Customer Satisfaction

People used to pay R27 a month for the removal of the bucket toilets. With the urine diversion toilet this is no longer the case. Further, people are happy that the toilets are much more hygienic, there is no smell, and many are making use of the compost for their gardens.

"We have brought our grandchild up on rainwater. He never gets diarrhoea, unlike the other children who drink the 'brak' water in the municipal system."

– Mr Cloete, resident of Khies

"Mine was the first inside urine diversion toilet in South Africa. After Mannie Dipeco [then Northern Cape Premier] saw it he gave lots of money for dry sanitation."

– Maritjie Meyer, Community Development Worker

Municipal Satisfaction

Water conservation is a way of life in Namaqualand, and households have always been closely involved in the management of their water supply to ensure survival. Urban water supply models have not worked in this water scarce area with its scattered population. The rehabilitation of the existing tried and tested technologies will ensure a far greater degree of sustainability.

"In Namaqualand there is no water and no money. Therefore dry sanitation is the best option."

– Gert Maarmann, Mayor of Kamiesberg

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KAMIESBERG

TECHNICAL REFERENCE SITE

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NORAD
DIREKTORATET FOR UTVIKLINGSSAMARBEID
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Background

From the cold, dry and desolate Atlantic coast the land slowly rises into the rugged beauty of the Kamiesberge before dropping away to the vastness of Boesmanland to the east. The Kamiesberge result in a significantly higher rainfall then the surrounding land, and are the setting for the spectacular Namaqualand flowers which occurs after the winter rains.

Within the Kamiesberge there are a number of scattered communities, which eke a living from the land, and are subject to the vagaries of rainfall. Unemployment is extremely high, and work is found on the diamond mines in Namaqualand or seasonal farm work in the Western Cape. During the days of apartheid the situation was exacerbated by declaring much of the area a "coloured reserve", and dumping people in a land which could ill afford to support them.

With a winter rainfall of between 250-300 mm, there are no perennial rivers in the area, and all the communities rely on groundwater for their needs. However, the groundwater is extremely variable in quality and, in some areas, cannot be used for human consumption without expensive, unaffordable desalination.

People, however, have survived in this area for centuries, adapting their techniques as new materials and products became available on the market. What is obvious is that:

1 Households and municipalities do not rely on one technology for water and sanitation;

2 The most effective technologies are the ones which can be maintained either at household level or within Namaqualand (the closest source of specialist expertise is Cape Town 500 km away); and

3 With water people rely on multiple sources, using different quality sources for different uses.

Choice of Technologies

In this context the following technologies and techniques have been introduced and sustained over the years:

Water

- ***Roof rainwater harvesting*** using various forms of tanks.
- ***Rock face rainwater harvesting*** done by clearing a rock face of all vegetation and collecting the runoff by building a low wall at the bottom.
- ***Mist harvesting*** done by erecting shade cloth to force condensation as the mist blows through it.
- ***Groundwater recharge*** through infiltration basins and leading winter flow down the boreholes.
- ***Dual water systems*** with 'soet' water for potable uses and 'brak' water for other purposes (such as flushing of toilets).

Sanitation

- ***Urine diversion toilets*** were originally introduced when it was found that hard surface rock made it impossible to dig ventilated improved pit (VIP) toilets.
- ***VIP toilets*** (where possible).
- ***Flush toilets*** using 'brak' water.

For more information on the technologies please consult the ***Introductory Guide to Appropriate Solutions for Water Supply and Sanitation*** (Number 7.2 in the Toolkit for Water Services).