



The status quo of water quality and water availability in Southern Africa: Strategies and Sustainable Solutions

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Wednesday, 29 January 2020, 16:30

Social Facilities Center, Building 10, University of Cyprus new campus

Short CV:

Summary:

Almost ALL countries in Africa, are faced with serious water security and water resources management challenges. In South Africa, it has been estimated that water scarcity could get rapidly worse as supply contracts and demands escalates due to population growth, industrialization, urbanization, unsustainable use, degradation of wetlands, water losses and a decrease in rainfall due to climate change. Based on current demand projections, the water deficit confronting the country could be between 2.7 and 3.8 billion cubic meters, a gap of approximately 17% by 2030. In addition, 56% of the over 1,150 wastewater treatment works are in poor and critical state and therefore, strategies must be put in place to rehabilitate and properly maintain the plants. On the other hand, 44% of 962 domestic local Government water treatment works are in poor conditions and in need of urgent rehabilitation. The issue of the deterioration of water quality is on the rise due to the presence of emerging pollutants among others. Currently the Government has sought the intervention from relevant stakeholders to help come-up with strategies to address these challenges. The University of South Africa is currently participating in a number of schemes of such nature in which the University is providing appropriate advices in order to address water quality, water treatment/purification, water re-use and recycling.

Dr Msagati is a Full Professor at the Institute of Nanotechnology and Water Sustainability, College of Science, Engineering and Technology, University of South Africa, Florida Park/Science Campus, Johannesburg, South Africa. He has more than 15 years of active teaching experience at University level. He has extraordinarily shown his presence in the areas of research globally and he has thus far published more than 120 scientific papers in international peer reviewed journals. In addition to journal papers, he has also contributed to more than 100 papers as conference proceedings and presentations in various congresses and symposia within and outside the African continent. Dr Msagati has also published two (2) text books and more than ten (10) chapters in books. Dr Msagati has also graduated more than 15 PhD, 12 Master students under his supervision. Dr Msagati has one patent in his name from an innovation related to the simultaneous separation and recovery of oil-water mixtures. His research interests fall in the following areas"

- Fabrication of polymeric membranes in various configurations for water purification and treatment (organic pollutant remediation)
- Bioremediation of contaminated aquatic environments – constructed wetlands
- Method development for the analysis of pollutants (organic/inorganic)