

# The Summer Desertification Projects Fact Sheet 3

## SDP 2: Water Usage Patterns in the Kuiseb River

The twelve western flowing ephemeral (temporary) rivers in northwestern Namibia support a major part of commercial and communal agricultural activities. The Kuiseb River is the most developed of them all and supports the tourism, mining and fish-processing activities and inhabitants in Swakopmund and Walvis Bay. In addition the Namib Naukluft Park and Gobabeb Training and Research Centre also use these resources.

In 1993 the Central Area Water Master Plan revealed a lack of information on the use and management of single ephemeral river catchments and there was no real concept of Water Demand Management. SDP 2 attempted to address these gaps by using direct measurements, observations and interviews with a sample of the major groups that use the Kuiseb's water resources. Participants were trained in the application of "first principles" and simple research techniques to obtain information relevant to sustainable development.

### The six major groups interviewed with water-use in brackets:

- ◆ *Commercial farmers* in the upper catchment (0.06 million m<sup>3</sup>)
- ◆ *Topnaar communal farmers* in the Namib Naukluft (0.006 million m<sup>3</sup>)
- ◆ *Gobabeb Training and Research Centre* in the Namib Naukluft (0.007 million m<sup>3</sup>)
- ◆ *Walvis Bay* (4.3 million m<sup>3</sup>)
- ◆ *Swakopmund* (1 million m<sup>3</sup> of a total use 2.9 million m<sup>3</sup>)
- ◆ *Rössing Uranium Mine* (Unknown amount of a total of 3.0 million m<sup>3</sup>).

The project predicted that water demand for Walvis Bay would increase from approximately 4.3 million m<sup>3</sup> in 1990 to 14 million m<sup>3</sup> by 2020.

In addition to rainfall in Namibia being extremely variable and unpredictable, very little water remains for run-off or recharge of underground water supplies due to high evaporation levels.



### Examples of water use in the Kuiseb Catchment

- ◆ Residential use in Walvis Bay accounted for 72% of all consumption in 1991.
- ◆ Of this more than half was used by the higher income groups mainly for their gardens
- ◆ Industrial consumption (fish factories and PortNet) represented 24% of the total use
- ◆ The highest per capita use in the Kuiseb was at the Gobabeb Centre to maintain gardens.

These results suggested an important avenue for reducing water use. The high evaporation from farm dams and reservoirs in the upper catchment could not be as easily addressed.

The study found that many people directly dependent on the Kuiseb Catchment are aware of the developing water shortage. Recommendations from the study focused on conservation of existing sources, increasing awareness and action amongst all user groups, the inter-dependence of people using a single catchment and the importance of a holistic view of water development. The development of desalination to serve the coast is strongly supported as scarcity of water is poised to undermine the prospects of sustainability and economic development.

**General recommendations made by the project included:**

**Planning** requires:

- ◆ multi-sectoral involvement
- ◆ a holistic bottom-up approach
- ◆ in-depth research and assessment of sustainability
- ◆ unbiased evaluation of all risks involved.

This would require **of government:**

- ◆ a well calculated and carefully constructed national development plan
- ◆ installation of meters at all extraction and major discharge points
- ◆ a framework for donor aid to ensure limitations of water are taken into consideration

**Appropriate technology** should include:

- ◆ applying technologies that maximise the harvest of forms of water other than from aquifers
- ◆ introduction of economic incentives for applying such technology
- ◆ development of suitable architectural design to best implement water harvesting, which should be considered when awarding tenders for housing developments

**Management and monitoring** measures should be exercised to

- ◆ prevent over consumption, wastage and unnecessary loss of water
- ◆ curb non-essential water use
- ◆ stop water subsidies to industries/institutions that use large amounts of water
- ◆ manage water quotas to industries at a fixed rate determined annually
- ◆ enact a law outlawing water wastage or use beyond allocated quotas
- ◆ remove unsupervised standing taps and introduce individual payment
- ◆ require swimming pool covers and recommend construction of sand dams as opposed to open dams and reservoirs to minimise evaporation

**Other recommendations** were made in the fields of:

**Appropriate gardening**

- ◆ reduction of water loss
- ◆ reduced erf sizes
- ◆ indigenous planting
- ◆ watering at night

and

**Education and training**

- ◆ awareness of water problems
- ◆ cultivating a culture of sustainable use
- ◆ forcing the water issue into the political arena
- ◆ encouraging exploration of alternative technologies for water conservation

