Hermanus Water Resource Development and Management Programme

“Building a Local Government Alliance for Disaster Risk Reduction” - Consultative Meeting

Barcelona, 22-23 May, 2008

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Overstrand Municipality
Hermanus, South Africa
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- Total population = 73,000 people
- 11 towns spread over 230km of coast line
- Total developed urban properties = 25,000
- Total undeveloped urban properties = 10,000
- Large seasonal variation in population
- Largest industries are tourism and agriculture
- Budget per year: Operational = USD50m, Capital = USD20m
- Main town is Hermanus with a population of 37,000
Greater Hermanus Area
Disaster Risk and Vulnerability – PROFILE & TRENDS

• Drought and Water Scarcity
• Flooding
• Fire and wind in dry season
Overstrand Municipality
Annual rainfall measured at Hermanus Magnetic Observatory

Disaster Risk and Vulnerability – PROFILE & TRENDS
WHAT has been done so far to address the issue?

- Reduce demand (Water Demand Management)
- Additional supply
Water Demand Management

• Clearing Invasive Alien Plants (DWAF WfW)
• Water wise gardening
• Public awareness campaign
• Leak detection and leak repair
• Water re-use (treated effluent)
• Pressure management
• Metering (bulk and domestic)
• Water tariffs
• Water restrictions
• Development restrictions
• Invasive alien plants pose a direct threat to biological diversity, water security, the ecological functioning of natural systems and the productive use of land. They intensify the impact of fires and divert enormous amounts of water from more productive uses.

• 198 alien plants are classified as being invasive. These plants cover about 10% of the country.

• Since 1995, the programme has cleared more than 1,000,000 hectares of invasive alien plants providing jobs and training to approximately 20,000 people from among the most marginalized sectors of society. Of these, 52% are women.

• The programme is globally recognised as one of the most outstanding environmental conservation initiatives on the continent. It enjoys sustained political support for its job creation efforts and the fight against poverty.
• A range of methods is used to control invasive alien plants. These include:
  – Mechanical methods - felling, removing or burning invading alien plants.
  – Chemical methods - using environmentally safe herbicides.
  – Biological control - using species-specific insects and diseases from the alien plant’s country of origin. To date 76 biocontrol agents have been released in South Africa against 40 weed species.
  – Integrated control - combinations of the above three approaches.

• WfW considers the development of people as an essential element of environmental conservation. The emphasis is on employing:
  – women (the target is 60%),
  – youth (20%) and
  – disabled (5%).

• Creating an enabling environment for skills training, it is investing in the development of communities wherever it works. Implementing HIV and Aids projects and other socio- development initiatives are important objectives.
Water Demand Management

- Clearing Invasive Alien Plants (DWAF WfW)
- Public awareness campaign
  - Water wise gardening
  - Water saving devices
  - General information
- Water re-use (treated effluent)
- Leak detection and leak repair
- Pressure management
- Metering (bulk and domestic)
- Water tariffs
- Water restrictions
- Development restrictions
Hermanus annual water demand

- De Bos Dam Safe Yield
- Annual Demand
- Trend
Additional supply

- Raise the De Bos Dam wall
- Build a new dam
- Abstraction of groundwater (boreholes)
- Desalination of sea water
Hermanus ground water investigation

- Water bearing formation
  - Confined aquifer of the Peninsula Formation of the Table Mountain Group

- First order estimate of aquifer size
  - Rock volume = 95,145 Mm³
  - Pore volume = 4,757 Mm³ (4,757,000 ML)

- First order estimate of aquifer yield
  - 5m head decline = 2,856 ML
  - 10m head decline = 5,713 ML
  - 20m head decline = 11,425 ML

Current annual demand
3,500 ML
### Hermanus ground water investigation

- **5 well fields identified**
  - 1st well field partly established (3 boreholes in production out of a possible 10 boreholes)
  - 3 boreholes = 52 l/s = 3.6 Ml/day = 1,600 Ml/year

- **Water quality**
  - Water is rich in Iron and Manganese
  - Requires pre-treatment

- **Cost**
  - Ground water = USD 0.12 per kl
  - Surface water = USD 0.50 per kl
  - Desalination = USD 1.00 per kl
Hermanus annual water demand

Year


kl per year

0 1,000,000 2,000,000 3,000,000 4,000,000 5,000,000 6,000,000 7,000,000 8,000,000

De Bos Dam Safe Yield
Annual Demand
De Bos Dam and Ground water
2% growth
4% growth
Trend
What have been the GOOD PRACTICES...

- DWAF “Working for Water” programme
  - Good inter-governmental co-operation on all levels (National, Provincial and Local) and between Departments.
  - Many positive outcomes: less water demand from invasive alien species, environmental restoration, job creation, skills training, poverty alleviation, environmental education, empowerment of woman, the youth and the disabled, HIV and AIDS awareness.
  - National Programme with strong Local support

- Environmental management
  - Environmental Impact Assessment
  - Ecological monitoring
... and the LESSONS LEARNED

• Our fresh water resources are limited and it must be managed responsibly,

• Effective inter-governmental co-operation is possible,

• There are no sustainable “quick fixes” - an integrated long term approach must be followed,

• Public participation and support is important and enough time must be allowed for it.
What are the CHALLENGES ahead?

- Completing the well fields,
- Manage the well fields responsibly,
- Research to gain an even better understanding of the aquifer,
- Expanding the programme to other towns.

- Storm water management for less often but more intense rain event
... and HOW to address them?

• Ongoing implementation of the Hermanus Water Resource Development and Management Programme

• Development of a Integrated Storm Water Management Plan
CONCLUSIONS

• The risk of drought/water scarcity has greatly been reduced by the implementation of the Hermanus Water Resource Development and Management Programme.

• The Programme yielded many additional benefits such as job creation, skills training and empowerment of woman and the youth.

• It is a sustainable Local solution with Provincial and National support.
Thank you
Hermanus water tariffs

Water usage per month (kl)

Water tariff (SAR)

Cost = R2.50
Average user = 30kl per month