



PEERC
PUBLIC AND
ENVIRONMENTAL ECONOMICS
RESEARCH CENTRE



Public and Environmental Economics Research Centre (PEERC)

Jugal Mahabir

Director: Public And Environmental Economics Research Centre (PEERC)
School of Economics
College of Business and Economics

OVERVIEW

The Public and Environmental Economics Research Centre (PEERC) was established in 2017 to fill a potential gap in the current economic and policy agenda by aligning the fields of public economics and environmental economics. Environmental issues are currently at the forefront of the policy discourse as the world battles global warming and climate change. Most remedies to environmental issues and externalities are public policy instruments, such as tax policy and regulation. As such, PEERC attempts to mobilise the critical skills and resources in both fields towards identifying and remedying environmental issues through public policy.

While this is the primary premise of the research centre, PEERC endeavours to be at the forefront of both the public economics and environmental economics fields. PEERC is currently governed by a board of directors, with Dr Sydney Mufamadi as its chairperson. Mr Jugal Mahabir, Centre Director, oversees the daily operations at the Research Centre.

PEERC continues to engage directly in academic and policy discourse. Over the past year, PEERC's Director, Mr Jugal Mahabir, was invited to present at the 4th Annual Urban Economic Forum in Toronto, Canada, on the best practice and challenges of financing cities in South Africa. Mr Mahabir highlighted essential issues impacting South African cities and municipalities, including the enormous debt owed to municipalities and related performance issues. Mr Mahabir further pointed out some best practices in South African local government that can assist other African cities, including best practices in debt management and the role of South Africa's intergovernmental supervision framework in improving local government performance.

Mr Jugal Mahabir presented a webinar to the South African Local Government Association (SALGA) on the potential impacts of the new raw water pricing strategy on local government in South Africa. The webinar was attended by municipal councillors and officials. The webinar was vital in formulating SALGA's response to public comments on the recently gazetted National Pricing Strategy for Water Use.



Between January 2022 and March 2022, Mr Jugal Mahabir and Dr Isaiah Magambo engaged in several workshops with the Department of Water and Sanitation (DWS), the Water Research Commission (WRC), the National Treasury and a range of other stakeholders to finalise the National Pricing Strategy for Water Use. The PEERC team played an essential role in designing the new strategy for raw water charges in South Africa.

Dr Frank Bannor attended the European Association of Environmental and Resource Economists (EAERE) and the Chair of the Economics/Resource Economics of the Swiss Federal Institute of Technology Zurich (ETH Zurich) Winter School in Environmental and Resource Economics. Dr Bannor presented a paper entitled "Do Effective Governance and Political Stability Facilitate the Promotion of Economic Growth in Natural Resource Rents? Evidence from Africa"





Dr Frank Bannor

Dr Frank Bannor was invited to the 2022 African Economic Conference (AEC), which took place from 09 - 11 December 2022 at the Intercontinental Hotel, Balaclava, Mauritius. The theme for the conference was "Supporting Climate-Smart Development in Africa." Dr Bannor presented his paper entitled "Economic Growth, Renewable and Non-renewable Electricity Consumption: Fresh Evidence from a Panel Sample of African Countries".

TALENT MANAGEMENT AND CAPACITY BUILDING

GRADUATES

PEERC's core staff and research associates are actively supervising honours, master's, and doctoral students in the fields of public and environmental economics towards developing the next generation of researchers and policymakers in these fields. Since its inception, PEERC has graduated three doctoral students, five master's students and several honours students.

PEERC was selected to participate in the Graduate Placement Employment Programme run by the WRC. The programme aims to equip young graduates with the skills and knowledge needed for the workplace. Senior researchers at PEERC were chosen to mentor graduates while they worked on various research projects. The internship programme ran from January 2022 – July 2022. We are pleased to announce that PEERC has absorbed one of the graduates at the programme's termination.

PEERC has introduced an internship programme for postgraduate students which will commence in 2023. The students will work under the mentorship and supervision of the researchers at PEERC to empower and groom future economics researchers. This internship will allow the Centre to increase output regarding research proposals, publications and, most importantly, skills development.



RESEARCH ASSOCIATES AND SENIOR RESEARCH ASSOCIATES

The Centre strives to attract internationally recognised researchers. Some of the Centre's research associates include researchers from the University of Gothenburg in Sweden and the University of Edinburgh in Scotland.

RESEARCH

COMPLETED RESEARCH PROJECTS

Putting the People in the People's Parliament – European Union

At the end of March 2022, PEERC successfully concluded its three-year project entitled "Putting the People in the People's Parliament", a European Union (EU) funded project to empower civil society to engage in national parliamentary and provincial legislative processes. The project was done in collaboration with the Dullah Omar Institute (University of the Western Cape), Heinrich Boll Institute, the Public Service Accountability Monitor (PSAM – Rhodes University) and the Parliamentary Monitoring Group (PMG). PEERC published two technical reports on provincial oversight, the provincial equitable share, and post-apartheid education funding.

Defining Commercial and Social Infrastructure for Raw Water Use – Department of Water and Sanitation

PEERC assisted the DWS and the WRC in revising the National Pricing Strategy on Water Use Charges, i.e., the pricing strategy for raw water use in South Africa. PEERC undertook research that informed the definition of social and commercial users of raw water and criteria to define social and commercial infrastructure. The Department recently released the revised strategy for public comment.

Financial and Fiscal Commission 2023/24 Annual Division of Revenue Bill Submission

In July 2022, the PEERC Director, Mr Jugal Mahabir,

and Senior Research Associate, Dr Sean Muller, completed research for the Financial and Fiscal Commission (FFC) on estimating the efficiency of education expenditure in South Africa. The study formed part of the FFC's annual submission to parliament on the 2023/2024 Division of Revenue.

CURRENT RESEARCH PROJECTS

PEERC is currently involved in two projects for the Water Research Commission (WRC). These are:

- **Introducing Dynamic Tariffs in South Africa's Water System - WRC**

In 2021, PEERC received grant funding from the WRC to look at introducing dynamic pricing into the South African water sector. The project concludes in March 2024. To date, PEERC has achieved all the necessary deliverables for the project. This includes a review of international case studies that applied dynamic pricing in the water sector, a review of the current water pricing system in South Africa and comprehensive focus group discussions with key stakeholders in the South African water sector. The latter objective explored the configuration of the water value chain and examined methods to implement dynamic pricing at various levels of the water value chain in the country.

- **Assessing the Welfare Impacts of Municipal Short-term Responses to Water Supply Crises - WRC**

At the beginning of 2022, PEERC received funding from the WRC to undertake a project entitled "An Analysis of the Economic Efficiency of Municipal Short-term Responses to the Water Supply Crises in South Africa". The study is based on the responses by the Nelson Mandela Bay and the City of Cape Town municipalities to the water supply crises that they are facing and the impact on the welfare of water consumers within their jurisdictions. To date, PEERC has completed the project's theoretical review and is engaging with the respective municipalities to collect the necessary data for the analysis. The project's expected completion date is March 2024 and is being coordinated by Professor Stephen Hosking, Senior Research Associate at PEERC.

PUBLICATIONS AND WORKING PAPERS

PEERC has published in national and international academic journals during the 2022 academic year. The publications and working papers are given as follows:

- Ravat, Z., Dikgang, J. and Mahabir, J. (2022). Influences of Various Pricing Points: An Experimental Study of Plastic Bags in Johannesburg, South Africa. *Journal of Applied Economics*. 25(1): 1200-1218.
- Samkange, C.M., Mahabir, J. and Dikgang, J. (2022). Efficiency of South African Water Utilities:

A Double Bootstrap DEA Analysis. *Applied Economics*. 54(26): 1-19.

- Espoir, D.K., Sunge, R. and Bannor, F. (2022). Economic Growth, Renewable and Non-renewable Electricity Consumption: Fresh Evidence from a Panel of African Countries. *Energy Nexus*.
- Bannor, Frank; Magambo, Isaiah Hubert; Mahabir, Jugal; Tshitaka, Jean-Luc Mubenga (2022): Interdependence between climate change and migration: Does Agriculture, geography, and development level matter in sub-Saharan Africa? ZBW – Leibniz Information Centre for Economics, Kiel, Hamburg

SUSTAINABILITY, INNOVATION AND FOURTH INDUSTRIAL REVOLUTION (4IR)

The Research Centre is currently engaged in new and innovative research aligned with the 4IR and the use of technology and artificial intelligence to improve the efficiency and effectiveness of existing systems. One of these is the possibility of introducing dynamic pricing into the South African water pricing system. This entails examining the potential for water tariffs charged by municipalities to adjust to changes in the water supply, i.e., the current water supply in reservoirs. In implementing such a system, the use of new and innovative technologies becomes critical in monitoring water levels in reservoirs and monitoring household water usage for pricing purposes.

PEERC is working on a collaboration project with Hydrodrip Limited to introduce a virtual water credit market for water consumers. The aim is to pilot new technology to measure water consumption in water consumer units and to develop a virtual water credit market where consumers can trade water savings with other water users. This system intends to improve the allocative efficiency of water by promoting water savings in lower water users and allocating such savings to higher water users.

PARTNERSHIPS AND COLLABORATION

PEERC researchers and associates worked on building numerous partnerships with national and international organisations. These include:

- African Association of Environmental Economics
- Water Research Commission
- South African Local Government Association
- University of Dar es Salaam, Tanzania
- The University of Washington, United States of America
- University of Gothenburg, Sweden
- Makerere University, Uganda