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Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA

Science Forum SOUTH AFRICA

10 YEARS OF IGNITING CONVERSATIONS ABOUT SCIENCE 2025

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"Approaches to bridge existing gaps and overcome challenges in enhancing public understanding and awareness of the role of science and technology in relation to the natural environment.“

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University of Johannesburg

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Overview






- Interest in, and knowledge of, science and technology (S&T) are two indicators that provide an insight into the nature of the relationship between the public and science, and further influence the extent of science engagement (Bastos et al., 2019; Losi, 2023).

- The objectives of this study were to:

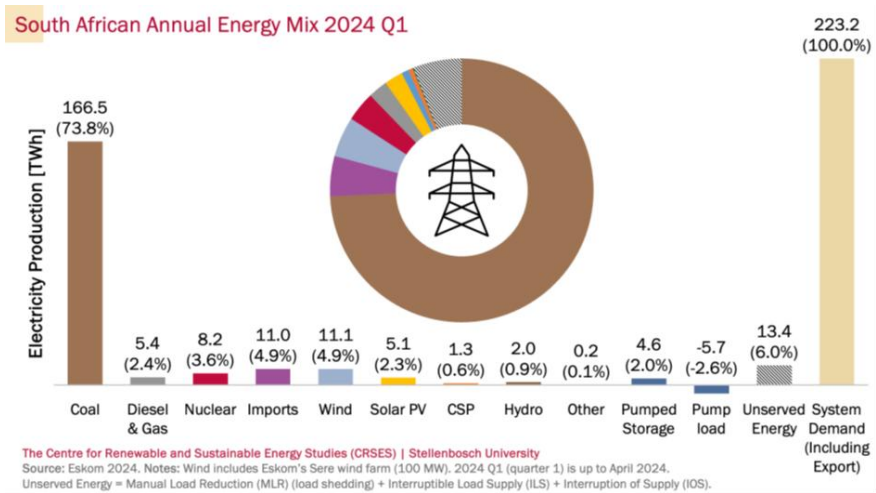
  - Establish the levels of awareness, interest, knowledge and concern of S&T and the environmental events.

  - Identify the characteristics of those who were more likely to be interested in and knowledgeable about the science and environment

  - Investigate the relationship between interest in and knowledge of S&T and knowledge and concern about the environment.

Overview

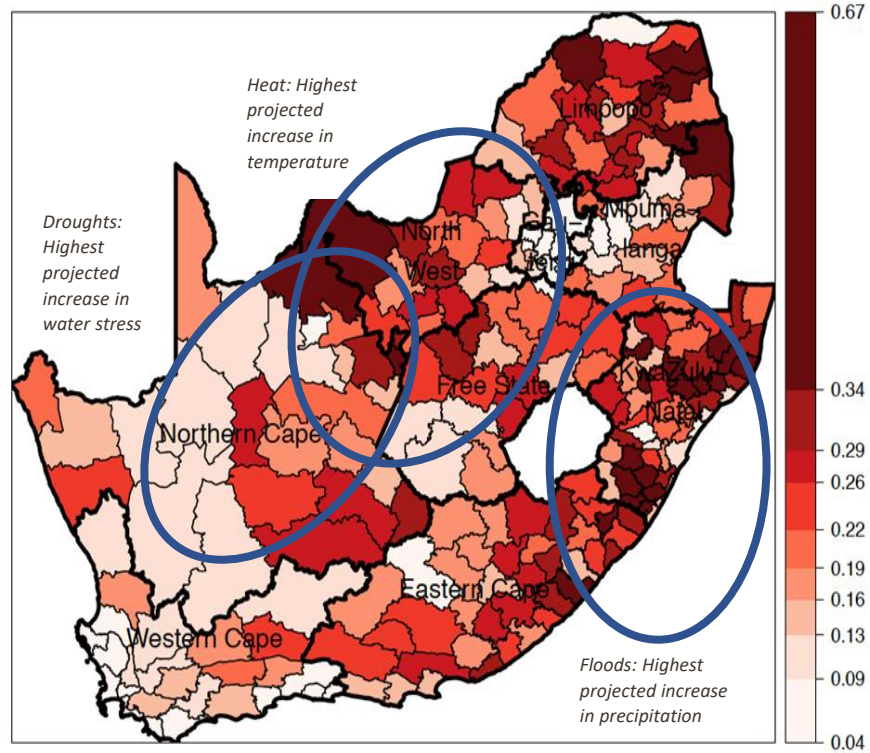
S&T may offer solutions to developmental challenges, improves the quality of life and wellbeing of individuals



Energy



Water



Climate Change

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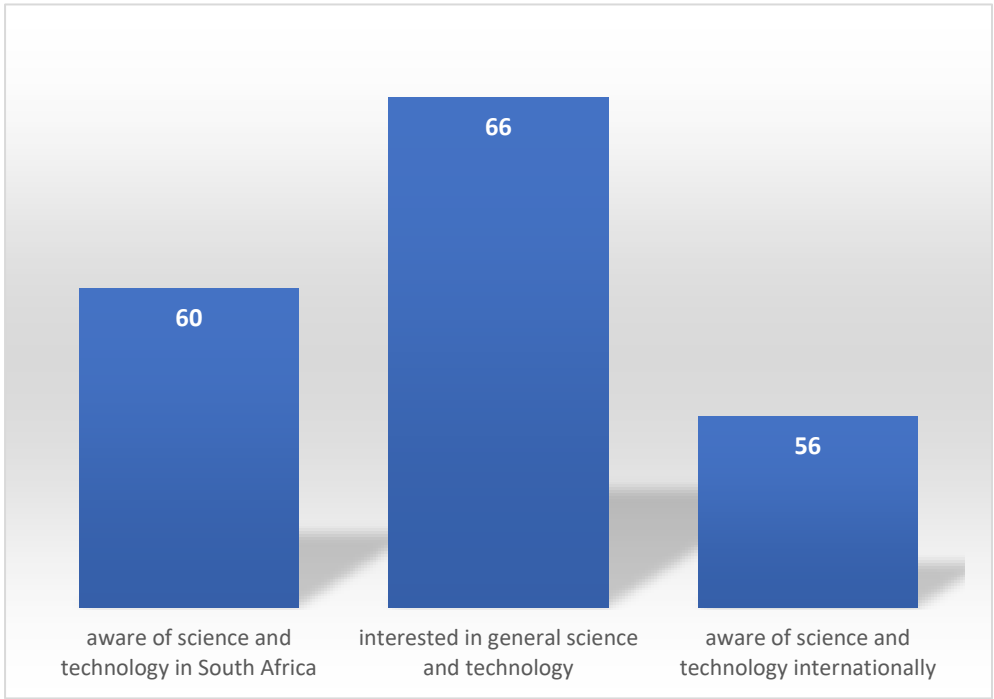
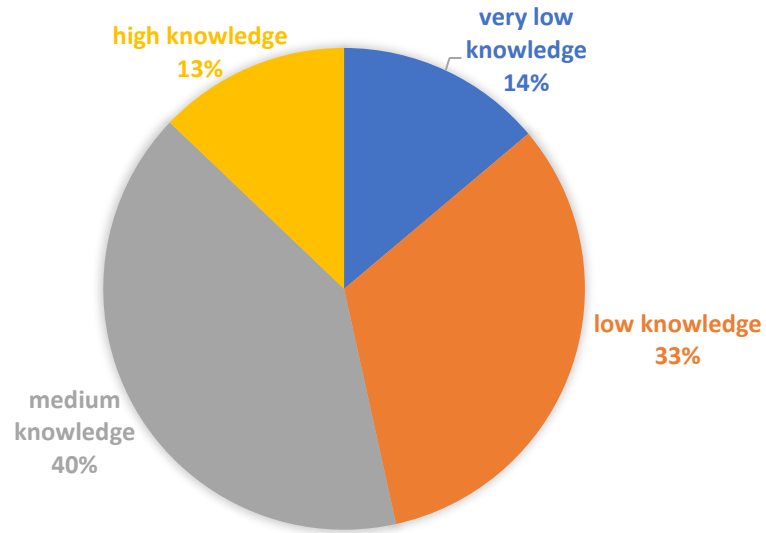
Science Knowledge

Awareness of, and interest in, achievements in S&T



Levels of science knowledge



Observations

Lower scores for cognitively demanding statements (antibiotics, genetics).

High scores for items that had dominated the news (vaccine, petrol).

General science knowledge amongst adults public needs to be improved.

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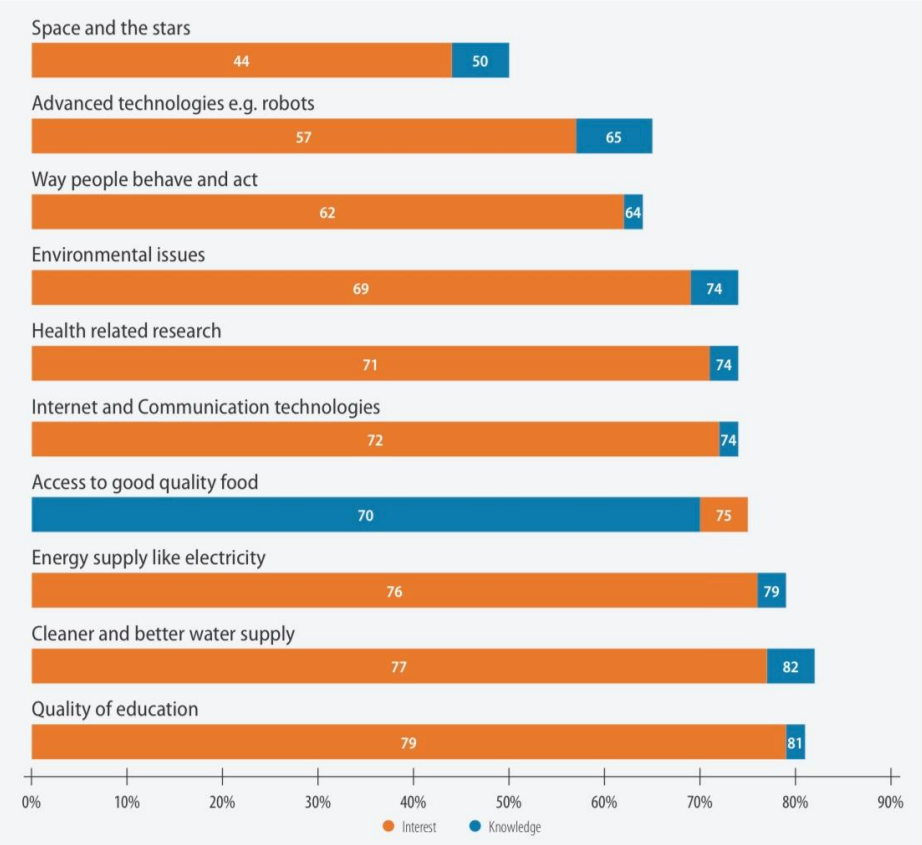
Priority Science Areas

The report explored the public interest in and knowledge of contemporary societal challenges that require an S&T response



Top areas for knowledge, and interest:
Water, electricity, Education.

Lowest levels of knowledge and interest
space and the stars, and advanced technologies

Responses reflect some of the unmet basic needs of the public related to service delivery that inform their daily experiences, as well as topics that dominate news cycles and social discussions

Levels: 47% (high knowledge); **57% (**high interest)

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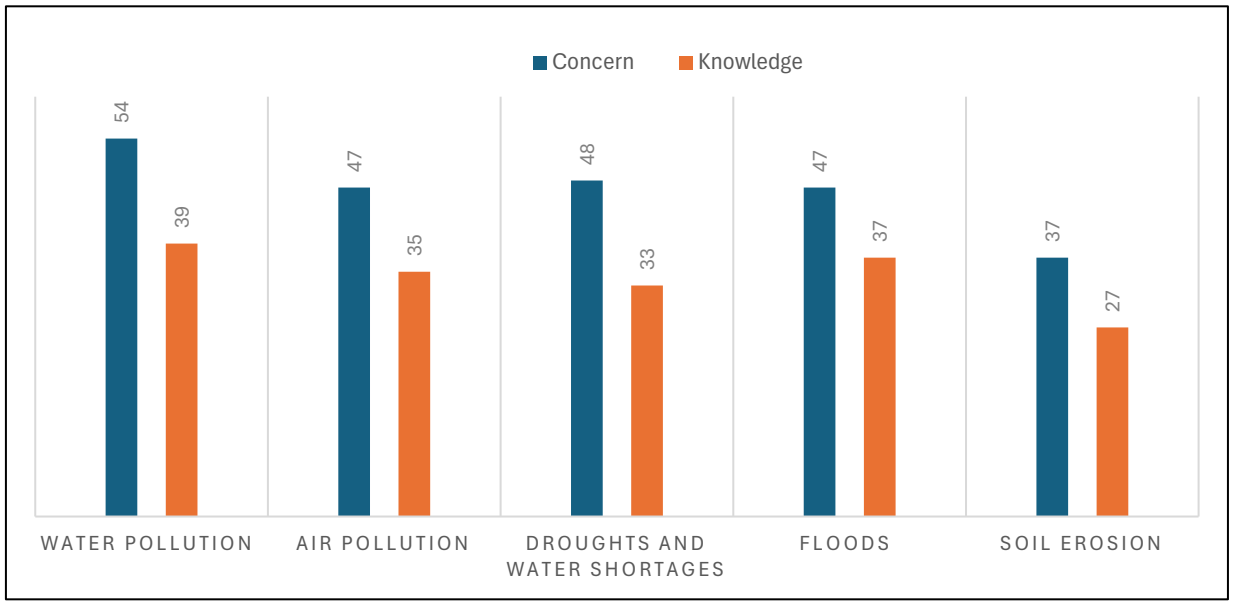
Knowledge and Concern About Natural and Environmental Events

The impact of climate change and environmental events are a global concern and a priority for South Africa



Levels of environmental knowledge and environmental concern:

- Six in every ten members of the public rated their environmental knowledge as “high” or “very high” (62%)
- Seven in ten members rated their environmental concern as “high” or “very high” (70%)
- **Six in every ten members** of the public rated their **environmental knowledge** as “high” or “very high” (62%)
- **Seven in ten members** rated their **environmental concern** as “high” or “very high” (70%)
- Concern scores exceed knowledge scores.

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Outcomes



STI Investment and Strategy

South Africa prioritizes science, technology, and innovation for socio-economic growth through national strategies.

Public Understanding Gaps

The SAPRS 2022 Survey reveals significant gaps in public knowledge and engagement with STI, especially environmental issues.

Demographic Discrepancies

Lower knowledge levels are noted among women, poorer households, and those with limited education support.

Need for Targeted Interventions

Addressing knowledge gaps requires focused efforts to improve science and environment awareness among vulnerable groups.

Challenges Identified



Structural Inequalities

Inequalities in gender, race, income, and location limit access to science education and resources.

Science Literacy Gaps

Many lack foundational science literacy, especially on topics not related to everyday life.

Limited Resource Access

Limited access to science centres, digital tools, and interactive learning widens knowledge gaps.

Trust and Communication Issues

Mixed trust in science institutions and poor communication limit effective engagement.



Strategic Approaches

Transformative Education



Curriculum Integration

Revising curricula to integrate environmental science makes education more relevant and accessible to students.

Educator Support and Training

Upskilling educators ensures effective delivery of science education, especially in under-resourced schools.

Early Childhood Science Activities

Hands-on science activities in early childhood foster curiosity and foundational knowledge.

Experiential Learning Opportunities

Providing experiential learning, especially for lower quintile students, builds a science-literate society.

Inclusive Governance



Collaboration Between Governments

National and local governments must work together to implement effective science communication within broader development plans.

Funding for Public Engagement

Dedicated funding is essential to support public science engagement initiatives and ensure their sustainability and effectiveness.

Community Partnerships

Partnering with community organizations and businesses helps broaden the reach and impact of science communication efforts.

Local Government Role

Local governments tailor and deliver science communication initiatives, playing a vital role in engaging citizens effectively.



Effective Science Communication

Accessible Science Content

Science content should be accessible and relevant, using diverse media channels like TV, radio, and social media.

Localized and Simplified Materials

Materials translated into local languages and simplified formats help reach diverse audiences effectively.

Storytelling for Engagement

Using storytelling and relatable examples illustrates science benefits in everyday life and boosts understanding.

Community Involvement

Involving community leaders and NGOs ensures cultural sensitivity and builds trust in science communication.

Community Involvement

Bridging Science and Society

Community involvement bridges the gap between science and society by making science accessible and relatable.

Local Science Hubs

Local science hubs in schools and community spaces foster ownership and relevance through community-driven initiatives.

Integration of Indigenous Knowledge

Recognizing indigenous knowledge builds trust and cultural resonance in science engagement efforts.

Empowering Community Champions

Empowering community members as science champions facilitates dialogue and information dissemination effectively.

Promoting Opportunities and Co-benefits



Incentives for Sustainability

Providing incentives for careers and businesses focused on environmental conservation drives sustainability efforts.

Educational Campaigns

Campaigns highlighting economic and health benefits of environmental stewardship raise public awareness and action.

Government Policy Support

Policies like tax concessions for ESG businesses encourage investments in environmental initiatives and sustainable practices.

STEM and Green Careers

Promoting STEM careers and creating job pathways for environmental specialists increases public participation and engagement.

Summary and Call to Action

Inclusive Multi-Stakeholder Approach
Engaging government, academia, civil society, and business creates a comprehensive framework for science understanding.

Addressing Structural Barriers
Transformative education, inclusive governance, and community involvement remove obstacles to scientific literacy.

Promoting Public Engagement
Demonstrating benefits and opportunities inspires active participation in environmental stewardship and science.



Dankie
Enkosi
Ha khensa
Re a leboga
Ro livhuwa
Siyabonga
Siyathokoza
Thank you



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