



General Background

Mozambique is situated on the East African coast, bordering in the North with Tanzania, Northwest Malawi, Zambia, in the west with Zimbabwe, in the south with South Africa and Swaziland and in the east extended by Indian Ocean a distance of 2470 km

Its about 799.390 sq Km, with humid tropical climate,

In 2007 the population census shows that there are 20.366.795 Mozambican, where 9.842 760 are male and 10 524 035 female. The GDP is 13, 8%. And the illiteracy rate is about 68%.



Mozambique



- Niassa
- Zambezia
- Sofala (Beira)
- Maputo (capital)



General Situation on water and Sanitation

- Mozambique's current sanitation coverage in urban area 38% and 35% rural, were 80 % of the entire population is rural.
- Access to water is now about 40% urban, 41%. For rural
- By 2015, need to provide adequate sanitation for a population of 6,93 million to achieve the MDG's.



Cont...

- Under the MGD's
- Targets 60% for peri-urban and 70% for rural sanitation by 2015 (DNA, May 2003 Sanitation Strategy).
- In the peri-urban areas improved family latrine construction will continue to be a priority **with at least part of the cost covered by the beneficiaries**. Where improved latrines are not appropriate suitable solutions will be studied and implemented



Introduction of Dry Toilets in Mozambique

- Ecological Sanitation is being introduced since 2001 by Government and NGO's through Aid from Donors.
- ESTAMOS in collaboration with Water Aid in Niassa Province, Northern Mozambique and PAARSS at Central region with support from the Austrian Development Cooperation
- Zambezia is currently implementing the same technology at integrated with storm water drainage



Type of Technologies in use

- *The Fossa Alterna composting toilet, with two shallow pits (1,5m), and small Arbour Loo with movable superstructure and pit serving as a "plant pot" when is full.*
- The urine diversion, single and doubled vault with bath room.
- Conventional Mozambican pit latrine is still the most applied in both peri-urban and rural areas.





Institutional Coordination

- PAARS-Project of Sofala province worked with Water Department supported by Australian Development Coop. UNICEF, Rotary, and Red Cross has built more than 600 urine diverted toilets (Buzi, Nhamatanda, Beira, Dondo, Marromeu)
- In Niassa, the local NGO- ESTAMOS, with Water Department, is working in four districts and the results as pilot for growing crops like maize, has shown promising.
- Zambezia, is working with local Municipal Council, with UN-Habitat. Its an integrated project for Community Development. Its targets as pilot to construct 100 diverted toilets in peri-urban area.
- Reuse of composting, the local community organisation, and Municipal Council are studying how will applied this product.
- As the area is very high water level than the sea level, the challenge is big.





The Cost

- The initial cost of Sofala experience was considered high but the government needed a solution for affordability and promotion is necessary for effective implementation. (800 usd.)
- For Zambezia, the demonstrative 4 toilets are fully subsidized, and to decrease the price the idea is to use cement bricks, for the understructure, while the superstructures can use local material, and covered with iron sheet

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CHALLENGES

- To convince at different levels of society that reuse of composting from urine diversion toilet is beneficial for crop growth, and not harmful human's health
- To advocate that the urine diversion toilets, and an technological alternative and solution for the future as Water is a non renewable resource and scarce, seen as source of future wars.





CONCLUSION

- Mozambique has accepted the urine diversion toilet as alternative technological option for sanitation.
- It requires to promote the use of composting from urine diverted toilet as fertilizers for crop growth
- A strong coordination of the ministries of Health, Agriculture and Public Works and Housing (Departments of Hygiene and Environmental, National institute of Agronomy and National Water Directorate Water Affairs)



Thinking deep

- Adequate water system, only can only be sustainable if there is adequate sanitation. So why has sanitation been left behind, while we all know that the impact of inadequate sanitation from one family can affect many others transmitting waterborne diseases.
- Inadequate sanitation, means high costs for water treatment unaffordable for development and achievements of MDG's. Can consider a globalized world without adequate sanitation??



Obrigado

Muchas gracias
Thanks

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Ceara- Fortaleza, 26th November 2007, Brasil