



Sanitation Policy in Ghana: Key Factors and the Potential for Ecological Sanitation Solutions

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Foreword: Why evaluate sanitation policy in Kumasi, Ghana?

Ghana presents an interesting case for the ecosan programme: in several districts, there are already competitive markets for faecal sludge, the most common sanitation technology in urban areas is a double-vault composting VIP latrine, and there is ample private-sector involvement in sanitation provision. There are many well organized actors involved in the sector (government, civil society, and private sector), and sanitation policies appear well developed on paper. Yet sanitation coverage is clearly inadequate: 38% of Kumasi's population relies on public toilets, over three-quarters of the population rely on shared toilet facilities, and tens of thousands of urban residents rely on open defecation. There is little treatment of faecal sludge in Ghana. This paper summarizes the current sanitation and sanitation policy needs for Kumasi, Ghana, and outlines some potential opportunities for ecosan in Ghana.

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List of Abbreviations

ARCC	Ashanti Regional Coordinating Council
CDR	Committee for the Defence of the Revolution
CONIWAS	Coalition of NGOs in Water and Sanitation
CWSA	Community Water and Sanitation Agency
DWST	District Water and Sanitation Team
EPA	Environmental Protection Agency
ESP	Environmental Sanitation Policy
GPRS	Growth and Poverty Reduction Strategy
IWMI	International Water Management Institute
JMP	UNICEF – WHO Joint Monitoring Programme for Water Supply and Sanitation
KMA	Kumasi Metropolitan Assembly
KNUST	Kwame Nkrumah University of Science and Technology
KVIP	Kumasi Ventilated Improved Pit Latrine
MCE	Metropolitan Chief Executive
MDGs	Millennium Development Goals
MLGRDE	Ministry of Local Government, Rural Development and Environment
MMDA	Metropolitan, Municipal, and District Assemblies
MWRWH	Ministry of Water Resources, Works and Housing
NDC	National Democratic Congress
NESPoCC	National Environmental Sanitation Policy Coordinating Committee
NPP	New Patriotic Party
UNIDO	United Nations Industrial Development Organization
VIP	Ventilated Improved Pit-latrine
VVU	Valley View University
WATSAN	Water and Sanitation Committee
WC	Water Closet
WMD	Waste Management Department
WSDB	Water and Sanitation Development Board

1 Introduction

The purpose of this report is to summarize current sanitation policy needs as well as factors that have been influential in leading to the current state of sanitation and sanitation policy in Kumasi, Ghana. This study answers some basic questions about the policy-making process in Ghana, and identifies some potential opportunities for ecosan options as solutions for the sanitation problems of Kumasi. This study was also a good way of identifying the main actors (government, researchers, NGOs, private sector), potential partners, and projects related to the sanitation sector in Ghana. EcoSanRes has a lot of active partners in West Africa, but very few in English-speaking West Africa. Kumasi was used as a case study for urban sanitation primarily because of access to information on the state of sanitation in the city. When selecting a city as a case study, information for Kumasi appeared to be more readily available than for Accra.

In looking at ‘policy’, I am looking not only at stated policy (e.g., speeches, policy documents), but also, where no policy statements have been made or where the policy statements are not entirely plausible, policy is evaluated based on the actual governance situation. By sanitation, I am mostly concerned with toilets and the management of human waste, though solid waste and wastewater inevitably come into the picture.

Info about Kumasi in general

Kumasi is the capital of the Ashanti people, as well as the Ashanti Region of Ghana. It is Ghana’s second largest city, with a population of approximately 1.2 - 1.5 million (UNIDO 2006; Vodounhessi 2006), and it has one of the biggest markets in West Africa, which draws many more daily. Migration accounts for much of Kumasi’s growth in recent years, and there is a significant migrant community.

According to the United Nations Industrial Development Organization (UNIDO 2006), Ghana’s purchasing parity adjusted Gross Domestic Product (GDP) per capita has risen by approximately 4% per year since 1995 and, consequently, Ghanaians have quite a high purchasing power parity in comparison with many other African countries (see Table 1).

The service sector accounts for roughly 80% of the economic activity in Kumasi, and about 75% of employment in Kumasi comes from small informal businesses. Industry accounts for only 20% of the economy, and consists mainly of wood-working, sawmills, and breweries (though there are also



Figure 1. Map of Ghana

factories that produce, for instance, foam products). Urban agriculture is an important source of food for Kumasi, but in terms of employment and the economy, it is fairly insignificant (King et al. 2001).

Kumasi lies in the humid forest zone, and experiences much higher rainfalls than northern Ghana. In Kumasi there are two rainy seasons: from mid-March to mid-July, and from mid-September to mid-November. December to February is the driest period of the year. Temperatures range from 20.7 to 33.6°C.

Table 1. Purchasing power parity

Country	PPP (\$)
Ghana	2234
Senegal	1682
Uganda	1471
Burkina Faso	1176
Mozambique	1133
Kenya	1035
Nigeria	1024

(UNIDO 2006)

Sanitation provision

From colonial times until the 1980s sanitation in Kumasi was run by the municipal government. The city council built, operated, and maintained public toilets, faecal sludge treatment sites, etc. No user fees were charged. Municipal staff were paid to collect faecal sludge from latrines (including bucket latrines) and bring it to treatment plants. There were many problems: services were not extended to all areas of town, the government sometimes built facilities without taking into account the ability/willingness of people to pay for connections, and infrastructure was not maintained.

In 1981, Flight Lieutenant Jerry Rawlings became president through a coup d'état. As part of his 'revolution', local collectives called Committees for the Defence of the Revolution (CDRs) were formed. Some CDRs built new public toilets, and others took control of existing facilities. In 1985, CDRs took over management of public toilets in Kumasi from the city council. They introduced user fees for maintenance, and for a while, conditions improved. However, over time, the CDRs (which were politically influenced) began to divert the money raised through fees to other uses, and conditions deteriorated once again. In the late 1980s, the national government (still under Rawlings) took back control over the facilities and handed them over to the municipal government (now called the Kumasi Metropolitan Assembly or KMA).

The central government experimented with public-private partnerships for public toilets and treatment sites in Kumasi, and the model was extended to all districts in Ghana during the 1990s. Conditions of public toilets improved considerably. In an effort to keep the rate of open defecation down, the Kumasi Metropolitan Assembly has tried to ensure that alongside the more expensive (but nicer) facilities that there will remain affordable (though less pleasant and sanitary) facilities.

Since the late 1980s, the KMA has also extended the public sewer system, run projects to encourage households to build their own latrines, and has built sewage treatment sites. Pan/bucket latrines have been mostly phased out, and there is reportedly no illegal dumping of faecal sludge (i.e., it all goes to the Dompouse treatment site).

2 Methodology

Sanitation in Kumasi

The first stage of this research was to define the current sanitation problem in Kumasi. What are the problems? Is it a lack of access to facilities? Unhygienic technologies? Misuse or poor maintenance? This gave us an understanding of the current infrastructural, technological, and educational needs. These questions were answered through a literature review and communication with experts in the field. A list of these needs was generated (see page 9).

Additionally, a timeline of sanitation activities in the case study area over the last 20 years was developed from the literature and communication with experts. This also helped provide an understanding of what has been done, what has worked/not worked, and how current conditions compare historically. A list of factors that influenced policy was generated (see page 17).

Sanitation policy-making in Ghana

The next stage of the research was to determine how policy-making is done in Ghana and what factors are influential in shaping policy. This was determined through communication with experts in the field, and a survey of the literature. The relationship between the general public and sanitation policy was determined. Who is involved in policy-making with respect to sanitation in Ghana? What government bodies are responsible or involved? What is the relationship between these government bodies? How do they invest in sanitation? Who takes part in sanitation policy-making? What policies are in place? These questions were answered. A map of the current policy structure was determined (groups involved in policy and their roles were identified; Figure 4; see page 11), and a list of policy needs was produced (see page 16).

3 Sanitation in Kumasi, Ghana: The current state of affairs

Getting a precise account of the current state of sanitation in Kumasi is quite challenging because (a) there is very little recent Kumasi-specific data, and (b) the available data are inconsistent. Many surveys divide urban Ghana into ‘Accra’ and ‘other urban areas’ (if they make a differentiation at all). Figures for spending by government, and by donors on sanitation in Ghana are designated likewise (often as either ‘rural’ or ‘urban’). Thus, to get some sense of conditions in Kumasi, one must

carefully analyze the data from ‘other urban areas’, making it hard to get a truly accurate picture of the state of sanitation in Kumasi.

To make matters more complicated, numbers for both spending and for coverage vary widely depending on the source. Even within the UNICEF – WHO Joint Monitoring Programme for Water Supply and Sanitation (JMP), data vary widely: the MDG mid-term assessment states that in 2002, 58% of Ghanaians had access to improved sanitation (JMP 2004). But, as a result of a change in the estimate in the percentage of people relying on shared toilets, for 2004 the JMP estimates that only 18% of Ghanaians have access to improved sanitation (JMP 2006). The differences in the numbers are substantial. According to the latest JMP data, somewhere around 27%¹ of urban Ghanaians have access to improved sanitation.

According to these data, Ghana has very low coverage compared with neighbouring countries (see Table 2). This is surprising, considering Ghana’s relative stability and prosperity when compared with these other countries. Among Ghana’s neighbours are seven of the lowest twenty countries in the UNDP’s Human Development Index (HDI).

Table 2 Country indicators and urban sanitation coverage

Country	HDI (2006) ^a	GDP per capita (PPP US\$; 2004) ^a	Adult literacy rate (% ages 15 and older; 2004) ^a	Life expectancy at birth (2000-2005) ^a	Urban sanitation coverage (2002; %) ^b	Urban sanitation coverage (2004; %) ^c
Ghana	136	2240	57.9	56.7	74	27
Togo	147	1536	53.2	54.2	71	71
Nigeria	159	1154	--	43.3	48	53
Benin	163	1091	34.7	53.8	58	59
Côte d’Ivoire	164	1551	48.7	46	61	46
Burkina Faso	174	1169	21.8	47.4	45	42
Mali	175	998	19	47.8	59	59
Sierra Leone	176	561	35.1	40.6	53	53
Niger	177	779	28.7	44.3	43	43

^a United Nations Development Programme, 2006.

^b UNICEF/WHO Joint Monitoring Programme for Water Supply and Sanitation 2004

^c UNICEF/WHO Joint Monitoring Programme for Water Supply and Sanitation 2006

Sanitation technologies

A variety of sanitation technologies are used in Kumasi (see Table 3). Flush toilets appear to be used by a large portion of the population. Only one quarter of all water closets (WCs), however, are

¹ Improved sanitation: “Proportion of the urban and rural population with access to improved sanitation refers to the percentage of the population with access to facilities that hygienically separate human excreta from human, animal and insect contact. Facilities such as sewers or septic tanks, pour-flush latrines and simple pit or ventilated improved pit latrines are assumed to be adequate, provided that they are not public”, according to the World Health Organization and United Nations Children’s Fund’s Global Water Supply and Sanitation Assessment 2000 Report.

connected to sewer systems (the remainder are connected to septic tanks), and many of these are shared (the figures include public toilets).

Pit latrines and Ventilated Improved Pit latrines (VIP latrines) represent almost half of all facilities. Some VIP toilets have two chambers, allowing the contents of one chamber to decompose while the other is in use. When the second chamber is full, the contents of the first chamber should be sufficiently decomposed as to pose no health hazard and ready for emptying. Since this model was developed in Kumasi, in Ghana this model is called the Kumasi VIP, or KVIP toilet (see Box 1).

Bucket latrines and public toilets were used extensively in Kumasi since colonial times (they were introduced by the British). Buckets need to be emptied regularly and up until the mid-1980s the metropolitan government maintained a staff responsible for the collection and disposal of 'nightsoil' (from both private homes, and from public bucket latrines). Bucket latrines are now considered a major public health hazard because of the significant health effects suffered by the 'conservancy workers' who were responsible for emptying the buckets (many workers died young), and because the buckets often ended up being emptied within or near the neighbourhood (e.g., in nearby streams) rather than at contained disposal sites.

Since the mid-1980s the KMA has actively discouraged bucket latrines as well as emptying service provision for bucket latrines, and has been promoting alternatives (e.g., through subsidies). But for financial reasons and convenience, 8% of the population still relies on bucket latrines. Officially there

BOX 1. The Kumasi Ventilated Improved Pit Latrine (KVIP)

The Kumasi Ventilated Improved Pit Latrine (KVIP) was developed by Albert Wright at the Kumasi University of Science and Technology (now the Kwame Nkrumah University of Science and Technology) in the early 1970s. The KVIP is a twin-pit VIP latrine, which allows the contents of one pit to compost while the other pit is in use. By the time the second pit is full, the contents of the first pit should be fully composted, and can therefore be removed manually and spread on fields without health risks. KVIPs were first developed as a technology for public toilets, but have become a preferred technology for household sanitation. KVIPs have a number of advantages over other sanitation technologies: they require almost no maintenance, any anal cleaning materials can be used, and it does not require water. They are now the most common technology used by urban households, and the second most common technology used by rural households (50% of rural residents use pit latrines, and 27% have no toilet facilities; Ghana Statistical Service 2000).

Various improvements have been made to the KVIP latrine, including fans to increase ventilation, extra vent pipes, and solar heated processing chambers, but challenges remain. KVIP latrines have often been misused, leading to inconvenience and unsanitary conditions. Many people use both holes at the same time, resulting in two full pits, both of which pose health hazards and require emptying at the same time. Another common error is the use of too much water, which prevents adequate decomposition and creates unsanitary faecal sludge. In many cases, there are simply too many people using the latrine ("an estimated 60 per cent of KVIPs in Moshie Zongo are not working properly because of overuse"; Saywell and Hunt 1999), so there isn't time for the contents to decompose sufficiently before emptying (Vodounhessi 2006; Saywell and Hunt 1999). User education could address many of these issues.

Table 3. Percentage of households by type of toilet facility

	Urban Ghana (2003) ^a	Urban Ghana, outside Accra (2000) ^b	Kumasi (1993) ^c	Kumasi ¹ (2005) ^d
Flush toilet	21.2	10.1	36	40
VIP	40.8	50.0	41	46
Pit latrine	26.7	17.2		
Pan/bucket latrine	4.5	11.7	20	8
None	6.7	11.0	4	4

^a Ghana Demographic and Health Survey 2003.

^b Ghana living standards survey 2000. Note: 78% of these are shared.

^c Songsoore and McGranahan 1993.

^d Mensah 2005.

are no more public bucket latrines, though on a brief tour of public toilets in Kumasi by the author, one of the sites visited still had a public bucket latrine.

Shared toilets

While the type of sanitation facilities does have an impact on health, there are many other factors related to sanitation that have much greater impacts on health. The containment of faeces (e.g., whether or not there is open defecation in the neighbourhood) and the number of households sharing sanitation facilities have been both found to exhibit higher correlations with illness than sanitation technologies used (Benneh 1993; Greed 2006).

By official estimates, a full four percent of the population of Kumasi does not use any sort of sanitary facilities but rather uses the ‘bush’ (i.e., open defecation). This is generally done in incomplete building sites, near abandoned public toilets, refuse sites, or streams, though many use the ‘wrap and throw’ method (the use of polyethylene bags, which are then deposited in gutters or refuse sites). Along similar lines are overhang latrines (toilets suspended over rivers, so that faeces fall directly into the water). Open defecation, ‘wrap and throw’, and overhang latrines are obviously very unhygienic and contribute significantly to both environmental pollution and disease burdens in the neighbourhood. All drainage systems in Kumasi are contaminated with human waste.

The Ghana Demographic and Health Survey (Ghana Statistical Service 2003) reports that currently, 78.5% of urban Ghanaians (outside Accra) share facilities with at least one other household. Though the number sharing facilities in Kumasi is likely to be lower, it is a very high proportion of the population, and will have to be decreased significantly if Ghana is to achieve its Millennium Development Goals (MDGs) for sanitation. Public toilets are the main facilities upon which poor people depend, and it is estimated that 38% of the population of Kumasi relies on these facilities (Vodounhessi 2006). Improving the accessibility and state of these facilities could have significant effects on public health and environmental quality.

“More than half of all reported diseases are related to poor environmental sanitation” (Republic of Ghana 1999) and a significant number of these are related to the unsanitary disposal of faeces (through groundwater and stream pollution, insects and other pests, etc.). The containment of faeces is vital in preventing unnecessary illness, but in many areas of Kumasi, people simply do not have access to sanitation facilities, whether private or public. This has direct impacts on the community. Lack of access to public toilets (e.g., because they are out of order or locked) is the number one reason cited for open defecation (Benneh et al. 1993). There is also a strong correlation between methods used to dispose of children’s stools and the availability of sanitation facilities (Ghana Statistical Service

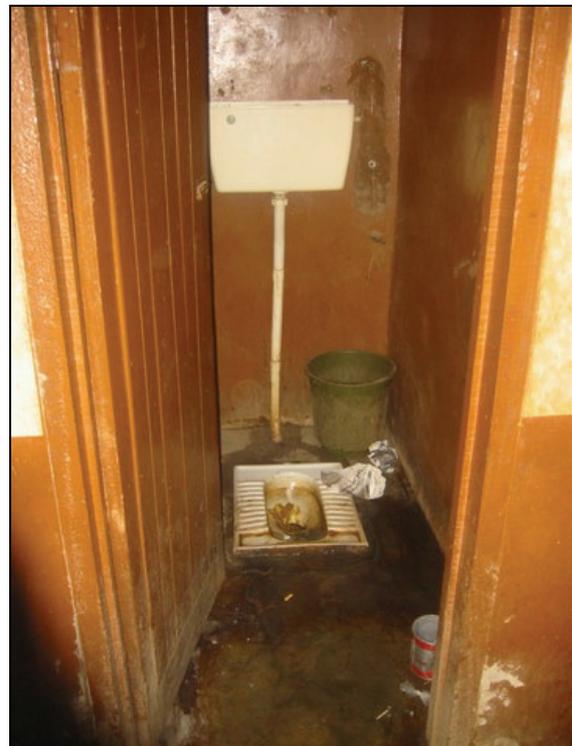


Figure 2. Public toilet in Kumasi

2003).² According to the Ghana Demographic and Health Survey, households with flush toilets or VIP latrines report over 75% containment of faeces, whereas households without sanitation facilities report only 35% containment of faeces. The containment of children's stools is particularly relevant because the presence of children's stools in the environment is strongly correlated with the incidence of diarrhoea (Benneh et al. 1993). Children's faeces generally contain higher concentrations of pathogens.

Sewage treatment

Faecal sludge from septic tanks, bucket, pit, and misused KVIP latrines needs to be collected. In many cities in West Africa, there is illegal dumping of faecal sludge due to unenforceable laws, high costs at dumping sites, inaccessibility of septic tanks, or long transportation distances (Montangero et al. 2002). In Kumasi, there is reportedly no illegal dumping (Vodounhessi 2006). This is attributed to the competitive market between private operators, the KMA's ability to withdraw the licenses of operators that dump illegally, and community participation in denouncing those who



Figure 3. Sedimentation pond at Asafo, Kumasi

dump illegally (Montangero et al. 2002; Vodounhessi 2006). A new treatment site at Buobai was developed recently at a cost of 550 000\$ US, but after two years of operation closed down because of (depending on who you ask) conflicts in the community and/or the lack of means to empty the sedimentation ponds (which are full) (Vodounhessi 2006). Treatment of faecal sludge is currently done at the Dompouse landfill site, where (as of December 2006) the sedimentation ponds were also full. Water in the final treatment pond was opaque at the time of my visit.

There is currently a pilot project of the co-composting of faecal sludge and organic waste at the Buobai site (jointly run by the International Water Management Institute (IWMI), KMA, KNUST, and the Department of Water and Sanitation in Developing Countries (SANDEC) of the Swiss Federal Institute for Aquatic Science and Technology). Solid waste is separated manually into organic and non-organic waste. Faecal sludge needs to be dried to the correct moisture levels and is then mixed with the organic waste (non-organic waste goes to the landfill). High temperatures in the compost heaps should kill all pathogens. At the Buobai site, the methodology for co-composting has been developed (de-watering of faecal sludge, economics, composting times, etc.) and research is currently being done on how to increase the quality of the compost generated. The Kumasi Waste

² In households with flush toilets or VIP latrines, 60-64% of respondents said that children's stools are thrown into the toilet, and 13.8% and 8.6% respectively said that the child always uses the toilet (i.e., approximately 74% of faeces are contained). In households with no sanitation facilities, 21.4% said that they throw the stools outside their dwelling, and 44.3% said that they throw it outside their yard (i.e., more than 65% of faeces are *not* contained).

Management Department (WMD) has stated that they will seek donor funding to build a large co-composting facility at Dompouse in the near future, though the pilot project is not yet complete.

It should be emphasized that faecal sludge treatment in Kumasi is significantly better than in most other West African cities. Very few cities have any faecal treatment facilities, and even where these facilities are available, illegal dumping is common. I was told repeatedly during my visit, for instance, that 100% of Accra's faecal sludge is going, untreated, into the ocean because none of their treatment plants is operational.

Management

Since the late 1980s, the KMA has experimented with public-private partnerships as a method of managing sanitation services. Currently, anyone can bid for a contract to build, upgrade, and/or manage public toilets. Consequently, public toilets are managed by not only the KMA, but also private contractors, lower levels of government (sub-metropolitan assemblies, unit committees), and others (e.g., schools). The KMA has tried to ensure affordable public toilets continued to be available when new facilities were built. Old and new facilities are often side-by-side.

Fees are collected at all public toilets, and generally range from 200 to 1000 cedis (between 2 and 11 cents US) depending on the technology and the level of service provided (flush toilets are more expensive than aqua privies and KVIPs). The KMA or sub-district receives a percentage of the earnings. Contracts are relatively short, and need to be renewed frequently. Unfortunately, the conferment of contracts has become somewhat political (see Box 2).

Contracts are also given for other services such as solid waste collection, operation of faecal sludge treatment plants, and the cleaning of specific areas (e.g., Kejetia Market). There is a competitive market for faecal sludge collection companies (that transport faecal sludge from septic tanks to the city's treatment site), and are licensed by the KMA. There are still people who empty bucket latrines, but contracts and licenses are not awarded for these services, and these services are discouraged.

Private management of environmental sanitation services has been widely seen as a positive development in terms of the quality of services. Services are substantially better than in the late 1980s. The KMA is trying to incorporate cost-recovery in as many services as possible –in the near future they hope to introduce a fee collection service to recover the costs involved in solid waste management.

BOX 2. Public toilet politics in Kumasi

In 1989, the Kumasi Metropolitan Assembly began experimenting with public-private partnerships for the management of public toilets. The franchising was deemed successful, and in 1992, all public toilets were to be franchised.

Unfortunately, some contracts ended up in the hands of Assembly Members who either had good connections with the sub-metropolitan district offices, or who received contracts from the then Metropolitan Chief Executive (MCE) in return for political support. Contracts were to be given to "registered local companies with demonstrated capacity" (Ayee and Crook 2003). By the time of the national elections in 2000 "most of the toilet management contracts were in the hands of Assembly Members" (Ayee and Crook 2003). After the elections, when new Assembly Members came to power, struggles broke out over control of public toilet facilities. Similar conflicts occurred in Accra, resulting in shots being fired at an NPP supporter who received a contract to manage a public toilet in La township.

Though tensions have subsided in recent years, public toilets remain a sensitive issue, and though there is considerable interest from the private sector in public toilets, few are willing to invest because of the risk that their facilities might be "hijacked".

Funding

According to Water Aid³, 52 million US dollars per year is being spent on sanitation in Ghana. Of the 52 million dollars, Water Aid states that approximately 3.5%, or roughly 1.8 million dollars, is provided by the Government of Ghana. The remainder, approximately 50 million dollars per year, is provided by foreign donors (e.g., the World Bank, UNICEF, the EU, the Danish International Development Agency (DANIDA)).

Sanitation needs

Containment: Due to a lack of sanitation facilities, excreta are not contained, but are rather spread throughout the neighbourhood environment. Policies that encourage the containment of faeces should be advocated. Some people (especially children) defecate in abandoned lots, and small children's faeces are discarded in the open in the neighbourhood where there is inadequate access to public toilets. Policy needs to address this lack of facilities.

Private facilities: Many people rely on public toilets, thus contributing to the spread of disease. Therefore, there is a need to encourage people to buy their own toilets, and a need to make sure the technologies are simple to use, easy to empty (e.g., may need vehicles that can access narrow alleyways), and affordable. Ongoing monitoring, education, and financial support should be provided to ensure proper maintenance and use of facilities.

Increased demand: Few people are building their own facilities. Reasons for the lack of demand need to be explored and methods of encouraging construction need to be identified (government has tried to address this, but has largely failed –e.g., mainly rich people take advantage of subsidies).

Desludging of treatment sites: Currently, faecal sludge is being deposited at the Dompouse treatment site, but the settling ponds are full. Desludging is needed. The Buobai treatment site was closed for similar reasons (depending on who is asked). As a consequence of the conditions at Dompouse, water from the settling ponds is being discharged into the environment in a badly polluted condition.

Improved public toilets: Because many people are dependent on public toilets, there is a need to ensure public toilets are functioning properly, kept sanitary, and are well maintained to minimize the spread of disease.

Ongoing support for maintenance and proper use of facilities: Inadequate maintenance and misuse of sanitation facilities has led to increased health risks. Thus there is a need to help support the costs of upgrading, maintenance, etc. and work on continually educating the public on how to maintain and properly use their facilities.

Financial: There simply isn't enough money to adequately address the issue in the immediate future (especially with population growth, existing institutional capacity), therefore there is a need to prioritize activities... Should we try to create developments that will encourage others to replicate (though other sanitation pilot projects have been unable to encourage replication except on a very small scale)? Should we target specific communities? Work on capacity building?

Education: Currently, KVIPs are the most common type of sanitation facility in Kumasi, yet they are frequently misused. Education is needed to ensure proper use of facilities. Hygiene education also needs to be conducted along with the provision of new facilities.

Access to safe drinking water: Access to enough, clean water allows better hygiene practices. Currently there is inadequate access to safe water sources, though this is improving.

Gender: Very little research has been done on gender needs with respect to sanitation. This gap needs to be filled.

³ WaterAid. 2007. The figures for the total amount of aid given are not certain. Other sources say that US\$85 million were spent on water and sanitation in 2006 (i.e., US\$35 million more than the Water Aid figures for sanitation). Since there is more money being spent on water than sanitation, I assume that one of these figures is incorrect.

4 Sanitation policy in Kumasi

A number of evaluations of Ghanaian sanitation policy and governance have been conducted in recent years (Ayee and Crook 2003; King et al. 2001; Salifu 2005; Saywell and Hunt 1999). Ayee and Crook evaluate the public-private partnership policies in Kumasi (and Accra) and provide a basic history of sanitation policies in Ghana. King et al. (2001) examine the policy-making structure in Kumasi, with a specific focus on the relationship between residents in low income communities and poverty-reduction policies. A significant section of their report deals with sanitation governance. Salifu (2005) conducted a wide assessment of sanitation policy and sanitation policy needs in Ghana. Saywell and Hunt discuss the development of the Kumasi Strategic Sanitation Programme, when and how it formed, and why it formed the way it did. Through a comparison with sanitation policies developed in Mozambique, they contrast the successes and failures, strengths and weaknesses of each policy.

The works by Ayee and Crook (2003) and King et al. (2001) are dated, as there have been significant changes in government since their publications. King et al. (2001) conducted research for their report before the election in 2001. Since then, there have been two elections (including a change in government for the first time since 1981), two changes in the KMA's chief executive position, and several major changes in the structure of the national ministries, most recently in April 2006 (responsibilities have been shifted around, departments have been split up). There have been significant changes to the way things are done. This work adds to the above literature by developing an updated timeline for sanitation and sanitation policy in Kumasi and examining the policy-making process for sanitation in the case study area. This includes an examination of the relationship between the general public and sanitation policy (drawing heavily on King et al. (2001) as well as interviews with experts in the field).

Policy structure

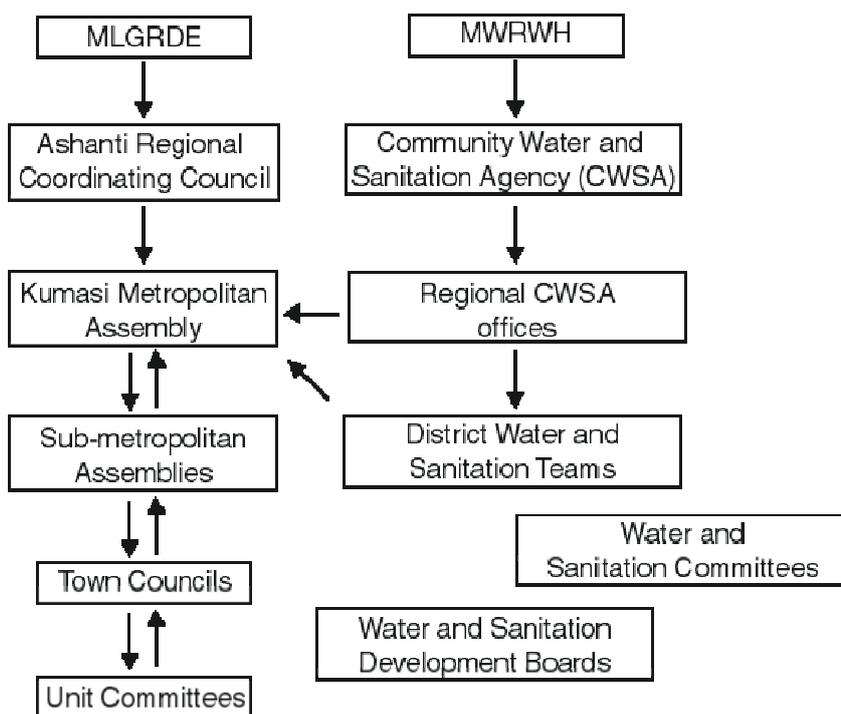
At the national level, there are four ministries involved in sanitation. The Ministries of Local Government, Rural Development and Environment (MLGRDE) and Water Resources, Works and Housing (MWRWH) have been the primary ministries involved in policy-making with respect to sanitation and water, respectively. The other two ministries involved in sanitation are the Ministries of Education, Science and Sports (which conducts hygiene education), and of Health (handles health data, contributes to policy-making, setting standards, and hygiene education).

Ministry of Local Government, Rural Development and Environment (MLGRDE)

MLGRDE is the lead agency in the sanitation sector. It is responsible for creating and coordinating sanitation policy, issuing guidelines on sanitation services and their management, and for supervising the National Environmental Sanitation Policy Coordinating Council (Republic of Ghana 1999). MLGRDE is also responsible for the national Environmental Sanitation Policy (ESP; see below). The environment portfolio of the ministry has only recently been added; prior to April 2006 the

environment portfolio was part of the now-defunct Ministry of Environment and Science (*Daily Graphic* April 28 2006).

Figure 4. Policy structure related to sanitation in Kumasi



National Environmental Sanitation Policy

Ghana’s national Environmental Sanitation Policy (ESP) was developed in 1999 in consultation with a variety of stakeholders and covers the broad spectrum of environmental sanitation including solid and liquid waste, industrial and hazardous waste, stormwater drainage, environmental and hygiene education, vectors of disease, and disposal of the dead (Republic of Ghana 1999). The policy identifies many of the major problems and constraints in environmental sanitation, including the lack of assigned roles for governmental bodies, the lack of capacity and skilled professionals at all levels, and the problems associated with the transfer of responsibilities for environmental sanitation without the corresponding budget, personnel, and equipment transfers. The policy then lays out its strategy to deal with these problems.

Key items in the strategy include: (a) defining the roles and responsibilities related to environmental sanitation of institutions from the national ministries down to unit committees, community organizations, and the individual; (b) the privatization of environmental sanitation services; (c) the

creation a National Environmental Sanitation Policy Coordinating Council (NESPoCC) and a District Environmental Sanitation Fund (DESF); and (d) the phasing out of pan latrines (by 2010). Targets were set for 2020 (except for the phase-out of pan latrines, which was targeted for 2010). This has allowed the government a lot of flexibility. Each of the above components are discussed below.

(a) Roles and responsibilities. The policy clearly states the role of actors at a variety of levels of government (“MLGRD shall be the lead sector agency. Its functions shall include...” (Republic of Ghana 1999)). However, the policy is in need of an update to include the roles of the MWRWH and Community Water and Sanitation Agency (CWSA), and to clarify the roles of some other institutions and ministries (e.g., Ministry of Health) (Tayler & Salifu 2005).

(b) Privatization of environmental sanitation services. Privatization of environmental sanitation services had already occurred in Kumasi by 1999, but the ESP clearly states that this is to be expanded to the rest of the country. Services that are supposed to be provided by the private sector include the provision and management of septic tanks, the construction, rehabilitation and management of all public baths and toilets, solid waste collection (both door-to-door service and from communal containers), and cleaning of specific sites (e.g., markets, lorry parks).

(c) NESPoCC. NESPoCC was set up in 2000, and consists of representatives from relevant government agencies (MLGRDE, MWRWH, Ministry of Health, etc.), NGOs (represented by ProNet), and the private sector (Republic of Ghana 1999). Its main purpose is to “coordinate policy and increase the profile of sanitation”. For the most part, however, it has been non-functional (DANIDA 2003).

(d) Phasing out of pan latrines. The KMA “ceased responsibility for emptying bucket latrines” in 1986, though most workers continued their jobs through the private sector (Saywell and Hunt 1999). Officially, there have been no public bucket latrines for many years, however on a brief tour of public toilet facilities, one such facility was observed. Many homes still use bucket latrines, and it is hoped that these will be converted to some other type of toilet by 2010. The KMA runs an incentive programme for households to build private toilets, and to convert bucket latrines into other types of toilets (e.g., KVIPs).

Ministry of Water Resources, Works and Housing (MWRWH)

The Ministry of Water Resources, Works and Housing (MWRWH) is responsible for water provision, and oversees the Community Water and Sanitation Agency (CWSA). The CWSA provides hygiene education, and water and sanitation services. The CWSA has a national coordinating office, but works mostly at the regional level, where each region has an office. At the district level, the CWSA works through Water and Sanitation Development Boards (WSDBs).

The CWSA has become a preferred body through which foreign donors work to implement projects related to water and sanitation. Since the CWSA focuses primarily on water, many of these projects tend to have a water supply focus (Tayler & Salifu 2005; Larbi et al. 2002). Salifu et al. (2005) have raised concerns that the new National Water Policy might shift responsibilities and funds that might otherwise go towards sanitation to the CWSA. At the time of writing, the new National Water Policy has gone to cabinet, but has not been approved.⁴

⁴ In a draft copy seen by the author there are no references to the suggested District Water and Sanitation Fund or National Water and Sanitation Collaborative Council which might conflict with the ESPs District Environmental Sanitation Fund and NESPoCC, respectively.

Most of the actual sanitation work in Ghana is done at the metropolitan, municipal and district assemblies (MMDA) level. In the case of Kumasi, it is the Kumasi Metropolitan Assembly that is “given direct responsibility for waste management, public health management, environmental monitoring, planning and monitoring” (Tayler & Salifu 2005). The KMA delegates responsibility for sanitation to the sub-metropolitan assemblies and the Waste Management Department.

The Kumasi Metropolitan Assembly

The Kumasi Metropolitan Assembly (KMA) is made up of the unit committees, town councils, sub-metropolitan assemblies, decentralized departments (some more functional than others), a central administration, an executive committee, and a general assembly (see Figure 4). The KMA is headed by a chief executive appointed by the central government. The general assembly is formed of 70% elected members, and 30% members appointed by the central government. In addition, members of parliament whose constituencies fall in the Kumasi area and heads of the public utilities are granted non-voting seats in the Assembly. In law, the assembly is supposed to meet three times per year. The KMA reports to the Ashanti Regional Coordinating Council.

Unit Committees are the lowest level of political organization in Kumasi. There are supposed to be 1020 unit committees in Kumasi. The unit committees are formed by 10 members elected from the local community, and 10 members appointed by the KMA chief executive. Unit committees are supposed to mobilize the general public and ensure that their needs are heard by the KMA. Concerns are to be brought before town councils (and from there on up the hierarchy), but unit committees often work directly with their assemblymen because the town councils are not functioning. Unfortunately, party politics sometimes prevents cooperative work between unit committees and assemblymen. For these and other reasons, many unit committees are not functioning. Suggestions have been made recently to increase the effectiveness of unit committees by reducing the number of members that form unit committees by approximately 50% and by reducing the total number of unit committees by more than 75% (Bintim 2005). The WMD often works with unit committees (when possible) because they have found them to be very effective at gauging local opinion and getting messages out to the community. Unit committees sometimes initiate community improvement projects themselves (Post et al. 2003).

Town councils are supposed to hear the concerns of the unit committees and report to the sub-metropolitan assemblies, who either act on their recommendations, or pass their concerns on to higher levels in the hierarchy. Due to a severe lack of capacity at the town council level (personnel, financial resources, transportation, visibility, etc.), town councils are generally not very functional (King et al. 2001).

The *sub-metropolitan assemblies* report to the WMD for sanitation-related issues. But according to King et al. (2001) sub-metropolitan assemblies existed only “in name and physical structures” until recently. There has been an effort to give the sub-metropolitan assemblies more capacity in the last few years: they have a presence in the communities, a staff, and more resources than before. They are still relatively ineffective, but they are no longer non-functioning (Rudith King, Personal Communication, November 21, 2006). Again, ineffectiveness is mainly due to a lack of resources.

The *Waste Management Department* (WMD) is responsible providing services such as waste collection and disposal (including faecal sludge), cleaning sewers, and managing promotion and subsidy programmes for household toilets. It is a “decentralized office with separated management from KMA” (Vodounhessi 2006). Despite the decentralization, the WMD is essentially dependent on

the KMA, since it has no financial autonomy—even money for repairing WMD vehicles must be cleared with the KMA chief executive (King et al. 2001; Vodounhessi 2006). The WMD is currently trying to make cost-recovery a priority to ensure the sustainability and quality of its services, and some services previously managed by the WMD are now done by private contractors (e.g., sewage treatment and operation of many of the cities public toilets). The Waste Management Department works collaboratively with a number of NGOs, all levels of government, and the big donors (though the KMA has mostly worked with the World Bank in recent years). The KMA and World Bank have run a number of sanitation-related projects in recent years, including the Urban IV and Urban V projects (which aimed to improve productivity and living standards by building new roads, drains, street lights, and toilets, improving capacity, improving institutional arrangements, and by helping develop the private sector; World Bank 1998), and the first and second Urban Environmental Sanitation Projects (which aimed to “improve urban living conditions in regard to environmental health, sanitation, drainage, vehicular access, and solid waste management in a sustainable fashion, with special emphasis on the poor”; World Bank 2004).

The *Ashanti Regional Coordinating Council* (ARCC) is the highest decision making authority in the Ashanti Region, “representing the entire political and bureaucratic machinery of the Central Government at the regional level” (King et al. 2001). Essentially, the ARCC is responsible for coordinating and monitoring the performance of development programmes in Kumasi, monitoring the KMA, and approving the KMA’s development budget on behalf of the national government. The ARCC, however, never imposes serious sanctions against the KMA for breaches of its responsibilities. A number of explanations have been cited, but the essence of the problem is that the KMA chief executive position has traditionally been filled with loyal party members of the central government (and often chief financiers of the party in power) who have greater access to the President than others at the ARCC, including the regional minister (the President appoints both the KMA chief executive and the regional minister). Going against the KMA chief executive is therefore akin to going against the President and central government. In the past, regional ministers who did not get along with, or who criticized the KMA chief executive, were removed from their positions (King et al. 2001).

The *Environmental Protection Agency* (EPA) is an autonomous, national level body responsible for environmental regulation (monitoring, and enforcement). The EPA has a branch office in Kumasi that works with the KMA.

Governance

In reality, the process of governance in Kumasi often does not follow the processes described in the policy documents. Many unit committees, for instance, never formed, some that formed never meet, and even those that meet sometimes cannot be effective because of problems at the town council or higher levels. Of course, many unit committees *are* functioning, and they fit into a very informal system of governance in Kumasi which includes members of parliament, tribal leaders, community leaders, assemblymen, NGOs, and others. When this informal system fails, individuals or groups may try to affect change through, for instance, demonstrations and confrontations or “tipping or offering gifts” to the responsible officials (King et al. 2001).

Non-governmental sector

The water and sanitation sector in Ghana is well linked through the Coalition of NGOs in Water and Sanitation (CONIWAS). CONIWAS is a coalition of about 50 NGOs, private sector actors, and government agencies. It was originally set up in 1989 by a group of NGOs concerned about the lack of equity between urban and rural access to water. Since then, they have expanded their goal to include everything under the Millennium Development Goal number seven, though they focus mostly on water and sanitation. Their eighteenth annual conference will be held in May 2007, which, because sanitation provision is falling behind work on safe water provision, will focus on sanitation.

Most of their work revolves around networking and capacity building for their members. They run training workshops on various issues, try to help members develop skill sets (e.g., proposal writing), and connect members with specialists when necessary. In the past few years, they have also been conducting policy dialogues. These consist of discussions between all the stakeholders in water and sanitation (e.g., public office holders, market women, and traditional authorities). It is a forum where people can raise concerns, explain why they do things the way they do (e.g., especially policymakers), and identify/discuss solutions. All policy dialogues have been on the topic of sanitation this year and reports and videos are available for all dialogues.

NGOs working in sanitation in Ghana generally fall into four main groups by activity (Patrick Apoya, Personal Communication, December 11, 2006):

1. Direct service delivery: For instance, NGOs that build pit latrines for rural communities.
2. Community institution building: This group encourages the participation of people in addressing water and sanitation (e.g., getting women involved, dealing with governance issues, etc.).
3. Advocacy; and
4. Research and capacity building: Generally the groups that do research also tend to do capacity building.

Ecological sanitation

Though there are only a few organizations working on ecological sanitation in Ghana, many ecological sanitation projects have been tried. Most are small projects, and have not been extensively documented. It is therefore quite difficult to get a good sense of what has been done, and how much has been tried. Projects that I have identified, or am aware of in Ghana include the ecologically designed Valley View University campus in Dodowa, Accra, a biogas project in Kumasi (built by Friends for Mentally Handicapped Children), a faecal sludge composting plant in Accra, and a number of projects run by IWMI such as the co-composting pilot-project in Buobai and wastewater irrigated agriculture. In addition to these, there are a number of businesses (e.g., Green Turtle beach resort) and NGOs (e.g., US Peace Corps) that have built ecosan toilets for their customers or for private use.

I have also found isolated references to many small projects around Ghana (a French project in Kumasi, the 'Kokrobite School' ecological village, and various biogas projects), but I was unable to obtain further information about any of these projects.

Aside from projects, there is a competitive (though informal) market for faecal sludge in Bolgatanga, Tamale, and Manya Krobo Districts (Cofie et al. 2005a, 2005b; Olofunke Cofie, Personal Communication, December 19, 2006) and waste-water irrigated agriculture is practiced throughout the country.

Policy Needs:

Clear roles. The Environmental Sanitation Programme (ESP) does not state the roles of the Ministry of Health or the CWSA. Nor does it clearly define the roles of all the groups involved. This is problematic, as the decision making structure is complex, with conflicting policies and programmes (see below). The complex nature of the decision making structure itself has also been identified as a problem for policy-making (Water Aid 2007). Finally, it would help if there were a “stronger, more visible, institutional home for sanitation policy-making” (TREND 2005; Tayler & Salifu 2005).

Revised ESP. There is a need to revise the ESP “to capture the GPRS and MDG goals as the basic strategic framework” (TREND 2005).

Coordination. There is a need for improved coordination between sanitation and health provision, and service provision, as well as improved coordination overall (Tayler & Salifu 2005; TREND 2005; Water Aid 2007; Bintim 2005).

Implementation. There is “political will towards promulgation of policies” BUT, there is a “perception that there is a lack of implementation support”. There is a need for increased implementation support, political advocacy for implementation by key organizations such as NESPoCC (TREND 2005).

Demand generation. There is a need for increased “focus on demand generation rather than on subsidies” (TREND 2005). Current and past projects have tried to encourage investment in household latrines by offering subsidies but have failed due to the lack of demand. New approaches that identify barriers to adoption and use targeted demand-stimulation strategies are necessary.

Capacity building. There is a need to improve capacity at all levels. There is a major lack of technical capacity at the MLGRDE and MMDAs in environmental sanitation (Demedeme 2006).

Finances. According to Water Aid (2007), approximately US\$162 million per year needs to be spent on sanitation in Ghana until 2015 to achieve the Millennium Development Goals related to water and sanitation. Only 52 million dollars per year is actually being spent, and, it is therefore unlikely that Ghana will achieve its MDG targets. Of the 52 million dollars, Water Aid states that approximately 3.5%, or roughly 1.8 million dollars, is provided by the Government of Ghana. The remainder, approximately 50 million dollars per year, is being provided by foreign donors (e.g., the World Bank, UNICEF, the EU, DANIDA).

Focus. There is a need to provide a greater focus on sanitation, as opposed to water provision because sanitation coverage is falling behind safe water provision (Water Aid 2007). Though the MWRWH has missed its targets for increased safe water provision in 2003, 46% of the population had access to safe water (up from 30% in 1994), whereas only 29% of the population had access to improved sanitation. This problem has been widely recognized in the water and sanitation sector recently and the Coalition of NGOs in Water and Sanitation (CONIWAS) has consequently made sanitation the theme of its activities in Ghana for 2006-2007 (policy dialogues, workshops, and the annual conference).

Inclusion. There is a need for greater inclusion of communities and the poor in decision-making (Water Aid 2007, King et al. 2001).

Decentralization. The WMD is highly dependent on the KMA financially. There is a need for greater autonomy for the Waste Management Department (Vodounhessi 2006). To be fair, the WMD is not entirely dependent on the KMA for funds, and is putting a lot of effort into making cost-recovery a central principle of its operations. User fees will allow the WMD to fund its own operations, thus reducing dependence on the KMA and increasing the sustainability of environmental sanitation services.

Enforcement. There is a need for a strong regulatory body. According to Vodounhessi (2006), the Environmental Protection Agency is very collaboration-oriented, which weakens its regulatory abilities. There is also, a need to update enforcement procedures for sanitation bye-laws. Some fines are “ridiculously low” and still listed in British currency (Amoaning 2006).

Non-partisan development. There is a need the KMA to be less partisan. Party politics prevent basic cooperative efforts for community improvement (King et al. 2001).

5 Influences on policy

The following factors have influenced the current state of Ghanaian sanitation and sanitation policy:

Salient solutions: Almost all models of sanitation management (the populist Committees for the Defence of the Revolution, the central state-run model, and the free-market model), and technologies (bucket latrine system, sewer & sewage treatment systems) tried in Ghana have been copied from elsewhere (the major exception being the KVIP toilet, designed in Kumasi). Ideas from outside Ghana have had an obvious impact on how sanitation is managed and what technologies are used. Many of these ideas have been imported by NGOs and foreign donors.

Foreign donors: Foreign donors exert considerable influence in Ghana (Ayee and Crook 2003; Prosper Kotoka, Personal communication, December 14, 2006). Very powerful and rich foreign donors (e.g., DANIDA, the World Bank) have given hundreds of millions of US dollars towards sanitation-related projects, and can therefore exert some pressure on sanitation policy. The World Bank, for instance, “dictates” to the WMD at times on how it should run its programmes. The influence of donors is often positive, but they frequently have different interests (e.g., the provision of safe water sources as opposed to sanitation services) and push policy towards their interests. This is one of the reasons that sanitation coverage has fallen behind safe water provision (Salifu 2005).

Power relationships in society: While not written in policy, differences between the political power of different groups of people obviously shape the level of services offered in different communities in Kumasi, and Ghana in general. People living in wealthier areas of town and communities that support those in power, for instance, are more likely to have better access to policymakers, and tend to receive better services. Wealthier communities are more likely to have better knowledge about how to approach policymakers, better access to information, better infrastructure such as roads (and can therefore be better serviced), can afford to contribute financially to meeting their sanitation needs, and therefore continue to receive better services (King et al. 2001). Certain communities benefit more from government programmes than others.

Policy priority: The government (and donors) often focus on what the general public wants and is willing to put money into. This skews results towards access to (clean, affordable) water. Government representatives sometimes have access to significant funds that could be used for sanitation, but sanitation has to compete with other priorities (street lights, one day ‘clean up’ activities, etc.).

Sanitation has been recognized as something that needs to be worked on by the current government and on paper the policies themselves are excellent. Action, however, is lacking. In general, MLGRDE has not considered sanitation a priority (personal communication, Eugene Larbi, December 8, 2006). Recently, a directorate for sanitation was created within the MLGRDE, and there has been a lot of work on capacity building. It is hoped that these activities will change MLGRDEs attitude towards sanitation.

Individuals: Individuals can make a large difference at certain positions in government. Assemblymen and chiefs sometimes have access to substantial resources that can be used to improve sanitation. The governance style of the Metropolitan Chief Executive and Ministers can have a major impact on the transparency and openness of government. Maxwell Kofi Jumah, the former Chief Executive of the KMA (2000 – 2004), for instance, tried to make the tendering process for public toilet management contracts more transparent (which was against the interests of the sitting assemblymen), whereas his

predecessor openly handed out contracts in return for favours (Ayee and Crook 2003; King et al. 2001).

Knowledge & ignorance: Public and government officials' attitude towards sanitation has been cited as a contributing factor to the problem in Kumasi (Frantzen and Post, 1999; King et al. 2001). Are they aware of the extent of the benefits of enhanced sanitary conditions? Though this has not been fully answered, it is not likely. Also, since the general public has a lot to do with sanitation choices (e.g., whether children should be allowed to defecate in piles of rubbish, whether they will build a toilet in their house, etc), it is necessary that they be adequately informed. But the evidence suggests that they are not sufficiently informed (though behaviour might change if they were presented the means). Household toilets are not being managed properly by their owners, due to a lack of knowledge of how they need to be maintained (e.g., composting toilets being left for a bit for the volume to decrease and then used again). Communication of knowledge is therefore a key aspect that needs to be further explored.

Financial constraints: Financial constraints sometimes appear to be ignored in Ghana's goals for water and sanitation coverage (and poverty reduction in general). Ghana is aiming, for instance, for 85% coverage for improved sanitation by 2015. The estimated cost to meet this goal is US\$162 million per year, but current budgets are nowhere near adequate to meet this goal (Water Aid 2007). The Government of Ghana currently contributes approximately US\$1.8 million annually (i.e., only 1.1% of the total required for sanitation each year).

Contextual factors: A wide variety of contextual factors have also played a role in sanitation policy and governance in Kumasi, including: rapid population growth, international development fads (technical assistance, capacity building, etc.), stability (or lack thereof), lack of capacity, and politics.

Conclusions

The greatest impediments to adequate sanitation are:

- Financial constraints –policymakers don't have the resources to do enough.
- Policy priority –though a significant portion of public funds is used for waste management, it is seen as something that has to be done, not as a high priority with potentially big payoffs. Sanitation is not a priority.
- Policymakers like to be 'seen' doing things, so they build things –they don't maintain them.
- Politicization of public sanitation service provision. Private contractors don't want to risk their investments, so there has been little private sector involvement.
- Knowledge constraints. Among the general public (who 'don't want to think about it', don't know how to operate their facilities properly, don't see why they should invest in a household toilet (as opposed to other things), etc.) as well as in government. The NGO sector is also at fault. Very few people have looked in any detail at why the general population isn't investing in toilets, and most projects that try to encourage people to invest in toilets offer subsidies, but nothing more. There has been no research on gender and sanitation in Ghana. There is a lack of knowledge on all sides.

- Lack of demand for sanitation. The demand for household sanitation is not sufficient to meet the MDGs.

Challenges, opportunities, and items of interest for ecological sanitation in Ghana:

1. In Kumasi, poultry manure is abundant and free, so there is difficult competition for sanitized human waste. Compost is most likely to find its market with real estate developers and large-scale agriculture. IWMI has conducted some research on this issue (International Water Management Institute 2004). Elsewhere in the country there is much less poultry manure, so markets may be more receptive.
2. Culturally, people don't like using faecal sludge. Some people "shun the consumption of crops cultivated with faecal sludge", and some landowners sometimes ban farmers from using faecal sludge on their property. On the other hand, many people are already using it, and in interviews very few said that it attracted public mockery (Cofie et al. 2005a).
3. Though KVIPs are currently a preferred technology, they are not being used properly and their image is slowly becoming tarnished. This may result in a switch in preference to other, non-ecosan technologies unless something is done in the relatively near future. User education is necessary.
4. "Western" models often carry more status than others. Rainwater collection may be valued by the poor, but if people can afford it, they will likely switch to pipe-borne water. This can pose problems for the sustainability of projects. At Valley View University (VVU), for instance, there is a constant need to explain to students why rainwater collection is worthwhile when they can afford to buy water from tanker trucks. Once explained, the students understand, but every year there is another group of students who need to hear the explanations.
5. Sustainability of projects is difficult to achieve. People are likely to say whatever donors want to hear in the hopes of receiving funding. When the funding stops, though the project may 'technically' be sustainable, staff might move on to greener pastures, ongoing education may stop, the project may cease to be financially viable, and maintenance may cease.
6. Anything associated with one political party can become politicized. Projects started under one party are sometimes not continued under another. Contracts given by one party might be revoked by another (if the contract is seen as political).
7. Gender research is needed. According to Ghanaian gender specialists, there has been no research on gender and sanitation in Ghana.
8. The Coalition of NGOs in Water and Sanitation (CONIWAS), a Ghanaian coalition of NGOs, private sector, and government actors, is currently in their "year of sanitation". They have been holding policy dialogues on sanitation in the major cities, and sanitation will be the theme of this year's annual conference (in May 2007). A number of their members do work related to ecological sanitation. Through the directorate of CONIWAS it is possible to communicate with the 50+ member organizations (some of which are coalitions).
9. Valley View University (VVU) has a newly-built (and still expanding), ecologically designed campus that includes ecological sanitation. VVU is a Seventh Day Adventist run private university — the largest private university in Ghana. The student population is currently 1500, but

is expected to rise to 5000 within the next few years. Rainwater is collected on most of its buildings, toilets are urine-diverting (the urine is used in their farm/orchard), and wastewater is filtered and re-used for irrigating their farm/orchard, etc. They have experimented with a variety of technologies and German students have done some research on perceptions, etc. The project is funded by the German Ministry for Education and Research (BMBF). They run training workshops on ecological sanitation, mostly for specific stakeholders, and are looking at ways to ensure the sustainability of the project.

10. It was suggested that the ecological sanitation community doesn't pay enough attention to what is already being done within the general population (i.e., not associated with projects), and how this can be improved. For example:
 - Farmers in Bolgatanga, Tamale, and Manya Krobo are already directly applying faecal sludge to their fields (without any form of treatment). There is a competitive market for the untreated sludge.
 - KVIPs (ventilated improved double vault composting latrines) are the second most common sanitation technology in Ghana (and the most common technology in urban Ghana), but they are often misused and the faecal sludge is not reused even when composted properly.

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