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TERMS OF REFERENCE FOR A DIRECTED WRC PROJECT

THEMATIC AREA: Knowledge Dissemination

TITLE: Scientometric study of *Water SA* as published from April 1975 to April 2025

TOR NUMBER: 1010037

1 RATIONALE

April 2025 marked the 50th anniversary of the publication of the first issue of *Water SA* in April 1975. To mark this milestone, the Editorial Board of *Water SA* has proposed a scientometric study of the journal, to recognise and highlight the journal's achievements in terms of its role and impact in the South African, African and international water sectors to date (April 2025), to identify patterns and trends in content, authorship and citations, and to use these insights to inform future policies and practices.

2 OBJECTIVES

To provide a comprehensive analysis of patterns and trends in the content, authorship and citation of *Water SA* over its 50 years of publication to date (April 2025), and to highlight aspects of *Water SA*'s role and impact over time and the key factors likely to have driven any positive and negative patterns and trends identified.

3 SCOPE OF WORK

The following questions are to be addressed by the collection and analysis of data for all published articles from the first issue of April 1975 to April 2025 (approx. 2 800 articles across 213 issues), their metadata and citation data, using the Web of Science and/or Scopus databases, or equivalent (where the necessary data is available or can be reasonably estimated):

- Trends in relative contributions by:
 - disciplinary paradigm (physical science, natural sciences, engineering, social sciences)
 - discipline (climatology, remote sensing, hydrology, geohydrology, soil science, agriculture, civil engineering, chemical engineering, ecology/botany/zoology, limnology, microbiology, sociology, political science, economics)
 - focus area (e.g., water supply, groundwater/geohydrology, drinking water treatment and quality, waterborne diseases, sanitation, wastewater treatment, environmental water quality, biodiversity protection, wetlands, catchment management/IWRM, agriculture, governance, economics)
 - specific applied research needs and trends (e.g. desalination, water reuse (from grey and wastewater, mining water, industry), climate change, water–food, water–energy; water–energy–food nexus, endocrine-disrupting chemicals, emerging contaminants)



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- Trends in multi- and trans-disciplinarity of individual papers
- Trends in authorship, by:
 - o sector (university, research institute, government, private sector)
 - o nationality (South African, Southern Africa, Africa, developing countries, developed countries)
 - o demographics: race, gender
 - o Established vs. early career researchers
- Trends in co-authorship:
 - o proportion of papers with authors from multiple institutions and multiple countries
 - o nature of co-authorship networks, whether collaborations are primarily national (within South Africa), regional (Southern Africa), continental (Africa-wide), or extend to the Global South and Global North
- Number/proportion of papers reporting on research directly funded or co-funded by the Water Research Commission (WRC) as part of a WRC project
- Most published authors per focus area
- Most cited authors per focus area
- Citation trends; citation of *Water SA* articles in:
 - o pure vs applied research papers
 - o grey literature
 - o government publications and policy documents
 - o print and online news media
 - o social media
 - o any other form of online attention received by Water SA publications or the journal
- Trends in SCI indices, e.g. immediacy, citation half-life, eigenvector, etc.
- Any other relevant enquiries suggested by a preliminary analysis of the main trends

Important time periods to note:

- Indexing by the Institute for Scientific Information
- Changes in scope as expressed in the Guide to Authors:
 - o 1985 (April): addition of 'hydrometeorology', 'aquaculture', 'mineralization', 'treatment and disposal of sewage sludge', 'water quality and treatment', and addition of categories of 'review' and 'short communication'
 - o 2000 (April): further addition of categories of 'technical note', 'rapid communication' and 'comments' (on published papers)
 - o 2005 (April): addition of 'policy' to read 'all branches of water science, technology, engineering and policy'
 - o 2007 (April): addition of 'water as a social good'
 - o 2013 (April): addition of 'water economics', and clarification of scope to exclude studies of predominantly local interest outside of Southern Africa (defined as South Africa and its direct neighbours). Inclusion of an open access statement
 - o 2019 (October): addition of 'hydropedology', 'hydraulics', 'freshwater and estuarine ecology', 'environmental and drinking water quality', 'water policy and governance',



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‘water services, including domestic water supply and sanitation services’, and ‘the primary focus of the journal is on content that is relevant to the needs of Southern Africa’ (defined as South Africa and its direct neighbours)

- 2020 (April): Primary focus statement expanded to ‘Southern Africa/SADC’
- First online publication: April 2005
- Inclusion in aggregator sites:
 - SciELO SA: September 2009
 - African Journals Online (AJOL): April 2004
 - Sabinet: October 2001
- Last print publication: January 2015
- First democratic elections in South Africa: April 1994
- Changes in the targeted scope and focus of research funding by the Water Research Commission, as reflected in changing Key Strategic Areas and their scope (e.g., periods focusing on desalination, water reuse (from grey and wastewater, mining water, industry), climate change, endocrine disruption, water–energy–food nexus)

4 DELIVERABLES

1. Inception report
2. Preliminary report on main patterns and trends highlighting options and recommendations for deeper analysis
3. Final report on findings of scientometric analysis of *Water SA* from April 1975 to April 2025

Time Frame:

4 months

Total Funds Available:

R350 000