

PERFORMANCE EVALUATION OF ECOLOGICAL SANITATION SYSTEMS IN NAKURU - Kenya

By

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Background information

- Nakuru lies on the floor of eastern branch of the Great Rift Valley and is the third largest town in Kenya (CBS, 2009).
- The town is a hub of the county's commercial activities.
- It lies between latitude $0^{\circ} 10'$ and $0^{\circ} 20'$ South and longitude $36^{\circ} 10'$ East and is at 1859 m above sea level (MCN, 1999).
- Covers an area of 290 km² of which, the Nakuru National park takes 188 km² leaving 102 km² for town functions that include settlement and development.

- The population of the municipality is estimated at 500,000 persons (CBS, 2009).
- Ranked the fastest growing town in Africa UN Habitat (2010).
- At a population growth rate of 13%, it is almost double that of the Kenya's capital city Nairobi (7%)
- Nakuru municipality just like many other urban centers in Kenya has experienced a rapid population growth thus exerting pressure on existing water and wastewater management facilities.

$\frac{3}{4}$ of the population live in $\frac{1}{4}$ of the area

- Nakuru is faced with serious sanitation challenges associated with population pressures
- People migrating from rural to urban areas, mainly the youths, in search for employment. The migrants end up settling in the peri-urban areas where most household are not connected to the central sewer system thus stressing the limited sanitation facilities further.
- The Municipality has recorded a tremendous growth in decentralized systems mainly the dry toilets. Though operation and maintenance of the dry toilets was observed as main challenge during the study

- Poor sanitation is a menace to public health and an obstacle to sustainable development.
- It's a huge strain on financial resources of our country Kenya.
- For instance, Kenya incurs annual losses of about 0.9 % of its GDP to sanitation related health complications according to a report by World Bank (2012).
- Urban poor, practice urban agriculture.

Objective of study

Main goal of the study was to evaluate sanitation interventions in Nakuru municipality to determine their sustainability.

Specifically to:

- (i) Assess the level of sanitation and hygiene for individuals, households and institutions of learning.
- (ii) Analyze household knowledge and practices on sanitation

Study methodology

- A baseline survey involving, a transect walk, key informant interviews, focus group discussions and administering a semi-structured questionnaire was undertaken within the study area.
- Random sampling of various households was employed to gather information on the status of sanitation
- FANTA (Food and nutrition technical assistance) guide indicators was used to evaluate the latrines for their hygienic conditions.

Condition No	Latrine condition	Guide criteria
1	Hygienic	Latrine with 3 or fewer flies, no evidence of feaces outside the latrine No smell
2	In use	Evidence that it had been cleaned recently, had been swept, had a path to it, was in good repair and/or lack of spider webs in the latrine
3	Poor	Smelling, soiled,
4	Very poor	Feaces visible from a distance, smelling, wet of urine, flies, mice, cockroaches

Results and discussion

- Three quarters (3/4) of the population live in high population density, peri-urban areas (Kaptembwo, KwaRhonda, Mwariki, Lake view, London/Hilton).
- 70% of the households not connected to sewer system.
- Geologic challenge either rocky (London) or loose soils (Kaptembwo, etc). Construction of pit latrines a major challenge
- Area ideal for ecological sanitation systems

- Ninety five (95) latrines in the peri-urban areas of Nakuru municipality were inspected by interviewers.
- Using the FANTA criteria, 89 of the 95 inspected latrines in use (94%) were considered unhygienic.
- Eighty percent (80%) of women interviewed (120 hhs) had not been instructed on the use and maintenance of sanitary facility.
- 10% had received instructions but could not recall when
- Lack of hygiene in households is manifested by the presence of lice, cockroaches and bed bugs

Latrine in use



Poorly constructed & maintained pit latrine



Unsafe and abandoned



Management crisis



9/24/2012

4th International Dry Toilet Conference-
Tampere, Finland

Abandoned UDDT in Lake view estate



- Ecological sanitation systems established in three schools (Pre-primary, Primary and Secondary schools), were found to be in excellent hygienic conditions.
- (i) Because of support from parents teachers Association (PTA)
- (ii) Lower classes eager to use the dry toilets (creating demand)
- Two households in London constructed their own from a loan sourced from Family bank

Ecosan systems



No smell, no flies = Happy moments



Clean environment

9/24/2012



Collection chamber

4th International Dry Toilet Conference-Tampere,
Finland



Drying shade

22nd -24th August 2012: Slide
No14

Conclusion

- The level of sanitation in peri-urban areas of Nakuru municipality is unhygienic with 94% of the households in risk.
- There is evidence of the potential of up scaling the Ecosan systems through proper capacity building
- There is evidence of knowledge uptake and therefore, more emphasis should be placed on school sanitation

Key observations

- The outdated traditional model of toilets were being handed out for free and mostly being used as a political tool.
- This in effect does not stimulate demand for sustainable sanitation or understanding what households want or need in a toilet.
- Sanitation suffers from having a low priority by the government "water **and** sanitation"

Memorable moments & quotes

- Sanitation is dignity
- " Toilets are a status symbol and an object of desire" - WTO

End of presentation

- Acknowledgement
- Organizers - 4th International Dry Toilet Conference for sponsorship.
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- The audience for listening to me

Thank you

- Asante sana
 - Kiitos
 - Danke
 - शुक्रिया
- Cảm ơn bạn
 - Merci
 - Tack
 - Salammat