



A report for the DFID Health Strategy Review

Environmental Health Situation in Uganda

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This report has been prepared in order to inform DFID Uganda's health strategy decision making process regarding the environmental health sector, particularly those aspects of water supply, excreta disposal, drainage and solid waste disposal relating to the urban poor. All of these aspects are included in the Ugandan definition of the term "sanitation". The report includes information about the effects the sector has on health and the socio-economy, it identifies stakeholders in the sector and their priorities, identifies gaps in the sector and suggests areas where DFID Health and Population Unit could contribute to developments in the sector, both nationally and at project level.

1. Summary

Environmental health or sanitation is a multi-disciplinary sector which is a vital key to improved health and to socio-economic development. It encompasses the isolation of excreta from the environment, maintenance of personal hygiene, safe disposal of solid and liquid waste, safe drinking water and vector control; it embraces a concept which includes hygiene promotion and individual action for change.

Unfortunately sanitation in Uganda has not received the attention required to realise its potential. There has been a lack of political will, a lack of bureaucratic and technical support, outdated legislation, lack of policy and guidelines, inappropriate technological choice, and an outdated approach to dealing with the community. As a consequence poor sanitation is a drain on the national economy and slows down Uganda's poverty reduction process.

The 1996 National Manifesto referred to the importance of improved sanitation for Uganda. The President and the Minister for Health are now calling for an accelerated National Sanitation programme to be launched in January 1998. Aspects requiring particular attention are legislative reform, policy development including minimum standards of service, increased financial investment and innovative cost recovery mechanisms, changes in the institutional framework to encourage collaboration and co-ordination, applied technical and social research to identify appropriate technologies and people-centred approaches, and a responsive information system. DFID is in a position to support this initiative in a number of ways, nationally and at project level; options range from supporting the Ministry of Health Environmental Health Division with a national resource centre to supporting Non-Government Organisations implementing community water/excreta disposal/drainage schemes.

2. Background to the environmental health sector

2.1 Benefits of environmental health

Improved excreta disposal, hygiene and water reduce diarrhoeal morbidity and mortality. The effects of excreta disposal and hygiene are larger in this respect than for water.

"Evidence from many studies indicates that the largest reductions in diarrhoea can be achieved by improvements in excreta disposal (36%). The next largest reduction can be achieved by better hygiene (33%), which represents to a large extent better hand washing practices, then more water (20%) and last improvements in drinking water quality (15%). In addition, evidence indicates that the under 5 year mortality rate is reduced by 60% and overall diarrhoeal mortality by 65%. Better excreta disposal and hygiene practices also reduce other diseases such as schistosomiasis (77%), ascariasis (29%) and trachoma (27-50%) while improved water quality alone produced reductions in guineaworm (78%). Because mortality is reduced more than morbidity, this suggests that excreta disposal, hygiene and water reduce the incidence and severity of diarrhoea".¹

"Further studies on the effect of water and sanitation on nutritional stunting indicated that severe and moderate stunting may be reduced by 39% when improved excreta disposal is made available. The reduction in stunting by the provision of household water was only 5%".²

Excreta disposal, hygiene and water can be converted to other benefits in society, such as a reduction in the energy expended by women during the course of a day and saving in time that can be put to improving the health and well-being of all family members. In this respect, improved water is more important than improved sanitation. The health benefits of solid and liquid waste are less well quantified. Solid waste disposal is associated with reduced rat and fly vectors. Improved waste water drainage is associated with reductions in malaria. In some areas where water supply has been brought to previously dry areas, malaria incidence can increase if waste water drainage has not been incorporated. The socio-economic benefits of these environmental health improvements include reduced number of education days and work days lost, reduced income lost and reduced expenditure on health care.

"If the sum of the benefits from improved water, hygiene and sanitation were factored correctly in cost-utility calculations, more attention would be given to these interventions. These interventions would be seen as the cornerstone of development".³

¹ Esrey, S.A., Potash, J.B., Roberts, L., and Shiff, C., Effects of improved water supply and sanitation on ascariasis, diarrhoea, dracunculiasis, hookworm infection, schistosomiasis, and trachoma, *Bulletin of World Health Organisation*, 1991

² Esrey, S.A., Incremental improvements in water and sanitation and incremental improvements in health, *American Journal of Epidemiology*, 1995

³ Esrey, S.A., Complementary strategies for decreasing diarrhoea morbidity and mortality: water and sanitation, *Pan American Health Organisation*, 1994

2.2 International Water and Sanitation Decade (1981 -1990)

Universal access to safe drinking water and excreta disposal were the goals of the Water Decade (1981-90). Significant investments were made but achievements fell short of expectations. The number of people without access to safe drinking water was reduced by 450 million people, but those unserved by an appropriate form of excreta disposal remained the same (WHO⁴). During the decade, perceptions of the roles of technology and engineering have changed and there has been a realisation of the importance of organisation, finance, training, sustainability/use and decision making in the process of improving water supply and sanitation facilities. Many countries have found that construction is a relatively easy process compared to the task and resource implications of operating and maintaining the services. Many water and sanitation facilities constructed have unacceptably high breakdown rates and levels of misuse. A meeting in New Delhi marking the end of the decade agreed that a change in role was envisaged for governments, from that of provider to that of promoter and facilitator, enabling local public, private and community institutions to deliver services. It also recognised the need for cost recovery in both urban and rural services to increase the funding available for the sector, reduce wastage and ensure that services would meet the real needs of consumers.

2.3 UNPAC Goals

The Uganda National Plan of Action for Children (UNPAC) established a number of wide ranging goals for Uganda to achieve by the year 2000. These were set as priorities for social sector development (Ministry of Finance and Economic Planning, 1992). The goals related to water and environmental sanitation goals are as follows:

- 75% of population to have access to safe drinking water
- 75% of population to have access to sanitary means of excreta disposal
- Improvement in means of disposal of solid and liquid waste
- Eradication of guinea worm disease
- Reduction by 50% in deaths due to diarrhoea, by 25% in the incidence of diarrhoea in under 5s and by 25% in the general diarrhoea incidence rate
- Reduction by 50% in deaths caused by malaria in under 5s, and 30% reduction in morbidity
- Reduction of 60% in malaria morbidity among pregnant mothers.

Sanitation (particularly inadequate numbers of segregated latrines at schools) was identified in a recent study in Uganda as the major problem for girls at schools, especially on reaching puberty⁵. In this way, sanitation is linked to other UNPAC goals including reducing the dropout rates of girls and improving performance in education.

⁴ WHO, The international Drinking Water Supply and Sanitation Decade - End of decade review (as of December, 1990), 1992

⁵Carasco, J.F., Munene, J. C., Kasente, D.H., Odada, M., Factors influencing effectiveness in primary schools: a baseline study, Makerere University/Uganda National Examinations Board, Uganda IEQ Project - Phase 1 Research, 1996

2.4 Environmental health situation in Uganda

Diseases related to poor water supply and poor hygiene and sanitation practices accounted for 49% of inpatient diagnoses in 1996 (including malaria)⁶. Many districts, including Kampala are frequently experiencing epidemics of diarrhoeal disease. Expenditure in the health system each year on treatment of sanitation related diseases including malaria amounts to some 26,999.6 million Uganda shillings (UgSh) and diarrhoeal diseases alone consume 4,022.4 million UgSh⁷.

- The key behaviours affecting sanitation related diseases are handwashing, excreta disposal and water collection, handling and storage practices. Surveys have suggested that many Ugandans:
- do not have access to handwashing facilities and materials at key times (after defecation (88%) and after handling infant's excreta (97%),
- do not consider children's stools dangerous and therefore do not dispose of them safely,
- do not teach children to use latrines until after the age of 3 years (average 51%),
- do not have access to safe and hygienic excreta disposal systems (average 52.2% households without access but worst in Kalangala where 98% are without access),
- do not have access to safe and adequate drinking water supplies (average of 60% households without access within 1.5km from homes but worst in Kiboga at 95% without access),
- contaminate drinking water before consumption (81%).

These behaviours are not all associated with lack of knowledge. Results from the same surveys indicate that many Ugandans:

- understand the link between poor sanitation and sanitation related diseases (96.6%),
- consider that poor sanitation is the responsibility of someone else.

Provision of health and hygiene information alone will be insufficient to alter hygiene practices. However, information is needed on the roles and responsibilities of individuals and organisations.

In addition to the disease burden, this low coverage results in an enormous socio-economic burden. Water collection in most families, mostly borne by women and girls - and boys up to the age of 12 years. Survey figures indicate that 1.3% of all student's time and 1.8% of all work time is lost due to sanitation related diseases, i.e. some 39.51 million working days amounting to an annual household income loss of 42.36 million UgSh lost each year due to poor sanitation⁸. Girls at schools reported that lack of sanitation facilities at schools was their worst experience at schools and a contributing factor in low performance and high dropout rates particularly after the onset of puberty⁵. Lack of sanitation is also a major threat to the environment. Examples include degradation of urban environment by indiscriminate disposal of solid and liquid wastes and eutrophication of freshwater lakes by untreated human waste (aggravating the water hyacinth nuisance). Costs of environmental damage include; discouragement of tourism, reduced exports of Ugandan fish products to lucrative European markets, reduced fisheries production and billions of UgSh spent on environmental clean-up operations.

If sanitation were to improve in Uganda, various health, social and economic benefits would accrue. Many deaths would be avoided and the under 5 mortality rate would be reduced from 97 to as low as 66 per 1000 live births⁹. Sanitation related diseases would significantly decrease from 49% of all outpatients and up to 27 billion UgSh of Government health expenditure would be saved on treatment of sanitation related diseases. 39.51 million work days each year would be

⁶Ministry of Health - Health Planning Unit Statistics, 1997

⁷Ministry of Health, Concept Paper on promotion of sanitation in Uganda, 1997

⁸National Integrated Household Survey 1992/3, Ministry of Finance and Economic Planning

⁹ Assuming a 60% reduction in the general under 5 year mortality rate for the 53.3% of population without access to adequate excreta disposal facilities.

saved from reductions in sanitation related morbidity. Millions of hours each year would be saved for women and girls in the reduced collection time for water. Nutritional stunting rates for the under 5 year age group would improve from 38% to 30.3%¹⁰. Government and households would make savings of billions of UgSh each year from savings on curative health expenditure, making more money available for other things and freeing up health resources to concentrate on more complex health disorders. Increased numbers and standards of school latrine facilities would decrease the dropout rates from and standards achieved in schools (especially for girls after the age of puberty). Linkages between improved sanitation and reduced environmental degradation would foster potential improvements to fisheries production, agriculture and tourism; and reduce the need for expenditure on various environmental clean-up campaigns. Together, these improvements would also result in increased personal dignity and a greater sense of national pride. No other single intervention could do so much to improve health and socio-economic development.

2.5 National water and environmental sanitation programme

Efforts to improve water and sanitation have been incorporated into a national water and environmental sanitation (WES) programme. Although based in the Ministry of Natural Resources Department of Water Development (DWD), the WES programme is supported by two other Ministries; the Environmental Health Division (EHD) of the Ministry of Health (MoH) for the sanitation and hygiene education aspects and the Community Development Department (CDD) of the Ministry of Gender and Community Development (MGCD) for the gender and social mobilisation aspects. At National level the Ministry of Local Government (MoLG) provides a monitoring role to the District Administrations while all implementation is carried out through MoLG administrations and district extension staff. This is in recognition that a decentralised multi-disciplinary approach is needed to address water and sanitation issues effectively. The Ministries and external support agencies at national level are co-ordinated by an Inter-Ministerial Steering Committee, chaired by the Ministry of Finance and Economic Planning. Funding for the programme is provided by Government of Uganda and donors (including DANIDA, UNICEF, SIDA, CIDA, Norwegian Government and World Bank IDA).

Up until now DWD and MGCD have actively been supporting the rural water and community mobilisation aspects of the programme. One of the strong features of the rural water and sector is the community based maintenance system, introduced in the mid 1980s, whereby users contribute to the construction and maintenance of their water source. Villagers select a volunteer to care for water sources and promote safe water use and sanitary practices; villagers also appoint a handpump mechanic for each sub-county, or one per 15-20 handpumps. Surveys in two districts and other district reports indicate that the functionality rate for handpumps increased from 36% in 1981 to 85% in 1993 and the downtime before repair decreased from 90 to 10 days¹¹.

Unfortunately, progress in sanitation has lagged behind that of water. In fact, despite targets of 25% for excreta disposal and 15% for hygiene promotion, lack of planned sanitation activities resulted in very low expenditure in the WES programme (3.8% of total expenditure in 1996). The reasons for this lack of performance include a general lack of appreciation of the benefits of improved sanitation and a lack of focus on sanitation from EHD. EHD primarily has had a health inspection role, focusing on factory, market and housing inspection, control of expired drugs, food and meat hygiene inspection, as well as spring protection, drinking water quality, drainage, solid waste disposal and excreta disposal. Training of health inspectorate staff is based on the principles current in Britain in the 1950s, is inappropriate and concentrates on inspection of facilities and legislative control rather than using an empowering and facilitating approach to encourage individual action for change. Inappropriate initial training, lack of refresher training and lack of training in the field and in participatory hygiene promotion techniques restricts the capacity of EHD and District Health extension staff to undertake the role required of them. EHD and District health inspectorate staff (Health Inspectors and Health Assistants) also have lower

¹⁰ Assuming a 38% reduction in stunting for the 53.3% of the under 5 year population without access to adequate latrine facilities.

¹¹ Government of Uganda/UNICEF Country Plan of Operations, 1995-2000

qualifications and therefore lower status than counterpart staff from other departments (Engineers, Doctors and Sociologists) because the highest environmental health qualification available in Uganda is a diploma from the School of Hygiene. These constraints need to be overcome if sanitation is to achieve a higher national profile.

2.6 Sanitation - a National priority

At the request of the Minister for Health a Concept Paper on sanitation in Uganda was drafted recently. The paper included the following aspects:

- the history of sanitation in Uganda, and factors responsible for its decline since the 1960s,
- the present sanitation situation in Uganda and the variations by district,
- factors which have inhibited improvements in sanitation in recent years,
- the costs of poor sanitation and the benefits from improvements to the situation, including savings to Government and households from reduced spending on cures for sanitation related diseases,
- a proposed plan of action leading to an accelerated national sanitation programme, including a national forum on sanitation to build consensus and to increase investment throughout the sector (scheduled for October 1997).

The draft concept paper has been reviewed and accepted by the Minister for Health. The paper has stimulated his further commitment towards raising the profile of sanitation. A memorandum was drafted for the Cabinet during late May 1997 in order to obtain commitment to an accelerated national sanitation programme from the wider political leadership. The memorandum includes a proposed action plan as follows:

- | | |
|---|-----------------|
| <input type="checkbox"/> Concept Paper | (May 1997) |
| <input type="checkbox"/> Cabinet Memorandum on Sanitation | (May 1997) |
| <input type="checkbox"/> National Working Group on Sanitation | (July 1997) |
| <input type="checkbox"/> National Sanitation Forum | (October 1997) |
| <input type="checkbox"/> Finalisation of National Sanitation Policy | (December 1997) |
| <input type="checkbox"/> Launching of National Policy and Strategic Programme
by The President of Uganda | (January 1998) |
| <input type="checkbox"/> Implementation of the National Sanitation Programme | (1998-2010) |

The Minister for Health has emphasised the need for an accelerated sanitation programme to be people-centred, principled and scientific. The programme must co-ordinate all stakeholders including environmental and educational stakeholders. It must provide relevant technical solutions including solutions for existing problems such as areas with collapsing soils and hard rock formations, communities living in informal (slum) settlements, migrating communities (fishing and pastoralist communities). There must be a participatory learning and action approach to hygiene promotion. All of these aspects require up to date and relevant information about best practice and monitoring of conditions in the districts.

2.7 Urban environmental sanitation

The official urban population growth rate for Uganda is 5.5% while the national average is 3.2%. It is likely that the urban growth rate is actually higher than statistics indicate; the problem of urban growth and the impact that has on environmental health need to be given greater consideration.

A UNDP/World Bank Regional Workshop was held in May 1997 on Urban Environmental Sanitation (UES) which is seen as a growing environmental and public health concern. Poor people make up the majority of urban dwellers and have limited or no access to sanitation facilities. In many cases they pay more for the services they have access to than those in middle

or high income groups. The informal low-cost settlements which house most of the urban poor are rapidly growing in size. Strategic approaches to service provision are lacking. Policies are inadequate and often do not cover the poor. Resources are difficult to mobilise due to the illegal status of the settlements. NGOs and community based organisations (CBOs) are the major providers but operate on a piecemeal basis - duplicating or contradicting one another. When services are provided, desirability increases, property prices and rents increase and the poorest residents have to move to cheaper accommodation where there are fewer services.

The following themes have all been identified as areas requiring guidelines for action:

- security of tenure and legal issues,
- people's participation,
- cost recovery and resource mobilisation,
- appropriate technology,
- institutional reform and capacity building,
- water resources conservation and management.

The urban environmental health situation in Uganda is not as serious as it is in some other countries. Informal settlements are still small in Uganda unlike those found in Nairobi. However corrective action taken now can prevent more serious problems occurring in future.

3. Activities and inputs of existing stakeholders

Over the past 10 years considerable progress has been made in the water sector. The water supply coverage increased from 18% in 1990 to 36% in 1996. However, water demand is rapidly increasing due to population growth and the general economic growth in both agricultural and industrial sectors. There have been major reforms towards decentralisation, a Water Action Plan and a draft National Water Policy. There has been considerable resource mobilisation, with investments in the sector increasing from US\$ 10 million in 1991 to US\$ 50 million in 1996. Breakdown figures were not obtained but DWD reported that 80% of investment has been in the urban and 18% in the rural sector. Increased investment is expected in the small town water supplies but no significant increase is planned for rural areas¹². Of that money, only an estimated 2% was allocated for sanitation, including waste water drainage, while approximately 60% went on water and the remainder on logistics and administration. Consequently progress in sanitation has lagged behind water supply nationally.

Various stakeholders are involved in the sector. A list of these organisations reported to be working in the sector (donors, para-statal Corporations and non-Government organisations) and the districts in which they work, is given in Annex 1. Many more are concerned with water than are concerned with water and sanitation. None is concerned with sanitation alone. The sanitation situation is worst in areas where there are technical problems, i.e. areas with high water tables or collapsing soils, areas of hard rock and areas where communities are transient such as fishing communities, pastoralists and informal settlement dwellers. Internationally, no easy solutions for these types of situation are available. Research is needed to identify relevant solutions for the communities living in these priority areas.

3.1 Municipality water supply and sewerage

(Responsibility of National Water and Sewerage Corporation (NWSC) and Municipal Authorities under the guidance of MoLG, DWD, EHD, CDD and MPED)

NWSC are responsible for the provision of water supplies and sewerage facilities for 9 towns (Kampala, Jinja, Entebbe, Mbarara, Masaka, Tororo, Mbale, Gulu and Lira). In recent years NWSC has received major investment, including loans for capital works schemes, management training programmes for personnel and financial procedures. The result has been impressive in some municipalities. In Kampala for instance, water supply coverage has risen from 50% of the population in 1993 to 80% in 1996 after the completion of Ggaba II Treatment Works and on-going extension work in the distribution network. Reducing unaccounted-for water is now being given serious attention. Again, sanitation has been left behind. Some refurbishment work to the sewage treatment plant in Bugolobi was undertaken about 10 years ago. No improvements were made to the sewers and so the flow to the treatment works has been inadequate for it to function effectively, and the improvements have now disintegrated having never been effectively utilised. The first sewer rehabilitation scheme for central Kampala has been underway since mid 1996. This includes additional sewer lines in Kitante, Mengo and Kisinyi, a new sewer line to Nsyambya hospital (including Kabalagala) and refurbishment of sewers along the Nakivubo Channel (including the Mukwano soap factory area) plus some mechanical repairs at Bugolobi sewage treatment works. This project will take more sewage from central Kampala but will not address the flooding problems arising from inadequate stormwater drainage which are the responsibility of Kampala City Council (KCC). Co-ordination between NWSC and KCC has been problematic.

¹²DWD NGO Water Sector Co-ordination Meeting Briefing Paper, 1997

Much of the investment for the work in Kampala has arisen through the First Water Project and currently through W102(A) Second Water Project (IDA funding). Smaller schemes include the Agenda 21 links between the UK and Denmark with urban authorities in Uganda. Schemes already in place include support for education and technical support to individual Urban Authorities. Some funding for instance, has been provided to Iganga Town Council for solid waste collection, recycling of solid waste and sewerage upgrading.

3.2 Other Urban Water Supply and Excreta Disposal

(Responsibility of Urban and District Authorities under guidance from MoLG, DWD, EHD, CDD and MPED)

No town in Uganda has adequate excreta disposal, solid waste disposal or drainage facilities. 61 Gazetted municipalities and town councils (excluding Kampala) and 206 smaller towns (population over 4000 people) have been identified by the Department of Water Development in the rural towns water supply and sanitation programme. Each requires major capital expenditure. In order to attract donor funding, these towns have been sub-divided into smaller units or projects. 21 municipalities/town councils and 141 of the small towns still have no funds committed for improvements. Millions of UK pounds would be needed to fund improvements in each of these projects.

The following projects are currently on-going or recently completed:

- W104(B) Small Towns Water and Sanitation Project (KfW) including Kasesi and Fort Portal
- W104(C) Small Towns Water and Sanitation Project (IDA/Mott MacDonald) 11 towns including Malaba, Ntangamon, Busiya
- W104(D) Eastern Centres Water and Sanitation Project (DANIDA/Kampsax) 11 towns (Kayunga, Kamuli, Pallisa, Buwenge, Kalino, Busembatia, Budaka, Budari, Lwakhaka, Bugiri and Busolwe)
- W104(E) South/West Towns Water and Sanitation Project (Austrian) 19 towns including Kabale and Kisoro
- W111(A) Small Town Urban Water - Emergency Earthquake Relief/Rehabilitation (Kasesi, Kotido, Bundibugyo)
- W111(B) Former Small Town Water Project in 8 towns (Kotido, Moroto, Kapchorwa, Bugiri, Kaliro, Ngora, Namagagali, Bundibugyo)
- W? Former Northern Uganda Rehabilitation Project (IDA) (rural and urban including Gulu, Pallisa, Kumi (including Ngora), Soroti, Lira, Apac, Arua and Moyo)

Some of the towns are NWSC towns and are being rehabilitated through DWD but on completion will be handed back to NWSC (e.g. Fort Portal, Gulu, Kabale). Some towns (e.g. Kasesi, Pallisa, Ngora) appear in more than one project profile. This is because some were only rehabilitated to previous demand levels and some were never actually started let alone completed.

Other projects have been prepared but are awaiting decisions from funders:

- W104(F) Small Towns Water and Sanitation Project North/East (no funding)
- W? Three Towns Water Supply and Sanitation (Possible EU funding)

There have been limited sewerage and excreta disposal activities funded through these projects. In some towns (e.g. Fort Portal) existing sewerage systems have been refurbished back to the original designs, but these are insufficient to meet the needs of current populations and are often too expensive to be afforded by anyone but the most wealthy. Some new schemes are being considered, e.g. small bore sewers are planned in Kisoro under W104(E). In the rural towns and trading centres, pit latrines are adequate for the needs of the community and motivation and promotion are the approaches adopted, particularly under W104(C) using local contractors and CBOs. This approach is likely to be adopted by the recently started W104(D).

NGO activities are wide ranging from urban water supply (Ngora town in Jinja District, to be undertaken by Vision Terudo/Christian Engineers in Development) to smaller projects supported

by CONCERN, Plan International and SCF UK (Wandegeye and Kawempe, Kampala), and Katwe, Kampala with support from OXFAM. GOAL were also active in Kampala (Banda, Kampala) but withdrew from Uganda in 1996.)

DFID is likely to support an Urban Water Supply Monitoring project with EHD and the Robens Institute which aims to generate an urban water model to provide operators with information about water quality, quantity, coverage, continuity and cost for improving water supplies. If successful the model will be written up as a WHO manual of best practice and used for other urban centres and in other countries.

3.3 Rural Water Supply and Sanitation

(Responsibility of District Authorities under the guidance of MoLG, DWD, EHD, CDD and MPED)

The rural sub-sector is assisted by DANIDA and UNICEF (in partnership with SIDA, CIDA and the Government of Norway). UNICEF assistance to 20 districts is also provided in collaboration with NGOs. Expenditure in the sector was 240 million US Dollars between 1985 to 1996, of which 1 percent was provided by NGOs and 1 percent by Government. Ongoing projects include:

W105(D) Rural Water and Sanitation - Borehole Drilling (AVSI/ACAV/CARE/LWF/ UNHCR/ ACTU/Plan Int/CS)

W105(E) Rural Water and Sanitation - Gravity Flow Schemes (EEC/SNV)

W106(A) RUWASA (DANIDA) 8 districts plus 2 new districts (rural)

W114(A) Water and Environmental Sanitation Project (SIDA/CIDA/Norway/UNICEF) 30 districts plus 4 new districts (rural)

W106(A) and W114(A) have similar budgets. Districts covered by RUWASA are therefore more adequately funded than the UNICEF supported districts, and even some of the RUWASA districts are only going to be brought up to 30% water supply coverage from the present level. In both of these programmes, sanitation is inadequately resourced. Of the project expenditure, only an estimated 4% was spent on sanitation in 1996 when water accounted for an estimated 60% of expenditure⁷.

Most NGOs (with the exception of WaterAid) undertake water and sanitation activities as components of other development projects and programmes (see Annex 1). Expenditure figures for various components were not obtained. Sources of funding were not identified for most of the NGOs although WaterAid receive most of their funding from DFID in various grants and funding schemes including their work in Kapchorwa and Kabarole. OXFAM is funded by DFID for their emergency water supply work in Kitgum, YWAM receive funds from DFID for their water and sanitation work in Soroti, and Busoga Trust receives significant amounts of their funding from DFID for their work in Luwero. ACORD also receives some DFID money for their water projects in Nebbi and Gulu as do Vision Terudo through Christian Engineers for Development for their work in Jinja District. DFID is also scheduled to fund some NGO water interventions in Masindi later this year (not sure which NGO).

In addition to the funding gap, the principal issues facing the sector are gross disparities in coverage between and within districts, partially due to security problems and compounded by staff shortages particularly in rural areas. There is a need to ensure correct technology choice, based on least-cost solutions within existing hydrogeological conditions, and apply them also to densely populated areas. Insufficient attention has been given to promoting positive hygiene practices to achieve the full benefits of improved facilities. Insufficient attention has also been given to the complex interplay between water and sanitation and the environment (e.g. deforestation and insufficient groundwater recharge) and also the gender disparities relating to management of water source development, water collection and use.

3.4 Solid Waste Disposal

(Responsibility of Urban and District Authorities under guidance from MoLG, DWD, EHD, CDD and MPED)

Solid waste disposal becomes an increasing problem with increased population densities. In rural areas, fewer commodities are purchased with inorganic packaging. Organic material is usually composted and used as a soil conditioner. In urban areas there is still a high organic content to the waste, however the areas for disposal are more limited. Piles of refuse build up on streets and waste ground in most urban areas in Uganda. Municipal authorities have organised skips for solid waste disposal with a collection system. Trucks used for the removal of the solid waste are expensive to operate and maintain, and many are frequently out of service which contributes to the infrequent collection of skips. The skips themselves are often large (5m³) and few in number. Waste collection workers (like many local government staff) may be paid several months in arrears, a system which reduces motivation and encourages them to look for "a living wage" elsewhere. The result was that a regular service had not been available even to those who were prepared to pay for it. Recent initiatives centre around private sector involvement. For over one year private households in peri-urban areas and offices and restaurants in the city centre have hired private firms to remove their waste. In April 1997 Kampala City Council advertised for private contractors to tender for solid waste collection and disposal contracts. It is not clear how effective this private operation will be, but KCC anticipate substantial savings and an improved service. This would only be possible if the contractor's invoices are paid in time. Ironically, the contractors awarded the contract are all former KCC employees.

3.5 Drainage

(Responsibility of Urban and District Authorities under guidance from MoLG, DWD, EHD, CDD and MPED)

Drainage is an important issue in Uganda. Many settlements and towns are built in low lying swampy areas, and some of these settlements which were established on higher ground have now spread to lower lying areas, particularly the low-income residents. Residents of swampy areas suffer more malaria than those who live on higher ground, their houses are prone to flooding and they have problems in latrine construction. Residents of these areas often see improved drainage as their priority need. However, very little drainage work is undertaken and little has been done to restrict building in swampy sites. Were drainage to be improved, the value of the housing in these areas would rise and the low-income tenants might have to find cheaper accommodation elsewhere - perhaps in swampy sites where improved drainage had not been implemented.

Town planning is required to encourage low-cost housing on suitable land with adequate services. Part of the relevant legislation includes The Environment Act (1995), a law designed to establish designated wetland areas for conservation and drainage purposes; areas which would be protected from urban encroachment and that would not be built on. These areas were to be maintained as wetlands. However, law enforcement remains weak, the legislation has never been implemented and settlements continue to encroach on these wetland areas at a high rate.

The Small Towns water and sanitation project (W104(C)) has identified Malaba, Ntungamo and Busiya as towns with very high water tables. The communities of these towns identified drainage as their major priority need. Unfortunately the project did not necessarily include what DWD or the town communities requested, and insufficient project money was allocated for sanitation (including hygiene education, latrine slabs and septic-tank emptying suction trucks only), i.e., US\$266,000 for Malaba, US\$130,000 for Busiya and only US\$7,000 for Ntungamo). A workshop is planned in late June where representatives from the community will have the opportunity to decide on the allocation of the available funds.

NGOs and CBOs are also involved in some community-level drainage initiatives for informal settlements. These are based on the priority needs identified by the communities as part of broader community development (Plan International in Wandegye, Kampala) or community health programmes (OXFAM in Katwe, Kampala). Costs of community drainage schemes are

high because they involve management of the watershed above and below the community concerned. Inadequate environmental planning can result in a worsening of flooding problems for another community.

4. Opportunities in the sector

Gaps in the environmental sector exist at national and project level. There are funding opportunities for DFID at both levels. Details of these schemes are outlined below. All require some further development and refinement, but each has potential to improve environmental health conditions.

4.1 National Level

A people-centred, principled and scientific approach is called for. This requires a re-orientation of the environmental health sector primarily based on information. This information is currently unavailable or difficult to obtain in Uganda for the various levels of stakeholders. Information is required which will:

- inform policies, guidelines, programmes and projects,
- monitor and evaluate progress,
- allow co-ordination and collaboration,
- inform individuals of their rights, roles and responsibilities.

Legislative reform and preparation of policy and guidelines are already being drafted by EHD. However a gap remains for upgrading of sectoral information and human resources. DFID should consider funding this type of initiative. Suggestions are listed below:

4.1.1 National Information and Resource Centre

A National Information and Resource Centre supplying information and materials about water, sanitation and environmental health is needed. Currently, material is scattered and existing projects spend much of their time and energy advising prospective and new projects on appropriate methodologies and being asked to provide advice, monitoring support and various other inputs. A well stocked national resource centre would be invaluable to practitioners and planners alike. The information system should be computerised to provide ready access as required nationally, and also to access the DFID supported global water and sanitation information network (GARNET). The most suitable central location for the resource centre is probably EHD in Entebbe (other possible locations include the School of Hygiene (Mbale) or WaterAid (Kampala)). EHD has recently received three new computers, has one Assistant Statistician and a vacant post for a Statistician. It has a team of health inspectors with responsibilities for rural, urban, institutional, policy and research and information aspects of environmental health. A TCO or a VSO based in EHD for a two year period would provide valuable assistance in setting up of the responsive information retrieval system, training EHD staff on information management and setting up the initial co-ordination and collaboration mechanisms with the various Government and non-Government stakeholders. The National Information and Resource Centre should be run on a non-profit basis but could move towards charging certain customers to generate funds to support itself in the future.

4.1.2 BSc Environmental Health at Makerere University

Bsc Environmental Health at Makerere University is needed to raise the quality of training available to environmental health staff and also to raise the profile of the environmental health profession. The cost of developing this course is estimated at 2 million US Dollars. WHO have been considering funding this initiative.

4.1.3 Refresher and field training for Health Inspectors and Health Assistants

Refresher and field training for Health Inspectors and Health Assistants are currently not undertaken by the School of Hygiene due to lack of funds. Over recent years AMREF funded students to attend AMREF project sites to get first hand practical experience. WaterAid have agreed to take over this arrangement this year with the objective of introducing participants to participatory approaches and to encourage the use of these approaches more widely. If the scheme is successful WaterAid will be looking for funds to continue the scheme in future years.

4.1.4 PRA video

PRA video showing the use of participatory techniques in water, sanitation and environmental health improvement programmes in Uganda. Currently WaterAid use video material from many different nations covering a wide range of topics. The lack of local reference and inappropriate subject material detract from the learning experience of the material itself. A specially made video for use with community workers is required. This video would show community members the relevance of PRA to identifying and addressing needs in the water, sanitation and environmental health sector. WaterAid would require funds in order to facilitate the production of this video. Once produced the video could be used more widely in the National WES programme and with other NGOs and CBOs.

4.1.5 Hygiene promotion radio soap opera

Hygiene promotion radio soap opera to raise public awareness of current issues in water, sanitation and health including individual rights and responsibilities, topical news items etc. Radio is considered to be an effective method of reaching people. WaterAid estimated that 50% of people in an area where they were working, both listened to and remembered the message from a short radio jingle on hygiene. A regular radio soap opera, relayed at a time when women would be able to listen, would be likely to reach a wide audience particularly in urban areas where radio ownership is highest. Relevant health messages could be broadcast to this wide audience in a subtle and entertaining way, without dilution. Uganda Broadcasting Authority estimated the cost of producing and broadcasting a weekly 2 x 30 minute soap opera in 6 languages for one year at 4,000 US Dollars.

4.1.6 Operational research into low cost sanitation options

Operational research into low cost sanitation options is required to provide relevant technical solutions including solutions for existing problems such as areas with collapsing soils and hard rock formations, communities living in informal (slum) settlements, migrating communities (fishing and pastoralist communities). There must be a participatory learning and action approach to hygiene promotion. All of these aspects require up to date and relevant information about best practice. Applied research activities in difficult areas need to be funded. The WELL Resource Centre would be able to provide suitable expertise as required. Fishing communities perhaps suffer most. Their problems usually include high water tables, collapsing sandy soils and also very poor and mobile communities following the fish from area to area. 95% of people in Kalangala live under these conditions. Many other districts also have people living under these conditions around lakes. Namirembe Diocese Aids Programme are currently planning a health needs assessment survey in Kalangala and are expecting sanitation to be raised as a priority concern. Funding is secured for the needs assessment work but an additional research project would require funding and support. Research in Kalangala would provide solutions to a serious problem in that district, but also solutions to smaller communities living in other districts of Uganda and elsewhere.

4.2 Project Level

Large scale investments are also needed in order to improve the environmental health situation in both rural and urban Uganda. More investment per capita is being spent in urban areas and this trend is planned to continue. Most of the money spent is on water supply, with lesser amounts going to solid waste disposal and drainage schemes. Sanitation and hygiene education receive nominal funding and have been left behind developments in the sector. Many water engineers within DWD acknowledge that inadequate sanitation (excreta disposal and solid and liquid waste disposal) is a problem which needs to be addressed together with improvements in water supply. Opportunities for DFID to fund project level initiatives are widespread. If chosen appropriately these initiatives can provide significant benefits to beneficiaries, and may have wider significance by providing learning models for other projects.

4.2.1 Participatory theatre

Participatory theatre appears to be a very effective way of reaching communities with hygiene messages. Theatre for Development and Ntuho (in Kabarole) were originally established by GTZ/MoH for AIDS awareness. Since then, WaterAid has been using them for water, sanitation and hygiene messages. A need has been identified for more theatre groups to be trained in participatory health dramas. These could become a local resource for all stakeholders working in the sector in nearby districts.

4.2.2 Child to Child

Child to Child has established a programme in Uganda. This health education approach is developed around the principal that children are able to learn from and to teach each other about basic health care. In Uganda, the programme has been developed to address primary health care issues, particularly basic hygiene, safe excreta disposal and safe water handling and storage. Unfortunately the programme suffers from lack of funds which prevents the staff from organising training courses and follow up activities with those schools and teachers who have already requested support. Financial support for the cost of the training would be a highly effective way of reaching children throughout Uganda with basic environmental health education. In addition those children and schools are likely to become more active in improving health in other ways.

4.2.3 Water Supply and Sanitation for Eastern District Health Units

Water Supply and Sanitation for Eastern District Health Units is essential for hygiene in health centres; indeed a health unit without adequate water and sanitation facilities may be more of a hazard to patients than the original cause of their presentation to the unit. All of those health units currently being supported and refurbished by DFID do not have adequate water or sanitation facilities. UNICEF and RUWASA are committed to improving the water supply for all health units in the districts that they work in (UNICEF in Kumi, RUWASA in Palisa, Mbale and Kapchorwa), but they are unlikely to achieve this target. The worst affected district is Kumi, where water is a district-wide problem anyway and problems over accounting for funds suspended UNICEF funding for some months. UNICEF is now looking to concentrate its resources on schools as the Universal Primary Education Programme has exacerbated water and sanitation problems in schools. UNICEF is keen to encourage other donors to fund facilities for health centres (especially DFID in Kumi). DWD WES staff indicated that RUWASA would be keen to find other donors to provide facilities to health centres in their project districts. DFID should consider funding water and sanitation facilities in all health units. One option for implementation would be for DFID to contract an NGO to undertake the work. Madzi are a suitable Kapchorwa-based local NGO who have been partners with WaterAid for several years and are technically competent to undertake the work. WaterAid is prepared to provide monitoring support as required. Further negotiations with UNICEF/RUWASA/Madzi and WaterAid would be required before detailed plans could be prepared.

4.2.4 Urban Sanitation facilities

Urban Sanitation facilities such as sex-segregated communal/public latrines with shower facilities in low income high density housing (slum) areas have been constructed by NGOs (i.e. CONCERN and Plan International in Kampala) at a cost of about 7.5 million UgSh including contributions from the local community. If well sited and appropriately designed, these facilities can be very popular with local residents and help to improve sanitation and also generate income. In some parts of Kampala, on-site communal latrines have been constructed by Plan International. Privatising these facilities seems more effective than community management because of the high costs and problems associated with emptying of the sludge when necessary. Off site water-seal latrines and shower units, segregated by sex, are constructed near to existing sewer lines. This avoids the problem of sludge removal and is more cost effective. Last year, the first CONCERN latrine in Wandegeye (Kinwanyi zone) was being used by an estimated 800 people. Each person pays an attendant to use the facility, except for children, the disabled and other vulnerable users who were allowed to use the facilities free of charge. The unit is community managed and the profit (an estimated minimum of 300,000 UgSh per month) being channelled into other community initiatives by the community management committee. This year CONCERN are constructing a new latrine/shower unit in another part of Wandegeye (Soweto). The profits from the units are being used by the community to construct a third unit in another portion of Wandegeye (Bushiya). CONCERN would be interested in supporting more of these initiatives in areas where there was a felt need among the community, were funds available. New sewers are now being laid in other parts of Kampala, some of which are near to slums. Construction of latrine/shower units in strategic locations could provide a very useful service to the urban poor.

4.2.5 Urban Community Drainage

Urban Community Drainage is a felt need in many towns especially those constructed in high water table areas. In towns like these, the priority felt need is often improved drainage. Although urban drainage itself is a major capital investment, where improvements are already underway small scale community initiatives could be encouraged. There are two examples:

- **OXFAM** has been supporting a community health initiative in Katwe, Kampala for a number of years. Katwe includes a slum which has built up on low lying ground. The major environmental health problem in this area is poor drainage. Initiatives to date have included some community drainage schemes and campaigns about clearing of drains. Very major work in Kampala was needed to make a difference, including the refurbishment of Nakivubo channel (now underway). The present major capital work on Kampala sewers may provide opportunities for community level drainage schemes in slums like Katwe, this intervention would make a significant improvement to the environmental health of those residents.
- **Plan International** has been supporting a community development project in the Mulago/Bwise/Kawempe areas of Kampala. Needs assessment exercises are carried out and Plan International assists with addressing the priority needs identified. These have included education, water, latrines, income generation, solid waste disposal, drainage and health. In Bwise the priority need was for drainage. Plan International has funded a detailed survey of the area and identified the need for dredging/digging out of some channels, concrete lining for some drains, new culverts at some road crossings and new drains in some locations. The estimated costs are around 500 million UgSh not including the community contributions. Plan International intends to assist the community with the work as funds allow, and would start immediately if sufficient funds were made available.

4.2.6 Solid Waste Disposal (Urban)

Solid Waste Disposal (Urban) is currently being privatised. This change may improve the efficiency of solid waste disposal and may also make recycling of solid waste more attractive. Small scale schemes making soil conditioner out of the vegetable waste have been tried out but had some problems, notably sterilisation of the product and the distance of the urban product from the rural market. Other small scale schemes including domestic manufacture of fuel briquettes from organic wastes (from plantain peelings to water hyacinth) have considerable potential, but require clever marketing strategies to encourage uptake. Research into this area may realise potential income generating activities while reducing the amount of solid waste and reducing the need for other fuels.

4.2.7 Hospital Incinerators

Hospital Incinerators are necessary for the safe disposal of large quantities of infected tissues and sharps. However, many of the hospital incinerators in Uganda are out of order and waste is subsequently disposed of in an unsafe manner. Improved incinerators have now been developed which generate electricity which can then be used to supply at least some of the hospital needs. Investments in this area would improve the disposal of hazardous wastes and reduce the expenditure of the hospital on electricity.

4.2.8 Emergency relief

Emergency relief is required for displaced persons living in schools and institutions. Some 40,000 people have moved from Kitgum to Masindi town to avoid the insecurity problems. These people are extremely vulnerable and apparently without assistance. They are likely to be staying in crowded accommodation without even rudimentary water supplies and sanitation. Efforts to assist them (and others like them elsewhere) are urgently required.

5. Recommendations for DFID consideration

Environmental health is an interesting sector, which is becoming more of a priority in Uganda now than before. Environmental health conditions vary throughout Uganda but the worst are found in areas where suitable technologies have not been developed (i.e. sanitation technologies for high water tables, collapsing soils, transitory populations and informal settlements). Improved sanitation and hygiene in particular are able to reduce under 5 year mortality by up to 60%, diarrhoeal morbidity by up to 66% and reduce nutritional stunting by as much as 39%. Large investments are needed nationally. A national water and environmental sanitation programme is currently being carried out in all districts of Uganda, with support from five Ministries. However insufficient resources are being invested to achieve the targeted coverage figures of 75% with access to safe water supplies and sanitary excreta disposal facilities by year 2000. In some districts both local and international NGOs are making smaller intensive efforts which may reach the national UNPAC goals in a localised area, however their ad-hoc operations lead to duplication and contradiction of efforts.

Sanitation (including excreta disposal, solid and liquid waste disposal and improved personal hygiene) is currently one of four priority areas for the Ministry of Health. Improvements identified include revision of legislation, development of policy and guidelines, alterations to the institutional framework, provision of information and research into technical and social mobilisation problems at the National level and funding of NGOs to carry out activities at project level. DFID could make valuable contributions nationally to an information system, to human resource development, to hygiene promotion or to technological research. At project level, DFID could make valuable contributions through NGO and CBO projects, including funding for water and sanitation facilities at the health units it already supports through CARE (especially Kumi), for child-to-child health promotion, and for communal latrines and drainage schemes for informal settlements. DFID could also facilitate private income-generating waste recycling schemes.