



# What does it take to convince decision makers in Omaruru, Namibia to scale up urine diversion dehydration “Otji toilets”?



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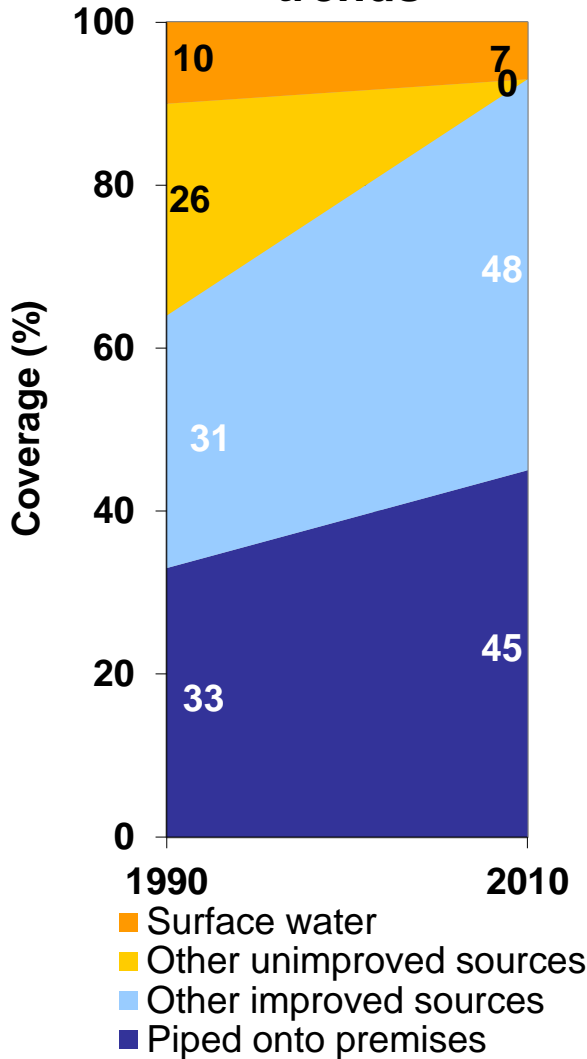
**BMZ**  Federal Ministry  
for Economic Cooperation  
and Development



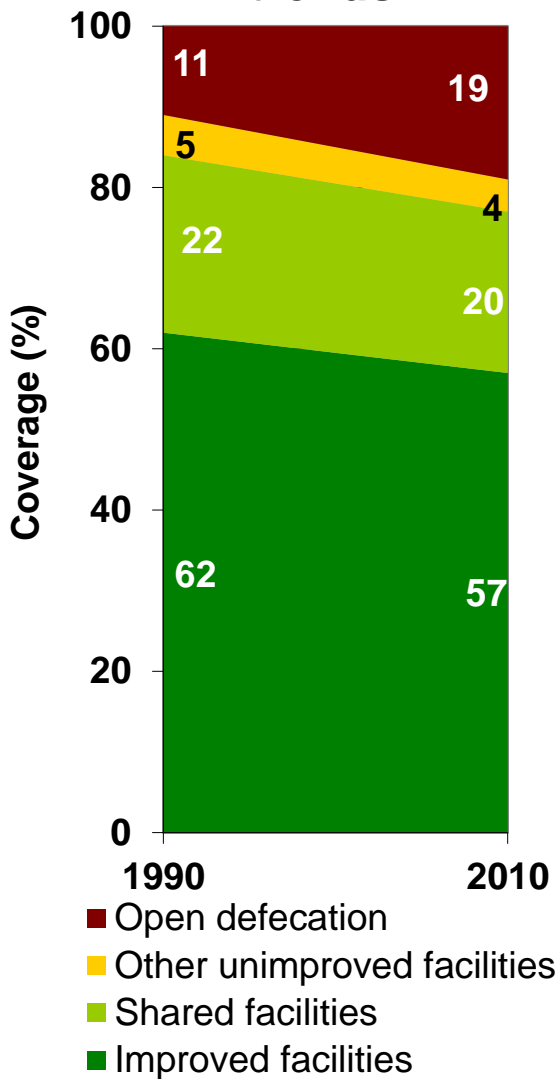
- Introduction
- Project background
- What are Otji Toilets?
- Piloting in Hakahana, Omaruru
- Piloting lessons learnt
- Challenges in scaling up
- Conclusions



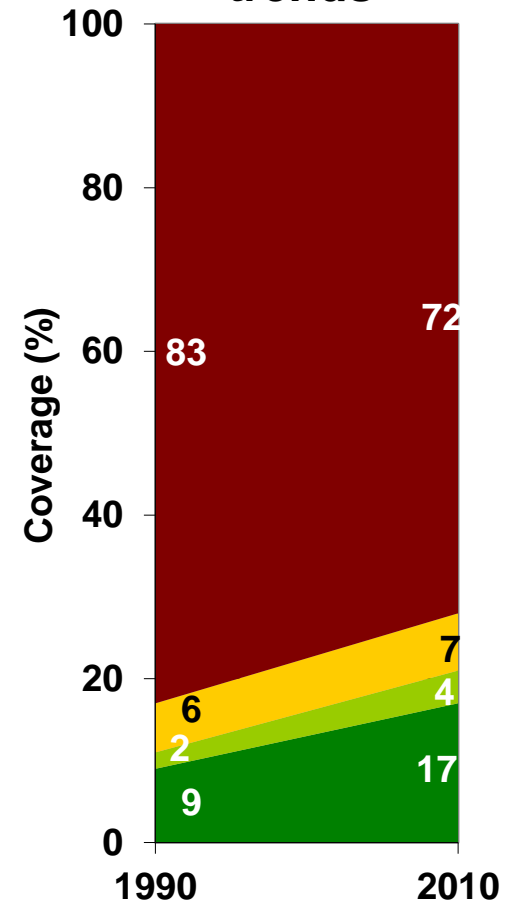
### Total drinking water trends



### Urban sanitation trends



### Rural sanitation trends



Source: WHO/UNICEF, 2012



- 135 Kms from Windhoek
- 1200m above sea level
- Average yearly precipitation is 280 mm
- 12,000 Inhabitants
- Informal settlements of Hakahana has 6000 inhabitants
- People walk upto 300 m to fetch water
- No access to sanitation
- Open defecation practised
- High ground water level



## Project Partners

- Omaruru Basin Management Committee (OmBMC)
- Namibian Water Resource Management Project of GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH)
- NGO - Clay House Project (CHP)

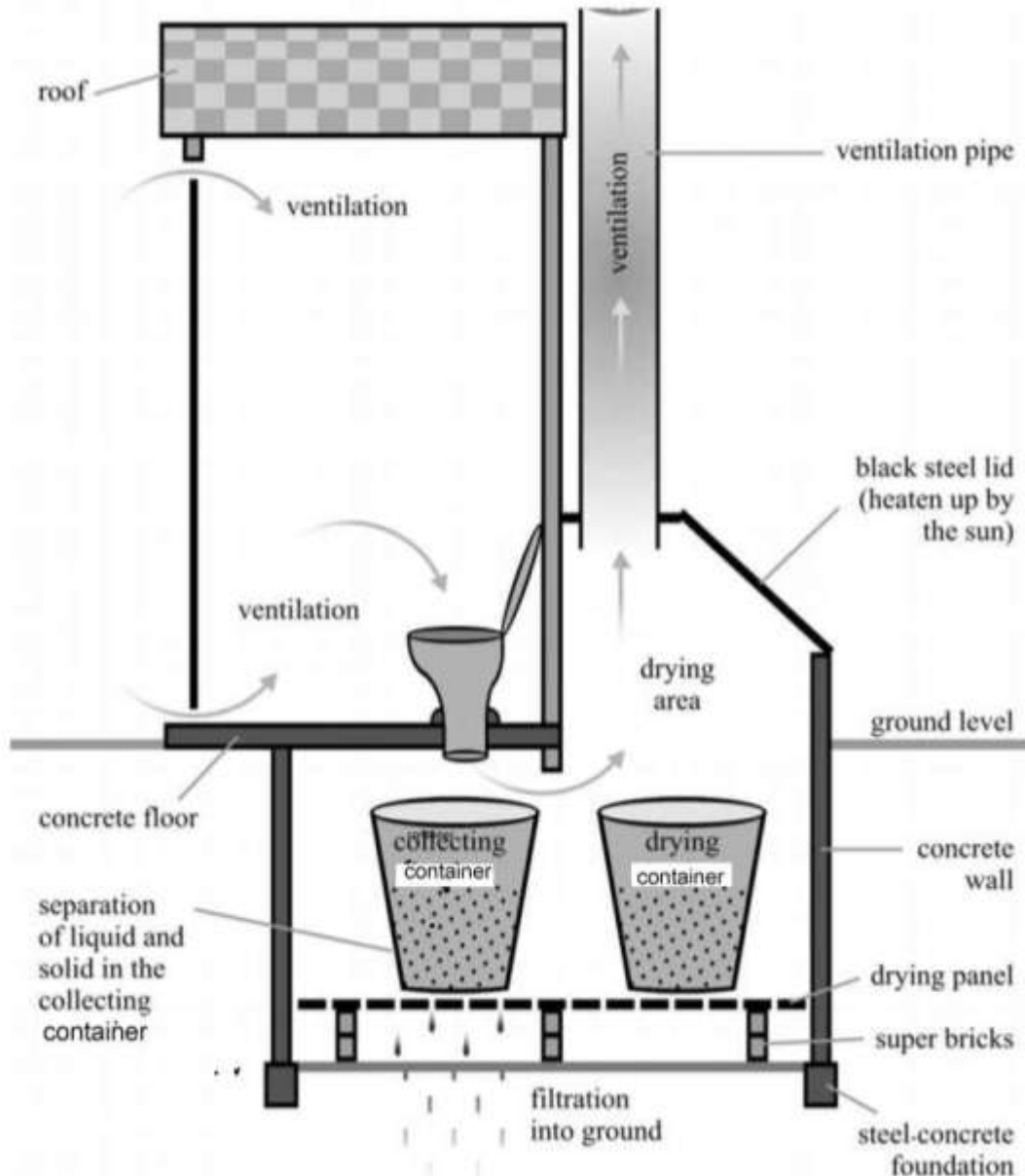
## Project Brief

- The need for proper sanitation in Omaruru was raised at one of the OmBMC meetings in the beginning of 2010
- OmBMC members explore different dry sanitation options and visit Otji toilets in Otjiwarongo
- Informal settlement of Omaruru selected as a pilot area based on a rapid baseline survey
- 21 future toilet owners selected on “first paid first served” basis





- Type of UDDT that separates urine and faeces at source and sanitises the faeces by dehydration
- Does not require any water for flushing, except minimal quantity for regular cleaning
- 4 people using one toilet takes about 6 months to fill up a 90l container,
- Independent installations cheaper than indoor installations



- Separates urine and faeces using a perforated container with urine contaminated by faeces infiltrating into the ground below the toilet
- Black steel lid heats up by the sun and facilitates the dehydration process while air then circulates through the toilet into the drying vault and out through the ventilation pipe, which makes the toilet odourless
- 2 perforated 90 litres containers, one for collecting and another for drying in each vault used alternatively



- Revised version of Otji toilet
- The urine touching the wall of the urine diversion toilet bowl is collected in a small trough and drained away through a pipe and infiltrated into the ground
- As the inner edge of the urine trough is 10mm wider in radius than the edge of the toilet bowl, only liquids can jump over over this open space to reach the trough
- Tests show that 80% of the urine is separated at source with relatively little contamination and infiltrated into ground
- Urine Diversion System bowl is patented by Ecosur C.C in Namibia and South Africa





- Otji-Toilet developed from the Clay House Project in 2003 in Otjiwarongo, Namibia
- build about 2,000 units in Namibia so far
- Since 2010, more than 365 Otji toilets with Urine Diversion System (UDS) bowl have been installed in Windhoek, Omaruru, Oshikoto, Gobabis and Gibeon
- In 2009, Otji toilet introduced in Latin America through the Ecosouth network ([www.ecosur.org](http://www.ecosur.org)); 600 units build so far in Ecuador, El Salvador, Nicaragua, Haiti



- 21 toilets for 140 users completed end of 2010
- 20 toilets funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) while one toilet was paid for by the European Commission
- Future toilet owners contributed a minor part (EUR 15 or 2% of the total costs) to the toilet, approx. 20% of one months income
- Each toilet costs EUR 776 therefore unaffordable without subsidy
- Water saving is also a persuading factor to the people
- Mass production and cheaper materials for the superstructure can reduce the costs of the UDS bowls
- Apart from regular cleaning, no maintenance is necessary and therefore O&M costs are low
- Collection of the dehydrated faeces by the Municipality has not yet materialised as planned and therefore dehydrated solids are dump them into the municipality rubbish waste bins
- No households reported to reuse the dehydrated faecal material



- Brief survey with 13 out of the 21 toilet owners
- Average number of people using one toilet was 6.5
- People seem happy with these toilets as 100% promoted the system amongst their friends and 92% think it is an appropriate solution for Hakahana
- 85% users use the handwashing facilities
- 46% would still prefer a flush toilet
- 54% users can imagine using dried faecal matter as fertiliser for plants, while 23% cannot
- 33% of users have a garden



- Pilot project helped to prove the appropriateness of dry toilets to the local authorities and residents, but the authorities still favour the flush toilets and sewers as they **perceive them as “high class” modern solutions** and without the support of decision-makers, it will not be possible to establish a dry sanitation system on a large scale
- low political acceptance and willingness to construct Otji toilets on a larger scale as the municipality **hopes for international donor funding** to build a sewer system and treatment plant
- Scaling-up difficult also due to **relatively high construction cost** of Otji toilets owing, in part, to the transportation of pedestals from Otjiwarongo
- Inclusion of **Otji toilets in the list of appropriate solutions** to address the sanitation needs in Namibia National Sanitation Strategy has helped its spread in Namibia





- Pilot project established **appropriateness of dry sanitation technologies** in providing safe sanitation and water conservation
- Otji toilet provides the user with the **convenience of ‘poo and forget’** similar to that of flush toilet
- Flush toilets are still considered superior to Otji toilets by the local authorities as they are perceived as **“high class” modern solutions**; more effort is required to **change their mindset**
- Donor funding has a great influence on the choice of the sanitation technology by the local authorities and therefore donors and funding agencies should also take a **holistic approach while financing sanitation projects**
- High capital costs of the Otji toilets make them an **unaffordable solution for the poor without a subsidy**
- Otji toilets are slowly but steadily **becoming more appealing** for decision-makers





# Thank You!

Important links:

[www.susana.org/case-studies](http://www.susana.org/case-studies)

[www.giz.de/sanitation](http://www.giz.de/sanitation)

[www.otjitoilets.org](http://www.otjitoilets.org)

[www.flickr.com/photos/gtzecosan](http://www.flickr.com/photos/gtzecosan)