

Case Study (TANZANIA)



## Water and Sanitation Program

An international partnership to help the poor gain sustained access to improved water supply and sanitation services

# Independent Water and Sanitation Providers in Africa

Water and Sanitation TANZANIA

### East and Southern Africa Region

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Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH  
on behalf of the  
Federal German Ministry  
for Economic Cooperation  
and Development



# The importance of private operators in the potable water system

## Weak in water production...

 Water production is mainly supplied by the Dar es Salaam Water and Sanitation Authority (DAWASA), a para-state company that is responsible for a network covering 824 m<sup>3</sup>. It supplies 304,000 m<sup>3</sup> per day, in response to an estimated daily demand of 410,000 m<sup>3</sup>.

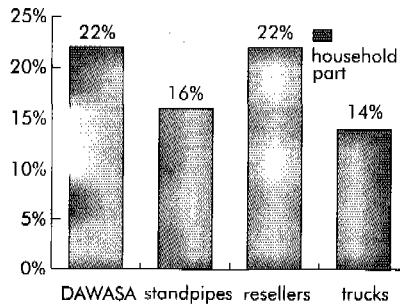
Private borehole operators also play a role in this market (128 boreholes were built between 1996 and 1997, producing 31,900 m<sup>3</sup> per day).

Water from rivers and wells constitutes an important alternative.

## ...but important in water distribution in peri-urban areas

The WS system of DAWASA supplies the city center and also 46 villages in peri-urban areas, 43% of the suburb's population. This is complemented by standpipe vendors who are employees

Population serviced by distributors



of DAWASA. In certain precarious districts, however, service is only given 2 days per week, hence the importance of private operators in distributing water to the underprivileged.

DAWASA has installed 88,442 connections and water points. Many connected customers sell water to tenants or neighbors, or to hand-carriers. Many consumers have tap connections to the mains (22%) or from neighbors (20%).

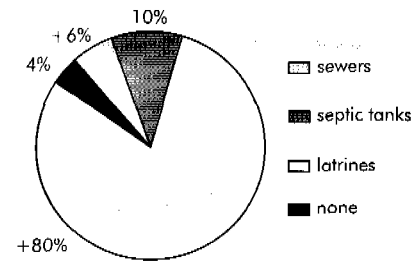
The affluent population, however, also turns to private operators in districts non-serviced by DAWASA. Water trucks owned by large companies supply certain residential areas.

## Jobs generated

Many jobs are generated through water services from DAWASA, DCC Rural Water Supply, and the Ministry of Water.

Water trucks employ between 20 and 30 people (a dozen companies),


Population serviced by equipment



whereas handcart vendors represent about 800 people throughout the city. Private water service operators have other jobs in order to diversify their source of income.

# The strength of private operators in the sanitation system

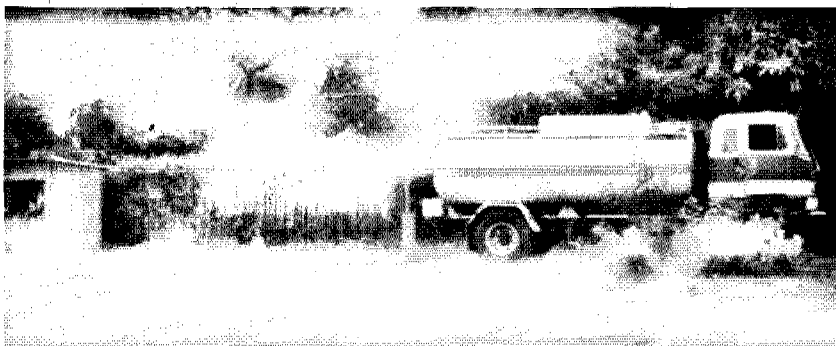
## Important in the construction and maintenance of sanitation facilities in peri-urban areas...

 The sewer system managed by DAWASA mainly services the city center, hence the importance of independent installations, latrines and septic tanks, built by specialized masons.

Manual cleaners maintain latrines that are used by about 90% of the lower income population.

## ...but not in sludge treatment

Para-state operators treat effluents through 8 treatment plants, of which 4 are not operational.





## Perspectives of development in private operators' activities

### Dar es Salaam, a growing city

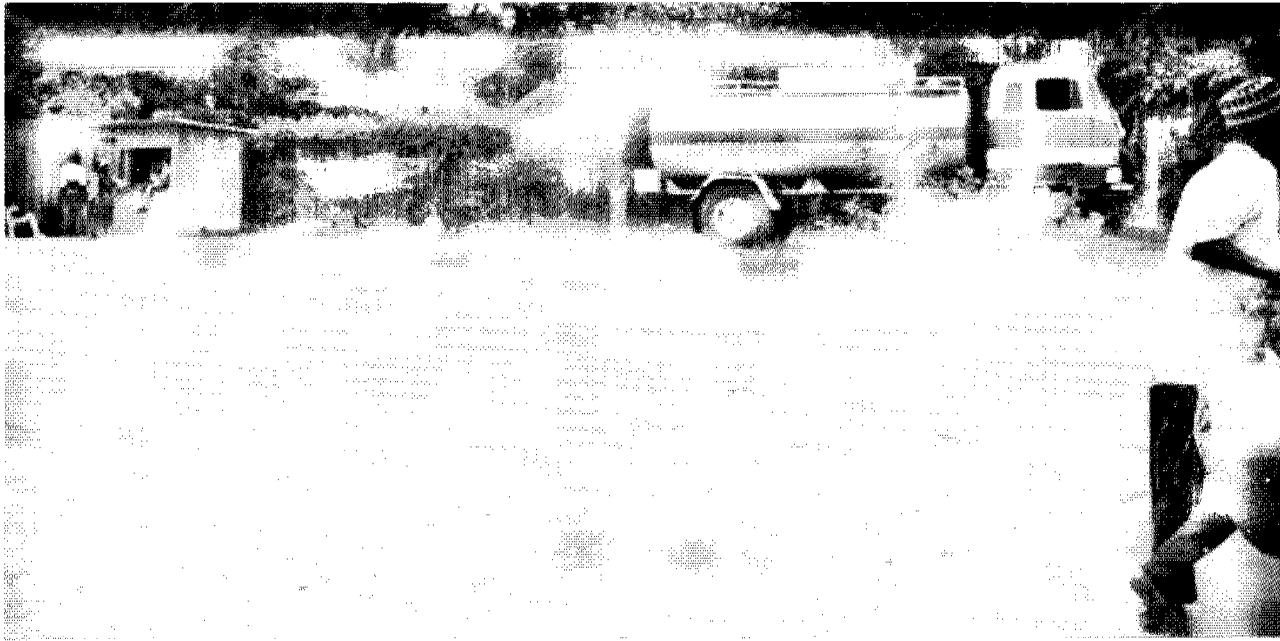


Dar es Salaam is a city of 3 million inhabitants and continues to expand at a rate of 8% per annum due to rural exodus (more than 10% of its inhabitants come from other regions). Approximately 66,000 live in peri-urban areas; 70% of the city's surface is not built on.

### ...BUT LACKING WATER

- The Ruvu river is the principal source of supply in the urban system, 2 plants carry out treatment and pumping.
  - Since the river ran dry in 1996 due to lack of rain, more than 100 boreholes have been installed.
  - The phreatic layer, not very shallow in some areas, sometimes gives cloudy and contaminated water.
  - Wells dug during the rainy season are often polluted.
- Globally speaking, DAWASA experiences considerable water losses. Only 53% of the water produced is accounted for. The remainder disappears in leaks and illegal connections.





## Facing offer from public services



The National Urban Water Authority (NUWA), of Dar es Salaam Sewerage and Sanitation Department

(DSSD) and Dar es Salaam City Commission (DCC) merged in 1997 to form Dar es Salaam Water and Sanitation Authority (DAWASA), a para-state company.

Under the auspices of the Ministry of Water, DAWASA is responsible for water and sanitation services. It manages an antiquated water network covering 824 km, a sewer system mainly serving the city center and 8 treatment plants, of which 4 are not operational.

Inefficiency in water services results in considerable losses due to unreliable pricing policies, haphazard billing and little payment collection. Hence affluent customers consuming large amounts of water pay low prices that are not in correlation with the volume consumed. Average losses are approximately 40%.

Lacking investment and rigorous management, water and sanitation services are not keeping up with Dar es Salaam's increasing urbanization. Demand for domestic water (50 l./day/person on an average for domestic use) and water for sanitation (90 l./day/person/latrines, 1.30 l./septic tank and 2.50 l./sanitary system) is high.

### Services and areas of intervention of DAWASA

#### Water sale by a restricted antiquated network:

- to household connections, businesses and administrations in central and built-up districts
- to the standpipes of standpipe vendors paid by DAWASA
- to the reservoirs of 3 supply plants installed by DASAWA

#### Sanitation service

- Wastewater collection from sewers mainly in the city center
- Treatment plant

### Price in US\$/m<sup>3</sup>

Potable water  
 domestic: 0.34  
 commercial: 0.52  
 industrial: 0.74

Pit emptying  
 Individual tariff 29.4  
 Industrial tariff 44.1



# Offers of service from private operators adapted to the specific demand of the urban fringe population

## Private operators in direct contact with their clientele

Potable water operators	Types of services and areas of intervention	Sale price in US\$/m <sup>3</sup>
<b>Borehole and handpump operators</b>	<ul style="list-style-type: none"> <li>• retail water sale from standpipe connected to a mini-system supplied by boreholes with electric pumps</li> <li>• retail potable water supply</li> <li>• in the urban fringe, not (or badly) serviced by DAWASA</li> </ul>	1-3.5
<b>Standpipe managers</b>	<ul style="list-style-type: none"> <li>• retail water sale from standpipe connected to DAWASA</li> <li>• retail potable water supply (20 l. cans)</li> <li>• in central districts and close suburbs</li> </ul>	1.5
<b>Handcarts</b>	<ul style="list-style-type: none"> <li>• home water delivery (by handcarts)</li> <li>• retail potable water supply (4 to 6 20 l. cans)</li> <li>• price varies according to the season, district, distance from the water point</li> <li>• in poor sections of the peri-urban areas</li> </ul>	3.5-7.5 6 US\$ on average
<b>Water trucks</b>	<ul style="list-style-type: none"> <li>• home water delivery by water truck supplied by 3 water points installed by DAWASA</li> <li>• potable water supply in large quantities (9-10 m<sup>3</sup> tanks)</li> <li>• in residential areas not serviced by DAWASA and with paved roads</li> </ul>	6.6-7

Most Dar es Salaam residents use private operators whose prices and services are negotiable. They are readily available as they live in the areas in which they work (particularly manual cleaners).

Sanitation operators	Types of services and areas of intervention	Tariff in US\$/emptiers
<b>Manual cleaners</b>	<ul style="list-style-type: none"> <li>• complete cleaning of latrines, method used by poor families</li> <li>• on-site sludge burial</li> <li>• in poor sections where they themselves live</li> </ul>	4.41-17.64
<b>Sludge suction trucks</b>	<ul style="list-style-type: none"> <li>• liquid cleaning of tanks by trucks equipped with suction pumps with a high volume of liquid effluents</li> <li>• evacuation of sludge to discharge sites</li> <li>• price varies according to distance</li> <li>• in districts accessible by road for affluent families, businesses and administrations</li> </ul>	22.05-36.76 27 US\$/trip for residents 36 US\$/trip for businesses



The average individual monthly income is approximately US\$ 20. Households are composed of an average of 5 to 6 persons. More than 60% of the poor population does not have access to potable water of acceptable quality.

### **...in a context of privatization**

Since independence, the Government provides basic services practically free. Although it has been marked by the period's socialist policies and self-sufficiency, it now turns to private operators. The Government has privatized more than 150 commercial organizations since 1998.

### **And a necessary adaptation to restrictions**

Apart from such restrictions as lack of competency in marketing and management, private operators are confronted

with DAWASA's rules and pricing policies. Permits are mandatory and difficult to obtain; the high cost of recording; the absence of clear policies, especially to the connected customer resellers who are considered to be illegal even though DAWASA has no development policy for standpipes; taxes on sludge discharge sites.

Handcart operators have to obtain an operating licence from Dar es Salaam City Commission (DCC) that is costly (US\$ 35) and is added to the operator's equipment costs (US\$120 for a cart and cans). Hence rentals are used (US\$ 0.75 to US\$ 1.50 per day). But these handcart vendors who are supplied by connected customer resellers sometimes benefit from direct services by DAWASA: in certain districts during the dry season DAWASA operates a borehole in order to supply them, thus showing that cooperation between private operators and public services is possible.

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