

### 3R - Water Recharge, Retention, and Re-use

*Climate Change Adaptation and Water Management Made Practical*



*Recharge*



*Retention*



*Re-use*



**Water recharge,  
retention and re-use:  
3R solutions for water  
and food security in  
water scarce areas**

Stockholm, Monday 17<sup>th</sup> August 2009

Moderator and Chair  
Prof Richard Carter, WaterAid

# Present dangers

Reliance on highly variable rainfall for crop and livestock production

Heavy dependence on unreliable and poor quality open drinking water sources

Land and soil degradation

Falling crop yields





# Climate change

Uncertainty about direction and change of rainfall and water resources

Likely increased intensity of rainfall

Likely increased frequency of floods and droughts

The greatest impact on the most vulnerable

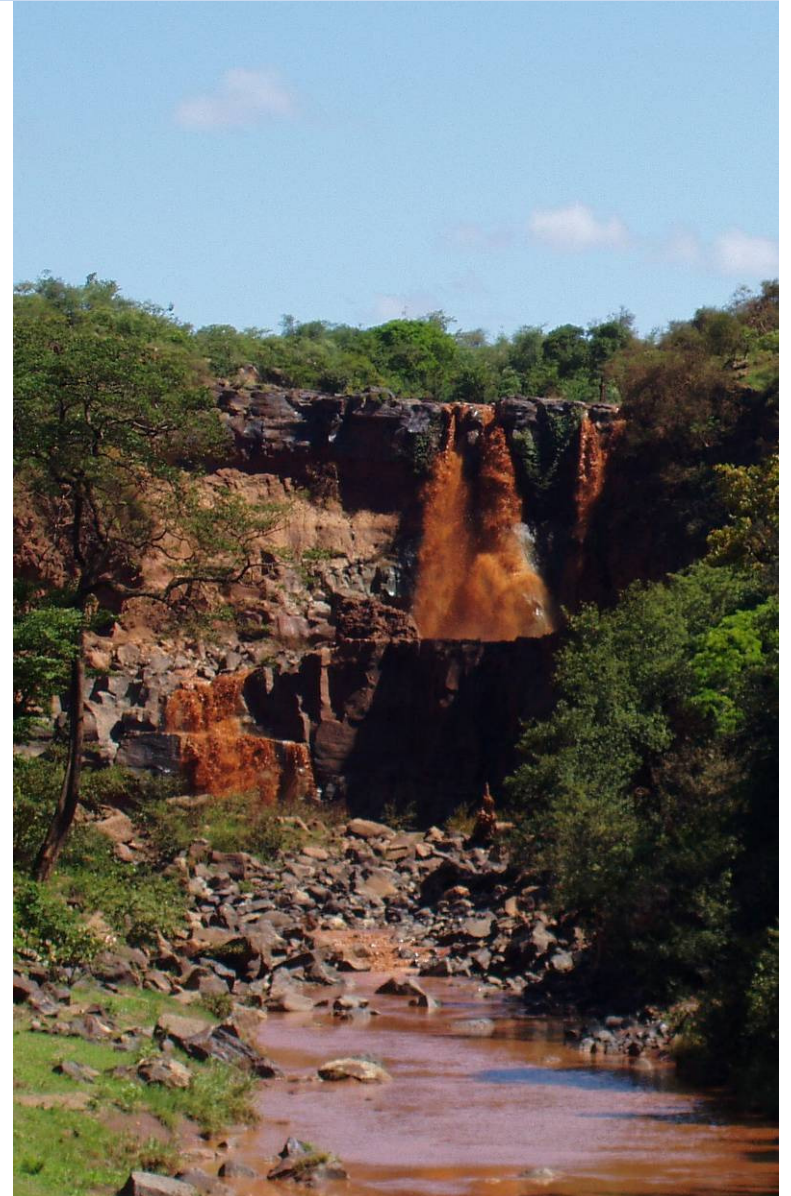


# Demographic change

Much greater certainty about growth and urbanisation – increased intensity of urban water demands

Increased food needs – rural and urban

Increased pressure on land



# Imperatives

More crop per drop and more crop per hectare

Better use of rainfall at or near the point where it falls

More intelligent use of water storage in rainwater tanks, surface reservoirs, soil, shallow and deep groundwater



(Re-) learning how to manage land and water in an integrated manner



# Some figures

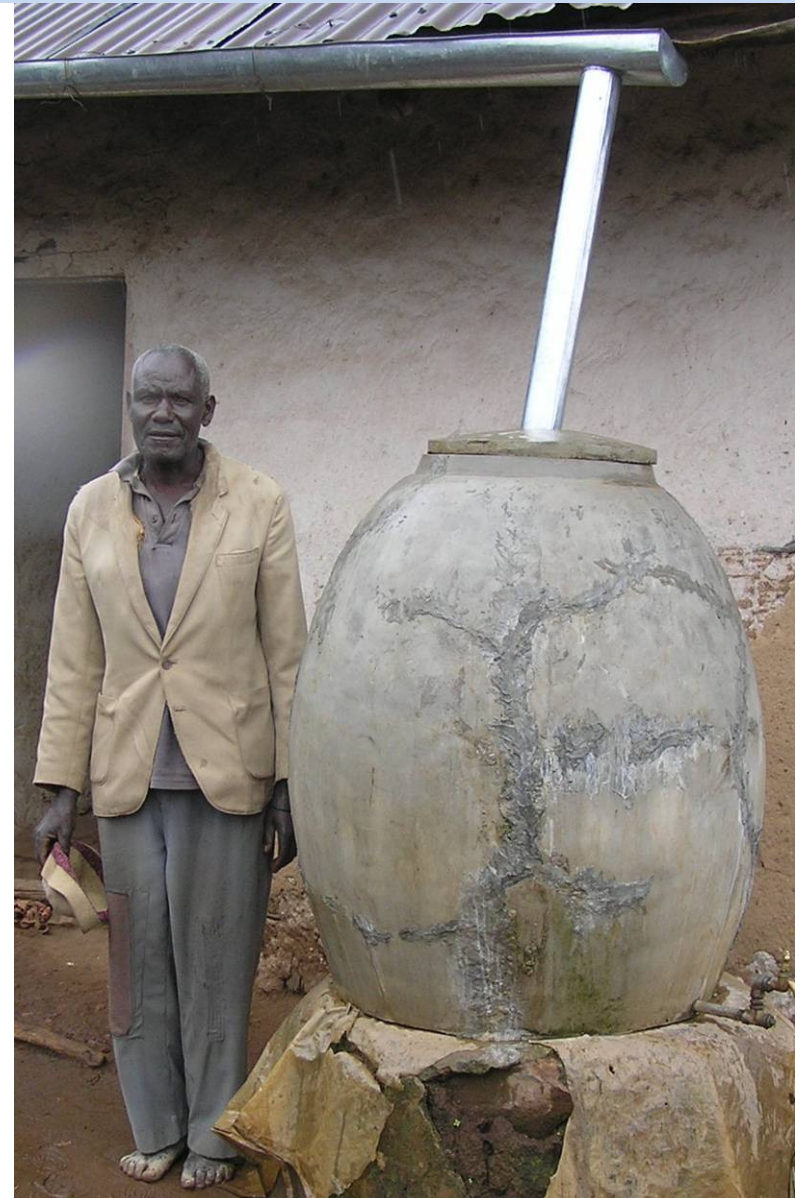
Reservoir storage per capita

- Ethiopia  $43\text{m}^3$
- South Africa  $750\text{m}^3$
- North America  $6150\text{m}^3$

Village ponds or domestic rainwater storage could add  $5\text{m}^3$  per person

An additional 10mm soil water storage over 1ha per household could add  $20\text{m}^3$  per person

Each additional 10mm groundwater recharge could add  $200\text{m}^3$  per person



# Capturing opportunities

A wide range of affordable technologies

The approach emphasises sound management of land and water

Both rural and urban opportunities

A need to extend access and scale up massively





# 3R Seminar

Overview presentations

Responses by Ministers and AMCOW

Field experiences

Extending alliances and partnerships

Going to scale



**Communicating the concept – exemplifying  
the approach – exploring wider access**



# The missing links

The science and technology make sense.

Water users and farming households need domestic water, livestock water, soil water.

But the missing link is in the institutional, financing and policy arrangements for going to scale.

