

# National Environmental Sanitation Strategy for Rural and Peri-Urban Areas in Zambia

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Programme Co-ordination Unit  
Working Group on Sanitation

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# Final Report, December 1997

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## EXECUTIVE SUMMARY

1. In an attempt to bring sanitation more to the forefront in Zambia the Water and Sanitation Sector, the intersectoral Programme Co-ordination Unit (PCU) of the Government of Zambia decided to establish the Working Group on Sanitation (WGS) in February 1997. This group has, among other things, the responsibility to develop a National Strategy for Sanitation. UNICEF has been sponsoring this development work.

2. To date there have been four national workshops and two consultancies arranged by the PCU towards achieving this task. The second consultancy, relating to the topic of this report, was conducted by the Water, Engineering and Development Centre (WEDC), Loughborough University, England. WEDC was commissioned to assist with the development of a national sanitation strategy and the consultants participated in the fourth workshop which took place 24 - 28 November 1997. Delegates at this workshop commented on a draft report by the consultants which was subsequently revised by WEDC to form this current document.

3. The incidence of some 80% of preventable disease in Zambia are related to poor environmental sanitation. Partly as a result the high level of diarrhoeal diseases (over one in ten children under five year's old is suffering from diarrhoea each day), malnutrition is rife (over 40% of children are significantly affected). In extreme cases these two conditions lead to death but more usually they affect the development of children and the productivity of adults. These conditions are a major constraint to personal and community development and to a large extent are preventable. In addition more than 8,000 people a year die of diarrhoeal disease and malnutrition, and around 1,600 died in the last two cholera outbreaks.

4. Until recently the necessary package of improved hygiene practices, better disposal of rubbish and faecal waste, and the provision of safe water, received little attention, except the last element. This was partly because sanitation has always had less immediate appeal than water supply but also because of three main blockages to progress. These are :-

- lack of political awareness of the costs to the nation of poor environmental sanitation, results in little pressure for change
- lack of clear institutional framework to give it a high profile and
- lack of individual response to knowledge acquired on behaviour changes necessary for improved health

5. As a result this document puts forward certain strategies to try and turn around the existing situation at least cost and using as far as possible government structures that are already in place or planned. This initiative falls much in line with the Government's Health Reform's priority to preventive, rather than curative health measures, and focuses on the more vulnerable people of rural and peri-urban areas. It also links with the WASHE initiative to establish community level management in water, sanitation and health education, and to develop and strengthen district level intersectoral capacity for planning, monitoring and managing sector activities.

6. Whilst individual projects can define more specific objectives, those for a national programme are initially simply related to bringing about a downward trend in

diarrhoeal diseases. Since the prevalence of different behavioural practices and the coverage of sanitary facilities is not yet known, more precise objectives will follow on. The strategy objective is "To create an enabling environment with support mechanisms to facilitate individuals, households and communities to effectively improve their environmental sanitation conditions and hygiene practices by erecting barriers to prevent the transmission of disease agents", or put more simply, in the words adopted by Workshop 4, "Environmental Sanitation for All".

7. Main changes required relate to :- handwashing after defecation or other faecal contact, safe disposal of faeces, disposal of rubbish, especially in peri-urban areas, eradication of sites of stagnant water near houses, and provision of safe water which is collected and stored in ways which do not affect its quality.

8. Key strategies are to start with advocacy to raise political awareness of the problem, to make the programme an intersectoral initiative, and to devolve as much as possible to community level. However the limited capacity to plan at district level and work at community level (concentrated mainly in MOH and now Central Board of Health) and the many responsibilities of relevant staff, mean that progress should initially be gradual if the system is not to be overloaded.

9. Institutional strategy will be critical to the effectiveness of a national programme. The many changes taking place in local government, health and water and sanitation sectors at present mean that relevant ministries will need to agree on a transitional structure which will be strong enough to begin the changes necessary, and can fit into the final form to which de-centralisation and reforms will lead. Action planning may not be productive until this is achieved.

10. In that women are the ones who have most influence in these issues at household level, and are well placed to play a major role in bringing about change, they will be particularly involved, with the additional aim that such involvement may help strengthen their position to make other positive changes to their lives.

9. Schools will also form a major target for environmental sanitation (ES) initiatives, since they offer the opportunity to provide lasting effect to the next generation, by example, instruction, teaching and demonstration. This can progress into influencing communities who can learn from information pupils collect on projects during cross curricula ES activities.

10. At present there remain a large number of 'unknowns' in relation both to behavioural and technical issues. Any programme will therefore need to start with a major research effort and collation of all existing information and experience in order that training materials and implementation strategies are well designed and effectively applied. Gaps in knowledge and/or useful research / pilot programmes are identified at the end of each section of the report and are brought together in section

11. Even in the short time the Working Group on Sanitation has been operational (since the PCU proposed its formation in Feb 1997), its activities have led to a very positive shift in attitude at those levels with which it has come in contact. This augurs well for the future, and so it is hoped that the efforts so far are first steps in a process which will lead to significant improvements to the life and well-being of peri-urban and rural communities in Zambia.

12. Strategy points mentioned in the report are highlighted in the text in bold font. A list of all these strategy points, abstracted from the text, is given in Section 11.

## ABBREVIATIONS

CBO	Community Based Organisation
CBoH	Central Board of Health
CDD	Control of Diarrhoeal Diseases
CHW	Community Health Worker
CMMU	Community Management and Monitoring Unit
CSA	Census Statistical Area
CSO	Central Statistical Office
CTC	Child to child programme
CU	Commercial utilities
DCD	Department of Community Development
DDCC	District Development Co-ordination Committee
DHMB	District Health Management Board
DISS	Department for Infrastructure and Support Services, MLGH
DWA	Department of Water Affairs
DWASHE	District WASHE Committee
ECZ	Environmental Council of Zambia
EHT	Environmental Health Technician
ES	Environmental sanitation
ESU	Environmental Sanitation Unit (a suggested name for a national ES co-ordinating body)
FHANIS	Food Health and Nutrition Information System
GRZ	Government of the Republic of Zambia
HMIS	Health Management Information System
IMCI	Integrated management of childhood diseases
KAP	Knowledge, attitude and practice
LA	Local Authority
LWF	Lutheran World Federation
MAFF	Ministry of Agriculture, Fisheries and Food
MCDSW	Ministry of Community Development and Social Welfare
MEWD	Ministry of Energy and Water Development
MLGH	Ministry of Local Government and Housing
MOE	Ministry of Education
MOF	Ministry of Finance
MOH	Ministry of Health
MWS	Ministry of Works and Supply
NAIS	National Agricultural Information Service
NCDP	National Commission of Development Planning
NCSR	National Council for Scientific Research
NGO	Non-government organisation
NORAD	Norwegian Agency for Development Co-operation
NWASCO	National Water and Sanitation Council
NWASHE	National WASHE Training Team
PCU	Programme Co-ordination Unit (Water sector re-organisation)
PCU	Programme Co-ordination Unit
PHP	Public Health Practitioner
PPU	Provincial Planning Unit
PRA	Participatory rural appraisal
PROSPECT	Programme of Support for Poverty Elimination and Community Transformation

PS	Permanent Secretary
PUSH	Péri-Urban Self Help
P/U	Peri urban
RHC	Rural Health Centre
RSU	Reform Support Unit
RWSS	Rural water supply and sanitation
SNV	Dutch organisation for development aid
STD	Sexually transmitted diseases
TBA	Traditional birth attendant
WASHE	Village WASHE committee
WASHE	Water, Sanitation and Hygiene Education
WGS	Working group on Sanitation
WHO	World Health Organisation
WID	Women in Development
WSDG	Water Sector Development Group
WS or W/S	Water supply
WSS	Water supply and sanitation

**Note**

\* Throughout this document an \* indicates that the preceding section of text has been changed since the draft version of this document in the light of recommendations made at Workshop 4.



# 1. INTRODUCTION

## 1.1 *Background to the Strategy*

1.1.1 In an attempt to bring sanitation more to the forefront in Zambia the Water and Sanitation Sector, the intersectoral Programme Co-ordination Unit (PCU) of the Government of Zambia decided to establish the Working Group on Sanitation (WGS) in February 1997. This group has, among other things, the responsibility to develop a National Strategy for Sanitation. UNICEF has been sponsoring this work.

1.1.2 To date there have been four national workshops and two consultancies arranged by the PCU towards achieving this task. The first consultancy, by IRC International Water and Sanitation Centre and NETWAS, was to analyse the existing situation and it included participation in the third workshop (Reference 4 & 5). The second consultancy, relating to the topic of this report, was conducted by the Water, Engineering and Development Centre (WEDC), Loughborough University, England. WEDC was commissioned to assist with the development of a national sanitation strategy and the consultants participated in the fourth workshop which took place 24 - 28 November 1997. Delegates at this workshop commented on a draft report by the consultants which was subsequently revised by WEDC to form this current document.

1.1.3 At various stages sub-groups have been formed and have met to consider certain aspects in more detail. These sub-groups have looked in particular at :-

- communications
- institutional and funding mechanisms
- technology options
- selection criteria and indicators

1.1.4 The Working Group is intersectoral and contains NGOs active in the sector and government personnel, many of whom have been involved in sanitation initiatives, training and research. It also contains representatives from international organisations such as UNICEF and WHO. It has a Core Group which meets on a weekly basis and co-ordinates the activities towards development of the Strategy.

The Terms of Reference for the WGS (2) are :-

- to develop a national strategy framework for sanitation and hygiene promotion
- to develop an implementation work plan, specifically focused on the needs of poor peri-urban and rural communities
- to create high level political awareness and commitment to the overall objective of the National Sanitation Strategy and
- to clearly define the roles and responsibilities of all partners in the sector in working towards the overall short and long-term objectives.

1.1.5 The strategy is particularly aimed at rural and peri-urban populations rather than including urban populations, for several reasons :-

- the mandate from the PCU was for peri-urban and rural sanitation

- a national urban sanitation strategy was formulated by MOH, WHO, Commonwealth Secretariat and Robens Institute in 1995
- the principles being developed are chiefly applicable to low cost technologies less suitable for the urban environment
- these principles also imply high community involvement in the planning and implementation of their own environmental strategies, which may in part be adopted by urban people but are mostly geared to rural and peri-urban environments.

1.1.6 This document contains proposals on strategy built up through workshops with relevant sub-groups of the WGS during November 1997, and consultations with relevant ministries and NGOs. It reflects the main conclusions of the fourth workshop and the relevant comments made during it.

## **1.2 Terms of reference for the consultancy to assist in strategy development**

### **1.2.1 Objectives/ activities of the consultancy.**

The specific objective of the WEDC consultancy was to contribute to the work of the Working Group On Sanitation (WGS) on the development of a sanitation strategy for rural and peri-urban areas in Zambia. The short term consultancy was planned to support the elaboration of a gender sensitive sanitation strategy including institutional aspects.

### **1.2.2 The following aspects needed to be covered for rural and peri-urban areas:**

- strategy for improving behaviours
- strategy for selecting communities
- strategy for selecting technologies
- strategy per target group for communication on village, district, provincial and national level
- strategy for institutional arrangements/types of partnership arrangements/legal framework
- strategy for funding mechanisms and resource mobilisation
- strategy for monitoring and evaluation (including impact indicators)
- criteria for selection of projects/activities
- programme/project rules and procedures.

Specific attention was required to be given to the needs of women and in the draft proposals, extra (educational) activities have been included whenever considered necessary to reach women. Rather than treat gender as a separate topic, aspects of particular relevance to women have been incorporated throughout the various sections as an integral part of the consideration of strategies.

The full Terms of Reference are presented in Appendix 1.

## **1.3 Methodology**

1.3.1 The proposed strategy has been developed through desk reviews of reports and other documentation, including interviews / discussions / meetings with

members of the WGS and others working in the sector, at district, provincial and national levels, and with donors active in the sector. Mini-workshops have been held on principle topics:-

- communications (2)
- institutional and funding mechanisms
- selection criteria
- monitoring and evaluation
- technology options.

It is on the basis of the discussions in these workshops that most strategy proposals have been made, and they are therefore the product of the views of a large number of people, who are acknowledged at the end of this section. As previously mentioned the modifications agreed by participants at the fourth workshop have also been included in this final version of the report. The main changes are indicated in the text by the use of an asterisk at the end of the changed section. Where consensus was not reached at the workshop, the text remains unaltered.

1.3.2 It had originally been proposed that field visits by the consultants would be made to Eastern Province. However it was found that -:

- a) the senior staff of Lutheran World Federation (LWF) were all out of the province
- b) the German funded water and sanitation programme scheduled to start by June has been delayed until at least December
- c) all D-WASHE committees in Southern and Eastern provinces sent delegates to Lusaka for a workshop on Thursday Nov 6th, providing an ideal opportunity to discuss experiences of both NGOs and local authorities, particularly on institutional and funding mechanisms.

1.3.3 These factors combined with the need for maximum consultation with WGS members, many of whom have given up much of their time, despite their other commitments, meant that, in this phase, field visits have mainly been omitted, and more time given to discussions at all levels especially on advocacy and institutional structures. In consultation with WGS and UNICEF it was felt that the consultants' previous experience at district and community level in six of the provinces, combined with the discussions with D-WASHE members, should provide an acceptable level of background experience. However it was possible to make limited field visits to sanitation facilities in a small number of villages in Monze, Choma and Kalomo Districts.

1.3.4 The consultancy took place from October 27 until November 27, 1997, finishing with Workshop 4 at which the draft sanitation strategy document was discussed. This has been a period of major changes in both the water and sanitation and health sectors, some of which have had major influence on existing and proposed institutional structures.

1.3.5 This document is viewed as being a document principally on sector strategy rather than a specific programme strategy. It may be read alongside the previous Sanitation and Communication Situation Analysis Report (4), and details presented in the latter are not generally repeated here.

1.3.6 Particular thanks are due to the following for inputs to the 'mini-workshops' on which much of this report is based.

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## 2. PROBLEMS, OBJECTIVES AND DEFINITIONS

### 2.1 *Problem definition*

2.1.1 In Zambia sanitation has until now, generally been a neglected aspect of government and individual initiatives to improve health and well-being. This is mainly as a result of lack of awareness at all levels of the cost to the nation and to the individual of not having good environmental sanitation and appropriate hygiene behaviour. The effects and contributing causes are outlined in Fig 2.1

2.1.2 There are almost no sanitation services for faecal and solid waste disposal provided in peri-urban or rural areas and government expenditure in the social sector has not included significant provision for water and sanitation except during the drought. There is also little attempt to enforce the regulations which exist on environmental sanitation (ES) and which include requirements of householders and landlords to provide sanitary facilities, and for new or rehabilitated houses to remain unoccupied until 'effectual drainage' has been provided.

2.1.3 In terms of behaviour, it is a countrywide practice to wash hands before eating, but very few people do so after defecation, or after attending to small children, when faecal contamination occurs. The use of soap is very limited, as its availability in rural communities, reflecting the low priority given to it in households budgets, which are already very stretched ( over 60% going on food). The high incidence of cholera, dysentery and diarrhoea in Luapula, the province with greatest

availability of water and highest number of latrines per head, underlines the importance of behaviour rather than the provision of facilities in the fight to reduce illness.

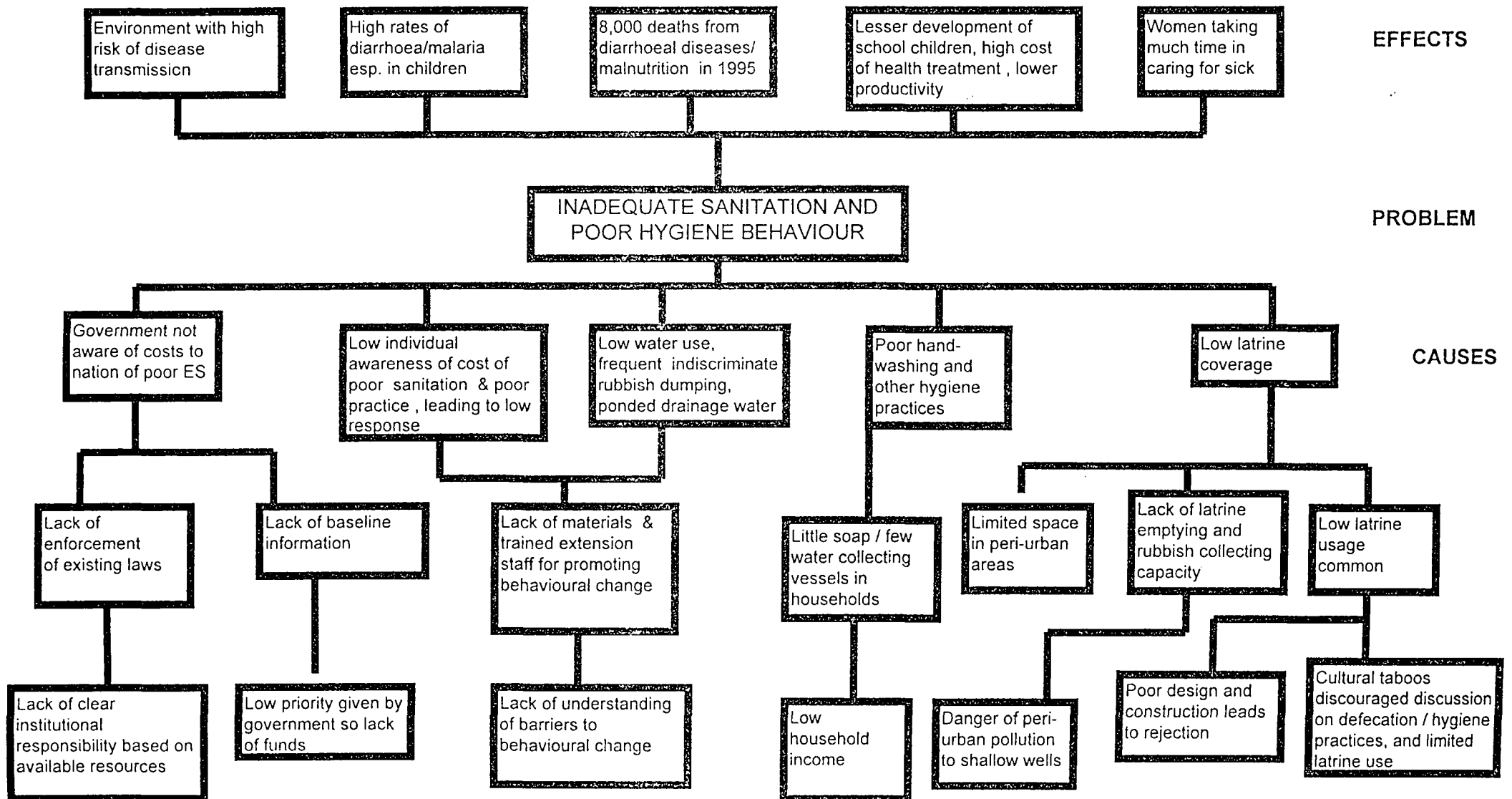
2.1.4 Almost two-thirds of rural people dump their waste on the ground (29), and probably the percentage is at least as high for peri-urban dwellers<sup>1</sup>. Some 70% of rural people have no access to protected water supplies. Conflicting figures are given for those with latrines, the stated proportion varying between 30 and 60%.

2.1.5 The environmental consequences of this state of affairs is that the build up of rubbish often left smouldering, causes fires, and poor air. Faecal matter left on the ground is spread by foot, animals, and rain, and so may reach water sources. Lack of drainage, combined with high density housing, causes flooding in some peri-urban areas in the rainy season, and stagnant water around standposts is also a common breeding ground for mosquitoes.

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<sup>1</sup> Unfortunately there appear to be no surveys in which peri-urban populations are differentiated from their urban neighbours. A lower proportion (40%) of urban dwellers are said to dump rubbish.

Fig 2.1 Problem tree for Environmental Sanitation in Zambia.



2.1.6 To a large extent as a result of these conditions, it is found that on any one day in the year, more than one in ten Zambian children under five years' old is suffering from diarrhoea. In 1995 over 150,000 school age children were so sick with diarrhoeal diseases that they took time off to go to a health centre or hospital seeking treatment. Patterns of morbidity and mortality for rural and urban areas are given in Table 2.1, and include the increasing prevalence of cholera. The costs of ORS, and the time it takes mothers to bring small children to the clinic all add to the cost of diarrhoea. In addition, the relatively high levels of malnutrition, (50% of adults and children have the manifestations of past or present malnutrition)<sup>2</sup> closely follow the patterns of diarrhoea, cough and fever incidence. Diarrhoea in particular is known to impair the absorption of nutrients from food, so that even with what should be adequate amounts of food, a child with diarrhoea may be malnourished. This will lead to poor concentration at school, greater vulnerability to other diseases and overall poor development. Its effect in reducing absorption of drugs also means that treatment of other illnesses may be less effective, leading to further debilitation and risk of death.

**Table 2.1 National morbidity and mortality figures 1995**

All Zambia admissions and deaths					
	First registration,		Death		
SUMMARY	Total	%age	Total	%age	
Malaria	126728	24.3	7123	17.9%	
URTI/pneumonia	54912	10.53	6395	16.1%	
Diarrhoea/malnutrition	50184	9.62	7842	19.7%	
TB	19358	3.72	3762	9.5%	
Eye	2752	0.53	9	0.0%	
Skin	14235	2.73	204	0.5%	
Worms	4817	0.92	108	0.3%	
Bilharzia	361	0.07	6	0.0%	

Source. Morbidity, %admission and fatality. Statistical summary 1995. Health Information Unit MOH Dec 1995

2.1.7 Thus environmental sanitation plays a significant part in the overall pattern of community health and well being in Zambia. The lack of attention paid to this at all levels is a contributory factor to the constraints on rural and peri-urban development in particular. Prospects for Sustainable Human Development in Zambia states that "the major threat to child health and survival - including malnutrition, diarrhoea, and respiratory infections - are linked with the impoverished, unhealthy and unhygienic environments that people have to live in."

## **2.2 Existing and proposed sector principles**

2.2.1 In 1994 GRZ adopted a National Water Policy which had seven major principles. These are :-

1. Separation of water resources functions from water supply and sanitation
2. Separation of regulatory and executive functions within the water supply and sanitation sector
3. Devolution of authority to local authorities and private enterprise
4. Achievement of full cost recovery for water supply and sanitation services (capital recovery and operation and maintenance) in the long run
5. Human resources development leading to more effective institutions

<sup>2</sup> Prospects for sustainable human development in Zambia GRZ/UN Dec 1996 (30)

6. Technology appropriate to local conditions
7. Increased GRZ spending priority and budget spending to the sector.

2.2.2 Objectives are more fully defined in the policy for rural water and sanitation, whose overall objective is the "universal access to safe, adequate and reliable water supply and sanitation services". The strategies proposed to meet this objective are :-

- i) ensuring that RWSS programmes are community based
- ii) developing a well-defined investment programme for sustainable RWSS
- iii) promoting appropriate technology and research activities
- iv) developing an emergency and contingency plan to mitigate impacts of droughts and floods in rural areas
- v) developing a cost recovery approach as an integral part of RWSS which will ensure sustainability
- vi) developing and implementing a well articulated training programme.

Most of these strategies, apart from the first, remain unimplemented, partly because of the uncertainty of where responsibility lies.

2.2.3 The Cabinet memo on Investment Needs of the Water and Sanitation Sector, paragraph 7.2.2 outlines three levels of priority for investment. Firstly there is emergency assistance to improve existing supplies, then maintaining existing coverage, and finally increasing coverage. The Sector Strategy (32) suggests increased emphasis on the provision of sanitation services to overcome past neglect, but the whole strategy is couched in terminology which suggests it is chiefly considering urban environments.

2.2.4 Within the health sector, the formation of the Central Board of Health is linked to the reform movement whose aim is "equity of access to cost effective quality health care as close to the family as possible". This reflects the move to a demand-driven approach. The six priority thrusts for the health service are :- Malaria, maternal health and family planning, HIV/AIDS and STDs, child health (especially diarrhoea, dysentery and cholera) tuberculosis and water and sanitation. The reformulated primary health care programme will focus on under-served, high risk and vulnerable groups, especially in rural and peri-urban areas.

2.2.5 In order that the risks to health be reduced and programmes be encouraged to give more prominence to considerations of ES the following principles may be adopted, to supplement those established in the National Water Policy above :-

1. Sanitation is critical to good health and therefore it should be recognised as an equal partner to water supply\*.
2. Behavioural change should be given greater prominence than provision of facilities\*.
3. Integrated institutional approaches operate at all levels in promoting behavioural change, led by one lead institution\*.
4. The government's role is primarily in facilitation, motivation and research, and to promote sanitation through technical and financial support in terms of information and co-ordination. This support will be concentrated on those areas most in need.



5. Implementation will be demand responsive and community / user based\*.
6. Level of need and demand will influence level and type of interventions.
7. Management and decision-making will be devolved to the lowest possible level. It will, wherever practicable, use existing structures, rather than create new ones\*.
8. Strategies will employ gender balanced approaches to meet objectives, recognising women as key players and agents of change, and not solely as primary beneficiaries.
9. Commercial sector (including formal and informal sector) inputs will be encouraged in promotion and implementation\*.
10. Monitoring and evaluation will be built into all sector activities.
11. Interventions will be sustainable for communities/users and will not pose negative impact on the environment\*.

### **2.3 Main Programme Objectives**

2.3.1 To improve the situation outlined in 2.1 will take time and considerable investment in advocacy at all levels. However the history of programmes to raise awareness of AIDS causes and of diarrhoea therapies indicate that such advocacy is both possible to establish and can be instrumental in changing people's behaviour.

2.3.2 The long term sector objective has been defined previously (1) as the

**Improvement of national access to appropriate, acceptable and affordable excreta and domestic waste disposal facilities through sustainable approaches that are demand driven and promote hygiene behavioural changes that bring about health and well-being of the people.**

The fourth workshop wished to change this to **"Environmental sanitation for all."**\*

2.3.3 The National Strategy Objective is now defined as :-

**To create an enabling environment with support mechanisms to facilitate individuals, households and communities to effectively improve their environmental sanitation conditions and hygiene practices to prevent the transmission of disease.**

2.3.4 Within five years the main objectives are proposed to be :-

1. Significant reduction in diarrhoeal incidence\*
2. National commitment to ES, though funding, staffing and job descriptions\*
3. Increased adoption of good hygiene practices including hand-washing\*
4. Increased use of acceptable community based sanitary disposal methods for faecal and solid waste\*
5. Increased use of latrines through greater acceptability and numbers\*

6. (Development of unsubsidised latrines - Workshop 4 suggested that this was deleted since it is covered elsewhere e.g. principle 4 of 2.2.1)\*
7. Increased use of safe water sources
8. Reduction in habitats for mosquitoes and houseflies\*
9. Clear cut institutional structure, and national focal point / ES unit (ESU)
10. Increased emphasis on the roles women can play in environmental sanitation (ES) (including promotional planning and possible development of commercial enterprises)\*
11. Increased emphasis on the role extension workers can play in promotion of ES\*
12. Existing peri-urban areas legalised and serviced\*
13. City councils provide/ ECZ approved sites for solid waste and latrine sludge dumping
14. Strict enforcement of planning and public health laws\*

## **2.4 Definitions of terms used in objectives**

2.4.1 **Sanitation** is a process of collection, treatment and disposal of human excreta and domestic waste in a safe and hygienic manner (behaviour) which is affordable and sustainable. (1)

2.4.2 **Environmental sanitation (ES)**. A set of interdependent factors, such as hygiene practices, faecal and solid waste disposal, safe water use and management and maintenance of a healthy community, which reduce health risks and increase well-being. \*

It is not a static concept but one whose strategies may continuously develop as a community's priorities, and socio-economic status change. This definition is similar to that of the WASHE Basic Needs Package.

### **2.4.3 Enabling environment and support mechanisms.**

1. Information easily available on sustainable technology
2. Extension level staff trained in techniques to promote behavioural change
3. Institutional structures which combine scarce resources to make integrated programmes
4. Government which gives environmental sanitation priority and budget, within well-defined institutional framework
5. Government which gives resources to peri-urban and rural areas.
6. An integrated human resources development programme to support ES.

### **2.4.4 Disease**

Specifically diseases :-

1. Transmitted through faecal contamination (diarrhoea, cholera, typhoid, round worms etc.)
2. Which prosper through lack of washing (scabies, eye infections)
3. Which relate to non-disposal of waste water (malaria)

2.4.5 **Rural**. Areas of population outside urban or peri-urban areas using point or surface sources, for which the community is responsible for the operation, and routine maintenance, and sanitation primarily through pit latrines for which the community is responsible for operation and maintenance. \*

2.4.6 **Peri-urban.** Areas of formal or informal centres of population within the town boundary without house water or sewerage connections. Communities are responsible for operation, maintenance and management of the facilities. These areas are inadequately served and not planned by local authorities as they are considered as areas of transition from rural to urban.\*

2.4.7 **Urban.** Recognised formal centres of population receiving water supply services by means of piped systems through property connections or standpipes servicing designated consumers and receiving sanitation services mainly through sewerage systems or septic tanks provided by the local authority, its agent or a utility.

## 2.5 *The peri-urban and rural environments*

2.5.1 Peri-urban and rural communities are lumped together principally because of the assumption that the technical solutions for both are similar. However in other aspects they are very different which can affect the strategies which are needed in each case (see Table 2.2).

2.5.2 Since the urban sector is more vulnerable to macro-economic policies, the restructuring of the Zambian economy has had particular effect on this section of society. In 1985 the poorest 25% of urban residents earned 3.1% of the income, compared with 7.5% in 1974-75, (31). Water-borne diseases are increasing, and in 1990 over 20,000 cases of cholera were reported, mainly in the peri-urban compounds of Lusaka and the Copper Belt. Peri-urban inhabitants spend large amounts of money on buying water and tend to have latrines or share one. Many also have shallow wells which can be contaminated by latrine leachate.

2.5.3 Rural population densities are low (usually less than 20/km<sup>2</sup>), and communities small (seldom more than 300 people except particularly in Eastern Province) and often with houses very scattered.

2.5.4 Peri-urban environments have much more in common with urban environments in terms of population density, commercial potential, need for enforcement of planning regulations, requirement of access for latrine emptying. The limited space for latrines, poor access between houses, the higher water consumption (CARE plan on 40l/hd/day), all mean that local authorities need increasingly to view 'peri-urban' as an extension of the urban environment, rather than giving it the lower priority that the present association with 'rural' implies.

2.5.5 It may also be questioned whether peri-urban areas to small townships, which are also served by community or individual managed water and sanitation facilities, should be lumped with large LUA peri-urban compounds, or be treated as a separate category, or considered with rural communities.

Table 2.2 GENERALISED DIFFERENCES BETWEEN RURAL AND PERI-URBAN ENVIRONMENTS WHICH MAY AFFECT STRATEGIES. (i.e. require different approach for each environment)

Aspect	Peri-urban	Rural	Effect on strategies
Population	24% of total population live in low cost urban settlements (31)	45% of population is rural (34)*	Peri-urban and rural populations form the major part of the total population and should have higher priority than at present
House plot ownership	Mainly private rented or owned / without tenure	Predominantly owned (86%), some free housing (10%) (29)*	Peri-urban needs enforcement of sanitation regulations on landlords, inhabitants unlikely to improve facilities without security of tenure
House density	High. Little room for gardens, latrines or privacy	Usually wide space around houses, open land/bush within easy walking distance	Peri-urban low opportunity to dig new latrines when old fill up, need emptying service
Water supply	Standposts or handpumps, some private wells, unprotected sources in minority	Some protected communal supplies, but 70% unprotected supplies	Peri-urban groundwater may be at risk from pollution hence latrine construction should be carefully designed *
Availability of materials	Extraneous materials such as cement, roofing sheets available locally. Local materials scarce and relatively expensive	Local materials more easily available. Cement, roofing sheets, reinforcing & aggregate usually difficult to obtain & expensive to transport	Preferred technologies may differ between peri-urban and rural, depending on the availability and cost of materials*
Community structure	Often fragmented and fairly recently established	Generally long- and well-established	Peri-urban leadership may take longer to mobilise
Cost of land	High	Low	Access for latrine emptying difficult in p/u, unnecessary in rural
Land ownership	Sometimes not regularised	Generally well established	Reluctance to invest in facilities without land rights
Municipal control	Medium/ high, potential for control of landlords/ owners	Low	Planning regulations could be enforced in p/urban
Sources of income	Generally informal or salaried	Mainly subsistence and low level agricultural production	More cash in circulation peri-urban areas gives potential for commercial and credit systems
Seasonality of time available	Similar year round	Linked to sowing, weeding and harvesting	Timing of programmes needs more careful planning in rural areas
Potential for private enterprise	High density of customers, short distances for distribution, moderate purchasing power	High distribution costs, low purchasing power with seasonal variations	Lower potential for private enterprise in rural areas
Access to health centre	100% within 5km	50% within 5 km	Support systems near to p/u areas
Access to schools	100% within 5km	84% within 5 km	Higher probability that p/u children can attend school
Access to media	Radio, newspaper and TV	Radio *	Affects design of media plan for communities
Situation of women	Largely informal traders with cash, potential for NGO credit systems	Women mainly subsistence cultivators, little or no cash, most exchange in kind	In both groups women with little time for attending meetings, rural probably less control on purchasing

Unknowns -: Relative disease incidence (need), demand, affordability, credit systems, attitude to shared facilities. Workshop concluded peri-urban and rural strategies should be separated.\*

### 3. NATIONAL AND INTERSECTORAL PROMOTION OF ENVIRONMENTAL SANITATION (ADVOCACY AND SOCIAL MOBILISATION)

#### 3.1 *Introduction*

3.1.1 Without high political commitment, all the refining of technologies, development of systems to prioritise communities, setting up of institutional structures and resource mobilisation will come to nothing. Thus it is fundamental that advocacy targets the political structure, at national and district level, from the beginning. If this is successful, then ministries will continue to put forward their best and most senior staff to work on environmental sanitation (ES) issues, rather than giving it little attention. They will also :-

- prioritise it in budgets
- push donors for funding
- give the concepts widespread and influential publicity, which may affect people at all levels, and
- provide a focus on women as key players not just beneficiaries<sup>3</sup>

This requires them to give greater prominence to ES on a continuous basis, nearer to the level given spasmodically whenever cholera breaks out.

3.1.2 At all levels in advocacy, the target groups need convincing of the validity of assumptions and objectives, in order that they act as effective channels of communication to pass on messages to the groups beneath and alongside them. At present there is a lack of understanding the magnitude of the effects of poor environmental sanitation which is the primary barrier to progress.

3.1.3 An outline of changes in attitude and behaviour needed for different target groups are summarised in Table 3.1. Column 2. It is apparent that some changes needed are common to all groups, and that the same messages can be incorporated into communications programmes for all. However separate packages will need to be developed for each target group, to concentrate on those aspects of attitude or behaviour change which are most needed to encourage the group in question to provide the facilitation and support needed for the fulfilment of the overall programme objectives.

3.1.4 Communications strategies are not static. If they have been successful then conditions will change and a new strategy will need to be developed. Thus it is a cyclical process, requiring regular evaluation of progress and effectiveness, and response to the findings.

#### 3.2 *Key strategies at the political and national level*

3.2.1 **Identify and target key political and non-political figures** in associated sectors and involve them as far as possible, through one to one discussions\*. Especially women who are committed and active at high levels.

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<sup>3</sup> As in the *Zambian Times* of Oct 31st 1997 in which there was a full page on a speech by the Permanent Secretary for Lusaka Province, talking on the key role of women in sanitation and hygiene education in efforts to prevent cholera at this time of year when outbreaks are common.

**Table 3.1 Target groups and changes needed in attitudes**

Target Group	Attitude and behaviour changes needed	Main messages	Channels /media
<b>Political level</b> (From President, Cabinet 2 Ministers, MPs, Mayors, Councillors and branch officials)	A1. Politicians brought to appreciate the problem. A2. Environmental sanitation receives some priority on the national agenda A3. Commitment to sanitation programmes is shown through funding support*. A4. Training in ES is incorporated across all training institutions A5. Environmental sanitation is a recognised responsibility in all relevant ministries.	B1. Costs of bad sanitation/ hygiene in terms of morbidity and mortality rates, and effect on production and nutrition. B2. Diseases which could be reduced B3. Impact on women and children B4. Effect, particularly on peri-urban environment, of dumped garbage and fouling.	C1. One to one meetings C2. Documents (e.g. pamphlets, hand-outs) C3. Workshops C4. Ministers invited to meetings / launches* C5. Lobbying MPs C6. Main stream media (radio, TV, newspapers) C7. National WASHE day
<b>District level administration, health, education, community development, agriculture, water district officers, (=DDCC) NGOs</b>	A1-3 as above. E1. ES given some priority in budget and plans E2. Move from being provider to facilitator E3. Move from isolated to intersectoral approach E4. From dependence to self-reliance E5. Acceptance of appropriate rather than unsustainable technologies E6. Belief that behaviour more important than technology. E7. Respect for rural culture/ beliefs E8. Resources spread equitably to rural and peri-urban areas not just urban	F1. District health profiles, ranking, and rural /urban disease patterns F2. Effective use of scarce resources and advantages of pooling them. F3. Sustainability and replicability reduce burden on local government. F4. Community development principles F5. Similar messages are given by all organisations	G1. Orientation day G2. Mainstream media G3. Field visits to PRA session G4 One to one G5. Mobile sanitation shows*  Provided by CBoH, NGOs and ESU, at regional/ provincial level. Training/ service organisations e.g. Rotary.
<b>Extension workers (EHTs, community development advisers, agricultural block advisers)</b>	A1,3, E1,2,3,4,5,6 I1. Regard themselves not as instructor but facilitator I2. Community is treated as partner not beneficiary I3. Realise role as link between community and district.	J1. If you want to change others, you may have to change yourself J2. Community development methodologies including participatory approaches for behavioural change.	K1. Capacity building training package K2. Newspaper, radio. District refresher course. By (MOH/ NGOs/CBoH/MOE)
<b>Schools</b>	A1., E2-7, I2., I3. L1. Teachers and pupils seen to have capacity to inform others*. L2. Pupils and teachers encouraged to develop their own materials L3. School curriculum uses sanitation messages and research applied in several subjects, not just HE	M1. Pupils can provide information as well as receive it M2. Pupils are a channel to take information to a wider audience. M3. Pupils learn also by example	O1. Training package O2. Newspaper O3. Orientation days, district MOE O4. Teacher training curriculum O5. CTC program*
<b>Chiefs</b>	A1, and revival of previous care for community ES	Encouraging ES as a sign of status and development	Chiefs meetings, one to one, workshops & posters*.
<b>Church, women and youth groups, Scouts and Guides,</b>	A1, E1, E6, I.1 P1. Move from low-high self confidence P2. Realise group potential to influence others.	Q1. Groups may have role outside that of serving just their members Q2. There is power in numbers	One to one Sermons, group activities Pamphlets. D-WASHE, NGOs, ESU
<b>Private sector</b>	T1. Sanitation promoted among own staff T2. Soap/ Sanplats promoted and sold by producers	Large need exists, and therefore ,with effective promotion and marketing, there will be large demand	One to one by MOH, and MLGH public health dept.

**3.2.2 Hold national events/ workshops at which key figures can contribute and show their support, and which are covered by mass media.** For example activities on National Water (and Sanitation) Day, on Youth Day and Environment Day.

**3.2.3 Form links to mass media** which allow individual news items (e.g. cholera outbreaks) to stress the importance of continuous activity in the sub-sector, rather than of crisis management. This would be a further development from the existing WGS link to ZAMCOM.

**3.2.4 Develop a newsletter to link all those interested in sector progress.**

A monthly periodical which gives information on government and NGO activities and experiences, can help highlight positive aspects and encourage others to try out solutions which have proved effective.

### **3.3 Objectives and strategies of intersectoral communication**

3.3.1. At provincial and district levels in particular the need is to encourage all sectors to work together in partnership to achieve shared objectives in environmental sanitation. This requires:-

- development of links and
- an adoption of common goals, which in turn require some
- breaking down of barriers which usually keep organisations vertically organised, and their activities separate.

3.3.2 The main objectives of intersectoral approaches are :-

- to make most effective use of available resources and
- to maximise opportunities to facilitate community development of ES strategies and
- to provide efficient channels for passing communications from communities to local authorities as well as *vice versa*.
- to encourage those who have been trained in specific aspects of social and technical aspects relevant to ES to be able to pass on their knowledge to others in different sectors.
- to promote sanitation initiatives through the Gender Analyst in Provincial Planning Units, and through Gender Contact Persons in each ministry at provincial level.
- to develop training packages which are cross-sectoral

The key strategies are to -:

**3.3.3 Ensure that the messages being promoted, and how they are promoted, are the same in all sectors\*.** Through workshops at all levels, and one to one discussions, to ensure that organisations do not give conflicting information or confusing messages. Also to discuss with ministries and NGOs where ES messages can be relevant within their wider spheres of activity. This will require designing and producing a variety of training materials.

**3.3.4 Use, as far as possible, existing management and planning structures.** Existing management structures would include DDCCs, council, D-WASHE, local government, Neighbourhood Health Management Boards, RDCs, PTAs, churches, women's groups and Development Boards where they exist\*. Political structures and co-operatives may also be used. Materials exist for some training of D-WASHE, produced and tested by CMMU/ N-WASHE, V-WASHE.

**3.3.5 Create an environment in which women can give their views and be influential in community plans.** Where possible women should be used as facilitators, and men should be trained in techniques for use in mixed meetings to encourage a balanced contribution from women and their active influence in community decision-making. They should also be trained to empower women to obtain maximum benefit from changes such as less time collecting water, or less time tending the sick.

**3.3.6 Undertake more health / hygiene meetings with mothers and children and men attending clinics, rather than always visiting villages.** Women who are well aware of health issues (more likely among those visiting clinics) may be encouraged to take messages back from the health centre, and even possibly pamphlets and later self-monitoring forms. Discussions on hand-washing and experimenting with how to be effective but use little water can be done in this way, but its impact would need monitoring.

**3.3.7 Involve traditional as well as government and NGO social structures.** The traditional structure, especially that of chiefs where they cover many communities, can be well employed to promote environmental hygiene. In the past chiefs used to monitor the sanitary state of their villages, and had the power under the Village Development Act to instruct a community to construct latrines. This in some areas they still do, and they are proving enthusiastic in their assistance to the WASHE programme in Eastern Province at present. They can offer a fast and effective, non-transport dependent system for transmitting messages and providing didactic instruction on behaviour change.

**3.3.8 Give schools a key role as bridges to communities, centres of dissemination and collection of information, and potential demonstration centres for new ideas.** Schools have been under-utilised in general<sup>4</sup> as facilitators in water and sanitation programmes. They offer great potential for :-

- the information which can be obtained from children through school projects, which can be used to monitor changes in behaviour and the condition of their environment
- the influence of tomorrow's adults
- the link between children and their wide variety of communities
- acting as demonstration sites for new technologies, and properly maintained familiar ones
- centres for feedback to programmes.

Greater inclusion of hygiene and sanitation in different parts of primary school curricula is now being promoted by the Chief Inspector for Schools who is developing a programme of WASHE materials. This has been pre-tested and will shortly be extended to all parts of the country. It could become a useful household level monitoring tool as well as for teaching purposes, emphasising the two-way communications which schools can develop.

**3.3.9 Identify mobilising issues in the community and use them as vehicles for developing institutional capacity.** This institutional capacity can then be used to improve the well-being of the community in many other ways than purely ES. In peri-urban areas CARE have found that water supply is the prime consideration which mobilises people and this is common in peri-urban areas.

**3.3.10 Explore the scope/ willingness of private sector to undertake promotion in order to expand market potential.** Traders who manufacture Sanplats or sell soap, among

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<sup>4</sup> Except perhaps in Western Province which has had a long running schools' programme, especially with home economics teachers.



others, may see an advantage to themselves in promoting health messages to increase their sales. This would lead to promotion indirectly paid for by the 'consumers' and so reduce dependence on outside subsidy. Those traders with small stands in urban streets are often run by women living in peri-urban areas, and so their encouragement a) to promote selling of soap, b) to provide some water for handwashing if selling food would set an example. Possibly even licenses to trade in food could be conditional on provision of hand-washing facilities (e.g. bottle of water and soap).

### **3.3.11 Explore scope for the involvement of traditional healers.**

The National Association of Traditional Healers could be approached to discuss whether there is common ground between the two approaches which could be used to reinforce the behaviour change messages being proposed. If this seems possible, then research would be needed into how this could be done, as it is a sensitive issue which would need careful consideration.

## **3.4 Media strategies.**

**3.4.1 Use previous experience in planning and media impact.** The Analysis of the Existing Situation (4) suggests that mass communication systems have been ineffective in Zambia. However this would seem to be untrue, since according to the Demographic Health Survey (28) 99% of people now know about AIDS and of these 80% of men and 94% of women say that they have made some change to their behaviour. Similarly, knowledge of therapies for diarrhoea are high, (94%) and some 75% give rehydration fluids, or increased water. This has been achieved by a variety of means from which any sanitation promotion strategy can learn. Men in particular gain information from mass media, while women tend to learn more from health workers and through conversation with friends. Rural populations, not surprisingly, are less affected by mass media campaigns, but even so, 70% of men and 45% of women had heard about AIDS over the radio. Existing and planned surveys on sources of information can help identify the most effective channels of communication for different age groups, rural and urban populations, and men and women. So far it is probably true to say that campaigns requiring instant action rather than behavioural change (e.g. eradication of polio and child immunisation) have been the most effective.

**3.4.2 Use links to other communications programmes.** Various health programmes have been trying out communications strategies, and have gained considerable experience already. Immunisation, AIDS, CDD (and now IMCI) have all been quite successful in getting messages through to their target populations. The National AIDS programme has also (apparently quite successfully) promoted the development of drama groups at health centres. It is now involved in a major 'home care programme' in which hygiene messages are a principle component, and are discussed at household level. It might be possible for other messages on behavioural changes and hygiene in the house to be incorporated into the programme.

UNICEF has several planned activities from which the sanitation programme could benefit. Throughout Eastern and Southern Africa it is developing the character of Sara, a girl whose life in comics, posters, stories and readers is being used to pass messages on particular aspects of personal development. The first episode has been on education, encouraging girls not to drop out of school, and the second is planned to be on AIDS. A third episode might be designed on sanitation and hygiene if the sanitation programme established links and demonstrated interest to develop this line of communication.

In addition UNICEF has plans for training in interpersonal communications skills in 1998, and within this, there is scope for making packages for use by extension workers which would be relevant to the sanitation programme.

**3.4.3 Use mobile film unit\***. At workshop 4 the use of a mobile film unit to screen appropriate material was suggested to be a useful form of media for promotion of environmental sanitation.

**3.4.4 Use traditional media.** There are various occasions when dramas, story telling and speeches are held. These include ceremonies such as 'kuomboka' and initiation. Those with expertise in this form of communication can be encouraged to use their skills both within and outside such events to bring information to communities and to encourage their response. They may offer an effective channel for dissemination of ideas, but very little is known of their capacity and distribution.

**3.4.5 Develop sub-district drama groups.** Several programmes have employed travelling drama groups to undertake performances with health, sanitation and management capacity building messages to communities. These tend to be well attended but are of short term impact. The cost of mobilising drama groups from district or provincial (or in some cases national) level is very high. Their use might more be to train local groups and build their enthusiasm and skills in transmitting specific messages, rather than transmitting the messages direct to communities themselves. Existing AIDS drama groups or school based teams and traditional actors could all be targeted.

### **3.5 *Gaps in information***

- Views of traditional healers on environmental sanitation issues
- Potential for private promotion to develop markets in selling soap, latrine slabs etc.
- Most effective mass media messages to influence behaviour, rather than simply stimulate short-term action
- Sub-district drama capacity, especially for traditional drama.

## 4. BEHAVIOURAL CHANGE AND COMMUNITY PARTICIPATION

### 4.1 Objectives.

#### 4.1.1 At community level the main objective is

- to empower people to effectively improve their environmental sanitation conditions and hygiene practices by erecting barriers to prevent the transmission of disease agents

This requires particular changes in attitude throughout the community, (see Table 4.1) which combined with the knowledge that many already have, and some additional ideas, lead to behavioural changes. It generally first requires building the confidence of the community in its ability to make its own plans and to develop ways of implementing them.

#### 4.1.2 The behavioural changes which are proposed to be targeted in the beginning are :-

- Hand-washing with soap, sand or ash, particularly after defecation
- Hand-washing after washing/cleaning small children and before preparing food, beer or handling plates, glasses, fruit or other items which will not be heated but form a direct link to people when eating
- Disposal of faeces, usually in well-maintained latrines\*
- Burial of rubbish, and development of community censure of indiscriminate dumping of any waste, particularly in high density housing areas
- Maintenance of good drainage, and sanitary conditions around water sources and removal of stagnant water near houses
- Safe collection and storage practices for water\*

4.1.3 Table 4.1 summarises some of the changes in attitude which are needed to stimulate the desired behavioural changes. However in relation to sanitation, the knowledge, attitude and practices of communities in Zambia is very little researched. It seems that the second major barrier to improved environmental hygiene and health is the lack of effective stimulus, especially to women, for them to wish to translate their knowledge of health risks into preventive actions.

The gaps in information mean that considerable flexibility is needed in any strategy, and the strategy should include a substantial amount of research before production of communication materials commences.

### 4.2 Communications Strategies at Community Level for behavioural change

#### 4.2.1 Regarding environmental sanitation as requiring a community strategy rather than simply individual choice

Whilst individuals must make their own decisions as to whether to change their behaviour, and whether to construct latrines, the effects of these decisions will be small unless a significant number of people adopt better practices. The discussion of such issues by whole communities, and the adoption of community strategies maximises the effect by :-

- establishing community norms or ways in which people are expected to behave
- creating peer pressure for better practices

- enabling coping mechanisms to be established for disadvantaged groups (e.g. latrine construction for female headed households)
- reducing costs for implementation by the consolidation of response (e.g. waiting until a number of people agree to construct latrines or purchase slabs / Sanplats)
- allowing self-monitoring systems to function and so increase community awareness of changes occurring and actions still needed
- encouraging community activities such as rubbish removal, drainage, low cost water source improvements.

**Table 4.1 Community level communications\***

The level of understanding and the changes which can be expected to result from setting the following objectives, and using the following messages and channels/media will vary with the age, sex and leadership role of a member of the community. However nearly all of the following aspects are interconnected and involve most members of the community.

Objectives (behaviour/attitudes to change)	Main messages	Channels/ media
A1. Realisation of the cost of poor sanitation to themselves and their children A2. Recognition that negligence of ES issues can lead to needless death of family members A3. Belief that they have the power to change the ES situation, and that such changes will repay their effort A4. Realisation that their good behaviour can influence others A5. Personal and environmental cleanliness are regarded as desirable and to be proud of A6. Latrines regarded as a status symbol A7. Parents value children's ES knowledge from school A8. Realise that individual decisions or laziness on ES can affect the whole community A9. Develop community ES strategy to benefit as many as possible A10. Pride in progress at achieving ES A11. Involve those looked up to as role models A12. Disadvantaged members included in community ES strategy A13. People have confidence that they can help bring improvement, even without outside funds	B1. Cost to mother of unnecessarily sick child( e.g. sleepless nights, trips to health centres, cost of ORS/RHF, death, poor progress at school etc.) B2. Sickness as a result of neglect of ES can permanently damage your health B3. A bar of soap costs less than ORT B4. 'Practice what you preach.' if you want others to follow your message. B5. Latrine has other than health benefits, especially convenience and privacy B6. Children can bring home learning to those who were not so fortunate to get education* B7. If some members do not dispose of faeces/ rubbish, those who do will still suffer B8. Malnutrition and diarrhoea stunt growth, weaken workers, and affect learning ability, weakening the potential and productivity of the whole community B9. ES is a first step in progress towards prosperity B10. ES is an area where low cost interventions can have large effects B11. Coping mechanisms are needed to assist those unable to improve their own environment B12. TBAs, CHW (and possibly traditional healers and herbalists - subject to research showing this to be appropriate) are identified as sources of health information	C1. Timetable of diarrhoea./ dysentery C2. Sanitation ladder C3. Role play C4. Drama C5. Child to child C6. Radio/ newspaper C7. Mapping C8. Community self-monitoring and 'environmental audit' C9. WASHE messages in initiations. C10. One to one C11. Workshops C12. Drama / leaflets*  <b>Agencies.</b> Primarily CBoH extension staff, but wherever possible, other sectors also NGOs in specific areas, especially where these have long term commitment to certain communities.

**Note:** Where A, B and C numbers in the table are the same it does not necessarily imply a connection between the objective, message and channel/media.

#### **4.2.2 Targeting and involving women, ensuring them a key role**

Women are the ones who tend to direct children in hygiene practices, and best know the way which things could change without increasing workloads. Throughout their daily routines they are also those who are most at risk, through tending to children and the sick, preparing food, drawing water etc.

#### **4.2.3 Adding up the cost of poor hygiene and sanitation practice**

Where people, especially women, are not yet aware of the consequences of having sick members of the family they should be helped to see this. The consequences include:- the cost of medicines and health centre charges; absenteeism from school; tiredness; reduced time for doing all other tasks; increased workload when children are sick and unable to assist (e.g. water and wood collection, child minding etc.); and last but not least the emotional and financial costs of death. The cost of reduced, easily preventable illness can then be reinforced, and act as a stimulus to change behaviour. This element of hygiene education has so far generally been lacking, it being assumed that women already regard diarrhoeal diseases as events which should and could be avoided, rather than the prevailing attitude that it is a constantly recurring disease which is part of life. Impact of ES programmes so far may partly have been low because this fundamental aspect has not been tackled, and women and men see only the cost of latrines, soap, storage vessels etc. and not the costs which are incurred because of their absence.

#### **4.2.4 Considering the community as a whole, albeit made up of different groups**

Whilst women are a particular target group, as are household heads and development committee members, it will in most cases, be more fruitful for discussions of their roles and the risks they face to be discussed in a mixed forum. This will ensure that others are also made aware of the problems and can discuss how they will react to, and reinforce, changes in behaviour. In a few cases meetings of women and children may be necessary if there is difficulty with discussing a topic as a mixed group.

#### **4.2.5 Promoting latrines not just for their potential health benefit**

In addition to the potential health benefit latrines need to be promoted for their convenience, privacy and with other measures, as symbols of pride in the community and signs of progress. It has been found in many instances that the reason people give for building latrines is more related to the status it gives when visitors come or the privacy it offers especially for women, which are more directly obvious benefits than any improvement in health which may occur over time. KAP surveys in Luapula (32) showed that latrines are regarded as a status symbol, providing privacy and showing respect for other community members.

#### **4.2.6 Identifying the scenarios within which a didactic approach may help achieve objectives**

Certain channels for communication at community level may not be geared to participatory methods. For instance chiefs and churches will deliver messages unequivocally stating what should be done, and advertising/ poster campaigns similarly do not offer opportunity for feed-back. Nevertheless they have a role to play, and provide channels with minimal cost implications so should not be neglected. The messages, and their timing, however, needs careful planning as the effect is reduced if, for instance, chiefs campaign for latrine construction before the capacity for slab construction has been established, or other channels of communication, such as health workers, have been involved in the programme. In that didactic methods are quicker to implement, it may be that some peri-urban populations, whose time is precious, may find participatory methods too simple and time consuming, and by these a more informative approach could be preferred.

#### **4.2.7 Communities should be involved in the design of communications strategies**

In association with the above approaches communities should provide feed-back on what methods and messages were most influential and how communication strategies could be improved from their point of view. The approach should be flexible, depending on the results of PRA and other discussion with the community which identifies its needs.

#### **4.2.8 Regarding community participation as a long term commitment, with management and monitoring as important a responsibility as implementation**

Community participation is not a short-term input organising and carrying out latrine construction, but includes building up capacity for management and problem solving. This new capacity can then be applied to other community initiatives which may further improve well-being. In terms of monitoring, systems used by the community will help it to make better informed decisions and see what progress is being made over the coming years (see Section 9). CBoH is now promoting this approach in recognition of the interdependence of socio-economic factors and health.

### **4.3 Agencies for communications.**

4.3.1 Most promotional work in behaviour change and building of community capacity will need to be undertaken by people at sub-district level. It is not possible in the present economic climate to use district level staff for field duties on a regular basis, without major outside funding. Allowances, fuel, and usually simply the availability of roadworthy vehicles, all militate against the mobility of district-based staff. Only Ministry of Health and Ministry of Education have significant numbers of people at the required level. It is proposed that Ministry of Health would be responsible for most promotional work at community level, with Ministry of Education reinforcing this and developing programmes with children, and encouraging their spread into communities (CTC). MLGH, MCDSW and the local authority can also be included where they have personnel at sub-district level.\*

4.3.2 NGOs can provide cost effective inputs where they exist. However to date there is no comprehensive list of NGOs, their capacity and the geographical areas in which they work. Few are sufficiently wide-spread and with adequate links to government to provide a consistent approach to ES activities (see Section 5), but have proved a valuable resource for government and other programmes which are not based at field level.

4.3.3 In peri-urban areas the formation of CBOs, voluntary community management bodies, encouraged both by NGOs and local authorities, means that these may be an additional resource for promoting ES issues. This is discussed further along with consideration on capacity building in Section 5.

4.3.4 It is proposed by the Working Group that an ES stand-alone communications unit be developed and placed within another organisation such as NAIS, to be used at agricultural shows etc.\*

### **4.4 Gaps in information.**

4.4.1 It is in the area of behavioural change and community participation that many gaps remain. Few surveys have been done, and since most programmes have so far concentrated on water supply and hygiene an exploration of attitudes towards sanitation has

usually been omitted. The differences between urban and peri-urban environments has also been poorly covered.

Some of the areas most requiring further investigation include :-

- women's attitudes to diarrhoeal diseases and reasons for not responding to the knowledge they already have
- women's attitude to having more time/energy available as a result of easier water collection and reduced burden of caring for the sick
- affordability and ways to change priorities in peri-urban and rural household budgets
- potential for contamination during collection and storage of water in peri-urban and rural environments
- cultural differences in chief's authority and acceptability of him conveying ES messages in different parts of the country
- the time element in building up community strategies rather than simply responding individual demands.
- whether pilot projects on encouraging use of soap and ash would show to users sufficient improvement in child health for them to:-
  - a) adopt its use on a regular basis and
  - b) spread news of its effects to others
- community capacity and methods for self-monitoring, and ways to obtain feedback on community views of how messages could best be put across
- attitudes to shared sanitary facilities
- perceptions of ash and other alternatives to soap in different parts of the country

## 5. INSTITUTIONAL STRATEGIES

### 5.1 Introduction

5.1.1 The lack of clear-cut institutional framework for environmental sanitation has been one of the three main causes of the present poor situation. It is therefore particularly important that this aspect is given high priority by the relevant ministries.

5.1.2 At the time of writing the institutional structure for water and sanitation in Zambia is undergoing change. The formation of the regulatory body, NWASCO, has been delayed since 1995, but is now in the process of becoming law (Water and Sanitation Act 1997). However the formation of the RSU (Reform Support Unit), which is a temporary institution scheduled to design and implement reforms is now in the balance, and its form has yet to be agreed. It will define institutional arrangements if/ when it is formed. RSU will report to PCU which is at present chaired by MEWD.

5.1.3 Meanwhile the development within local government of DISS (Department for Infrastructure and Support Services) has continued and it is now nearly fully staffed. However it has only the capacity to deal with contracts for large urban and large peri-urban water supply and sewerage, and has no staff or establishment for rural and small peri-urban water supply or sanitation and no experience of community led projects and promotional campaigns for behavioural change\*. The Livingstone agreement is that rural water supply and sanitation will not be made the responsibility of CUs (Commercial Utilities) but be put with the local authority. At present there is no date for this, although township water supply operatives, at present under DWA, will be paid for by MLGH from 1999.

5.1.4 Ministry of Health has also been going through major changes, with the formation of the Central Board of Health and the 'de-linking' of district and sub-district staff from the Ministry. Extension staff are in the process of being transferred to CBoH, which may prove temporarily unsettling. However the developments so far of the CBoH, which aim to bring the management of health services as close as possible to service deliverers, effectively support the overall move to a demand-led approach. The development of the Health Management Information System (HMIS)<sup>5</sup>, if fully implemented, will have done much to make the monitoring of ES programme impacts more easily and cheaply achievable.

**5.1.5 Any institutional strategy needs to recognise a transitional phase to avoid loss of momentum through present lack of clarity on progress towards final reform structure in various sectors.** In the present dynamic situation, speculating on the institutional framework in five years' time is not very fruitful. An interim strategy will therefore be proposed.

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<sup>5</sup> The Central Board of Health revised its Health Management Information System (HMIS) earlier this year as part of the health reform process (41). The HMIS is a monitoring system which relies on data regularly collected during routine operation of the health system. It is designed to give warning of deterioration in the situation so that appropriate further investigations and actions to reverse unacceptable situations can be carried out. Several of the parameters being recorded by the System are of direct relevance to monitoring sanitation, indeed one of the six priority thrusts is 'Water and Sanitation'. This has four associated indicators each of which has a stated goal. These goals are:

- Increase Health Centre's support of sanitary facilities
- Increase accessibility of safe drinking water
- Increase accessibility of sanitary facilities (toilets and latrines)
- Reduce the number of diarrhoeal disease through improvement of public hygiene



**5.1.6 Transitional strategy may need to be pragmatic**, acknowledging the constitutional responsibilities of MLGH, but also that capacity and experience to implement, especially largely promotional programmes which will be needed at the start, lies with MOH / CBoH. Even so capacity is limited and action plans need to bear this in mind.

**5.1.7 At the start, promotion and implementation<sup>6</sup> should not be separated, but implementation will be low cost and undertaken by community or private enterprise.** In this way CBoH 'basket funds' could help support some action, if communities express sanitation as a priority. Funds could also be mobilised through D-WASHE committees, NGOs and in some cases Department of Community Development.

## **5.2 Evolution of institutional structures**

5.2.1 The framework for services in urban areas is slowly becoming clearer, and it is upon this environment which water and sanitation re-organisation has concentrated. The low priority of peri-urban and rural areas is reflected in the lack of clarity as to where they will stand. Fig 5.1 outlines the links as they stand for water and sanitation, and illustrate that at national level there are three parallel structures, and one chiefly national body, which have 'de facto' responsibility as follows :-

- Ministry of Local Govmnt. support to councils, urban w/s control of planning
- Central Board of Health rural and peri-urban (+ urban) ES promotion & monitoring
- ECZ national level monitoring of gross pollution and advocacy
- Department of Water Affairs rural water supply

At present this is the basic framework within which ES programmes have to work.

5.2.2 The reform structures (WSDG and CMMU) acting as a secretariat to PCU, which have been researching into and making guidelines for water supply and sanitation are being phased out, and will be replaced first by an interim RSU (Reform Support Unit) and then also by the regulatory body NWASCO (Fig 5.2), whose mandate will be to oversee water companies (Commercial Utilities (CU)). These will, at least in the foreseeable future, only be responsible for urban services. It is not clear yet how peri-urban areas fit into this as the omission of them from CU responsibility is based on a definition of their existing service level, rather than their needs. Some peri-urban areas may be omitted from Commercial Utility responsibility because they have only point supplies and on-site sanitation, and yet the CU is the only body which will have the capacity to implement up-grading of their water and sanitation services by linking them to urban provision<sup>7</sup>. In larger councils such as Lusaka peri-urban up-grading takes place under council facilitation (see Fig 5.4) but relies on donor

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<sup>6</sup> Implementation is here meaning action requiring construction, i.e. hardware rather than software.

<sup>7</sup> As section 7.3.7 implies, it may be cheaper to connect some peri-urban areas to piped supplies than to enforce lining of pit latrines to avoid pollution of local groundwater sources (which may already have begun)

Fig 5.1 Main institutional communication lines in water and sanitation at present

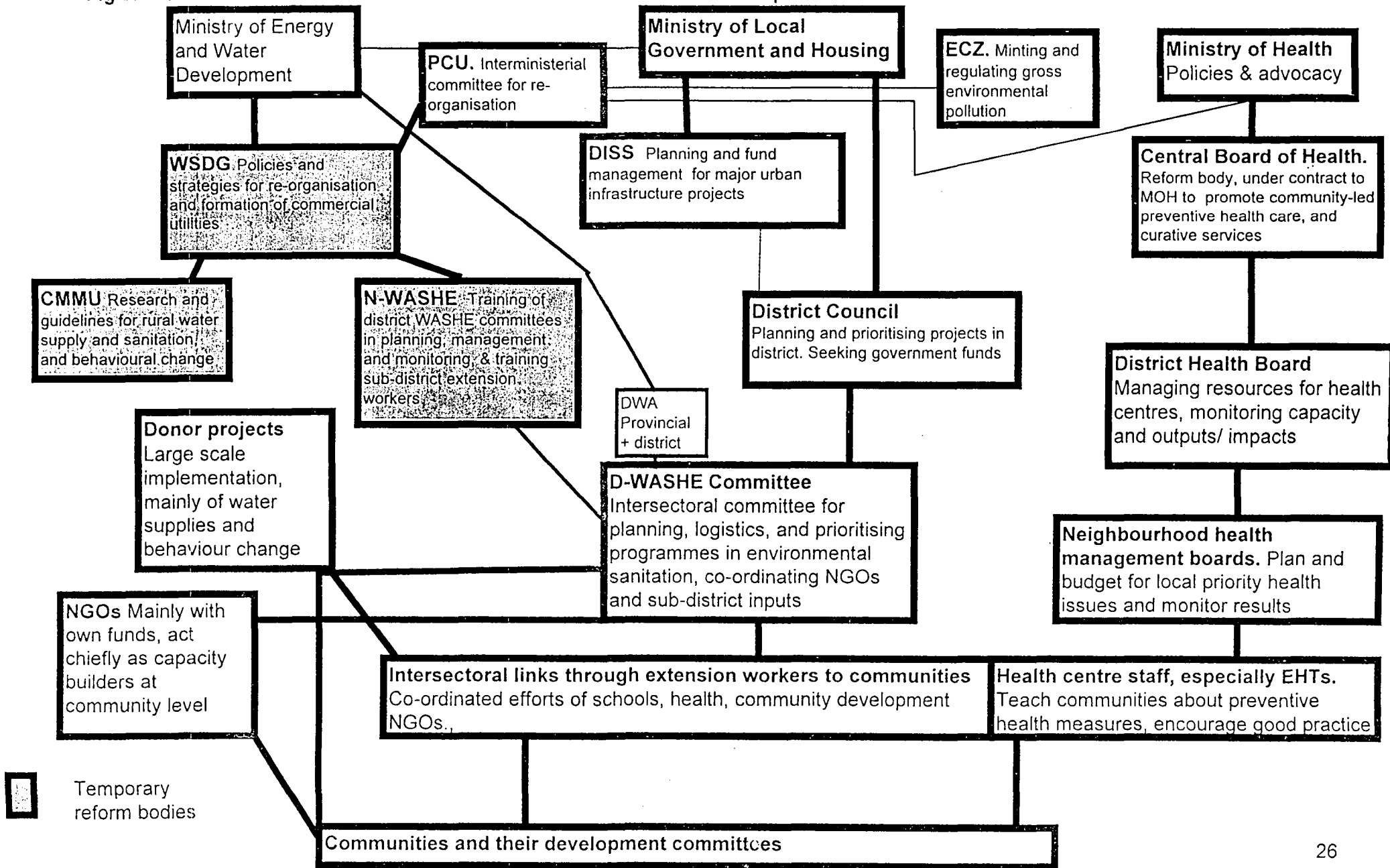


Fig 5.2 Planned Final product of re-organisation/ reform

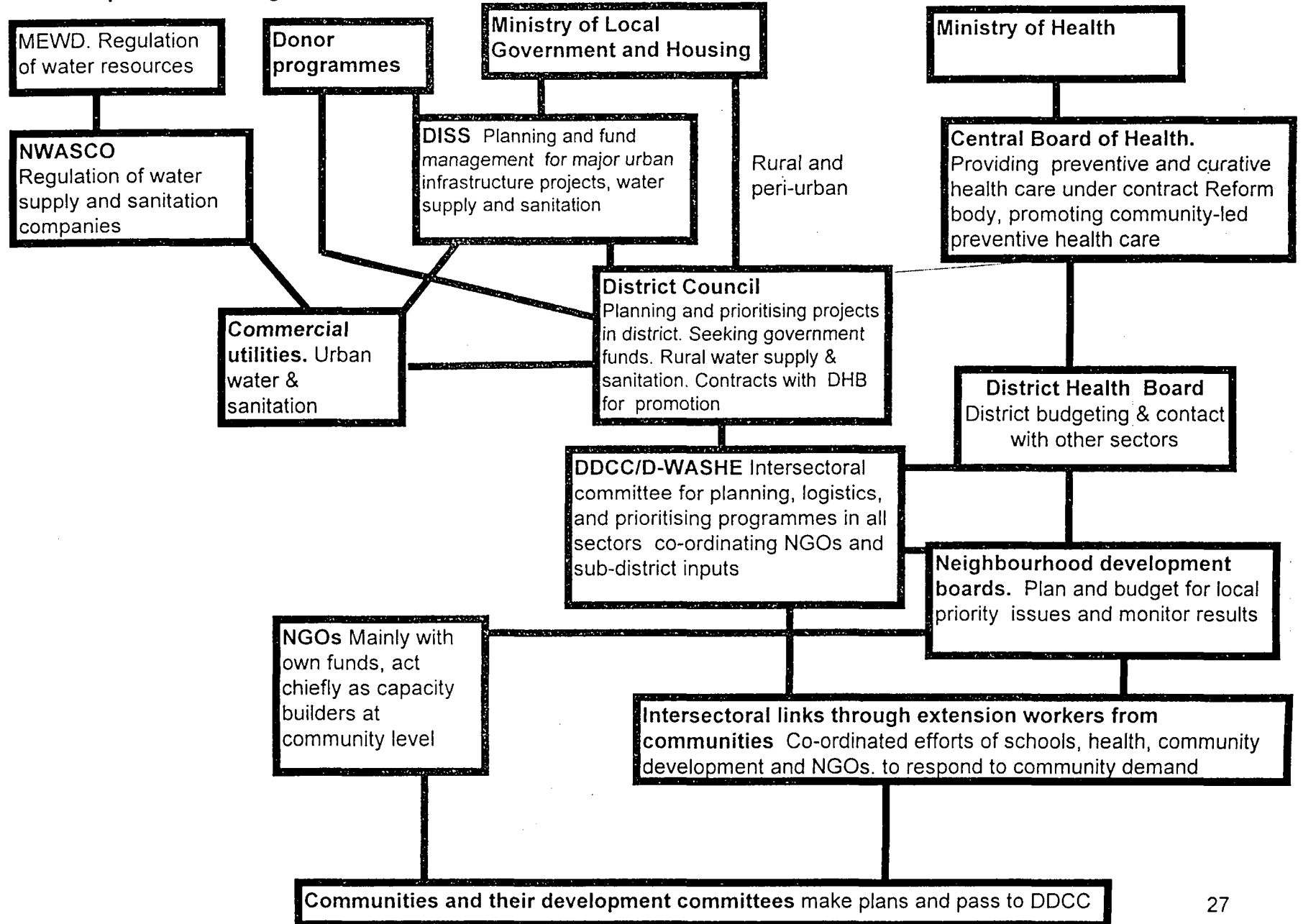
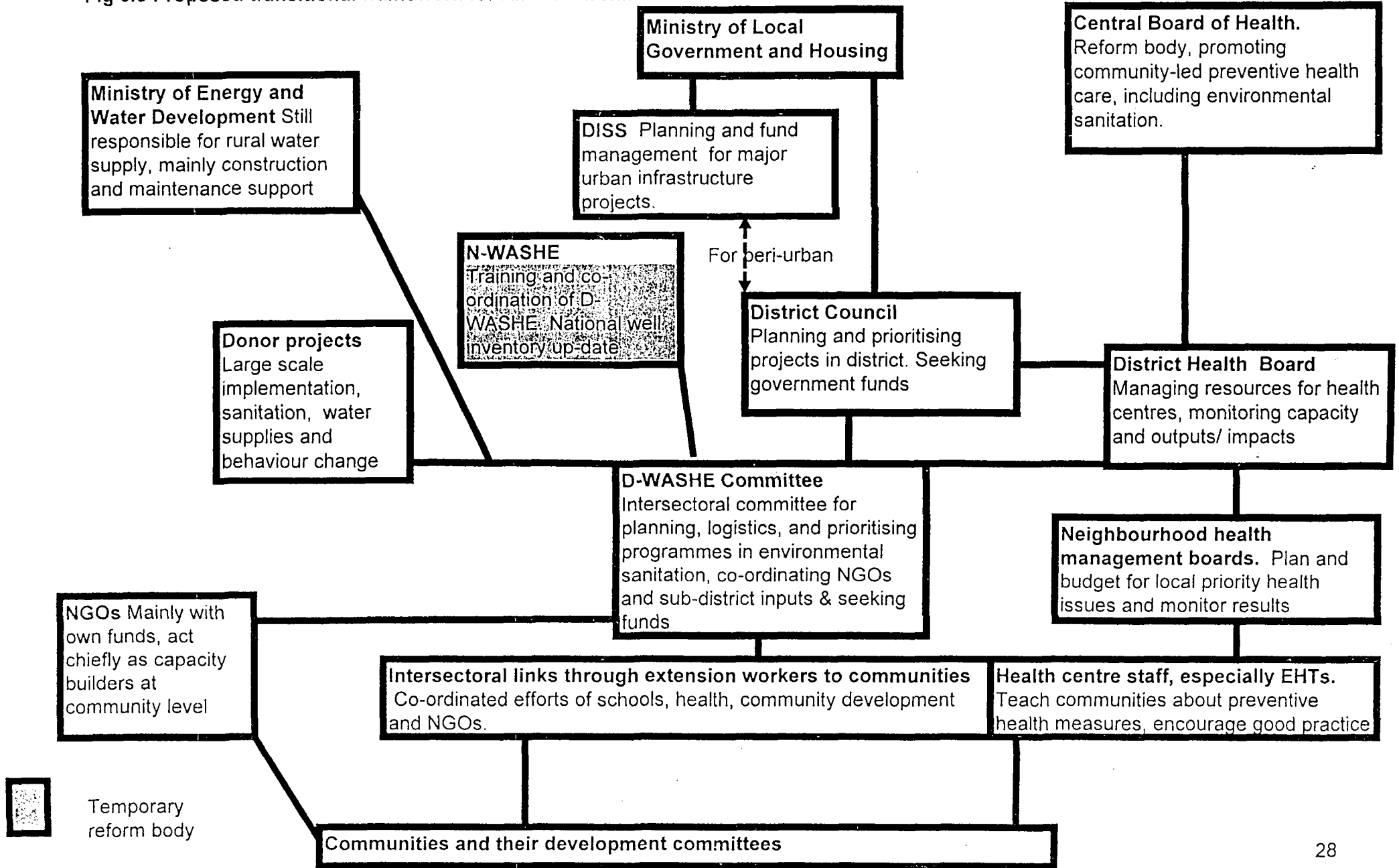
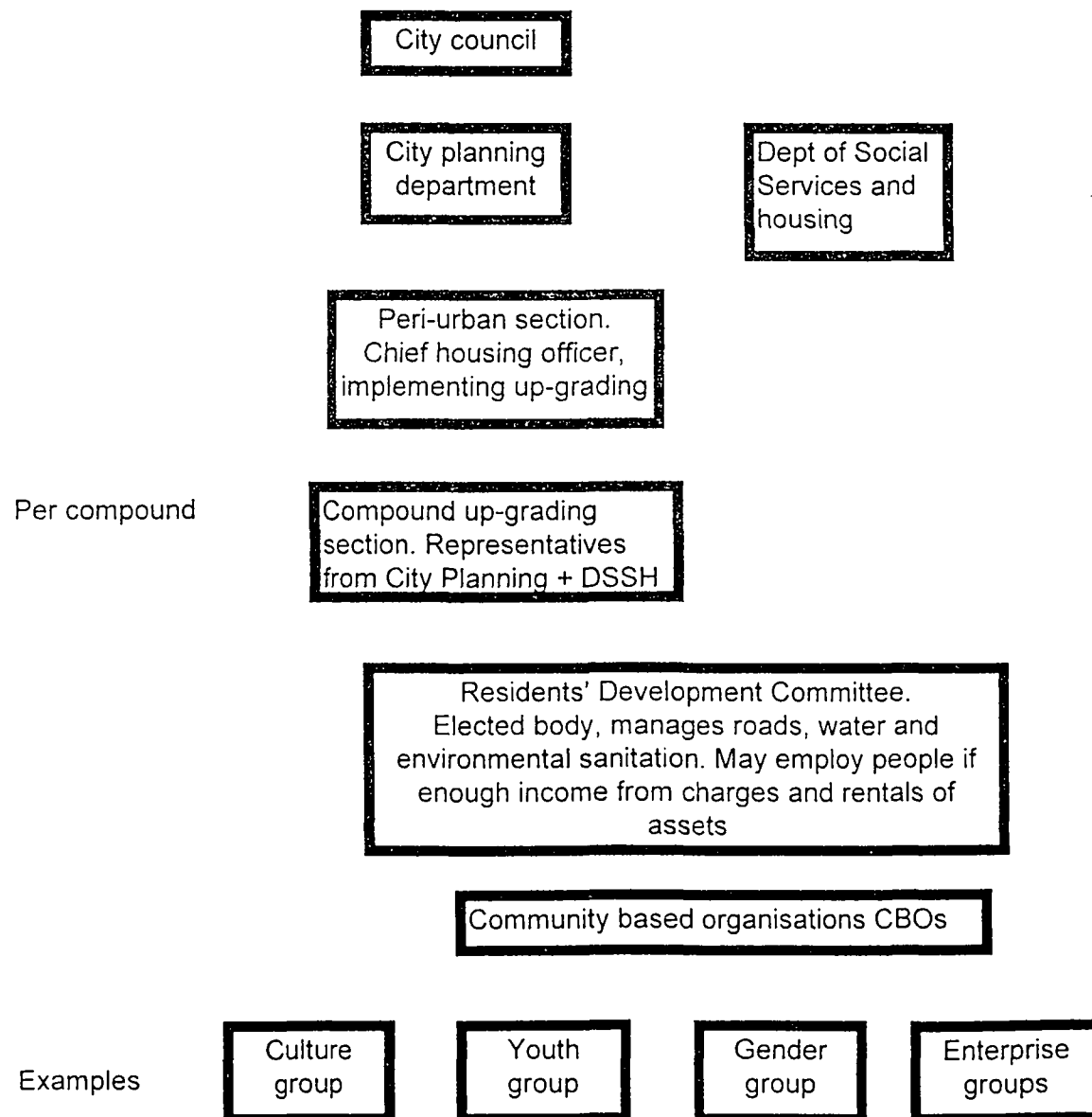


Fig 5.3 Proposed transitional framework for rural environmental sanitation



funds and the communities' ability to organise and manage systems, and assumes that on-site water supply will remain a safe option. Since DISS is generally only yet engaged in works for urban areas there is no strong lobby for peri-urban or rural funds at national level, nor to co-ordinate implementation programmes. This indicates the one possible weakness of the WASHE system at present, as there is no national body representing or co-ordinating it, since N-WASHE is a training body, not a co-ordinating one and is part of the reform structure (so not permanent). At present the WASHE co-ordinating role is taken by programmes, UNICEF, at national level, and Irish Aid and SNV at provincial levels. CMMU co-ordinated WASHE implementation in Luapula Province which was not what it was designed or given capacity to do. If information is needed from WASHE committees or they wish to apply for funds, or undertake even small programmes, they are working directly with donors. **D-WASHE committees need a national focal point for project co-ordination, monitoring, lobbying ministries to change job descriptions and give funds to such an intersectoral budget.** This role could be taken on by N-WASHE, but would require extra capacity and could be a temporary solution until MLGH has capacity to co-ordinate rural and peri-urban supplies at national level.

**Fig 5.4** Levels of peri-urban institutions typically involved in a large urban area (These are parallel structures to D-WASHE and intersectoral lines shown in Figures 5.1 -5.3)



5.2.3 If dependence is put only upon WASHE structures, this may also exclude peri-urban areas especially in large urban areas (LUAs), who also tend not to have Neighbourhood Health Management Boards yet. In institutional terms it is difficult to see how peri-urban and rural communities can fit under the same system in the transitional phase. Eventually MLGH will have overall responsibility and capacity to deal with the whole district population equitably if de-centralisation policies are carried through to their planned conclusion (see Fig 5.2). At this time MLGH would make contracts with line ministries, all donor funds would go through DISS, and NAWASCO would regulate CUs providing urban water supply and sanitation services, and will have the councils as a major shareholders. It is understood that rural and peri-urban supplies will not fall under the CUs at this stage, but will be administered directly by councils, at least until commercial utilities are strong enough to absorb this element into their organisation.

At present D- WASHE committees only function in provincial and district centres, and not in association with large conurbations. Planning and control of funding in these areas is carried out by councils including the District Planning Officer, but DDCC and the WASHE structure is not normally financed by council or local government funds, and has no legal status. It is therefore in a weak position to lobby for funds from council budgets, nor is it linked strongly to local government at other levels through DISS, since this has no rural and peri-urban section.

5.2.4 In the transition phase (Fig 5.3) it is suggested that **D-WASHE, with its greater intersectoral bias, should continue to solicit funds for ES but the routeing for these funds needs to be strengthened**, because funds at present come almost solely from donor support to the WASHE initiative. **WASHE committee members need to begin to solicit small amounts of funding through their respective ministries which need, in turn to be sensitised to the effectiveness of this approach.** Some D-WASHE funds may be put through DHB or vice versa depending on district plans and capacities. In either case both should work closely to make integrated plans, and should adopt similar approaches.

5.2.5 There should be some discussion as to whether DISS and MLGH should take greater responsibility for large peri-urban areas, but 'rural' ones could fit under D-WASHE which is answerable to the local authority as a social sector sub-committee of DDCC, or DHB.

5.2.6 In this transitional period it will be necessary for the three key ministries, MLGH, MOH and ECZ to work together at a high level to agree a structure which can be effective and attract government and donor funding to implement an ES programme. Under the present split of responsibility and capacity from national to community level, it is difficult for ES issues to be pushed at cabinet level. It is also difficult for donors to identify a clear route for funding to rural and peri-urban sanitation which can reach the community level. Councils and communities also have a problem to find well-defined routes, although the 'basket fund' for neighbourhood health boards can do this where resources are sufficient.

5.2.7 Action planning is scheduled to follow after the approval of the Strategy, but this should not take place until a transitional institutional structure is agreed by the relevant ministries. Without such a structure the programme is unlikely to gather momentum.

At a time when promotion is the main activity, and MLGH are very involved with de-centralisation and the re-organisation of the sector, perhaps MOH could be the lead ministry with particular emphasis on advocacy, community level facilitation and small scale implementation of environmental sanitation, with DWA working alongside on low cost improvements in water supply, until MLGH takes over this function. Entry point for funds could be through any of these.

**5.2.8 There is also need for a small, permanent, full-time group to undertake research, develop materials, provide advocacy, and keep the programme on track.**

One scenario might be that this group could perhaps fit into the CBoH, where much of the monitoring and evaluation will be being done. Preventive action is also a main objective of the health reform which ties up well with the approach adopted for environmental sanitation. It is suggested that, in order to maintain good links with related key ministries, there should be a person seconded from MLGH and one from ECZ among the staff. In this way, as sector policies develop, and reform takes shape, it will be possible for such a group to move to another ministry if the key players find this desirable. Funding would be needed to support the group, which could be answerable to an intersectoral committee chaired by MOH.

An alternative may be to set such a group in association with N-WASHE. Should N-WASHE move to MLGH this would then also be a possible host.

### **5.3 District level options**

**5.3.1** There is some confusion still at national level and this may also occur at district level in the future. At present D-WASHE committees, under the DDCC, are being developed to act as intersectoral planning bodies for environmental sanitation. They are receiving training in aspects such as planning, costing and submission of proposals to donors, and carry out workshops for extension staff and other sub-district groups (e.g. pump minders). As DHB is now receiving a wider remit for preventive health, including the possibility of small scale ES and development funding ('the basket' whose use depends on community priorities), **the WASHE committee and DHB need to work very closely together.** If, the DHB develops an equally intersectoral approach, it is likely to consist of much the same people (already with WASHE training) and at that stage the WASHE committee *per se* could be phased out, depending on the wish of the DDCC, who may wish to retain it as a sub-committee.

**5.3.2 D-WASHE should be encouraged to work closely with the Gender sub-committee of DDCC** where this has been set up, to try and ensure that any benefits to women from improved ES are carried through to an overall improvement in their quality of life, rather than simply giving them more time to work in the fields. Through this sub-committee and DCD women's groups, women may receive additional training on aspects of hygiene but also on ways they can set up credit systems, and/ or make use of any time saved in a way that they have control over and which they feel benefits them directly.

**5.3.3 The responsibility and potential of D-WASHE and RDCs need to be recognised by councils and included in budgets.** If D-WASHEs and RDCs are totally donor dependent they will fail as soon as such support is removed. Even quite small funds could be effectively used by pooling resources from several ministries.

**5.3.4 District level training capacity may be used to encourage development of the private sector where this could lead to lesser dependence on subsidies.**

Training of brick-layers and slab makers may be done by D-WASHE members from the Ministry of Works and Supply or DWA, but if there is scope for selling the services, private individuals should also be considered. These may build their own and/or sell their services to others.

#### 5.4 Sub-district level options

5.4.1 The main activities at community level are to:-

- provide hygiene and health education
- disseminate environmental messages as per section 4.1.2 and 4.2
- provide promotional marketing of latrines, soap, handwashing facilities
- strengthen community management skills
- act as a link between community and district support, and solicit funds
- encourage community self-monitoring

In general this would mainly be done by Neighbourhood Management Committees or rural health centre staff, who are the most widespread available resource, and for whom water and sanitation form one of the six principle health thrusts. However the **promotion or marketing of latrines and soap, or pots for handwashing could also become a small scale enterprise centred on the health centre, school or women's group.** In particular the selling of soap from health centres would allow health centre staff some incentive for the promotion of hand-washing practices.

5.4.2 The institutions available to undertake such tasks are outlined in Table 5.1.

**Table 5.1 Institutions with environmental roles in rural and peri-urban areas**

Organisation	Advantages	Disadvantages	Proposed roles
Neighbourhood Health Management Boards	<ul style="list-style-type: none"> <li>• Voluntary, no implied cost</li> <li>• Part of communities</li> </ul>	<ul style="list-style-type: none"> <li>• Have not yet received much training</li> </ul>	<ul style="list-style-type: none"> <li>• Co-ordinate community demands relating to health, and make neighbourhood plans, monitoring</li> </ul>
Health Centres	<ul style="list-style-type: none"> <li>• Permanent, close links to communities.</li> <li>• Provide forum where mothers take their children</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity very small for large number of villages</li> <li>• CHWs and TBAs not trained in necessary skills</li> </ul>	<ul style="list-style-type: none"> <li>• Main channel for communication with communities</li> <li>• Monitoring and evaluating changes</li> <li>• Small scale implementation</li> </ul>
NGOs (international)	<ul style="list-style-type: none"> <li>• Good mobilisation of international funds</li> <li>• Accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Only temporarily in area</li> <li>• May rush to complete, to detriment of long-term impact</li> </ul>	<ul style="list-style-type: none"> <li>• Primarily capacity building at all levels, rather than construction/ implementation</li> </ul>
NGOs (local)	<ul style="list-style-type: none"> <li>• Voluntary basis</li> <li>• Not bureaucratic</li> <li>• Integrated approach</li> <li>• Close to communities</li> </ul>	<ul style="list-style-type: none"> <li>• Weak at soliciting funds</li> <li>• May be poor management</li> <li>• No control</li> </ul>	<ul style="list-style-type: none"> <li>• Training and working alongside RHCs to support them in community facilitation/ implementation</li> </ul>
Chiefs	<ul style="list-style-type: none"> <li>• Make village policies</li> <li>• Have authority</li> <li>• Easily identifiable route for 'command' communication</li> </ul>	<ul style="list-style-type: none"> <li>• Little control over chief's actions</li> <li>• Subjects may resent messages</li> <li>• Limited knowledge of issues</li> <li>• little power in peri-urban areas</li> </ul>	<ul style="list-style-type: none"> <li>• Informal monitoring of situation and promoting environmental responsibility</li> </ul>
Churches	<ul style="list-style-type: none"> <li>• Permanent and respected</li> </ul>		<ul style="list-style-type: none"> <li>• Promoting good practice and value of cleanliness</li> </ul>
Schools	<ul style="list-style-type: none"> <li>• Permanent and structured organisation</li> <li>• Great influence on children's behaviour</li> <li>• Potential for demonstration purposes</li> </ul>	<ul style="list-style-type: none"> <li>• Often remote from community</li> <li>• Limited in skills, esp. construction</li> <li>• Lack of communication materials</li> <li>• Government doesn't acknowledge linking role to community</li> </ul>	<ul style="list-style-type: none"> <li>• Teaching and learning from pupils</li> <li>• Passing information gained to D-WASHE/ MLGH</li> <li>• Acting as good example and demonstration</li> <li>• Channelling information to communities</li> </ul>



**5.4.3 At community level various groups would be involved. Groups with special interests and training (e.g. women's groups, youth groups, development committees/ VWASHE committees) can have particular roles, as can individuals.** In the latter category, TBAs, CHWs and others regarded as 'knowledgeable' in the community can be both role models and trainers. With low employment **there may be a role for youths to look at ways they could generate income from activities which would improve the environment, e.g. work on solid waste disposal or to dig drains, especially in peri-urban areas, where RDCs are active.**

**5.4.4 Implementation would be mainly done through RHCs and NGOs, and promotion through schools, NHMBs, chiefs, churches and health workers, especially those at community level.**

**5.4.5 As at other levels, existing community development or management committees should be used whenever possible.** Thus if a community health board already exists it should be discussed whether this, or any other committee would take on the responsibility for ES or whether a new committee is preferred.

## **5.5 Legal framework**

5.5.1 The legal framework outlined in the 'Analysis of the Existing Situation' has been further strengthened by the recent passing of the Town and Country Planning Policy, adopted in the last sitting of Parliament. In summary the following Acts make provision for aspects of ES :-

<b>Environmental Control 1990</b>	Gross pollution of water and air Licensing of rubbish tips
<b>Local Government Act 1991</b>	MLGH responsible for rubbish removal Environmental health in terms of markets, butcheries etc. sewerage and drainage provision of public sanitation
<b>Public Health Act 1935 and National Health Services Act 1995</b>	Local Authority responsible for regulation relating to :- New and rehabilitated houses having a latrine Siting of latrines CBoH becomes responsible for dealing with outbreaks of infectious/ preventable diseases if Local Authority fails to do so.
<b>Village Development Act</b>	Chiefs power to instruct community to build latrines.
<b>Local Government Act 1974</b>	Regularising of shanty compounds

At Workshop 4 a sub-group looked into the relevant Acts and produced the table presented in Figure 5.2 to summarise the implications of the current legislation on environmental sanitation, particularly the provision of latrines. All except the Public Health Act refer to communal latrines rather than individual latrines.\*

**Table 5.2 Responsibility for sanitary facilities according to the relevant Acts\***

	Public Health Act 1935	Local Government Act 1991	Water Supply and Sanitation Bill 1997	National Health Service Act 1995
Planning	Individual to plan for sanitation so that no nuisance to public [Section 64]	LA for communal facilities only [Section 61. Second schedule Art. 50]	LA for communal facilities only [Section 10]	
Promotion				LA [Section 6]
Implementation (construction)	Individual to construct. No nuisance [64]	LA for communal. [Section 61. Second schedule Art. 50]	LA for communal facilities only [Section 11]	CBoH when LA fail to provide [Section 7]
Regulation	LA for regulation [68]		Licensing of communal by NWASCO [11]	CBoH [Section 7]
Enforcement	Local Authority [68]			LA [Section 6]

5.5.2 The main problem is the difficulty that local authorities have to enforce such regulations. Even where planning regulations are applied it is not usual for planning departments to be able to go and check up that conditions are being kept to. **In order that no more problems than absolutely necessary, are stored up for the future, perhaps local authorities could identify those most critical situations and areas, and concentrate their regulatory powers on them.** Without this, future problems of access for latrine emptying, or even sewer laying may cause much unnecessary additional expense at a later date. In urban areas the licensing of trading premises allows local authorities to put pressure on property owners to comply with regulations, but no such similar sanctions yet apply to domestic properties.

5.5.3 The Cabinet memorandum number 1 of 1995 established DDCCs and sub-committees such as D-WASHE. Although it also established Provincial DCCs and a National DCC these have never been formed. Its budgetary arrangements are not clear, which has made the sub-committees operation difficult on many occasions, where councils do not support them.

5.5.4 Where Local Authorities are unable to deliver the services which will prevent outbreaks of communicable or infectious diseases (such as cholera and typhoid), the CBoH is empowered to take over. In this way they are often called upon to undertake costly emergency solutions where good sanitation would have avoided the need for such measures.

## 5.6 *Human resources development.*

5.6.1 The changing of emphasis from centralised development planning to community empowerment requires a very different approach to that previously prevalent in government departments. **Most of the changes require capacity building in management principles, training skills, and finding methods to help people convince themselves that changes in behaviour are worth the effort.** The more tangible aspects such as latrine construction, logistics, and research planning and implementation are also required.

5.6.2 **Much of the cost of a sanitation programme will be linked to the costs of capacity building, rather than, as in the past, to latrine construction.** However there are also comprehensive plans for HRD tied to the Health Reform and also in relation to D-WASHE training packages, teachers refresher courses and a variety of donor and NGO

projects. Any attempts to make HRD plans would need to take account of these, and should be the product of a co-ordinated plan of the several ministries who may be involved.

**5.6.3 The large part that training has to play requires close links with training institutes.** This will assist both in ensuring environmental sanitation issues are well covered in new curricula, and the drawing up of cost effective training programmes and materials. As a result new extension staff will be better prepared and existing staff can receive refresher training.

**5.6.4 In that schools should play a major role in any sanitation initiative, training of teachers, and influencing them to provide good role models in ES issues should be a high priority.**

**5.6.5 A major constraint to any programme will be the capacity at district and sub-district level. Planning of activities should also take account of any other programmes which might be intending to use the same management structures or field personnel.** WASHE committee members and District Planning Officers may be able to assist in identifying key personnel who have spare capacity and those who are already over-committed in various related sectors.

**5.6.6 Funding through GRZ at district level will need to start at low levels, as no organisation is in a position to manage large capital projects in the sector, particularly in rural and peri-urban environments.**

**5.6.7 In order to provide the best long-term results, and devolve management to the lowest level, training should be aimed at people who are close to, or at community level, via effective preparation of those at district level, which gives them the capacity for passing on their acquired expertise.**

**5.6.8 Training materials may need developing, based on research findings. However BASICS and other NGOs are already producing manuals for health workers and others which may reduce the amount of work required.**

**5.6.9 A sub-group which, at Workshop 4 considered human resources development and capacity. To meet their chosen objective 'to build and enhance capacity at all levels in the sanitation sector' they suggested the following list of strategies, some of which are also mentioned above:**

- use existing D-WASHE structures to promote and monitor implementation of ES programmes
- use Village Development Committees / Resident Development Committees for ES.
- staff at central level to be trained in the information, education and communication (IEC) training modules for ES
- use learning institutions in promotion of ES
- use the existing adult literary classes, women's' clubs, and youth group to promote ES
- use local research and development (R&D) capacity in ES programmes
- use the private sector in promotion of ES
- use local drama clubs to promote ES programmes, through capacity building of the communities
- Use local leaders as a link between D-WASHE and their subjects to promote ES.

## 6. FUNDING MECHANISMS AND RESOURCE MOBILISATION

### 6.1 Introduction

6.1.1 The lack of funds at all levels is a direct result of the low priority given to ES by government, donors, NGOs and individuals in the past. This is now changing a little, and may be altered further through advocacy leading to greater awareness of costs and benefits. The degree to which this may be effective will influence funding strategies. In particular it will affect the dependence put on community/individual financing/ resource mobilisation, as opposed to the need for and availability of subsidies. The speed with which communities respond may initially depend on some incentives which subsidise activities, and the response will also affect the degree to which the private sector is interested to become involved.

6.1.2. The history of government commitment to rural water and sanitation is not encouraging, and most donors are putting funds into provincial or district levels by bypassing government systems at national level. There is a 'chicken and egg' situation where the lack of proper channels for funding is both a cause and an effect of this lack of funding commitment through government systems. **Part of advocacy should be to show government how quite small funds have been able to have impact through tackling environmental sanitation issues**, and how they have been administered successfully through the growing (albeit still limited) de-centralised capacity for intersectoral planning. In this way, in combination with evidence of the cost to the nation of the present poor situation, some budgeted activities in ES could receive more priority, leading to development of better lines of communication between national and district levels in rural and peri-urban ES. Up to now the only channels for any ES initiatives have been Innovation funds through MOH, for water source improvements and latrine construction, and counterpart funds to some donor projects.

6.1.3 Not enough is known at present on the degree to which good promotion of ES issues can create a demand which does not require subsidy. Most projects to date have assumed this was necessary to kick-start a response, and there is little experience of attempting to do without it. Some flexibility is therefore needed, and **pilot projects should include attempts to encourage communities to adopt solutions which are affordable and sustainable if at all possible from within their own resources.**

6.1.4 There is little existing experience of payment for sanitation service in rural areas. Some people, while receiving subsidised Sanplats/ slabs are paying builders to provide super-structure or pit lining. In peri-urban areas, private unmechanised latrine emptying services are available and paid for by a few, often people who also have to pay for water.

### 6.2 Proposed sources of funds

6.2.1 Table 6.2 summarise the proposed sources of funds for medium (five year) and longer term strategies. This suggests that :-

1. **Individuals or communities would cover most of the cost of latrine construction, soap and latrine emptying, and would be subsidised temporarily for provision of**

discharge points for latrine waste (where needed in peri-urban areas), and probably for latrine slabs/Sanplats (especially in rural areas).

2. GRZ will make the major contribution in the provision of extension staff for promotion and marketing of good environmental sanitation practices, with assistance from NGOs where possible. Government training institutions would also include participatory and community development techniques in the training of new intakes, so contributing to the capacity building of staff at all levels.
3. Donor funding would be required particularly for training and research in the early stages but government should fund social mobilisation and contribute funds towards research\*.
4. The aim would be that within five years communities cover all costs for ES interventions at community level except promotion\*.

Table 6.1 ES components and their funding

Item	Short-term source (<5 years)	After 5 years	Comments
Promotion	GRZ / NGOs	GRZ / NGOs	Salaries / allowances of sub-district level personnel
Training in promotional/ participatory methods	NGOs, donor funds usually associated with applied programmes. GRZ through training colleges for new staff, and standard refresher courses.	Within GRZ system	After five years, most field-based people and some community based volunteers trained, and methods become standard within cross-sectoral curricula.
Promotional materials	NGOs and donors	Materials developed and supplied. Further development through schools and training colleges	Materials will continue to evolve but basic materials will be established.
Research	Donors and NGOs through pilot programmes, and separately funded research by Zambian institutions.	Still need for some outside funding, on impacts of different pilot approaches	As far as possible will use Zambian institutions, so part GRZ funding. Also tie in with HMIS, and possible monitoring through schools.
Latrine construction	Community/ individuals. Minimised subsidy for below-ground components in rural areas as initial incentive, and test possibility of removing subsidy for peri-urban*	All borne by community. No subsidy for rural areas, peri-urban encouragement of commercial promotion and marketing	
Latrine emptying	Commercial charges to individual households. Initial subsidy to provide safe discharge points in peri-urban areas	Fully commercialised, or done by individual	Needs some funded research on viable alternatives for collection and disposal
Soap	No subsidy, full cost to consumer	No subsidy, full cost to consumer	Pilot projects on selling soap through health centres, and also on high level short-term subsidy.

**6.6.2 Subsidies targeted at individual householders, should be avoided.** If subsidies for latrines are targeted only at those classified as 'the poorest' this is likely to lend a stigma rather than a status to latrines.

### **6.3 Strategies to reduce costs of resource mobilisation**

**6.3.1 Use a community strategy, with a threshold number / proportion of houses in a community.** If less than half the houses in a community are willing to make improvements (or, say 20 houses minimum in rural areas) then any latrine construction requiring subsidy would not take place. In this way those who wish to make improvements may put pressure on others in order that they themselves may benefit. (This has proved a powerful lever in community based sanitation programmes in Malawi and reduces mobilisation costs.)

**6.3.2 Employ ES promotional materials in other programmes, e.g. adult literacy.** MOE, and DCD have community based programmes in adult education, particularly for women, which could use such materials, with no further cost implications.

**6.3.3 Pilot different alternatives so that subsidies can be phased out as soon as possible.** Assessing impact of reducing subsidy in some on-going projects and starting up pilot projects with different levels of subsidy or subsidy only to targeted groups.

**6.3.4 Use people coming to health centres, Councillors and PTAs as vehicles for messages\*.** The needs of mobilising villages all the time can be reduced by making use of the opportunity to discuss problems and identify community needs when people already come to focal points. For instance PTA meetings can be used for planning activities and linking to other initiatives, or for the promotion of fund raising for items such as tanks for handwashing near institutional latrines.

### **6.4 Local funding strategies.**

**6.4.1 Investigate potential of using community credit systems where they exist.** Especially in peri-urban areas, some NGOs have set up community credit systems and trained management, usually associated with CBOs, which can help in the purchase of Sanplats or perhaps to set up in their production. This is not a system based on sanitation alone and being broader/ development-based, is more likely to succeed. It is also preferable to indigenous local credit systems 'kaloba' which have very high interest rates. Similar systems are much rarer in rural areas, but there are some women's group co-operatives and communal funds associated with community water supply systems which might be usable.

**6.4.2 Make allowances for seasonality of cash in rural areas.** It may be necessary to allow credit if construction of latrines is scheduled for times of low cash flow, or to encourage pre-payment. Payment in kind is possible, but normally the cost of administering the system, collecting and selling the produce cannot easily be borne by the payer, and so results in subsidy.

**6.4.3 Encourage small scale enterprise, which may lead to informal promotion of good habits..** e.g. wives at rural health centres selling soap, or Sanplats. Some small initial subsidy might be required in pilot areas, but might be done with NGO support. Commercial Sanplat production in rural areas tends to come across the difficulty/ expense of distribution, limiting production to few units.

## **6.5 Routes for funding**

6.5.1 Strategies for funding will depend on the institutional model adopted, and are likely to differ according to donor experience and other programmes being implemented.

**6.5.2 If funding is small scale and district level, then D-WASHE committees may be used.** Increasing numbers of programmes are putting small amounts of money through D-WASHE committees. This level of funding is very suitable for ES initiatives and training of extension workers. It is answerable to the council auditors, with sub-sector committees such as D-WASHE able to hold separate accounts from the council and MLGH.

**6.5.3 If it is required that funds be used only for environmental sanitation then they should pass through DDCC or D-WASHE who will make a contract with appropriate organisations for specific services\*.** CBoH are now putting basket funds at district and health centre level. These are not separated according to the elements of the Essential Package, but do allow for small scale implementation, depending on the priorities of local communities. However since CBoH have to make their action plans in the previous year, clear commitment needs to be given well in advance.

**6.5.4 If routing is through NGOs, they should plan in close co-operation with DDCC or D-WASHE.**

## **6.6 Gaps in information**

- Potential for commercial rubbish collection (thought to be low)
- Affordability and willingness to pay in different socio-economic environments
- Credit systems in rural areas
- Feasibility of strategy using communal funds (in the same way as they are collected for water supply, and perhaps in association with this) to finance community ES strategy and cover those unable to afford contributions.

## 7. TECHNOLOGY OPTIONS

This chapter considers the wide range of technology inputs required to support the creation of an improved sanitary environment. Although it looks at latrines in detail it also considers some aspects of the technological options appropriate for handwashing devices, and briefly considers solid waste disposal, drainage and the environmental impact of a major increase in latrine construction. The statements in the text which are highlighted in bold are either strategy points which are brought together in Section 11, or are points which need further research and these are listed together in Section 7.7.

### 7.1 Objectives and Associated Implications

#### 7.1.1 In view of the long term sector objective (2.3.2)

Proposed sanitation interventions need to be appropriate, acceptable, affordable, sustainable and demand driven. To have health impact technological interventions will need to be accompanied by appropriate hygiene behaviour changes.

7.1.2 The next four sub-sections examine in turn the broad implications of each part of the first sentence of this objective.

#### 7.1.3 Appropriate and Acceptable

**To be technically, culturally and environmentally appropriate and acceptable each technology used should satisfy the following criteria:**

- **cause no harmful surface soil contamination**
- **cause no harmful contamination of untreated potable water sources**
- **prevent the spread of disease by flies or animals**
- **present no health risk to people using or maintaining the system**
- **be free from offensive smells and unsightly conditions**
- **be culturally acceptable and gender sensitive**
- **use as little water as possible where this is scarce.**

#### 7.1.4 Affordable

**To be affordable each technology should have a minimum-cost entry point which virtually all prospective users are able to afford should they want to adopt it.** The communications strategy will seek to bring about changes in attitudes of people so that they desire appropriate forms of sanitation and are willing to invest sufficient money and other resources to adopt at least the entry-point technology.

##### 7.1.4.1 Pre-entry point

A simple improvement to the existing practice of open defecation would be to encourage people to at least take a hoe with them when they go to defecate and to then bury their faeces (sometimes called the 'cat' method) but there are four aspects that make this inappropriate for general use:

- the faeces may be dug up again (by another person who digs a nearby hole or by an animal) before the harmful pathogens have died off, thereby creating a risk of disease transmission
- hookworm larvae can migrate up through a shallow soil covering (44)
- fly breeding is not always eliminated



- if a person is seen carrying a hoe at certain times of day it may embarrass them since it is obvious that he/she is going to or returning from defecation. (However a similar problem needs to be overcome in people who feel embarrassed in being seen entering or leaving a latrine)

7.1.4.2 Despite what has just been said, people who work in their fields far from the home latrine should be encouraged to at least adopt this practice of burial of faeces if they have to defecate in the bush, because it is certainly better than leaving the faeces exposed.

#### 7.1.4.3 Entry-points

Because the shallow burial method is not hygienic, the suggested entry point for hygienic disposal of faeces is the adoption of a sealed-lid Sanplat system. This could be a very small unreinforced, or very lightly reinforced, concrete slab (0.6 m × 0.6 m × 0.05 m) which can be used to improve an existing simple pit latrines. Its use is illustrated in Appendix 5.1. In such a latrine the slab can be laid on the existing floor to:

- provide an easily cleaned surface
- provide raised footrests. These reduce the risk of fouling of the slab (because people position themselves better) and reduce the risk of the transmission of hookworm to bare feet
- provide a sealable squatting hole to prevent the entry of flies and cockroaches
- provide a sealable hole to reduce the presence of odours.

7.1.4.4 Where there is no existing latrine, this small slab can be used on a new latrine with a log and mud a floor; but if logs were in a large latrine building programme there will be environmental implications (see Section 7.3.7). However, because of the risk of eventual rotting of the logs, the larger concrete slab mentioned below is preferable.

7.1.4.5 Where the user can afford a larger slab (e.g. 1.3 m diameter × 0.06 m) reinforced concrete slab (sometimes also called a Sanplat) which is strong enough and large enough to span a pit (e.g. 1.0 m diameter) without log supports should be used. This option, which is already in use in Zambia, may be cheaper than the smaller slab if the logs have to be purchased and it can be reused on a new pit when the first one becomes full. It should also have a lid for the squatting hole to control flies and odour.

7.1.4.6 In some soil conditions a pit lining of some sort may be required to prevent collapse, although if the pit is round and of small diameter this risk reduces. Unfortunately such lining will increase the cost of the entry level so should not automatically be a requirement. However as insurance against the risk of collapse, and to allow the construction of a wider, longer lasting pit, the householder may choose to line the pit if he can afford it.

7.1.4.7 Unlike the VIP latrine which is mentioned later, the sealed lid latrine does not need a superstructure or roof to function hygienically. However users will usually choose to erect a basic privacy wall and for convenience may also add a roof to protect themselves from rain. (The roof also prevents rainwater water draining off the slab into the pit, although this does not usually lead to problems). Users need to remember to always replace the lid.

#### 7.1.4.8 Incremental improvements

Although the entry point will offer a very basic technology, wherever possible the technology should be upgradeable so that owners who want to, can improve their sanitation facilities at a later stage when they can afford to do so.

7.1.4.9 This for example may be possible if the small Sanplat used on a traditional latrine as an entry-level is later incorporated into a larger, say 1.3 m diameter, reinforced concrete slab which the owner uses on his/her next latrine which is built without a log floor. (See chapter 7 of reference 45 for more details about this idea)

7.1.4.10 If, in addition to the squatting hole, the 1.3 m diameter slab (or the combined slab just mentioned), is provided with a 150 mm diameter hole temporarily sealed with a close fitting stopper, then at a later stage it will be possible to add a vent. If the vent was of sufficient size and equipped with a fly mesh, and the superstructure were upgraded to produce a darkened interior, this would create a ventilated improved pit latrine (VIP) which is illustrated in Appendix 5.3. This type of latrine does not use a stopper but still controls flies and is likely to give better odour control than the sealed-lid latrine.

7.1.4.11 Another way of upgrading relates to the lining, where this is required. In the short term a sealed-lid latrine can be used effectively on a shallow small diameter, unlined pit with a very simple superstructure, possibly just consisting of a privacy wall. Whenever the owner could afford the lining materials, this same slab could then be used on a larger diameter lined pit, and at this stage a more permanent and expensive superstructure could be built.

**7.1.4.12 This idea of progressively upgrading latrines needs to be piloted technically and socially to confirm that it work successfully in Zambia.**

7.1.4.13 In Mozambique 1.2 m and 1.5 m diameter, 40 mm thick, domed unreinforced latrine slabs have been very successful (45). An example of this type of slab, which is cast on a shaped pile of sand, is illustrated in Appendix 5.2. It has been tried in Zambia by at least one project but they failed when test loaded, probably because of the poor quality of the available construction materials. **However, because the potential saving in reinforcement will reduce the cost of materials for a latrine slab by at least one third, it is recommended that this idea should be piloted elsewhere in Zambia, where there are suitable sands and aggregates.** As described later, the strength of latrine slabs can be simply tested after production by supporting them on four bricks and standing six people across a diameter.

### 7.1.5 Sustainable

7.1.5.1 **The use of direct subsidies to reduce the construction cost of technologies should only be used as a last resort. It may sometimes be appropriate in the very short term but is best avoided because once subsidies have started their removal is 'politically' difficult and is usually detrimental to continued progress.**

7.1.5.2 If subsidies are really thought to be necessary at the start of a programme, then at that stage it should be made clear to the whole community that the subsidy is going to be gradually reduced or phased out over a defined time-scale.

7.1.5.3 In some projects/programmes there are indirect subsidies relating to the procurement (particularly transportation and bulk purchase) of materials. The effect on replicability of the technology, when at the end of the programme these subsidies cease, needs to be carefully examined at the planning stage. The plan should be to seek to set up a way in which the technology can continue to be adopted even after the indirect subsidies are removed.

**7.1.5.4 The long term operation, maintenance and replacement requirements of the technology should be well explained to potential users and should be within their expected capabilities.**

7.1.5.5 The expected life-span of the chosen size of latrine pit for certain sized families should be made clear, particularly if the pit is very small, because this may affect the type of superstructure the owner wishes to invest in. The owner also needs to be made aware of the following:

- the need to keep the slab clean
- the purpose of the darkened superstructure, vent and fly-mesh if it is a VIP and how to check they are working properly
- the purpose and use of the stopper if it is a sealed-lid latrine
- the need to eventually dig another pit (when the first is full to within 0.5 m of the slab) and to move the slab and re-build a superstructure
- the addition of ash to the pit if necessary to control odour (46).

### **7.1.6 Demand Driven**

7.1.6.1 This importance of people reaching a stage of really wanting appropriate sanitation technologies has been discussed in Section 3 and 4 of this report.

7.1.6.2 **Government, Donors and NGOs should not try to implement programmes faster than the development of real demand for the sanitation technology.** It is important that the users want to adopt the sanitation strategies on offer. Willingness on the part of the user to pay the full cost of the technology is a good indication of felt need. Offering a small range of incrementally improvable technical options (as previously described) is likely to allow demands from people with different levels of disposable income to be met in an appropriate way.

7.1.6.3 **High subsidies and programme efforts to meet target numbers of facilities by a certain time, irrespective of demand and appropriate community/user participation, may result in facilities being provided which are not properly completed or which are not used.**

7.1.6.4 **The use of legislation to enforce the construction of latrines at existing dwellings in rural and peri-urban areas will often lead to facilities being poorly built and not used.** Finding ways of encouraging people to want to adopt latrines is a better approach to hygiene improvement than using the Chief to threaten them with fines for not having a latrine.

## **7.2 Implementation Approach for Domestic Latrines**

### **7.2.1 Latrine Construction and Training**

7.2.1.1 **It is recommended that the most appropriate and sustainable system of domestic latrine construction is for local private masons (including women where appropriate) to be trained to construct the type(s) of latrine most appropriate for the area in which they live. Any householders can then privately employ these masons to build at least the parts of the latrine which need a masons skills (e.g. the sanitation platform).**

7.2.1.2 The owners can contribute to the construction of the latrine, and thereby reduce the amount they need to pay someone (e.g. the mason). Typically such tasks include:

- digging the pit
- providing materials for the Sanplat to be constructed near the latrine (or purchasing a pre-cast slab and transporting it to site)
- providing building materials for the superstructure (and lining if needed)
- providing labour.

**7.2.1.3 The sealed-lid Sanplat and the VIP latrines seem to be the best suited of the many types of on-site sanitation systems for most rural and peri-urban areas in Zambia** and they are already in use on a number of projects. However it is too early at this stage to recommend complete latrine designs for each of these types, or to suggest a design for the proposed incremental upgrading.. Those who are presently promoting different designs in the country need to monitor the performance of their design of latrine over a period of time (at least two years experience) to check that there are no longer term problems with the current designs. The advantages of sealed-lid and VIP latrines over other types of pit latrine are presented in Appendix 5.4.

**7.2.1.4** In order to maintain good design of latrines it is recommended that standard designs are developed to specify all the essential points but which allow freedom to the builder/owner to choose their own features where these will not affect the hygienic performance of the latrine.

**7.2.1.5** A national body should draw up minimum recommended standards for technically important components of sealed-lid and VIP latrines. When doing this reference should be made to the findings of intentional experience and international research already carried out (e.g. references 44,45, 46 & 47), the experiences of those already implementing the construction of latrines in Zambia and feedback from communities using the latrines. The standard should specify only the essential technical points and allow freedom to the builder/owner to choose their own features where these will not adversely affect the hygienic operation and/or durability of the latrine.

**7.2.1.6** For all latrines the standard should recommend:

- some guidance on siting\*
- some guidance on the size of slabs\* the squatting hole size and the orientation of footrest
- some guidance on suitable reinforcement for the concrete
- appropriate slopes to the surface of slabs around the squatting hole to facilitate drainage when cleaning the slab
- some guidance on an appropriate size/volume for the pit \*
- some guidance on the need for lining of latrines (see recommendations in reference 47)
- that the ground around the latrine is raised and that surface water is diverted away from the latrine to reduce infiltration of rainwater into the pit, leading to its collapse where it is unlined.

**7.2.1.7** For sealed-lid sanplats additional recommendations should be made relating to

- how to best form the close fitting stopper

**7.2.1.8** For VIP latrines additional recommendations should include:

- the internal sizes of the vent pipe/chimney which relate to the material it is made from
- the height of the pipe/chimney above the roof (recommendations need to relate to flat and conical roofs) and preferred ways of fixing the mesh to the vent
- the material used for the fly-screen and the size of its apertures

- appropriate ways of allowing a restricted amount of light into the latrine so that the inside is not so dark that it discourages users

7.2.1.9 Wherever possible simple diagrams should be used to describe these recommendations clearly.

7.2.1.10 CMMU have produced a supplementary training module, 'Options for Excreta Disposal Facilities' (but it only gives a very little amount of information about the VIP and it does not mention the sealed-lid Sanplat). (51)

7.2.1.11 A detailed illustrated 'Mason's Guide' (52) for the construction of a reinforced concrete 'Improved Sanplat' using UNICEF provided moulds has been produced by UNICEF-WASHE for use on programmes in Zambia. The text mentions a squatting hole cover but gives no clear instructions for the construction of this lid.

**7.2.1.12 The extent of the practice of bathing in latrines needs to be explored together with the implications of this on the appropriate design of latrines.**

**7.2.1.13 In view of the poor quality of sand and aggregate for concrete construction and the possibility that builders do not follow recommended procedures for construction of good slabs a simple but standard test for strength should be devised.** It is recommended that this consists of supporting the slab on four bricks equally spaced around the edge of the slab and then getting say six adults to stand in line on the slab on the axis of the squat hole (45). This test should be carried out seven days after casting the slab. This test is a useful way of demonstrating to a householder that the slab is strong and it brings an element of quality control into the on-site production of slabs.

7.2.1.14 It may also be possible to suggest a simple test for the sand and the aggregate to guide the builders in selecting appropriate materials to avoid slab failures. Thoroughly shaking a sample of the sand in water in a transparent bottle and then leaving it to observing the depth of the clay and silt which settle on top of the sand may be an appropriate way of rejecting sands which contain excessive amounts of these very fine particles. In some districts washing of the sand to remove the very fine particles may be necessary to produce good concrete. Screening of dust and dirt from crushed stones may also be necessary. Mixing of the concrete should ideally be carried out on a clean impermeable surface to reduce the loss of cement grout and the contamination of the concrete with soil. The surface on which the concrete is laid should also be one which is not going to absorb cement grout or excessive amounts of water from the concrete mix. However, if despite poor materials and mixing practices a slab passes the above mentioned test (7.2.1.13) it can usually be considered adequate.

7.2.1.15 Where slabs are cast on the householder's property the owners role in properly curing the slab by keeping it shaded and damp during the first seven days after casting needs also to be emphasised.

**7.2.1.16 The trained builders should be provided with appropriate easy to use moulds for the sanitation platforms to ensure correct dimensions of critical components.** Suitable glass reinforced plastic (GRP) moulds for some types of latrine slab are already being produced in Zambia.

**7.2.1.17 The competence of the trained builders should be monitored after the training by an appropriately trained senior technician who inspects at least six**

latrines constructed by the builder before recommending the award of a certificate of competence for the aspects of construction observed. Sometimes this certificate may relate only to the production of the slab, but when appropriate the certificate will indicate proven competence to construct a complete latrine of a certain type. At Workshop 4 it was suggested that the D-WASHE Chairmen were suitable persons to sign a letter of reference on the recommendation of the EHT\*. Householders should be encouraged to check from the certificate / letter of reference that the builder they want to employ is competent in constructing the type of latrine they want. The senior technician should from time to time monitor the standard of construction of latrines in his area to ensure that high standards are maintained. To maintain high standards it may be appropriate for the builder's certificate to be renewed each year, based on satisfactory performance during the year.

### **7.2.2 Centralised Production of Sanitation Platforms**

**7.2.2.1 Caution should be observed if it is planned to set up a central Sanplat production unit because of the difficulties and cost of transporting the slabs to scattered users.** The experiences of those who have tried to do this in Zambia and have failed should first be examined together with the lessons from any successful enterprises. Centralised production may be appropriate for some peri-urban areas.

**7.2.2.2** The mass production of sanitation platforms for sealed-lid latrines or for VIP latrines at one location has some advantages:

- the producer builds up a high level of skill
- all the appropriate equipment and water for curing are readily available
- mass production techniques lead to faster production
- because the raw materials are carefully selected and delivered in bulk, its quality is relatively uniform
- because the materials are uniform and construction methods are standard quality control is easier.

**7.2.2.3** However the biggest drawback to centralised production in rural Zambia is the usual large distances between villages and individual dwellings and the usual unavailability of suitable methods of transporting the large sanplats from the production point to the latrine site. It is possible to carefully transport the smallest sanplats (0.6m × 0.6m × 0.05m) on a bicycle but this is not possible with the other sizes.

**7.2.2.4** A few women's groups are currently producing Sanplats in Zambia.

### **7.2.3 Technical Liaison at Regional Level**

**Wherever possible, different organisations working in the same district to promote sanitation should seek to use similar technologies and promotion methods so that the public and the local builders do not become confused.** DDCCs and D-WASHE committees should encourage all the organisations promoting ES technologies in their district to work together in an appropriate manner.

## **7.3 Other Aspects of Pit Latrines**

### **7.3.1 Disposing of Children's Faeces**

**7.3.1.1** The hygienic disposal of the faeces of babies and children needs special attention. Ways of helping mothers and older children find solutions to this problem needs investigation. Final disposal of the faeces of babies and children who do not use latrines should be in the latrine. Where children have fears of using the latrine efforts should be

made to understand the source of the fear and to deal with it so that they begin to use the latrine properly. Young children should be taught to report any fouling of the slab so it can be quickly cleaned by an adult.

**7.3.3.2 It should be investigated if it is appropriate to construct simple latrines for use only by children.** A small sealed lid Sanplat over a small pit, without a superstructure, may be an appropriate solution.

### **7.3.2 School Latrines**

**7.3.2.1 Appropriate types of latrines for schools should be investigated and successful designs should be promoted.** National experience to date should be collated to find the best design. Special attention should be paid to appropriate ways of keeping such latrines clean and to the provision of proper handwashing facilities, preferably with soap.

**7.3.2.2** Part of the suggested advocacy work is to promote latrines at schools. Since these facilities will have intensive use great care needs to be taken when choosing the number of squatting holes and in the technical design. Unless appropriate ways of ensuring that the latrines are regularly cleaned is implemented the latrines will become points of disease transmission. The staff and the Parent Teachers Association need to address this point before latrines are built, and they may need to employ someone to carry out the task. It is suggested that VIP latrines are likely to be more appropriate than sealed-lid latrines but this needs to be confirmed by studying the performance of existing latrines, or by pilot studies which construct both types. The superstructure of VIPs should be only as dark as is necessary to attract flies in the pit to the mesh covered vent. Each squatting hole needs a separate pit and a separate vent for the ventilation system to work well (49).

**7.3.2.3** Appropriate persons in the Ministry of Education at national level need to be involved in this process.

### **7.3.3 Communal Latrines**

**7.3.3.1 Appropriate ways of providing sanitary latrines at places where large numbers of the public congregate away from their homes in rural areas or where latrines are not available in peri-urban areas should be investigated to prevent the environment in these areas becoming a health risk.**

**7.3.3.2** As has been discussed when considering school latrines, communal latrines are only likely to reduce the transmission of disease if they are regularly cleaned and if proper handwashing facilities are provided. Unfortunately this rarely occurs. One way of possibly overcoming this is to have privately run fee-paying latrines as is already being practised in a few places in Zambia. The success of these should be investigated so that lessons can be learned. Some useful advice is found in reference 49.

**7.3.3.3** In dense peri-urban areas where there is a shortage of latrines, or it is very difficult to construct new latrines, it is recommended that the feasibility of fee-paying latrines, run by a member of the community is investigated.

**7.3.3.4** As has been mentioned for the school latrines, the technical design of communal latrines needs care if they are to function properly. If communal latrines are poorly constructed or badly maintained it may discourage people from wanting to own a latrine of their own because they will not believe that a latrine solves the problems of odours and flies.

### 7.3.4 Demonstration Latrines

7.3.4.1 There is benefit in showing people what types of latrine are being promoted in their area. The Central Board of Health is encouraging each clinic to have a demonstration VIP. This is for the use of staff and visitors, and to be a good example will need to be kept clean. However the design of latrine demonstrated will almost certainly be a VIP with a brick superstructure and will probably use permanent roofing materials. That is it will be a 'top of the range' version, unlikely to be affordable by the average villager. Therefore:

7.3.4.2 **It is recommended that at clinics at least one type of appropriate minimum-cost latrine is demonstrated so that villagers become aware of the cheapest sanitary latrine option.** Clinic staff should inform interested villagers of the approximate cost and local sources of technical help for construction of the latrine of their choice.

7.3.4.3 **It is suggested that a pilot project is used to investigate the usefulness of constructing the full range of appropriate sealed-lid and VIP latrines at a District centre in an area where latrine promotion activities are taking place.** This facility can be used to sensitise leaders, to train staff and to show to village leaders and prospective owners what choices there are.

### 7.3.5 Latrines for Difficult Conditions

7.3.5.1 There are situations where the design of domestic latrines can not follow the standard because the pit needs special features. Such situations will include:

- where the soil is very loose and the whole of the pit needs lining. (Sometimes the pit may have to be dug in a sinking caisson rather like in well-digging).
- where the water table is very high. (This often causes pits to collapse if they are not lined)
- where there may be a risk of contaminating the groundwater
- where rock is very close to the surface, meaning that only a shallow pit can be dug, or that part of the pit needs to be above-ground.

7.3.5.2 The extent of situations with these problems in Zambia is not known. Unfortunately the solutions to these difficult situations are nearly always expensive, and may not be affordable to rural and peri-urban areas without major subsidies.

7.3.5.3 **Special designs of latrine will need to be developed to overcome difficult soil conditions and high water tables.** Most problems have previously been overcome in other countries so international experience should be sought when designing for these special situations. References 44 to 47 are sources of useful advice.

7.3.5.4 Each Local Authority should collaborate with other stakeholders working in the district to ensure that designs of latrines appropriate for the local situation are identified and that critical aspects for good performance are specified and followed\*.

### 7.3.6 Latrine Emptying

7.3.6.1 Where pits become full and it is not cost-effective to construct another pit and superstructure, or there is no space for such a pit, sometimes owners decide to empty the existing pit so that it can be reused.

7.3.6.2 Emptying in Zambia is apparently sometimes done by hand in the dense peri-urban areas but there is usually no final hygienic disposal point for the removed contents. Both the manual emptying of the pit and the unhygienic method of disposal of the excavated contents pose a serious health risk.



7.3.6.3 A more hygienic method of pit emptying is to use a suction tanker but this would not be affordable to a resident in the peri-urban area (it was reported that some private contractors would want charge as much as K300,000). Also access for large suction tanker to reach the site of the latrine will be very difficult, if not impossible. Mr Magnus Coffey, an expert on latrine pit emptying, and the developer of a small emptying vehicle, has been involved in assessing the situation in some of the compounds in Lusaka, but the extent and findings of the study were not established during the preparation of this strategy document. If, as is usual with a pit latrine, the liquids have been allowed to soak into the ground, the pit contents will have become quite solid and hard to remove by suction without adding water. Mechanical pit emptying methods are likely to damage any pit which is not adequately lined but new subsidised latrines in some of the compounds (like Kamanga) are being lined with perforated cement mortar blocks.

7.3.6.4 At present it seems that in Zambia for all but the richest people there is no affordable hygienic method of emptying full latrine pits. However, in Dar-es-Salaam a manually operated suction pump with a separate small collection tank (200 litres) has been successfully used to empty latrine contents using a suction pipe which passes through the squatting hole. This equipment which is mounted on two handcarts is called the MAPET. It is not clear whether such a system would be viable in the dense peri-urban areas but it would certainly be much cheaper than the conventional suction tanker. However, unless the urban authorities provided a nearby intermediate discharge/transfer point for the operators to empty the 200 litre tank, it is likely that the sludge would be dumped somewhere nearby where it would be a health risk (although if there were space burial might be a possibility). More details on this technology can be obtained from reference 48.

**7.3.6.5 If there is a need for a latrine pit emptying service for the dense peri-urban areas, and there is at least some willingness to pay a reasonable amount for this service, it will be worth investigating the appropriateness of the MAPET system. It may also be an appropriate way of emptying communal and school latrines.**

7.3.6.6 If, when a latrine is full a second latrine is built, then after two years have elapsed, it will be safe to empty the first pit, in which the faeces will have decomposed to resemble soil. This principle is used in the alternating-pit design where two pits are built right from the start. This design can reduce the cost of overcoming some of the problems mentioned in 7.3.5. However for the system to work it needs someone to be willing to empty the decomposed material.

### **7.3.7 Environmental Impact of a Large Latrine Building Programme**

7.3.7.1 A large latrine building initiative in a rural area will lead to an increased demand for building materials. The logs used for traditional latrine floors are usually chosen from a certain hardwood tree (Mubanga) which is resistant to rotting, so if a very large number of new latrines used the small Sanplat which needs such logs to support it, there may be implications for the survival of this species. However it is more likely that people will choose the larger, reinforced concrete slabs which do not need to be supported by logs. It was suggested at Workshop 4 that the use of preservatives to protect timber floors from rotting was a useful topic for research\*.

7.3.7.2 If people use pole and dagga walls to latrines this will lead to an increased demand for building poles but it is not clear if this is of environmental consequence. Neither is it clear if the use of timber for firewood to produce the burnt bricks used for alternative superstructures will have a major detrimental environmental impact.

7.3.7.3 A successful sanitation programme should have a very positive impact on the environment in which people live and on their health. These benefits are expected to outweigh any detrimental effect from the increased use of building materials.

7.3.7.4 There is a risk to groundwater contamination if latrines are very close to a well. However if the soil is fine and there is a reasonable distance (e.g. 15 metres) between the latrine and the water source the risk is usually minimal. However the safe distance is very site specific (50). Where the effluent from latrines quickly enters fractured rock the risk of pollution is high.

7.3.7.5 A report (33) relating to the urban sanitation situation in Zambia suggested that in view of the fractured limestone below Lusaka, latrine pits there should be lined with impermeable materials to prevent liquid pollution reaching the groundwater. Expert advice needs to be obtained to quantify the real extent of this risk. In particular a study should determine whether the massive additional cost and operational problems of sealed pits (which will need regular emptying) is warranted especially if a smaller investment in water treatment and distribution may eliminate the health risks. Lining only new latrines may in any case have only limited impact on reducing the pollution of the groundwater because existing latrines, waste dumps and septic tanks etc. will continue to be potential sources of groundwater contamination. In view of the above:

**7.3.7.6 The potential of increased risk of contamination of groundwater in peri-urban areas from an increased use of latrines with normal pits needs to be properly quantified before a change in pit design is appropriate.**

## **7.4 Handwashing Devices**

7.4.1 In order to support the hygiene training initiatives relating to promoting handwashing it is recommended that the local production of appropriate devices is encouraged. These could be produced by householders, women's groups etc. and should be demonstrated at primary schools, health centres etc.\*

7.4.2 The WGS sub-group which looked at technology options has identified several simple purpose made devices already in use:-

- tippy tank made from a suitably adapted plastic bottle
- tippy tank made from a gourd
- container with a removable plug

One device which is not yet used in Zambia but which has been used elsewhere is a:

- leaking ladle

7.4.3 The leaking ladle consists of a small container fixed to a handle with a hook so that it can be dipped into a pot of water and then be hung up over a small soakaway (an example is illustrated in Appendix 5.1). The container (e.g. the bottom of a plastic bottle) has a small hole in it at the bottom, so that when the device is hung up water slowly runs out enabling someone to wash their hands below the flowing water. This like the tippy tank has the advantage that only a small pre-determined amount of water is used each time and there is no need to handle the device again after washing one's hands. The removable plug system has two disadvantages: the first is that if the plug is not replaced or it leaks some/all of the water stored in the container is wasted; the second is that if the users hand contaminates the plug before handwashing starts that their hand may be re-contaminated after handwashing when they replace the plug.

7.4.4 Some of the devices, like the leaking ladle, are so simple that they can be made by the householder or schoolchildren.

7.4.5 As mentioned elsewhere, the use of soap or at least ash, is recommended to make handwashing most effective. The locally preferred location of the handwashing device needs to be determined.

## **7.5 Solid Waste Disposal**

**7.5.1 Although solid waste disposal in rural areas does not presently appear to be a major environmental health risk, householders need to be encouraged to understand the best methods of disposal and ways of reducing fly nuisance.**

7.5.2 Much of the vegetable waste in rural areas is eaten by animals and what is not is periodically burnt. Solid materials, such as yard sweepings and ashes, are usually thrown on a pile at the edge of the yard. The need for refuse pits is not obvious, and if the soil is impermeable they might in the rainy season have an adverse impact by providing a place for the breeding of mosquitoes. If food waste is not eaten by animals it may result in fly nuisance unless it is covered with soil. Householders need to be sensitised as to the risks which arise from poor solid waste disposal and to be taught how to minimise such risks by appropriate methods of solid waste disposal\*.

7.5.3 In the less dense peri-urban areas solid waste disposal is still not thought to be a major problem and the approach can be similar to that just mentioned for the rural areas.

**7.5.4 In the peri-urban compounds for good environmental hygiene the solid waste needs to be regularly removed from appropriate primary collection points and carted to appropriate final disposal points. This rarely happens in practice and the relevant actors (communities in the compounds, the NGOs that assist them and the urban authorities) need to seek a solution to this problem to improve the environment. The Local Authorities need to be provided with adequate resources to undertake solid waste collection and disposal, although private initiatives should also be encouraged\*.**

7.5.5 The primary collection of solid waste in peri-urban areas is something which the community can be sensitised to carry out. The subsequent carting away and safe disposal of the collected refuse are matters which need to be attended to by the urban authorities, although presently it seems that waste removal has only been carried out via NGO activities.

**7.5.6 Delegates at Workshop 4 suggested that the feasibility of disposal of some solid waste in peri urban areas by composting and recycling is investigated\*.**

## **7.6 Drainage**

7.6.1 In addition to the possible formation of stagnant pools during the rainy season, these can also be man-made at community water collection points. The designers of water collection points should therefore provide an appropriate method of disposal such as sloping concrete apron slabs with upstanding edges to divert water into small concrete drainage channels which can discharge into covered soakaways. Soakaways should be sufficiently far from open wells that they do not lead to contamination of the well-water. In some rural

situations it may be appropriate to use the wasted water to feed a cattle drinking point, or to water a garden, but these points should not be allowed to become mosquito breeding places. Provision of clothes washing facilities near to the water point may be welcomed by the women in the community. Such facilities need to have proper facilities for the disposal of used water, in a way that will not contaminate the water source. The community need to be educated as to the benefits which will arise from providing and maintaining proper drainage facilities (7.6.5)\*.

7.6.2 In the less-dense peri-urban areas and rural areas the disposal of domestic water does not presently appear to create a major environmental hazard. However this situation needs to be monitored.

7.6.3 In the densely populated peri-urban areas, particularly where standpost supplies provide a reasonable level of water the disposal of wastewater is likely to be more of a problem but this needs to be addressed together with the need for surface water drainage. Workshop 4 suggested that enforcement of appropriate waste water drainage is also important in peri-urban areas\*.

7.6.4 Surface water drainage is not usually a problem in rural or less-densely populated peri-urban areas. However latrine owners need to be made aware of the need to divert surface water away from the latrines to reduce the risk of pit collapse. This requirement should be a standard recommendation (see 7.2.1.5 - 7.2.1.9)\*.

**7.6.5 Both rural and peri-urban communities need to be sensitised as to the risk of mosquitoes breeding in water ponding in small ground depressions, or in impermeable solid waste material, so that wherever possible they prevent the occurrence of such risks. All communal water collection points should be provided with appropriate methods to safely dispose of wasted water.**

### **7.7 Gaps in information**

The following aspects which have been discussed earlier in this Section need further investigation. Some would form useful research projects and some could be investigated by experimental pilot projects. The numbers in brackets indicate in which section the need is discussed more fully.

- Documenting existing standard designs of latrine (7.2.1)
- Drawing up a minimum recommended standards for essential components of sealed-lid and VIP latrines (7.2.1)
- Monitoring of longer term performance of existing designs of latrine (7.2.1)
- Investigation of the practicality of incremental upgrading of latrines (7.1.2)
- Studying the extent and desirability of the practice of bathing in a latrine (7.2.1)
- Devise a simple way of testing the strength of latrine slabs (7.2.1)
- Gathering information on the experiences to date of centralised production of sanitation platforms (7.2.2)
- Exploring if there is a demand for special domestic latrine provision for children, and if there is, design and promote one (7.3.1)
- Investigate appropriate designs for school latrines and promote a good design (7.3.2)
- Investigate the design and performance of existing communal latrines (particularly fee-paying latrines) and promote good design and practice. (7.3.3)

- **Pilot a District sanitation technology demonstration centre (7.3.4)**
- **Investigate the need for, and if appropriate design and pilot designs of latrine for use in difficult conditions. This includes where the soil is very loose and the pit may need lining; where the water table is very high; where there may be a risk of contaminating the groundwater; where rock is very close to the surface. (7.3.5)**
- **If there is a need for a latrine pit emptying service for the dense peri-urban areas, and at least some willingness to pay a reasonable amount for this service, it will be worth investigating the appropriateness of the MAPET system. (7.3.6)**
- **A suitable study should be carried out to quantify the effect that new latrines in peri-urban areas, particularly in Lusaka, may have on the quality of groundwater, and the most cost-effective way of avoiding any health risk. (7.3.7)**
- **the feasibility of disposal of some solid waste in peri urban areas by composting and recycling is investigated\*. (7.5.6)**

## 8. SELECTION CRITERIA

### 8.1 Objectives of selection.

8.1.1 With limited resources to undertake rural and peri-urban initiatives, it is necessary to identify those provinces, districts and communities in which ES activities will create the greatest impact. This does not simply mean identifying those most at risk, but also in the early stages, those in which a programme has most chance of succeeding, and which may provide a good example to neighbouring villages or peri-urban sections, and so lead to a natural spread of influence.

8.1.2 Thus objectives are to :-

a) categorise provinces, and districts according to their

- need,
- demand
- coverage of sanitation facilities
- access to safe water
- population densities
- general socio-economic status
- physical environment and

in addition to classify areas within districts, and outline community situation according to the above aspects and also

- links to support institutions (RHCs, schools etc.) and development programmes
- previous community led initiatives which indicate potential
- land/ house ownership.

b) to get government at all levels to adopt the system, to avoid hasty decision-making and to ensure an equitable, sustainable and demand driven approach, free from local political pressures.

8.1.3 Generally provinces are likely to be chosen for reasons of high recorded diarrhoeal diseases, or for political reasons relating to other factors. Within a province districts may initially be prioritised on the basis of health, coverage, and number of people not properly served with sanitary facilities or water.

### 8.2 Methodologies.

8.2.1 Table 8.1 outlines the indicators and sources of information available for community selection. It is apparent that a certain level of information can be provided without requiring community visits. Mainly through district planning offices and Central Board of Health statistics, the needs and demands of different districts/provinces can be assessed, and to some degree the characteristics of different parts of a district can be identified.

8.2.2 Use indirect information to select priority districts and areas within them. In order to keep costs as low as possible, selection down to the level of groups of communities should be undertaken with information available at district level or above. At present the HMIS system has been established in 14 districts, but is planned to extend to all the rest over the next year. This will provide an invaluable tool for identifying areas of need, based on health centre catchment areas. This approach will, however mean that socio-economic

**Table 8.1 Selection criteria and indicators for province to community**

Criterion (from WGS analysis report, Aug '97)	Indicators	Sources of Information for District/provincial level selection	Sources of information for community selection
Need (Incidence of water and sanitation related diseases)	<ol style="list-style-type: none"> <li>1. Diarrhoeal morbidity / mortality</li> <li>2. Incidence of cholera, and other water related diseases (see Section 2)</li> <li>3. School absenteeism</li> <li>4. Poor sanitation practice</li> </ol>	<ol style="list-style-type: none"> <li>1. Provincial hospital returns</li> <li>2. District planning profiles</li> <li>3. CSO data at national level.</li> <li>4. District health summaries through HMIS</li> </ol>	<ol style="list-style-type: none"> <li>1. RHC records of first registration</li> <li>2. CHW reports</li> <li>3. EHT experience of catchment population</li> <li>4. Schools' records and teachers experience</li> <li>5. PRA</li> </ol>
Demand (Expressed need)	<ol style="list-style-type: none"> <li>1. DDCCs include ES in district plans</li> <li>2. Councillors/ MPs record requests for ES assistance from communities</li> <li>3. Individuals have paid for or constructed their own latrines/ rubbish pits, or improved their water source</li> <li>4. individuals share facilities rather than use the bush</li> </ol>	<ol style="list-style-type: none"> <li>1. District development plans</li> <li>2. District secretary/ Director of Works's experience.</li> <li>3. D-WASHE committee records and experience</li> <li>4. RHC returns</li> </ol>	<ol style="list-style-type: none"> <li>1. PRA</li> </ol>
Existing coverage	<ol style="list-style-type: none"> <li>1. Number of latrines per number of households</li> <li>2. Number of used latrines per number of households</li> <li>3. Signs of indiscriminate defecation</li> </ol>	<ol style="list-style-type: none"> <li>1. HMIS district summaries</li> </ol>	<ol style="list-style-type: none"> <li>1. PRA</li> <li>2. Community transects</li> </ol>
Previous or existing community/ individual initiatives	<ol style="list-style-type: none"> <li>1. Self help projects undertaken</li> <li>2. Co-operatives or women's groups formed</li> <li>3. Active VWASHE committees</li> <li>4. Other development projects</li> </ol>	<ol style="list-style-type: none"> <li>1. District Dept of Community Development</li> <li>2. MAFF district offices</li> <li>3. DDCC records</li> <li>4. D-WASHE minutes</li> </ol>	<ol style="list-style-type: none"> <li>1. PRA</li> </ol>
Population densities	<ol style="list-style-type: none"> <li>1. Provincial/ District rural population density</li> <li>2. Size of CSA and population</li> </ol>	<ol style="list-style-type: none"> <li>1. CSO statistics</li> <li>2. Ministry of Lands, Dept of Survey aerial photos</li> </ol>	<ol style="list-style-type: none"> <li>1. Peri-urban units of Dept of Housing and Social Services. (MLGH)</li> <li>2. Observation</li> </ol>
Socio-economic status	<ol style="list-style-type: none"> <li>1. Average per capita income</li> <li>2. Proportion of income spent on food, education etc.</li> <li>3. Drop in RHC registration since charges introduced</li> <li>4. Trends in income, food security</li> </ol>	<ol style="list-style-type: none"> <li>1. FHANIS monitoring of household economic situation</li> <li>2. RHC out-patients records and HMIS health subsystem.</li> <li>3. Living conditions survey.</li> </ol>	<ol style="list-style-type: none"> <li>1. PRA</li> </ol>
Links to support institutions	<ol style="list-style-type: none"> <li>1. Proximity of active RHC, school or agricultural centre</li> <li>2. Presence of active CDO</li> <li>3. Active TBAs or CHWs</li> <li>4. Active NGOs/ integrated development projects</li> </ol>	<ol style="list-style-type: none"> <li>1. District planning unit</li> <li>2. HMIS health centre workloads/ human resources sub-system</li> </ol>	<ol style="list-style-type: none"> <li>1. Neighbourhood health management boards,/ development or VWASHE committees</li> <li>2. PRA</li> </ol>
Access to safe, adequate water supply	<ol style="list-style-type: none"> <li>1. Number of functioning protected wells/ population</li> <li>2. Proportion of population using protected sources for drinking</li> </ol>	<ol style="list-style-type: none"> <li>1. National well inventory /6)</li> <li>2. CMMU district water supply profiles</li> <li>3. HMIS records</li> </ol>	<ol style="list-style-type: none"> <li>1. PRA</li> <li>2. KAP surveys</li> </ol>
Hostile environment	<ol style="list-style-type: none"> <li>1. High water table</li> <li>2. Fine uniform sands</li> <li>3. Hard rock near surface</li> </ol>	<ol style="list-style-type: none"> <li>1. Hydrogeological map of Zambia</li> <li>2. DWA records</li> <li>3. CMMU well inventory</li> </ol>	As for districts
Ownership	<ol style="list-style-type: none"> <li>1. Households rented</li> <li>2. Areas of non-formalised ownership</li> </ol>	N/A	Director of Works/ DPO. Land registry

status is unlikely to be an element of initial selection of geographical areas. Similarly, coverage will initially be judged on number of latrines/ number of people, rather than on number of latrines in use.

**8.2.3 Use the intersectoral links of D-WASHE and district planning units to identify priority areas.** Resources at district level are increasingly well set up for pooling information and making district plans for ES. Many more districts now have an active planning unit which can assist D-WASHE or DDCC to collate information and make an objective decision on areas upon which to concentrate.

**8.2.4 Use community level participatory data collection only once areas of interest have been decided upon by district level authorities.** PRA and other similar approaches requires several people spending considerable time in the field if many communities are to be assessed. This is not generally affordable, until working in a selected group of communities, both to assess the best approaches to take, and to provide base-line data against which impact can later be judged. Costs of collecting detailed information should be weighed against the benefits of such refinement at any given stage in a programme. It is a further phase of community selection, and a first step in identifying and quantifying aspects to monitor.

### **8.3 Strategies relating to selection criteria**

**8.3.1 Areas of high need and high demand should have highest priority.** In these areas, which are most likely to be densely populated and peri-urban, the combination of factors offer good potential for significant impact. The potential for commercial involvement will also be higher than in other groups. There is more available information on ES experience in peri-urban areas than in rural ones, so that some mistakes can be avoided and positive experiences be built upon.

**8.3.2 Where high need but low demand is identified, an intersectoral communication programme will need to build community awareness as a pre-requisite to facilitating a community strategy.** Pilot projects on building community awareness and developing community strategies in rural areas with low demand are still needed. Progress may be expected to be slower than in the case of 8.3.1. High need can be measured in terms of incidence of diarrhoeal diseases and worms (Analysis Report, WGS August 1997 (3)).

**8.3.3 After considering need and demand, communities with good support resources should be chosen first.** Initiatives will have most chance of success where extension workers are active, and where facilities such as schools and health centres are near enough to be in good contact with communities. If early initiatives are to be demonstrations of what communities can achieve, and are to act as focal points from which replicable solutions can spread, they need to be in communities with a reasonable potential for success. Targeting the poorest of the poor in the early stages may lead to failure and the perception that latrine building is a sign of poverty rather than being a desirable indication of status and development. Strategies tested in this slightly more favourable environment can then be extended (if necessary in modified form) to more difficult situations.

**8.3.4 Promotion activities should take place in clusters of communities, rather than being spread thinly over a wide area.** In order to maximise effect and reduce costs, more densely populated areas should be covered first, and efforts concentrated in a specific area, so that inputs by different sectors can be easily co-ordinated.



**8.3.5 Within a community, strategies may be aimed to improve quality of life for target groups such as women and the disadvantaged.** However this should be as a result of community strategy, not from socio-economic selection by outsiders which may lead to people being indignant at being labelled 'poor'. This could also reduce the status of latrines.

**8.3.6 Where possible, trends may also be considered, rather than simply the existing situation.** FHANIS now monitor living conditions in five sample communities in each district of Zambia. This makes it possible to put observed conditions in the context of longer-term trends, so that areas where quality of life is deteriorating particularly rapidly can be identified, and then the significance of ES be assessed.

**8.3.7 Selection criteria should be flexible,** depending on whether a project is testing out specific hypotheses, or forming part of a large scale programme.

#### **8.4 Agencies for selection.**

8.4.1 The DDCC or D-WASHE committee will normally be the forum where priorities are discussed. In this they may be led by the District Secretary, District Planning Officer or a representative of the District Health Management Board. There is at present no national level body for funding and prioritising to provide the national perspective but this is necessary to channel funding to D-WASHE.

8.4.2 Most information at community level will be collected by Health Centre staff (at present usually EHTs, but in future to be PHPs). Teachers could also be involved but are likely to regard it as outside their remit. In peri-urban areas CBOs (community based organisations) may assist.

#### **8.5 Gaps in information**

8.5.1 Census data is seldom broken down sufficiently to identify individual communities. Peri-urban populations are only approximated, and rural communities may not be quantified. This is not likely to change and strategies must make allowance for the lack of detailed demographic data.

8.5.2 Lack of expertise at sub-district level in PRA. Extension staff will mostly require training packages and field experience, except where, as in Luapula for instance, programmes in WASHE and other sectors have trained a variety of community level workers.

8.5.3 Assumptions are made as to how different types of community will respond (e.g. those with low demand will be slower to take up behaviour change, or communities with integrated development programmes will be more successful). These assumptions should be tested as time goes by, to see whether the impact which might have been predicted has actually been realised. Criteria and any scoring system should be modified to take account of the findings.

## 9. MONITORING, EVALUATION AND INDICATORS.

### 9.1 Definitions

9.1.1 Monitoring and evaluation of a programme or project are usually activities carried out to investigate the performance to-date against some objective(s) or against a plan for activities or outputs which have previously been laid down in the planning process.

9.1.2 Monitoring can be seen as a process of checking the extent to which planned activities have actually taken place and what the associated physical inputs and outputs have been. *Essentially monitoring is carried out to discover whether or not a programme or project is on the planned track.*

9.1.3 Evaluation is a process of checking whether the planned activities which have taken place have actually achieved the original objective(s). *Essentially evaluation it is to discover whether the programme or project was on the right track.*

9.1.4 It is clear that for effective monitoring and evaluation some means of measuring achievement of the planned objectives or activities should be laid down at the planning stage. *Indicators are the outputs or changes, which are measured to indicate progress.* These are sometimes called *objective verifiable indicators (OVIs)*. In the ideal situation, two independent observers measuring performance against such indicators should come to similar conclusions as to the current status. The indicators therefore need to be as specific as possible and the best units of measurement include aspects of two or more of the following: time (e.g. date), cost, quantity and quality. Progress figures presented as proportions of totals are more useful than just numbers (i.e. 'Over the past year latrines have been built at 12% of the houses in the village' is a more useful figure than just saying that latrines had been 'built at 60 houses' (unless the total number of house in the village (500) is also stated.)

### 9.2 Basic principles of programme monitoring

9.2.1 **Indicators of progress in the sector need to be as far as possible easily collected on a nation-wide basis. This information should be used for monitoring linked to health and well being by a national sanitation body (e.g. an Environmental Sanitation Unit (ESU))\*.** Within specific projects more detailed information can then be gathered to diagnose the degree to which specific problems are being successfully addressed. **The primary indicator will be the trends in the incidence of diarrhoeal diseases.** All other indicators are those elements which are believed to affect to diarrhoeal incidence directly or indirectly, and so provide some diagnosis of why trends are moving in the observed direction. These indicators relate to the objectives outlined in Section 2.3.4.

9.2.2 **Data collection should use as much of existing monitoring systems as possible. Where such data is not presently available efforts should be made to get it incorporated into existing systems. Otherwise the cost of additional data collection should be carefully weighed against its benefits.** Much unused and unnecessary data has been collected in the past. Where records are already passing from point sources of information (health centres, hospitals, NHMBs, schools, FHANIS surveys), it is more cost

effective to try and get one or two important additional aspects included, than to set up a complete new system to collect very similar information.

**9.2.3 As far as possible, data collected should be analysed and used at the level at which it is collected. Vertical lines of evaluation should be minimised, as is the principle with HMIS.**

At community level, self monitoring could be set up with women's groups or where they do not exist, the Development, Health or WASHE committees (whatever is the existing management body regarded by the community as responsible for improving its general well-being, which might be the Neighbourhood Health Management Board).

**9.2.4 Basic, mainly indirect data collection systems can be set up to monitor the degree to which the objectives in 2.3.4 are being fulfilled. These are the basic programme objectives, to which more specific project indicators can be added as discussed in the following sections. The indicators proposed and their sources are set out in Table 9.1**

**9.2.5 To undertake this general monitoring system requires six actions\* :-**

- the incorporation of monitoring into the scope of a national environmental sanitation unit (ESU) (see 5.2.8)
- the development of monitoring checklists and self analysis by schools, probably as part of the WASHE schools programme building cross curricula ES modules (see 9.5.3)\*
- developing simple self-monitoring systems for community level self evaluation of changes being achieved by their own efforts (see 9.5.2)
- linking systems to district level, via NHMBs or MOE to D-WASHE, district planning offices and DHBs, making full use of the CBoH HMIS (see 9.3) and NGO data\*
- defining types of attitudes and behaviour from which to design monitoring systems and judge impact\*
- setting up standard instruments for measuring changes in attitude and behaviour (i.e. develop ideas in 4.1.2 and Table 4.1)

**9.2.6 A detailed survey of all sources of existing KAP, monitoring or baseline data relevant to the sanitation sector should be carried out. Relevant information will be held by the Central Statistics Office, and a number of different Ministries, Donors, District Authorities, NGOs etc. (Group 2 of the first consensus building workshop (1) made some suggestions for possible sources of information on the existing hygiene and sanitation situation). Lessons learned from collecting the data for these initial districts should be used to make the collection of data for other districts more effective when such an exercise can be funded\*.**

**9.2.7 Analysis of data from health centres (rather than from households) should allow for the effects of**

- a) increases in health charges,
- b) availability of drugs, and
- c) levels of staffing, which may cause increases or decreases in attendance\*

**Table 9.1 Objectives and indicators for ES programme monitoring**

Objective	Indicators	Sources
Downward trend in diarrhoeal incidence	# No. of Health centre registrations of diarrhoea diseases over time # Household incidence of under 5's recorded through schoolchildren, community surveys	HMIS returns & analysis WASHE schools programme, or D-WASHE/DPO
National commitment to ES	# ES included in GRZ budgets # Donors provide funding based on GRZ proposals # Articles in national papers, TV and radio # Prominent politicians attend ES workshops # Articles with a focus on women as key players not just beneficiaries # Gender groups adopt sanitation policy # Up-dated national 'bill' for diarrhoeal diseases	Yellow book, district budgets NCDP, Ministry of Finance  Records kept by ESU/ CBoH Workshop reports Office for Gender and Development, Cabinet Office CBoH
Increased adoption of good hand-washing practice, personal hygiene.	# Proportion having soap in house # Proportion say they wash after defecation/ child care # Prevalence of hand-washing facilities, bathhouses/ latrines used as bathhouses if far from river	KAP surveys/ blind voting  Community survey (9.5.2)
Increased faecal and solid waste disposal	# Absence/ frequency of faeces/ rubbish observed around houses # Dedicated site or rubbish pits	Community survey, EHT observation. School pupil surveys
Increased use of latrines through greater numbers and greater acceptability	# Number of latrines # Number of latrines in use	HMIS data Community survey School pupils surveys RDCs
Development of unsubsidised latrines	# Levels of subsidy # No. of latrines constructed outside projects # Growth of commercial sector	Projects/ RHCs, D-WASHE HMIS, RHCs D-WASHE reports, DPO, RDCs, RHCs
Increased use of safe water sources	# Increase in No. of protected water points/population # No. of school children taking drinking water from standpost, handpump or bucket and windlass	D-WASHE & HMIS  School surveys
Reduction in habitats for mosquitoes	# No stagnant water near houses # Malaria incidence does not increase	Community surveys RHC reports HMIS data
Clear cut institutional structure	# Agreement between ECZ, CBoH, and MLGH. # Formation of unit responsible for ES monitoring and research # Intersectoral steering committee	Minutes of meetings Existence of 'ESU' Minutes of body to whom ESU is secretariat
Increase emphasis on the roles women can play in environmental sanitation promotion, planning and possible development of commercial enterprises	# Women's group incorporating ES in their schedules # Women traders and slab makers promoting their wares at community level # Women's convenience and views being part of consideration of latrine siting # Women are key element in community monitoring	DCD, D-WASHE, NHMB District Council Planning Officers, and ECZ guidelines
Extension staff active in facilitation for ES in communities	# No. of facilitation meetings held # No. of EHTs/ PHPs with ES training	# RHC returns of weekly inputs # Reports from schools and communities # DBH/ CBoH reports

**Table 9.1 (Continued)**

**Objectives and indicators specifically for peri-urban areas**

Move to formalise services to peri-urban areas	# Piped water supply in compounds from borehole or better from CU main supply # RDCs with ES policy/ plans # Funds for ES up-grading from GRZ / donors # CU s begin to include peri-urban areas in investment plans	RDCs/ MLGH/ CUs RDCs/ MLGH DISS
City councils provide/ ECZ approve sites for solid waste and latrine sludge dumping	# No. of sites approved # Growth of latrine emptying services	ECZ/ Local authority RDCs
Planning regulations more enforced (esp. peri-urban)	# Councils monitor latrine construction with new houses # No. of council sited latrines # Government imposes penalties on those who don't comply	Council records/ Director of Works/ City Planning Dept.

**9.2.8 A small number of appropriate baseline surveys, using a widely agreed format, should be carefully designed and carried out in representative parts of chosen Districts by suitably qualified personnel. Support should be sought to fund these surveys.**

From the representative survey results the possible situation in each district studied should be tentatively predicted. The survey results should then be combined with other sources of data (such as CSO, CBH records) and used to aid the planning of appropriate sanitation interventions (software and hardware), some of which should be in the actual communities which have been surveyed.

**9.2.9 After various actors have carried out interventions in some of the areas surveyed a further set of KAP surveys should be carried out to measure the magnitude of the changes which appear to have resulted from the known interventions.**

If donors are interested in financing hygiene and sanitation related projects in Zambia some will already have an interest in carrying out baseline and evaluation KAPs to satisfy their own Government's requirements, and are therefore likely to show a willingness to fund these for the particular programme/project they are interested in. Donors should be strongly encouraged to share the major findings of all studies they fund, even if some of the results indicate that the programme could have done better. Other groups may then be able to better design their own programmes. Any efforts to identify trends through KAP surveys should be evaluated to assess the degree to which they improve understanding obtained from the lower cost monitoring through HMIS, WASHE and community and schools' programmes if this is set up.

9.2.10 The apparent effectiveness of the various interventions should be gauged after the second series of KAP surveys by combining the data so collected with data from other sources, such as HMIS. The findings should be disseminated by a national sanitation body (an Environmental Sanitation unit (ESU)) so that other actors can learn what changes have (or may have) resulted from certain interventions\*. The collection of data in areas in which no major sanitation interventions have taken place will indicate the effect of other factors on the KAPs being monitored.

Actors in District which were not represented in the KAP surveys should be able to learn useful lessons from the level of change measured in the monitored districts, particularly if their District has similar social and geographical characteristics. They will then be in a better position to be able to plan suitable interventions, similar to those tried in areas where good progress has been made. In carrying out these interventions they can hope for similar success to that in the monitored District, but they will not be able to quantify this positive impact in as much detail as was possible in the area monitored, although some indicators will still be needed to allow monitoring and evaluation.

### 9.3 Existing monitoring systems (CBoH)

9.3.1 The Central Board of Health revised its Health Management Information System (HMIS) earlier this year as part of the health reform process (41). This provides both a health indicator and coverage of water supply and sanitation facilities.

The HMIS is a monitoring system which relies on data regularly collected during routine operation of the health system. It is designed to give warning of deterioration in the situation so that appropriate further investigations and remedial actions can be carried out.

9.3.2 Several of the parameters being recorded by the System are of direct relevance to monitoring sanitation. This system has four associated indicators each of which has a stated goal. These goals are:

- Increase Health Centre's support of sanitary facilities
- Increase accessibility of safe drinking water
- Increase accessibility of sanitary facilities (toilets and latrines)
- Reduce the incidence of diarrhoeal disease through improvement of public hygiene

9.3.3 The monitoring of progress towards the achievement of the Health Centre's support of sanitary facilities (the first goal) relates to calculating the percentage of Health Centres with functioning VIP latrines. The 'Response' section for the same goal also talks of the need to 'Construct more latrines near health centres if the number of latrines is low' but gives no details about how this would be carried out in practice. The monitoring of increased accessibility of a sanitary facility (the third goal) relies on the calculation of the percentage of households with access to sanitary facilities.

9.3.4 The definition of a 'sanitary latrine' is not given in the HMIS document but 'access' is defined to mean that a latrine is within 50 metres of the user's dwelling. This definition of access does not include how user's of a latrine will be identified. It is doubtful that the owner of a latrine will allow people from all the dwellings within 50 metres of a latrine to use it. To assume that they did use it would lead to an artificially high estimate of households with access to latrines. It may be more meaningful to only report the number of houses with latrines (as a percentage of the total number of houses). This change would not require the collection of any additional data. In some cases of course latrines would be shared by

neighbours so this change would lead to a level of under-reporting of access, but the percentage is likely to be more realistic.

9.3.5 In addition to the 'Water and Sanitation' priority thrust, the HMIS has a 'Child Health' priority thrust which includes a number of goals which relate to the reduction of diarrhoeal diseases, or death attributable to such diseases.

9.3.6 The indicators used by the HMIS are expected to directly facilitate active response at all levels of the health delivery system. However the time period between monitoring events may be up to one year. The reporting of diseases is from data filled in on the Disease Aggregation Form H1A.1 which is filled out every month and sent quarterly to the District officials\*. The reporting of the existence of Health Centre latrines is via the annual inventory report. The data source for households with access to sanitary latrines is an annual survey or community register.

**9.3.7 A national body, such as an Environmental Sanitation Unit (ESU) should make full use of relevant data from the HMIS system to monitor health improvements, particularly relating to diarrhoeal diseases, as the prime indicator of progress towards ES. It should hold discussions with CBoH Monitoring and Evaluation Department to see if any additional information is needed, and to avoid of ambiguities in the HMIB system by providing a definition of a 'hygienic latrine', and by specifying the method for determining the number of households with access to latrines.\***

#### **9.4 Project monitoring systems**

9.4.1 These are partly to provide accountability for inputs and partly to try and see what changes in practice and behaviour are occurring.

9.4.2 Modified minimum evaluation procedure. (MEP)

Section 8 of the Final Report on the Sanitation and Communication Situation Analysis (4) discussed the wide variety of aspects relating to sanitation projects which are useful to evaluate. Seven categories were listed the first three of which are discussed in detail in reference 43. These were as follows; each is listed with a typical question which needs to be asked:

- functionality (Are the facilities functioning correctly?)
- usage (Are the facilities being used correctly?)
- impact (What changes in hygiene behaviour and/or health have resulted?)
- relevance (Does the work fit in with local needs and demands?)
- efficiency (Have resources been used in the best way to achieve the output?)
- effectiveness (Has the output effectively achieved the purpose?)
- sustainability (Are the benefits from the facilities going to continue, particularly if some external inputs are going to reduce or cease?)

One additional aspect which sometimes is also evaluated is suggested by PROWESS (42):

- replicability (Can what has been achieved be duplicated elsewhere (ideally with minimum input of external resources)?)

This can provide a framework for project monitoring, which would be quite intensive and so would not be sustainable in the long-term.

9.4.3 Appendix 3 gives some typical questions to be addressed when seeking to monitor condition of, understanding about, and correct usage of latrines.

9.4.4 The WASHE monitoring system is at present hardware orientated, being primarily to provide accountability. In some districts such as Monze the EHTs each month report on the numbers of new latrines constructed in their area. This report goes to the Senior Health Technician who collates figures from all the Technicians before passing the information on to the D-WASHE. It is not clear how many other D-WASHE committees receive information in a similar way. This information where available at District level is very useful information which should enter the national monitoring system.

9.4.5 Where there are major programmes promoting latrine construction D-WASHE committees should be encouraged to collect information on a regular basis from appropriate Ministry of Health staff, NGOs and any other organisations overseeing the construction of latrines. The information reported to D-WASHE should include the number of new latrines of each specified type completed in the reporter's area during the month and a running total of the hygienic latrines in the area. Where possible the total number of dwellings in the area should also be updated.

9.4.6 Where only physical outputs from a programme are measured it is important that a representative survey is carried out to check to what extent the outputs have contributed to improved environmental sanitation\*.

Usually for accountability purposes inputs, particularly financial, but also materials, staff etc. are also monitored by most programmes. The comparison of the inputs with the outputs will show the cost-effectiveness of the intervention in producing the outputs. However, cost effective outputs are only commendable if they have contributed to a worthwhile objective.

## 9.5 *Monitoring behavioural change*

9.5.1 It is in this area that considerable effort will be needed to develop new ways of monitoring, since behavioural change is the main objective. Methods of monitoring behavioural change through repeated KAP surveys are costly and therefore unsustainable. Particular behavioural changes to be monitored are set out in 4.1.2. **It is proposed that as far as possible monitoring of behavioural change should be done by those immediately affected, so that they become aware of the progress and impact of the work being carried out and how to improve its effectiveness.** As there is relatively little experience of this aspect in Zambia, it will take some time and effort to develop and test systems, and see what information could usefully be passed on to another level.

9.5.2 The involvement of communities in monitoring/evaluating will initially need the involvement of a trained mobiliser/facilitator) or hopefully eventually just the support of an EHT), but this should be time well spent since it reinforces hygiene messages previously targeted at the community.

The focus on hygiene behaviour also guards against an over-reliance on merely counting the number of facilities, such as latrines, completed, or the number of sanplats sold. While these numbers can give some measure of the take-up of the facilities offered by a project, and are essential for accounting for associated project expenditures, neither figure would give an indication of the extent of hygienic usage of domestic latrines by all relevant members of the family. Indeed unless behaviour practices are also targeted, merely building the latrines may have very little effect on the incidence of disease, particularly if the latrines are not kept clean.



**9.5.3** One way of involving members of the community in monitoring/evaluating their own environment is to encourage school teachers to include practical monitoring exercises as part of the course work which accompanies teaching given about environmental sanitation. Such an exercise will usefully reinforce the health and hygiene teaching children receive at school. Since similar exercises can be done each year in each community represented in the school a teacher could monitor likely changes in the environment. This could tie in with the Ministry of Education's present initiative to make cross curricular use of sanitation and hygiene themes. At present this only seeks to improve children's acceptance of hygiene principles and consequences of ignoring them, but could with very few changes also, at minimum cost, become a tool of use to D-WASHE and DHB to identify areas at risk, trends in diarrhoea at household level and changes in observed cleanliness of villages. Some small tests of similar approaches in Western Province proved that such ideas are mostly taken up very enthusiastically by teachers and pupils.

**The development of monitoring systems through schools as part of the curriculum should be tried, and the links between schools and D-WASHE strengthened so that the information gained can be put to wider use.**

## **9.6 Gaps in information**

The following will require considerable time and effort both to develop systems and train people in their use:

- define types of attitudes and behaviour from which to design monitoring systems and judge impact\*
- set up standard instruments for measuring changes in attitude and behaviour (i.e. develop ideas in 4.1.2 and Table 4.1)
- the development of monitoring checklists and self analysis by schools, probably as part of the WASHE schools programme building cross curricula ES modules (see 9.2.5 and 9.5.3)\*
- the development of simple self-monitoring systems for community level self-evaluation of changes being achieved by their own efforts (see 9.2.5 and 9.5.2)
- a detailed survey of all sources of existing KAP, monitoring or baseline data relevant to the sanitation sector (see 9.2.7)
- baseline definitions of conditions, attitudes and behaviour from which to design monitoring systems and judge impact
- baseline surveys (including KAP) in parts of selected districts for improved understanding (see 9.2.8)

## 10. POTENTIAL PILOT PROJECTS AND REQUIRED ACTIONS

In the preceding text it has been recognised that a number of gaps in information exist and these gaps have been listed at the end of each relevant section. In this section these lists are all brought together. A general pre-requisite to carrying out this work effectively is the creation of the previously mentioned national body (such as an Environmental Sanitation Unit) to oversee and co-ordinate work in the sector.

The points in these lists identified by Workshop 4 as having the highest priority (for action in 1998 if possible) are highlighted in italics and/or are listed in 10.7.

### 10.1 *Advocacy and Social Mobilisation*

3.5

- *Views of traditional healers on environmental sanitation issues*
- *Potential for private promotion to develop markets in selling soap, latrine slabs etc.*
- *Most effective mass media messages to influence behaviour, rather than simply stimulate short-term action*
- Sub-district drama capacity, especially for traditional drama.

### 10.2 *Behaviour Change and Community Participation*

*Workshop 4 suggested that there should first be a general review of all existing material from which appropriate more detailed studies from the following list can be planned.*

4.4

Some of the areas most requiring further investigation include :-

- the differences between behaviours and community participation in urban and peri-urban environments
- women's attitudes to diarrhoeal diseases and reasons for not responding to the knowledge they already have
- women's attitude to having more time/energy available as a result of easier water collection and reduced burden of caring for the sick
- affordability and ways to change priorities in peri-urban and rural household budgets
- potential for contamination during collection and storage of water in peri-urban and rural environments
- cultural differences in chief's authority and acceptability of him conveying ES messages in different parts of the country
- the time element in building up community strategies rather than simply responding individual demands
- whether pilot projects on encouraging use of soap and ash would show to users sufficient improvement in child health for them to:-
  - a) adopt its use on a regular basis and
  - b) spread news of its effects to others
- community capacity and methods for self-monitoring, and ways to obtain feedback on community views of how messages could best be put across
- attitudes to shared sanitary facilities
- perceptions of ash and other alternatives to soap in different parts of the country

### **10.3 Funding Mechanisms and Resource Mobilisation**

6.6

- Potential for commercial rubbish collection (thought to be low)
- Affordability and willingness to pay in different socio-economic environments
- Credit systems in rural areas
- Feasibility of strategy using communal funds (in the same way as they are collected for water supply, and perhaps in association with this) to finance community ES strategy and cover those unable to afford contributions

### **10.4 Technology Options**

7.7

- *Documenting existing standard designs of latrine*
- *Drawing up a minimum recommended standards for essential components of sealed-lid and VIP latrines*
- Monitoring of longer term performance of existing designs of latrine
- Investigation of the practicality of incremental upgrading of latrines
- Studying the extent and desirability of the practice of bathing in a latrine
- Devise a simple way of testing the strength of latrine slabs
- *Gathering information on the experiences to date of centralised production of sanitation platforms*
- Exploring if there is a demand for special domestic latrine provision for children, and if there is, design and promote one
- Investigate appropriate designs for school latrines and promote a good design
- Investigate the design and performance of existing communal latrines (particularly fee-paying latrines) and promote good design and practice.
- *Pilot a District sanitation technology demonstration centre*
- Investigate the need for, and if appropriate design, and pilot designs of latrine for use in difficult conditions. This includes where the soil is very loose and the pit may need lining; where the water table is very high; where there may be a risk of contaminating the groundwater; where rock is very close to the surface.
- *If there is a need for a latrine pit emptying service for the dense peri-urban areas, and at least some willingness to pay a reasonable amount for this service, it will be worth investigating the appropriateness of the MAPET system. (Workshop 4 suggested that MLGH should be involved in this)*
- *A suitable study should be carried out to quantify the effect that new latrines in peri-urban areas, particularly in Lusaka, may have on the quality of groundwater, and the most cost-effective way of avoiding any health risk. (Workshop 4 suggested that NCSR and Care International should be involved in this work)*
- the feasibility of disposal of some solid waste in peri urban areas by composting and recycling is investigated\*.

### **10.5 Selection Criteria**

8.5

- Census data is seldom broken down sufficiently to identify individual communities. Peri-urban populations are only approximated, and rural communities may not be quantified. This is not likely to change and strategies must make allowance for the lack of detailed demographic data.
- *Lack of expertise at sub-district level in PRA. Extension staff will mostly require training packages and field experience, except where, as in Luapula for instance, programmes in WASHE and other sectors have trained a variety of community level workers. (Workshop 4 saw this training work as a role of N-WASHE)*

- Assumptions are made as to how different types of community will respond (e.g. those with low demand will be slower to take up behaviour change, or communities with integrated development programmes will be more successful). These assumptions should be tested as time goes by, to see whether the impact which might have been predicted has actually been realised. Criteria and any scoring system should be modified to take account of the findings.

## **10.6 Monitoring, Evaluation and Indicators**

Workshop 4 identifies the proposed ESU, and for the third point the MOE, as having key roles in the following\*:

9.6

- *define types of attitudes and behaviour from which to design monitoring systems and judge impact\**
- *set up standard instruments for measuring changes in attitude and behaviour (i.e. develop ideas in 4.1.2 and Table 4.1)\**
- *the development of monitoring checklists and self analysis by schools, probably as part of the WASHE schools programme building cross curricula ES modules (see 9.2.5 and 9.5.3)\**
- *the development of simple self-monitoring systems for community level self-evaluation of changes being achieved by their own efforts (see 9.2.5 and 9.5.2)*
- *a detailed survey of all sources of existing KAP, monitoring or baseline data relevant to the sanitation sector (see 9.2.7)*
- *baseline surveys (including KAP) in parts of selected districts for improved understanding (see 9.2.8). Workshop 4 decided that this should only be carried out after the general review mentioned at the head of section 10.2\*.*

## **10.7 Actions for 1998.**

10.7.1 In order to maintain the momentum gained so far, Workshop 4 considered what actions were needed in the short term. These consist of a combination of the priority research topics identified in the previous sections and specific actions to give ES a national profile and priority. It is an urgent requirement that the WGS assign responsibility for and timing to these actions.

10.7.2 The following actions were identified by workshop 4 as necessary before the main Action Plan can be completed -:

- *the creation of an 'Environmental Sanitation' logo*
- *the drawing up and implementation of an advocacy plan especially aimed at politicians at national and provincial levels*
- *obtaining political commitment to /approval of the ES strategy*
- *the further examination of legislation and the gaps and duplications which may need clarification in relation to ES and institutional roles*
- *interministerial agreement on the pivotal role of the MOH and specific responsibilities of key organisations (e.g. Ministries of Health, Local Government, Environmental Council and Education, UNICEF and NGOs) during the next five years, which may form a transition period*
- *the agreement of key ministries on the form a national Environmental Sanitation Unit should take*

10.7.3 The above actions are necessary before the Action Planning exercise can begin, and this would in turn be followed by -:

- *launch of the ES strategy (and if completed the Action and Monitoring and Evaluation plan) during ES Day in May 1998.*
- *the funding and establishment of the ESU as soon as possible to co-ordinate work in the sanitation sector (this might precede the Action Plan but is not a prerequisite, as long as there are indications of donor interest in ES and GRZ commitment which includes willingness to second senior staff to the ESU)*

10.7.4 Other urgent activities include:

- *identifying key messages*
- *resource mobilisation*
- *production of materials*
- *liaison with MOE on ES*
- *identification of key ES training needs and materials in different sectors*
- *research into areas into which ES teaching should be incorporated (e.g. initiation ceremonies).*

10.7.5 The timing of production of materials and guidelines needs careful assessment, to balance eagerness to satisfy demand against having sufficient researched findings to identify and support key messages. Influencing behavioural change is not a simple exercise, especially where benefits are not immediately or very obviously identifiable. A communications programme which employs hurriedly devised messages and materials may not convey sufficiently relevant ideas or trigger the desired responses. In that case any subsequent programme will have a much reduced impact. The WGS needs therefore to co-ordinate activities carefully in the period up to the formation of the ESU, to encourage development of research projects, and production of advocacy materials. Without further qualitative information on beliefs, practices and barriers to behaviour change it unlikely that much effective material for use at community level can be developed during the period of the short-term action plan.

## 11. SUMMARY OF SECTOR STRATEGIES

The following strategies have been identified in the report by being highlighted in bold. The strategies are listed under the section titles used in the report and are shown with the relevant section numbers. The sub-points highlighted using italics were identified in Workshop 4 as requiring urgent action during 1998. Other priorities are similarly highlighted in section 10 of this report. *Workshop 4 identified the urgent need for an ES strategy for Zambia to be agreed early in 1998 by GRZ, leading if possible to a launch of the strategy on 'Environmental Sanitation Day' in May 1998. The rapid formation of an Environmental Sanitation Unit (see 5.2 below) was thought to be key to achieving progress towards ES in Zambia.*

### 11.1 PROBLEMS, OBJECTIVES AND DEFINITIONS

#### 2.3 *Main Programme Objectives*

- 2.3.2 Improvement of national access to appropriate, acceptable and affordable excreta and domestic waste disposal facilities through sustainable approaches that are demand driven and promote hygiene behavioural changes that bring about health and well-being of the people. Summarised by the Workshop 4 to be "Environmental sanitation for all"
- 2.3.3 To create an enabling environment with support mechanisms to facilitate individuals, households and communities to effectively improve their environmental sanitation conditions and hygiene practices by erecting barriers to prevent the transmission of diseases.
- 2.3.4 Within five years the main objectives are proposed to be -:
1. Significant reduction in diarrhoeal incidence\*
  2. National commitment to ES, though funding, staffing and job descriptions\*
  3. Increased adoption of good hygiene practices including hand-washing\*
  4. Increased use of acceptable community based sanitary disposal methods for faecal and solid waste\*
  5. Increased use of latrines through greater acceptability and numbers\*
  6. (Development of unsubsidised latrines - Workshop 4 suggested that this was deleted since it is covered elsewhere e.g. principle 4 of 2.2.1)\*
  7. Increased use of safe water sources
  8. Reduction in habitats for mosquitoes and houseflies\*
  9. Clear cut institutional structure, and national focal point / ES unit (ESU)
  10. Increased emphasis on the roles women can play in environmental sanitation (ES) (including promotional planning and possible development of commercial enterprises)\*
  11. Increased emphasis on the role extension workers can play in promotion of ES\*
  12. Existing peri-urban areas legalised and serviced\*
  13. City councils provide/ ECZ approved sites for solid waste and latrine sludge dumping
  14. Strict enforcement of planning and public health laws\*

### 11.2 NATIONAL AND INTERSECTORAL PROMOTION OF ENVIRONMENTAL SANITATION (ADVOCACY AND SOCIAL MOBILISATION)

*Workshop 4 suggested that an 'Environmental Sanitation' logo is developed by the WSDG as soon as possible. It stressed the need for political commitment towards, and approval of,*

*a national ES strategy for Zambia and the need for an ESU to be established as soon as possible to co-ordinate work in the sector relating to promoting the continued development of the ES strategy. (See also Section 5.2 below and 10.1)*

### **3.2 Key strategies at the political and national level.**

- 3.2.1 Identify and target key political and non-political figures
  - 3.2.2 Hold national events/ workshops at which key figures can contribute and show their support, and which are covered by mass media.
  - 3.2.3 Form links to mass media
  - 3.2.4 Develop a newsletter to link all those interested in sector progress.
- See also Table 3.1

### **3.3 Objectives and strategies of intersectoral communication**

- 3.3.3 Ensure that the messages being promoted, and how they are promoted are the same in all sectors\*.
- 3.3.4 Use, as far as possible, existing management and planning structures.
- 3.3.5 Create an environment in which women can give their views and be influential in community plans.
- 3.3.6 Undertake more health / hygiene meetings with mothers and children and men attending clinics, rather than always visiting villages.
- 3.3.7 Involve traditional as well as government and NGO social structures.
- 3.3.8 Give schools a key role as bridges to communities, centres of dissemination and collection of information, and potential demonstration centres for new ideas.
- 3.3.9 Identify mobilising issues in the community and use them as vehicles for developing institutional capacity.
- 3.3.10 Explore the scope/ willingness of private sector to undertake promotion in order to expand market potential.
- 3.3.11 Explore scope for the involvement of traditional healers.

### **3.4 Media strategies.**

- 3.4.1 Use previous experience in planning and media impact.
- 3.4.2 Use links to other communications programmes.
- 3.4.3 Use mobile film unit\*
- 3.4.4 Use traditional media
- 3.4.4 Develop of sub-district drama groups.

## **11.3 BEHAVIOURAL CHANGE AND COMMUNITY PARTICIPATION**

### **4.1 Objectives**

- 4.1.1 At community level the main objective is to empower people to effectively improve their environmental sanitation conditions and hygiene practices by erecting barriers to prevent the transmission of disease agents
- 4.1.2 The behavioural changes which are proposed to be targeted in the beginning are :-
  - Hand-washing with soap, sand or ash, particularly after defecation
  - Hand-washing after washing/cleaning small children and before preparing food, beer or handling plates, glasses, fruit or other items which will not be heated but form a direct link to people when eating
  - Disposal of faeces, usually in well-maintained latrines\*
  - Burial of rubbish, and development of community censure of indiscriminate dumping of any waste, particularly in high density housing areas
  - Maintenance of good drainage, and sanitary conditions around water sources and removal of stagnant water near houses
  - Safe collection and storage practices for water\*

- 4.2 *Communications Strategies at Community Level for behavioural change.*
- 4.2.1 Regarding environmental sanitation as requiring a community strategy rather than simply individual choice.
- 4.2.2 Targeting and involving women, ensuring them a key role.
- 4.2.3 Adding up the cost of poor hygiene and sanitation practice.
- 4.2.4. Considering the community as a whole, albeit made up of different groups.
- 4.2.5 Promoting latrines not just for their potential health benefit
- 4.2.6 Identifying the scenarios within which a didactic approach may help achieve objectives.
- 4.2.7 Communities should be involved in the design of communications strategies.
- 4.2.8 Regarding community participation as a long term commitment, with management and monitoring as important a responsibility as implementation.

## 11.4 INSTITUTIONAL STRATEGIES

### 5.1 Introduction

- 5.1.5 Any institutional strategy needs to recognise a transitional phase to avoid loss of momentum through present lack of clarity on progress towards final reform structure in various sectors.
- 5.1.6 Transitional strategy may need to be pragmatic
- 5.1.7 At the start, promotion and implementation should not be separated, but implementation will be low cost and undertaken by community or private enterprise.

### 5.2 Evolution of institutional structures

*Workshop 4 identified an urgent need to establish an 'Environmental Sanitation Unit' to co-ordinate: plans and activities, monitoring and evaluation, development of monitoring tools, resource mobilisation, advocacy, management, development of training materials, development of guidelines/policy, research and technical assistance.*

- 5.2.2 D-WASHE committees need a national focal point for project co-ordination monitoring lobbying ministries to change job descriptions and give funds to such an intersectoral budget
- 5.2.4 D-WASHE, with its greater intersectoral bias, should continue to solicit funds for ES but the routing for these funds needs to be strengthened. WASHE committee members need to begin to solicit small amounts of funding through their respective ministries which need, in turn to be sensitised to the effectiveness of this approach.
- 5.2.5 There should be some discussion as to whether DISS and MLGH should take greater responsibility for large peri-urban areas, but 'rural' ones could fit under D-WASHE or DHB.
- 5.2.6 In this transitional period it will be necessary for the three key ministries, MLGH, MOH and ECZ to work together at a high level to agree a structure which can be effective and attract government and donor funding to implement an ES programme.
- 5.2.7 Action planning is scheduled to follow after the approval of the Strategy, but this should not take place until a transitional institutional structure is agreed by the relevant ministries.
- 5.2.8 There is also need for a small, permanent, full-time group to undertake research, develop materials, provide advocacy, and keep the programme on track.

### 5.3 District level options.

- 5.3.1 The WASHE committee and DHB need to work very closely together.
- 5.3.2 D-WASHE should be encouraged to work closely with the Gender sub-committee of DDCC



- 5.3.3 The responsibility and potential of D-WASHE and RDCs need to be recognised by councils and included in budgets.
- 5.3.4 District level training capacity may be used to encourage development of the private sector where this could lead to lesser dependence on subsidies.

#### *5.4 Sub-district level options*

- 5.4.1 Promotion or marketing of latrines and soap, or pots for handwashing could also become a small scale enterprise centred on the health centre, school or women's group
- 5.4.3 At community level various groups would be involved. Groups with special interests and training (e.g. women's group, youth groups, development committees/ VWASHE committees) can have particular roles, as can individuals. There may be a role for youths to look at ways they could generate income from activities which would improve the environment, e.g. work on solid waste disposal
- 5.4.4 Implementation would be mainly done through RHCs and NGOs, and promotion through schools, NHMBs, chiefs, churches and health workers, especially those at community level.
- 5.4.5 As at other levels, existing community development or management committees should be used whenever possible.

#### *5.5 Legal framework*

- 5.5.2 In order that no more problems than absolutely necessary, are stored up for the future, perhaps local authorities could identify those most critical situations and areas, and concentrate their regulatory powers on them.

#### *5.6 Human resources development.*

- 5.6.1 Most of the changes require capacity building in management principles, training skills, and finding methods to help people convince themselves that changes in behaviour are worth the effort. The more tangible aspects such as latrine construction, logistics, and research planning and implementation are also required.
- 5.6.2 Much of the cost of a sanitation programme will be linked to the costs of capacity building, rather than, as in the past, to latrine construction.
- 5.6.3 The large part that training has to play requires close links with training institutes.
- 5.6.4 In that schools should play a major role in any sanitation initiative, training of teachers, and influencing them to provide good role models in ES issues should be a high priority
- 5.6.5 A major constraint to any programme will be the capacity at district and sub-district level. Planning of activities should also take account of any other programmes which might be intending to use the same management structures or field personnel.
- 5.6.6 Funding through GRZ at district level will need to start at low levels, as no organisation is in a position to manage large capital projects in the sector, particularly in rural and peri-urban environments.
- 5.6.7 In order to provide the best long-term results, and devolve management to the lowest level, training should be given as far as possible to people who are close to, or at community level via effective preparation of those at district level, which gives them the capacity for passing on their acquired expertise.
- 5.6.8 Training materials may need developing, based on research findings. However BASICS and other NGOs are already producing manuals for health workers and others which may reduce the amount of work required.

## 11.5 FUNDING MECHANISMS AND RESOURCE MOBILISATION

### 6.1 Introduction

- 6.1.2. Part of advocacy should be to show government how quite small funds have been able to have impact through tackling environmental sanitation issues.
- 6.1.3 Pilot projects should include attempts to encourage communities to adopt solutions which are affordable and sustainable if at all possible from within their own resources

### 6.2 Proposed sources of funds

#### 6.2.1

1. Individuals or communities would cover most of the cost of latrine construction, soap and latrine emptying, and would be subsidised temporarily for provision of discharge points for latrine waste (where needed in peri-urban areas), and probably for latrine slabs/Sanplats (especially in rural areas).
2. GRZ will make the major contribution in the provision of extension staff for promotion and marketing of good environmental sanitation practices, with assistance from NGOs where possible. Government training institutions would also include participatory and community development techniques in the training of new intakes, so contributing to the capacity building of staff at all levels.
3. Donor funding would be required particularly for training and research in the early stages. but government should fund social mobilisation and contribute funds towards research\*.
4. The aim would be that within five years communities cover all costs for ES interventions at community level except promotion\*.

- 6.6.2 Subsidies targeted at individual householders, should be avoided.

### 6.3 Strategies to reduce costs of resource mobilisation.

- 6.3.1 Use a community strategy, with a threshold number / proportion of houses in a community.
- 6.3.2 Employ ES promotional materials in other programmes, e.g. adult literacy.
- 6.3.3 Pilot different alternatives so that subsidies can be phased out as soon as possible.
- 6.3.4 Use people coming to health centres, Councillors and PTAs as vehicles for messages\*.

### 6.4 Local funding strategies.

- 6.4.1 Investigate potential of using community credit systems where they exist.
- 6.4.2 Make allowances for seasonality of cash in rural areas.
- 6.4.3 Encourage small scale enterprise, which may lead to informal promotion of good habits.

### 6.5 Routes for funding.

- 6.5.2 If funding is small scale and district level, then D-WASHE committees may be used.
- 6.5.3 If it is required that funds be used only for environmental sanitation then they should pass through DDCC or D-WASHE who will make a contract with appropriate organisations for specific services\*.

## 11.6 TECHNOLOGY OPTIONS (see also some connected points in 10.4)

### 7.1 Objectives and Associated Implications

#### 7.1.3 Appropriate and Acceptable

To be technically, culturally and environmentally appropriate and acceptable each technology used should satisfy the following criteria:

- cause no harmful surface soil contamination
- cause no harmful contamination of untreated potable water sources

- prevent the spread of disease by flies or animals
- present no health risk to people using or maintaining the system
- be free from offensive smells and unsightly conditions
- be culturally acceptable and gender sensitive
- use as little water as possible where this is scarce.

#### 7.1.4 Affordable

- To be affordable each technology should have a minimum-cost entry point which virtually all prospective users are able to afford should they want to adopt it.
- Although the entry point will offer a very basic technology, wherever possible the technology should be upgradeable so that owners who want to can improve their sanitation facilities at a later stage when they can afford to do so.
- The idea of progressively upgrading latrine technology needs to be piloted technically and socially to confirm that it works successfully in Zambia.
- Because the potential saving it is recommended that this idea of the unreinforced domed Mozambican slab should be piloted in Zambia, in places where there are sands and aggregates suitable for good concrete.

#### 7.1.5 Sustainable

- The use of direct subsidies to reduce the construction cost of technologies should only be used as a last resort. It may sometimes be appropriate in the very short term but is best avoided because once subsidies have started their removal is politically difficult and usually detrimental to continued progress.
- The long term operation, maintenance and replacement requirements of the technology should be well explained to potential users and should be within their expected capabilities.

#### 7.1.6 Demand Driven

- Government, Donors and NGOs should not try to push the implementation of domestic latrine programmes faster than the development of real demand for the sanitation technology.
- High subsidies and programme efforts to meet target numbers of facilities by a certain time irrespective of demand and appropriate community/user participation may result in facilities being provided which are not properly completed or which are not used.
- The use of legislation to enforce the construction of latrines at existing dwellings in rural and peri-urban areas will often lead to facilities being poorly built and not used.

### 7.2 Implementation Approach for Domestic Latrines

#### 7.2.1 Latrine Construction and Training

- It is recommended that the most appropriate and sustainable system of domestic latrine construction is for local private masons (including women where appropriate) to be trained to construct the type(s) of latrine most appropriate for the area in which they live. Any householders can then privately employ these masons to build at least the parts of the latrine which need a masons skills (e.g. the sanitation platform).
- The sealed-lid Sanplat and the VIP latrines are the best suited of the many types of on-site sanitation systems for most rural and peri-urban areas in Zambia.
- In order to maintain good design of latrines a national body should draw up minimum recommended standards for the technically important components of sealed-lid and VIP latrines. When doing this reference should be made to the findings of international experience and international research already carried out, the experiences of those already implementing the construction of latrines in Zambia, and feedback from communities using the existing latrines.

- The standard should specify only the essential technical points and allow freedom to the builder/owner to choose their own features where these will not adversely affect the hygienic operation and/or durability of the latrine.
- In view of the possible use of poor quality of sand and aggregate for concrete construction and the fact that builders may not follow recommended procedures for construction of good quality slabs a simple but standard test for strength should be devised. (For example the slab can be supported at its edge on four equally spaced bricks and six people can stand in a line on the slab).
- The trained builders should be provided with appropriate easy to use moulds for the sanitation platforms to ensure correct dimensions of critical components.
- The competence of the trained builders should be monitored after the training by an appropriately trained senior technician in each District. He should inspect at least six examples of work carried out by the builder before recommending the award of a certificate of competence for the type of latrine construction work being carried out by the builder.

#### 7.2.2 Centralised Production of Sanitation Platforms

Caution should be observed if it is planned to set up a central Sanplat production unit in rural areas because of the difficulties and cost of transporting the slabs to scattered users.

#### 7.2.3 Technical liaison at Regional Level

Wherever possible, different organisations working in the same district to promote sanitation should seek to use similar technologies and promotion methods so that the public and the local builders do not become confused.

#### 7.3 Other Aspects of Pit Latrines

- Appropriate types of latrines for schools should be investigated and successful designs be promoted.
- It is recommended that at clinics at least one type of appropriate minimum-cost latrine is demonstrated so that villagers become aware of the cheapest sanitary latrine option.

#### 7.4 Handwashing Devices

In order to support the hygiene training initiatives relating to promoting hand-washing it is recommended that the local production of appropriate devices is encouraged.

#### 7.5 Solid Waste Disposal

- Although solid waste disposal in rural areas does not presently appear to be a major environmental health risk, householders need to be encouraged to understand the best methods of disposal and ways of reducing fly nuisance.
- Proper solid waste disposal rarely happens in practice in peri-urban areas and the relevant actors (communities in the compounds, any NGOs that assist them and the urban authorities) need to seek a solution to this problem to improve the environment.

#### 7.6 Drainage

Both rural and peri-urban communities need to be sensitised as to the risk of mosquitoes breeding in water ponding in small ground depressions, or in impermeable solid waste material, so that wherever possible they prevent the occurrence of such risks. All communal water collection points should be provided with appropriate methods to safely dispose of wasted water.

## **11.7 SELECTION CRITERIA**

### **8.2 Methodologies.**

- 8.2.2 Use indirect information to select priority districts and areas within them
- 8.2.3 Use the intersectoral links of D-WASHE and district planning units to identify priority areas.
- 8.2.4 Use community level participatory data collection only once areas of interest have been decided upon by district level authorities.

### **8.3 Strategies relating to selection criteria**

- 8.3.1 Areas of high need and high demand should have highest priority
- 8.3.2 Where high need but low demand is identified, an intersectoral communication programme will need to build community awareness as a pre-requisite to facilitating a community strategy.
- 8.3.3 After considering need and demand, communities with good support resources should be chosen first.
- 8.3.4 Promotion activities should take place in clusters of communities, rather than being spread thinly over a wide area.
- 8.3.5 Within a community, strategies may be aimed to improve quality of life for target groups such as women and the disadvantaged.
- 8.3.6 Where possible, trends may also be considered, rather than simply the existing situation.
- 8.3.7 Selection criteria should be flexible.

## **11.8 MONITORING, EVALUATION AND INDICATORS**

### **9.2 Basic principles of programme monitoring**

- 9.2.1 Indicators of progress in the sector need to be as far as possible easily collected on a nation-wide basis. This information should be used for monitoring linked to health and well being by a national sanitation body (e.g. an Environmental Sanitation Unit (ESU))\* . The primary indicator will be the trends in the incidence of diarrhoeal diseases.
- 9.2.2 Data collection should use as much of existing monitoring systems as possible. Where such data is not presently available efforts should be made to get it incorporated into existing systems. Otherwise the cost of additional data collection should be carefully weighed against its benefits.
- 9.2.3 As far as possible, data collected should be analysed and used at the level at which it is collected. Vertical lines of evaluation should be minimised, as is the principle with HMIS.
- 9.2.4 Basic, mainly indirect data collection systems can be set up to monitor the degree to which the objectives in 2.3.4 are being fulfilled. These are the basic programme objectives, to which more specific project indicators can be added.
- 9.2.5 To undertake this general monitoring system requires six actions\* :-
  - the incorporation of monitoring into the scope of a national environmental sanitation unit (ESU) (see 5.2.8)
  - the development of monitoring checklists and self analysis by schools, probably as part of the WASHE schools programme building cross curricula ES modules (see 9.5.3)\*
  - developing simple self-monitoring systems for community level self evaluation of changes being achieved by their own efforts (see 9.5.2)
  - linking systems to district level, via NHMBs or MOE to D-WASHE, district planning offices and DHBs, making full use of the CBoH HMIS (see 9.3) and NGO data\*
  - defining types of attitudes and behaviour from which to design monitoring systems and judge impact\*

- setting up standard instruments for measuring changes in attitude and behaviour (i.e. develop ideas in 4.1.2 and Table 4.1)
- 9.2.6 A detailed survey of all sources of existing KAP, monitoring or baseline data relevant to the sanitation sector should be carried out.
- 9.2.8 A small number of appropriate baseline surveys, using a widely agreed format, should be carefully designed and carried out in representative parts of chosen Districts by suitably qualified personnel. Support should be sought to fund these surveys.
- 9.2.9 After various actors have carried out interventions in some of the areas surveyed a further set of KAP surveys should be carried out to measure the magnitude of the changes which appear to have resulted from the known interventions.
- 9.2.10 The apparent effectiveness of the various interventions should be gauged after the second series of KAP surveys by combining the data so collected with data from other sources, such as HMIS. The findings should be disseminated by a national sanitation body (an Environmental Sanitation unit (ESU)) so that other actors can learn what changes have (or may have) resulted from certain interventions\*. The collection of data in areas in which no major sanitation interventions have taken place will indicate the effect of other factors on the KAPs being monitored.

### 9.3 *Existing monitoring systems (CBoH)*

- 9.3.7 A national body, such as an Environmental Sanitation Unit (ESU) should make full use of relevant data from the HMIS system to monitor health improvements, particularly relating to diarrhoeal diseases, as the prime indicator of progress towards ES. It should hold discussions with CBoH Monitoring and Evaluation Department to see if any additional information is needed, and to avoid of ambiguities in the HMIB system by providing a definition of a 'hygienic latrine', and by specifying the method for determining the number of households with access to latrines.\*

### 9.4 *Project monitoring systems*

- 9.4.5 Where there are major programmes promoting latrine construction -D-WASHE committees should be encouraged to collect information on a regular basis from appropriate Ministry of Health staff, NGOs and any other organisations overseeing the construction of latrines. The information reported to D-WASHE should include the number of new latrines of each specified type completed in the reporter's area during the month and a running total of the hygienic latrines in the area. Where possible the total number of dwellings in the area should also be updated.
- 9.4.6 Where only physical outputs from a programme are measured it is important that a representative survey is carried out to check to what extent the outputs have contributed to improved environmental sanitation\*.

### 9.5 *Monitoring behavioural change*

- 9.5.1 It is proposed that as far as possible such monitoring of behavioural change should be done by those immediately affected, so that they become aware of the progress and impact of the work being carried out and how to improve its effectiveness.
- 9.5.2 The involvement of communities in monitoring/evaluating will initially need the involvement of a trained mobiliser/facilitator) or hopefully eventually just the support of an EHT), but this should be time well spent since it reinforces hygiene messages previously targeted at the community.
- 9.5.3 The development of monitoring systems through schools as part of the curriculum should be tried, and the links between schools and D-WASHE strengthened so that the information gained can be put to wider use.

## APPENDIX 1 TERMS OF REFERENCE

TERMS OF REFERENCE (12-9-97)

# SUPPORT ELABORATION OF A SANITATION STRATEGY FOR RURAL AND PERI-URBAN AREAS IN ZAMBIA

## BACKGROUND

See the following documents:

- 1) Terms of Reference of the Working Group on Sanitation (WGS)
- 2) Report Workshop 1 (14-16 April, 1997)
- 3) Report Workshop 2 (4-6 June, 1997)
- 4) Report Workshop 3 (takes place on September 8, 1997: not yet available)
- 5) Report IRC/Netwas: Situation analysis
- 6) Working papers of 4 subgroups:
  - communication
  - institutional and funding arrangements
  - technological options
  - selection criteria and indicators

## OBJECTIVES/ACTIVITIES CONSULTANCY

The specific objective of the consultancy is to contribute to the work of the Working Group On Sanitation (WGS) on the development of a sanitation strategy for rural and peri-urban areas in Zambia. The WGS is expected to discuss in its Fourth Workshop a draft strategy paper on sanitation issues including institutional aspects. To facilitate the work of the WGS a short term consultancy is planned to support the elaboration of a gender sensitive sanitation strategy including institutional aspects.

The following aspects need to be covered for rural and peri-urban areas:

- strategy for improving behaviors
- strategy for selecting communities
- strategy for selecting technologies
- strategy per target group for communication on village, district, provincial and national level
- strategy for institutional arrangements/types of partnership arrangements/legal framework
- strategy for funding mechanisms and resource mobilisation
- strategy for Monitoring and Evaluation (including impact indicators)
- criteria for selection of projects/activities
- programme/project rules and procedures.

## METHODOLOGY

Through desk reviews of reports and other documentation, including interviews / discussions/meetings with members of the WGS and others working in the sector, as well as through field visits. The consultants will collaborate closely with the sanitation expert at WSDG, the Working Group on Sanitation and the subgroups on specific issues . The draft strategy document will be discussed with a broad range of participants during Workshop 4.

Specific attention will be given to the needs of women and in the draft proposals for extra (educational) activities will be included whenever considered necessary to reach women.

The background information mentioned above form integral part of the TOR. In particular the reports of the Workshops 1, 2 and 3, the IRC/Netwas report on the situation analysis, and the report of the four subgroups, and the documents mentioned in those reports, will be used.

If the following subjects are not sufficiently covered by the available sources, additional data collection/analysis need to be undertaken during the consultancy:

### Existing procedures, norms, rules

Are they adequate to ensure accountability. Are they flexible enough to encourage local initiative and adaptable enough to reflect different project needs and situations?

### Legal framework

Current legislation in place. Does it reflect adequately community based programming. Does it allow community ownership of facilities. How does it affect peri-urban areas and squatters. Can community groups organise and easily register to establish legal person, manage resources, open accounts etc.

### Institutional arrangements

Existing arrangements for policy formulation, implementation, (donor) coordination, capacity building, service delivery, technical support, financial arrangements/procurement, monitoring and evaluation. Decentralization. Informal and formal arrangements on village and district level.

### Donors, NGO's

National, regional, local or community based. Level of organization. Capacities. Functions (funding, advocacy, capacity building, implementation)

### Private sector

Types and frequency of private sector providers on national, district and village level. Extent and capacities in local manufacture.

### Criteria for partner organisation and scheme selection

Criteria in use for selection partners/projects. Differences. Advantages/disadvantages. Needs for refinement.



### Communication

Adequacy and cost-effectiveness of channels/materials in use. Required improvements.

### Programme/Project phasing

Arrangements in use. Use of situational information. Constraints. Possible improvements.

### Gender

Current situation: legal framework, criteria, policies, norms, procedures, project phasing. Constraints. Possible improvements.

### Financing options

Existing options. Criteria for financing and resource mobilisation.

## **PERIOD**

The consultancy will take place from October 27 until November 27, 1997. The consultants will participate in Workshop 4 to discuss the draft sanitation strategy document.

## **REPORTING**

The consultants will present the draft-document to the Workshop 4 of the Working Group on Sanitation for comments. The draft document will be modified, based on the outcome of the Workshop 4 and will be presented to UNICEF within two weeks after the Workshop. UNICEF will forward the copies to the secretariat of the WGS, so that the WGS can take a decision on the acceptance of the report.

The WGS will be in charge of seeking official approval of the sanitation strategy document.

UNICEF will ensure that copies of the draft report and final report are printed and distributed.

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## APPENDIX 3 TECHNICAL MONITORING

### 1. Technical Monitoring/Evaluation by Observation at Community Level

#### **A. Suggested checklist for monitoring the sanitary state of the environment**

How many family dwellings are there in the area?

How many of them have latrines for use by family members?

Are faeces lying around in the environment?

Are water sources likely to be polluted by faeces, either directly or by excreta being washed into them or from contamination which is introduced during the collection of water?

Is there stagnant water anywhere?

Is solid waste left lying around?

#### **B. Suggested checklist for monitoring sanitation facilities**

Is the latrine and area around it clean of faecal matter?

Is the latrine slab smooth and easy to clean (ideally the slab should slope towards the squatting hole)?

Is the latrine and the area around it free from fly nuisance?

Is the latrine and the area around it free from unpleasant odours?

Is the ground immediately around the latrine raised so that surface water flows away from it?

Is there any evidence of structural problems with the latrine (e.g. cracked slab, unstable structure, settlement of ground around the latrine)?

Are handwashing facilities available ready for use near to the latrine? (It is not necessarily a potential health hazard if they are not because hand washing may be done elsewhere, but it is a good sign if they are available).

If it is the custom to use anal cleansing materials are these available in the latrine? (Their absence is not necessarily a bad sign because people may bring suitable materials to the latrine from their house, but it is a good sign if they are available.)

##### B.1 Particularly for VIP Latrines

Is the mesh on the top of the vent intact? (This may be hard to observe unless the observer uses a mirror on a stick but is important because if there are holes large enough for flies to pass through the whole purpose of the mesh is defeated)

Is the vent working? (If it is there should be no unpleasant odour in the latrine house. The effectiveness of the vent can be checked by putting some smoking material near to the squat hole and seeing if the smoke is sucked into the hole to leave the pit by the vent.)

Is the squat hole open to allow free passage of air to vent the pit?

Is the inside of the superstructure dark enough that any flies that enter the pit are more likely to be attracted to the light from the top of the vent instead of that from the squatting hole?

##### B.2 Particularly for sealed-lid latrines

Is the stopper/lid for the squatting hole in place?

Is the stopper/lid close fitting to prevent the escape of flies?

## **2. Technical Monitoring/Evaluation at Community Level Through Discussions**

The following questions can not usually be answered from observations in the community but need the householders and villagers to explain the situation. The data could be gathered through a variety of methods including interviews, group discussions, various PRA activities etc.

### **A. Suggested questions to ask representatives from families with latrines**

Do all adults and older children in the family use the latrine when they are in the village?

What is the method of dealing with the faeces of children who do not use the latrine? (i.e. is it a hygienic method and are hands washed afterwards?)

Does handwashing take place after defecation and if so is a hand-cleansing agent such as soap or ash always used?

What do people in your family like and dislike about the latrine?

What is the best way of keeping the latrine clean? (i.e. regularly washing the slab)

Do people in your family usually bathe in the latrine?

How long do you think it will be before the latrine pit fills? What do you plan to do then?

If they have a VIP latrine Can you tell me the purpose of the vent and how it works? Does it need any maintenance? (In particular to check that they understand that the inside of the superstructure needs to be fairly dark; that the squatting hole should not be covered; that the latrine will not control flies if the mesh becomes damaged and that if the mesh is not corrosion resistant that it may need to be periodically replaced)

If they have a sealed-lid latrine Can you tell me the purpose of the lid/stopper? (To check that they understand the importance of always replacing it quickly after defecation)

### **B. Suggested additional questions for families with new latrines**

Why did you want to build a new latrine?

How did you hear about how to build this type of latrine?

How much did you spend on this latrine for materials and labour?

What labour or materials did you supply yourself?

Were you or your builder given anything free by an organisation promoting sanitation? (i.e. items such as cement, vent pipe, fly screen, pre-fabricated Sanplat etc.)

Would you have constructed the latrine if you had not received these free materials?

## APPENDIX 4 ACKNOWLEDGEMENTS

PEOPLE MET WHOSE HELP AND IDEAS ARE GRATEFULLY ACKNOWLEDGED.  
(see also the list at Section 1.3.5)

Banda Dr. J.	Director Health Services Commissioning, CBoH
Banda Mr.	Mutunzi NGO, Chadiza
Bhebe A.T.	Dept. of Planning, Mazabuka Municipal Council
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Chisanga S.T.	Chief Health Inspector. Ministry of Health
Gaag J.v.d.	Consultant to UNICEF
Hedley D.	CARE International, Lusaka
Huijts Dr.I.	WHO, APO, Child Health Unit. Lusaka
Kaluba M.	Head CMMU
Loukhelo A.	Diocese of Chipata (Chipata D-WASHE)
Limbambala Dr. M.E.	Director Monitoring and Evaluation, CBoH.
Lukonga Mr.	Director of Works Katete District Council and D-WASHE
Lungu F.	Project Officer, Sanitation UNICEF
Luo Hon. Prof.N.	Deputy Minister, Ministry of Health
Mathur S.	Programme Officer, WES, UNICEF
Makwaye M.	Peace Corps, Lusaka
Mbewe I.J.	Head N-WASHE
Musange Dr. J.C.	Director General. Central Board of Health, Lusaka
Musonda K.	World Vision, Chipata D-WASHE.
Musowe V.	Director of Planning, Ministry of Health
Mupinde Mrs.	Child Health Unit (ex CDD)
Mutinta S.G.	Director of Works, Chadiza District Council. (and D-WASHE)
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Zandonda I.H.M.	Inspector, Water Pollution Control, ECZ
Zulu Rev.	AMEC, Nyimba D-WASHE

## 4.2 Participants to the 4th. Sanitation Workshop

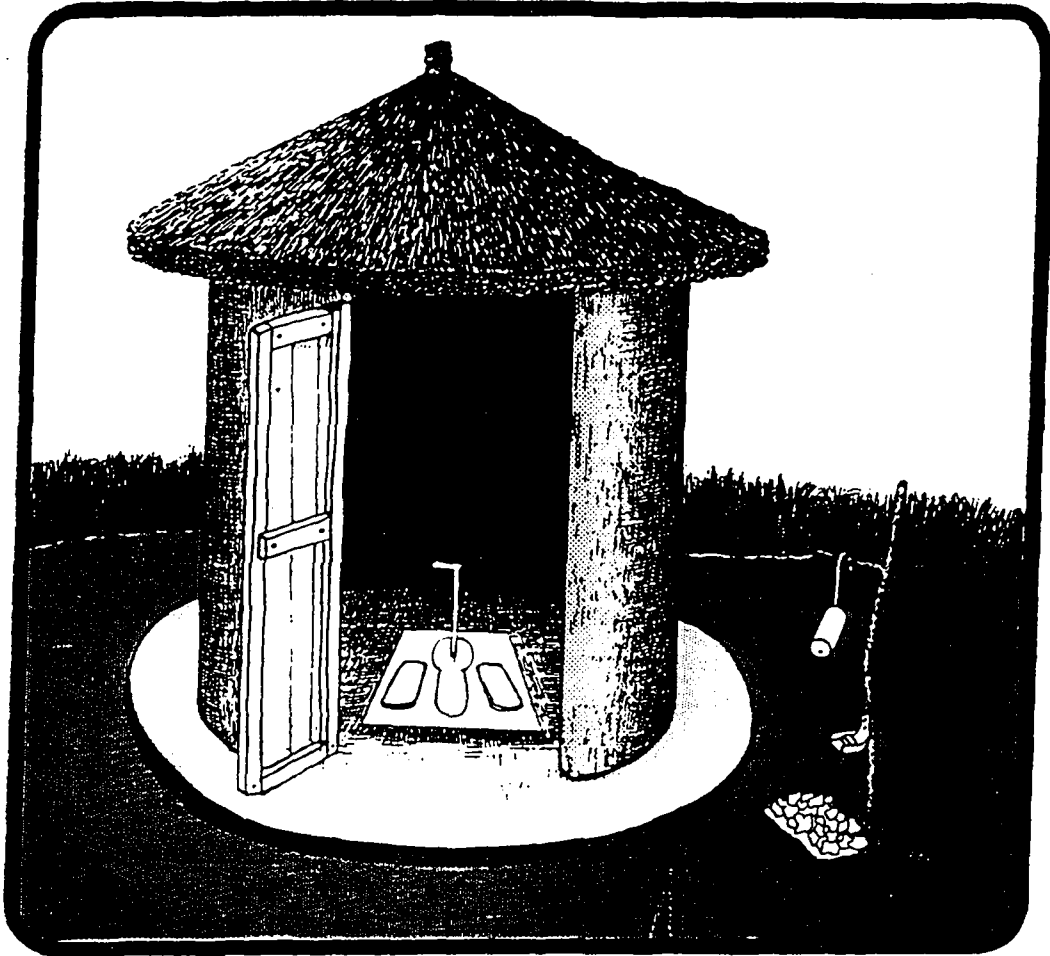
Baroins T.	Irish Aid -Mbala
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Bulwani G.	Legend Consultans
Chibale M.	MoE
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Sutton S.	WEDC
Tshintu G.B.	DISS
Wijnobel F.	RWHP
Zandonda I.H.M.	ECZ

## APPENDIX 5 DETAILS ABOUT TYPES OF LATRINE

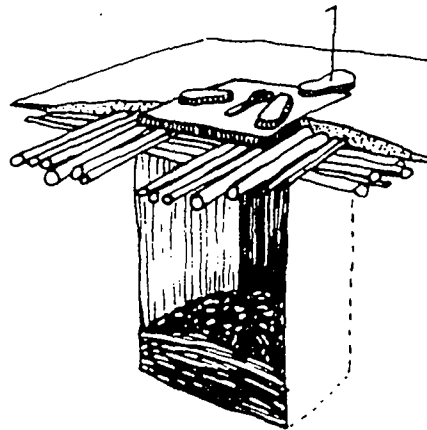
- 5.1 Outline details of small sealed-lid sanplat
- 5.2 Outline details of unreinforced Mozambique arched slab
- 5.3 Outline details of VIP Latrine
- 5.4 Comparison of different types of pit latrine



**Appendix 5.1. Outline details of small sealed-lid sanplat latrine**



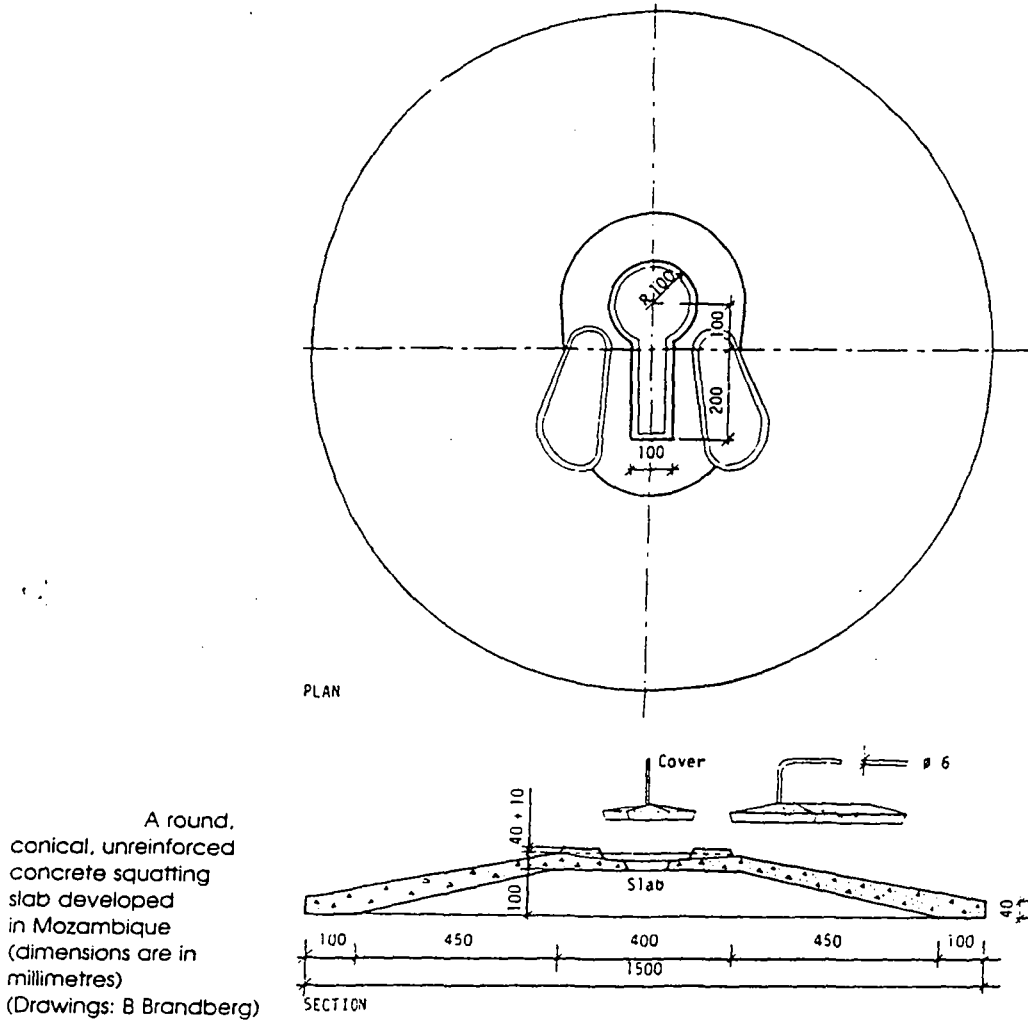
**View of finished latrine (also showing 'leaking ladle' handwashing device)**  
(Note: covered superstructure is not essential) Source: UNICEF Uganda?



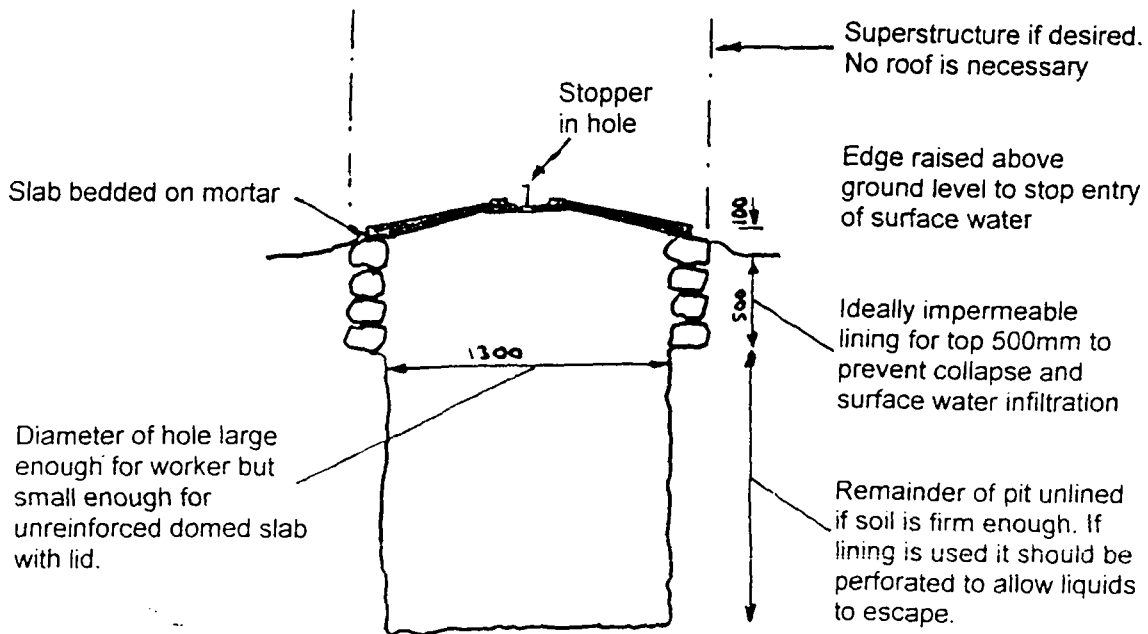
**Sectional view showing log supports**  
(Source: Reference 54)

## Appendix 5.2

### Outline details of unreinforced Mozambique arched slab latrine

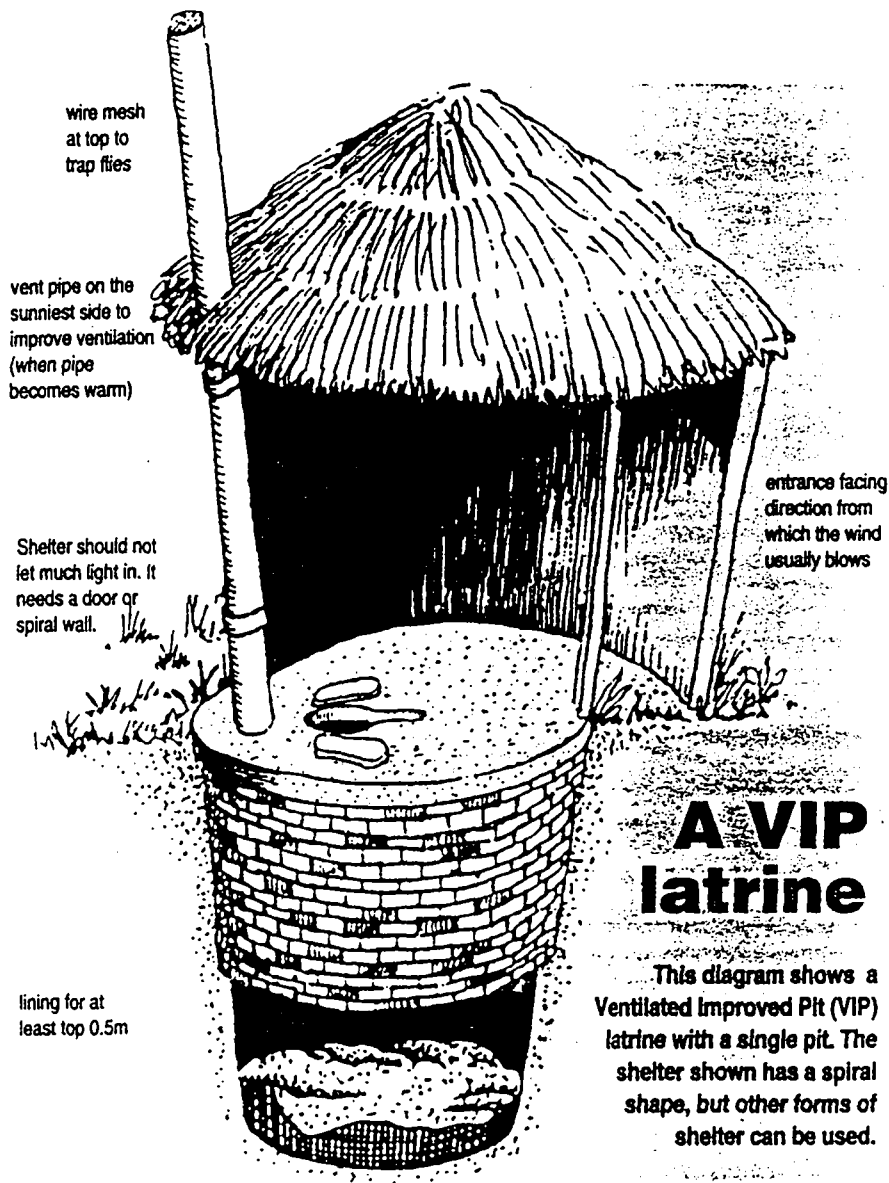


Plan and section of slab (From reference 53)



Section through latrine showing pit and support to slab

## Appendix 5.3 Outline details of a VIP Latrine



(Source: Reference 54)

## Appendix 5.4 Comparison of different types of pit latrine

Table entries shows the advantages of latrine in column 1 to that at the top of the column in which the text appears

	SIMPLE PIT	SEALED LID	VIP	POUR FLUSH
SIMPLE PIT (SP)		1 SP is cheaper and easier to build	1 SP is cheaper and easier to build	1 SP is cheaper and easier to build
SEALED LID (SL)	2 SL able to control flies 3 SL able to control smells 4 SL may be safer to use		2 & 3 SL is also able to control flies and smells 5 SL can be used where there are trees and closely packed buildings, and where there are no breezes (VIP may malfunction in these circumstances) 6 SL is cheaper and easier to build 7 SL has no vent or mesh to maintain	2 & 3 SL is also able to control flies and smells 8 SL suitable for receiving any anal cleansing material, including just water. (PF can <u>only</u> accept water and if used <u>soft</u> toilet paper) 9 SL easier to use since people don't have to find flushing water
VIP	2 VIP able to control flies 3 VIP able to control smells 4 VIP may be safer to use	10 VIP easier to use properly since people don't have to replace lid (but they need to remember to shut door if spiral wall is not used)		8 VIP suitable for receiving any anal cleansing material, including just water. (PF can <u>only</u> accept water and soft toilet paper) 9 VIP easier to use since people don't have to find flushing water 11 VIP is more suitable where soil has low permeability or there is a risk of groundwater pollution. Flushing water from PF may create problems in such circumstances 12 Other than fly mesh VIP can be constructed using cement and local materials (PF pan is difficult to make locally)
POUR FLUSH (PF)	2 PF able to control flies 3 PF able to control smells 4 PF may be safer to use	13 With PF people don't have to replace a lid or shut a door (but must be willing to flush the pan after each use)	5 PF can be used where there are trees and closely packed buildings, and where there are no breezes 14 PF controls mosquitoes and cockroaches (VIP may not) 15 For PF simple superstructure possible (doesn't need dark interior to superstructure) 16 No vent or mesh or maintenance of the same needed (VIP mesh can corrode; also vent can become ineffective because of spider webs in it) 17 Not dark inside superstructure and no deep hole, so people not so frightened to use it 18 In densely populated areas no risk of smell from neighbour's vent	