



ACTUARIAL SOCIETY
SOUTH AFRICA

CLIMATE CHANGE in a SOUTH AFRICAN context

15 August 2024



AGENDA

- Climate change debate
- Status of Climate Change legislation in SA
- What do institutional investors consider
- What should you as a professional be considering
- What should you as an advisor be doing in terms of CC transition Plans
- A system change: What are you doing In your personal Life? What more can you be doing?





CLIMATE CHANGE in SOUTH AFRICA

Top Risk in the the SARB FSR Report June 2024





LEGISLATIVE IMPERATIVES

Green Taxonomy

Climate change Act promulgated 24/4/24. No effective date

European Border Equalisation Tax





HISTORY

1988

IPCC

2015

Paris Agreement

2017

TCFD

2022

JSE Sustainability & CR
Disclosures



*How old will your child be in 2050,
what planet will he inhabit?*

CSIR

Climate Change Scenarios

- High-resolution climate model simulations of present-day climate and projections of future climate change over South Africa
- Most accurate view of rainfall, wind and temperature change in SA



CSIR MODEL

Combines 6 global models
DEVELOPED BY IPCC to create a
very sophisticated model for
developing scenarios for climate
outcomes.

Fun Fact:

simulations were run on the Super
Computers at the High Performance
Centre Computing at the CSIR's
Meraka institute.

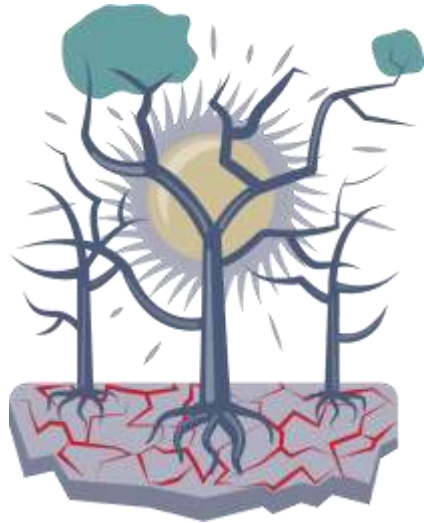
Model developed for 50km resolution,
and then enhanced for 8km resolution

Low Mitigation Scenario - RCP 8.5

High Mitigation Scenario - RCP 4.5

RISKS OF CLIMATE CHANGE

- 1.extreme weather conditions
 - 2.climate action failure
 - 3.Man-made damage
 - 4.infectious diseases
 - 5.biodiversity loss
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TEMPERATURE

- Rapid rise: 1.5 to 2 times the global rate.
- Hot days increase by 50% in NW & Limpopo.



RAINFALL

- General decrease across Southern Africa.
- Increase over central interior & east coast.



EXTREME RAINFALL

- Extreme rainfall events are projected to increase in frequency, accompanied by lightning, hail, damaging winds and flash floods

SPECIFIC WARNINGS



IMPACTS – AGRICULTURE AND LIVESTOCK

Impacts on agriculture and livestock over the western interior and the Limpopo basin, → maize crop yields and livestock yield.

ACTION: significantly enhance food trade in southern Africa and internationally.



INCREASED ENERGY DEMAND

Increasing average temperatures over South Africa are likely to increase the household demand for cooling over the coming decades.

ACTION: increase supply of renewable energy.



PUBLIC HEALTH RISKS

Extreme heat poses significant health risks, especially for the poor and elderly living in informal settlements or rural areas with limited access to water and healthcare.

ACTION: the need for targeted public health interventions, improved infrastructure in vulnerable communities.

SPECIFIC WARNINGS



REDUCED RAINFALL – WATER SECURITY RISKS

Increased water scarcity and potential conflicts over shared water resources.

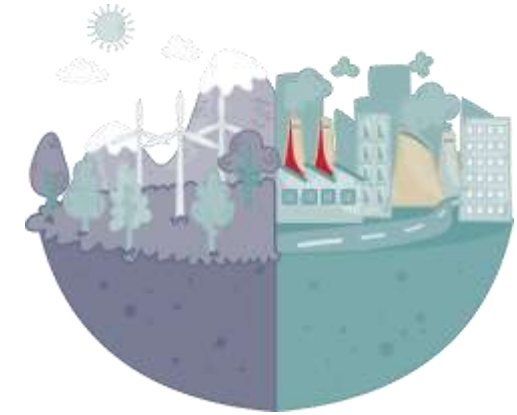
ACTION: Implement advanced strategies for shared basins to ensure equitable and sustainable water use.



EXTREME RAINFALL EVENTS

Increased risk of flooding and infrastructure damage in central interior regions.

ACTION: New Water Catchment Areas: Develop infrastructure to capture and store water from extreme rainfall events in central regions.

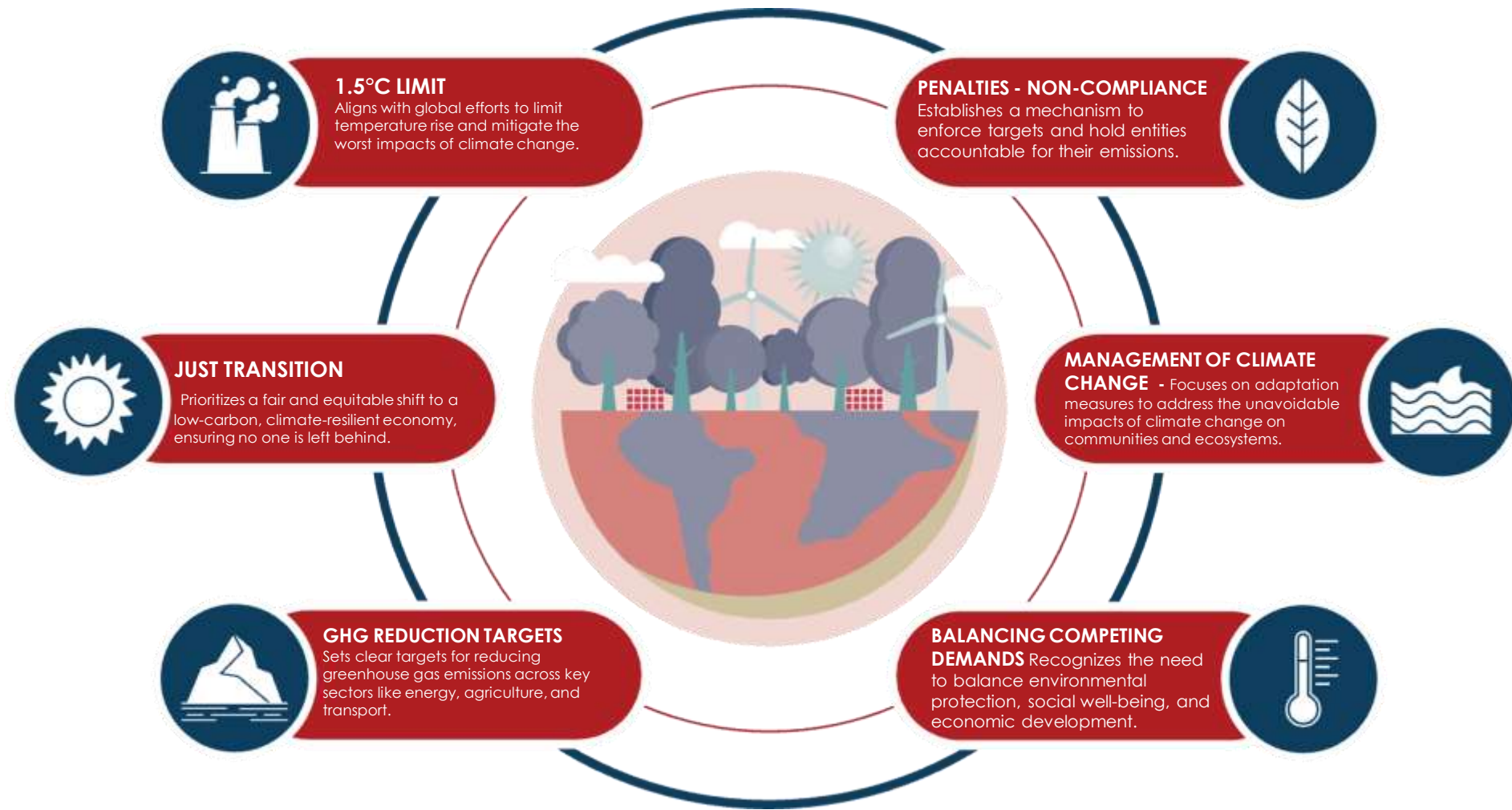


VULNERABLE SETTLEMENTS

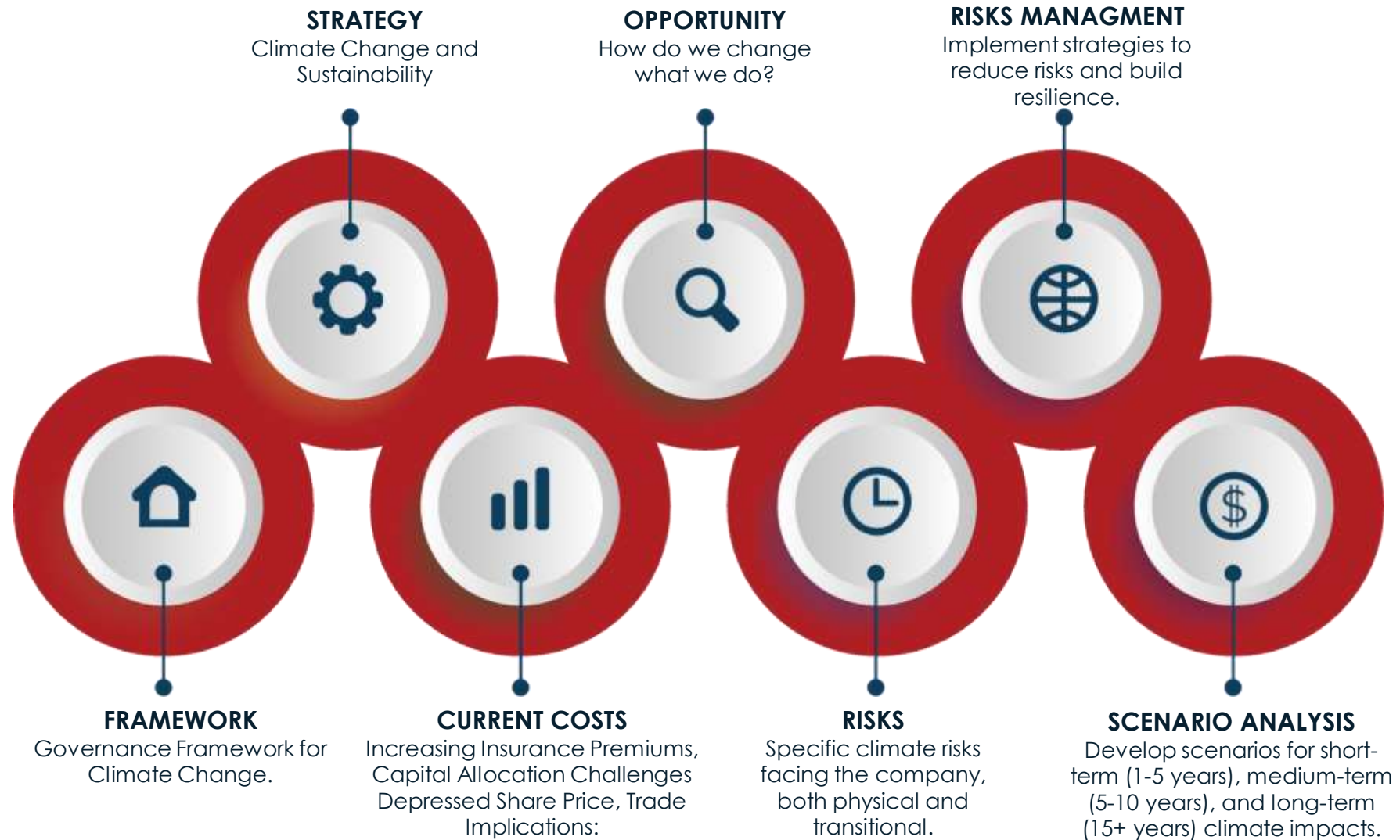
5% of settlements at extreme risk
22.5% at high risk due to climate change impacts.

ACTION: Invest in resilient infrastructure to protect vulnerable settlements from floods and droughts.

SPECIFIC WARNINGS



FOCUS AREAS FOR PROFESSIONALS





THREE CATEGORIES OF RISK

- Physical | Transition | Liability
- Understand over which timeframe the risk is likely to manifest.
- Understand materiality of the risks for your business.

EXAMPLES:

- Loss of Biodiversity (Dasgupta Biodiversity Review)
- Stranded assets
- STAKEHOLDER rejection



OPPORTUNITIES

- Portfolio Decarbonisation
- Avoided emissions / Carbon returns
- Climate Solutions

EXAMPLES:

- Capture and destruction of high impact Climate gasses



- Base-line Assessment
 - Setting Objectives
 - Education and understanding of Climate Risk
 - Health Risks for employees
 - Repricing of Health Risk products
 - Action – ARE YOU PRICING CAT RISK CORRECTLY?
 - For SA insurers – loss of global reinsurance capacity, expansion of NEJ reinsurers
 - Allocation of Resources
 - KPA's, setting KPI's – different measures of success
 - Mobilise Transition Finance – Capex, Opex
 - Monitoring and Reporting
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WHAT DO INVESTORS CONSIDER



- Disclosure (including assurance)
 - CDP
 - TCFD
 - Sustainability Reporting
- Ratings Agencies
 - FTSE / JSE
 - ISS
 - MSCI
 - S&P
- Are Sustainability KPI's included in STI and LTI?





- UNEP FI PSI
- ISSB S1 and S2 Not adopted in SA by JSE yet
- Scope 1, 2 and 3 Emissions



A SYSTEM CHANGE



WHAT ARE YOU DOING IN YOUR PERSONAL LIFE TO ADAPT FOR CLIMATE CHANGE?

WHAT MORE CAN YOU DO IN YOUR PERSONAL LIFE TO ADAPT FOR CLIMATE CHANGE?



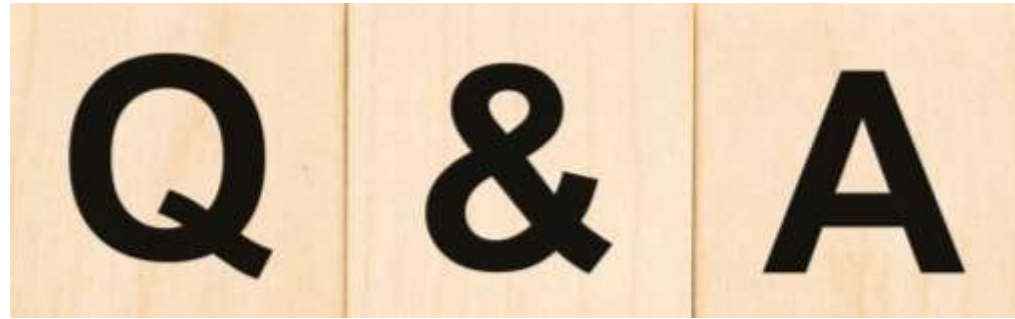
USEFUL LINKS

There are lots of excellent resources produced as a public good for everyone to use

CSIR SA Climate Change Scenarios

<https://pta-gis-2-web1.csis.co.za/portal/apps/GBCascade/index.html?appid=b161b2f892194ed5938374fe2192e537>

Climate Financial Risk Forum Guide 2023 (for scenarios)



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