



Unlocking opportunities: The CEO Water Mandate approach

(18 March 2009 – Public session)



***Andries Meyer
Sasol Technology, South Africa
5th WWF & UN CEO Water Mandate Workshop
Istanbul, March 2009***


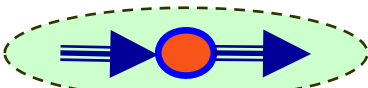
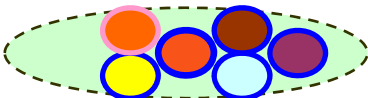

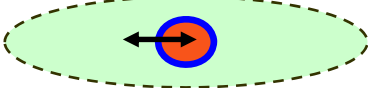



Introduction – Sasol endorsement of CEO Water Mandate

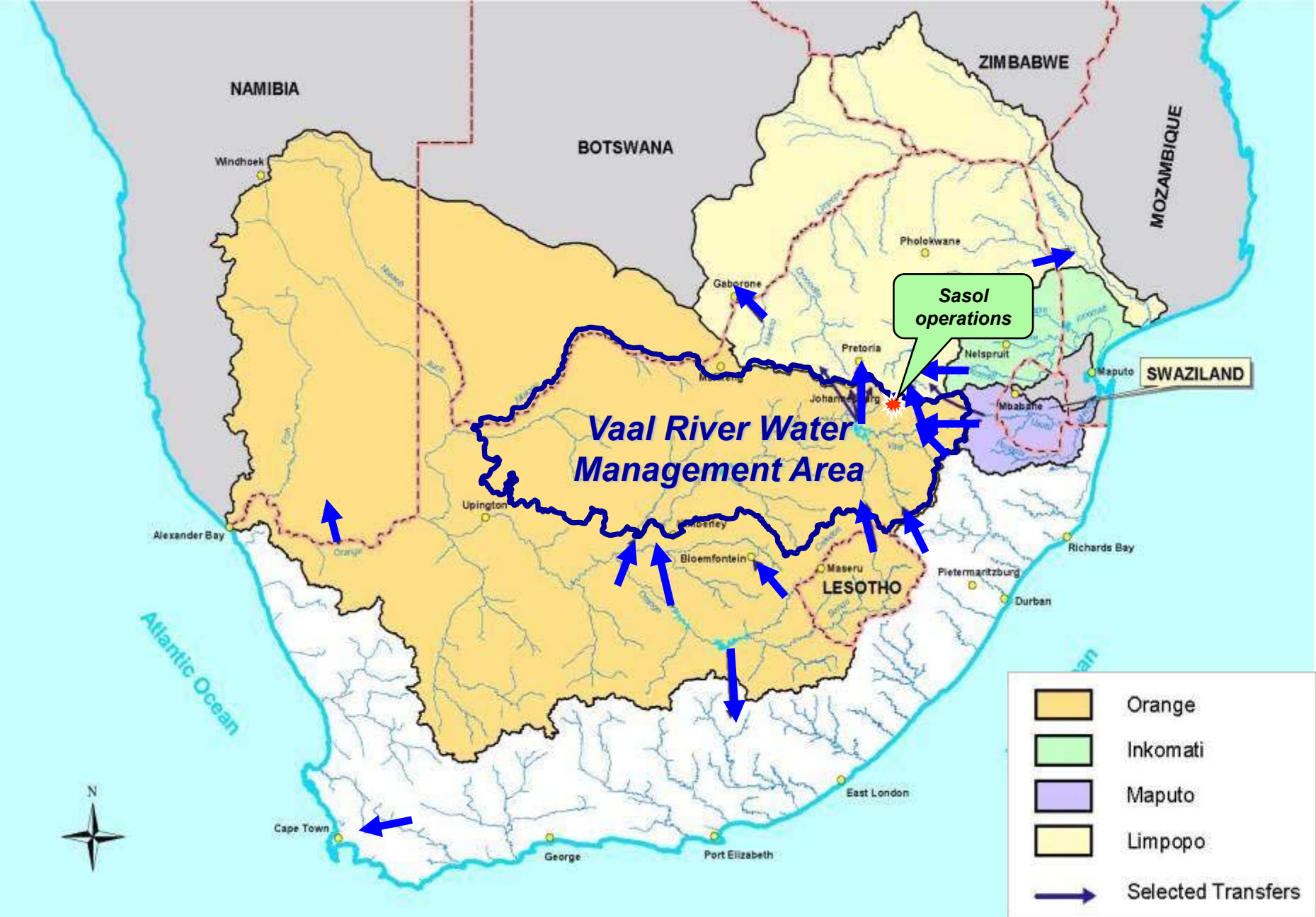
UN CEO Water Mandate endorsed by Sasol CEO – March 2008

Key Focus Area

Sasol perspective

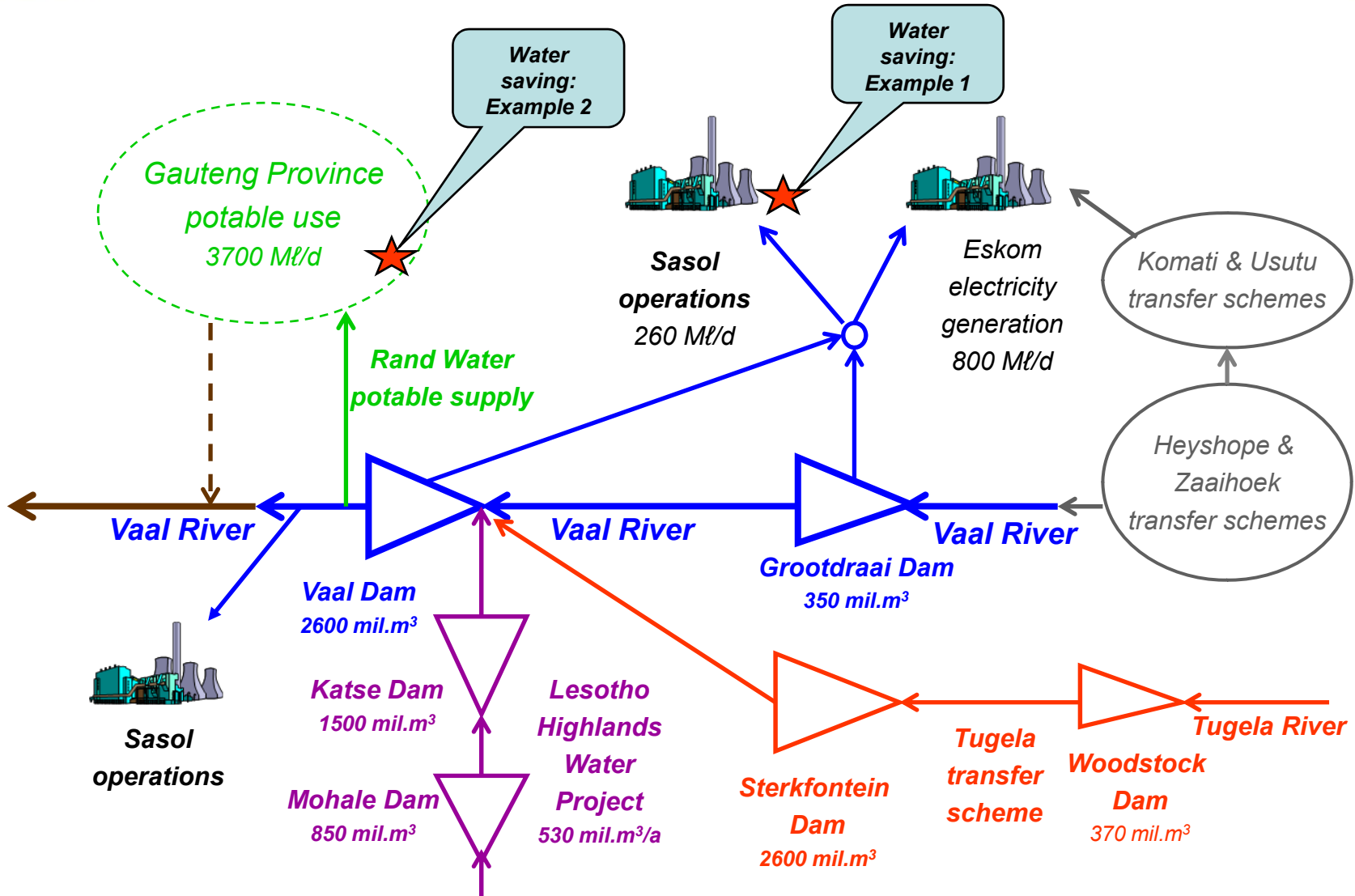
Direct operations		Traditionally strong focus area Example 1 ★
Supply chain & watershed management		New focus area Example 2 ★
Collective action		Relatively new focus area
Public policy		Strong focus area
Community engagement		Relatively new focus area
Transparency		Strong focus area

International Rivers shared by South Africa





Integrated Vaal River system, South Africa





Water saving – direct operations (Example 1)

Sasol Synfuels, Secunda, South Africa

160 000 barrels/day coal-to-fuels & chemicals facility

Water intake
260 Mℓ/d



Evaporation
& losses
240 Mℓ/d

Treatment
& re-use
200 Mℓ/d

Effluent
discharge
20 Mℓ/d



Water saving – direct operations (Example 1)



Cooling tower blow-down recovery plant:

- Softening, ultra-filtration membranes, reverse-osmosis membranes, ion-exchange
- Capital cost: US\$ 50 mil
- O&M cost: US\$ 2.00/m³
- Saving: 18 Mℓ/d



Water saving – catchment potable use (Example 2)

Sebokeng township, Gauteng province, South Africa

Population: > 500 000 people



Water use: ± 100 M ℓ /d

- Minimum night flow > $\pm 60\%$ daily maximum flow
- Widespread leaks in distribution system & home plumbing systems





Water saving – catchment potable use (Example 2)

Pressure management system on main Sebokeng water header

No leaks fixed, only pressure reduced during off-peak periods (same leaks - but lower volume)



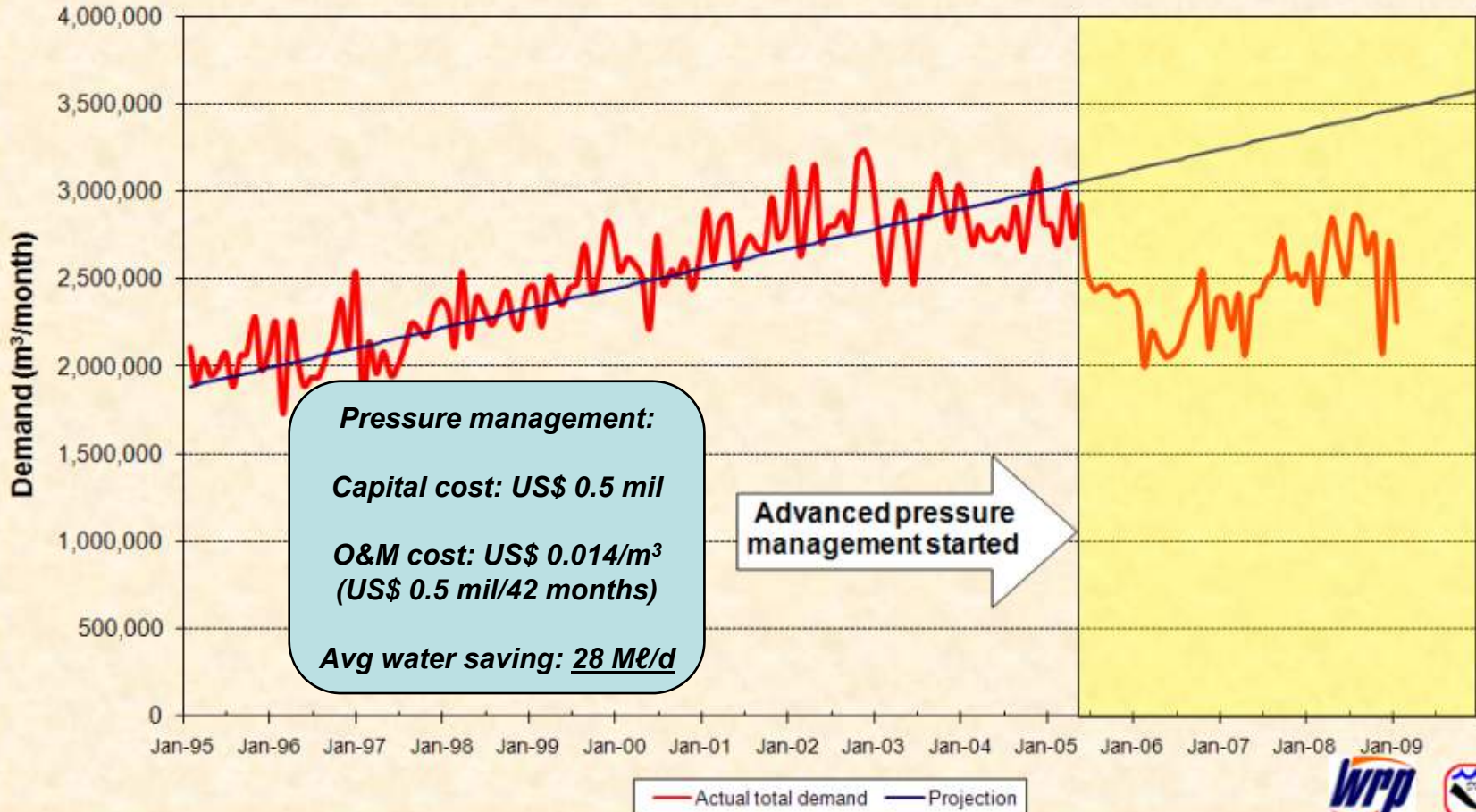


Water saving – catchment potable use (Example 2)



SEBOKENG / EVATON CONSUMPTION HISTORY

Savings for 42 months to Dec 2008 = 35.5 million m³ = R105 million (\$12 million)





Comparison between water savings initiatives

	Direct operations saving (Sasol initiative) <i>Example 1</i>	Catchment saving (Private initiative – no Sasol involvement) <i>Example 2</i>
<i>Water savings from Vaal River system</i>	<i>18 Mℓ/d</i>	<i>28 Mℓ/d</i>
<i>Capital cost</i>	<i>US\$ 50 mil</i>	<i>US\$ 0.5 mil</i>
<i>Unit capital cost</i>	<i>US\$ 2.8 mil/Mℓ</i>	<i>US\$ 0.02 mil/Mℓ</i> <i>< 1 %</i>
<i>Operating & Maintenance cost</i>	<i>US\$ 2.00/m³</i>	<i>US\$ 0.02/m³</i> <i>< 1%</i>



Conclusion

- ***The case study mentioned is a simplified example only - there are many social and environmental aspects to be considered when reducing water footprint - it goes beyond volume reduction only***
- ***The CEO Water Mandate approach “outside the factory fence” could reveal cost efficient water savings opportunities in the same catchment***
- ***Low technology “catchment solutions” could in some instances be up to 100 times more cost efficient than high technology “direct operations” solutions***
- ***Significant potential exist for public-private partnerships in “catchment solutions”***

Thank you