This material is shared as a learning resource to promote awareness and good practice in the provision, use and management of water resources for sustainable social and economic development and maintenance of African ecosystems.

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RENEWABLE ENERGY EXPLOITATION FOR IMPROVED WATER SECURITY IN URBAN COMMUNITIES TOWARDS SUSTAINABLE AFRICAN CITIES: A FEASIBILITY STUDY

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Problem: Population growth in African cities

- growing townships and informal settlements
- Inadequate water and sanitation services
- Poor community health, reduced quality of life

Research Questions:

- How can accessibility to clean water in urban settlements be increased, sustainably? Decentralization vs centralization
- Can renewable energy be exploited to support such?
- Can wastewater be used as a resource for both Water and Energy

Intent:

- provide the evidence and create tools to support decision-making on complex sustainability challenges in African cities.
- inform intergovernmental policy processes and assessments
Youth in knowledge co-designing and co-production

- Case Studies: Diepsloot Township, South Africa and Chambishi Township, Zambia

- **Co-generate** data from case studies:
  - Household water needs, sources, access, government structures
  - Interconnections between household water, energy and health

- **Co-design** and **co-production** of solutions
  - Integrated water and energy systems (sustainable, healthy, gender responsive)
  - contextualised
  - build local capacity

- Make recommendations to policy makers
### Recommendations

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Who should act</th>
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<tbody>
<tr>
<td>Wastewater reclamation should be made the norm <strong>and incentivised</strong></td>
<td>Water &amp; Sanitation regulators.</td>
</tr>
<tr>
<td>Dual water reticulation systems should be considered</td>
<td>Departments of Human Settlements/Housing, Water &amp; Sanitation Regulators</td>
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<td>Public awareness campaigns on water use and reuse need to be strengthened and</td>
<td>Science Councils &amp; Academia, Water &amp; Sanitation regulators, Water Services</td>
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<tr>
<td>capacity building—<strong>(youth-led)</strong></td>
<td>Providers</td>
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