

# Climate Change and catchment management : some ideas for discussion

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COP 17 Ecosystems-based adaptation

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## Climate change in our KwaZulu Natal context

- The future of water supply is uncertain
  - There are predictions of more rainfall, but with
  - Higher temperatures
  - Greater rainfall intensity
  - Greater rainfall variability
    - Volumes
    - Timing
  - Alien plant growth
- Demand is growing

## So how do we adapt to this?

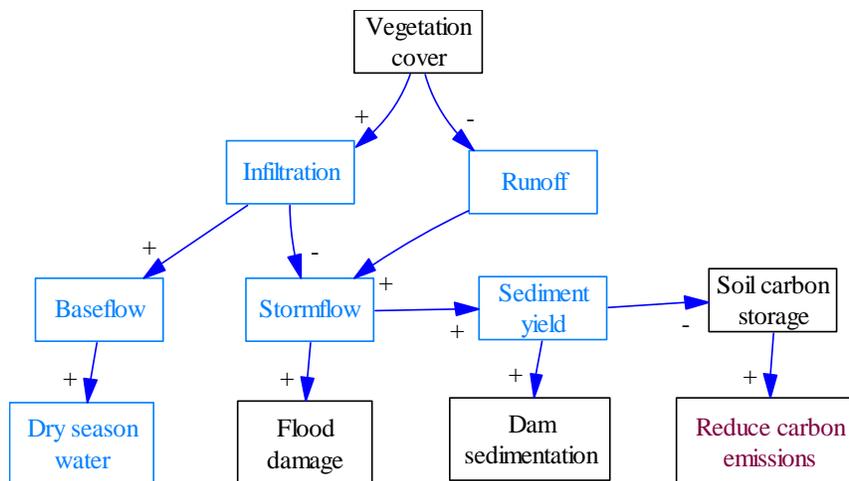
- What options do we have in dealing with uncertainty?

## Consider our Four Capitals

- **Built capital** is the infrastructure (dams, canals, water works, etc.) that make up the material structure of human society.
- **Human capital** is the physical bodies of individual humans, their health and education, and the information stored in their brains.
- **Social capital** is the web of interpersonal connections, institutional arrangements, rules and norms that facilitate human interactions.
- **Natural capital** is the land and the resources it contains, including ecological systems and services.

# Catchments are natural capital : Green infrastructure for climate change adaptation

## The Green Infrastructure

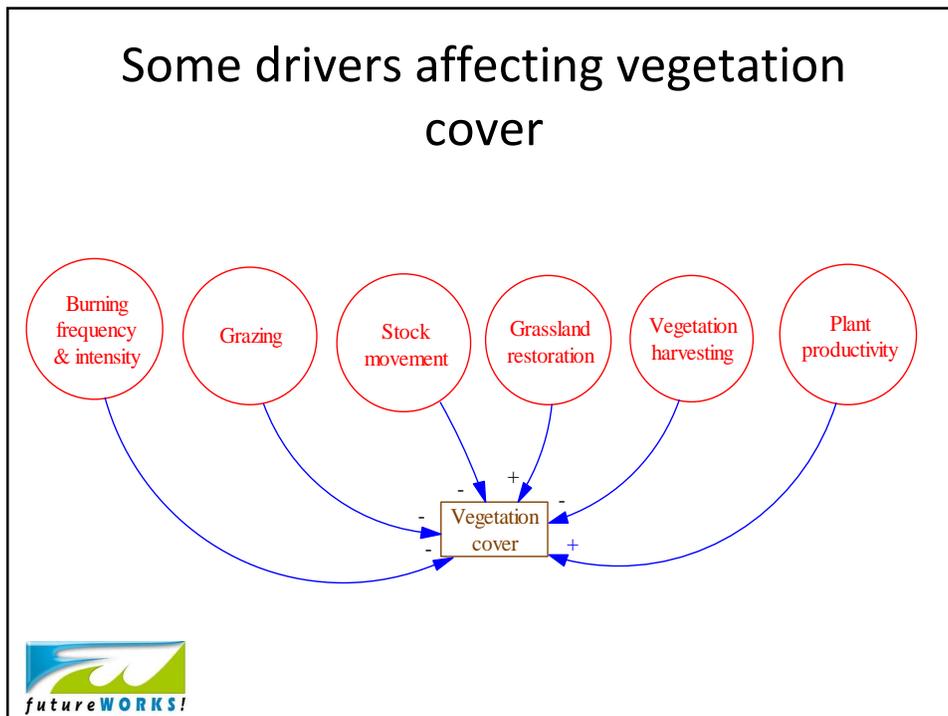
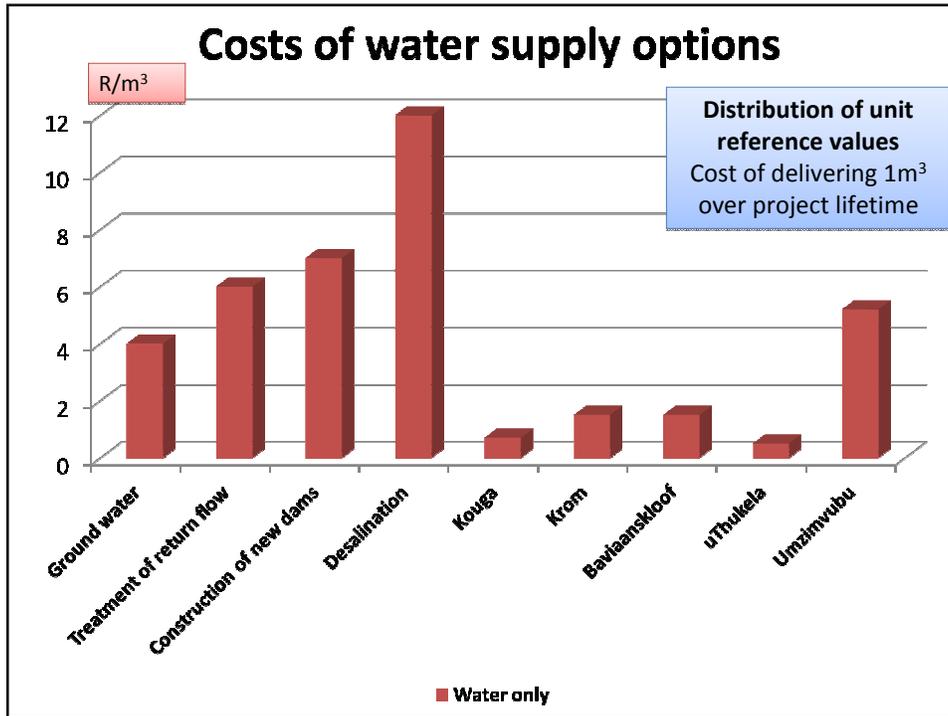




### Maloti Drakensberg : Changes in supply with good management

Quantities of services supplied in the two Catchments

	upper-Thukela	upper-Umzimvubu
Total additional baseflow: m <sup>3</sup>	12 869 204	3 936 842
Sediment reduction: t/y	1 884 379	7 381 437
Sediment reduction: m <sup>3</sup> /y	1 256 252	4 920 958
Carbon sequestration: t/y	134 352	337 718











In Summary

Good natural capital – many diverse services



Low service levels



## Limited service levels



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## Partly functional natural capital – some services



## Depleted natural capital – one service only



## Concluding thoughts

- Catchments with abundant natural capital offer a wide range of options for adaptation – at generally low cost – by using existing capital
- Catchments with developed landscapes offer few options – at generally high cost – we have to build new capital
- In uncertainty do we choose multi-tools – like the ‘Leatherman’, or single purpose tools – like a number 13 spanner or both?