

Institutional Strengthening for Water Management in Rwanda

Sir David King FRS

Senior Strategy Adviser to the President of
Rwanda,

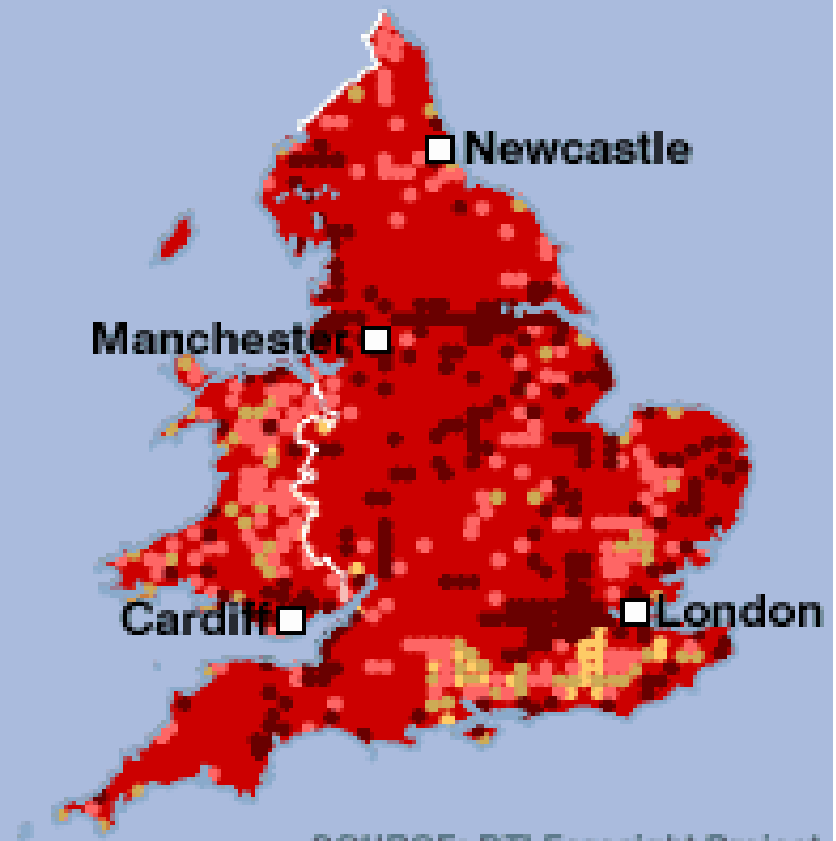
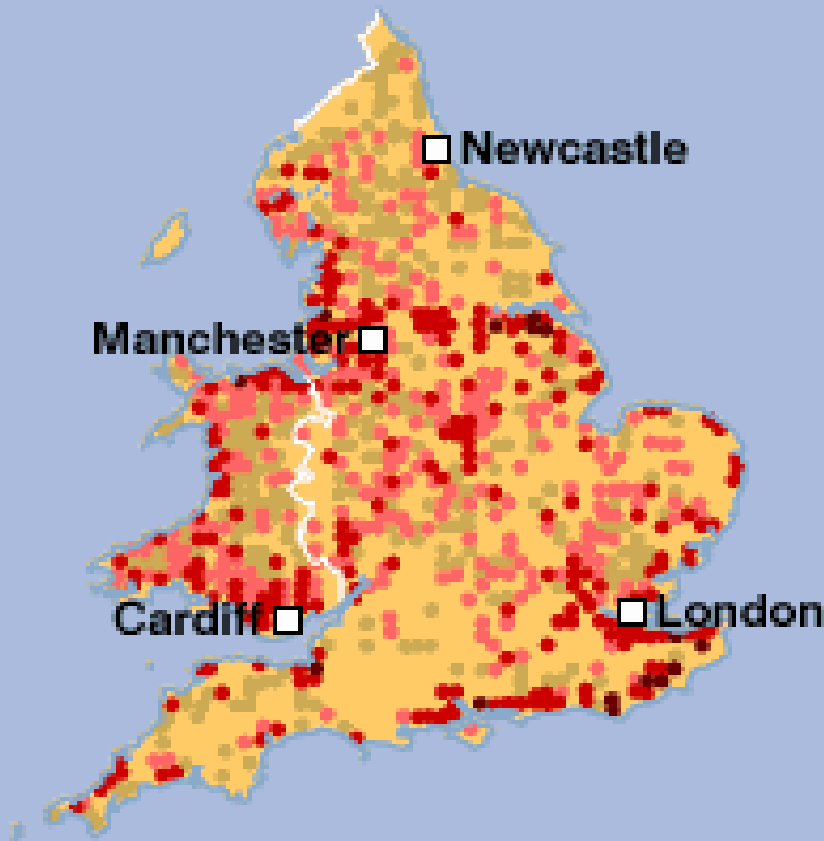
And Affiliate Partner at SYSTEMIQ Limited

IWRM Water for Growth Rwanda

Marriot Hotel Kigali 20th March 2019

Best case scenario

Worst case scenario



SOURCE: DTI Foresight Project

Change in risk of flooding damage (from 2004)



... causing dangerous landslides, topsoil loss, and more expensive hydropower



Dangerous Landslides



Topsoil loss

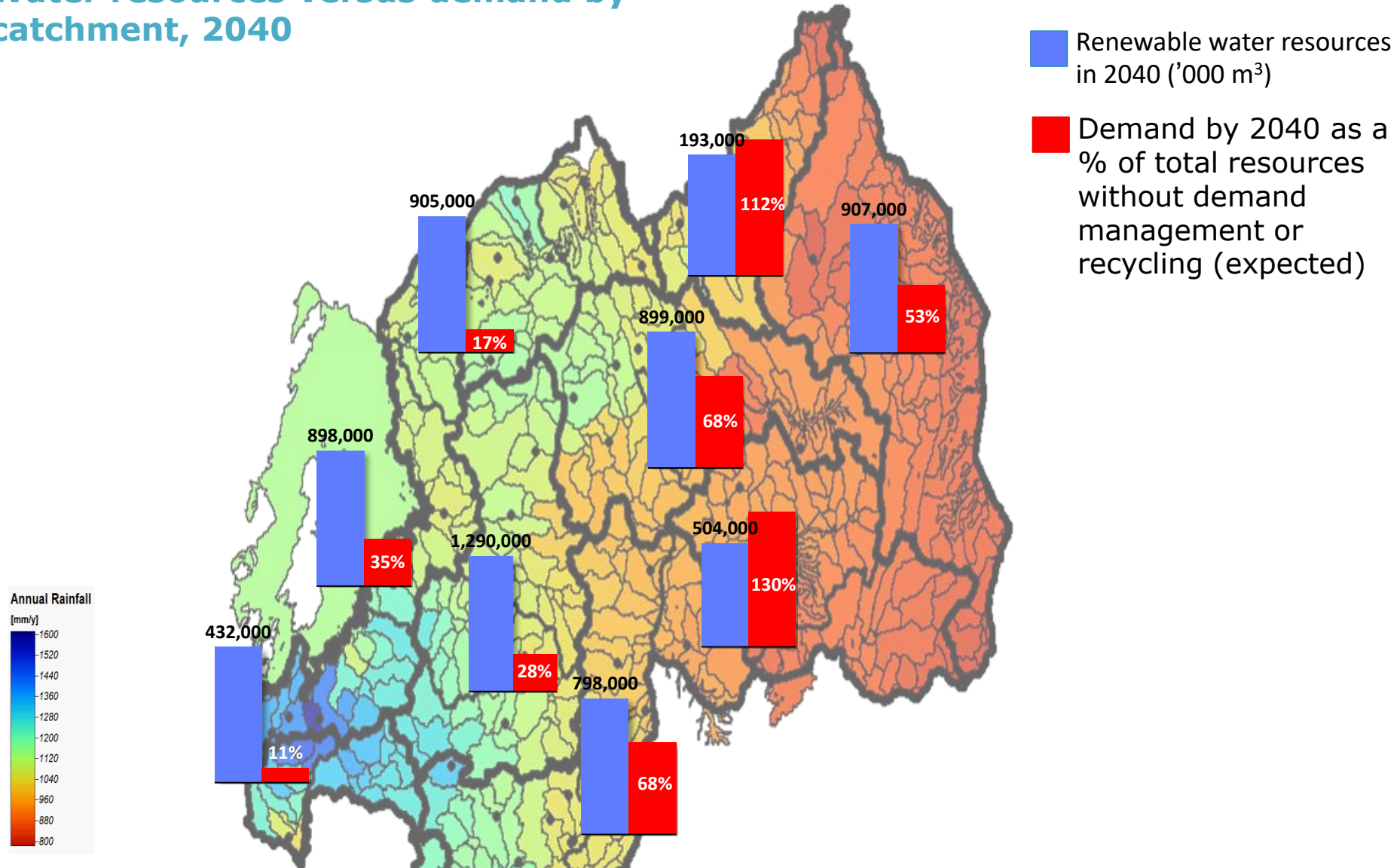


Energy lost due to sedimentation



The East and Kigali will face severe water shortages by 2040 if not adequately managed

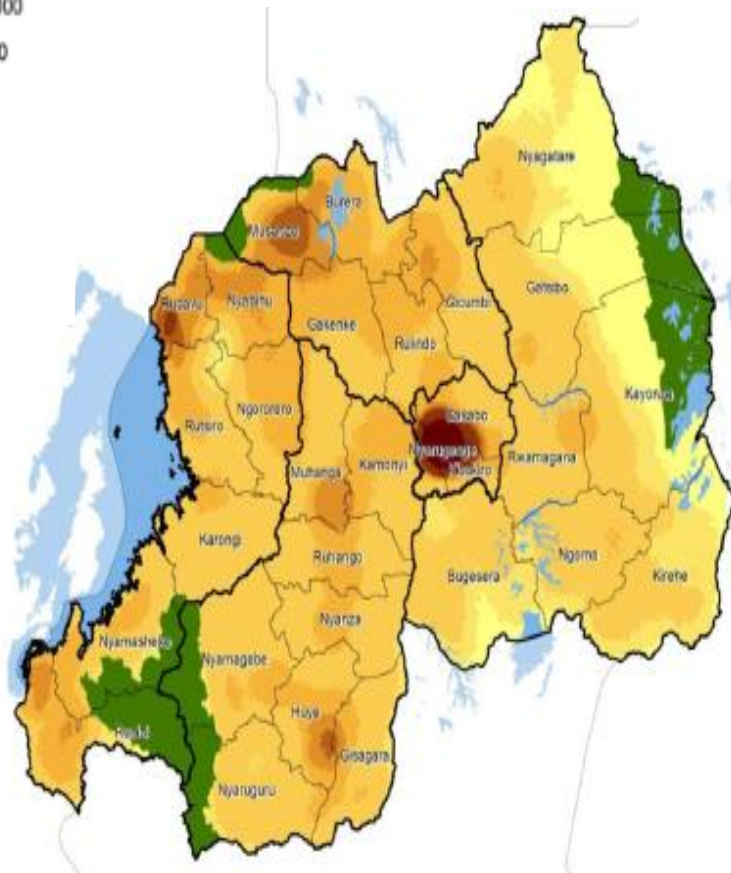
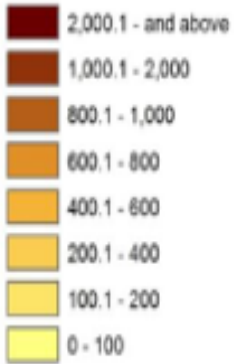
Water resources versus demand by catchment, 2040



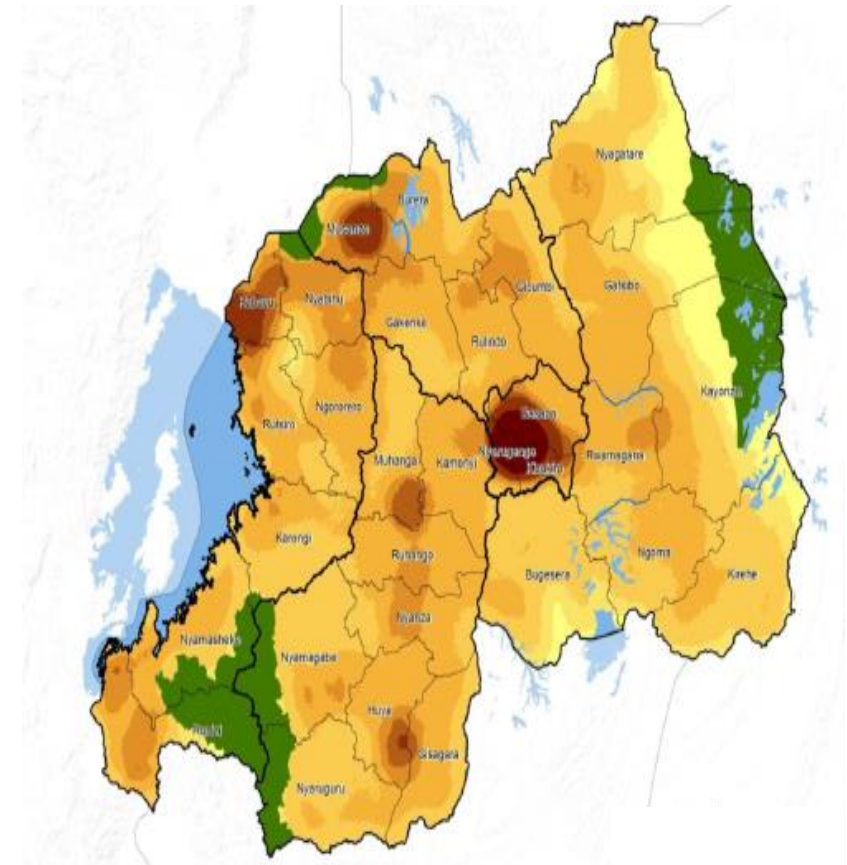
Source: Rwanda National Water Plan; FAO
http://www.fao.org/nr/water/aquastat/infographics/Stress_eng.pdf

Population density is highest in the North-West and in Kigali, and is continuing to intensify

2002



2012



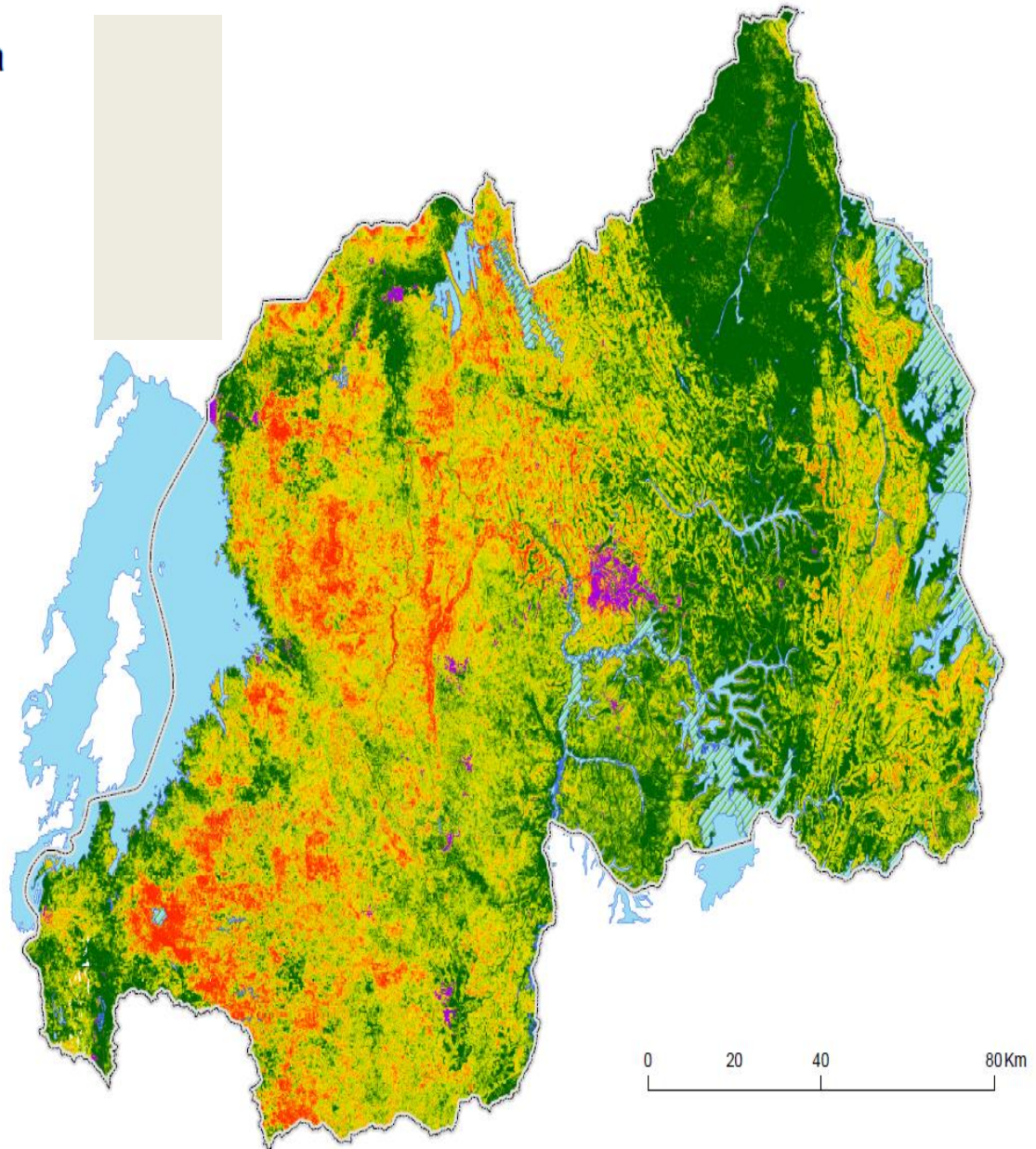
Source: Rwanda Population & Housing Census, 2012

Meanwhile the West faces high risks of erosion...

Soil erosion risk in Rwanda

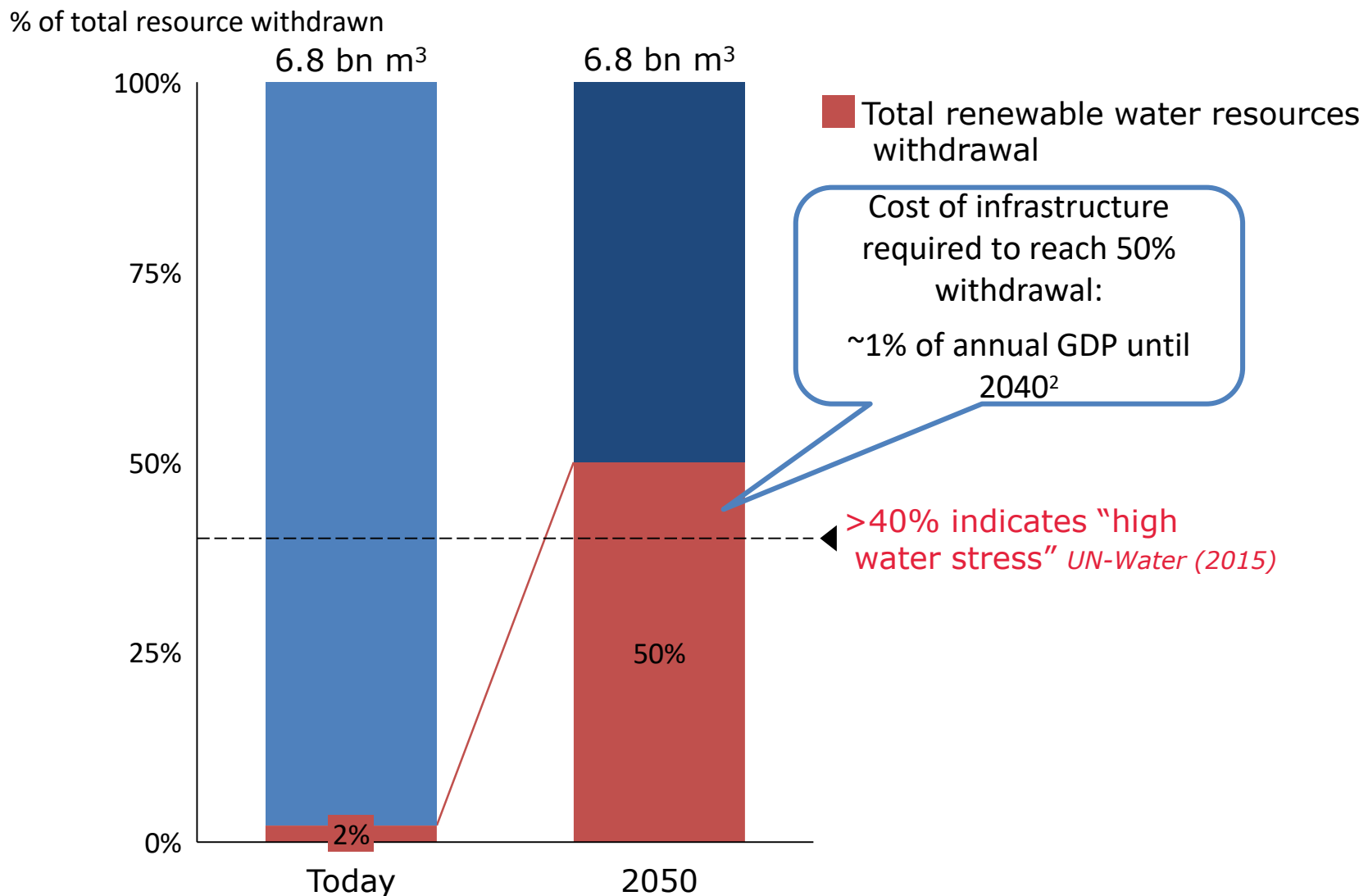
(t/ha/year)

- Very low (0 - 5)
- Low (5 - 10)
- Moderate (10 - 25)
- High (25 - 50)
- Very high (50 - 100)
- Extremely high (>100)



Source: IWRM Programme Rwanda; World Bank;

Rwanda needs to increase water withdrawal to ~50% of renewable resources by 2040



1 TRWR figure based on 2012 data and 2040 projections provided by the Ministry of Environment. TRWR is assumed more-or-less constant until 2040. The TRWR/capita assumes a population of 10.2M in 2012.

2 Assumes 10% YoY GDP growth, infrastructure cost of \$3.7/m³ based on Muvumba dam, population of 12M today and 18.7M in 2040

Source: Water stress figure: FAO, Rwanda figures: provided and endorsed by GoR



Sustainable water management is the critical foundation for economic growth and social prosperity

Note: 2.6% figure extracted from Min of Dis's report on flood damages. Dave pls check you're OK with this

78%
of NST1 outcomes
impact or are
impacted by water

IWRM Programme Rwanda

2.6%
of 2018's GDP spent
on flood disaster
recovery

MINEMA



Source: [sources]

SYSTEMIQ



The new **Water Resources Board** will manage:

- **Water allocation** to prevent disputes and support growth (supply/demand balance)
- **Water quality** to ensure clean rivers and promote investment
- Catchment restoration and **erosion control** to minimise landslides and topsoil loss
- **Flood & drought infrastructure planning** to minimise the impact of adverse weather events on the country
- **Cross-sectoral and international relations** to minimise conflict