

CITY OF TSHWANE
MUNICIPAL RESEARCH AGENDA

EXCERPT OF THE APPROVED MUNICIPAL RESEARCH AGENDA: THEMATIC FOCUS AREAS

The following are the proposed thematic areas and research priorities of the 2021-2025 Municipal Research Agenda.

4.2.1 Health

4.2.1.1 Proposed Priorities and Focus Area

Prioritized Research Area	Research Focus
City Public Health	Health and Social Research Focusing on HIV, TB, Drugs, Maternal Health, Health Public Infrastructure, Population and Public Health, Health and Nutrition. (already a Forum is established and will be expanded in scope and posture)

4.2.2 Water Resources and Scarcity

4.2.2.1 Proposed Priorities and Focus Area

Prioritized Research Area	Research Focus
Water Value Chain Analysis	The understanding of the water value chain begins to provide a strategic position of how the cities should position themselves in responding to water scarcity issues.
Water Recycling and Reuse	The water value chain normally ends with disposal or recycling and reuse. It is a given fact that South Africa is a water scarce country, and most of its catchments and cities are already water stressed.

Prioritized Research Area	Research Focus
	The issue of water recycling and reuse therefore seems highly plausible.
Water Pollution and Compliance Monitoring	While there exist programmes to monitor large manufacturing and processing industries, small and medium enterprises are often not monitored in terms of how they run businesses as they grow from being micro to macro enterprises. This research area is concerned with developing incentives and mechanisms for compliance.
Building a Water Efficient City Through Infrastructure Analysis, Optimization, Network Design, Water Conservation and Demand Management	Research into smart systems within the water infrastructure networks would be carried out to explore the potential they carry. A comprehensive analysis and understanding of the City's water and wastewater infrastructure help with planning for any future investments on the water and wastewater infrastructure network.
Water Infrastructure Maintenance Partnership Development	An understanding of the water infrastructure and its associated technology currently deployed provides a picture of whether there is scope for future improvements in terms of O&M investments.
Indigent Policies and Implementation Strategies Review	<p>Most municipalities struggle to monitor their indigent register simply because of how they implement the indigent policies.</p> <p>To assist the City of Tshwane in responding better, this research area will be concerned with assisting the city in developing better indigent strategies.</p>
Building a Water Wise and a Water Smart City: Human Settlement Planning	Water sensitive urban design helps protect waterways by improving storm water quality and reducing the amount of runoff. There are a variety of techniques ranging from large-scale green roofs to household rain gardens.

4.2.3 Spatial Transformation

4.2.3.1 Proposed Priorities and Focus Area

Prioritized Research Area	Research Focus
Changing Spatial socio-economic dynamics of post-apartheid cities	<ul style="list-style-type: none">• Spatial Planning• Spatial socio-economic dynamics urban and spatial transformation• Urban Public Policy and Partnerships in Urban Governance• Emerging Spatial economy of post-apartheid City
World Class African City: The Right to the City	<ul style="list-style-type: none">• Urban Development \Urban Growth Management• Right to the City: Urban Public Policies, Urban Governance and Pro-poor programmes
Spatial-Planning for Public Service Delivery in Post-apartheid City	<ul style="list-style-type: none">• Housing for the Urban Poor• Renewable Energy and Clean Energy Transition in the Construction Sector• Affordable and Social Housing Programmes in Post-Apartheid City• Income-generation from Marginal Urban Spaces: Pavement\Informal Traders in Urban Spaces.• Spatial Planning, Public Transport, Social Inequalities
Spatial Knowledge Management for Urban Governance in post-apartheid City	<ul style="list-style-type: none">• Processes and Procedures for Spatial Knowledge Construction• Applications of Spatial Knowledge for Urban Governance

4.2.4 City Resiliency and Sustainable Development

4.2.4.1 Proposed Priorities and Focus Area

Sustainability Themes	Potential Research Focus
Sustainable Built Environment	Evaluating the uptake of the Green Building by-law under review to Net Zero Carbon Buildings, obstacles to implementation and measures to address.
Eco-mobility and Sustainable transportation	Investigation the integration of non-motorized transportation infrastructure with motorized transportation infrastructure and supporting strategies to ensure uptake of that infrastructure.
Sustainable energy management	The role of micro -energy generation as a strategy to alleviate both energy poverty and to supplement household incomes. The role of smart meeting and block-chain technology will be key in this regard.
Sustainable waste management	The development of a waste economy in the City of Tshwane ensuring that separation at-source initiatives can yield sustainable economic opportunities. This includes documenting and tracking the plethora of initiatives underway to address Tshwane's waste management challenges.
Biodiversity and Ecosystem Services	Investigating the relationship between investment in green spaces and social upliftment and sustainability of the Tshwane Urban Project (Continuity of the City into the future)
Climate change – Adaptation	Assessing the most effective methods of developing community-based responses to the impacts of climate change in low income and vulnerable communities.
Climate change – Mitigation	Assessing methods of communicating Tshwane's carbon footprint and promoting mitigation actions

Sustainability Themes	Potential Research Focus
	amongst the Tshwane community that yields mitigation-based investment by high carbon emitters.
Sustainable (Green and Brown) Economy	Documentation and case-studies of emerging environmentally socially and financially economy projects and evaluation of their performance against pre-determined sustainability criteria.
Sustainable Procurement	Conducting baseline work in Tshwane to assess the City's procurement requirements and in the process identify suitable alternatives that have an enhanced sustainable performance against current procured items whilst still being cost competitive.

4.2.5 Food Security and Sustainable Alternative Agricultural Economy

4.2.5.1 Proposed Priorities and Focus Area

Prioritized Research Area	Research Focus
Agricultural Baseline Studies	It is aimed at analyzing the current situation with regards to agricultural activities to define a point of departure for planning interventions.
Food and Nutritional Security	Whilst South Africa is said to be food secure at a national level currently it is understood that some communities are more vulnerable than others, therefore. This will assist to ensure that appropriate and practical interventions are implemented at an appropriate level.
Value Chain Mapping and Opportunity Identification	Work Part of the work of the MRA will be to map the value chain of the agricultural activities in the city with other connections and links in the Gauteng City Region and identify opportunities for innovation and technology to enhance and transform the status quo particularly focusing on downstream and upstream opportunities.

Prioritized Research Area	Research Focus
R & D Commercialization Opportunities	It is proposed that part of the MRA is to investigate opportunities for R&D commercialization into new sectors such as bioscience as a priority.

4.2.6 Information Communication Technology and the Knowledge Economy

5.2.6.1 Proposed Priorities and Focus Area

Knowledge Themes	Economy	Potential Research Focus
Knowledge Institutions		<ul style="list-style-type: none"> To investigate the need or availability and effectiveness of platforms for applying new knowledge created in the institutions to solve the city's challenges.
ICT Infrastructure		<ul style="list-style-type: none"> Data Centralization and Data store Platform Development as a basis for Smart City Benchmark or ICT technology audit in the city against other metros with strong knowledge economy. Investigate the economic impact of free Wi-Fi Project.
Commercialization of new Knowledge		<ul style="list-style-type: none"> Investigate suitable commercial vehicle to bring new knowledge to the market.
Innovation Legal Framework		<ul style="list-style-type: none"> The impacts of IPR act on innovation within the local knowledge institutions, and spin-offs for the city. Investigation of suitable R&D funding model for the city.

4.2.7 Democratic Developmental State

4.2.7.1 Proposed Priorities and Focus Area

Themes	Potential Research Focus
Transformation of South Africa's Capital City	<ul style="list-style-type: none">• How has the role of the South Africa's capital city changed post 1994 in response to its forged transformative agenda? The MRA will focus on how the city has improved and transformed:<ul style="list-style-type: none">○ Spatial and urban planning○ Addressing social inequalities○ Local economic growth and investment attraction○ Talent attraction and skills development○ Role of National DFI in South African Public Investment
Direct role and contribution of the academic and research institutes in the development of the capital city through research and development	<p>The primary role of academic and research institutes is to perform a search for new knowledge and solve existing problems and develop new solutions.</p> <p>The research will investigate the critical role and contribution of knowledge institutions located within the City of Tshwane in improving the local economic growth and development, developing required skills, developing solutions to complex problems.</p>