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Basic service provision for the urban poor; the experience of Development Workshop in Angola

by

Allan Cain, Mary Daly and Paul Robson

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IIED Working Paper 8 on Poverty Reduction in Urban Areas

The ten case studies demonstrate the important roles that local institutions have (or can have) in contributing to poverty reduction in urban areas. They show that:
• many aspects of poverty need to be addressed, including not only inadequate livelihoods, income levels and asset bases but also poor quality and often insecure housing, inadequate infrastructure and services, inadequate legal protection of poorer groups' rights, and "voicelessness and powerlessness" within political systems and bureaucratic structures;
• there are often positive multiplier linkages as actions to reduce one aspect of poverty can help reduce other aspects;
• there are many possible entry points for reducing poverty (including some for which little or no external funding is needed) and many kinds of local organizations or institutions that can contribute to this;
• the form of the local institution that can reduce poverty varies with context; they can be community organizations, federations of community organizations, local NGOs, local foundations, municipal authorities or, on occasion, national government agencies or local offices of international agencies;
• one of the critical determinants of the success of poverty reduction initiatives is the quality of the relationship between "the poor" and the organizations or agencies that have resources or powers that can help address one or more of the deprivations that poorer groups suffer; and
• sustained poverty reduction requires city and municipal government agencies and political structures that are more effective, more accountable and more able to work with low-income groups and their community organizations.

International agencies need to develop or expand funding channels to support local institutions that can deliver for low-income or otherwise disadvantaged groups (including the organizations, associations and federations formed by these groups as well as local NGOs and local government agencies) while also remaining accountable to them. Such channels should also support the capacity of these institutions to widen the scale and scope of poverty reduction programmes and recognize that much poverty reduction depends on new attitudes and actions by local government institutions.

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SUMMARY

This paper describes the water and sanitation programmes that the NGO Development Workshop has developed in Luanda over the last 15 years, working with community organizations, local government and the official water and sanitation agencies. These had to be built within a city where:
- the population was growing rapidly, in part due to war forcing people to flee rural areas (Luanda's population grew from 480,000 in 1970 to around 3.4 million today), in a country which had had more than 40 years of conflict and economic decline;
- for 20 years there had been almost no provision to extend water to the peri-urban areas where much of Luanda's population growth had taken place;
- conflict has damaged and inhibited the political and institutional foundations for ensuring basic service provision;
- local governments and the water company lacked the power and resources to address the deficiencies in water and sanitation (although recent reforms aim to make local governments more accountable and effective); and
- incomes were too low to allow conventional solutions, yet there was no tradition of community provision (and government agencies were wary of working with community organizations).

Overall, 17 per cent of households report a water connection but only 10 per cent have an inside water supply. Most of Luanda's population rely on water purchased from tankers, with prices varying from the equivalent of US$ 4 per cubic metre in an area close to a water company distribution tank to US$ 20 in an area distant from the river and from any water company connection. The proportion of families with provision for sanitation within their homes is low.

The NGO Development Workshop began work in Angola in 1981, at the invitation of the Angolan government, and initially its work concentrated on providing technical support to the government, working within the Ministry of Construction's Department of Urbanism. It set up a new bureau for the upgrading of *musseques* (peri-urban squatter areas) and a pilot project (Project Sambizanga) was initiated in one *musseque*. After political changes in Angola in 1990, which allowed the emergence of community associations and NGOs, this project began to work directly with the community in the *musseques*. Water and sanitation were important components of the work because of the priority given them by residents (and because residents could manage housing construction individually but not water and sanitation). The project demonstrated two viable approaches to improving provision: community-managed public standpipes and family dry-pit latrines. It also demonstrated how an NGO could support residents' groups in developing and managing these models – and also how to bring in government organizations (even if they were weak and lacking in funding). It also made clear the need for models for water supply and sanitation that could be managed and funded within the community.

From 1995, a larger water programme developed, based on what had been learnt in Project Sambizanga. To date, this has built 200 public standposts in eight of the nine municipal areas of Luanda, each serving around 100 families. When the programme started, there were only ten working standpipes; many had been built at the end of the colonial period and the early post-colonial period, but were no longer functioning because of the lack of management, protection and maintenance. For each standpipe, Development Workshop sought to develop a partnership between a local elected water committee that managed it, the water company and the local authority. Half the funds collected from users went to the water committee for management and maintenance (and to pay the wages of those who managed it) with 30 per cent to the water company and 20 per cent to the local authority. The community management worked well but it was often difficult to get the necessary support from the local government and the water company. For instance, it was difficult to ensure that the water company supplied water to the standpipe and, inevitably, community support for standpipes would wane if there was no regular water supply; a programme is now underway to improve water mains

provision. Local governments were often not supportive – for instance, in helping to deal with illegal connections – and, in some places, they took over the water management systems.

The latrine programme supported the construction of 5,000 family latrines between 1995 and 2000 – focusing on particular geographic areas, with the aim of getting 90 per cent or more of households in an area to invest in them. Mobilizers trained by Development Workshop encouraged and supported families in chosen areas to develop the latrines. The dry-pit latrine was found to be the most appropriate way to improve sanitation in the peri-urban areas, where most water has to be carried to the home – so water-based latrines were not appropriate. In addition, they are cheaper and need less maintenance than water-based toilets with septic tanks. Pour-flush toilets are also a hazard as their effluent generally goes into gullies or is dumped in rubbish lots. Much effort went into developing designs and squat plates that kept down costs and were appropriate to local soil conditions. Families were responsible for digging the pit, lining it (usually done by professional masons) and building the cabin. Development Workshop provided the only significant sanitation programme in Luanda during the 1990s for peri-urban areas.

There is also a programme underway to improve solid waste collection. The state company responsible for solid waste removal in the city does not have the capacity to regularly collect solid wastes from the peri-urban *bairros*. It also lacks the equipment to get into these areas (through narrow unpaved roads) and the experience of how to work with community organizations. Development Workshop is supporting a pilot scheme to collect wastes from within *bairros*, using containers left at strategic points that are regularly collected by a tractor and taken to a site where the state company collects the wastes.

Sustainable basic service provision. The intention of these programmes was to develop robust systems for water, sanitation and solid waste collection that could work within a city that is growing rapidly, with much of the population living in self-constructed housing and having very low incomes and with very weak local governments.

It was clear that low-income households were prepared to pay for water if they got a reliable service and the price was less than that charged by private water vendors. Thus, the challenge was to develop a model that provided such a service at a price people were prepared to pay and which would cover the cost of the water and the standpost maintenance and with revenues for the water company to encourage them to sustain water supply to the standposts. Water committees were formed to operate the standposts and collect the revenue, ensure that the taps work and are maintained, keep standposts clean, keep the drainage tube clear, register the number of days of water flow, and ensure that records of all payments and expenses are kept in a cash book. This meant developing community organizations that were accountable to residents – for which there was little precedent. It also meant developing community organizations that could manage finances and deal with conflict (including getting action against illegal connections). From this, forums were developed through which different community organizations involved in managing standposts could share their experiences and work together in seeking better services from the water company and from local authorities. The water company also recognizes that it does not have the capacity to manage water supply at the community (*bairro*) level and that it should concentrate on improving bulk water supply (extraction from river, treatment and distribution through water mains). In effect, the programme is building local institutions from the bottom up – and seeking to create trust and working partnerships between community organizations, local governments and the water company, in which each has defined roles and performance standards. But this kind of long-term support for institutional development is not one that most international funding agencies can support. Their support is more for capital investments in time-bound projects Many external agencies also see privatization as the solution but this would be inappropriate for Luanda with its weak national private sector, public institutions too weak to manage privatization and a large part of the population with incomes too low to be attractive to private enterprises.

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I. INTRODUCTION

This report is a case study of the water and sanitation programmes of Development Workshop Angola in Luanda, the capital city of Angola, over the last 15 years. Although Development Workshop Angola has programmes in other areas of Angola (particularly in and around Huambo on the central plateau of Angola), and although it has other kinds of programmes (improved building techniques, savings and credit, small community initiatives), it was thought appropriate to focus on the water and sanitation programmes in Luanda, which are the longest-running programmes of Development Workshop Angola. Potentially, urban water and sanitation programmes can tackle urban poverty in three ways. First, they can reduce the cost of basic services: as we will see some urban residents in Luanda pay very high prices for water due to the lack of access to this basic service. Second, they can tackle some of the basic causes of poor health, which is an important drain on poor people's resources. Third, water and sanitation programmes can be opportunities to give people experience in working together as communities, an experience that might be replicated in other collective actions of relevance to poverty reduction.

This case study sets out the context in which Development Workshop Angola has been working, and gives an outline of the water and sanitation programmes and some of the lessons from the programmes.

II. DEVELOPMENT WORKSHOP

a. Development Workshop Internationally

Development Workshop (DW) is a not-for-profit organization committed to developing local capacities to improve the living conditions in less-developed communities. Four architectural students who were concerned that they were not equipped to deal adequately with the problems of the poor founded DW in 1973 in London, UK. Initially, DW's work focused on appropriate and affordable shelter using indigenous building techniques, inspired by the work of Hassan Fathy, an internationally known Egyptian architect, who turned architects' attention to the use of popular architecture to improve living conditions for the rural poor (Fathy, 1993). This later broadened to include water supply and sanitation, primary health care, small enterprise development and disaster mitigation. Building the local capacities of affected populations and strengthening local organizations are cross-cutting programming themes.

DW began its work delivering programmes and services directly, and has gradually shifted its focus to developing models for the improvement of basic services in underserved and low-income communities. In addition to their disadvantaged economic status, many of these communities are also subjected to the disruptions caused by environmental degradation, natural disasters or armed conflict, adding a further, complicating dimension to community work.

Institutionally, DW evolved as a single organization structured as a network with offices in several countries. The offices have substantial autonomy in programming and operations but the core principles and approaches are constant throughout the network. These are:
- **understanding the local reality**: recognizing stakeholders' strengths and constraints, being mindful of indigenous knowledge and expertise;

- **encouraging local solutions and sustainability**: solutions that people can go on using with the skills and resources available to them are sought and promoted. Equal emphasis is given to the process [of arriving at the solution] as well as to the product (intervention) itself;
- **commitment to long-term development**: starting with pilot initiatives developed with local partners and progressively scaling up to more comprehensive programmes commensurate with the technical and organizational capacities of stakeholders; and
- **partnership**: building alliances and partnerships with a variety of community-based groups, NGOs, local government and the private sector for longer-term sustainability.

DW currently operates from three main centres: Canada (established 1981), Angola (1981) and France (1985). DW also has an affiliate NGO in Mali (DW Mali: *Habitat et Environnement*). In 1998, the French office became a separate French not-for-profit association with its own governing board.

DW Canada's focus has evolved over the years as the nature and scale of operations elsewhere has changed. Currently, its mandate is to provide programming support services, develop and maintain links with organizations in North America, and serve as a secretariat for DW's governance structures. On a limited scale, it also undertakes public education and advocacy on specific issues. DW Canada does not implement projects except to provide short-term advisory services in research and evaluation.

Since 1985, DW France's work has included projects in Viet Nam, Laos, Pakistan, Bangladesh, the Balkans and the Sahel region of West Africa. One focus has been the award-winning promotion in the Sahel of "woodless" vault and dome construction techniques as a response to environmental degradation and the depletion of trees. These techniques were indigenous to North Africa and the Middle East but unknown in the Sahel. Working from Niger to Mauritania, DW has developed a training system that has given building skills to many hundreds of village builders using locally available earth. Today, these programmes are largely run by local teams. DW France has also been active in developing prevention strategies to reduce vulnerability in the face of disaster and, for example, undertakes significant work in developing community-managed domestic damage-prevention strategies in central Viet Nam.

DW is funded on a project-by-project basis by grants from non-governmental organizations, national and international development agencies and private foundations. It does not raise funds directly from the public. DW has worked with communities, grassroots organizations, NGOs and local and national government authorities on over 300 projects in over 30 countries in Africa, Asia, the Balkans and the Middle East on a range of research, training and technical assistance projects. DW Angola is the largest programme in the DW network, after an invitation by the Angolan government led to the establishment of the DW presence there in 1981.

b. Development Workshop Angola

Development Workshop Angola was set up in 1981 and provided technical support to the Angolan government during the 1980s, operating from within the Ministry of Construction's Department of Urbanism. For many years, it was the only international non-governmental organization in Angola, as the Angolan government tightly controlled the presence of foreign organizations in the country and insisted that they work closely with government departments. DW Angola also provided some technical support in settlements of Namibian and South African refugees who were based in Angola.[1] From the mid-1980s, DW, with its government partners from the Department of Urbanism, set up

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[1] During the 1980s, the Angolan government was not recognized by the government of the United States of America and was seen by Western governments as being allied to the Soviet Union. Angola was neither a member of the International Monetary Fund nor of the World Bank. The Angolan army was supported by Cuban troops in the war against UNITA, which was supported by the USA. Angola was a "front-line state" supporting the liberation movements of Namibia and South Africa.

GARM, a new bureau for *musseque* upgrading.[2] A pilot project, Project Sambizanga, was begun in one area of the *musseques* of Luanda to begin testing approaches to slum upgrading.[3]

There were many political changes in Angola at the end of the 1980s and in 1990. These included a move to a multi-party political system, the legalization of Angolan associations and non-governmental organizations, and fewer controls on foreign non-governmental organizations.[4] Project Sambizanga began to work directly with the community in the *musseques* of Luanda and to work with individual government ministries on particular issues.[5] Water and sanitation became important components of Project Sambizanga, as they were identified by poor urban residents as priority problems for which they required assistance. At the same time, an increasing number of foreign non-governmental development organizations began to operate in Angola. Growing donor interest in Angola and the reputation of DW's work in the country led to a three-fold growth in the size of operations from 1992 to 1997. In 1997, DW Angola opened a second office in Huambo, the second city of Angola, on the central plateau. This second programme area provided a context in which to test some of the approaches piloted in Luanda in war-affected peri-urban and rural areas, but in both areas the approach to sustainability involved social mobilization teams working with the beneficiaries to develop mechanisms to ensure their continued and active participation in the management and maintenance of the new service.

III. ANGOLA

a. Forty Years of Conflict

Until November 1975, Angola was a Portuguese colony. Although there had been a Portuguese presence along the coast from the late fifteenth century, effective occupation of the interior began after the Conference of Berlin in 1885. After 1945, at a time when other colonial powers were beginning to consider independence for their African colonies, Portugal preferred to intensify its occupation by encouraging settlers to migrate to Angola. This, and a boom in coffee production, led to a rapid increase in the white settler population of Angola. Nationalist uprisings in 1961 led to a further intensification of Portuguese settlement in Angola rather than a reconsideration by Portugal of Angola's status as a colony. Thus, while other colonial powers in Africa were negotiating independence agreements, Portugal was pursuing an active policy of development of the colonies in the interests of the metropolis. Three rival independence movements were founded. From 1961 onwards, a guerrilla war against Portuguese occupation spread through mainly the remote, rural areas of the north and east of Angola.

A military coup in Portugal on 25th April 1974, the "Revolution of the Carnations" overthrew the "Estado Novo", the undemocratic regime that had governed Portugal since 1926. The tensions within the military, arising from the colonial wars in Africa, were one of the causes of the military coup. This made independence of the colonies inevitable, although the decolonization process (particularly in Angola) was chaotic. Portugal departed from Angola on 10th November 1975 with a declaration that

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[2] In Portuguese, "Gabinete de Amelhoramento e Rehabilitação dos *Musseques*".

[3] "*Musseques*" is a common name for the peri-urban shanty towns of Luanda. See Section 3.5 for an explanation of the origin.

[4] The end of the Cold War and, in particular, the New York Accords of December 1988 between Angola, Cuba and South Africa led to the withdrawal of South African and Cuban troops from Angola and a slight improvement in relations with the West. Angola became a member of the World Bank and the IMF. The war with UNITA continued until May 1991, and the USA continued to support UNITA, although talks to end the war continued. The legalization of local associations and the relaxing of controls on non-governmental organizations were part of the process by which the Angolan government signalled its desire for better relations with the West.

[5] GARM had, in practice, scarcely functioned and rarely received its funding from the state budget. This was another reason for the change in the mode of operation of Project Sambizanga.

they were handing power to the Angolan people, but without attending the ceremony at which the new Republic was proclaimed. In the early hours of 11th November 1975, rival movements separately declared independence, in Luanda and in Huambo. Already, there was war between the two groups of the liberation movement and the country had been invaded in the south by the South African Defence Forces and in the north by Zaire. By then, the country had already lost most of its Portuguese residents and those of Portuguese origin. There was intense conflict in the period leading up to independence and in the first year thereafter, until the MPLA (the "Movimento para a Libertação de Angola"), with Cuban assistance, gained the upper hand.

In 1981, following the election of the Reagan government in the USA, a new phase of the war began that was to last for ten years. There were a series of invasions by the South African Defence Forces from the south, and simultaneously the surviving, rival guerrilla movement UNITA (the "Uniao Nacional para a Independência Total de Angola") occupied much of the thinly populated areas of eastern Angola and carried out guerrilla attacks on the Central Plateau. From 1986 onwards, when USA government support to UNITA became open and supplies were sent to UNITA through Zaire, guerrilla attacks also affected the interior of the north of Angola. A series of large-scale conventional military battles also took place in the south-east of Angola between the Angolan government army and Cuban forces on the one hand, and UNITA and the South African army on the other.

The high cost of these conventional battles and their inconclusive nature led to a series of peace negotiations that eventually led to the Bicesse Accord on 31st May 1991. There was a period of 18 months of peace prior to elections, which were held on 29th and 30th September 1992 and in which the MPLA and UNITA were the main parties. UNITA rejected the results of the elections, which gave a majority to the MPLA, and the country was plunged into the most brutal period of conflict to date. This period of conflict was both a conventional military conflict between two heavily armed belligerents and a guerrilla war. It affected both rural areas and, for the first time, small towns and some provincial capital cities such as Malanje, Kuito and Huambo that were besieged and heavily shelled. Between 1992 and 1994, Angola staggered through a period of extensive fighting, institutional paralysis, widespread lawlessness and increasing population displacements. The country has never really recovered from the destruction of infrastructure and the almost complete degradation of service provision institutions of this period.

On 20th November 1994, the Lusaka Protocol was signed between the government of Angola and UNITA, signalling the start of a "fragile peace" ("neither war nor peace"), which lasted until December 1998 when open warfare began again in the form of conventional battles, guerrilla warfare and besieged cities.

By the middle of 2000, the conventional conflict had been exhausted. The United Nations' sanctions on UNITA were beginning to take effect and government forces were beginning to have the conventional military edge on UNITA; however, UNITA still retains a guerrilla capacity. The death of UNITA leader Jonas Savimbi on 22nd February 2002 and the subsequent declaration of a ceasefire by the government of Angola (13th March 2002) possibly opens the way to an end to conflict, although this might take some time.

b. The Economy and Conflict

Prior to independence, Angola had a diversified agricultural export economy, was self-sufficient in the production of staple foods and was developing an off-shore oil sector. Today, the only source of export revenue is the rapidly growing oil sector. The agricultural infrastructure is destroyed, most of the peasant farmers are displaced and landless, access to much of the agricultural land is prevented by land mines, and the accessible land is overused and non-productive. Public spending exceeds revenue and is primarily allocated to the military and "public order" budgets, while the budget allocation to health and education is small and declining.

The sharpest economic decline was in the post-election period of conflict. Between 1990 and 1995, Angola fell from 58th position to 161st in the world league tables of GNP per capita, and from 94th to 164th in the league table of the Human Development Index. Angola ceased to be classified as a medium-income country and became a low-income country. The balance of payments deficit was US$ 1.5 billion in 1993 and US$ 1.2 billion in 1994. External debt in 1994 was US$ 11.2 billion, approximately 356 per cent of 1994 exports. This was despite increasing production of oil and diamonds and the prospects of further increases in oil production with new deep-sea discoveries in 1997. Oil and diamonds form enclave economies (Hodges, 2001).

More than 50 per cent of the adult population is unemployed or underemployed and of those employed, more than 50 per cent work in the informal sector. The informal sector is the only safety net for the landless, displaced and the urban poor. Despite this well-documented reality, official government thinking continues to conceptually confuse the informal sector with an illegal "black economy". There is limited private sector investment except in oil and related services, which is primarily by international companies and which is mainly off-shore. Most government income is from the oil sector. There is little rural to urban economic linkage. A small formal economy controls the distribution of goods to the informal sector and makes significant profits on wholesale transactions and through privileged access to buy foreign exchange for imports.

Service provision from the formal public sector for housing, health, education and other services is characterized by rent-seeking behaviour on the part of the lowly paid public service employees. This is popularly referred to as *gasosa* (soft drink or a gift/small bribe) and is considered the norm rather than exploitative behaviour. Socioeconomic indicators are among the worst in sub-Saharan Africa (UNDP, 1997).

> The under-five mortality rate is 292 per 1,000 live births
> The maternal mortality rate is 1,500 per 100,000 births
> 42 per cent of children have low weight for age
> 44 per cent of men are illiterate
> 71 per cent of women are illiterate

The under-five mortality rate is the third highest in the world, and well above the average of 170 for sub-Saharan Africa. Unlike other African countries, the rates for urban areas are not significantly less than for rural areas. It has been hypothesized that this is due to the poor living conditions and lack of services in peri-urban Angola: in other African countries, a high under-five mortality rate is mainly due to poor rural services whilst access to services in urban and peri-urban areas is better (UNICEF, 1999). However, specific data for Luanda or for peri-urban areas are not available.

Only 31 per cent of the overall population and 46 per cent of the urban population have access to piped water (or water from a borehole or protected well or spring) within 500 metres of their house: the comparable figure in Zimbabwe is 79 per cent, in Botswana 93 per cent and in Mauritius 98 per cent. At least 60 per cent of the population nationally, and 30 per cent of the urban population, have no access to any kind of sanitation system. The most common forms of sanitation are dry latrines and pour-flush latrines. Even in urban areas, only 18 per cent of households have access to sanitation linked to a sewerage system (UNICEF, 1999).

c. Population Displacement

The result of 40 years of conflict has been large-scale population movements under conditions of economic crisis. Accurate data are, however, scarce. There has been no full-scale census since 1970 and only a partial census in 1983 and 1984. The total population is thought to be about 15 million. Three million people were estimated to have been displaced between late-1992 and late-1994. Another 1-3 million people (estimates vary) were estimated to have been displaced between 1998 and 2000. There are no clear estimates of how many people have been displaced at other times during the

1980s and 1990s, but most Angolan families have been affected by displacement at some stage in the war.

During the 1980s, rural areas were insecure and people fled to small towns and inland cities, as well as to the main cities near the Atlantic coast. The post-election war affected small towns and inland cities, so the main cities near the Atlantic coast became the main destination. It is estimated that the population of Luanda, Benguela, Lobito and Lubango (the safest cities) in 2000 was 40 to 50 times that of 1940. The population of Benguela, Lobito and Lubango in 2000 was ten times that of 1970 and the population of Luanda in 2000 was seven times that of 1970 (Robson and Roque, 2001).

In the case of cities of the interior, at various times directly affected by war, there have been population movements inwards and outwards. Better-educated people, and those with more resources to pay for the available transportation, left the inland towns and cities, which now shelter people who have come in from the countryside. Huambo is 20 times more populated than in 1940, a significant growth although not as great as that in Lubango, Benguela, Lobito and Luanda.

Table 1: Population of the main cities of Angola from 1940 to 2000

	Luanda	Huambo	Lobito	Benguela	Lubango
1940	61,000	16,000	13,000	14,000	8,521
1960	224,000	38,000	50,000	23,000	15,086
1970	480,613	61,885	59,528	40,996	31,674
1985	1,138,000		338,300	219,000	104,847
1995	2,100,000		600,000	355,000	
2000	3,276,991	300,000			400,000

Data from 1940 to 1970 are from the national census. Subsequent data are from various estimates.

A 1996 study commissioned by UN Habitat (UNHCS, 1996) estimated that over 50 per cent of Angola's population lived in urban or peri-urban areas by 1995. The proportion has increased since then.

People have been displaced a number of times, from rural areas to small towns then to larger towns and then to the main cities. Some people moved back to rural areas in the period of peace in 1991 and 1992, and were then displaced again by the renewed conflict after the elections. Patterns of migration are thus complex and have been little studied. Although most migration is due to war and insecurity, it does not always take place when and where there is the fiercest fighting. People leave potential conflict areas when there is an opportunity or when they as individuals feel insecure. There were significant migrations between 1995 and 1998, even though this was a period of relative peace: people felt that the peace would not last forever and it was an opportunity to leave rural areas and travel to the cities while the roads were open.

Thus, not all displacement is of large groups of people. And even when large groups of displaced people leave an area together, these tend to break up during the long and multi-staged journeys. When displaced people arrive in an urban area, they usually stay with friends from the area of origin or with members of the extended family who migrated earlier. However, the economic difficulties of all people in the peri-urban areas, even those who migrated some time ago, makes it difficult for them to host displaced relatives for more than a short time. The latter find their own place to live as soon as possible and this is often in another *bairro* because of the difficult (or high cost) of finding accommodation in older established areas.

For these reasons, it is rare to find in the peri-urban shanty towns surrounding the main cities (where most displaced people resettle) groups of people coming from the same area living close to each other. Forced displacement has broken up previous social groupings.

Until recently, there had been an implicit assumption that at least some of this urbanization would be reversed with the end of war. It is becoming clear that this is not necessarily the case and that few newly urbanized people are making immediate plans for a return to rural areas. A generation of young people, children of migrants from rural areas, have grown up in the urban centres. There is now a gradual realization that reconstruction needs to take into account the urban nature of much of Angolan society. There is as yet, however, no strategic view of the future of urban areas in Angola.

d. A Complex Emergency and Humanitarian Intervention

Although Angolans have been living with conflict since 1975, there was no significant international humanitarian intervention until the post Cold War period and the signing of the Bicesse Agreement in 1991. This international humanitarian intervention was intended to be oriented towards reconstruction in the period of peace between 1991 and 1992, but rapidly became overwhelmingly emergency-like in character as peace broke down in late 1992. From 1992 to 1995, emergency relief was delivered outside of Angolan national structures and institutions. This was justified on the basis of the urgency of the beneficiary needs but resulted in the accelerated degradation of national service provision, structures and systems. From 1995 onwards, international agencies reviewed their intervention strategies and attempted to reinforce capacity building for national institutions in project interventions. The impact has, however, been limited because of the continuing emergency aid focus, with short time horizons, changing policy environments, unclear strategies for capacity building and rapid expatriate turnover. Institutional weaknesses in Angola are compounded by a continuing lack of political will to prioritize pro-poor policies.

In a complex, structural, political emergency, conflict damages not only economic and communications infrastructure but also the foundations upon which conventional social relations are based and those institutions necessary for recovery: cultural institutions, educational and health structures, market and business networks, rural–urban linkages, human resources and skills bases, and social, civil and political organizations. International assistance to Angola for reconstruction has rarely recognized the implications of a complex, structural, political emergency and the institutional components of reconstruction (ADRA, 1998; Robson, 2001). While communities and individuals are constrained into thinking in a short-term, survival mode only, Development Workshop strongly feels it must apply a developmental approach to interventions, even in the context of an ongoing complex emergency. The sectors for intervention correspond to ongoing needs of the population, independent of changes in the political and military situation, but the intervention must be planned in the context of informed stakeholder analysis and speed of implementation should correspond to the assimilation capacity of local partners. Even in an emergency, rapid technical responses and the creation of dependent beneficiaries can be avoided and capacity building of local partners can be promoted.

e. Luanda – The Capital City

Luanda was founded in the sixteenth century as a port on the Atlantic coast, protected from the ocean by a long sand spit formed by the strong, northward flowing Benguela current. Until the end of the nineteenth century, it was a trading station, often dealing in slaves, and occupied only the low-lying ground by the bay. After the Conference of Berlin, Portugal attempted to effectively occupy Angola and European migration to Angola was rapid. The town of Luanda began to grow: businesses and houses for Europeans displaced the homes of poorer people in the low-lying area, forcing them to occupy the slopes above the bay. The low-lying area was known as the *Baixa* ("low area" in Portuguese), and the slopes and uplands as the *musseques,* a word derived from a local Kimbundu word describing the red and sandy soils of the slopes and uplands. Thus began the division between

the *Baixa* and *musseques,* a division between the better conditions in the centre of the city and the precarious, improvised settlements around it.

Luanda grew rapidly from 1945 onwards, with the coffee boom and later with the development of local industries. Population growth was due both to European migration from Portugal and to migration of Africans from the surrounding areas and from the Central Plateau. Migrants from Kimbundu-speaking areas inland from Luanda were mainly seeking to escape from harsh conditions in rural areas. Migrants from Umbundu-speaking areas on the Central Plateau were mainly "contract" workers, forcibly recruited to work on the railways and in the port. Rural-educated Africans were also fleeing to the anonymity of the city, away from the Portuguese authorities in rural areas who identified all educated Africans as potential nationalists.

> *Angola's last 15 years as a colony changed the face of the country more quickly and profoundly than all the previous decades of the century* (Neto, 2000).

> *Luanda really started to grow in 1948 or 1949, and between 1940 and 1960 Luanda's population grew by a factor of four and there was a ten-fold enlargement of the city's area* (Messiant, 1989).

Unlike some other cities in Southern Africa (and unlike certain other Angolan cities such as Huambo and Lubango), there was never a clear, planned division between the *Baixa* (the cement, mainly European city) and the *musseques*. During the periods of rapid growth, the *Baixa* extended into the *musseques*, pushing indigenous communities further out but with no space between the two areas and sometimes leaving behind islands of *musseque* housing among the advancing blocks of flats. By 1970, Luanda had reached a radius of about five kilometres. Beyond was an area of small farms occupied by Portuguese settlers. Further *musseque* settlements were in areas much further out (such as at Golfe, a piece of municipal land reserved for a golf course that was never built and that was spontaneously occupied in the late-1960s). But in general, the population density in the *musseques* was increasing as outward expansion was blocked.

> *The musseques surround the cement city but they also infiltrate and cut into it. This continued during the growth of the 1950s… The way construction advanced was basically wild. New Portuguese arrivals settled with no consideration for the initial city plans. The city expanded mainly in the form of tentacles along the main roads* (Messiant, 1989).

Following independence, the population of Luanda initially declined as the Portuguese population left Angola, but began to grow again as rural economic decline and insecurity encouraged migration from rural areas. From the late 1970s, there was also a return of Angolan exiles, mainly from Zaire. These exiles were Angolans (or the children of Angolans) who had fled from the north of Angola following the uprisings (and subsequent reprisals by the Portuguese) in 1961 and had lived in Kinshasa or other cities of western Zaire. They initially lived in flats abandoned by the Portuguese, but later built houses in new areas on the edges of Luanda, often areas that had been marked for formal urbanization in the last years of the colonial era but which had not been built on.

The abandonment by the Portuguese of the small farms around Luanda opened up these areas for spontaneous occupation, and the outward spread of the *musseques* was continuous from 1980 onwards. By 2000, they extended 13 kilometres out from the city centre. But population densities have also continued to grow: annexes have been built onto existing houses, road edges have been occupied as have spaces that were previously reserved for other purposes. Densities often reach more than 800 people per hectare in some pre-independence era *musseques,* 500 per hectare in areas dating from the 1980s and 200 per hectare in areas dating from the 1990s. There are also areas on the city fringe that are beginning to be colonized at a low density. The average house occupancy is 7.6 persons.[6]

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[6] Conditions are poor, although they compare favourably with population densities in cities such as Nairobi,

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Box 1: Growth of the *bairros* of Val Saroca and Ossos in the commune of Ngola Kiluanje, Luanda

Until 1975, farms covered most of the area. On the highest land, along the old road to the north-east, there were some wooden houses mainly inhabited by people linked to the coffee companies in the Dembos region. Bones from the slaughterhouse were deposited in part of the area during the 1960s, which led to it becoming known as Ossos (bones).

People started building houses in the area in 1982 on the highest land. By 1985, ten hectares of the highest land had been occupied. Occupation proceeded down the slope and, by 1989, there were 1,250 houses on 26 hectares. Occupation continued during the 1990s, both by infilling and by occupation of new areas. Areas occupied in 1989 had twice as many houses by 2001, by which time the whole area was occupied: the total population of the two *bairros* was about 40,000 and the population density was 500 persons per hectare.

The population of Luanda now includes people from all the provinces of Angola. As noted previously, in only a very few peri-urban *bairros* are there people from the same region or from the same ethno-linguistic group.

Until about 1980, *musseque* housing in Luanda was constructed in wood, or in burnt brick with tile roofs by better-off *musseque* residents. Insecurity in rural areas from 1980 onwards cut off supplies of wood and most construction since then has been with cement blocks with roofs of tin sheet. Housing of wood or brick indicates areas occupied before 1980, although owners of older houses gradually replace wood with cement blocks. Cement is usually available, even if the price is high, and about 80 per cent of peri-urban houses in Luanda are concrete structures. About 25 per cent of the residents in peri-urban areas rent their houses (DW, 1997). Renting is more usual among more recent migrants to the city who have not yet saved enough to buy or construct a house. Most people consider renting to be insecure, as the landlord might put up the rent steeply or evict a tenant to make way for a family member, so they aim to buy or construct their own home as soon as possible.

There is an active housing market, as people move between *bairros* according to their ability to pay. This is another reason why it is rare to find groups of people coming from the same area living close to each other. Rents, house prices and land prices rise steeply the nearer to the centre of the city, where the economy (fuelled mainly by the oil industry and the port) is most dynamic. In 2000, a small plot of land on which to build a house might cost US\$ 200–300 in an outlying *bairro* but US\$ 2,000–3000 in a peri-urban *bairro* closer to the city centre, transport routes and market opportunities. It might then cost over US\$ 2,000 to build a small house (one room and one bedroom) in cement blocks in a peripheral *musseque* area.

For most of the colonial period, water and sanitation services were provided only for the "cement city" mainly occupied by the white population. In the last few years of the colonial period, and in the first years after independence, there was some attempt to provide water and sanitation services in the *musseques*. The lack of maintenance since then has led to a deterioration in these services (as has the low quality of installed infrastructure, such as pipes laid close to the surface) and there has been almost no attempt to provide services to the areas occupied since 1980 (when the population of Luanda was only one quarter of what it is today). The frequency of domestic water connections ranges from over 90 per cent in the urbanized city to zero in most peripheral areas (Berger, 1998). Overall, 17 per cent of households report a domestic water connection but only 10 per cent report having an internal water supply, however irregular. Most water is bought from individuals who have water tanks

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where they can reach 3,000 people per hectare.

who, in turn, are supplied by tanker lorries that carry water from the River Bengo, 25 kilometres to the north of Luanda. The price of water (in 1998) varied from US$ 4 per cubic metre in an area next to a water company distribution tank to US$ 20 per cubic metre in an area distant from the river and from any water company supply. The cost of water has an impact on daily consumption (Berger, 1998). The poorest people use less water, use poorer quality water, boil or treat it less often and spend more money and time obtaining it.

The proportion of families with on-site sanitation is dropping. Newly arrived migrants are less likely to be able to afford to construct a latrine as economic conditions have deteriorated. Development Workshop found in one area in 1989 that 70 per cent of families had some type of on-site sanitation, but in the same area in 1997 the proportion of families with on-site sanitation was less than 50 per cent. Fewer than 5 per cent of families in areas more recently occupied by displaced families from the provinces have on-site sanitation (DW, 1989; DW, 1997). Those who have no access to on-site sanitation defecate in the open air (on rubbish heaps, in drainage gullies or elsewhere) (UNICEF, 1999).

The major killer diseases in Angola are malaria and diarrhoeal diseases, both related to poor sanitation and environmental conditions. In the rainy season in Luanda, it is believed that 6 per cent of the population have malaria at any one time but the prevelance is much higher in children and is twice as high in the *musseques* as in the central "cement" city (Feio, 1996). It is believed that, nationally, 28 per cent of children under the age of five have diarrhoea in any two-week period. Cholera and dysentery showed epidemic surges between December and May of each year from 1987 until 1996. In 2000, there was an epidemic of poliomyelitis in children due to polio virus 1. All of these affected the peri-urban areas much more than the urbanized areas of the city. Mortality due to diarrhoea recorded in 1994 for Sambizanga *municipio* was ten times greater than in urban Luanda (Ingombotas), and in Cazenga it was 24 times greater than in urban Luanda. The 2000 epidemic of polio also registered many more cases in peri-urban *bairros* compared to the urbanized section of the city. Appropriate disposal of faecal matter is crucial to the control of cholera, dysentery and other diarrhoeal diseases.

There has never been a strategic view of urban development in Angola. There is no clear legislation on land tenure in urban areas. Land has been occupied in an ad-hoc fashion and formalization of the process of land occupation is done through the local levels of the state administration. Details of the process vary across the city and local administration boundaries. The land and housing occupied by the urban poor, whether in the old *musseques* or on the periphery of the city, remains their principal form of capital (wealth) accumulation. In the economy of Luanda, where hyper-inflation has occurred frequently and where there are few mechanisms for the poor to accumulate savings, the land and housing that people occupy provides a margin of security that can be converted into capital in a time of crisis. Under current legislation, the urban poor's right of occupation remains extremely precarious and, without the means to legally secure tenure, the poor remain vulnerable to expropriation of the land that they occupy.

The major agencies that have implemented programmes in Luanda include the European Union, the World Bank (through IDA loans) and DfID (UK government). The justifications for their interventions are:
- the number of people potentially affected by the intervention;
- the potential opportunities to encourage "good governance"; and
- the potential opportunities to affect national policy in the sectors of intervention.

A World Bank infrastructure and rehabilitation project was conceived in the early 1990s. The component project for Luanda (IRE) included a pilot project to experiment with an integrated infrastructure development project for a peri-urban area (Fillatre and Guber, 1994). The provincial government contracted Development Workshop to do the preparatory research for this pilot project in 1995. While the baseline research was underway, the World Bank team reviewed their development strategy and transferred the funding that had been allocated to the IRE project for Luanda to another credit line available for infrastructure development in the provinces. DW was able to continue the

pilot project with funding from the Canadian and Swiss governments. The provincial government still considers that testing solutions for infrastructure development in the peri-urban areas of Luanda is a priority. The World Bank continues to contemplate involvement in the development of water and sanitation infrastructure in the city but the government of Angola is still negotiating preliminary conditions with the IMF. There are also possibilities for African Development Bank funding for infrastructure development in Luanda.

f. Local Government and Decentralization

The local government system in Luanda is likely to undergo changes, although how and when remains unclear at the time of writing. There has already been a substantial amount of decentralization to other provinces, whereby all of the central ministries, with the exception of the ministries of Justice, Police and Finance, relinquished the management responsibilities at provincial level to the provincial government structure in the year 2000. In 2002, for the first time in Luanda and several other provinces, budgets have been allocated to municipal administrations for development project activities.

It is projected that the two peripheral municipal areas of Luanda with rural populations (Cacuaco and Viana) will become autonomous administrations, while the other seven municipal areas of Luanda will be divided into their constituent communes. These may be renamed *bairro* coordination units and would have responsibility for coordinating services in their area. It is not clear whether Luanda will have a city mayor, elected or appointed, or continue with a provincial governor appointed by the state president as in other provinces. A first phase of local democracy is likely to involve the election of municipal and *comuna* administrators.

IV. DEVELOPMENT WORKSHOP ANGOLA: WATER AND SANITATION

In 1986, at the request of the National Institute for Public Health (INSP), Development Workshop was asked to coordinate a research study on environmental sanitation in the city of Luanda (Cain et al, 1989). In the decade since independence, the urban sanitary infrastructure of Luanda had fallen into disrepair due to a lack of sufficient investment and maintenance. New demographic pressures resulted from the rapid unplanned growth of the city. Rubbish had accumulated for many years in the peri-urban districts and diarrhoeal diseases such as cholera were becoming endemic. The study, which was carried out by DW with assistance from the London School of Hygiene and Tropical Medicine (LSHTM) and the INSP, laid the groundwork for Development Workshop's future urban programmes. The study proposed a strategy of employing a combination of low-cost technical solutions for basic services combined with an approach to community mobilization to mitigate the growing urban crisis.

a. Project Sambizanga: 1986 to 1995

Together with Angolan professional colleagues from the Department of Urbanism within the Ministry of Construction, Development Workshop Angola began a pilot project (Project Sambizanga[7]) in one area of the *musseques* of Luanda to begin testing approaches to slum upgrading. This area was the *comuna* of Ngola Kiluanje in the m*unicipio* of Sambizanga. The population of the *comuna* at the time was about 10,000 households.

After the political changes in Angola in 1990, the project ceased to be directly under central government and became a DW project working directly with the residents of the area, provincial,

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[7] Sambizanga Project received support during its several phases from One World Action (UK), Inter-Pares (Canada), British Overseas Development Agency (ODA), UNICEF, the Netherlands Cooperation and the Swedish International Development Agency (ASDI).

municipal and *comuna* (district) level administrations and with individual government ministries on particular issues. In practice, the main partner was the community itself as government partners, in the period before and after the 1992 elections, were particularly weak.[8]

Poor urban residents identified water supply and better on-site sanitation facilities as problems for which they required assistance and these became important components of Project Sambizanga. Housing and construction, however, were not identified by poor urban residents as problems for which they needed assistance.[9] Project Sambizanga thus aimed to test collective, community management models of water supply, and family solutions for on-site sanitation. It emphasized low-cost technical solutions.

The achievements of Project Sambizanga included the following:

1. Robust, low-cost technical models were designed and refined for public standposts and family dry-pit latrines. A system of management of community water supply was tested and experience was gained in how to manage and maintain them. The viability of dry-pit latrines for peri-urban families was demonstrated.

2. More refined ideas on community mobilization and the promotion of greater community empowerment were developed. Initially, Project Sambizanga had engaged large numbers of young people in the community who, on a part-time basis, provided health education for their communities and encouraged them to become more proactive in their development. In the short term, this strategy was effective: residents became more aware of hygiene issues and actively sought chlorine to treat their drinking water (to guard against cholera infection that was common during this period), and more families were showing an interest in building on-site latrines. But the strategy was not effective in the long term: residents became dependent on the activists, regarding them as agents for delivering on behalf of the project, and were not interested in more active participation or in assuming responsibility for project investments. Moreover, the activists were becoming dependent on the food-for-work incentives provided by the project and resisted passing control of activities to the community. The activists of Project Sambizanga had functioned as intermediaries, or even as a barrier, between the project and the communities but had not contributed to empowering the latter.

By the end of Project Sambizanga, DW saw more clearly the purpose of mobilization as being to engage communities to manage their own affairs, and the task of mobilizers as that of training and supporting communities in leadership and management. Development Workshop Angola, in its work subsequent to Project Sambizanga, concentrated on recruiting and training small numbers of professional mobilizers to provide support to direct participation by the majority of an area's residents in water and sanitation activities. Some of the original activists stayed with DW to become professional community mobilizers and some joined other development programmes.

3. Clearer ideas were developed about a possible role for state institutions, such as the water company and local government, in water and sanitation programmes. While Project Sambizanga only marginally involved such institutions, which were at the time extremely weak, it became clear that they would need to be included in future interventions as service providers or regulatory bodies.

4. Cost recovery was identified as a key issue. Some experience was gained in how to manage this issue and progress was made in convincing the water company of its importance.

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[8] The uncertainty caused by the prospect of elections led to paralysis in many government services; the post-election war and a corresponding shift of resources into the war effort prevented recovery for a number of years.
[9] Development Workshop Angola has continued to work in the area of construction, particularly in Huambo where most peri-urban construction is in adobe or soil-cement blocks and where a need has been identified for training and development of improved building techniques. Development Workshop Angola has also provided technical assistance to a wide variety of organizations (ranging from local parents' committees to international aid organizations) on upgrading and maintenance of school buildings in many provinces of the country.

5. Development Workshop Angola gained a reputation as a significant actor in basic service provision for the peri-urban poor.

b. Water and Sanitation from 1995 to 1999

In the period subsequent to Project Sambizanga,[10] Development Workshop Angola sought to apply the lessons learned through two separate programmes, one to replicate and extend the supply of public water[11] and the other to extend the provision of family latrines.[12] More emphasis was given to developing and testing better strategies of community mobilization, training for mobilization, sustainable models of community management of services and training for user groups.

The water programme built 200 public standposts in eight of the nine municipal areas in Luanda, each standpost built to serve 100 families (or about 800–1,000 people). Although public standposts had been built at the end of the colonial period and in the early post-independence period, by 1990 only ten were operational in the whole of Luanda due to a lack of mechanisms for management, protection and maintenance. In the absence of an official model for the management of standposts, Development Workshop proposed a pilot model to EPAL, the provincial water company, which was approved and put into practice, although sometimes adapted by local administrations and user groups. In this model, the community users managed the standpost on a daily basis and were responsible for its protection and maintenance. A monitor appointed by the users collected a small fee and the revenue was divided as follows:

- 50 per cent to the community for maintenance and a stipend for a monitor if agreed by the users;
- 30 per cent to the water company for water supplied; and
- 20 per cent to the local authority in return for a monitoring and regulatory role.

DW's mobilizers supported communities in electing water committees for each standpost and trained the members of the water committees in basic bookkeeping, standpost maintenance and conflict resolution skills. A community theatre group was created by the project to communicate a public health message and promote democratic management methods within the water committees. The group later became independent and continues to work with DW, who regularly commission theatre pieces on social mobilization themes.

The provincial water company, EPAL, was an active participant in this programme and supported its development and funding applications. The teams that built the standposts were made up equally of staff from DW and EPAL. EPAL recognized that, although it was able to acquire the know-how and personnel to construct public standposts, it did not have a coherent policy for their management or for the management of the community water supply and this lack prevented it from effectively extending the water supply in the peri-urban areas of Luanda. EPAL was keen to work with DW, who would be responsible for developing community participation in the public water projects.

The latrine programme assisted the building of 5,000 on-site family sanitation units between 1995 and 2000. The programme was designed to achieve near-saturation coverage of 90 per cent of families in specific residential areas so as to maximize the health and sanitation benefits (and not offer latrines on demand, dispersed over a large area). Mobilizers encouraged families in a chosen area to build latrines, helped them to obtain materials and provided technical advice about construction. The number of new latrines that each mobilizer was able to facilitate at any one time went from ten in

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[10] At the Istanbul Habitat Conference in 1996, the Sambizanga Project was recognized as one of the "International Best Practices" in urban upgrading.

[11] Luanda Peri-urban Water Programme Phase I, 1995-96 and Phase II, 1997-98, DW in partnership with One World Action – funded by ODA/DFID.

[12] Peri-urban Emergency Sanitation Project – funded by CIDA, SDC and Emergency Sanitation for IDPs, in partnership with One World Action – funded by European Union and Netherlands Cooperation.

1996 to 40 in 1999. Families built their own latrines using the latrine slab provided by Development Workshop.

c. Tackling New Challenges: 1999 Onwards

The lessons learnt from the water and sanitation programmes between 1995 and 1999 suggested that a number of questions needed addressing.

1. Although community management of standposts had worked well, there was no way of ensuring that the water company continued to supply water. Water pressure in the mains pipes often declined when there were major breakdowns in these (and no resources were available to invest in upgrading and repair) and also due to redirection of the water supply because of political expediency. Drops in pressure occurred to the point where water committees did not feel that it was worthwhile continuing and users preferred to seek alternative supplies rather than invest in maintaining a standpost. It was therefore necessary to improve the water supply and devise mechanisms to guarantee maintenance and a continued supply.

DW, under a World Bank contract through Louis Berger Ltd., designed a water distribution system of over 600 standposts for most of Luanda's *musseques*. This system employed the technical and community management model piloted by DW through the Sambizanga and subsequent water projects (Berger, 1998). The original plan for the period 1999–2002 was based on the assumption that the World Bank would invest significantly in the network of mains water pipes, then the DW water programme would work intensively in one area where the trunk supply had been significantly improved. They would also work with the water company to help them improve their maintenance and to convince them that users would be willing to pay for water, provided that the supply was reliable, that the quantity and quality of water was reliable, and that the users knew where the money was going. It would also facilitate better liaison between the water company and the users (and water committees).

After the 1999–2002 water programme had begun, the World Bank programme was put on hold. After some delay, funding from DFID was agreed to allow the DW water programme to assist EPAL to build a trunk water pipe in the communes of Ngola Kiluanje and Hoji ya Henda. This has improved water supply to the area and has allowed the DW water programme to work with the water company and with the community to devise mechanisms to guarantee maintenance and a continued supply, facilitating better liaison between the water company and the users.

2. Local government bodies were receiving money from water committees without a clear stipulation of their duties and responsibilities, and irrespective of their performance. In practice, some were receiving money while doing less than was expected to help water committees to resolve disputes with other bodies, or to put pressure on the water company. The water committees felt in need of support from local government in order to deal with illegal connections and this was not always forthcoming.

3. Local administrations in some places were also taking control of the water management system, marginalizing the water committees. Sometimes, local government insisted on playing an intermediary role between water committees and EPAL and failed to transfer money. For this reason, the water company preferred to by-pass local government and sign contracts directly with consumers.

4. It was also clear that more could be done to strengthen the water committees, to improve their accountability to users and prepare them better to deal with local government and the water company. It would be necessary to work more intensively with water committees so that they are strong enough to maintain their autonomy and to negotiate effectively with local government bodies and the water company, as well as being more accountable.

5. It was also becoming clear that a strategy should be devised and tested for dealing with the removal of solid waste from the *bairros*. Development Workshop had intervened previously only to help remove some large concentrations of solid waste, and through a small pilot programme for waste reduction. However, the experience gained and the contacts generated with ELISAL (the sanitation company) suggested that the time had come to pilot a strategy for a sustainable service through the participation of residents and ELISAL.

6. One of the implications was that the programme should focus more intensively on the *comunas* of Ngola Kiluanje and Hoji ya Henda, after a period when the DW water and sanitation programmes had expanded into most of Luanda's municipalities. The intensive testing of a number of models and systems would best be done in a limited area, as most would rely on supplying adequate water to an area and this could best be guaranteed by working intensively in one area. Support could only be provided to a limited number of local government bodies and this too would be best in a clearly defined area.

d. The Approach to Sustainable Basic Service Provision

Development Workshop programmes aim to develop and rigorously test the technology and models of service delivery mechanisms, to serve for further replication. This is in contrast to major, multilateral-sponsored, time-limited investment that must scale up rapidly, leaving inadequate time for learning and feedback: having selected a particular technology or model for investment, it is difficult to change the application, even when problems are encountered. DW programmes can be seen as a low-cost experimentation phase in advance of major investments that are eventually likely to be made in peri-urban Luanda by the World Bank and African Development Bank. They try to follow a structured approach to testing models of service provision and scaling up in accordance with the institutional capacity to manage the services.

The following table summarizes the key issues for sustainable development of service provision.

Table 2: Components for sustainable service provision

Installed and functioning systems	Competent stakeholders	Delivery systems
• Community consultation before installation • Adequate coverage • Efficient operation and maintenance • Complete cost recovery or recognized need for a public subsidy	• Management skills, transparency and accountability, technical skills • User groups with leadership skills and representation • Public/user education • Quality control and effective consumer protection	• Decentralization and local authority involvement • Systems and support for learning and problem solving (monitoring, data collection, data analysis, review and planning) • Mechanisms for client feedback, systems review and planning • Mechanisms for dialogue, collaboration

Thus, the objectives of Development Workshop's work in water and sanitation can be summarized as follows:

Purpose: To promote access by underserved peri-urban populations of Luanda to basic services, namely water supply, on-site family sanitation and solid waste removal

Objectives:

- To develop and test robust technical solutions to the problems of collective low-cost water supply, on-site family sanitation and collective solid waste removal
- To develop and demonstrate, in collaboration with the stakeholders, sustainable management models for basic service provision
- To develop and test cost recovery mechanisms
- To build the awareness and capacity of community organizations, local government departments and local NGOs involved in service provision
- To document lessons learned, disseminate information and promote discussion on good practice models

The key elements of the programme strategy have been:
- To start with a priority need identified by the community. Water supply was the first area of basic service intervention in 1991. In areas where improvement of the water supply is not a viable option in the context, communities have opted to begin with on-site sanitation.
- To use appropriate technologies, which are accessible, affordable, accepted by the users and where the users can manage the ongoing maintenance.
- To apply an informed stakeholder analysis. Stakeholders are encouraged to dialogue and collaborate and to perform and monitor their respective roles in service provision. Stakeholders are supported to develop their capacity to carry out their responsibilities and to deal with the conflicts that can arise from provision of basic services.
- To ask users of the service to contribute to the costs of the service, but ensure that the service is affordable and that institutions are developed that account for the use of funds and that apply them to sustaining the service.
- To raise community awareness in relation to viable options to improve their access to basic services. To train and support community residents to reach their potential as user-managers of services.
- To lobby the policy makers to consider community management of resources as a viable option. Users are client-consumers, who make fair payments for services provided, look after their community's investment and put pressure on other stakeholders to be accountable.
- To establish a monitoring system to systematically track progress. The monitoring system should identify technical and systemic problems and identify new opportunities. Problems should be addressed promptly and in a transparent fashion with the stakeholders. Opportunities should be used optimally, where following the new opportunity does not compromise the ongoing commitments.

Angolan politicians have often defended the position that basic services should be free of charge. This simplistic populist position has in practice led to no services being provided (because government income from oil and diamonds has rarely trickled down to basic service provision in peri-urban areas) or to a lack of funds for maintenance of the existing services. As a result, the poor find themselves paying more for essential services from the private sector or losing income because of frequent illness from contaminated water.

An opposite position has been promoted by international financial institutions, namely a "privatization" approach. As implemented in Angola, this has meant an obsession with "profitability", with little attention being paid to:
- affordability;
- accountability for funds collected;
- the correct use of funds to maintain service delivery systems; and
- adequate preparation of the public institutions so that they can manage or oversee private operators and account for money (or so that they can effectively regulate any private sector participation).

When the model has been applied in Angola, a country with a still weak undeveloped national private sector, this has led to:
- operators attempting to extract short-term gains, resulting in high prices for services;

- suppression of demand; and
- a lack of clarity about how profits have been used.

In practice, peri-urban residents, in the absence of a public water supply, are paying high prices for often contaminated water from private suppliers who distribute water by tanker truck. Peri-urban residents are not against the idea of paying for a public water supply, provided that:
- the cost is less than that paid for water from private water tanks;
- they have some assurance about the quality of the service provided; and
- they have some assurance that funds go to sustaining the service (Pinto and Ribeiro, 1998).

To provide a sustainable service, it is necessary (and has been shown to be feasible) to adopt many of the principals of cost recovery, to charge an affordable fee for water that is used to keep the local infrastructure operational. Experience has shown that relying solely on centralized funds from the state budget to maintain local infrastructure in the peri-urban *bairros* has proved unrealistic. The approach of the Development Workshop water and sanitation programme has therefore been to develop a model in which the fees for water (much less than those charged by private suppliers) are used to maintain the water standposts and to pay a fee to the water company as an incentive to sustain the water supply to the area; in future, it will also provide a cross-subsidy to support the removal of solid waste from the *bairros*. This approach, however, does require considerable work to develop various institutions that can manage the funds adequately and in a transparent manner. This is an inevitable part of developing sustainable basic services: they are a collective good, which people will support if they trust them, and this requires them to create accountable institutions.

Peri-urban *bairros* are rarely "communities" in the full sense. They have been formed by the migration of people from different areas at different times. They reflect the fragmented society around them. There are different groups of people with different levels of power who, in the daily struggle to survive, use that power to gain access to resources. Water supply (and other basic service) provision has the potential to benefit everyone but only if everybody follows the rules. In the absence of functioning institutions in peri-urban areas, it has become common for those with more power to bend the rules, for example making illegal connections to water pipes to provide a private supply, thus depriving public standpipes of water. Other residents feel unable to tackle people who make illegal connections, and expect residents' committees or local government to help them deal with this type of conflict. However, these bodies are rarely able to deal with them adequately and they too may feel unable to tackle more powerful people who make illegal connections. Users of services, residents' committees and local government have to be supported to deal with this kind of conflict, and to insist that rules are respected. When users pay for services, they have more leverage to demand action against those who abuse the rules.

Development Workshop internationally has recognized that its technical work must be accompanied by a great deal of attention to governance. As can be seen from the examples above, this involves developing local institutions that, in turn, involves developing programmes that pay more attention to capacity building and training. During Project Sambizanga, partnership development focused on the communities once a legislative framework had been put in place that allowed community associations and allowed DW to engage the community directly. Subsequently, it was realized that communities could not become actively involved in their own development in an institutional void, especially in urban areas, and that attention also had to be paid to official institutions. DW projects are therefore conceived of as "forums" to provide the space for stakeholders at different levels to inter-react. Project design has sought to strengthen communities and develop their relationship with local government and service providers, with DW itself acting as a facilitator of other partnerships (and not as a direct partner). This is an approach that promotes maximum stakeholder involvement in programme design and implementation but, in practice, it has not always been clear who the main stakeholders were. At times, identification of stakeholders revealed a policy and legislative void which made it difficult to format the space in which stakeholders could articulate constructively with each other.

Following the renewal of conflict in late 1992, government institutions, and particularly local government structures, disintegrated and have been slow to recover. It has been necessary to actively engage them and support their recovery.

V. ON-SITE SANITATION

a. Robust, Low-cost Technology

Throughout the 1980s, official thinking in government and among policy makers in Angola was that the peri-urban areas were a temporary phenomenon that would disappear after the war, because rural people would return to the land and those who remained would be "properly housed". This thinking had a particularly negative effect on the development of sanitation infrastructure. In built-up urban areas, the city sewers were no longer functional but it was illegal to build soak-away pits; in the peri-urban areas, where there was limited access to water, the building of dry-pit latrines was discouraged until 1989 when the Ministry of Health, on recommendation from the World Health Organization, revised the policy and began to promote the technology. The sewer system serves only the central "cement" part of the city, and even there its operation is deficient: more than three-quarters of the city population (those living in the *musseques*) have no access to sewers (Coopers and Lybrand, 1997).

Table 3: Potential sanitation upgrading sequences

(adapted from Cairncross, S and Feachem, R G, 1983)

Toilet type	Water supply		
	Hand carried	**Yard tap** **Water tank on site**	**In-house connection**
Improved dry-pit	Feasible	Feasible	Unlikely combination
Pour-flush	Feasible*	Feasible	Feasible
Sewered pour-flush	Inappropriate	Feasible	Feasible
Vault	Inappropriate	Feasible	Feasible
Septic tank and sewerage	Inappropriate	Inappropriate	No upgrading required

* only feasible if sufficient pour-flush water is carried home

Early in Project Sambizanga, the need for on-site sanitation was identified and, subsequently, the dry-pit latrine was shown to be a viable option. The construction of a limited number of subsidized latrines during Project Sambizanga gave way to a larger programme in which individual families covered a substantial part of the costs. Even with a limited subsidy it was possible to obtain high coverage of an area, and thus community benefits, through intensive mobilization. The model chosen was a dry-pit latrine, which was judged to be an appropriate model for the context of peri-urban Angola. Between 1995 and 2000, DW programmes facilitated the construction of 5,000 on-site family sanitation units in peri-urban Luanda. An improved dry-pit latrine is most appropriate in a situation where the majority of water has to be hand carried to the home. Furthermore, once a family has reached the level of owning a yard tap and having a dry-pit latrine on site, the maximum benefits in terms of disease prevention have been achieved.

The model of dry-pit latrine employed is based on a round dome-shaped slab that was designed in Mozambique[13] in the 1980s and which is placed on top of a one-metre diameter pit. This slab was chosen because:
- it encourages round pits, which are more stable;
- it can be rolled, like a wheel, through narrow alley ways from the production or collection point to the house;
- it cannot fall into the pit provided the diameter of the pit is smaller than the diameter of the slab; and
- the conical dome shape is strong and eliminates the need for steel reinforcement.

Most *musseque* areas of Luanda have unstable soils with little clay and high infiltration rates. In such areas, the pits must be lined with rectangular seven-centimetre blocks, which is a significant cost in the overall cost of building a latrine. Research has continued into ways of reducing the cost of materials for pit building, although no satisfactory way has been found which doesn't put at risk the stability of the latrine. Use of trapezoidal cement blocks developed by DW might reduce the total cost of pit lining, but if the blocks are badly made there is a risk that they might disintegrate at the points where they are thinnest. Bottleneck pits, where the lower part of the pit has a larger diameter than the top, might provide for an increase in pit capacity with a small increase in construction costs, but they require a higher level of skill to construct. The possible effects on the pit lining of corrosive substances generated by decomposition inside latrine pits implies that risks should not be taken in building the pit lining and that a solid, straight-sided lining is preferable.

Slabs are produced in a central workshop run by DW and subsequently are supplied to DW projects (or to other agencies that have adopted this model of latrine). Some communities have easy access to good quality sand and to water, and in these cases the communities are encouraged to produce their own slabs under the supervision of the mobilizers. In most cases, communities have no sand and only limited water, and so it is cheaper to produce the slabs at a central production unit.

The user family is responsible for the latrine construction: digging the hole, lining the pit and building the cabin. Normally, the lining of the pit is done by a professional mason, paid by the beneficiary family. On average, it takes four days to build a latrine.

The capacity of each pit is 2.6 cubic metres. The literature suggests that a family of seven would fill such a pit in eight years. In practice, the rate of filling varies: some pits have by now been in use for eight years and are indeed nearly full; others are slightly more than half-full (Coffey, 1998). Some families have built a second pit and have allowed the contents of the first pit to dry out, successfully. Other families do not have space for a second pit (and even have difficulty finding the space for one pit) and this is likely to be more common in future, as population densities have increased markedly. Other families would prefer not to invest in digging a second pit. A need has therefore been identified for some kind of service to empty dry-pit latrines that could access the narrow roads of the *musseques*. Trials are beginning of a tractor-drawn tanker with pump, which can also inject water into dry-pit latrines to ease the release of the dry contents. If such a service is shown to be viable, it is hoped that private operators might take it up as a self-financing service.

b. …But the Software is Just as Important as the Hardware

When the latrine programme began in 1992, there was clearly a demand for family latrines, and the provincial government's public health department was interested in providing the basic service of slab production. It was hoped at the time that the elections due in September 1992 would bring conflict to an end and that the macro-economic situation would then improve, so that families would be able to afford the basic components of a latrine without the need for any subsidy. It might then be possible for

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[13] The SanPlat model of improved dry-pit latrine adopted by DW was first developed and became widely used in Mozambique in the early 1980s. DW encouraged a South-South transfer of this basic technology and adapted the model for use in Angola.

small-scale businesses to be responsible for making and supplying the basic components, and Development Workshop would then focus on:
- testing and improving the technology;
- training local businesses to provide the basic component; and
- supporting the provincial government in monitoring and facilitating the service.

After the elections, Angola experienced its worst episode of conflict. The economic position of the poor worsened. Government capacity declined further and the provincial government sanitation initiative did not materialize. The number of people living in Luanda grew, they were all poorer and could not afford to build latrines. Thus, a smaller proportion of people had access to adequate sanitation. Families were unable to afford the full cost of a latrine and small businesses were not interested in providing components.

There were cholera outbreaks and an increase in diarrhoeal diseases. The public health literature considers that in high-density peri-urban communities in developing countries, direct faecal-oral transmission is the main factor maintaining high rates of diarrhoeal disease, and promotion of the widespread use of sanitary latrines is the most effective and rational intervention.

However, it was clear that there was still a high demand for on-site sanitation. Families, though increasingly poor, were willing to contribute to the cost of a latrine that would belong to them. Adults universally resented having to defecate in the open air and attempted to manage their defecation patterns in order to do so after dark. This was a major problem for women who were afraid to go far from their houses after dark.

Development Workshop decided to continue with a latrine programme, playing a greater role than had been anticipated but with key government public health personnel seconded to the DW programme. Throughout the 1990s, Development Workshop provided the only significant sanitation programme in Luanda for peri-urban areas.

The approach for the on-site sanitation programme involves:
- identifying a specific area where residents have formally shown interest;
- assessing the capacity of the community to organize themselves collectively;
- involving the residents' committee at an early stage and assessing their need for training and support;
- involving other local groups such as church groups or small local NGOs;
- ensuring that the residents' committee liases with the *comuna* administration;
- mobilizing families in defined geographic areas (of about 20 to 100 families), using DW's mobilizers accompanied by representatives of the residents' committee and, where applicable, other local groups;
- agreeing a plan for the distribution of materials and for the construction of latrines with the group of families; and
- the distribution of latrine slabs and materials for pit lining to groups of six families, who undertake to build within 15 days of receiving the construction material for the latrine pits (if the families do not build within the specified period, the materials are passed on to the next group of families).

Each individual family is responsible for building and maintaining its own latrine (except in relatively few cases where neighbours agree to share). But the benefits of latrines are maximized when everyone in an area has one and faeces in the open air has been eliminated. It is in the interests of families to encourage their neighbours to build their own family latrine, otherwise those neighbours who do not own a latrine might want to use theirs and the neighbours' children would continue to defecate in public spaces. Carrying out mobilization with groups of families (and with community organizations), so that these agree to build at the same time, turns latrine construction into a collective action that works towards this objective. Education and implementation are done with groups of people who know each other, and their local community structures have a stake in the success of the work. Consultation with

peri-urban residents (Berger, 1998) also indicates that they much prefer family latrines, but are not interested in partial solutions to problems, and so reject programmes that provide family latrines to only some residents: they prefer all interested families to benefit.

The local builders trained by DW normally respect an agreed pricing table. By the year 2000, there were 31 builders trained by DW operating in seven *bairros* in Luanda. There are also other builders trained by DW, working in other provinces. DW undertakes two types of training for builders:
- a formal training course for builders which lasts two weeks. Builders who are already working in their own communities learn in practice how to build better quality latrines. Builders are normally volunteers from communities who are preparing to implement a family sanitation project or may be builders sponsored by other NGOs; and
- on-site training, where unemployed young people selected by their communities are trained in the production of blocks and slabs.

The involvement of residents' committees in the programme has created a certain degree of competition between neighbourhood areas. Residents' committees try to ensure that their area is not overlooked. Increasingly, representatives of the community, normally a member of a residents' committee, have contacted DW with an estimate of the number of families and an indication of the willingness of the communty to participate actively in the project.

In some cases, residents' committees have been encouraged by their involvement in the on-site sanitation programme to spontaneously assume other responsibilities such as better solid waste management. Residents' committees in the past have had a low level of accountability to residents and little experience of seeking consensus from residents or organizing collective action. By involving them in the on-site sanitation programme, it is hoped to learn more about how they work and the potential for working with them. The programme facilitates meetings between the residents' committees in order to compare experiences. Often, it is at these meetings that groups begin to discuss other initiatives.

The mobilizers also follow the construction of the latrines, ensuring that the pits are correctly built to avoid them collapsing when it rains. Families have always been willing to build their own latrines despite poor design and workmanship, so accessible, good quality technical supervision is necessary to ensure that latrines are well built.

The community mobilizers employed by Development Workshop carry out direct health education with residents and also educate their local representatives to continue the follow-up process. The messages concentrate on the correct hygienic use of latrines, promoting the use of latrines by children and better management of household water, including drinking water. Common mistakes are putting water in a dry-pit latrine, and not replacing the lid after use or losing the lid.

If users do either of the above, the latrine contents putrefy rather than decompose, thus causing the unpleasant odour of improperly used latrines. The follow-up process provides the opportunity to carry out family hygiene education and, specifically, to reinforce the message of hand-washing after using the latrine.

Education is closely linked to the delivery of the service. Development Workshop considers that it would be counter-productive to provide information without providing the materials. Research done with communities in Luanda indicates that a surprisingly high number of people understand the concept of faecal-oral transmission of disease and recognize the health hazards related to poor hygiene (due to the periodic education campaigns of the Ministry of Health, UNICEF and WHO), so ignorance is not a major barrier to the adoption of latrines. Furthermore, it is clear that families spontaneously maintain their own latrines in hygienic conditions. But people make rational decisions on the basis of their perception of available resources and possible benefits (Development Workshop (2), 1995). The previous experience of many Angolans leads them to be sceptical that programmes will deliver any benefit, so they are not likely to accept an intervention that demands investment of

time or money before they have any concrete proof that the intervention will take place. Education, mobilization and delivery need to be closely linked, working intensively in a particular area, for the programme to succeed.

In the colonial era, dry-pit latrines were considered to be a primitive model and were discouraged. The perception of dry-pit latrines is sometimes one of a temporary, dangerous latrine built as a short-term measure, lining the pit with barrels and without a slab or other cover. As a result, some families prefer a pour-flush option (although it is more expensive to build and maintain and they need to carry water to the house by hand) and they adapt the slab for use as a component of a pour-flush latrine.

Pour-flush sanitation models require a regular supply of water and a means of dealing with effluent, such as a piped sewer system or a septic tank that can be cleaned out regularly, preferably using suction equipment, and the contents safely disposed elsewhere. These solutions require expensive infrastructure investments from central authorities and there are no existing plans for such a public investment programme. Results from a survey in 1989 (Development Workshop, 1989), and subsequent experience in water and sanitation programmes in the *bairros*, indicate that many existing pour-flush latrines are built without the appropriate infrastructure and constitute a real health hazard. In some cases, crude effluent flows directly into open gulleys; in others, the contents are evacuated manually and dumped on rubbish tips under cover of darkness. The beneficiary assessment (Development Workshop, 1995) reported that one of the most frequent reasons for "adolescent nephews" leaving home was because they were required to manually empty the family latrine. Further studies are required to investigate the options for sustainable and cost-effective technologies for emptying pour-flush latrines; until such options are available, the only viable alternative for high-density populations is the improved dry-pit latrine. Families who spent time outside Angola during the colonial era, such as those in exile in Zaire, used dry-pit latrines there and accept them more easily. Some families who have owned pour-flush latrines are willing to switch to dry-pit models as the cost of water limits their use of the latrine.

DW was aware that there was an inherent risk involved in effectively introducing a "new technology", i.e. the improved dry-pit latrine. The fact that the proposed model is an appropriate model from a health and environmental point of view needs to be measured against sociocultural attitudes in the target population and among decision makers. Essentially, the challenge is to overcome the notion that pit latrines are temporary, shoddy, dangerous and "not smart".

The health education components of DW programmes emphasize the positive aspects of the improved pit latrines:
- they are hygienic and odourless;
- if the pit is sealed, the cabin structure can be light and airy and owners can invest to make it as "smart" as they can afford;
- latrines can be adapted with a water run-off, to allow use of the cabin for bathing;[14] and
- one does not have to invest in the construction and regular emptying of a septic tank.

The essential factors for most owners are that their latrine should be safe, odourless and pleasant to use. It is also important that the pit life justify the initial investment. The improved dry-pit latrine fulfils all of these criteria. Owners made their choice on the availability of resources at the time, with a view to upgrading the facility to a pour-flush latrine at a later date. An external evaluation of the programe in 1998 recorded that both dry-pit and pour-flush latrines, in use for six years, were clean and odourless and their owners were satisfied (Coffey, 1998).

c. Replication with Local NGOs

A number of stronger local NGOs have been sub-contracted to implement geographically defined latrine projects, where they are responsible for family mobilization, for the supervision of latrine construction and for health education. NGO-sponsored builders and monitors are trained by Development Workshop.

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[14] A drain can be included to remove bathing water from the cabin without it entering the latrine pit.

By 2001, 15 local NGO family latrine projects had been completed in peri-urban areas of Luanda and several international NGOs had adopted the technology. DW has also transferred the improved latrine technology to local partners in the provinces of Huila, Huambo, Zaire, Moxico, Kuanza Sul and Kuanza Norte by assisting in building local slab production workshops and in training production technicians and social mobilizers. The National Directorate of Water has, with DW's assistance, developed a national strategy for improved latrine promotion that would involve local NGOs and local government agencies.

Replication through local NGOs has been more successful in sanitation than in the water programme. It is likely that the local NGOs were more successful with the family latrine projects because of the qualitative difference between mobilizing for a personal benefit (family latrine) and a collective benefit (public water standpost). Many of the local NGOs also had some previous experience in emergency health projects and in delivering health education.

d. School Latrines

Schools in the *musseques* do not have functioning sanitation. Although the school day is short,[15] there is a need for sanitation, and schoolyards have become smelly and unhealthy. Some form of latrine might be appropriate, but the model of latrine would have to be adapted to the characteristics of latrine use in schools: a high usage and a different ratio between urine and faeces. Latrines have been built in ten schools. Their use and performance has been monitored and adaptations are being made.

VI. SOLID WASTE REMOVAL

ELISAL, the state company responsible for solid waste removal in Luanda (and answerable to the provincial government), does not have the capacity to regularly remove solid waste from peri-urban *bairros*. ELISAL operates under a private-public management contract with a national operator called Urbana 2000. It removes solid waste regularly from containers (in the street) in urbanized areas and occasionally removes large concentrations from certain sites on the periphery of the city, usually beside main roads or in markets. Some large concentrations of solid waste have grown within *bairros*, and these are a major health risk as they are also used for defecation. ELISAL has difficulty in removing solid waste from inside *bairros* as it does not have the necessary equipment for use on the narrow dirt roads, has no experience of devising a system for such areas and does not have the skills necessary for negotiating with local stakeholders.

Before 1999, Development Workshop had only intervened in solid waste removal in the *musseques* by helping to remove some large concentrations of solid waste and through a small pilot programme for waste reduction. It was becoming clear that a strategy should be devised and tested for dealing with the removal of solid waste from within the *bairros*. The experience gained and the contacts generated with ELISAL suggested that the time had come to pilot a strategy for a sustainable service through the participation of residents and the sanitation company. This pilot is being implemented at present.

Low-technology equipment has been purchased to collect solid waste from sites within a *bairro* and to take it to a place where ELISAL will collect it and transport it to the main city dump. A tractor that can be used on narrow dirt roads hauls the equipment. Containers are left at sites within a *bairro* and are picked up a few days later by the tractor, which leaves other containers.

The programme is testing the feasibility (practical and economic) of this tractor-hauled service, which is cross-subsidized from residents' payments for water (as recommended by a consultant, as directly collecting money for rubbish removal can be difficult) (Coffey, 1998). The prerequisites of putting this in place as a sustainable service are the participation of both the residents and the sanitation

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[15] Most schools in Luanda are used by three shifts of pupils a day.

company, and a mechanism to concentrate solid waste in a place where ELISAL can collect it regularly.

This involves negotiating with the residents and the sanitation company. It also involves bringing together the water committees in any particular area and local government to manage the service. The way in which this is being done is described in Section VII.

VII. WATER SUPPLY

In 1976, just after independence, there were 600 registered public standposts serving the peri-urban areas of Luanda, although the number of operational standposts at the time is not on record. By 1990, before DW began to intervene in the water sector, only ten standposts were operational. Over a period of six years, from 1993 until 1999, DW facilitated the construction of 200 standposts. Each was built to serve 100 families, however, in practice, the number of families served depends on the water pressure at any one time.

At the same time, ACORD UK facilitated a displaced community in Viana to build 15 standposts and a World Bank-sponsored project built seven standposts in Vila de Mata in Cazenga.

In the absence of a formal sector piped water supply, the informal sector responded with an extensive network of underground family-owned tanks, which are fed in turn by privately owned water tanker lorries. No family had to walk any great distance to get water nor did they have to wait in long queues, but the service is expensive and the water often untreated which limits their consumption of water.

a. Robust, Low-cost Technology

DW programmes facilitate water supply through public standposts linked to the mains water supply and constructed by EPAL/DW construction teams. There are currently three designs and the decision about which to apply is made on-site and depends on the water pressure in the mains pipe. Where the pressure is sufficient (i.e. a minimum of three metres of pressure head), the surface model is constructed. Where the pressure is lower (i.e. 1.5–3 metres of pressure head), the semi-surface model is used. In cases where the water pressure is very low (i.e. less than 1.5 metres of pressure head), but the need for a standpipe is urgent, the underground design is used. There is rigorous screening of sites selected by the communities, to limit the selection of sites where head pressure would diminish over time, but even after ten years experience it is still not possible to confidently project future water pressures and, sometimes, selected sites become non-operational.

Specific design features have been developed through testing in the field and in consultation with the users:
- perimeter walls around the standpipe reduce the spread of spillage to surrounding areas;
- the structure is built mainly of concrete blocks or cast-in-place concrete that is more durable;
- there is a drainage pit lined with concrete blocks to prevent the accumulation of stagnant water;
- there is a grille on the drain (for filtering garbage) which can be opened for cleaning the drainage pipe;
- there is an isolation valve contained in a lockable valve box;
- the valve box is large enough (50 centimetres by 50 centimetres) to facilitate repairs;
- the standpipes have taps (usually only two) that are manufactured locally and available in local markets and so can be easily replaced by the monitor or other users;[16]

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[16] Experiments with specially designed shut-off taps promoted by some development agencies were undertaken but they have generally proved unsuccessful and expensive. Locally manufactured taps are cheap and easily replaced by the user committee. The local manufacturer has made small improvements to strengthen its taps,

- there is no water meter incorporated into the design;
- there is no structure to protect the standposts, although local water committees often set up barriers such as half-buried tyres to obstruct vehicles; and
- some standposts (in lower-density areas where there are gardens) have soakaway drains rather than soak pits that allow the use of waste water for irrigation.

Standposts in a World Bank-sponsored project in Vila de Mata *bairro* incorporated a design feature whereby users could fill their buckets whilst these were still on their heads. Women rejected this feature, however, as, in practice, filling a 20-litre bucket with it still on one's head is extremely painful because one cannot distribute the weight; the women maintained that this modification was introduced to assist the male monitors who were tired of helping women users lift the buckets onto their heads.

Water meters have been omitted from the design as they appear to be a weak point in standpost design, and reasonable estimates of water consumption are available through records kept by both the standpost monitors and the water company. Water meters are costly to maintain and repair and have been shown to register readings when air is pushed though the pipes and not water. They may even run backwards in certain circumstances when negative pipe pressure occurs. In a World Bank-sponsored project in Lobito and Benguela (another conurbation in Angola), the connections on either side of the meters on the standposts were frequently tampered with by users when water pressure was low, as the meters were at a lower level than the taps and there was more water available at this level than from the taps; this interference then produced substantial leaks from the joints, which were difficult to repair. Silt particles suspended in the water are abrasive and wearing on meter parts, which break down after a short while.

The aim has been to bring water to within 100 metres of every house, as a number of studies have shown that when water is supplied at a distance of less than 100 metres from the house, water consumption increases. In practice, to date, this has never been possible in Luanda, where water pressure has never been sufficient to allow this coverage, although the current programme attempts to approach this by also improving water supply to a particular area.

b. …And the Institutions to Manage It

The water programme sets out to pilot a model of basic service provision in an area of the *musseques* of Luanda, and at the same time create links between the users of these services, the local government and the providers of the services. The linkages between the stakeholders are vital for the management and sustainability of the services. The piloting of this model is still, at the time of writing, in progress.

Water committees–user groups. Various community consultations[17] have clearly indicated that residents of the *musseques* want better basic services, especially a water supply, and are willing to pay for these provided they know where their money is going. They want sustainable services and not ad-hoc solutions. They reject the option of private operators supplying services because they understand that government would have to regulate and monitor the private operators but has little capacity to do so: they anticipate that things would go wrong, but who would they complain to when they did? They are interested in some form of community management of water points (in which the users have some control over the water point and its monitor) but state that they would need help in creating the mechanisms to do so. There was little previous collective experience in managing money and this was recognized very early on as a major challenge for project design and implementation.

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based on recommendations from DW.

[17] In particular, the beneficiary assessments of 1995 and 1998; see Section VIII(c).

Thus, a basic element of the water programme has been water committees: three-person committees for each standpost, elected by the users of that standpost and responsible for its maintenance and management.

Experience has shown that the management and maintenance of standposts locally, by people chosen by the users, is the most effective system especially when there is effective accountability to the users. Experience has shown that people are willing to pay for water when they feel that the service is reliable and when they know that their financial contributions are going towards the maintenance of the service. It has been possible to overcome people's lack of experience in collective action, organizing them around a relevant, practical activity such as a water point. Where water was supplied for 15 or more days per month, with a flow of at least 20 litres per minute, the water committee found solutions for most of the problems in order to maintain the service, and kept all taps and other components in good condition. Where the supply was irregular or less than 15 days a month, it was very difficult to maintain any interest in the service: where the service does not correspond to demand and if the maintenance systems do not ensure consistent service provision, the users lose interest and look for individual rather than collective solutions to their service problems. There is an alternative, although costly, service provided by residents who have built water tanks under their yards and who are supplied by water tanker lorries, and this will be used if the service at standposts is unreliable.

The main tasks of the water committee are to:
- ensure that the taps are working and are well maintained;
- keep the standpost and its surrounding area clean, and clean the drainage tube regularly;
- register the number of days of water flow at the standpost;
- open and close the standpost at the appointed hours and organize the queue;
- collect the user payments;
- register all revenue in the cash book;
- register all spending in the cash book; and
- supply the technical and financial information required on a regular basis to DW.

Yet, water committees have difficulty in dealing with conflict without external support, and few have learnt to deal with illegal connections or with other external problems with the water supply. Water committees need to be able to represent the users in dealing with local government and the water company, to force them to carry out their responsibilities. This has meant that, since 1999, mobilizers have had to work more intensively with water committees so that they are strong enough to maintain their autonomy and negotiate effectively with local government bodies and the water company. An association is being formed of water committees, and a forum will be created that brings together the water company, the association of water committees from a particular area and local government. The forum will attempt to create coordinated action between these stakeholders.

Water company. EPAL is a state-owned water company, answering to the Luanda provincial government. EPAL is aware that it does not have the capacity to manage water supply at the *bairro* level nor to manage standposts. It has been willing to participate in Development Workshop's water programme so as to develop models for local management of water supplies while it concentrates on upgrading, maintaining and managing the main water system, that is, the extraction from the river, water treatment and mains supply.

Commune administrations and residents' committees. Commune administrations are the lowest level of the state administration system. Residents' committees are bodies representing residents of an area at the *bairro* level: they are autonomous although, often, the commune administrations strongly influence the way that they work. Both have a responsibility for supporting basic service provision in their areas. Residents also look to them for help in resolving conflicts about water supply and in preventing illegal connections to water pipes. They rarely have the capacity to provide this support, however.

Local government staff are not aware of the "mobilization" support required to maintain the systems operational and of the need for expenditure on maintenance and management. Where there was a regular water supply, they regarded cost recovery as a potential source of revenue for the local authority. Some local authority staff were also unwilling to pay the water company.

Commune administrations and residents' committees are weak: they lack the basic training and information that is required for a role in basic service provision. A recent review by the Ministry of Labour and Public Administration indicated that 40 per cent of the existing staff of local administrations have no skills and it recommended that they should be retired. Local government priorities are mostly set from above and frequently differ from the priorities of local communities.

Residents' *bairro*-based organizations have a history going back to the pre-independence period of being part of the MPLA urban-based people's power movement. From 1974 to 1977, they were politically active, community-sponsored organizations that also participated in service provision initiatives. The 1977 internal rebellion within the ranks of the MPLA, and the subsequent repression, frightened most community leaders into apathy. The vacuum of authority at local level became apparent and, in 1983, the state[18] made a wide-ranging effort to re-exert its authority down to community levels through a consultative process of choosing *bairro* and *comuna* level "residents' commissions". In the principal urban areas, a set of district administrative divisions were defined. From micro to macro, these consisted of the *quarteirão*, or block of 10–50 families; the *bairro*, which consists of 10–50 *quarteirões*; the *sector* which can be made up of several *bairros*; and the *comuna*, being the lowest level of state administration, which has between 5–10 *sectors*. At the same time as the new urban matrix was defined, the Ministry of Planning carried out its first pilot census since independence, in Luanda and a limited number of other areas.

In the years that followed, the leadership of the residents' commissions, who were elected or chosen at the *bairro* and *comuna* levels, were rarely consulted nor were they delegated any real authority from the government structures above. Their main roles related to organizing community-level security through local militias. There was no further attempt to make the residents' commissions really representative by organizing periodic elections. By 1991, they were hardly noticeable in peri-urban areas and where they existed they were considered to be simply extensions of the "party". Many *musseque* residents continued to avoid development initiatives, which might be interpreted as "political action". In 1992, as part of the envisioned democratic reforms, the provincial government of Luanda developed new regulations, describing the role of resident representation and clearly promoting grassroots participation. The institutional disintegration, on a national and local level between 1992 and 1995, caused by the return to war, hindered the initiative at that time but, in 1996, the government began to show some active interest in reorganization of the local government structures and, consequently, an interest in community representation.

The primary challenges inherent in support for community representation groups, as with other developments of civic society in Angola, are that there is a tradition of organizations "reporting to the authorities" rather than accounting to their members or constituency. Confronted by problems, the user groups and residents' committees tend to invoke authority rather than consult users in an attempt to solve the problem at their own level. Many elected members of residents' committees consider themselves as conduits of information "from the government to the people", rather than the voice of the people to represent their interests to the government.

Previous attempts to involve handover responsibilities in the water programme to commune administrations and residents' committees have created difficulties. Although the local administrations are weak, technically and institutionally, and the residents' commissions have a poorly developed sense of representation, they cannot be ignored. Potentially, they have an important role in planning and monitoring basic services, and they are the only viable structural option to guarantee sustainable basic service provision for the poor. Therefore, service provision interventions

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[18] One-party state led by the MPLA.

for the poor should not sideline these structures because they are weak, but should actively seek to engage them and strengthen their role in service provision.

 The current phase of the water programme involves a great deal more support to these bodies so that they can take on such responsibilities while being more accountable to service users. The programme works in a limited number of communes and, within these, support for residents' committees has been concentrated in a limited number of geographic sectors. They have clearly benefited from the support, undertaking independent initiatives and suspending incompetent members. But they still show a degree of dependency on project teams and do not spontaneously seek to develop horizontal relationships with similar groups with common interests. They require continued support for some time, to learn to negotiate as equals with local government.

Bringing the stakeholders together. A stakeholder approach does not just involve identifying the stakeholders (or potential partners) or building their capacity. It involves bringing them together and helping them to work together. It involves repeated face-to-face interaction, so as to achieve a successful outcome and also create trust and an understanding of the mutual benefits of working together (social capital), which then serves as an asset when the same stakeholders must collectively address the next problem. In a context of institutional regression, where formal institutions have little experience of working in partnership (and where partnerships involving informal stakeholders, such as water committees or other representatives of services users, are very rare), this could be a long-term process.

The role of Development Workshop is thus mainly to be a facilitator of community development. Sustainable operation and management of standposts requires changes in behaviour patterns for all of the stakeholders, and a facilitator is required to support all of the stakeholders through the transition to a newly established behavioural pattern. When problems arise in a new system, if constructive support is not available either to identify any problems as soon as they arise or to encourage stakeholders to solve the problems rather than abandon the new system, then the general response has been to revert to a previous system and behavioural pattern.

Professional mobilizers work with water committees and with the users as a whole to create accountability of water committees to the users, improve the ability of the committees to take new initiatives, and build trust between the committees and the users. Effective accountability of the water committees to all residents requires working with a wider group and not just the leadership: a wider group needs to be aware of the system for operation and maintenance, and be prepared to demand accountability and possibly form a future leadership of the committees. Water committees will renew their mandates regularly through elections by users of standposts. More senior staff work with formal stakeholders and help them to work together.

The following model is being piloted at the moment. The water supply and solid waste collection components are linked to each other. There is a water committee for each standpost in the project area that is responsible for managing and maintaining the standpost. An association of water committees in the project area is being formed to work with local government, EPAL and ELISAL on the basis of shared responsibilities.

A forum is being formed bringing together EPAL, the association of water committees and relevant local government bodies. Development Workshop is facilitating the creation of this forum and its development (although at some stage in the future it would hope to reduce its involvement). The forum will deal with questions linked to the continuing supply of water, namely:
- that the water committees pay EPAL for water (on time and at the agreed price);
- that EPAL properly maintains the mains water pipe (up to the standposts) and supplies water for the number of days and hours agreed; and
- that the water committees, EPAL and local government together take measures to avoid any damage to the mains water pipe and to avoid illegal connections.

Through the forum, trust will be built up between the parties, also an increasing level of confidence that, if each continues to play its agreed role, the others will play theirs. The forum allows each party to monitor the performance of the other parties (through reports on the amount of money collected and spent, and indicators of performance).

Forty-five standposts in the project area are being built and there will also be nine rubbish collection points. There will be a container at each point. A tractor-hauled service will remove each container twice weekly and leave the contents in a larger container from which ELISAL will remove the contents regularly to the town rubbish dump. This service will be paid for from part of the fees collected for water by the water committees. The service will begin under the direct control of DW in the short term, while the system is being assessed, although the intention is that a local operator will be found if the system proves to be viable.

The fees collected for water:
- pay the monitor who looks after the standpost (25 per cent);
- maintain a fund held by each water committee for repairs to the standpost (20 per cent);
- pay EPAL for the water supplied (30 per cent);
- pay the provider of the rubbish collection system (25 per cent)

c. Value for Money

Data have been collected regularly on the costs of construction, maintenance and operation of standposts, and on the amount of money collected at standposts. It costs about US$ 2,000 to build a standpost and another US$ 2,000 to maintain it over a ten-year period. Data are also obtained from the water company on the cost of supplying water.

Currently, with the limited overall supply of water to Luanda, families buy from standposts an average of five buckets of water per day (100 litres) at a cost of US$ 0.13 per day. This corresponds to US$ 1.30 per cubic metre, which is 12 per cent of the price charged by private water vendors selling water from tanks supplied by lorries. The amount charged at standposts has proved to be adequate to maintain and repair the standpost, pay a monitor and pay a contribution to EPAL for the water supplied. Users may be willing to pay more for a household or yard tap, and there may be health benefits from the greater use of water that normally results from such water connections. There is, however, not enough water being supplied to the city to supply a large number of household connections.

d. Replication with Local NGOs

During 1996–1998, attempts were made to involve local NGOs as external NGO facilitators for small water programmes. Two local NGOs, who operated in areas where it was possible to build standposts, were sub-contracted by DW to provide the mobilization and community support services normally provided by DW. The experience did not work because the NGOs were not able to empower the water committees for the collective responsibility of ongoing management of the standposts and because, in one case, the local NGO was not sufficiently local to identify with the community. The amount of capacity building, facilitation and learning required in an urban water programme has proved to be beyond the present capacity of the smaller, local NGOs who have been interested in such programmes.

VIII. GETTING BETTER AT LEARNING

Sustainable basic service provision for the urban poor is as much about learning as it is about doing. Key components of the strategy are documenting lessons, disseminating information and promoting discussion on good practice models. This needs to be done through a variety of methods.

a. Using Experience

Institutional learning has been an important part of the water and sanitation programmes. In a difficult working environment like Luanda, where day-to-day management can crowd out other activities, this has not been easy. But strong efforts have been made to minimize staff turnover, to create a committed group of Angolan staff and to ensure that the lessons of experience are widely known within the organization.

Learning from the water and sanitation programme has been complemented by learning from other programmes. From the mid-1990s, Development Workshop also began to develop two other important programmes in peri-urban areas of Luanda, namely a micro-finance programme and a local initiatives programme. These contributed significantly to the institutional learning on:
- how best to optimize the potential of communities as agents of their own development;
- screening of partners and potential stakeholders;
- setting up and monitoring accountable, transparent structures; and
- developing better training for community partners.

DW seeks to promote opportunities for enhanced participation of women in community development. During the programme period of Project Sambizanga, it became evident that women were the principle family breadwinners and that they operated in the informal sector. The micro-finance programme aims to improve family well-being by providing the women with access to small loans. The programme enabled DW to understand family dynamics in greater detail and to understand monetary transactions in the informal sector. The programme also obliged DW to develop techniques for training the illiterate and not functionally numerate people operating in the informal sector.

The local initiatives programme was also designed in the period after Project Sambizanga as a grant fund. Communities could apply for grants of not more than US$ 10,000 to contribute to a project identified by the residents. The grants, when approved, were paid over to the communities in *tranches* and the DW team monitored project implementation. The programme has successfully facilitated the completion of an average of 25 community projects per year since 1997 and has contributed significantly to learning in a number of key areas:
- better strategies for engaging local stakeholders;
- development of tools to facilitate accountable management of money;
- development of ideas and training tools for sustainable maintenance (many of the projects built or extended existing schools); and
- development of more appropriate screening tools for community projects, which included a significant assessment of a group's organizational capacity.

This programme, more than any other, established DW as an NGO partner of preference for peri-urban community groups that intend to undertake a development initiative for the first time. They contributed greatly to building the basis for trust between communities and DW, as a consistent partner for development.

b. Information Systems and GIS

DW is also investing considerable time and resources in the development of tools appropriate for local administration staff and residents' committees to monitor service provision and to gather all available information in one place in an accessible form. Local administrators are also being encouraged to use the information generated locally to lobby provincial and central government for further allocation of resources.

DW recognizes that the health risks for people living in the peri-urban areas are obvious, but very little information is available on environmental health in a comprehensible, disaggregated and comparable form. As a result, decisions on policy and investment in Angola are often made on the

basis of impressionistic and anecdotal information. An example of this is the widespread perception that lorry drivers who sell water in the peri-urban areas are making an enormous opportunistic profit and are monopoly-driven. The reality is that many lorries are owner-driven, and they make a profit of approximately 30 per cent (Development Workshop (2), 1995), whilst businesses in the formal service industry in Angola often expect to make profits of more than 100 per cent.

In response to the lack of available and appropriate information for planning basic service provision, DW developed an operational research project to address the issue of collection and management of environmental information. The project hypothesis is that:
- health is largely determined by environmental factors, which have a spatial dimension; and
- a spatial computer model or geographic information system (GIS), demonstrating a range of environmental influences on the health and well-being of an identified peri-urban district, can be usefully employed as a monitoring and planning tool to assess the impact of interventions on health and well-being.

The project was designed in two phases, beginning in October 1998. The first phase of nine months aimed to develop assessment tools and develop a database of appropriate environmental health indicators that could be monitored over time.[19] In the ongoing implementation of the water and sanitation programmes, the indicators continue to be assessed for validity and specificity over time. Service coverage for water and sanitation can be presented geographically in a visual and disaggregated form, and maps are updated regularly and visually compared with other available information. DW and local authorities can use this information in lobbying. The next step is to produce this information regularly in a form that would interest the user. In this context, DW teams are investigating the options for supporting local newsletters and interactive local radio programmes.

Information collection at a local level is now well established and needs minimum input from DW. DW is completely responsible for the management and presentation of the information. The provincial government planning office has shown interest in assuming this role in the future, but provincial government structures are still too fluid to invest in any one department at this point in time. The information produced is used in planning, but informally and in response to continuous lobbying by DW.

c. Research

Where funds have been available, specific surveys and research projects have been initiated that look in more depth at topics that are of direct relevance to the programmes, and these have fed back into programme work. This has included both applied technical research (such as research into characteristics of solid waste in peri-urban *musseques* of Luanda, which has informed subsequent activities in this area) and social research (such as involvement with the Angolan NGO, ADRA, in a programme of research into social change in Angola and its impact on communities and community institutions).

During 1995, DW also had the opportunity, under contract to the World Bank, to carry out extensive research on water and sanitation in peri-urban Luanda. This research, described by the World Bank as a "beneficiary assessment", confirmed lessons learned during programme implementation to date and expanded knowledge in other areas, such as willingness to pay, and user views on management of resources and local government authorities. In 1998, DW had a further opportunity to repeat and extend on the information collected in the 1995 beneficiary assessment, as a sub-contract to the design work for the extension of the water supply in Luanda. The designs of both beneficiary assessments were greatly influenced by the knowledge and experience gained through project implementation. In

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[19] Access to water and sanitation services, the presence of hazards such as rubbish tips or stagnant water, and data from health posts.

turn, project design and strategy were informed by the knowledge and insights acquired in the beneficiary assessments.

Beneficiary assessments involve extensive consultation with project "beneficiaries", through interviews and discussion groups.[20] They are, in the opinion of Development Workshop, a mandatory preliminary step to designing any large-scale intervention for infrastructure development or basic service provision. Rigorously applied, the tool will provide a comprehensive view of stakeholder interest and capacities, will identify potential problems with proposed delivery systems, and identify possible alternatives and opportunities not previously considered. The major risk with the beneficiary assessment is that it is a highly participative, consultative tool and generates beneficiary expectations. Therefore, it should not be used as a simple research tool to generate information, where no further investment in service provision is under consideration. The beneficiary assessment also contributes to establishing a format for client feedback in the longer term.

IX. WORKING WITH OTHERS, INFLUENCING OTHERS

It is not enough to document the lessons and experiences from sustainable services programmes in the field. For scaling up, it is necessary to disseminate information and promote discussion on good practice models to both local institutions and international organizations (multi- and bilateral donors). It is these larger institutions that will make decisions about large-scale interventions that need to be influenced. Development Workshop has sought to work with a range of these institutions in order to influence them. The long-term presence of Development Workshop in Angola has allowed it to participate in the National Water Commission and the National Human Settlements Commission. It can, however, be difficult to get the attention of government institutions. Many consider NGO programmes to be small, emergency stop-gap interventions that do not have relevant lessons for large-scale interventions. Many are trapped into modes of operation that focus on large, time-bound engineering interventions that do not provide adequate opportunities for capacity building or developing partnerships between the stakeholders.

X. CONCLUSIONS

Angola is potentially a rich country, with extensive oil and other mineral reserves. Little of this wealth trickles down to the majority, most of whom now live in peri-urban *musseque* settlements with few services. Poverty reduction cannot be brought about by the trickle down of wealth from a growth in the economy or a few big projects, nor does it have to await the end of an emergency. Even in an emergency, rapid technical responses and the creation of dependent beneficiaries can be avoided and capacity building of local partners can be promoted.

Increased well-being and reduced vulnerability involve improving the poor's access to livelihood assets and building local capacity and institutions. The main feature of a complex emergency context is the lack of functioning institutions (rules and procedures), and the end of war and insecurity will not necessarily mean a return to "normality". Rebuilding functioning institutions (and the norms, trust and accountability that underpin them) is a key part of reconstruction, development and poverty alleviation; the challenge of this rebuilding needs to be tackled sooner rather than later, and will need to continue even if the war ends and an apparent normality is re-established.

Programmes for sustainable water and sanitation services for the urban poor can be important for poverty reduction, as they impact on public health and on the time budgets of the urban poor. They can also serve as catalysts for community, collective action. However, the emphasis must be on the

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[20] The World Bank sees them as a process of "continuous client consultation". DW would prefer to avoid the use of the term "beneficiary", which has a connotation of passivity.

sustainability of the services (rather than on turnkey infrastructure projects). Water and sanitation are not just technical issues: they involve collective action and, thus, stronger institutions. This involves a considerable amount of work in strengthening institutions and facilitating collaboration between them. Water and sanitation interventions may even be an opportunity to begin strengthening institutions in a context of weak institutions.

Sustainability of water and services implies generating resources for operation and maintenance of the services, and so may involve payment for the services by the users. But this does not necessarily imply the crude "privatization" approach of some international institutions that neglects the question of affordability and neglects the development of the institutions to manage funds. When users pay, they need to be able to see where their contribution is going and need to feel confident that the community, state or para-statal organizations that receive their contribution in fact use it to operate and maintain their service.

The sustainability of any model of operation and maintenance will need to be tested over the long term. Although Development Workshop has been working in water and sanitation in Luanda for more than ten years, it is still learning and still testing its model of operation and maintenance. Developing and testing technology and models of service delivery (to serve for further replication) is a very different approach from the time-limited investment of major international aid agencies that must scale up rapidly, leaving inadequate time for learning and feedback, and that have difficulty in changing the technology or model of operation and maintenance, even when problems are encountered.

Development Workshop's experience is that a wide range of activities can be undertaken by communities who exhibit a high degree of ownership and care of infrastructure for which they are given responsibility. It is a myth that communities cannot be trusted to manage money, but appropriate systems and supervision have to be established. Urban communities in Angola are not really communities in the strict sense and they require assistance in working together and in dealing with conflictual situations such as when illegal connections are made to water pipes. Development Workshop has to invest considerable time in building the financial skills needed for managing finances at the community level, developing and demonstrating systems of management for money that are transparent and facilitate accountability. It also has to devote time to helping communities to develop rules for their collective activities, to helping them manage conflict and assisting them to deal with local government and service providers.

However, communities are not prepared to invest time, energy or money for a partial solution that will not satisfy their needs and may, indeed, generate conflict where access to the resource is limited and/or irregular. Coverage of a collectively organized service must correspond to the demand in order to generate sufficient user interest. A development organization will have to gain the trust of a community who will only respond when they can see results and consistent performance. In Angola, communities have limited experience of government or international agencies actually delivering on their promises.

Users of services, and organizations of users, are not the only stakeholders in urban services. The companies who provide the main services (water and sanitation companies) and local government are an important part of service provision, and it has been necessary to convince them that working with communities is in their interests so as to improve their coverage. These bodies also require support, and the process of bringing the various stakeholders together needs to be facilitated. The various stakeholders are not all equal and may only be able to speak to each other after some preparation.

In short, Development Workshop's strategy has been to identify all the interested stakeholders and define their respective interests, help them to come together, agree their respective roles and responsibilities and define a support or training programme for the stakeholders that corresponds to their defined responsibilities. Development Workshop's experience confirms the conclusions of others that sustainable services for the urban poor are found where communities, agencies and municipalities

are brought together, share knowledge and information, and receive appropriate training; there are well-defined commitments linked to specific outputs, and community management structures are established (Sohail, Cavill and Cotton, 2001). This requires more than community participation: it requires "community partnering" or "structured participation" that develops strong institutions, leadership, long-term involvement and preparation. The involvement of the private sector is not the only alternative: it does not obviate the need to rehabilitate community and public institutions that can take responsibility for water and sanitation.

The capacity building of communities requires resources and time to transform communities into managers of their own services, and of their own development, rather than users. Training and support for local user groups and residents' committees equips them with knowledge and skills to demand better services and participate in the management of service delivery.

Service providers and local government will usually require extensive support so that they can encourage participation of residents, generate and manage funds locally and develop a capacity to monitor the quality and coverage of service provision, ensuring an equitable distribution of resources.

Follow-up and support may be required well beyond the end of the "project". There is thus a danger in "exit strategies", in that the NGO (or other development agency) may exit before there is sustainable service.

The role of an NGO (or other development agency) should not primarily be to provide services, although this will often be how they are perceived especially in a context where there are large numbers of emergency relief agencies. The NGO should not substitute the community or state institutions but, rather, facilitate their development of sustainable services. However, this can be a complex and long-term process. The NGO will need to have skills in training, facilitating, social organizing, communication, education, monitoring, evaluation and follow-up. It means that the NGO must continually question its role.

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Appendix 1: Photos of Luanda and of some of the work undertaken by Development Workshop

All photographs are by John Cosgrave

Most water for the *musseques* of Luanda comes by lorry from rivers up to 25 kilometres away.

Some *musseque* residents have built water tanks. They buy water from water lorries and re-sell it by the bucket. Water from these tanks is costly and of poor quality.

The many informal markets of Luanda have no water supply. Water sellers supply water in plastic jerry-cans delivered by hand cart.

A standpost under construction. DW programmes facilitate water supply through public standposts linked to the mains water supply and constructed by teams of DW and Water Company staff. The perimeter walls reduce the amount of spillage from spreading to the surrounding surfaces. The structure is built mainly of concrete blocks or cast-in-place concrete.

DW programmes facilitate water supply through public standposts linked to the mains water supply. Where water pressure in the mains is low but the need for a standpost is urgent, one is constructed partly below ground level. More recent work by DW to improve mains water supply to particular areas is an attempt to reduce the problems of low water pressure, but large-scale investment is also needed to improve overall city water supply in line with the growth in population of the last 25 years.

Standposts are designed to use taps that are easily available on the market in Luanda. When they break, they can be quickly replaced by the monitor chosen by the users. This has proved to be more straightforward than using special, heavy-duty taps that are less easy to obtain when they do break.

A standpost under construction. Some are being built from cast concrete rather than concrete blocks.

The round dome-shaped slab that was designed in Mozambique in the 1980s to cover the pit of a dry-pit latrine. The conical dome shape is strong and eliminates the need for steel reinforcement. It is the only specially designed element in the latrine programme.

Despite the lack of water, some residents prefer to build pour-flush toilets. The round dome-shaped latrine slab can be adapted for use as a cover for the septic tank.

Extending the latrine programme to schools and other collective-use sites has been challenging, involving design changes and a health education programme to ensure proper use.

During the rainy season, water accumulates in the dips in roads and in other places in the *musseques* of Luanda.

The state company responsible for solid waste removal in Luanda does not have the capacity to regularly remove solid waste from peri-urban *bairros*. Large concentrations of solid waste have developed inside *bairros,* and are a major health risk as they are also used as defecation sites.

The state company responsible for solid waste removal in Luanda has placed some large containers in peri-urban areas. These should be removed regularly by lorries with lifting equipment. Lorry breakdowns, however, means that their removal is delayed, by which time the containers are surrounded by rubbish; this further hampers their removal.

Low-technology equipment has been purchased, which will collect solid waste from sites within a *bairro* and deposit it at a site from which ELISAL will collect and transport it to the main city dump. The equipment is hauled by a tractor that can be used on narrow dirt roads. A container is left at a site inside a *bairro*, and is picked up a few days later by the tractor, which leaves another container.