

BEST PRACTICE

Community-based small-bore sewers cost 5-10x less than conventional sewerage systems

PROJECT:
WOP Kenya

TOPIC:
Small-bore sewerage for urban sanitation

COP:
Urban Sanitation

MORE INFORMATION:



CHALLENGE

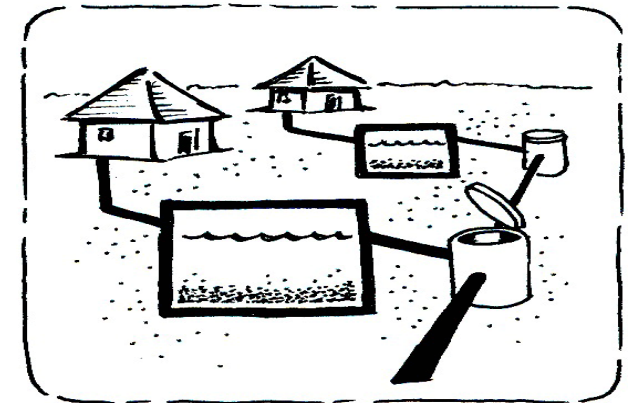
Low-income urban areas often face challenges due to inadequate infrastructure, limited access to clean water, poor waste management systems, and insufficient sanitation facilities. Factors such as overcrowding and informal settlements exacerbate these issues, leading to health hazards, waterborne diseases, and environmental pollution. The lack of proper sewage systems and waste disposal methods poses significant financial and health risks to residents, hindering their well-being and perpetuating a cycle of poor sanitation. Addressing these challenges necessitates strategies that prioritize basic infrastructure, access to clean water, and effective waste management tailored to the needs of people.

APPROACH

Initiating small bore sewerage entails engagement with residents, stakeholders, community leaders for their understanding, support, and participation. A thorough area assessment gauges specific needs, existing infrastructure, population density, shaping the sewerage system's design. Involving the local community from the project's inception is crucial. A detailed feasibility study, encompassing technical, financial, and environmental aspects, determines viability, costs, risks, and needed resources. Tailor an appropriate sewerage system considering local topography, soil conditions, systems used (e.g., gravity-based or pressure-based), and adherence to local regulations, construction standards, environmental impact, and sanitation guidelines.

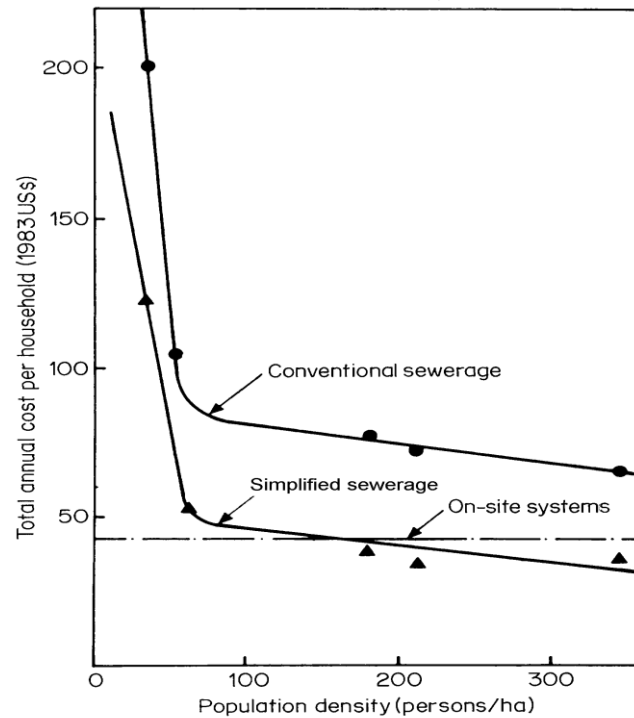
RESULTS

In Nakuru the small-bore sewer technology reached a unit cost reduction in construction upto 70%, it increased revenues based on a modest sewer surcharge on the water bill to customers, it improved public health, reduced school absenteeism, raised the tenant occupancy rate and improved customer satisfaction on services provided. Households would get a priority water connection, their water availability increased, sanitation services were upgraded and appreciated, while participation of the community and artisans could lower unit cost for construction and operation. Improvements yet to be realised are: a reliable water supplies and pro-active site selection for new sanitation blocks (to be connected to the small bore system).





Small bore sewerage builds upon existing onsite sanitation systems (septic tanks) that prevail in low-income urban areas. Draining the settled sewage via small diameter pipes reduces the annual household cost for sanitation substantially; in particular in areas with high population densities (persons per ha).



SUCCESS FACTORS

Success factors are its low-cost, its ease of operation and maintenance, and its perfect fit to low water consumption levels and high population densities (no easy access for major piping or transportation).

FURTHER INFORMATION

DOCUMENTATION

Major organisations engaged:
 NAWASSCO:
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WASTE/FINISH Mondial:
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pknanu@gmail.com



FSM Alliance:
www.FSM.org
www.susana.org



OTHER

The Global Water Operators' Partnerships Alliance (GWOPA) helps water operators help one another to provide quality services to all. GWOPA is an international network alliance supporting water operators to engage in WOPs. WOPs are peer support exchanges between two or more water operators, carried out on a not-for-profit basis with the objective of strengthening operators' capacity and performance to provide better services to more people (www.gwopa.org). WaterworX is a major Dutch WOP program engaging over 50 water operators in their joint effort to capacitate peers, strengthen their work processes, and ultimately improve operational and managerial performance (www.waterworxprogramme.org).