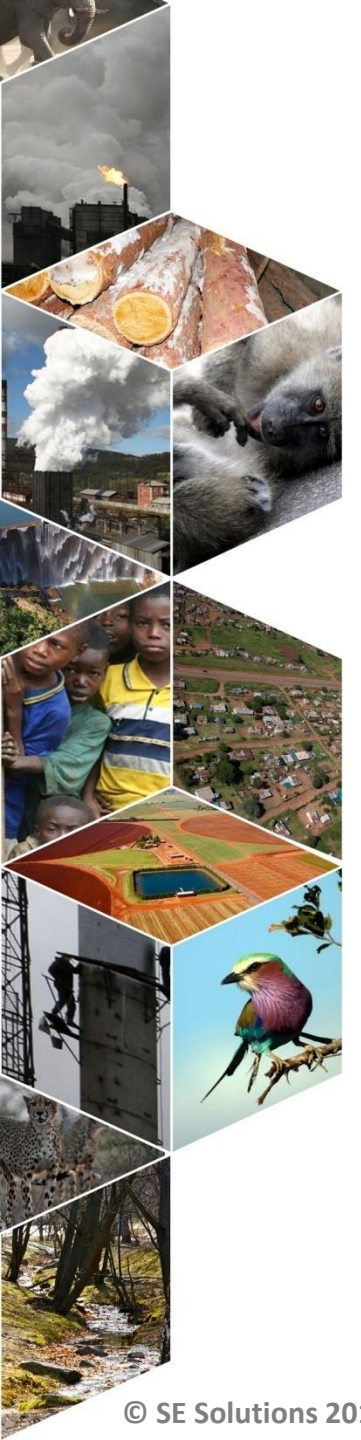


RUNNING ON EMPTY

ASSESSING THE SUSTAINABILITY OF WATER IN SOUTH AFRICA

Presented by

Sean O'Beirne

SE Solutions (Pty) Ltd

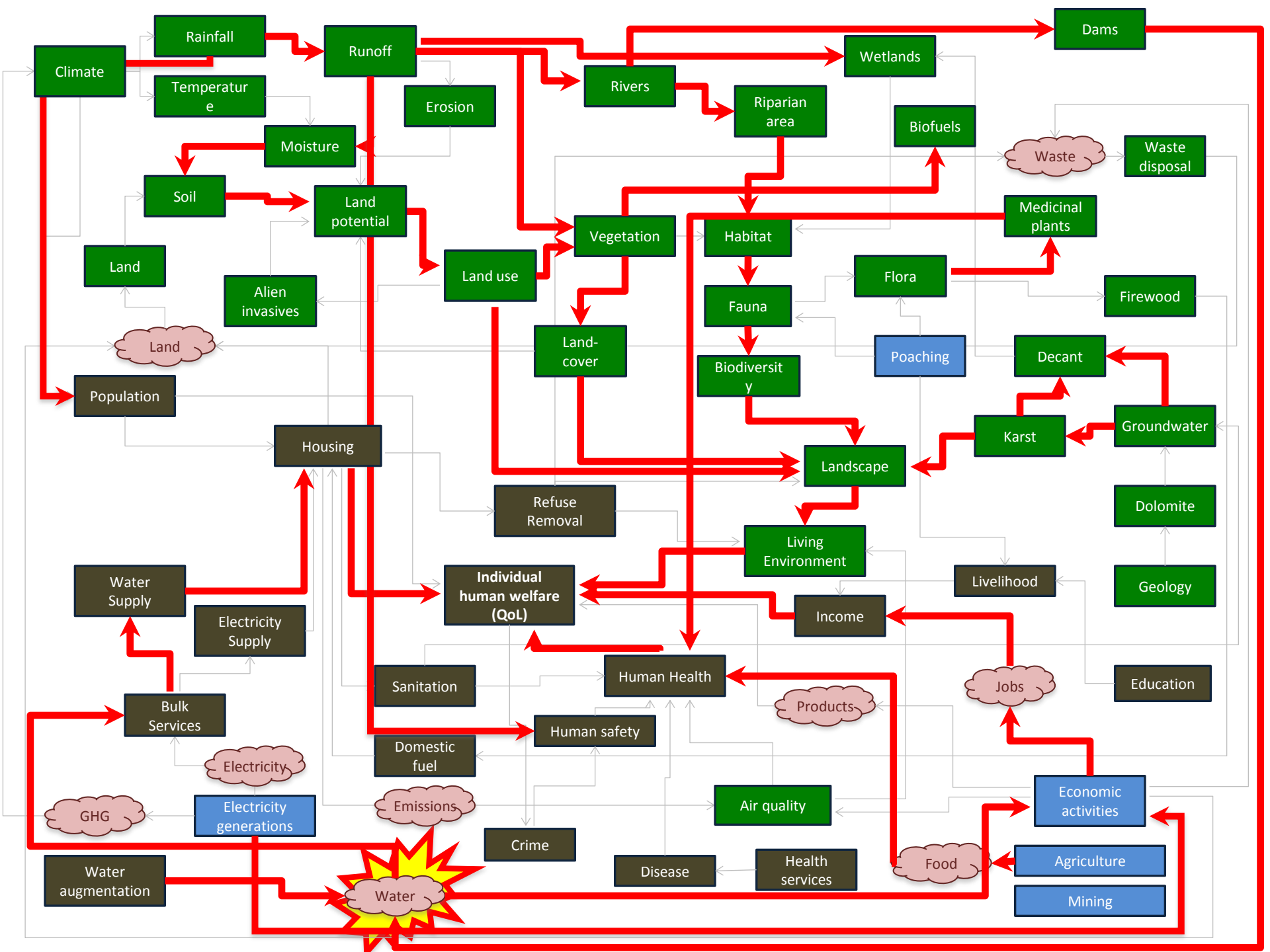
SE SOLUTIONS
Advancing Environmental Sustainability

OVERVIEW

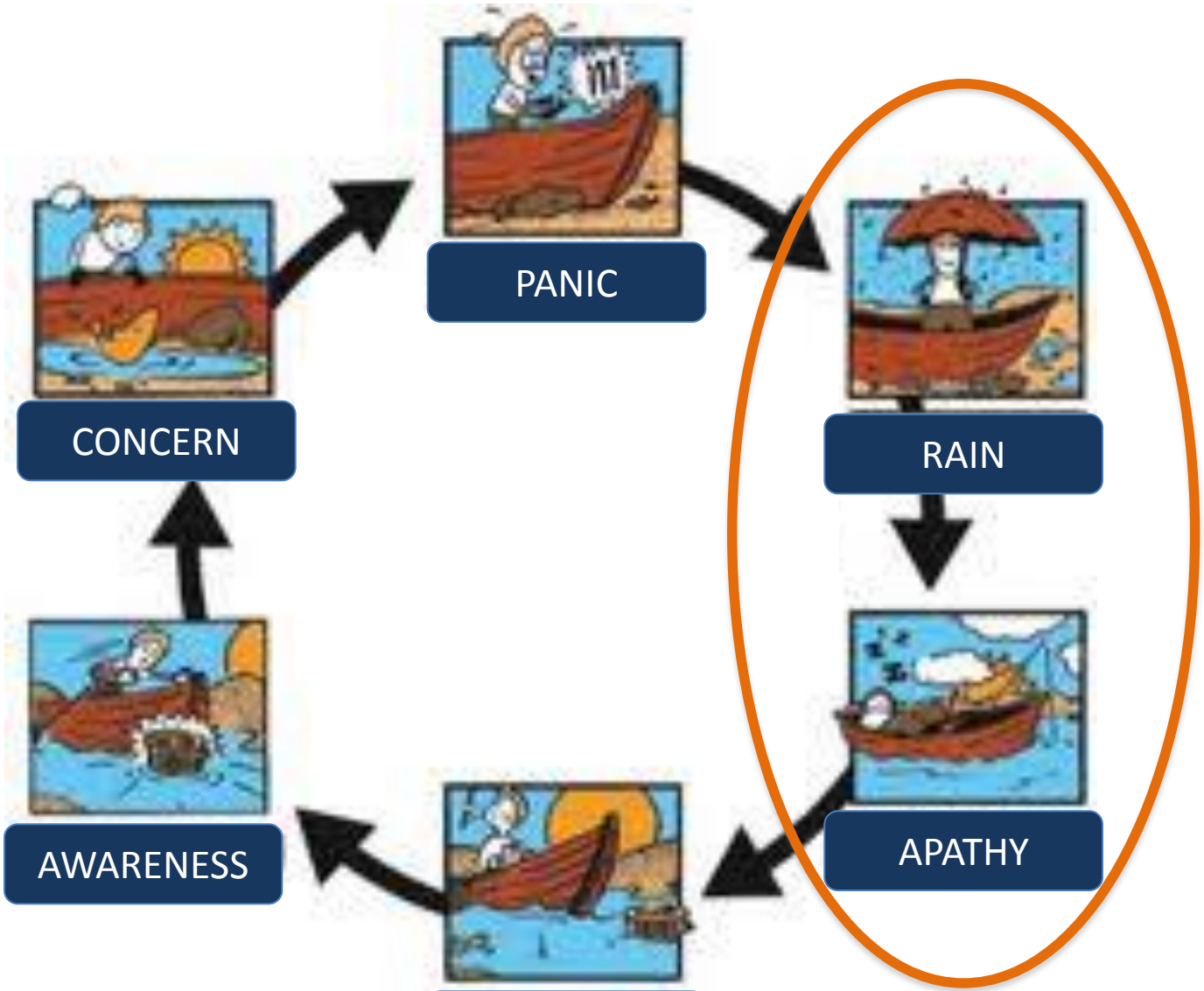
- Why the interest?
- Setting the context
  - Internationally
  - In South Africa
- A sustainability model
- Some sustainability scenarios

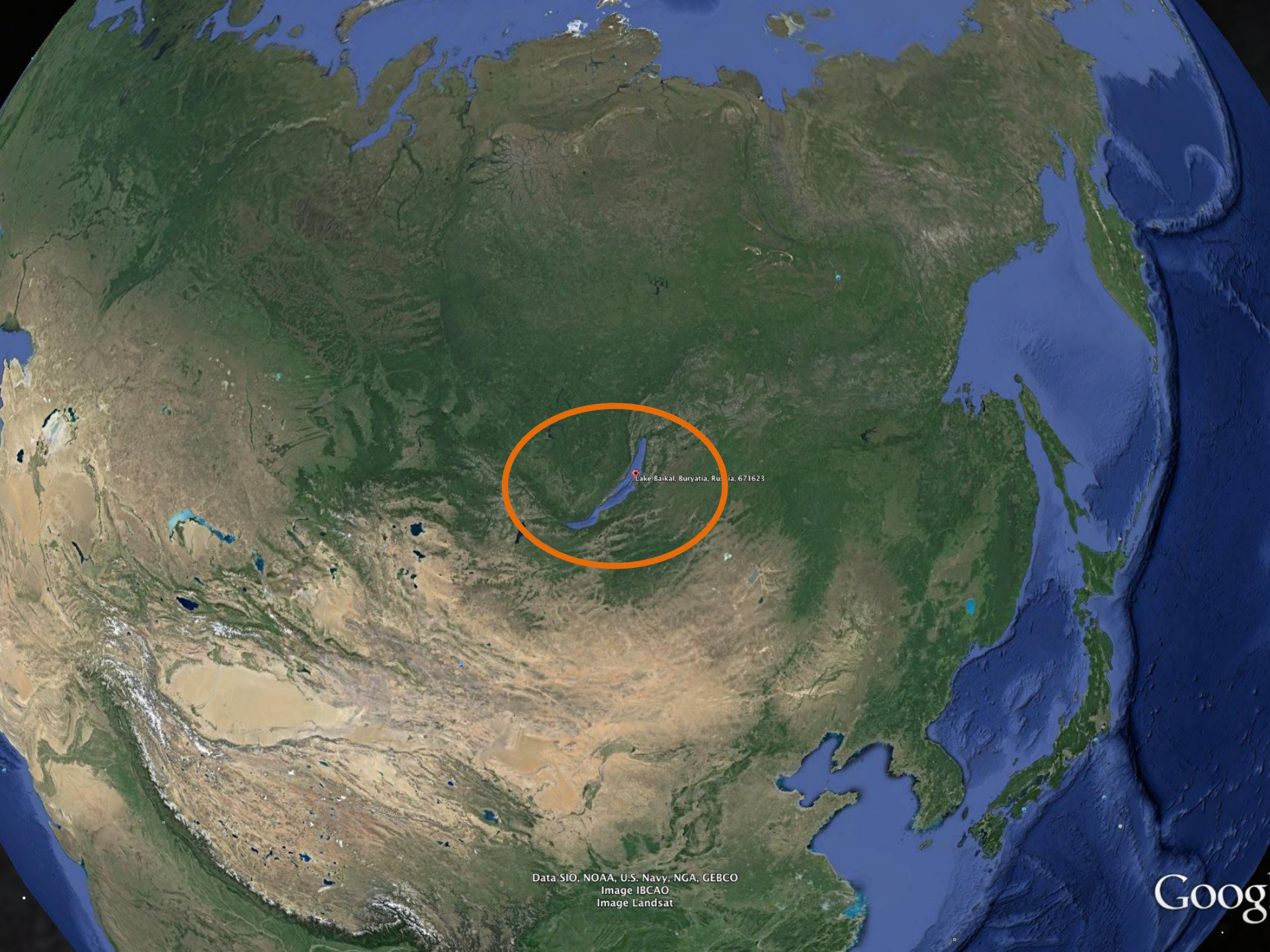
WHY THE INTEREST?

- ‘Rotating the Cube - Environmental Strategies for the 1990s’
- Several environmental Outlooks where the picture on water is bleak
- An apparent disjuncture between the information that is out there and a sense of concern
- No sense of urgency
- The hydro-illogical cycle
- A dire need for, but no sense of minimalism – ‘mms versus kms’
- An earnest and sincere desire to be proven wrong.


Rainfall
Climate
Runoff
Temperatur e
Erosion
Rivers
Wetlands
Dams
Riparian area
Biofuels
Moisture
Waste
Waste disposal
Soil
Land potential
Vegetation
Habitat
Medicinal plants
Land
Land use
Flora
Alien invasives
Fauna
Firewood
Land
Land-cover
Poaching
Decant
Biodiversit y
Population
Karst
Groundwater
Housing
Landscape
Refuse Removal
Dolomite
Living Environment
Water Supply
Individual human welfare (QoL)
Livelihood
Geology
Electricity Supply
Income
Sanitation
Human Health
Jobs
Education
Bulk Services
Products
Human safety
Domestic fuel
Electricity
Economic activities
GHG
Electricity generations
Emissions
Air quality
Crime
Water augmentation
Disease
Health services
Food
Agriculture
Water
Mining

THE HYDRO-ILLOGICAL CYCLE

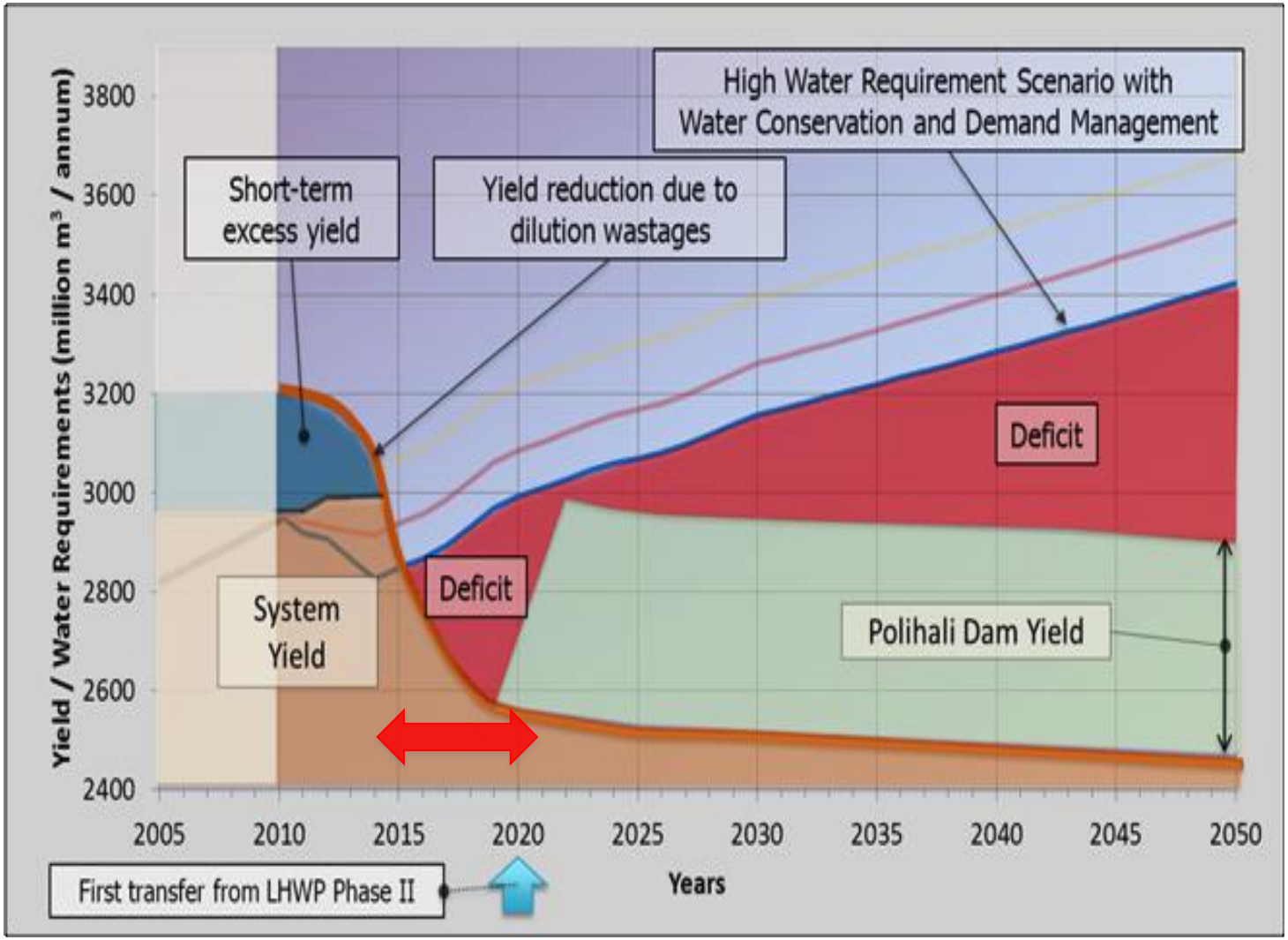



Lake Baikal, Buryatia, Russia, 671623
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image IBCAO
Image Landsat
Goog

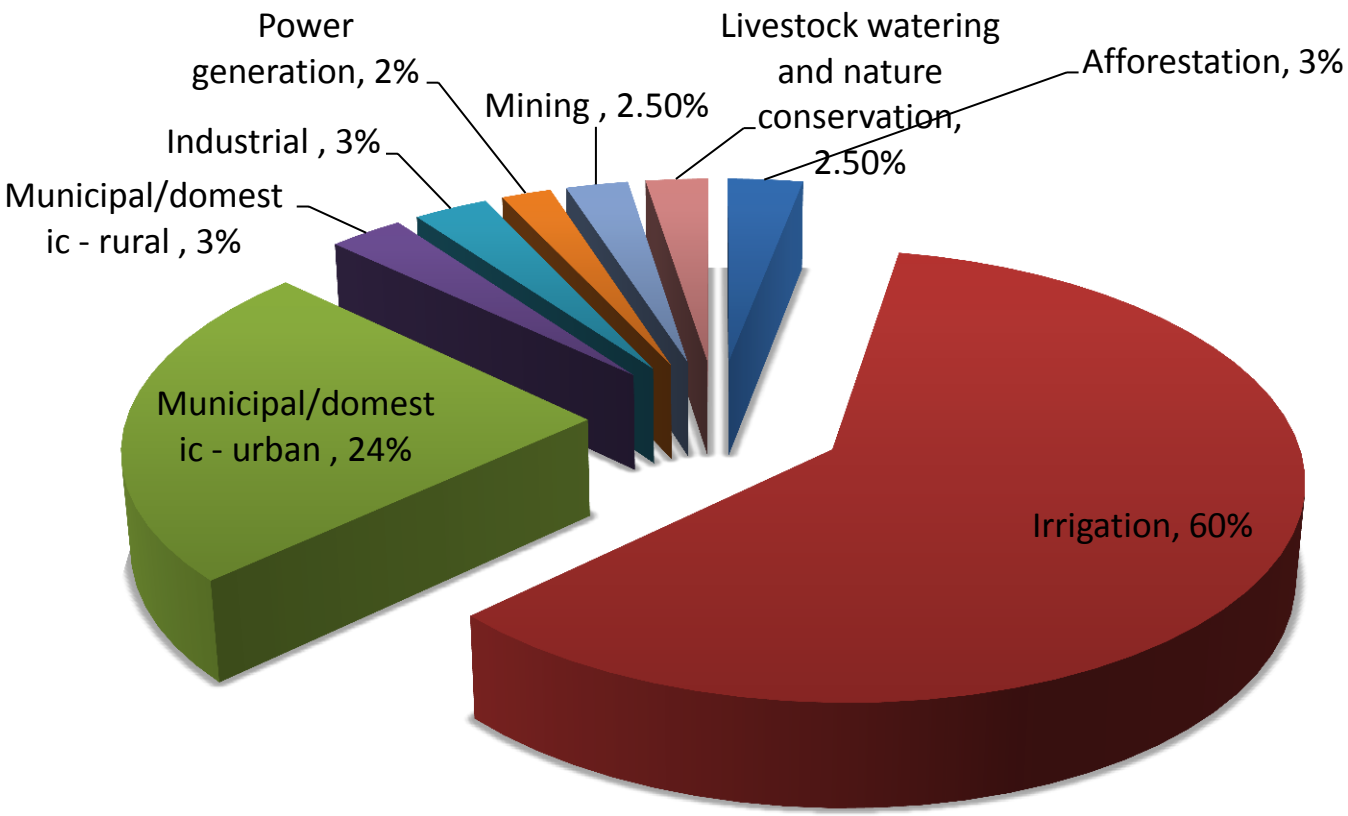
CONTEXT (NWRS2)

- 30th driest country in the world – but less water per capita than drier countries;
- 16 consecutive years of above average rainfall in summer rainfall regions
- 10 billion m^3 of water with 98% assurance of supply
- Mean annual runoff of 49 billion m^3 – 25% required for ecological reserve
- Non-revenue water at between 35% and 50% - water use not metered by agriculture
- 50% of our water comes from 8% of the land.

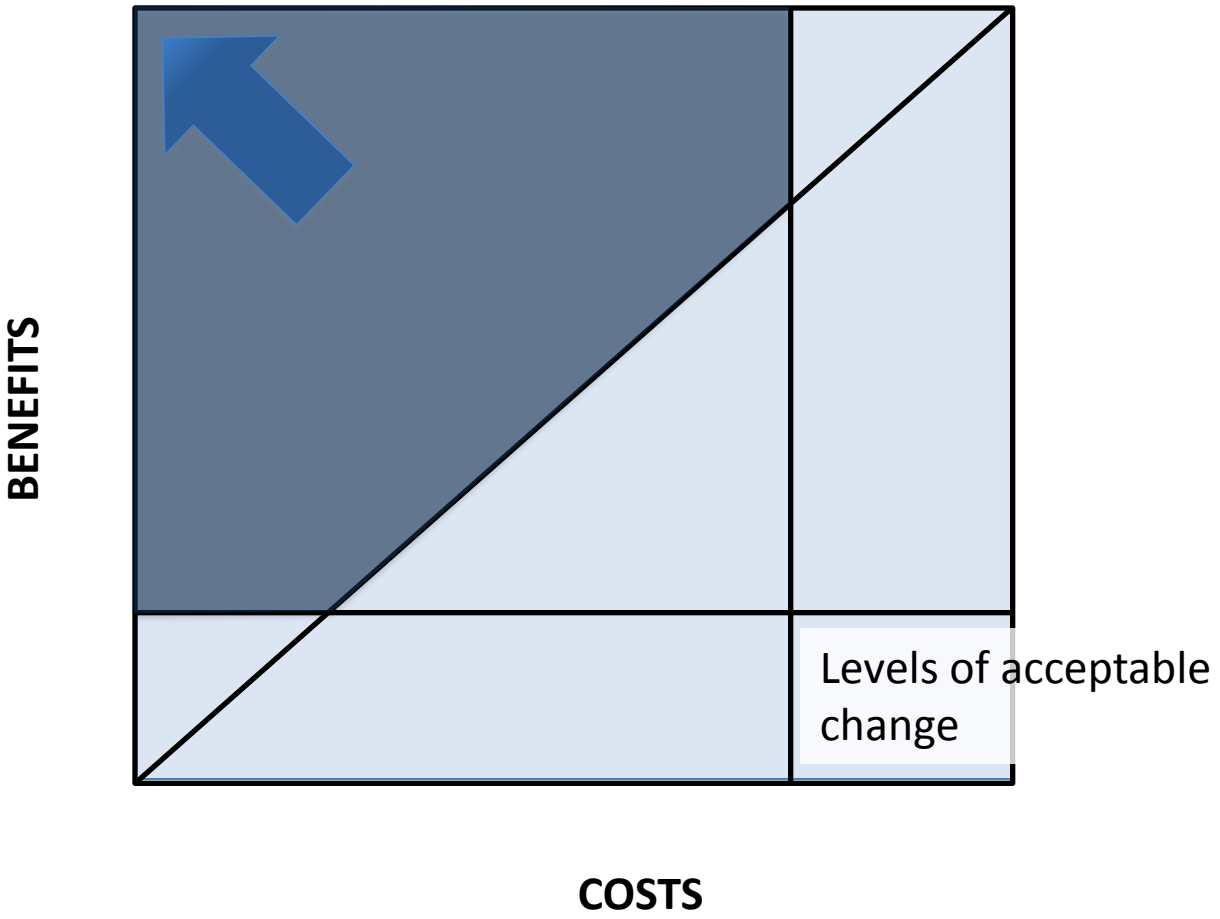
CONTEXT



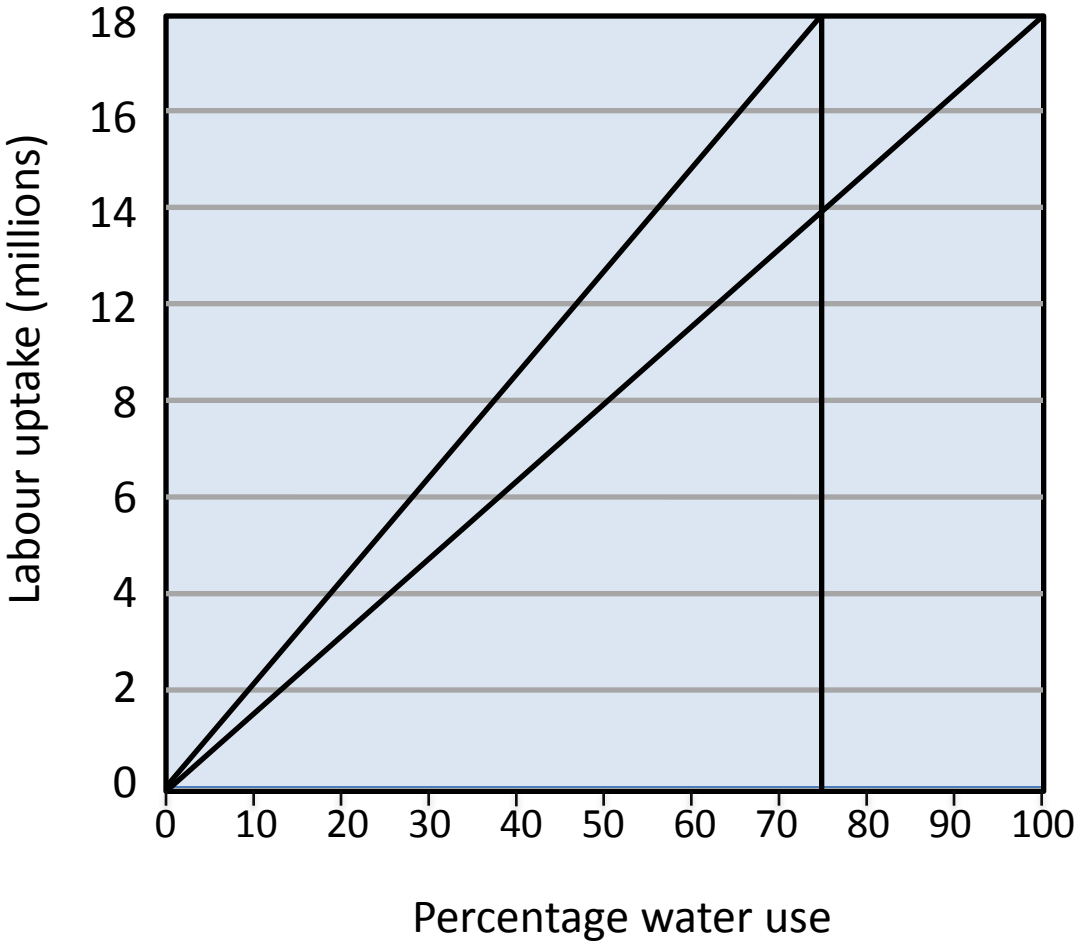
CONTEXT (NWRS2)



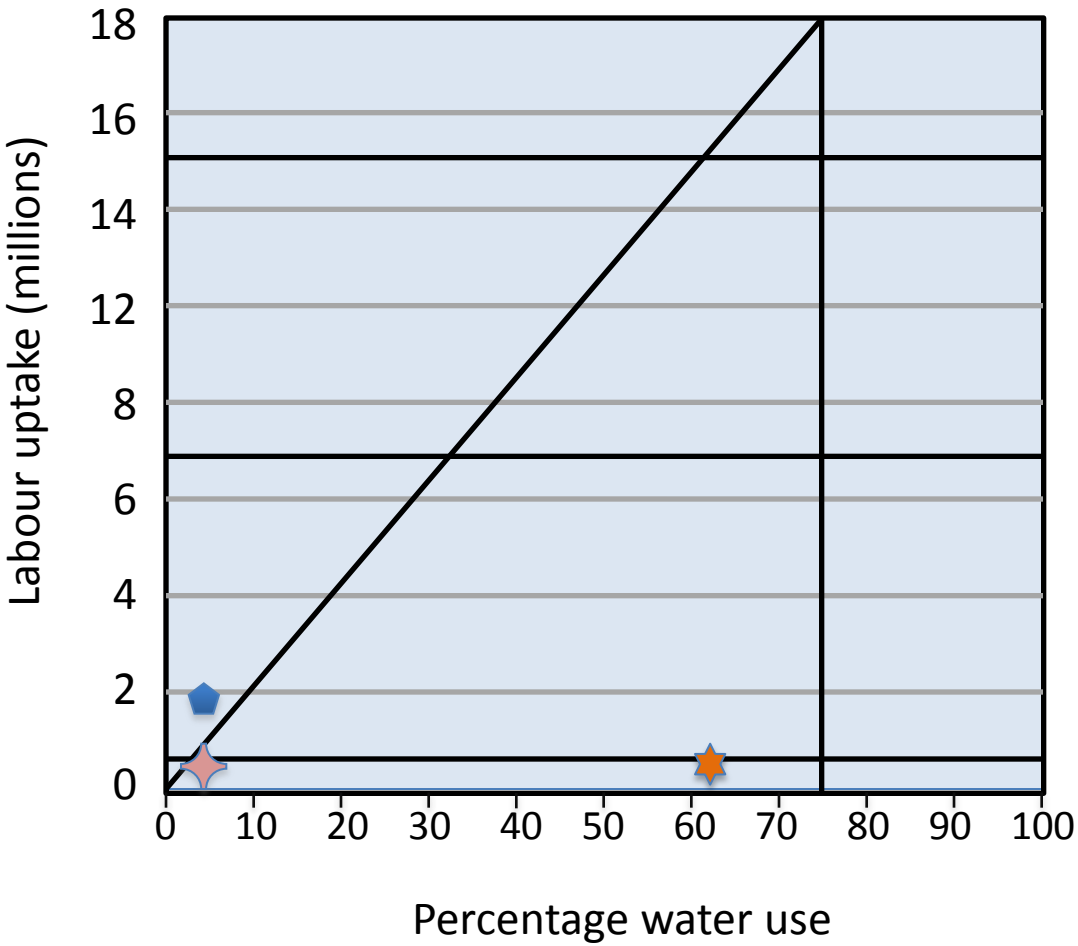
A SUSTAINABILITY MODEL



SUSTAINABILITY APPRAISAL



SUSTAINABILITY APPRAISAL



CONCLUDING COMMENTS

- We don’t have the time
- The climate change dichotomy
- Agriculture a sacred cow (chicken, maize, wheat, sorghum, barley, fruit etc.)
- Got to stop the wastage as an immediate priority
- Got to protect the ecological reserve
- Got to change our paradigms.

SOURCING DATA

STATS SA