Devolution Trust Fund and GTZ Zambia

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Country Profile

National population : Estimated 12.8 million

Urban population: 5.1 million

Urban Sanitation Coverage: 34 %

Devolution Trust Fund (DTF)

- **Established by Parliament through Established through the Water Supply and Sanitation Act No. 28 of 1997**

MANDATE;

- **To assist CUs extend and improve water supply and sanitation services to Low income urban areas (i.e. Low Cost and Peri-Urban Areas.)**

The Sanitation Concept…

Working with the CUs

- ✓ Legally mandated
- ✓ Professional providers

Demand Responsive Approach

- ✓ Self selection by target community
- ✓ Informed choices of technological option i.e. DEWATS (SSW,SST)

Salient Intervention

- ✓ Household level
- ✓ Public-level sanitation
- ✓ Community Participatory Assessment (CPA)

Project Approach

- Two phase

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Phase I

- Community Participatory Assessment (CPA)

- **Phase II**
- Construction, Operation and Maintenance

Tools for the Community Participatory Assessment (CPA)

- Wealth Classification
- Sanitation Mapping
- Gender Roles and responsibilities
- Technological options (informed choices)
- Contribution plans
- Training needs
- MoU/Community Action Plan.

WEALTH RANKING

- Determine economic activities and income sources , classify households by wealth categories
- Identify and establish local indicators and definitions of wealth
- Determine capacity for community contribution to the project

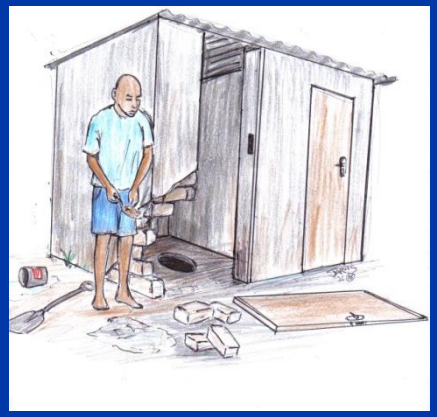
Sanitation Mapping

- To determine the availability and conditions of sanitation prevailing.
- To establish the level of access by various stratum of society

Gender Roles and Responsibilities

- To understand the allocation of tasks among different gender
- To identify locally available skills

Technological Options



- To inform community about available technologies for sanitation.
- To discuss the cost implications of the various potions for both the community and the CUs
- To facilitate for Design Engineering Drawings (DED) and investment cost estimation

Contribution Plans

- To establish project structure
- To discuss and agree contribution options
- To document and commit to the agreed contribution plan.

Training Needs Assessment

- To identify those in need of training within community
- To indentify and strengthen skills relevant for the implementation fo the project.

Factors to consider when selecting Technical Options

- **Costs**

  Are the investment anticipated operational costs within the existing financial resources?

- **Self-Help Compatibility**

  Can community effectively participate during implementation/construction? Which phases of implementation require expert attention?.

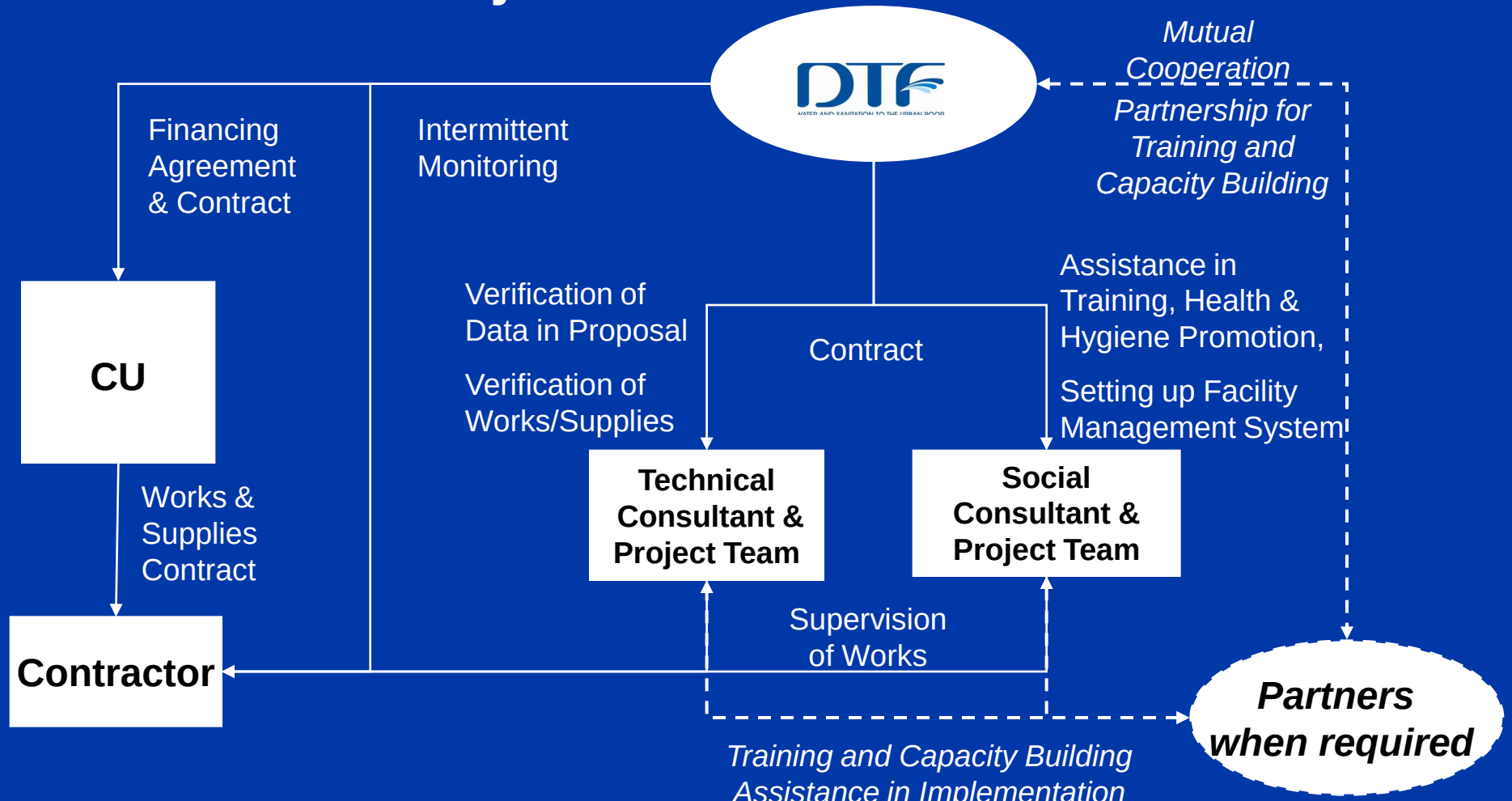
- **Operation and Maintenance**

  Can routine operation and maintenance activities be carried out by members of the community or is expert help need?

Factors to consider when selecting Technical Options ,Cont`d

- **Replication Potential**
  Can the local authorities or Water Utility replicate the option independently?
- **Reliability**
  Can a problem free operational and functioning technical option be guaranteed?
- **Convenience**
  How far do the technical option match/meet the preferences of the community regarding `convenience`?
- **Treatment efficiency**
  What environmental discharge standards must be met?

Financing and Implementation mechanism: Sanitation Projects



CPA RESULTS …..

- 4 projects recommended and implementation;
  (i.e. Kariba in Ndola, Kansuswa in Mufurila Libuyu in Livingstone and Kandundu in Solwezi)

- Total cost for all the projects,
  ZMK15, 5bn (US $ 3,2Million)

- Total number of beneficiaries:20,000 people

The projects…

KANSUSWA SANITATION PROJECT

- **Technology applied**
- Offsite and waterborne sanitation, connecting to existing conventional centralized sewerage system;
- Use Prefabricated toilet super structures with squat pans ; cheaper alternative to conventional construction as well as quality assurance guaranteed

- **Operation**

  Toilets maintained by individual Households
- The flushing mechanism to be applied is “Pour flash”.

Mulonga WSC
Kansuswa Sanitation Project

Total population targeted by project:		2,730		
	No. of Households	958		
Project deliverables:		**Description**	**Costs**	
			ZMK	**US$**
	Ablution units (Toilets)	Construction of 60no. ablution units	**429,376,950**	**89,454**
	Sewerage reticulation	1. Construction new 110mm upvc X 13,710m sewer network connecting households 2. Construction of rehabilitation of additional sewer networks with followings spec; i. 110mm upvc x 2,285m ii. 160mm upvc x 6,235m iii. 200mm upvc x 3,438m iv. 250mm upvc x 780m v. 315mm upvc x 273m	**1,579,032,264**	**328,965**
	Digester/Interceptor	Construction of 1no. Interceptor	**65,544,038**	**13,655**
	Sewage Treatment	Rehabilitation of Kansuswa Ponds	**605,991,596**	**126,248**
	Manholes	Construction of 542 Manholes	**1,764,815,697**	**367,670**
	Administrative, capacity building, sensitisation and other logistics	Provision of equipment, Sensitisation activities, project management and training for project team, Community Sanitation Committee and attendants at biogas plants as well as transport.	**372,610,000**	**77,627**
	Supervision, Contingency, preliminary and General items and consultancy.	Contingency on technical works, and hire of social and technical consultants by DTF. Provision of P&Gs to contractors	**602,238,027**	**125,466**
Total Project Cost (ZMK):			**5,419,608,573**	**1,129,085**

KARIBA SANITATION PROJECT

- **Technology applied**
- Offsite and waterborne sanitation
- Connection to existing conventional centralized sewerage system via intermediate settlers (biogas plants),
- integrated ablution units complete with showers and squatting pan toilets. Built as 1no block x 3no toilets units.

KARIBA SANITATION PROJECT, CONT`D

- **Operation**
- The flushing mechanism to be applied is “pour flash” and it will be manually done using 2 -3 liters buckets per flush.
- The showers will also provide extra water to aid in conveyance of excreta and cleaning mechanism of the toilet pans.
- The gas extracted will be used by households for cooking. Pilot gas stoves will be provided to selected households and thereafter these shall be sold and gas will be provided on a demand basis.

Kafubu WSC
Kariba Sanitation Project

Total population targeted by project:		1,759		
	No. of Households	350		
Project deliverables:		**Description**	**Costs**	
			ZMK	**US$**
	Ablution units (Toilets)	Construction of 350no. ablution units	**2,218,507,200**	**462,189**
	Sewerage reticulation	Construction 6" AC X 4,758m sewer network connecting households	**603,163,200**	**125,659**
	Water reticulation	i. Laying of new 3" upvc x 1,268m supply network. ii. laying of new 4" upvc x 546m distribution network		
	Biogas plant	Two biogas plants were already constructed under training for masons in June 2009.		**0**
	Manholes	Construction of 78 Manholes	**164,107,991**	**34,189**
	Administrative, capacity building, sensitisation and other logistics	Provision of equipment, Sensitisation activities, project management and training for project team, Community Sanitation Committee and attendants at biogas plants as well as transport.	**529,288,920**	**110,269**
Total Project Cost (ZMK):			**3,812,822,311**	**794,338**

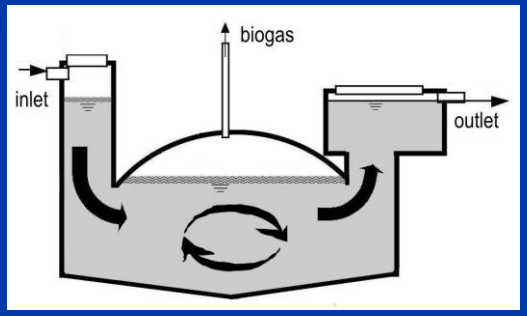
LIBUYU SANITATION PROJECT

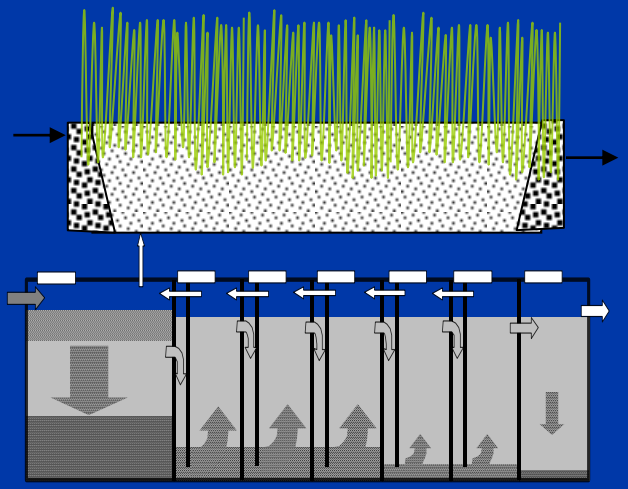
- **Technology applied**
- Offsite and waterborne sanitation
- Connection to existing conventional centralized sewerage system with intermediate settlers (biogas plants),
- Prefabricated toilet structures quality assurance guaranteed
- **Operation**
- Reduced the load before being channeled to the central sewerage system.
- The flushing mechanism to be applied is “pour flash” and it will be manually done using 2 -3 l buckets per flush.
- Pilot gas stoves will be provided to selected households.

Southern WSC: Libuyu Sanitation Project

Total population targeted by project:		2,730		
	No. of Households	390		
Project deliverables:		**Description**	**Costs**	
			ZMK	**US$**
	Ablution units (Toilets)	Construction of 350no. ablution units	**1,739,010,000**	**362,294**
	Sewerage reticulation	1. Construction of 160mm upvc x 20.5km sewer network 2. Construction of 200mm AC X 200m sewer network for road crossings 3. Construction of 220mm upvc X 200m sewer rising main network	**740,074,500**	**154,182**
	Sewerage Treatment Plant	Rehabilitation of Sewer pump station	**806,380,000**	**167,996**
	Biogas plant	Construction of 12no. biogas plants	**373,654,415**	**77,845**
	Manholes	Construction of 166 Manholes	**534,300,000**	**111,313**
	Administrative, capacity building, sensitisation and other logistics	Provision of equipment, Sensitisation activities, project management and training for project team, Community Sanitation Committee and attendants at biogas plants as well as transport.	**189,022,400**	**39,380**
	Supervision, Contingency, preliminary and General items and consultancy.	Contingency on technical works, and hire of social and technical consultants by DTF. Provision of P&Gs to contractors	**822,770,946**	**171,411**
Total Project Cost (ZMK):			**5,205,212,261**	**1,084,419**

KANDUNDU SANITATION PROJECT





- **Technology**
- Offsite and waterborne sanitation and Fully Decentralised wastewater treatment system
- Connection to the decentralized sewerage system with intermediate settlers (biogas plants), an anaerobic baffled reactor and a planted gravel filter

KANDUNDU SANITATION PROJECT, CONT`D

- **Operation**
- Organic solids will be retained and subsequently reducing the load before being channeled to the anaerobic baffled reactor which reduces dissolved contaminants (mostly chemicals).

- The gas extracted will be used by households for cooking. Pilot gas stoves will be provided to selected households and thereafter these shall be sold and gas will be provided on a demand basis.

- Planted Gravel Filter will reduce pathogens and the smell before utilization for agricultural purposes in a nearby banana plantation.

- The flushing mechanism to be applied is “full flash” and it will be done using cisterns.

North Western WSC: Kandundu Sanitation Project

Total population targeted by project:			1,008	
	No. of Households		106	
Project deliverables :		**Description**	**Costs**	
			ZMK	**US $**
	Ablution units (Toilets)	N/A		
	Sewerage reticulation	i. Construction of 150mm upvc x 1,572m main sewer line collector ii. Construction of 100mm upvc x 1,392m household sewer connection iii. Construction of 180mm upvc X 200m sewer discharge network	**260,657,000**	**54,304**
	Biogas plant	Construction of 4no. Biogas plants (Intermediate settlers)	**306,035,790**	**63,757**
	Manholes	Construction of 45no. Manholes	**64,935,000**	**13,528**
	Soak ways and Soak pits	Construction of three soak pits to the PGF (Plant Gravel Filter)	**30,975,000**	**6,453**
	Administrative, capacity building, sensitisation and other logistics	Provision of equipment, Sensitisation activities, project management and training for project team, Community Sanitation Committee and attendants at biogas plants as well as transport.	**224,480,000**	**46,767**
	Supervision, Contingency, preliminary and General items and consultancy.	Contingency on technical works, and hire of social and technical consultants by DTF. Provision of P&Gs to contractors	**257,341,579**	**53,613**
Total Project Cost (ZMK):			**1,153,343,069**	**240,280**

Thank you