

Water for Growth and Development

Roundtable Discussion

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GROWTH & DEVELOPMENT IMPERATIVES

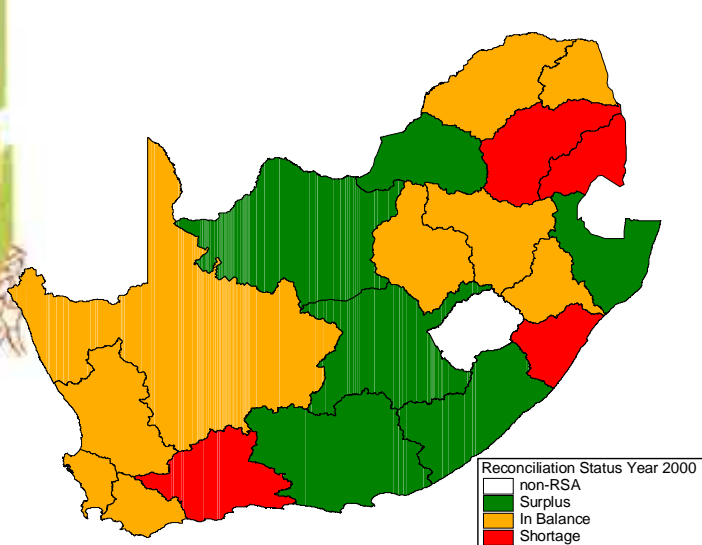
- Economic growth rate of 6% requires additional water supply
- Halve poverty by 2014 (deal with access backlog and responding to the anti-poverty strategy)
- Already, the Vaal system gets its water from other catchments (Senqu, Tugela & Usuthu)
- Effluents from the Vaal already augment the Crocodile/Olifants systems ([Mines/Energy](#))
- Transfer of water for long distances is expensive
- Some economic activities also impact negatively on water quality ([acid mine drainage](#))



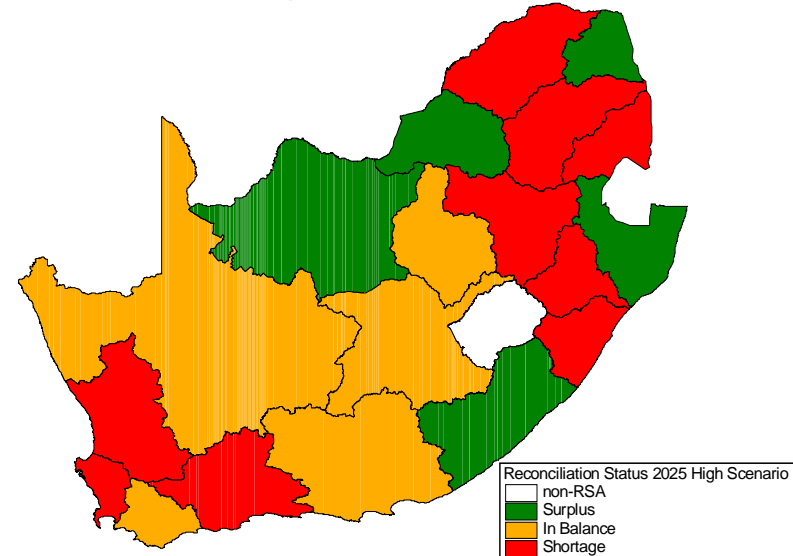
Quantity

- 
- Sufficient water can be made available at all significant urban and industrial growth points in the country for water to enhance economic development
 - However, given the long lead times for developing new water schemes, **co-operative planning** is required between water users and water management institutions in order to ensure that water can be made available when it is needed.

Water Demand / Supply Scenarios



Scenario 2000

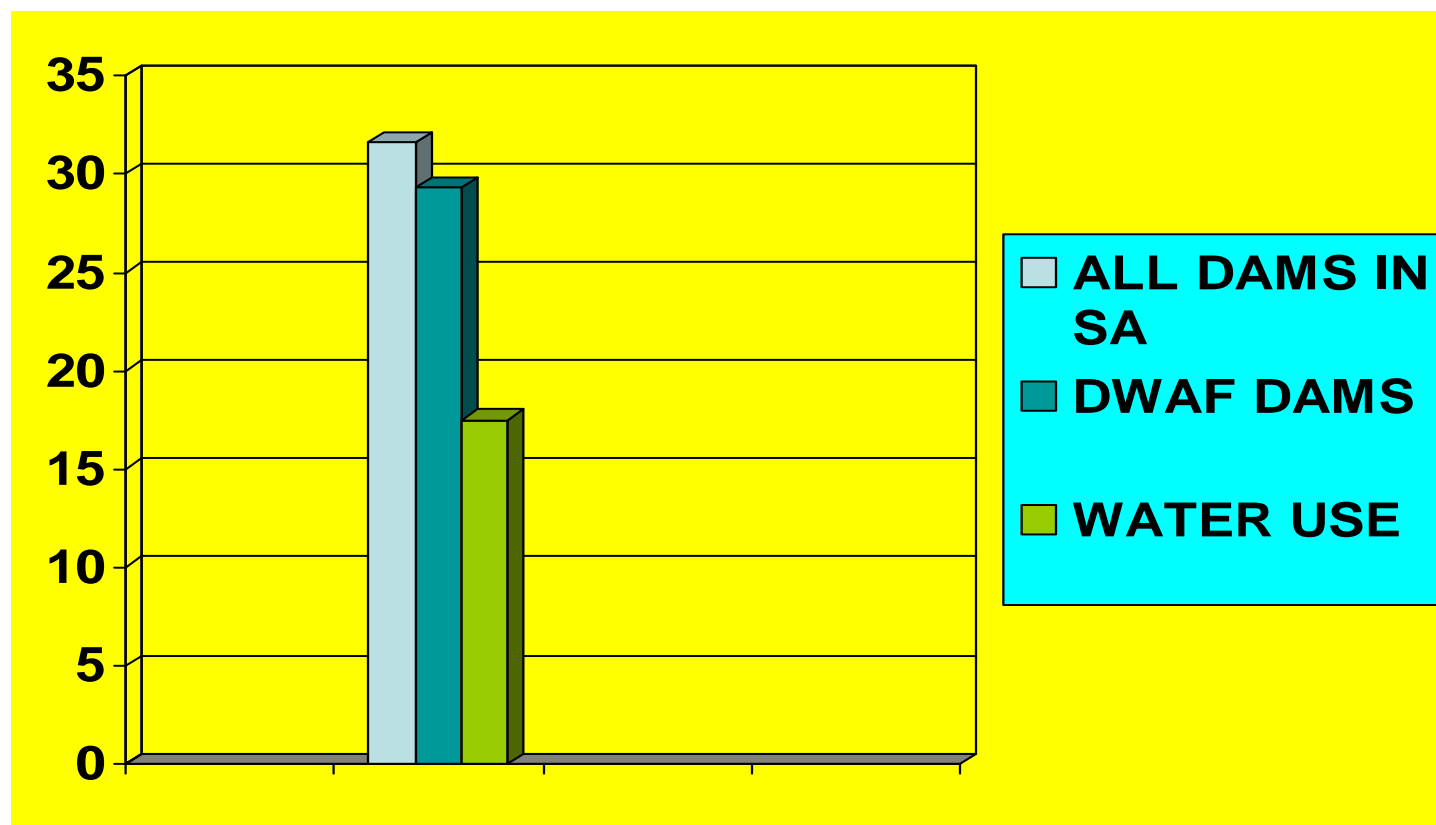


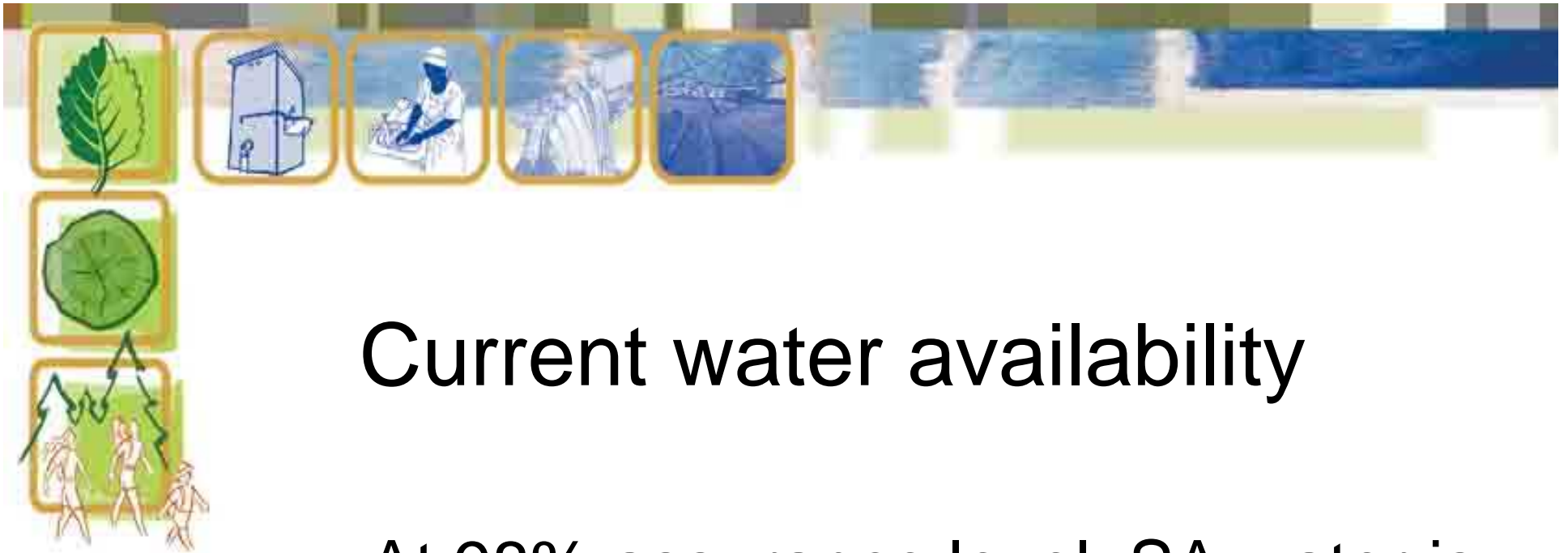
Scenario 2025

- Nandoni dam that was construction in Livuvhu/Letaba WMA improved situation
- All 4 big Metros need serious consideration



ALL DAMS vs DWAF DAMS vs CURRENT WATER USE

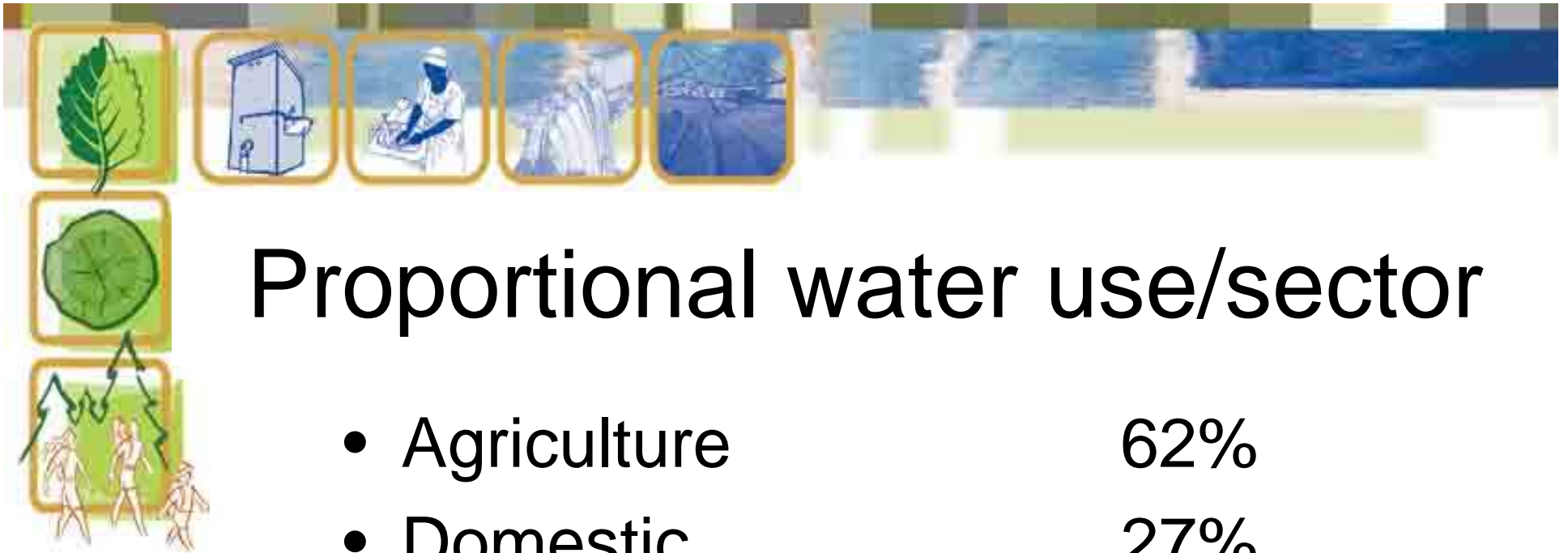




Current water availability

At 98% assurance level, SA water is constituted as follows:

- 77% surface resources
- 9% ground water
- 14% return flows



Proportional water use/sector

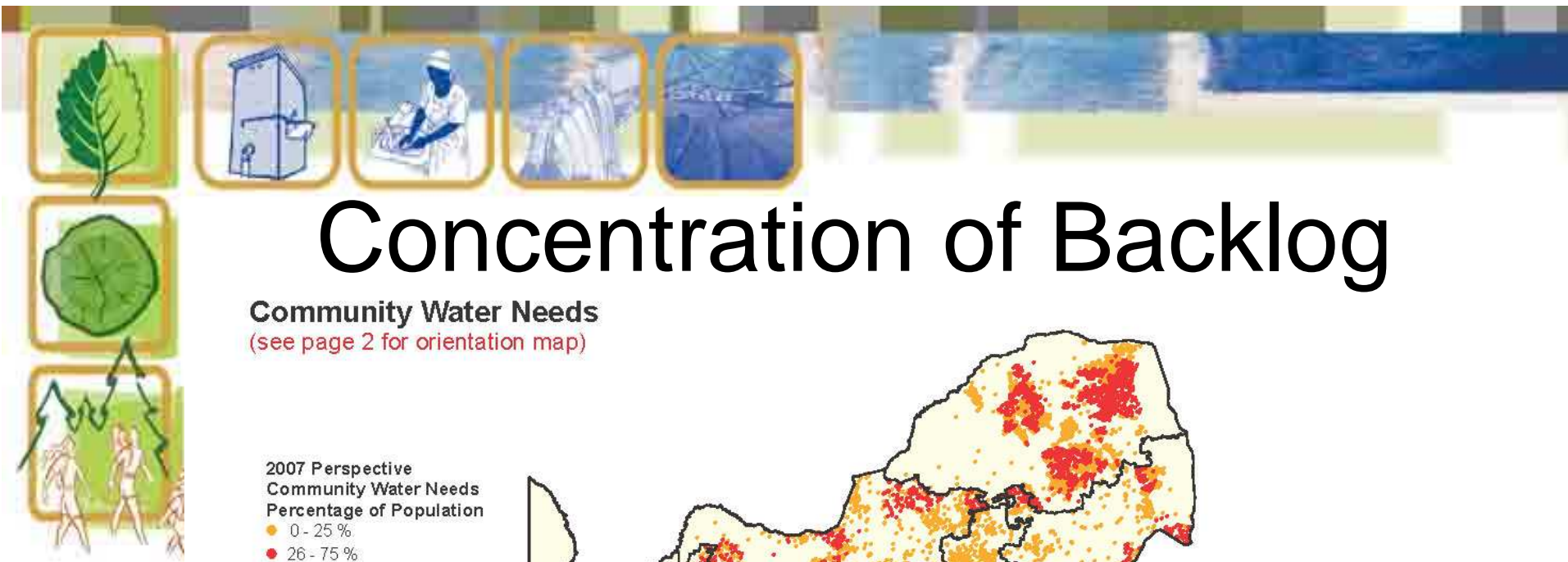
- Agriculture 62%
- Domestic 27%
 - Urban 23%
 - Rural 4%
- Mining 2.5%
- Industrial 3.5%
- Power generation 2.0%
- Afforestation 3.0%



Water Supply and Backlog

Population – access to water supply

- 1994 – 38,9m population
 - 59% of population had access to basic levels
 - 15,9 million people had no access to safe water supply
- 2008 – 48,7 m population
 - 88 % of population have access to basic levels
 - 5,7 million people still without access to safe water supply

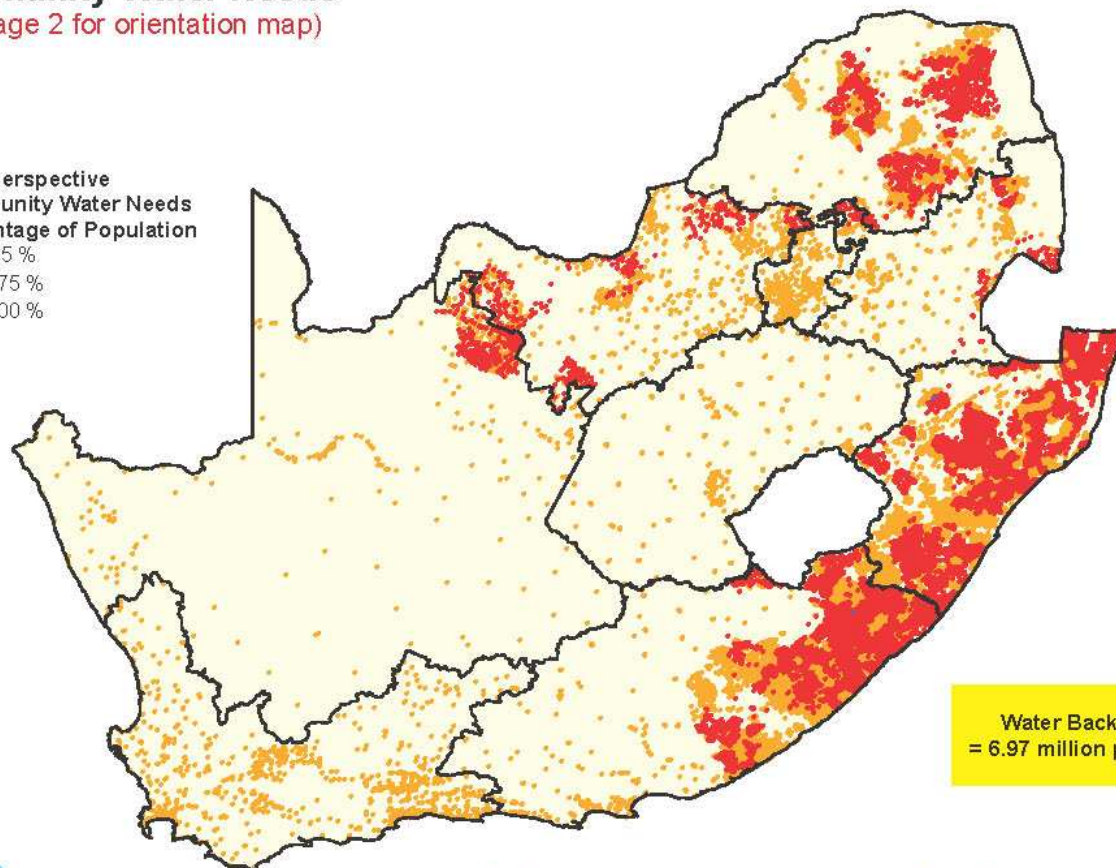


Concentration of Backlog

Community Water Needs
(see page 2 for orientation map)

2007 Perspective
Community Water Needs
Percentage of Population

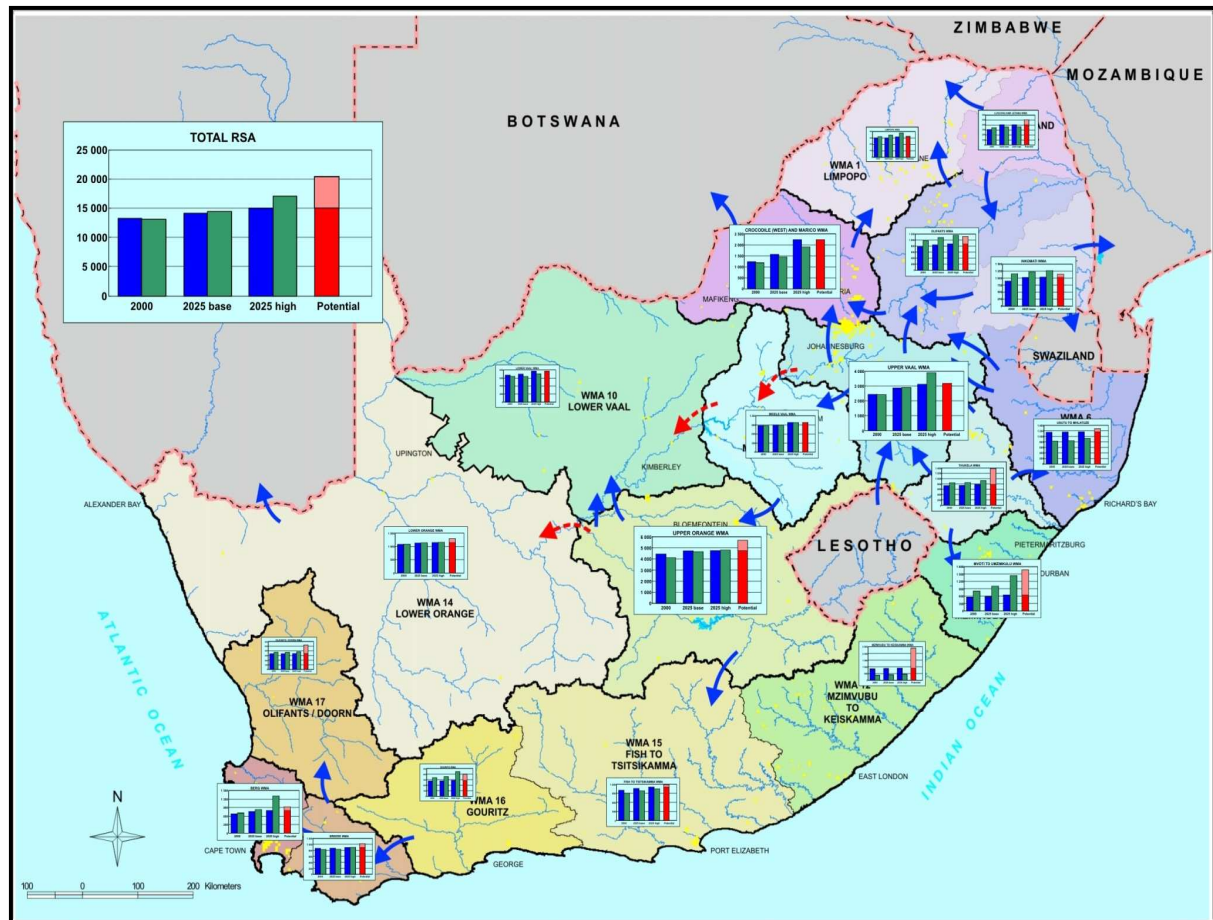
- 0 - 25 %
- 26 - 75 %
- 76-100 %



Water Backlog
= 6.97 million people

Water availability vs use

- Current water use match water (yield) availability
- Potential for further resource development still exists in KZN (south) & East of EC
- Limited potential for further resource development in most areas

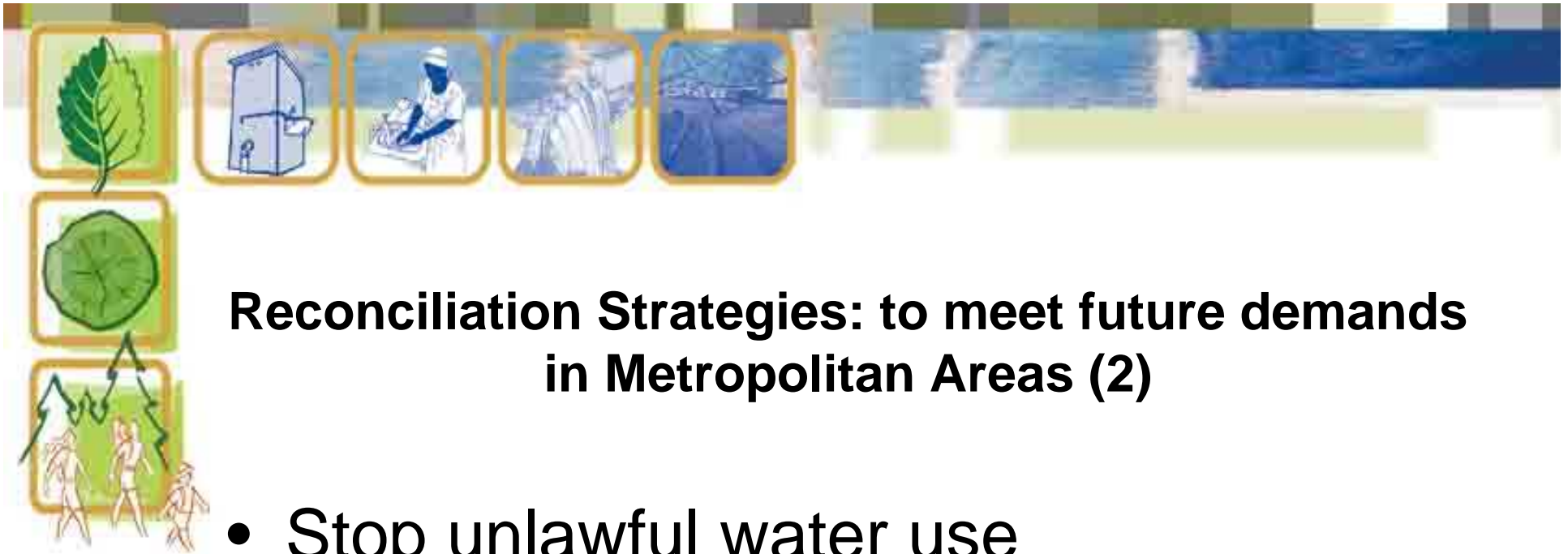


Water demand and availability projections for 2025 (National Water Resource Strategy, 2004). Blue bars = water availability; Green bars = water use; Red bars = water development potential.



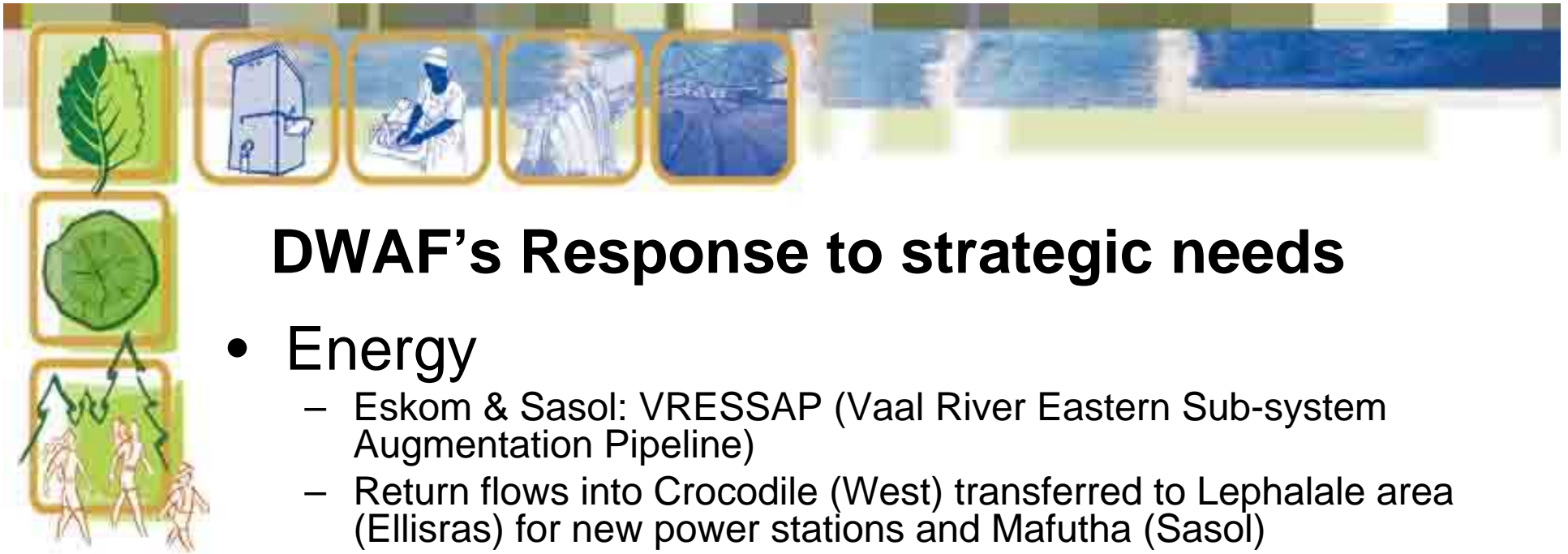
Reconciliation Strategies: to meet future demands in Metropolitan Areas (1)

- WC/WDM to be implemented urgently
- Use of treated effluent
- Groundwater resource must be developed
- Further resource development and interbasin transfers



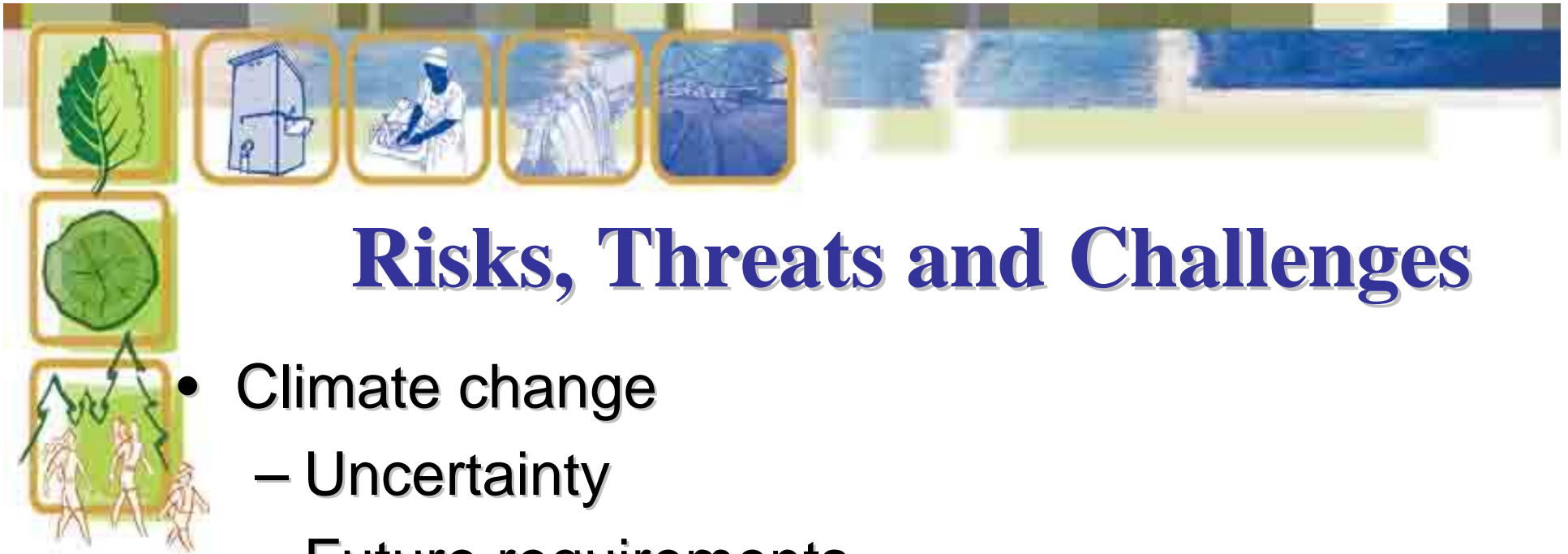
Reconciliation Strategies: to meet future demands in Metropolitan Areas (2)

- Stop unlawful water use
- Desalination of seawater for coastal areas
- Regulated water trading from agriculture to address urban demand.



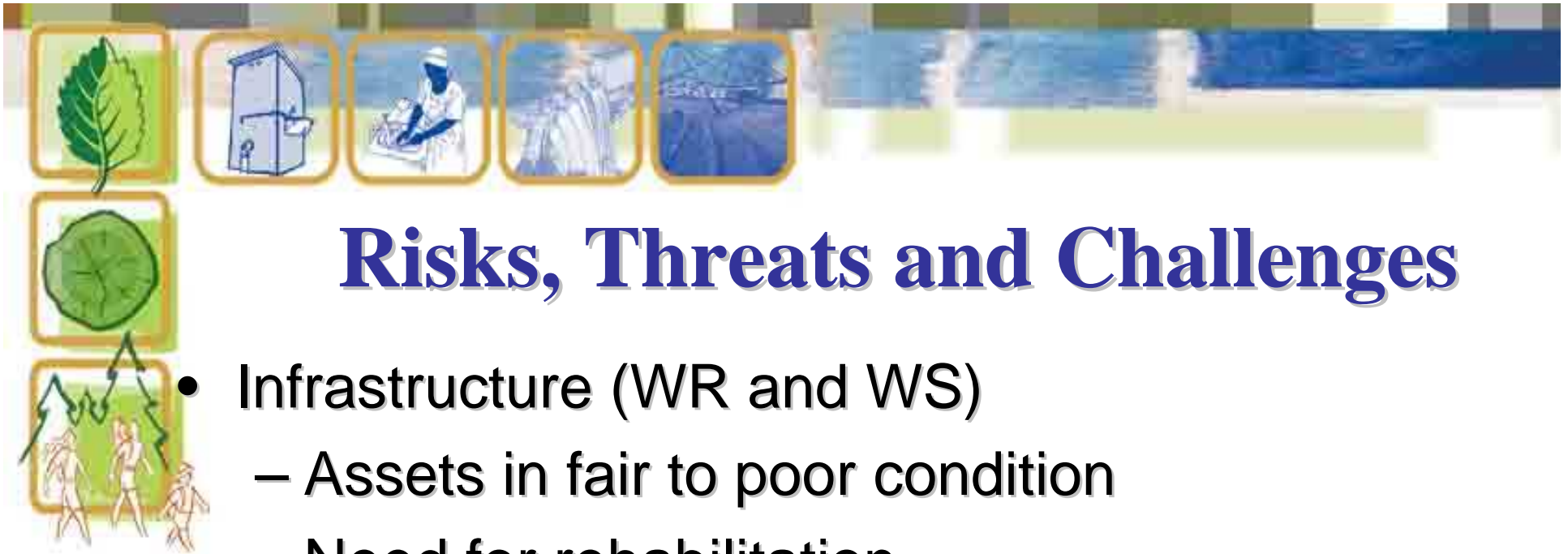
DWAF's Response to strategic needs

- **Energy**
 - Eskom & Sasol: VRESSAP (Vaal River Eastern Sub-system Augmentation Pipeline)
 - Return flows into Crocodile (West) transferred to Lephalale area (Ellisras) for new power stations and Mafutha (Sasol)
 - Construction of De Hoop and Mokolo Dams
- **Mining –**
 - Crocodile West augmentation
 - Construction of De Hoop
- **Industry/urban - reconciliation strategies for Metros**
- **Agriculture – new schemes only in previously under-developed areas with potential for further development.**
- **Forestry – specific wet locations**
- **Rural – accelerate delivery**



Risks, Threats and Challenges

- Climate change
 - Uncertainty
 - Future requirements
 - Water resource characteristics
 - Adaptation and mitigation



Risks, Threats and Challenges

- Infrastructure (WR and WS)
 - Assets in fair to poor condition
 - Need for rehabilitation
 - Maintenance backlogs
 - Costly activity



Risks, Threats and Challenges

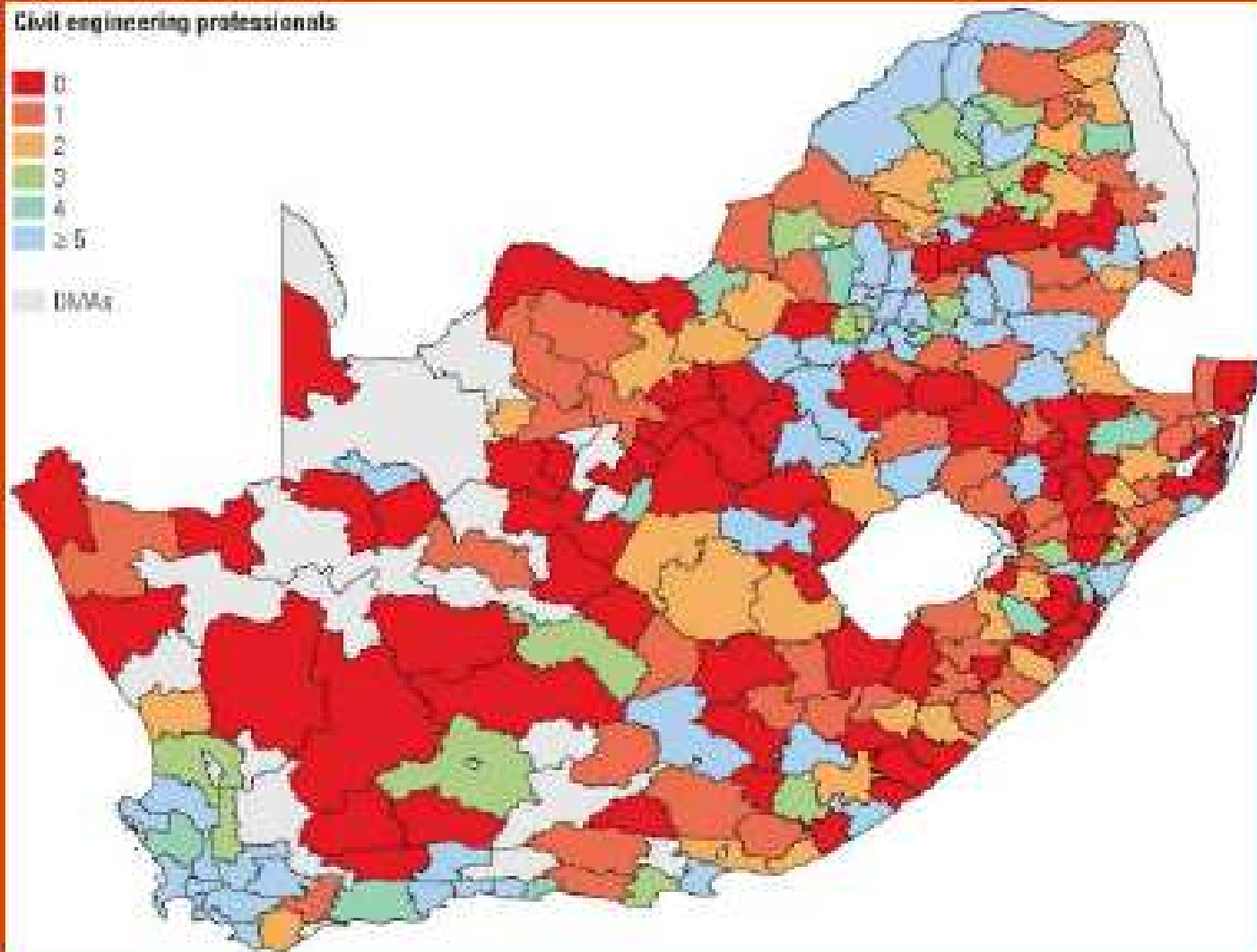
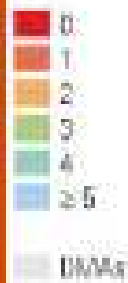
• Scarce skills

- Critical skills shortages
- Skills development is by nature a long term process.



Civil Engineering Staff in Local

Civil engineering professionals



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Risks, Threats and Challenges

Unlawful water use and pollution

- Large amount of water used unlawfully
- Urban areas, industries and mines all contribute to pollution

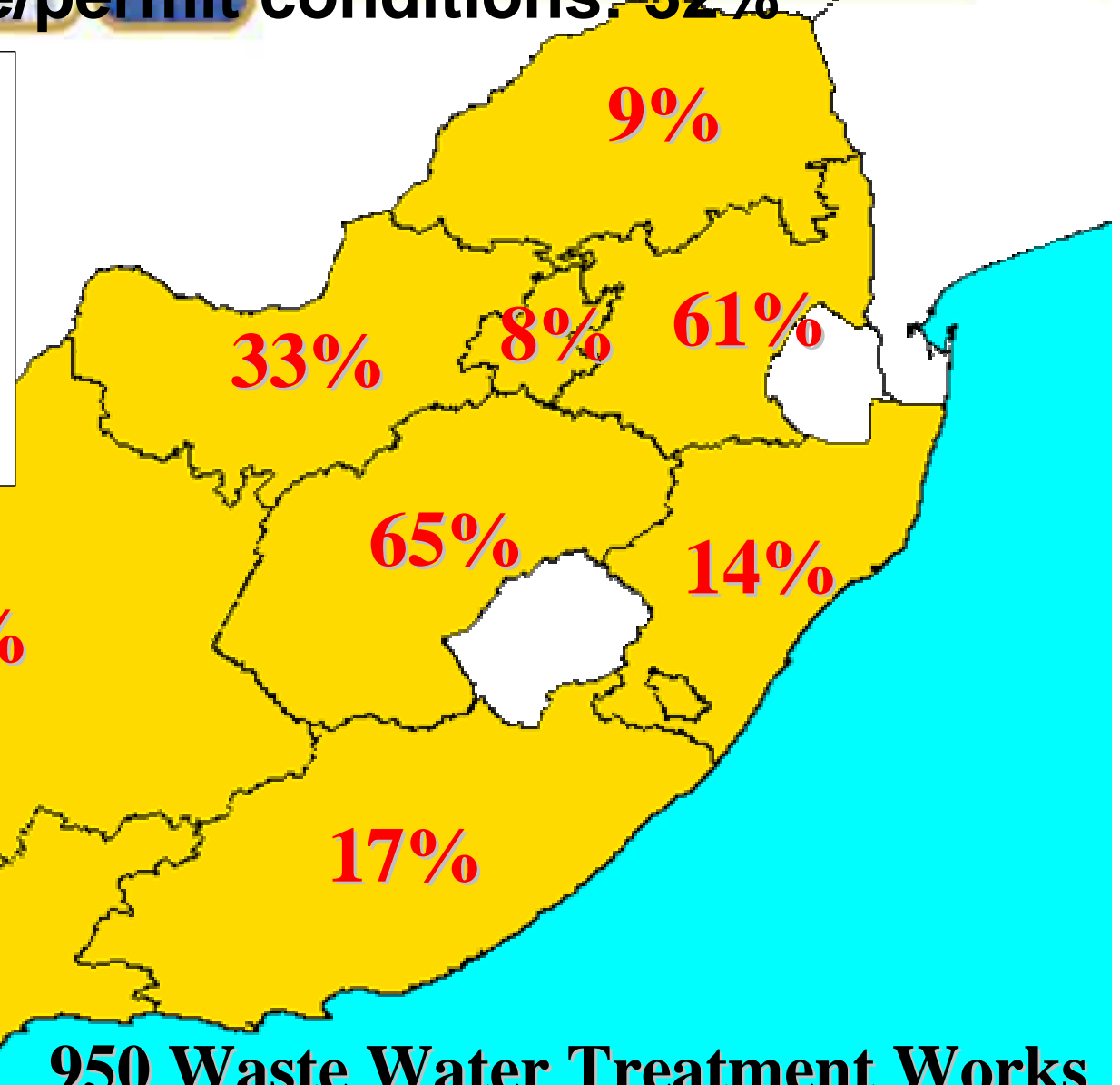
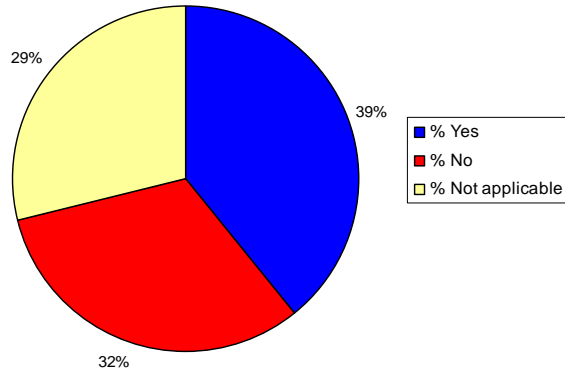


Risks, Threats and Challenges

- **Raw and drinking water quality – often result of poorly managed WWTW (Municipalities)**
 - Major threats to sustained safe drinking water quality
 - Capacity of Waste Water Treatment Facilities to meet effluent standards (non- compliance)
 - Skills shortage

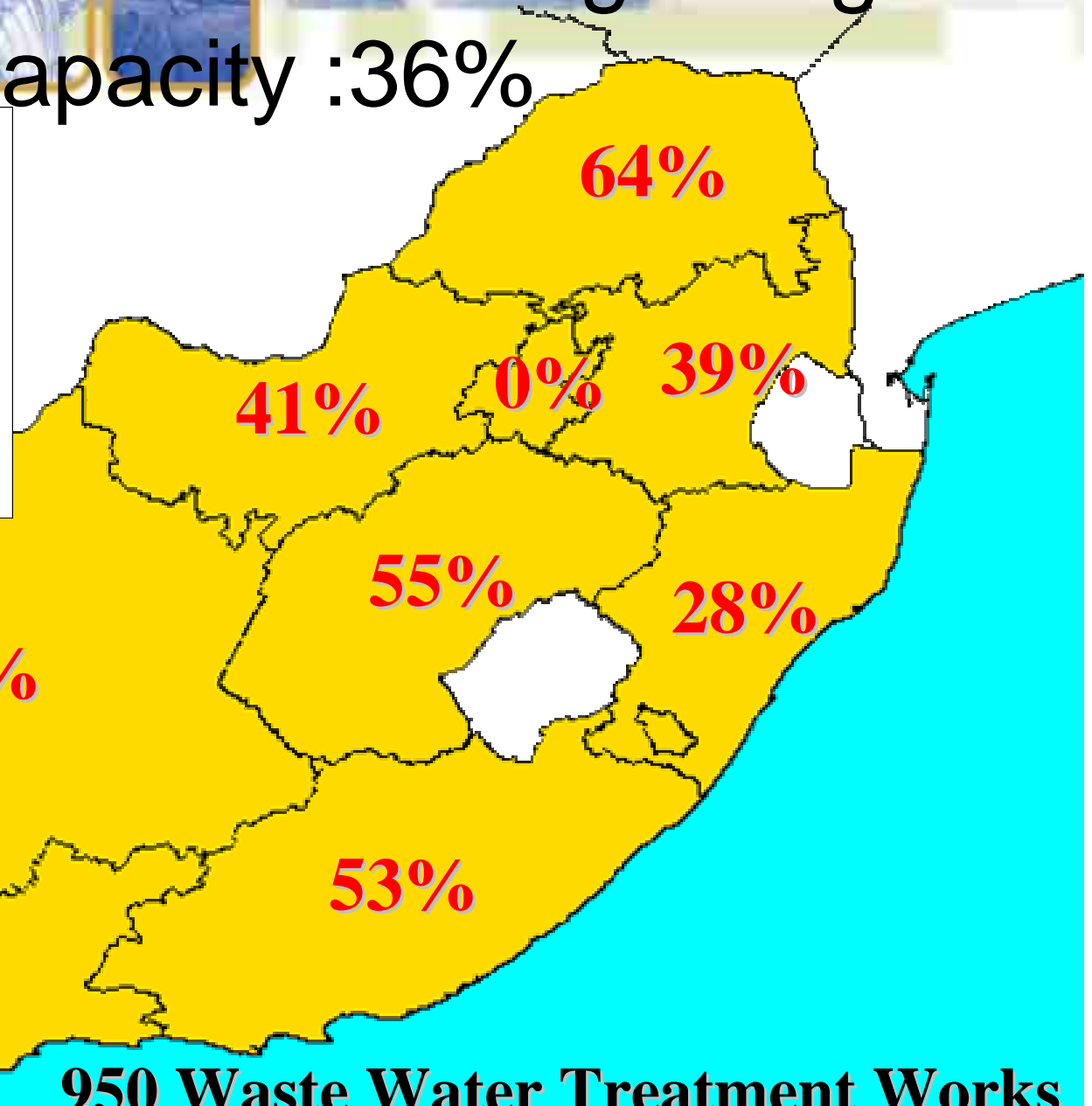
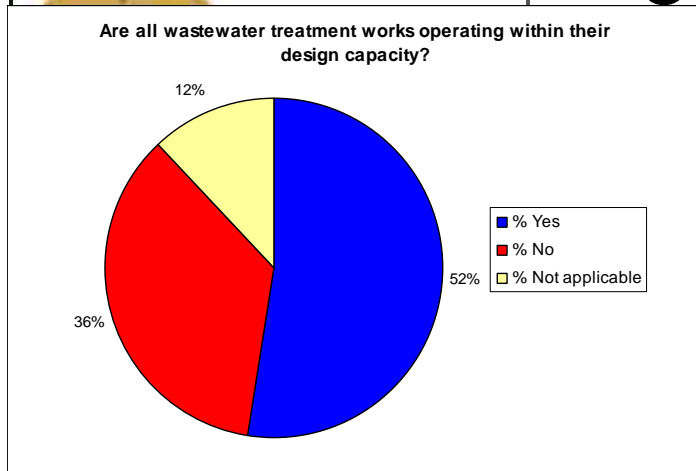
WWT Facilities with license not complying to license/permit conditions: 32%

Do all wastewater treatment works comply to licence/permit conditions?

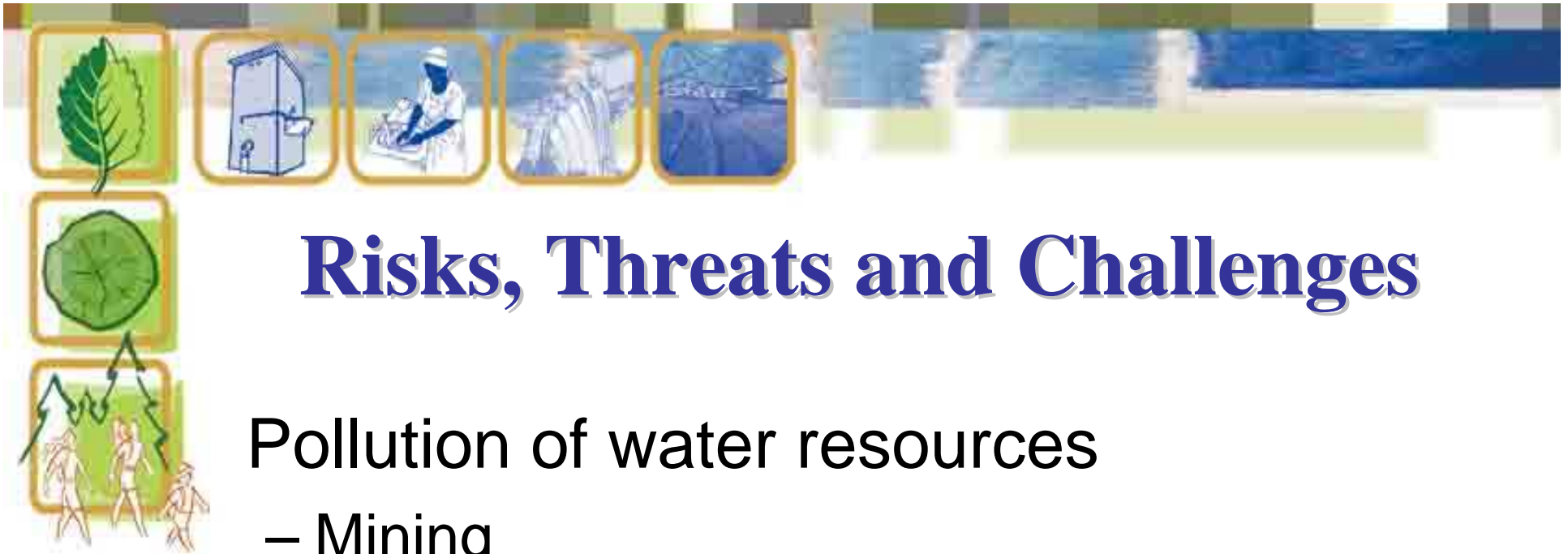


950 Waste Water Treatment Works

WWT Facilities exceeding design capacity :36%



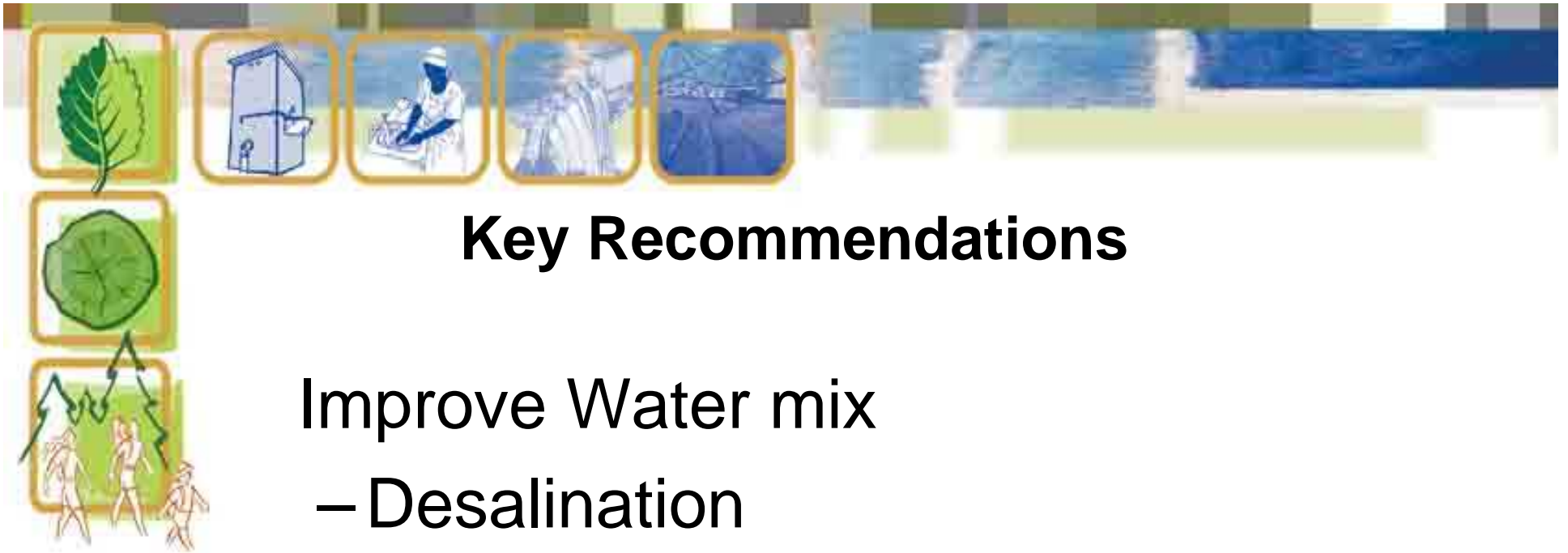
950 Waste Water Treatment Works



Risks, Threats and Challenges

Pollution of water resources

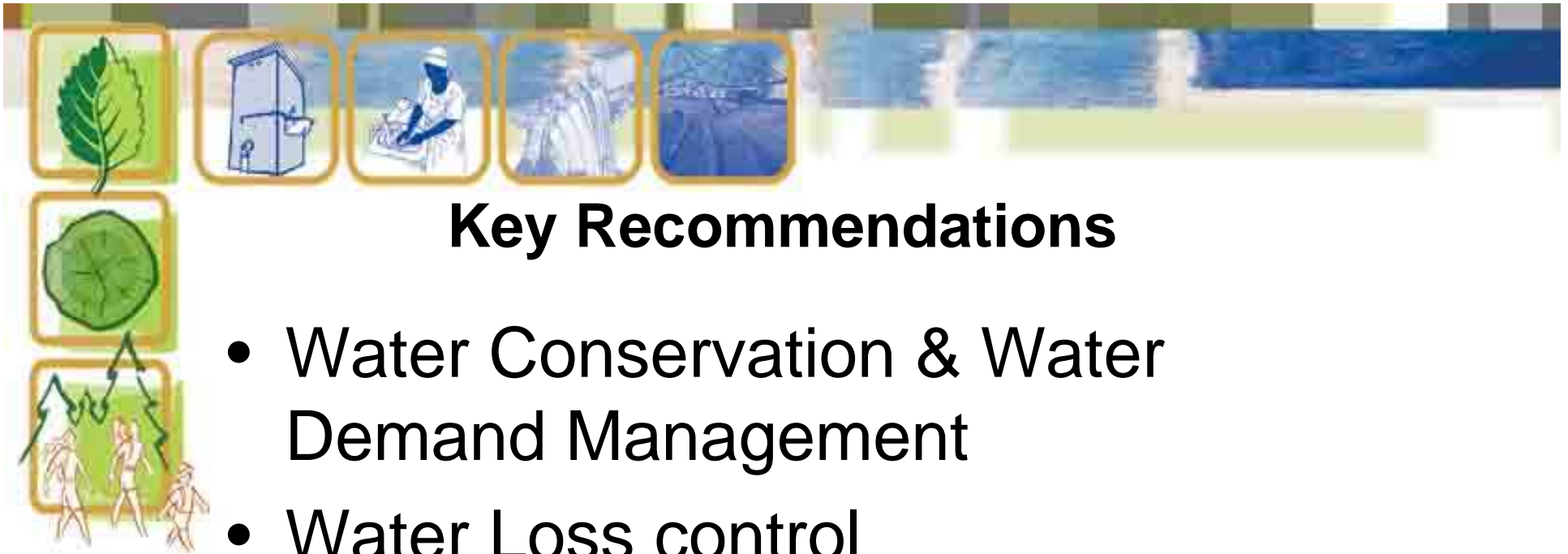
- Mining
- Poor agricultural practices
- Eutrophication



Key Recommendations

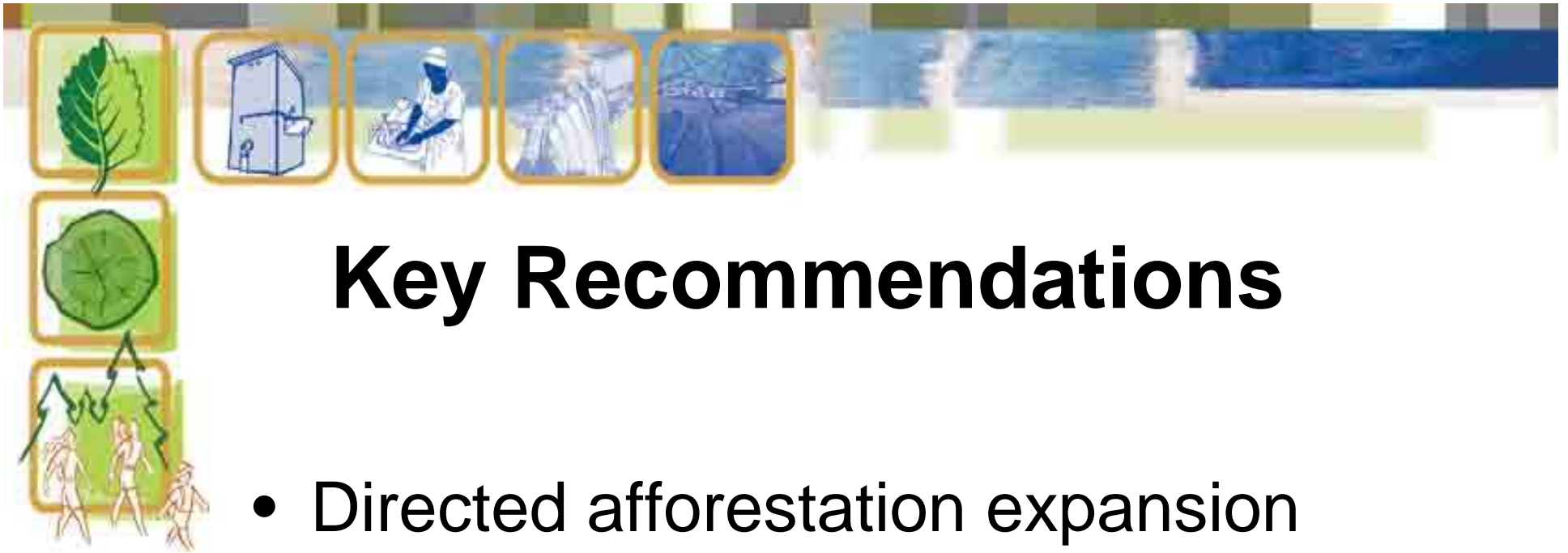
Improve Water mix

- Desalination
- Surface water resources
- Multi-purpose
- Ground water
- Return flows



Key Recommendations

- Water Conservation & Water Demand Management
- Water Loss control
- Clamp down unlawful water use
- Promote water use efficiency (economic instruments)
- Infrastructure (IBWT)
- Directed irrigation development



Key Recommendations

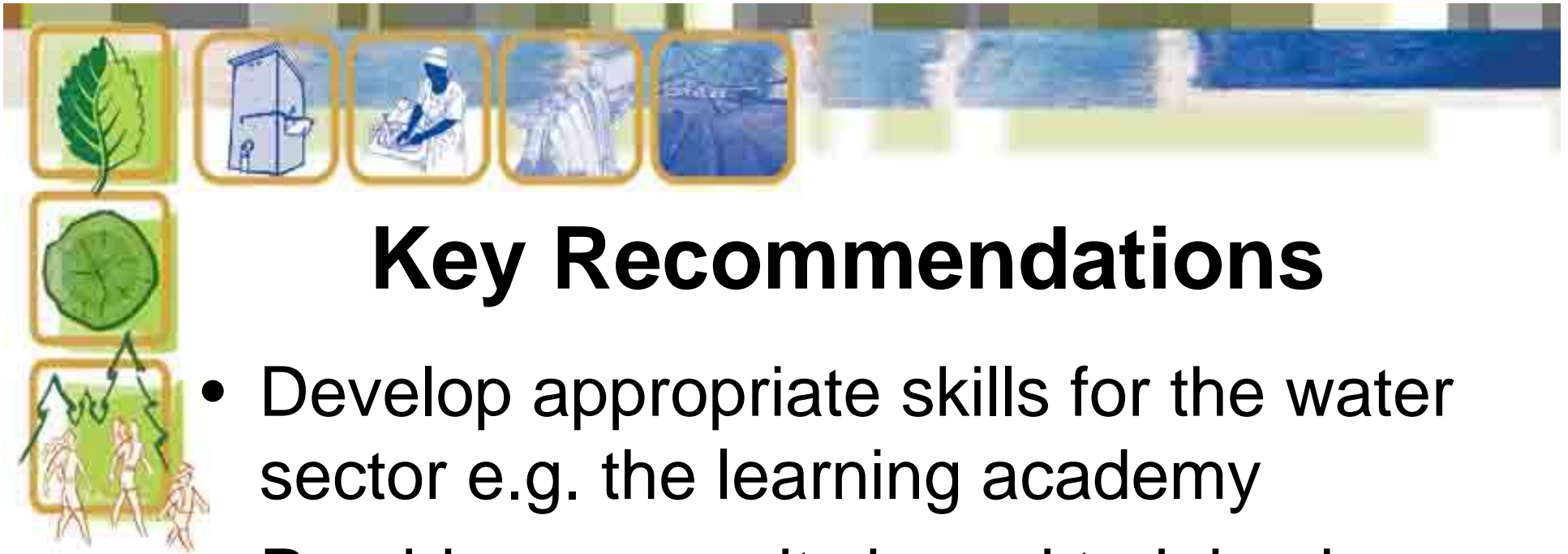
- Directed afforestation expansion
- Aligned strategic planning (water)
- Water quality management & pollution control
- Mitigate and adapt to climate change



Key Recommendations

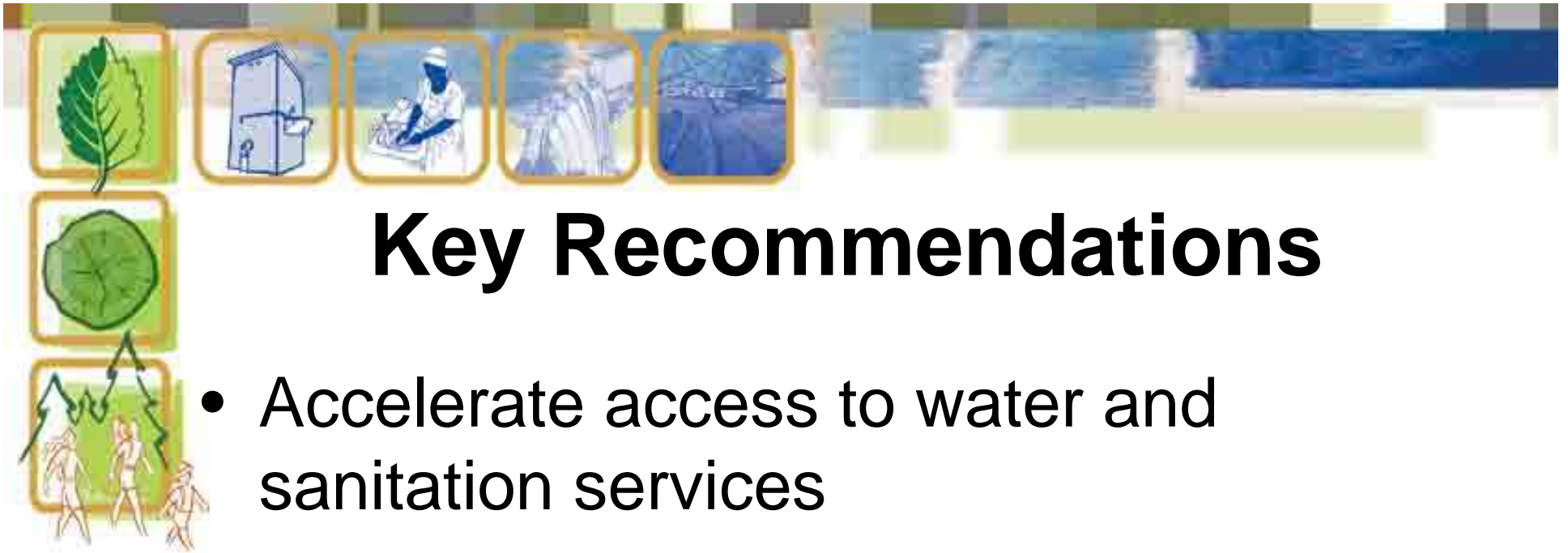
Respond to Anti-Poverty Strategy

- Invest and develop infrastructure that will promote small scale rural development
- Promote rain water harvesting
- Develop community benefits around dams
- Massification of programmes like Working for Water, Working for Wetlands etc
- Development of value added industries from cleared biomass



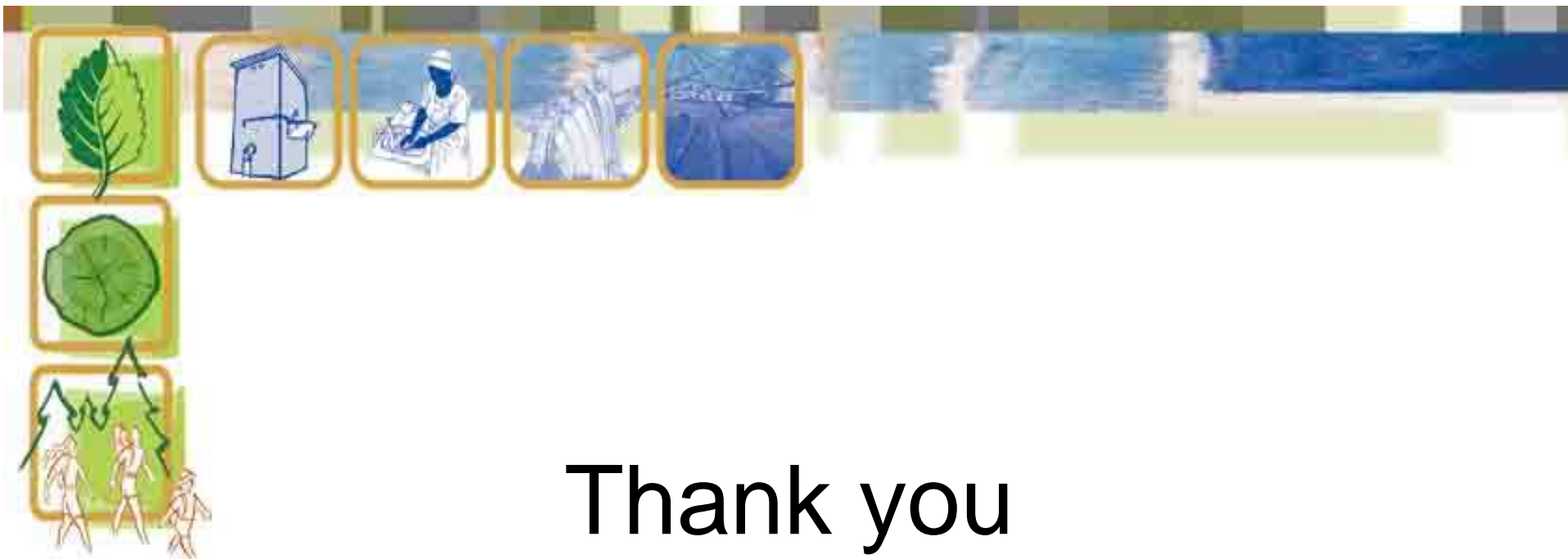
Key Recommendations

- Develop appropriate skills for the water sector e.g. the learning academy
- Provide community based training in programmes like WfW, WoF, Working on Wetlands
- Award bursaries and learnerships



Key Recommendations

- Accelerate access to water and sanitation services
- Improve access to free basic services
- Support local government to deliver on its constitutional mandate
- Ensuring effective regulation



Questions, comments, and inputs



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