

Managing Wastewater for Social Benefit:

A Case Study in Technological Enablement



Measuring Sustainability

Triple Bottom Line Accounting

- Financial
- Environmental
- Social

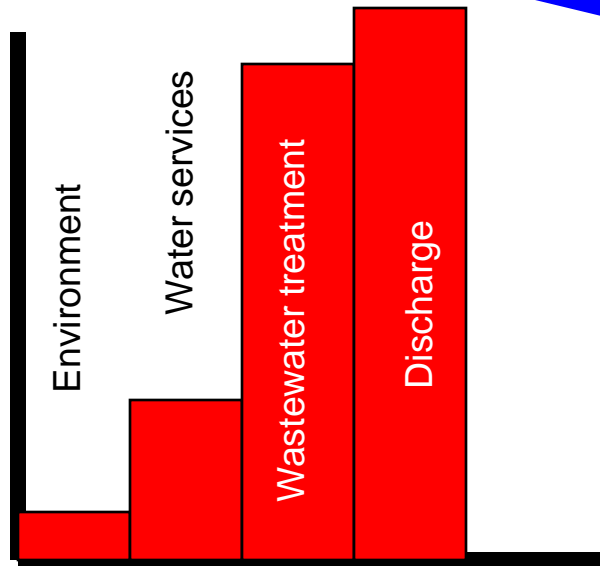


How do we shape up in the Water Sector?





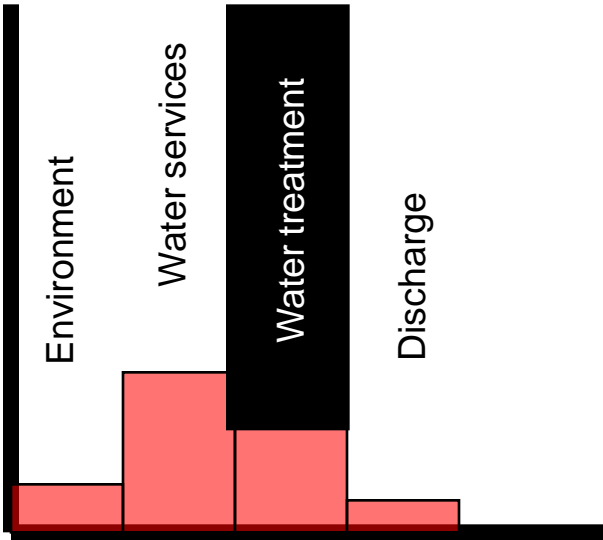
Opportunity
cost



Environmental, Economic & Social Costs



Enabling
Technology



Net Costs or Cost Recovery?

Poverty in the Presence of Opportunity



**Environmental Biotechnology
Research Unit**



Integrated Algal Ponding Systems (IAPS)

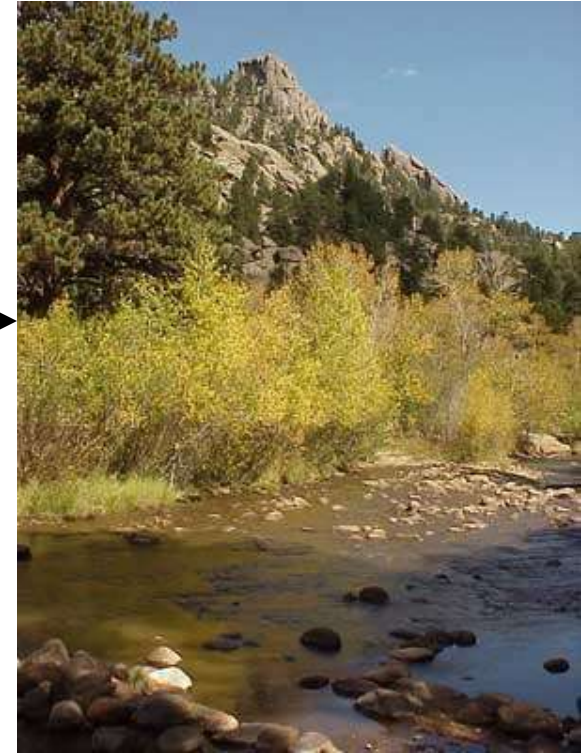
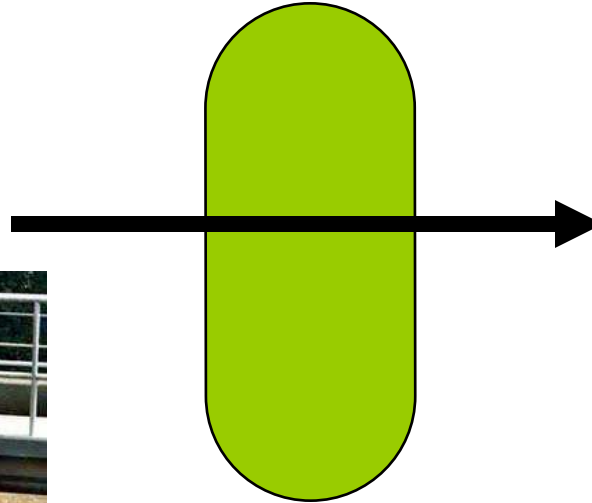


Independent High Rate Algal Pond (I-HRAP)





I-HRAP



Poverty alleviation

IAPS Sewage treatment system



The Nutrient Cycle



UNEP WIO-LaB Project

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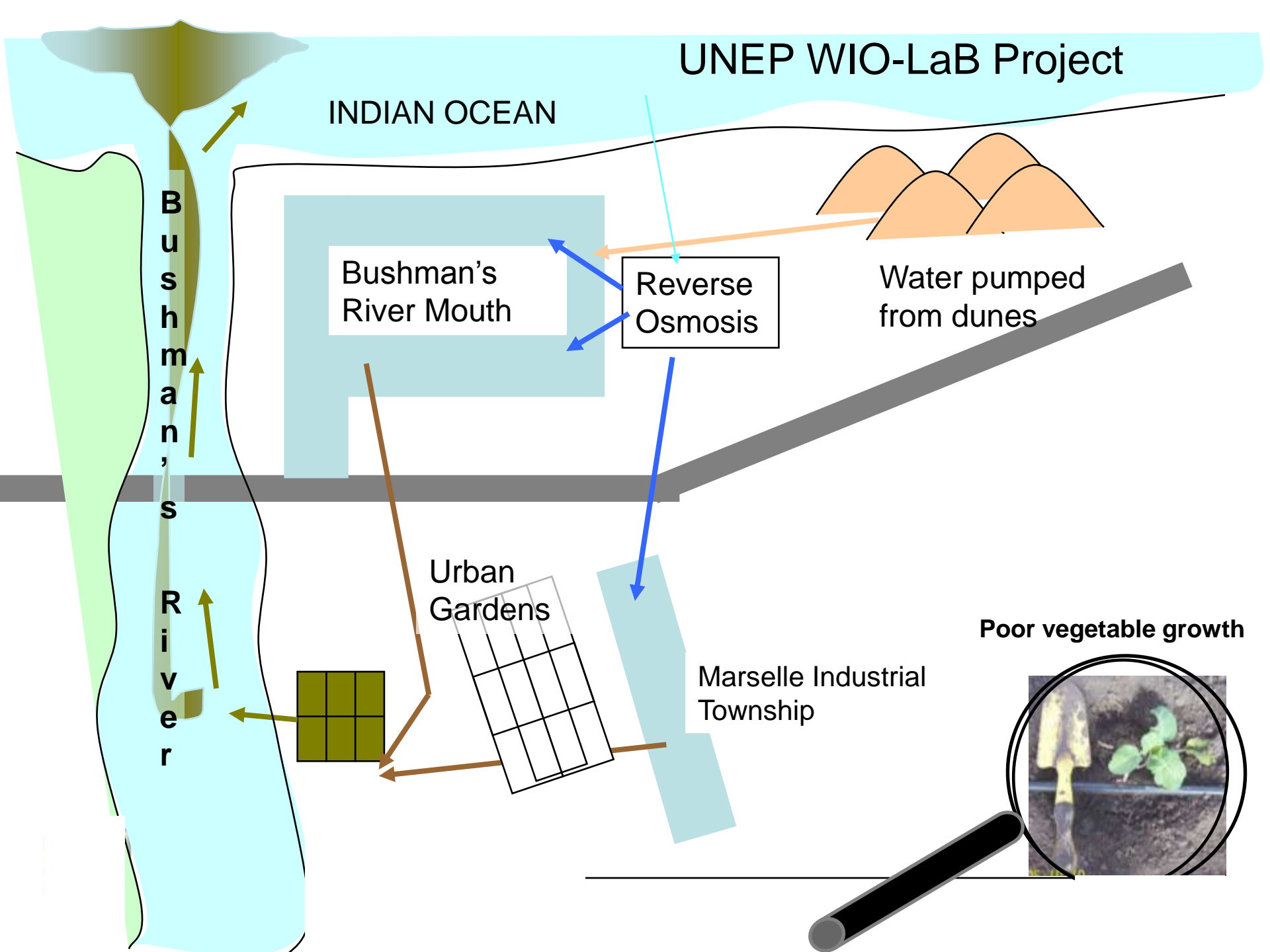
Reverse
Osmosis

Water pumped
from dunes

Urban
Gardens

Marselle Industrial
Township

Poor vegetable growth



INDIAN OCEAN

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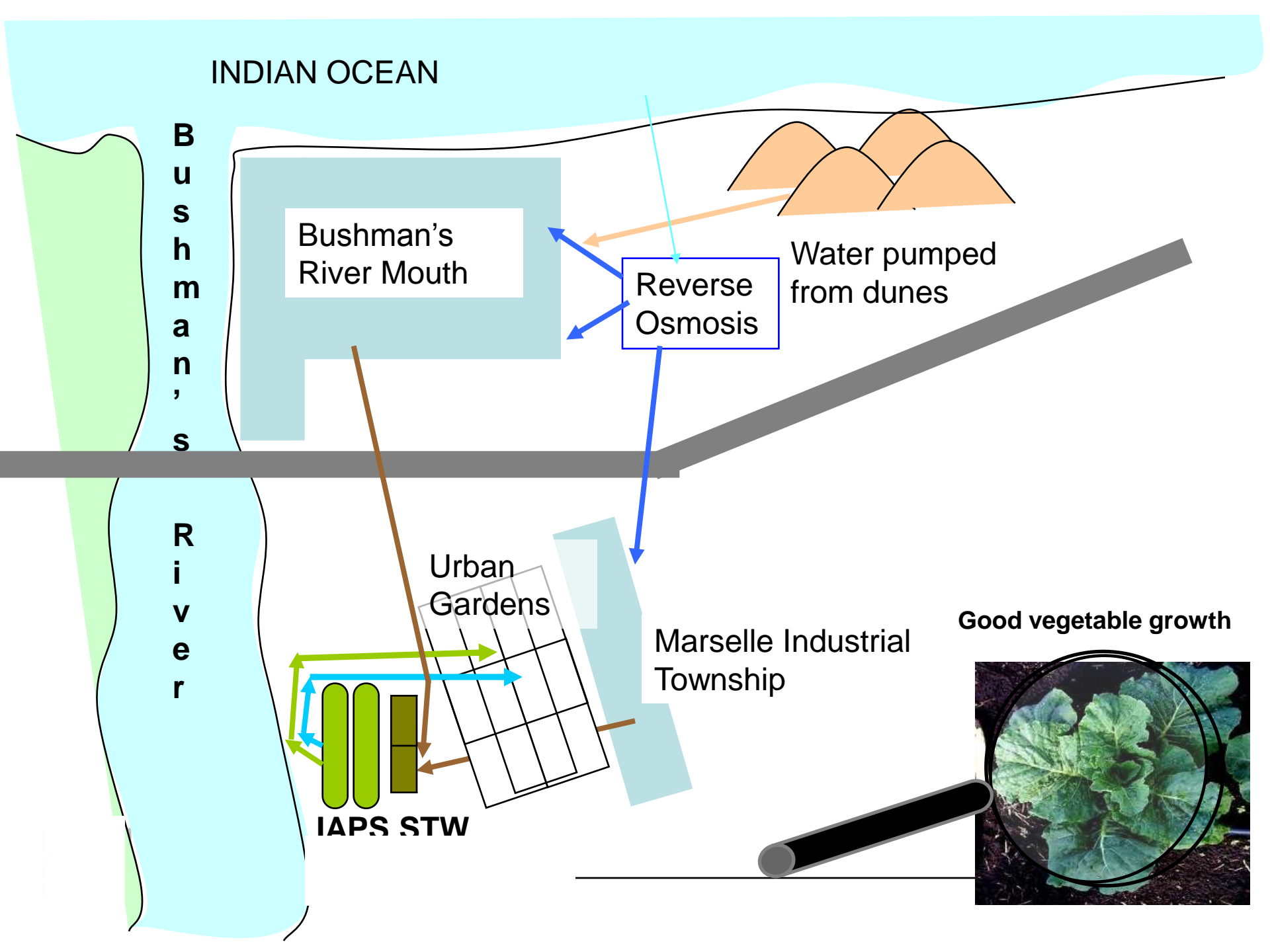
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Urban
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Good vegetable growth

IAPS STW



Acknowledgements

- WRC
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Status of Wastewater Treatment Plants

Eastern Cape Study (EBRU) STWs (<1MI/day)

- 77% need short to medium term intervention

National (Snyman) micro-, small- and medium-scale STW

- 30% need immediate intervention
- 69% need short to medium term intervention
- 4% comply with DWAF standards

Environmental, Economic & Social Costs

