



GCRO ANNUAL REPORT



ANNUAL REPORT

2017/2018



GCRO | Gauteng
City-Region
Observatory

A Partnership of:



GCRO ANNUAL REPORT 2017/18

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Gauteng City-Region Observatory Annual Report 2017/18



Photograph (back) by Simon Wolfson | Photograph (front) by ThaboThejane

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**Foreword,
introduction and
overview of the year**

Foreword from the Chairperson of the GCRO Board

Globally and locally we are confronting the great fluidity of the social, spatial and environmental contexts in which we live, with ongoing concern about how to deal with a range of simultaneous challenges for which we may not be altogether prepared. The larger global problem of climate change seems to be proceeding faster than previously anticipated, with a variety of implications for the planet's biologies, and human societies in particular. We are warned that the climate of Southern Africa is likely to be warming possibly faster than elsewhere (with a possible 4° Celsius increase in the 50-year time frame, compared to 2° elsewhere), with a drier climate overall but with more extreme weather events – i.e. floods. For an already-dry region and urban settlements already demonstrably poorly equipped for floods, these are worrying portends. The water crisis experienced by Cape Town has sharply illustrated our vulnerability in relation to water supply, and Gauteng has seen the need to review our security in this regard into the future. We are increasingly aware of climate-impacting carbon-dioxide emissions and the health damage inflicted by air pollution, and alarmed that the smoke-stack industries in our region continue with impunity (indeed, with permission it seems) to contribute toxic emissions way above any level considered safe. Our overwhelming dependence on motorised transport for daily commuting deepens the problem, as does the reliance in many households on combustible fuels for cooking and warmth. Environmental problems have occupied relatively secondary positions on governance agendas, with the imperatives of poverty and transformation necessarily taking lead priority. However, sharpening scientific insight and public debate may require us to look synoptically at issues of social justice and environmental sustainability, firstly

because the poor are the first to suffer these changes and, secondly, because there may be significant economic and employment opportunities in innovative and vigorous approaches to the green economy.

In addition to existing persistent problems of poverty and inequality (for which solutions continue to be elusive), we are increasingly gaining insight into how the conditions of marginalisation and the growing precarity of the middle classes work to deepen the politics of intolerance. Our metropolitan societies are necessarily cosmopolitan and heterogeneous and, indeed, they should be regarded as sites of opportunity for those seeking social mobility. Recent work from the Human Sciences Research Council (HSRC) suggests that migrants into urban areas stand a better chance of improving their livelihoods than if they stay in rural areas. Our task should thus be to strengthen the opportunities that cities provide to vulnerable migrants rather than generate climates of hostility. This poses a multi-faceted challenge for city-region governments (especially in Gauteng, which experiences the highest levels of in-migration in South Africa), who must see to the housing, schooling, mobility and health needs of a rapidly growing population, among many other considerations.

Underpinning any ability to tackle these complex challenges is the need for a vigorous and inclusive economy. While Gauteng's economy is the largest in the country, there is wide consensus that it performs way below the levels needed to absorb cohorts of school-leavers and the existing body of unemployed to provide an enabling environment for entrepreneurs, or to create the tax base needed for the functioning of the state. A number of structural and political encumbrances are slowing levels of re-investment by local business and discouraging fresh investments

from elsewhere. Aspiring new entrants to the market find themselves obstructed by an over-concentrated economy where established conglomerates have the means to maintain commanding positions in their respective sectors.

While these challenges are formidable, it is now clear that approaches have to be conceived at the level of the local – that is, in the urban areas where the opportunities for innovation are supported by density and agglomeration. Government policy has acknowledged this, and the recent Integrated Urban Development Framework signals that cities are the pre-eminent sites for turn-around on all the issues noted above. What is clearly required, though, is the governance capability to take the lead. This includes stronger performances from government, especially the ability for cooperative government to work more effectively horizontally across functional areas and vertically across spheres, and a stronger ability for government to work with its social partners in business, academia and civil society. In Gauteng, the changes in party-based administration at local government level in 2016 have introduced a greater level of political competitiveness that may slow progress towards the kind of collaboration we desire for the city-region as a whole.

Against this background, we welcome various initiatives that have brought universities and government into closer dialogue, including the initiative by the Hon. Premier David Makhura to

provide the basis for closer collaboration (which is now being brokered by the GCRO). We are delighted to see the initiative of two new Chairs to be funded by Provincial Government – in ‘Trade and Investment’ and ‘Inclusive Economies’ – and we look forward to the productive establishment of these. Other collaborative initiatives between the universities and Provincial Government are in the pipeline.

In this context, we are pleased to see the strengthening of the GCRO, with the arrival over the past year of several newly recruited staff members, bringing fresh strength and diversity to the organisation. It has also moved into new premises on the Wits University campus to accommodate its enlarged numbers. The demand for the GCRO’s work continues to grow, and we are very pleased that this innovative model of university/government partnership has proved to be so effective. The research agenda of the GCRO is strongly influenced by the challenges noted above, and by the particular role of our urban context in addressing these challenges, and we are confident that the influence of their work will continue to support the constitutional goals we seek for our society.

Professor Zeblon Vilakazi
Deputy Vice-Chancellor (Research and
Postgraduate Affairs) – University of
the Witwatersrand, and Chairperson
of the GCRO Board



Photograph by Charles Mphahlele

Introduction and overview

This report covers the April 2017 to March 2018 financial year and reports on the fourth year of the GCRO's second full five-year cycle (2014–2019 financial years). The GCRO is a relatively rare partnership between government and universities: the Gauteng Provincial Government (GPG) provides an annual core-grant, while the universities provide valuable in-kind support, which includes office accommodation, administrative and library services, etc. The GCRO is governed by a Board with representatives from the GPG, the two universities and organised local government. While the GCRO is guaranteed its academic independence, its research agenda is focused on the issues of the city-region, and relationships of significant trust and reciprocal exchange exist between the partners, enabling greater insight for researchers into the priorities and complexity of government, and enabling greater absorption of the GCRO's work into government quarters. The unfailing financial support from the GPG, its steadfast respect for the

GCRO's independence, and the strong support of the universities, have all together enabled the GCRO to strengthen its capacity and reach over the years since its inception (late 2008), and we are pleased to note the high levels of interest and credibility that our work has attracted over the years.

The year under review has been an exacting one, with several areas of pleasing accomplishment as well as challenges. A number of strong, full-scale research reports were released this year, including *Mining landscapes of the Gauteng City Region*, *Pathways to anti-racism*, *Taking streets seriously*, and *Uneven spaces: Core and periphery in the Gauteng City Region*. A ground-breaking occasional paper is *Motherhood in the city: Mapping the experience and moral geographies of women and their children in the city*, a study that has opened up a valuable window into gendered urban life and which promises rich further work in this field. The deep value of the data generated by the Quality of Life (QoL) Survey is demonstrated in two incisive data briefs arising from the 2015/16 QoL Survey, namely



Photograph by Toka Hlongwane

Crime and perceptions of safety in Gauteng, and Social cohesion. As always, the GCRO has sustained its very reliable track record in producing regular Maps of the Month, one of our most iconic outputs.

The GCRO has continued to attract international attention, and we were invited by two European universities to participate in urban studies postgraduate programmes. A team from the GCRO provided lectures and (later) supervision for a Masters group at the Institute for Housing and Urban Development (IHS) at Erasmus University in Rotterdam, and a postgraduate group from Strelka University in Moscow used Johannesburg and the GCRO for their international study tour. We provided seminars as well as guidance and feedback on their case studies. Visits were also made to counterpart urban studies institutes in Leipzig and Dresden. Continuing the European theme, we were part of a delegation from the GPG to visit the region of Emilio Romagna and the city of Reggio Emilia to continue the province's partnership with this region. Valuable exchanges are underway, including projects in Gauteng townships, sports initiatives aimed at social cohesion objectives, and planned collaboration around the development of regional systems of innovation. We have attracted the attention even of the City of Auckland in New Zealand, and we hosted a study tour from their research and planning division.

Our international profile continued to be strengthened throughout the period, including through collaboration with research partners at leading universities, and GCRO researchers profiled their work at high quality conferences internationally (including Europe, the UK and the BRICS countries). Among other fora, the GCRO made presentations at the World Urban Forum in Kuala Lumpur, as well as the Moscow Urban Forum.

“We were invited by two European universities to participate in urban studies postgraduate programmes.”

The Gauteng Premier, the Hon. David Makhura, initiated an agreement with the Gauteng-based universities for closer collaboration, and the GCRO was asked to assist in brokering these relationships. Visits by the GPG/GCRO team to the institutions demonstrated the strong willingness for partnerships across a number of important development fields. Very encouragingly, following this work, the GPG has signalled funding for two economy-related Chairs in partner universities: the Gauteng City-Region Chair in Trade and Investment at Wits University, and the Gauteng City-Region Chair in Inclusive Economies at the University of Pretoria. These are particularly valuable approaches to building collaboration, with long-term investments in scholarly work on issues of priority development in the city-region.

The GCRO has continued its support for the participation of the GPG in the Metropolis network of the UCLG (United Cities and Local Governments). Premier Makhura was elected as co-President of Metropolis, and the GCRO was pleased to assist in developing the Premier's choice of theme for his co-presidency.

During this year, we began work on the fifth iteration of the Quality of Life (QoL) Survey, now supported by our newly recruited senior survey specialist, Dr Julia de Kadt. As has been reported in the past, the GCRO was keen to avoid the repeated problems encountered with survey fieldwork contractors where we were confronted at the end of fieldwork with extensive levels of cheating and fraud, and had then to insist on this being remedied by the contractor concerned. We have instead embarked on a necessary innovation, partnering with a fieldwork unit at the University of Johannesburg, an IT provider with a platform that will enable real-time monitoring of fieldwork quality, and a non-governmental organisation that prepares youth for employment. The intention is that the temptation for fieldworkers to cut corners will be quickly brought under control, and that a cohort of young people will be provided with job experience under the tutelage of the NGO. As with many innovations, however, the project has encountered some hurdles, and some unfortunate delays in reaching the contracted targets. Nevertheless, this represents an important change in approach to this very complex and demanding

survey. The QoL Survey has earned wide recognition for the granularity of its work, and expressions of interest have come from government as well as researchers internationally.

The challenges of the economy in the city-region are considerable, and the GCRO has been in discussion with the Gauteng Department of Economic Development (GDED) and its implementation arm, the Gauteng Growth and Development Agency (GGDA). We have convened a workshop on the research priorities of the city-region (we invited Prof. Ivan Turok from the Human Sciences Research Council – HSRC – to provide keynote inputs), and we have made proposals for various research initiatives to demonstrate the kind of insight and support that could be available. The GDED has agreed to a pilot-phase proposal involving the GCRO and two other partners (the HSRC and the Centre for Competition Regulation and Economic Development from the University of Johannesburg). Together, these three exercises will open different windows onto the Gauteng economy, and show the way for more sustained and systematic research into the future to inform economic planning.

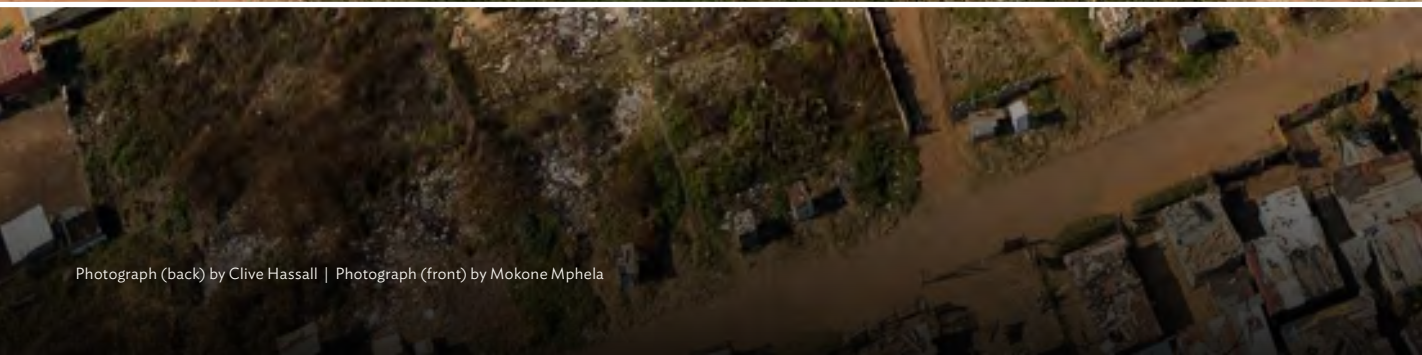
Following our successful recruitment programme in the previous reporting year, the GCRO has integrated and consolidated its research capacity, and is relishing both the continuity of its established strengths and the important new interests driven by the fresh and increasingly diverse talents in our corridors. We value very much the good relationships we have with our partners in government and in academia, and acknowledge that both the very visible accomplishments of the year and the good opinion we enjoy in these circles arises from how we are positioned in the research-policy nexus, and the rewarding possibilities that this affords.

Dr Rob Moore
Executive Director





Photograph by Clive Hassall





Governance and organisational development

Governance and organisational development

Governance

The GCRO is a partnership between the Gauteng Provincial Government (GPG), organised local government in Gauteng (SALGA-Gauteng), the University of Johannesburg (UJ) and the University of the Witwatersrand (Johannesburg) (Wits University). These four partners are all represented on the Board of the GCRO. In 2017/18 the Board comprised of:

- Prof. Zebon Vilakazi (Chairperson for 2018): Deputy Vice-Chancellor: Research and Postgraduate Affairs, Wits University
- Prof. Tshilidzi Marwala (Chairperson for 2017 until his appointment as Vice-Chancellor of UJ): Deputy Vice-Chancellor: Research, Postgraduate Studies and Library, UJ
- Prof. Saurabh Sinha (Deputy Chairperson on taking over from Prof. Marwala): Deputy Vice-Chancellor: Research and Internationalisation, UJ
- Prof. Fiona Tregenna: SARChI Chair in Industrial Development, UJ
- Prof. Anne McLennan: Associate Professor and Assistant Dean, Research in the Faculty of Commerce, Law and Management, Wits University
- Mr Lucky Leseane: Provincial Executive Officer, SALGA-Gauteng
- Councillor Patrick Naga Lipudi: Deputy Chairperson, SALGA-Gauteng
- Mr Khululekile Mase: Deputy Director General: Development Planning, Gauteng Planning Division, Office of the Premier, GPG
- Mr Rashid Seedat: Head: Gauteng Planning Division, Office of the Premier, GPG.



Staff and structure

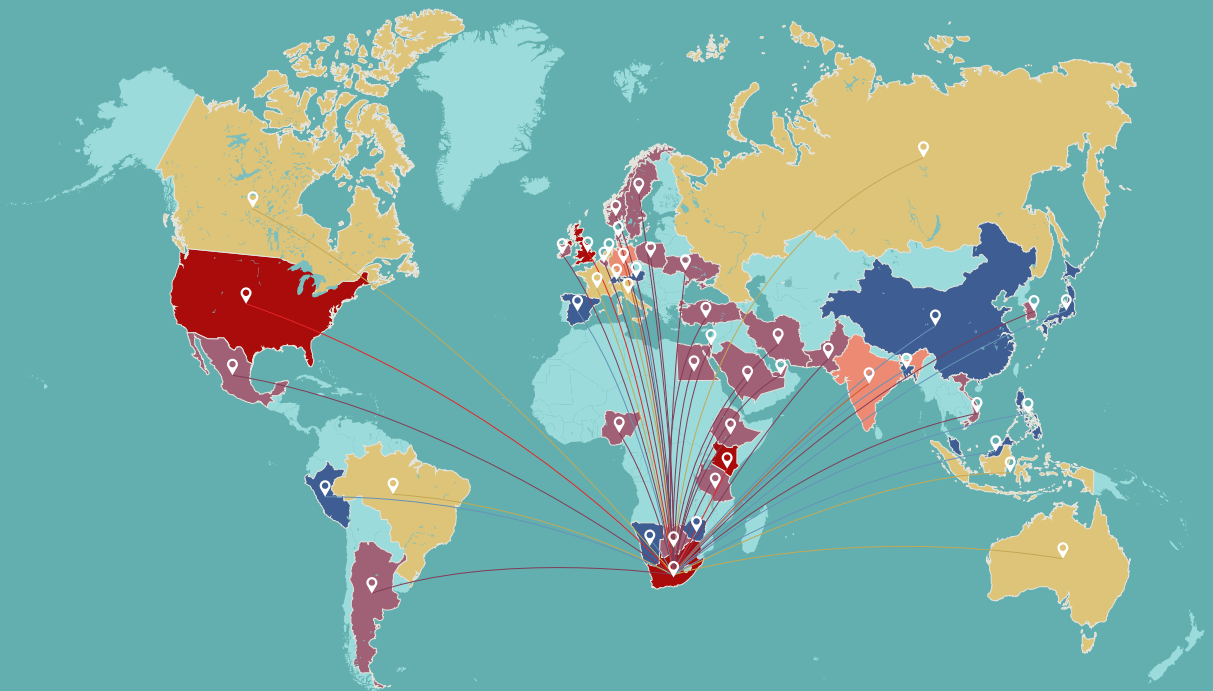
As at 1 July 2017, the GCRO was made up of 22 staff members, with 19 of these being research staff (including the Executive Director and Director: Research), and three administrative staff.

As always, the financial year saw some staff turnover. Nadine Abrahams joined in May 2017 as the new Office Administrator. In June 2017, we welcomed Dr Julia de Kadt, an experienced quantitative researcher with an interest in health and education. She joined us as a Senior Researcher primarily responsible for the Quality of Life Survey. Ruth Mohamed joined the GCRO as an administrator on a part-time basis but was then appointed full-time from 1 March 2018 in anticipation of Adele Underhay's retirement early in the next financial year.

Junior researcher Mncedisi Siteleki left in October 2017 to take up a PhD study opportunity in Norway. And University of Johannesburg funded postdoctoral fellow Aidan Mosselson left at the end of 2017, first to take up a six-month writing fellowship hosted at the London School of Economics' LSE Cities Programme, followed by a Newton International Fellowship post-doc hosted at Sheffield University's Department of Urban Studies and Planning. Kate Joseph, a valued contract researcher, left us in December 2017 to take up a position at the City of Johannesburg, though she remains involved in some projects at the GCRO.

Notwithstanding these departures, the GCRO's staff complement saw significant stability compared with previous years, especially as the new researchers hired in late 2016 settled into their new roles.

The reach of GCRO research: Global website visits | GCRO Map of the Month, December 2017



GCRO staff members 2017/18



Rob Moore



Adele Underhay



Graeme Götz



Darlington Mushongera



Christina Culwick



Koech Cheruiyot



Samy Katumba



Richard Ballard



Christian Hamann



Mncedisi Siteleki



Samkelisiwe Khanyile



Ngaka Mosiane



Gillian Maree



Mamokete Matjomane



Thembani Mkhize



Kate Joseph



Jesse Harber



Alexandra Parker



Elaine Milton



Aidan Mosselson



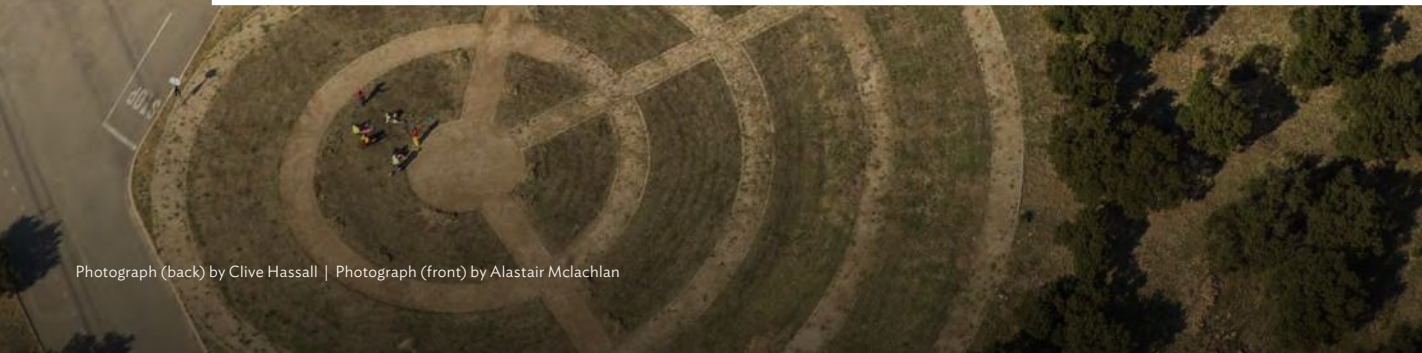
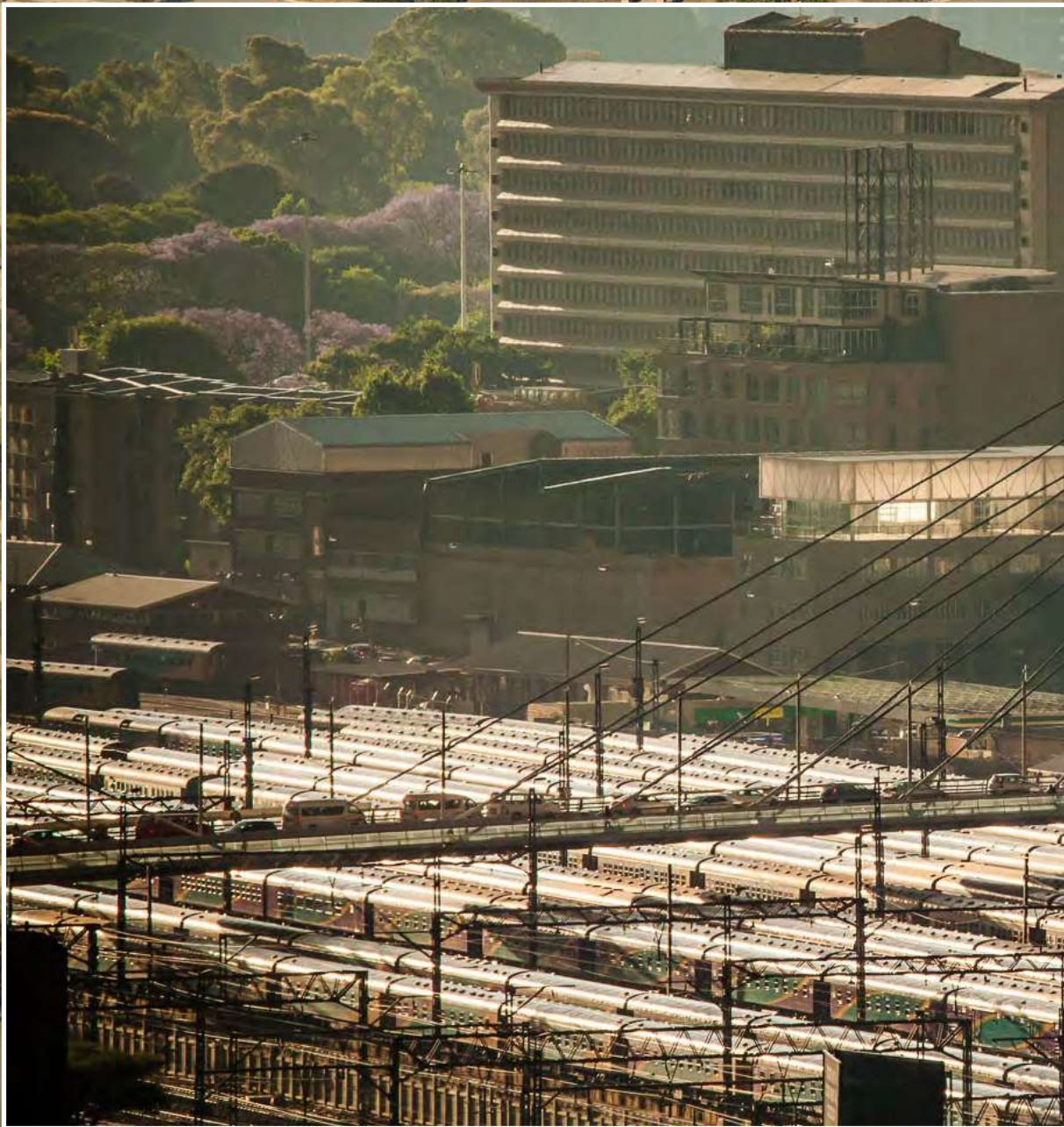
Julia de Kadt



Nadine Abrahams



Ruth Mohamed





**Support to
government**

Support to government

While much of its applied research is intended to be strategically relevant to the provincial departments and municipalities in the city-region, the GCRO is frequently called upon to provide direct strategic support to government. This support may be either structured as a project and sustained over time, or it may be short-term ad hoc assistance on request.

Strategic support to the Gauteng Planning Division

Following a meeting between the Premier and Vice-Chancellors of universities in Gauteng, the GCRO was asked to assist with brokering productive relationships between the Gauteng Provincial Government (GPG) and the universities. A series of meetings was held with key representatives of the universities throughout 2017/18.

The GCRO assisted the Gauteng Planning Division (GPD) with convening a one-day workshop focused on understanding the Sustainable Development Goals and strategising the GPG's commitment to localising them, in part because of the Gauteng Premier's election to the position of co-President of Metropolis. Two GCRO staff, Christina Culwick and Gillian Maree, gave inputs at the workshop, and the GCRO

also facilitated the contributions of two external specialists, Prof. Colleen Vogel from Wits University's Global Change Institute and Peter Luckey from the National Department of Environmental Affairs.

On request from the GPD, the GCRO assisted the GPG to understand what water security would mean to the Gauteng City-Region in light of the current water shortages being experienced in Cape Town. A number of presentations on water security were given at provincial events, including: the Executive Council Lekgotla on 6 February 2018; a Joint Strategic Planning Retreat of the Gauteng Department of Economic Development (GDED) and the Gauteng Department of Agriculture and Rural Development (GDARD) on 21 February 2018; a Joint Executive Management Team meeting of the GDED group and the GDARD on 7 March 2018; and a presentation to the Premier's Coordinating Forum on 23 March 2018.

In January 2018, GCRO Executive Director Rob Moore was asked to join an official delegation from the GPG to the city of Reggio Emilia and the region of Emilia Romagna to continue a formal partnership between these entities and Gauteng. The activities of the delegation included planning around the various exchange programmes already established, as well as exchanges around approaches to policy research and regional systems of innovation.

“On request, the GCRO assisted the GPG to understand what water security would mean to the Gauteng City-Region in light of the current water shortages being experienced in Cape Town.”

Other support

The GCRO continued to provide occasional research support to the Social Cohesion Champions group appointed by the Premier to address key social cohesion challenges facing the province. In July 2017, the Framework Document developed by the GCRO was presented to a special session of the Provincial Exco.

In 2015/16, the GCRO was requested by the City of Johannesburg (CoJ) to partner with it on spearheading a 'Caring Cities' initiative for the international network of cities, Metropolis. The task was to formulate a 'Caring Cities Barometer'. During 2017/18, an online tool was finalised for the collection of information in multiple cities. In 2016/17, a survey was completed in Johannesburg and, in 2017/18, a paper synthesising both earlier conceptual work and the results of the Johannesburg survey was completed and submitted to the CoJ.

In part because of its work for the Social Cohesion Champions, and in part because of its work on Caring Cities, the GCRO was commissioned by the CoJ to assist in the development of a Social Cohesion Strategic Framework for the city. The GCRO finalised a comprehensive report, covering: a conceptual framework; an analysis of the evolution of key social cohesion concepts; an analysis of social cohesion dynamics using Quality of Life (QoL) IV data; and a systematic review of social cohesion interventions implemented in Gauteng.

In 2016/17, the GCRO was requested by the MEC for Economic Development to assist with a firm-level survey, looking inter alia at the cost of doing business

in the region. Working with the Gauteng Growth and Development Agency, the GCRO developed a two-phase firm-level survey process across a number of dimensions. The Human Sciences Research Council was commissioned to investigate the knowledge-intensive tradeable services sector in Gauteng. The University of Johannesburg's Centre for Competition, Regulation and Economic Development is contributing a 'census' of ten industrial areas across Gauteng, laying the basis for a deeper survey in the second phase. In 2017/18, the base was laid for the GCRO's own preliminary survey of business owners identified in the QoL Survey. Questionnaires were extensively workshopped and finalised. Early in 2018/19, 500 telephonic interviews and 100 face-to-face interviews will be conducted.

Over the course of the 2017/18 year, the GCRO served on the Gauteng Department of Education's school-feeder zone task team by attending meetings, providing feedback on policy documents, and assisting with preparation for a proposed Quality of Education Summit.

The GCRO was asked by the CoJ to help it develop a green infrastructure strategy for the city. Initial work was done on the strategy in late 2017/18, and the project will continue in 2018/19.

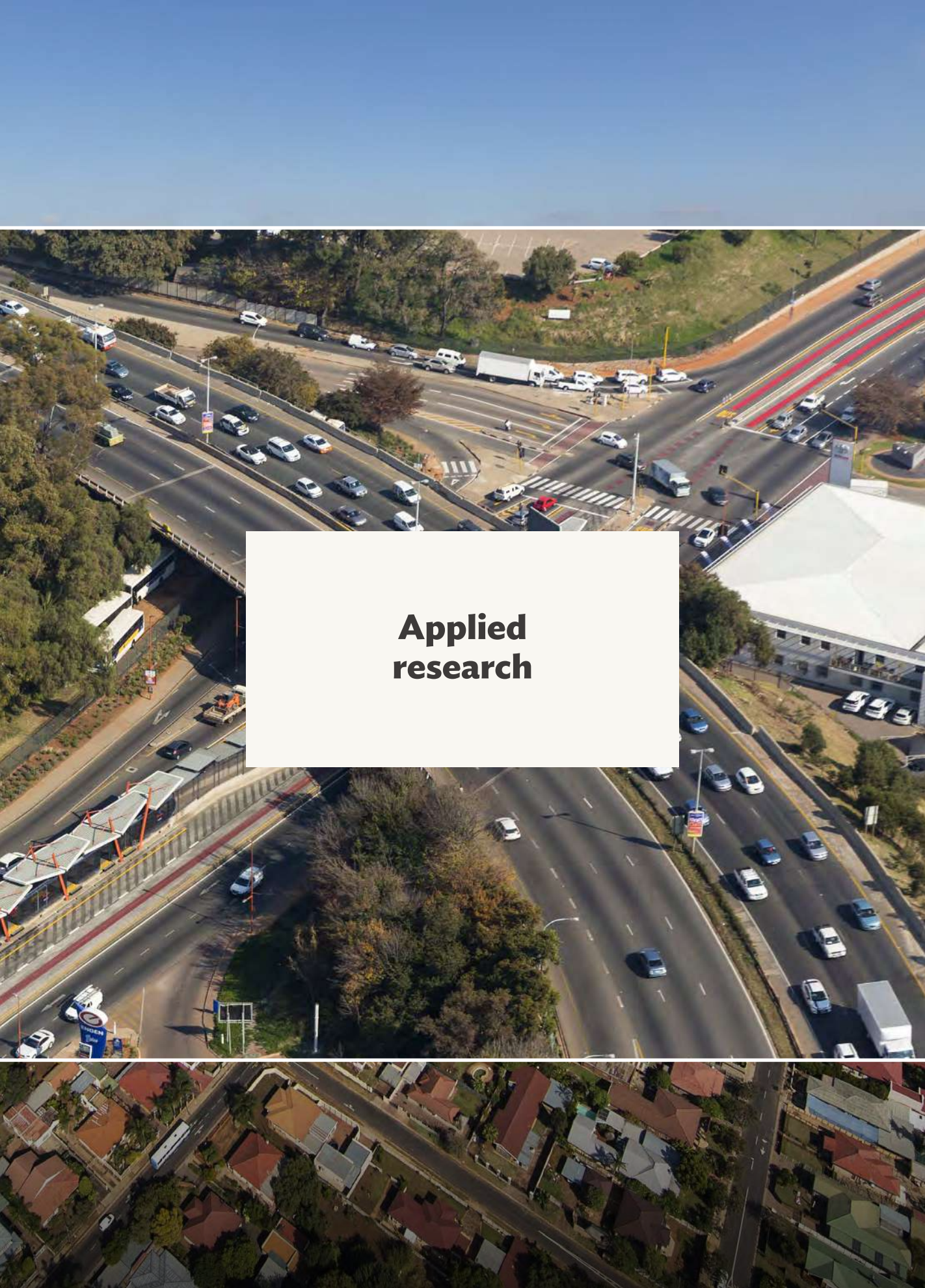
The GCRO participated in initial stakeholder engagements led by the Gauteng Department of Health regarding the potential establishment of a Gauteng Health Observatory.

Photograph by Tshepiso Seleke

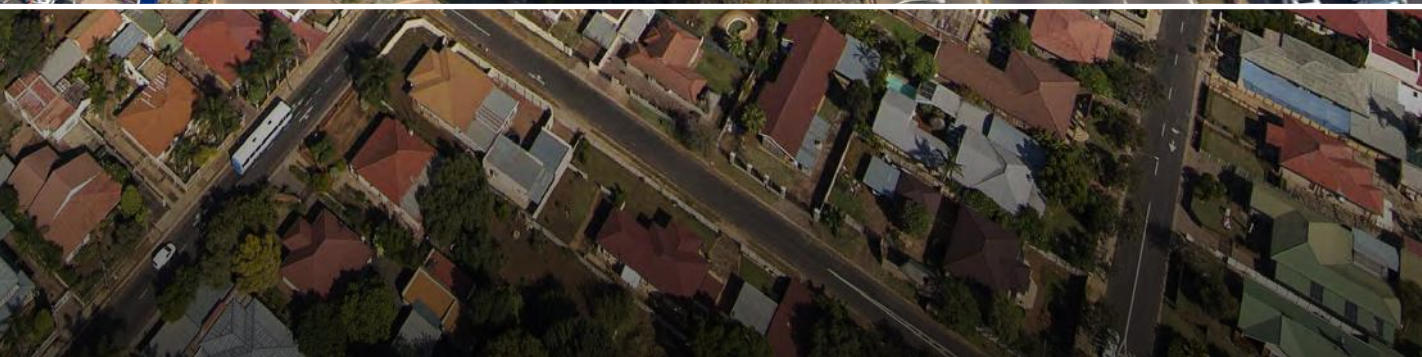




Photograph (back) by Clive Hassall | Photograph (front) by Clive Hassall



Applied research



Applied research

Overview

In 2014/15, the GCRO Board approved a new five-year strategic plan. The plan was formulated to build on existing areas of strength, and also to take account of new strategic frameworks, notably the Gauteng Provincial Government's Transformation, Modernisation and Re-industrialisation agenda for the 2014–19 term of office.

In terms of this five-year plan, the GCRO has arranged its project work into a number of thematic focus areas. There are seven themes that organise the GCRO's applied research. Each theme is made up

of a number of research projects. An eighth area is 'Government support', which, as outlined above, covers work in response to requests from local, provincial or national government. Work in this area entails either larger policy support projects or forms of ad hoc assistance for data or analysis.

The 2017/18 work plan has involved 40 live projects across the seven applied research focus areas. A few other projects, held in abeyance during this financial year primarily because of a lack of capacity, are not reported on here.

Thematic focus areas	Number of projects
1. Analytics, cartographies, visualisations	7
2. Changes in the social fabric/Changing the social fabric	6
3. Rationalities of government and governance	3
4. Histories and futures of the GCR in comparative perspective	2
5. Landscapes in transition in the GCR	11
6. New regional economies	5
7. Sustainability transitions in the GCR	6
8. Government support	n/a

1. Analytics, cartographies and visualisations

Projects in this theme include the Quality of Life (QoL) Survey, conducted every two years, as well as the design and ongoing management of a number of online applications and platforms that contribute to the open access and visualisation of the city-region's geospatial data. Examples include the Interactive GIS Viewer, Ward Profile Viewer and the ESRI Urban Observatory. Increased attention is also being placed in this theme on what it means to build a 'smart' city-region and on new methods for visualising data in interesting and accessible new ways.

Quality of Life IV (2015/16)

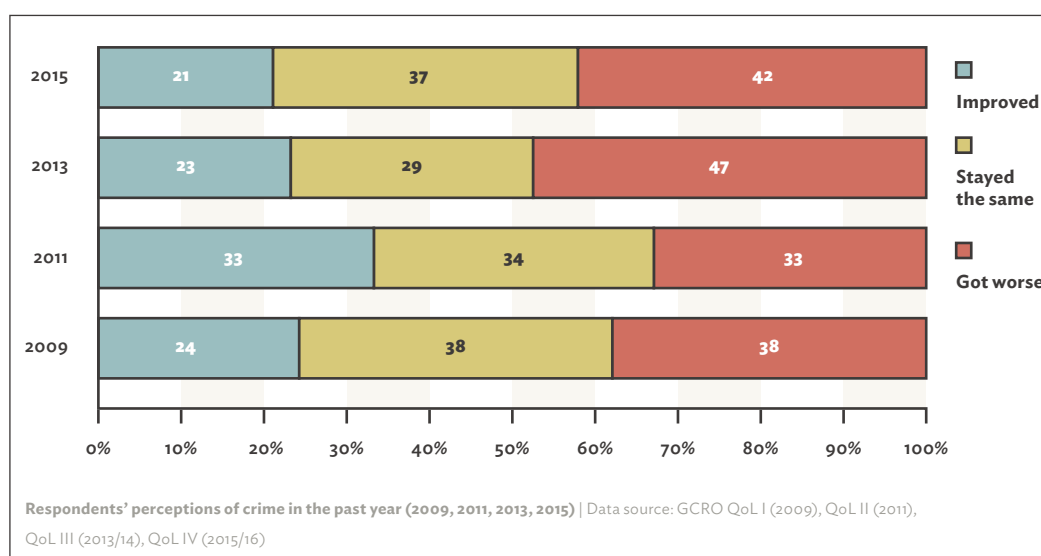
Following the completion of QoL IV data collection in mid-2016, the focus shifted to reporting the insights gained from the data. Two GCRO Data Briefs on QoL IV data, the first on crime and the second on social cohesion, were published on the GCRO website.

A further GCRO Data Brief on health issues is currently in the process of being finalised and will be published in the 2018/19 financial year. A QoL IV Benchmarking Report, which will include carefully selected infographics that summarise key findings, is also being written as a GCRO Occasional Paper.

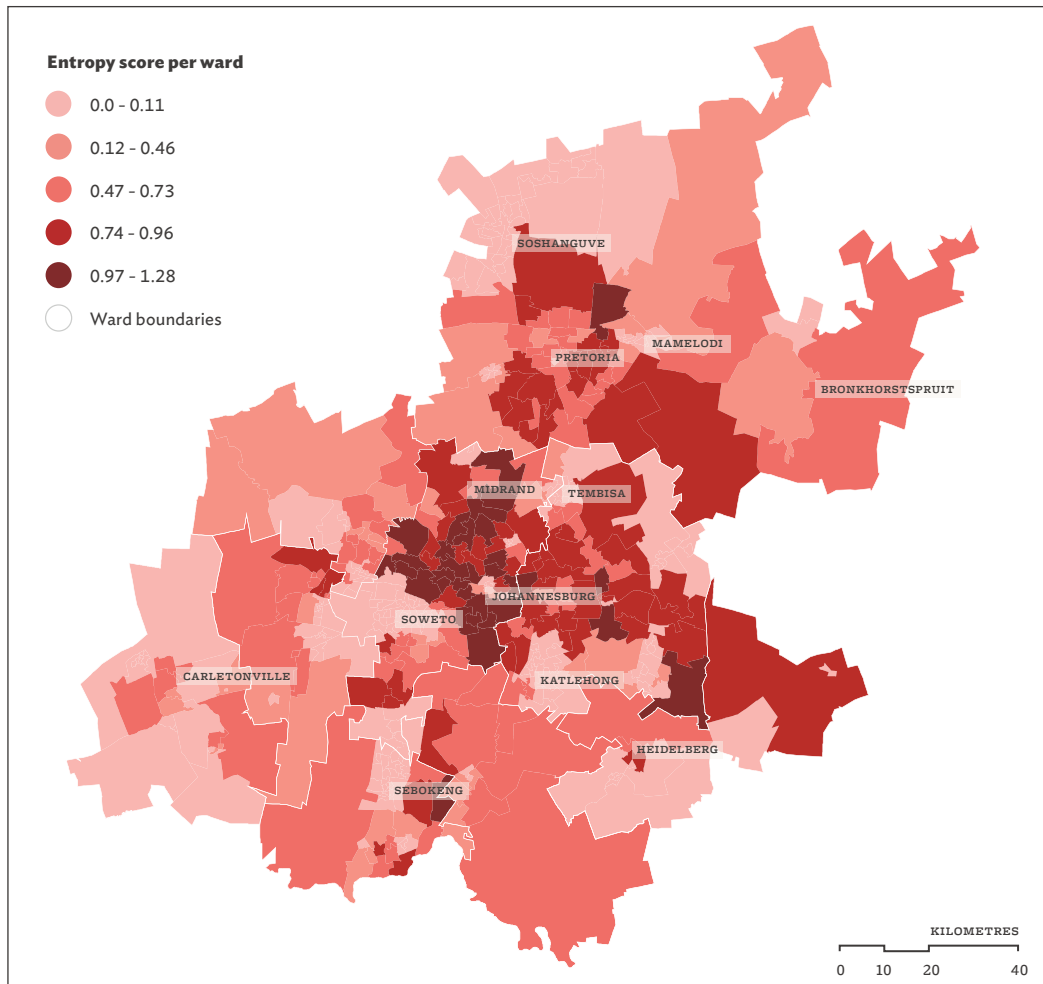
The GCRO's QoL data is publicly available and the GCRO strives to improve access to the data it collects. To this end, the QoL datasets were included on the South African Cities Network data repository and various engagements were held with municipalities in Gauteng to improve their access to and use of the QoL data.

Among numerous applications of the QoL IV data, one that potentially stands out is a vulnerability index that was developed to support a GCRO-Gauteng Department of Agriculture and Rural Development (GDARD) collaboration on mapping vulnerability in Gauteng.

Quality of Life IV (2015/16) | Figure from GCRO Data Brief #07, October 2017



Quality of Life (2015/16) | Map from GCRO Data Brief #08, February 2018



Racial diversity per ward in Gauteng in 2015/16 | Data source: GCRO QoL IV (2015/16)

Quality of Life V (2017/2018)

With the fifth QoL Survey, the GCRO is exploring a novel approach to data collection by partnering with ResearchGo, based at the University of Johannesburg. ResearchGo proposed a model which they had successfully used for large-scale data collection in the 'Tshepo 1 million' project. The model draws on unemployed youth, identified through the Harambee Youth Employment Accelerator, and trains them to collect data as part of a skills-development and work-readiness programme. The model also makes use of

innovative technology to enable the GCRO to check the data as it is collected, thereby enabling high levels of quality and geographical accuracy. With input from multiple stakeholders, the questionnaire and sampling methods were designed to ensure the collection of ward-representative data to provide insights into many of the key challenges facing the Gauteng City-Region (GCR).

Unfortunately, the start of fieldwork was substantially delayed by technical challenges, and fieldwork itself has not progressed as smoothly or

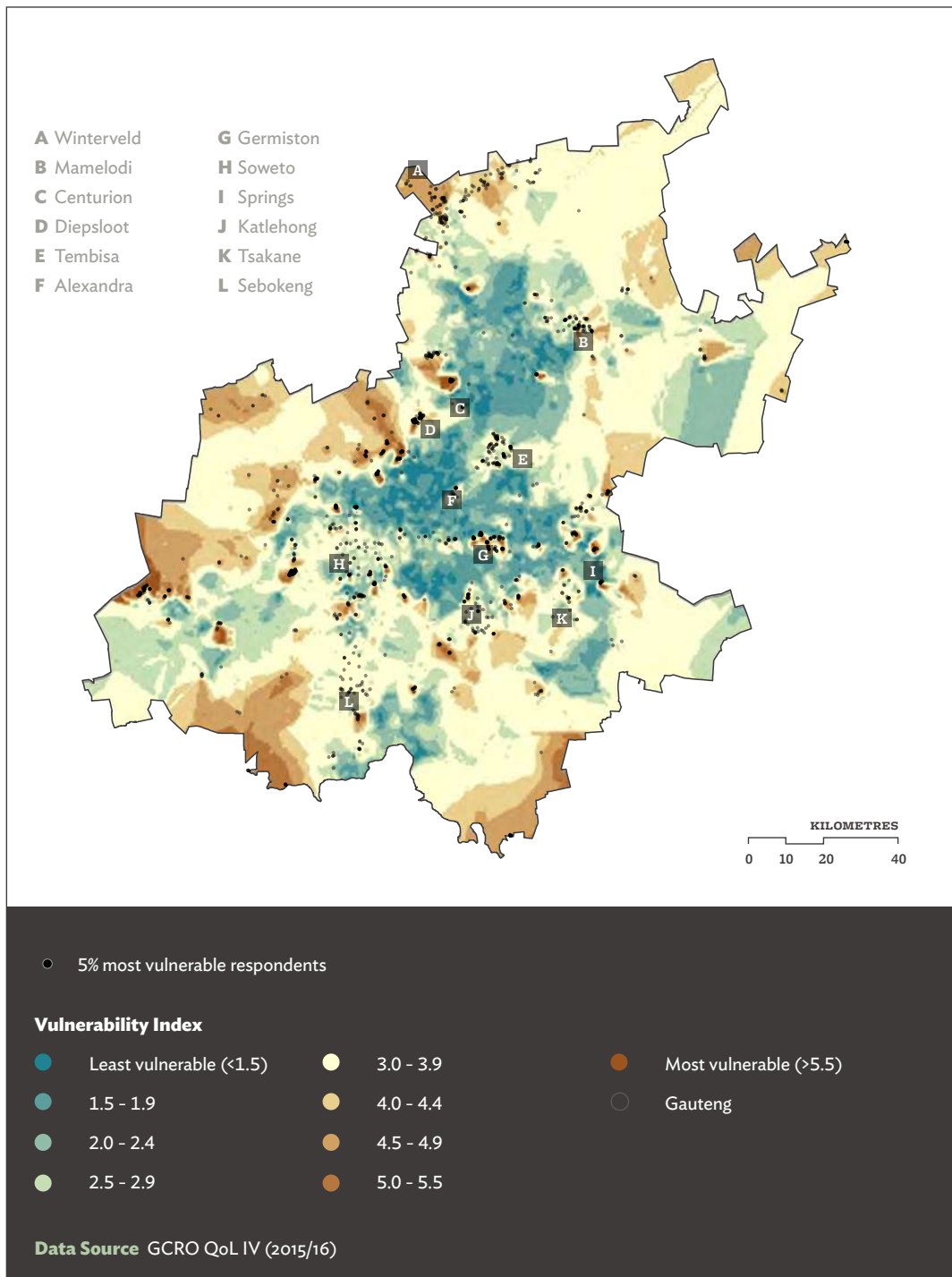


Photograph by Charles Mphahlele

rapidly as hoped. Retention of data collectors has proved challenging, and their needs in terms of training, close in-field management and logistical support were underestimated. Fieldwork was still underway in the fourth quarter of 2017/18. With interventions such as the engagement of additional

data collectors, substantially enhanced in-field management and strengthened logistical support, combined with a somewhat reduced sample size, both the GCRO and ResearchGo are committed to completing data collection as rapidly as possible in the first part of 2018/19.

Mapping vulnerability in Gauteng | GCRO Map of the Month, March 2018



Advancing data visualisation

This project cuts across many GCRO projects. Its aim is to work with GCRO data (quantitative and qualitative) to push innovative data products and information systems, indicators and benchmarks, and especially interactive data visualisations, to a new level. The data products range from a monthly GCRO Map of the Month, which showcases unique spatial visualisations, to interactive graphs, visualisations and vignettes which present various aspects of the GCR. These data products, summarised in the table in the section on GCRO outputs, are distributed to all GCRO contacts and are accessible via the GCRO website.

Data smart GCR

This research project focuses on providing strategic support to the Gauteng Planning Division (GPD) in the Office of the Premier in order to build a Spatial Data Infrastructure (SDI) for the GCR. To this end, research is underway towards a GCRO publication, together with specialists from the University of Pretoria and the Council for Science and Industrial Research, on the importance of SDI concepts and best practices. Preliminary results from this research have been presented at the GIS Forum meetings organised by the GPD's GIS unit and also at various seminars.

QoL Viewer 2nd generation

This project entails the redevelopment and enhancement of the current GCRO QoL Viewer currently displaying the 2009, 2011 and 2013/14 QoL Survey data. Through the QoL Viewer, QoL Survey data is made available online to a wide audience, allowing for various stakeholders, academics and government officials to visualise and use the data. It has become apparent that the QoL Viewer needs to be reengineered in order to address a number of issues, including the fact that it does not enable the data

to be accessed at the ward level, and the enormous time and energy required to incorporate data into the QoL Viewer in a way that preserves the weights, and therefore accuracy, of the original SPSS data file format. During the financial year, potential service providers were contacted and their proposals for reengineering the QoL Viewer were reviewed.

Geo-visual analytics

This project sees ongoing enhancements to the GCRO's GIS-based websites, and exploration of new visualisation techniques such as story-maps. During this financial year, the GCRO arranged a number of sessions of a geovisualisation (GeoViz) reading group that included the participation of various staff as well as Dr Stefania Merlo from the Wits University Department of Geography and Environmental Science and her students. During the third quarter, the project lead presented the GCRO's Ward Profile Viewer to the ESRI Southern Africa User Conference.

Website and dissemination

Because some aspects of the framework system on which the GCRO website has been built are to be discontinued, it became apparent that there is a need to redesign the back-end of the website to ensure its continued functionality. The GCRO's website developers and hosting provider, Unomena, have identified that this will likely need to be done in 2018/19. Initial discussions on the scope and focus of the redevelopment were held.

Updating of the website continued throughout the financial year, with a particular focus in the third quarter on updating each of the project pages, including ensuring that each new project had a page on the website and was associated with the relevant researchers. A general template for photo essays was also designed to optimise the potential of this medium on the website.

“Through the QoL Viewer, QoL Survey data is made available online, allowing for various stakeholders, academics and government officials to visualise and use the data.”

2. Changes in the social fabric/Changing the social fabric

Within this theme, the GCRO runs a number of projects on issues related to social life in Gauteng, including poverty, racism, graffiti, street renaming, belonging and motherhood.

Poverty and inequality in the GCR

Darlington Mushongera compiled and edited a GCRO Research Report entitled *Poverty and inequality in the GCR*. The project starts from the premise that unless and until inequality is addressed, reducing poverty will remain an intractable challenge. The report consists of three chapters: an income and expenditure analysis by David Tseng; a labour market analysis by Prudence Kwenda and Miracle Benhura; and a multidimensional poverty index for Gauteng by Darlington Mushongera, Precious Zikhali and Phindile Ngwenya. The report is scheduled to be published mid-2018.

Pathways to antiracism

In September 2017, the GCRO published its fifth Research Report, *Pathways to antiracism*, edited by Dr Caryn Abrahams. The report aims to inform and provoke discussion around pathways towards social change in a context where there seems to be a resurgence in South Africa of racism and xenophobia, and discrimination on the basis of ethnicity. The report contains conceptual reflections on the prospects for antiracism, a comparative analysis of how various countries have compiled action

plans on racism and xenophobia, and photo essays. Some of the key conclusions drawn in the report include that collaborations between government and civil society could help bring isolated pockets of success and understanding into a broader national antiracism strategy. This shared knowledge project may potentially leverage the strengths of existing strategies and facilitate the co-design of new ones, in turn offering exciting possibilities for a national South African dialogue around plural rather than purist notions of antiracism.

Graffiti in the city

Samkelisiwe Khanyile, Alexandra Parker and Kate Joseph made considerable progress on a new project, 'Graffiti in the city'. The team developed a comprehensive literature review that situates graffiti globally and in South Africa, and conducted two rounds of fieldwork, primarily in Maboneng in central Johannesburg. The authors compiled a first draft of a GCRO Occasional Paper entitled *Where do we draw the line? Graffiti in Maboneng and surrounds*. In the forthcoming year, the project will produce a public online application that maps and archives sites of graffiti in Gauteng and eThekweni. This aspect of the project is being run in collaboration with Open Data Durban and is due to be showcased at the DigiFest in Durban in June 2018.



Photograph by Alexandra Parker

Pathways to antiracism | Page from GCRO Research Report #05, July 2017



“

**...one of the ways to overcome
learned and normalised racism
is to challenge the common-sense
assumptions about race and racial
attitudes as something linked to
particular essentialised identities.**

”

Photograph by Yamon Figurs

Place and street renaming

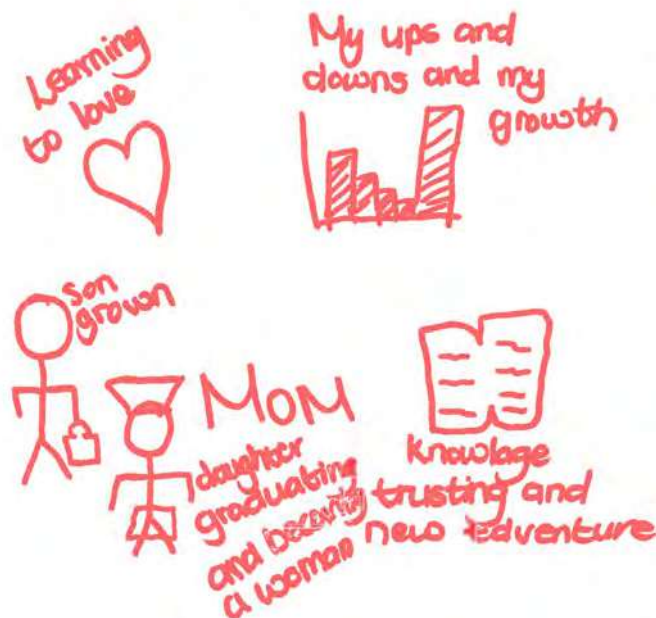
This project aims to generate insight into the politics of place and urban branding in Gauteng. Mamokete Matjomane and Thembanani Mkhize began the initiative with a particular focus on the City of Tshwane, aiming to understand why the official renaming of selected streets is resisted in some areas and accepted in others.

Scale, belonging and exclusion

In a project called 'Scale, belonging and exclusion', Richard Ballard, Sian Butcher, Alexandra Parker, Christian Hamann, Julia de Kadt, Ngaka Mosiane, Sandiswa Sondzaba and Luke Spiriopolis are examining the nature of belonging in Gauteng. In particular, this project explores the way in which some groups feel attached to particular territories, and how these territories increase or decrease in scale according to the interests of those attempting to shape the nature of belonging. The team had two writing retreats to prepare chapters for an edited collection, either as a book or journal special issue. Four of the case studies were presented at the African Centre for Cities Conference in Cape Town on 1 February 2018.

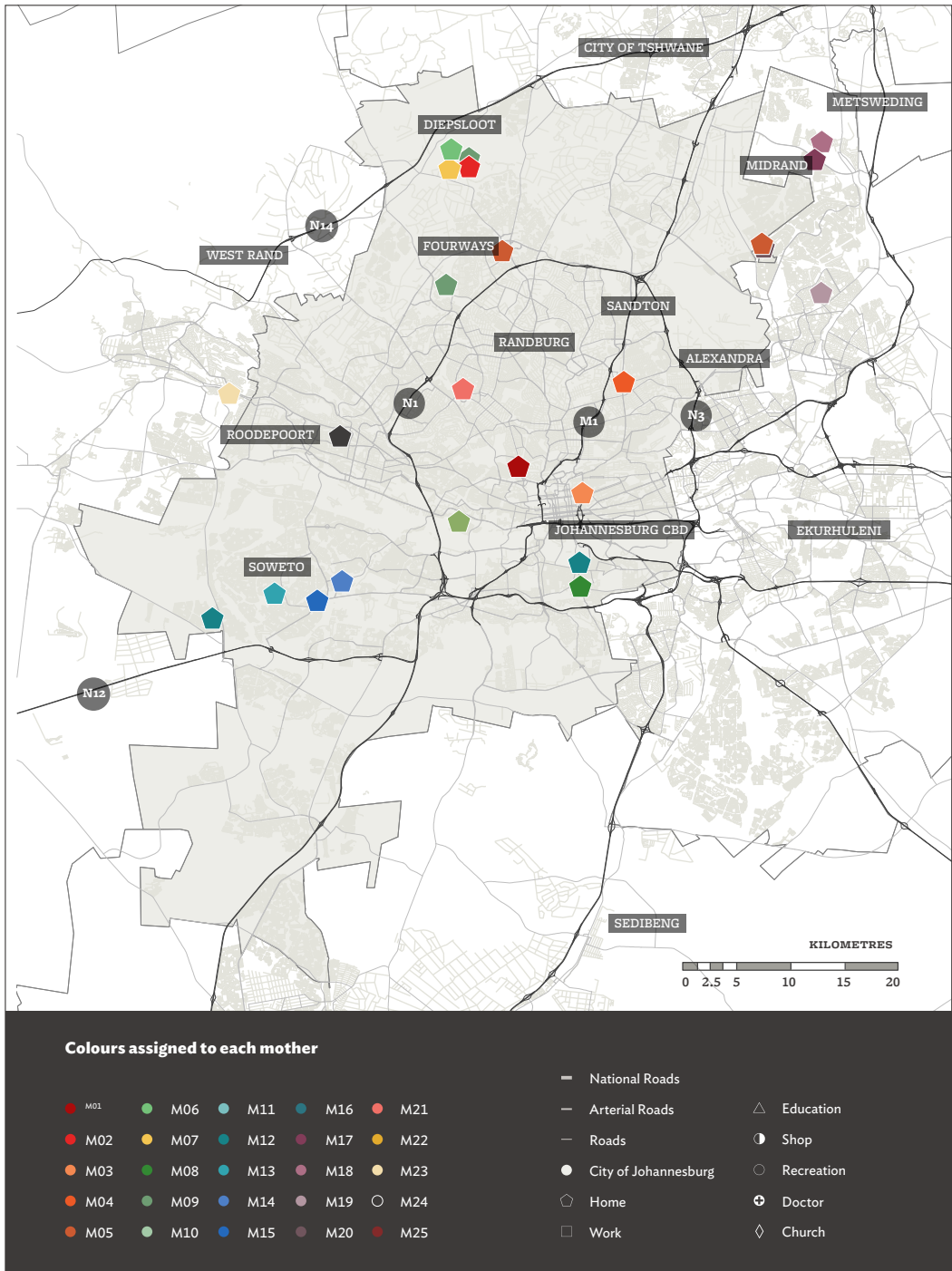
Mothers in the city

While there is a rich mine of literature on spatial exclusions due to race, very little study has focused on the gendered spatial experiences of women – and, more particularly, on mothers – in South African cities. In November 2017, the GCRO released an Occasional Paper entitled *Motherhood in Johannesburg: Mapping the experiences and moral geographies of women and their children in the city*. The Occasional Paper was published in partnership with the South African Research Chair in Spatial Analysis and City Planning. The research explored the spatial dynamics of mothers in Johannesburg, and how the nature of motherhood as both a relationship of care and a role constructed in society, as well as highly unequal urban conditions, often impose heavy burdens – financial, temporal and emotional – on mothers in the city. Understanding the spatial negotiations that typify mothers' lives exposes the depth of spatial inequality in and poor urban management of our city-region in new ways. A second phase of this project, to include a larger sample of participants, is being planned for future years.



Mothers in the city | Hand-drawn map of respondent's emotional life from GCRO Occasional Paper #11, November 2017

Distribution of mothers/respondents across Greater Johannesburg | Map from GCRO Occasional Paper #11, November 2017



3. Rationalities of government and governance

Research in this thematic area examines both government itself and the relations between government and society. On the former, it is vital to consider how government is defining its objectives and organising itself in relation to these purposes (hence rationalities of government), and also to dig deeper into the administrative configurations that might either facilitate or hinder a more integrated and coordinated city-region. These ‘institutional ethnographies’ need to be complemented with deeper analysis of the expectations that residents have of government – how are these expectations framed, organised, mobilised and expressed, and in turn how are they processed by government in a manner that is also constitutive of ‘society’s demands’? Several projects were proposed and were in progress during the period under review.

Ethnographies of the state – the politics of service delivery planning

This project entails deep-level analysis of state functions in planning and budgeting for service-delivery, with a specific focus on water services. GCRO Researcher Darlington Mushongera engaged in extensive fieldwork at the City of Johannesburg (CoJ). The GCRO negotiated with the CoJ to allow the researcher to undertake ethnographic fieldwork in the Departments of Group Strategy and Environment and Infrastructure Services. Since the methodology was ethnographic, the researcher was physically stationed at the CoJ offices, participating in most of the activities that officials in the department engage

in on a daily basis, including meetings, presentations by service providers, and so on. Work on analysing the data was started.

Knowledge partnerships for urban futures

This project consists of two components: (1) with the Gauteng Planning Division (GPD), the establishment of selected pilot strategic knowledge partnerships between government and universities; and (2) research into global and local practice (with the GCRO itself written up as a local case study) in the domain of forging university-to-government knowledge brokering and partnerships.

In terms of the first component, the GCRO led a number of engagements with Gauteng universities to advance the Premier’s initiative to strengthen collaboration between the university sector and the Gauteng Provincial Government (GPG). Workshops were held with the leadership groups of the University of Pretoria, Unisa, Wits University, Tshwane University of Technology, Vaal University of Technology and the University of Johannesburg. Considerable willingness to collaborate has been expressed, and now a platform needs to be developed to facilitate this, largely within the structures of the GPG.

In terms of the second component, the GCRO worked on a range of different initiatives. An important partnership with University College London’s Department of Science, Technology, Engineering and Public Policy (STePP) was furthered through four avenues. First, an internship that was initiated

“It is vital to consider how government is defining its objectives and organising itself in relation to these purposes.”

Photograph by Alexandra Parker





Photograph by Clive Hassall

towards the end of 2016/17 took shape with Joanna Sawkins spending time at the GCRO interviewing staff to gain a better understanding of the GCRO's structure and methodologies. During the second avenue, progress was made on a jointly authored journal article entitled 'Urban observatories and knowledge for urban futures: The case of the Gauteng City-Region Observatory'. Third, the GCRO and STEaPP co-hosted an event – 'Urban Observatories and the Governance of City-Regions' – at the 12th Metropolis World Congress, Montreal (Canada) from 19 to 22 June 2017. Fourth, the GCRO-STEaPP-GPD co-hosted a networking event at the World Urban Forum in Kuala Lumpur, Malaysia, in early February 2018.

The GCRO model and research strategies were presented and discussed through the year at a range of fora, locally and internationally. These events included: a preliminary discussion with the eThekweni City Planning Commission, and then a follow-up workshop at the GCRO offices; the Moscow Urban Forum in July 2017; a visit to the GCRO offices by the Head of Planning for the Auckland (New Zealand) City Council; the GIBS Investec Leadership Summit in August 2017; postgraduate lectures at the Institute for Housing and Urban Studies at Erasmus University, Rotterdam, in February 2018; the World Urban Forum (WUF) in February 2018; following the WUF, a workshop on urban observatories with the leadership team of the Iskandar Malaysia Urban Observatory, and a meeting with the Leibniz Institute for Urban Studies in March 2018.

The GCRO hosted a workshop for the Gauteng Department of Economic Development on policy

research for city-region economies, inviting among others Prof. Ivan Turok (Human Sciences Research Council) to outline current research imperatives for regional economies.

The GCRO was included in a GPG delegation to Emilia Romagna (region) and Reggio Emilia (city) in Italy, in January 2018. Rob Moore presented the GCRO model and participated in a number of meetings aimed at strengthening collaborative governance and economic and cultural relations between the two regions.

Governing the GCR – a Provocations series

This project aims to advance the debate on how the GCR is to be governed, and indeed what the GCR is, through the question of how governance in the city-region is being or could be institutionalised. It will take the form of a series of short GCRO Provocations that each approach a particular facet of the issue. Several Provocations were identified as making up the series, including a framing Provocation on the issue of 'institutionalising' the GCR. This framing Provocation went into production in the last quarter of the financial year.

Other Provocations in the series have been planned on: learning lessons from metropolitan government proposals in Île-de-France; water governance; party politics in demarcation decisions; and governance of the more peripheral rural edges of the city-region. Preliminary outline drafts of each of these Provocations were discussed at an initial framing workshop.

4. Histories and futures of the GCR in comparative perspective

The Gauteng City-Region (GCR) has a long history that shapes its current realities and informs its future possibilities. This thematic area addresses the need to expand and deepen the analysis of where the city-region is 'evolving to'. This requires a better sense of the region's history, and therefore its path-dependencies, and how it compares to other places elsewhere in the world.

Futures of the GCR

This project will lead to the production of a GCRO Occasional Paper providing a 'futures perspective', situating the GCR within projected long-term global urban trends and dynamics. An external specialist, Prof. Edgar Pieterse, has been engaged with a view to undertaking the work.

What is the GCR?

In the 2017/18 financial year, this project focused on producing a major exhibition on the GCR and the GCRO's work at the Cities Exhibition in the inaugural 2017 Seoul Biennale on Architecture and Urbanism in South Korea. The GCRO's exhibit was entitled 'Shifting borders and building bridges'. Project lead Alexandra Parker curated the exhibition in four story-maps – Spatial, Social, Institutional and Resources – each exploring aspects of the historical borders of the city-region and how metaphorical bridges have been erected. The exhibition included 54 maps (many of them newly developed), over 30 photographs, four videos and gifs, six charts and diagrams and two new interactive visualisations. The GCRO stand was launched on 1 September and was on display for two months until 5 November 2017 together with installations from metropolises and city-regions from around the world. Since it was primarily a digital exhibition, the full content was simultaneously launched on the GCRO website.

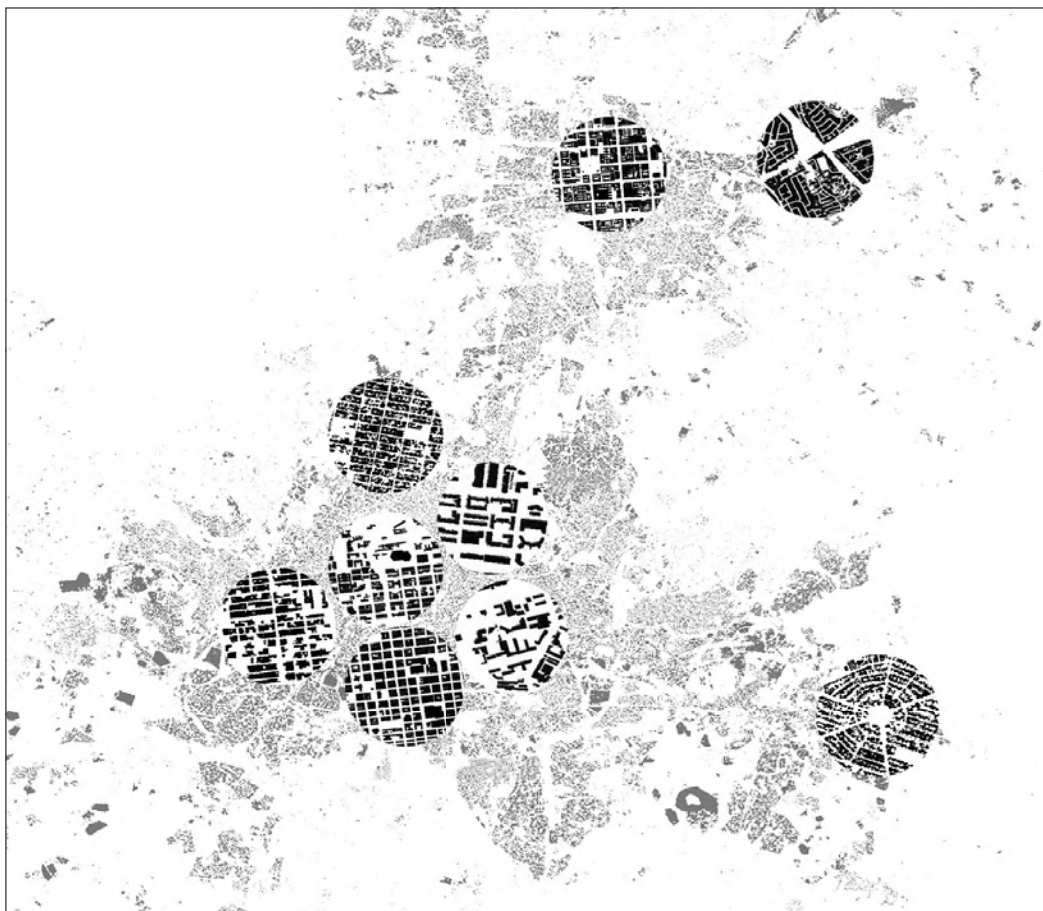
Following its successful reception in Seoul, the 'Shifting borders and building bridges' exhibition was re-exhibited as part of the Gauteng Provincial Government and Gauteng Tourism Authority stand at the World Urban Forum in Kuala Lumpur in February 2018.

Future years will see the further development of material from the exhibitions for an eventual book project. An initial proposal for the book was drafted.



GCRO exhibit at the Seoul Biennale on Architecture and Urbanism, South Korea, September–November 2017

Taking streets seriously | Detail from GCRO Research Report #o8, February 2018



5. Landscapes in transition in the GCR

Taking streets seriously

This project aims to understand the Gauteng City-Region through the lens of its streets. Its first output was a Research Report with the same title, published in February 2018 and launched at the African Centre for Cities International Conference, where it was warmly received. The Research Report included a set of case studies of streets around Gauteng. The case studies set out to explore the proposition that our streets are designed with inadequate regard for their

users, and especially those users whose experience of the street is unmediated by the car. The studies found a complex interplay of actors in both the history and the present of Gauteng's streets: street users, property owners and the state operate according to diverse agendas, contingent very much on the individual streets in question. The result is streets whose natures are chaotic, contested and changing over time, and where, despite the dominance of cars, pedestrian activities proliferate.

At the end of the 2017/18 financial year, the project was regrouping and planning for an extension of the research agenda, either as a further GCRO Research Report, or as a book.

Peripheries and rural/urban transitions in the GCR

Small towns on the edge of the city region, large peri-urban and commercial farming areas, and huge zones of displaced urbanisation in ex-‘Bantustans’ are all poorly understood. Yet there is evidence that they are undergoing rapid change. This longstanding project to deepen understanding of the GCR’s peripheries has been run in conjunction with the National Research Foundation Chair for Planning and Modelling in the Wits School of Architecture and Planning. It culminated in September 2017 with the publication of a major GCRO Research Report, *Uneven spaces: Core and periphery in the Gauteng City-Region*.

Mining landscapes of the GCR

This project, a multi-disciplinary study (environmental, economic, and social and spatial) of changing mining landscapes in the GCR, concluded in the final quarter of the financial year with the publication of a major GCRO Research Report titled *Mining landscapes of the Gauteng City-Region*.

Untangling transport

This is a pilot project designed to analyse data gathered from a specially designed mobile app (myJozimoves) which tracked participants’ movements through Johannesburg over the course of several months in 2016. The project was somewhat delayed by the maternity leave of the externally contracted lead researcher, but by the end of the financial year, preliminary drafts of a report as well as the data had been received.

A political economy analysis of transit corridors

The Rea Vaya Bus Rapid Transit (BRT) system is one of, if not the, most significant policy and infrastructure interventions in post-apartheid Johannesburg. It belongs to a general wave of interest elsewhere in the country, the continent and the world in corridor-based transport interventions, many of which involve BRT. This project undertook to understand the genesis, planning, implementation and effects of Johannesburg’s transit corridors,

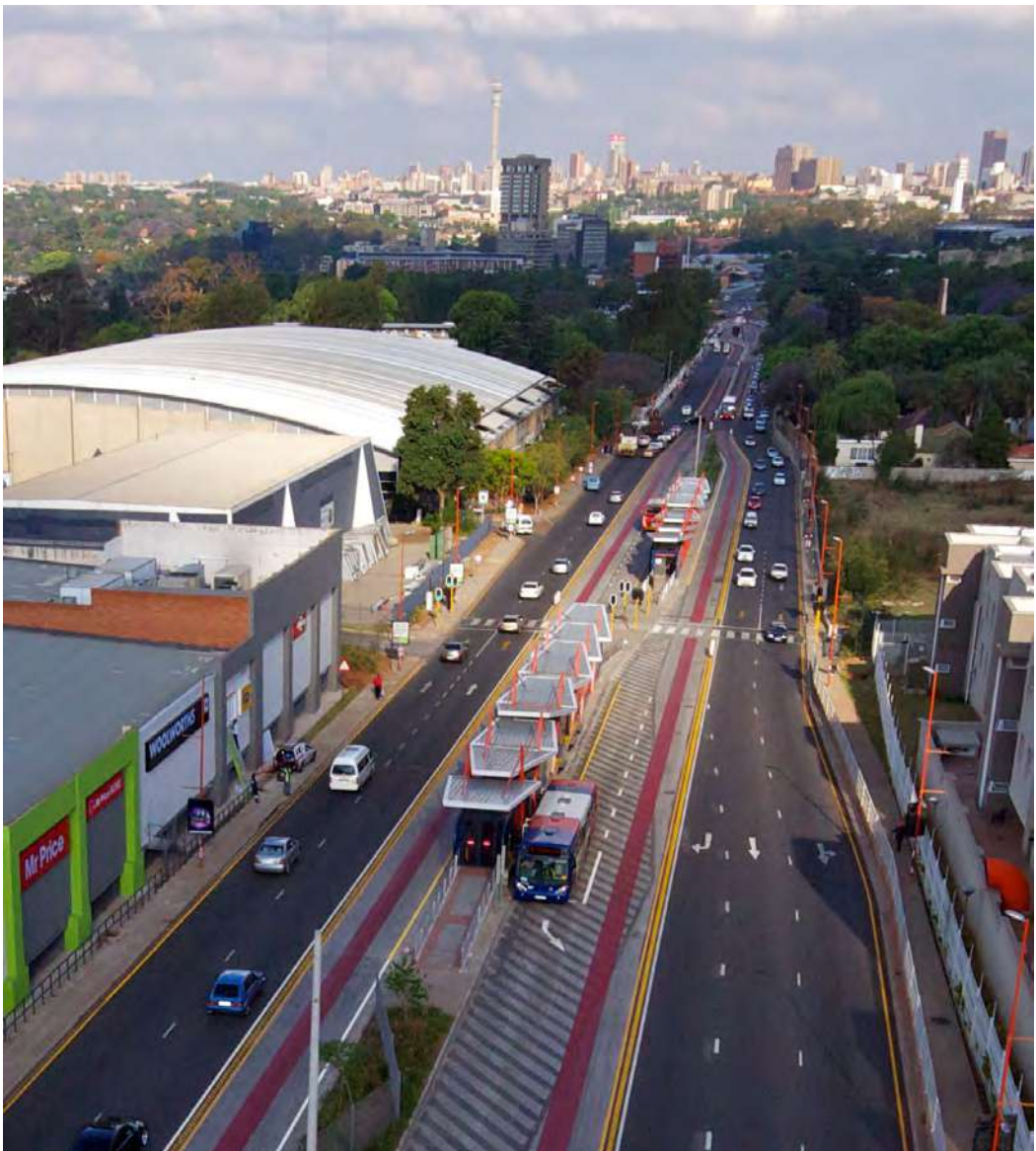
“Small towns on the edge of the city region, large peri-urban and commercial farming areas, and huge zones of displaced urbanisation in ex-‘Bantustans’ are all poorly understood.”

Photograph by Clive Hassall



both to understand the dynamics in this specific city, and to build a more general analysis of these policy instruments in comparative perspective. The project has been conceived as a partnership between the GCRO and co-researchers at University College London and the African Centre for Cities at the University of Cape Town.

In this financial year, the project saw three conference papers delivered in Leeds, Berlin and Cape Town, as well as drafting on a Provocation, provisionally titled *Unrealistic expectations, unrealised: Bus rapid transit in Johannesburg*. This output was at an advanced stage of writing by year-end.



BRT station near the University of Johannesburg (photograph © GCRO)



August House is dead, long live August House – book launch, October 2017

The local city

This project seeks to examine the shifting dynamics of the city through selected Johannesburg inner-city buildings. 2017/18 saw an agreement with publisher Fourthwall Books and the African Centre for Cities for GCRO to financially support the production of a book on a Johannesburg inner city building with a fascinating history of transformation. A memorandum of understanding was signed, clarifying the responsibilities of each of the three parties. The book, *August House is dead, long live August House*, written by Kim Gurney, was published in September 2017. GCRO's Research Director spoke on the importance of the book at a launch event in early October 2017.

Spatial imaginaries of the GCR

This is a study into how provincial and local governments are defining spatial visions for their areas (with an emphasis on how to develop and redevelop human settlements), and what resources and tools are available to translate vision into reality. It involves a diverse set of case studies on different 'spatial imaginaries'. A very significant output under this project was the choreographing of a special issue of the journal *Transformation*, issue 95, published in December 2017. The special issue brought together six papers on the topic of how megaprojects have come to be envisaged as the solution to South Africa's unmet housing and human settlement demand.

Beyond this significant work, the project saw initial conceptualisation of a future GCRO Research Report on spatial imaginaries, which will be taken forward in 2018/19.

Conceiving, producing and managing neighbourhoods

This research explores processes of urban upgrading and precinct development in two neighbourhoods in Johannesburg, one in the north-eastern suburbs and another in the inner-city. It follows the precinct development plans through their conception, establishment and ongoing operationalisation. The first half of the financial year saw significant fieldwork in Norwood and (to a lesser extent) Ekaya/Hillbrow. In the second half of the year, attention turned to writing up the research, and good progress was made on the drafting of a GCRO Occasional Paper. The work was submitted for external peer review and, by the end of the financial year, the researchers were revising the work in line with comments and suggestions received.

Building Gauteng

This project examines the way in which developers of various kinds produce urban space, and especially the assumptions, behaviours, practices and systems of developers driving large-scale urban developments. This is a comparative project which brings case studies based in Gauteng into conversation with research in Toronto, London and Manila. In the first quarter of the

financial year, co-project leads Richard Ballard and Sian Butcher submitted a proposal for a special issue to the journal *Environment and Planning A*. The proposal was accepted, subject to some revisions, and by the end of the financial year, substantial progress had been made on drafting of the various articles.

Landscapes of peripheral and displaced urbanisms

This multi-year research involves sustained investigation in the northern peripheries of the extended Gauteng City-Region, looking in particular at how ordinary people in selected sites in Rustenburg and former KwaNdebele areas are remaking their lives and their landscapes. This year saw a significant background literature review, with a focus on the establishment of the former KwaNdebele homeland. It also saw over three months of intensive fieldwork, first in Rustenburg, then Mabopane, and then in the final quarter of the financial year in Phokeng, Freedom Park, Platinum Village and Impala mining hostels in Rustenburg.

The project also sees some overlap with a distinct, but connected, research initiative coordinated by the Wits School of Architecture and Planning entitled 'Living the urban periphery: Investment, infrastructure and economic change in African City-Regions'. The project lead has interacted with researchers in this initiative.

Civic Tech Innovation Network (CTIN)

The CTIN project is a partnership with the Network Society Programme at Wits Journalism. It involves a peer-learning network of government and civil society on how to improve the use of technology in governance. A concept note was produced early in the financial year based on stakeholder interviews, and presented at National Treasury's Economy of Regions Learning Network. A discussion was convened at the same event on agile procurement.

The CTIN launched with a set of activities including several peer-learning events and an edited online publication for partners and members. These were well subscribed and impetus was gained for a more institutionalised network.

The CTIN's activities over the year had been funded by Making All Voices Count, a global transparency and governance initiative. Towards the end of the year funding was secured from the Omidyar Foundation to support the Network's core activities for two years to come, dependent on securing additional funding for the second year. As the year closed, preparations were underway to contract a national convenor and editorial staff for the CTIN, in preparation for its relaunch on a more formal basis.



Photograph by Alet Pretorius

6. New regional economies

Research in this theme examines the Gauteng City-Region's changing economic geography since 1994 and how this is impacting the quality of life of its citizens. While the GCR has seen huge economic strides, notably in the mid-2000s, there remain key challenges across the region including unemployment, poverty and inequality. The various research projects under this theme are geared towards informing the development of a GCR economy that is competitive, inclusive and sustainable.

Economic geography of the GCR

One of the highlights of 2017/18 was the publication by Springer International of a major book on the economy of the GCR, *The changing space economy of city-regions: The Gauteng City-Region, South Africa*, edited by Dr Koech Cheruiyot. The book has ten chapters, of which six are authored or co-authored by GCRO staff. A GCRO Map of the Month (titled *Differentiating household income growth in Gauteng 2001-2011*) drawing on content from the book was also released in October 2017. With a discount of 40% offered by the book's publisher, the GCRO has ordered several copies which will be distributed to key stakeholders, including government officials.

Understanding Gauteng's urban space economy

This project aims to deepen understanding of how the urban space economy of Gauteng works, and interrogate how government has understood and taken up the challenge of intervening in this economy over the last two decades. In 2017/18, work on this project was oriented towards a partnership between the Gauteng Growth and Development Agency (GGDA), the GCRO, the Human Sciences Research Council and the Centre for Competition Regulation and Economic Development around various aspects of a firm-level survey requested by the MEC for Economic Development (see above under 'Support to government').

GCRO staff spent a week at the Institute for Housing and Urban Development Studies (IHS) at Erasmus University, Rotterdam, lecturing on an Urban Competitiveness and Resilience Masters Programme.

A number of GCRO staff members are either supervising or co-supervising IHS students.

Township economies in the GCR

Research on township economies deepened in 2017/18, led by one of the new researchers employed in 2016/17. The project lead started to develop a GCRO Provocation on the issue. This will add to recent work included as one of the chapters in the edited book on GCR's regional space economy, titled 'Revitalising Gauteng City-Region township economies through value chain development'.

Methods for regional economic analysis

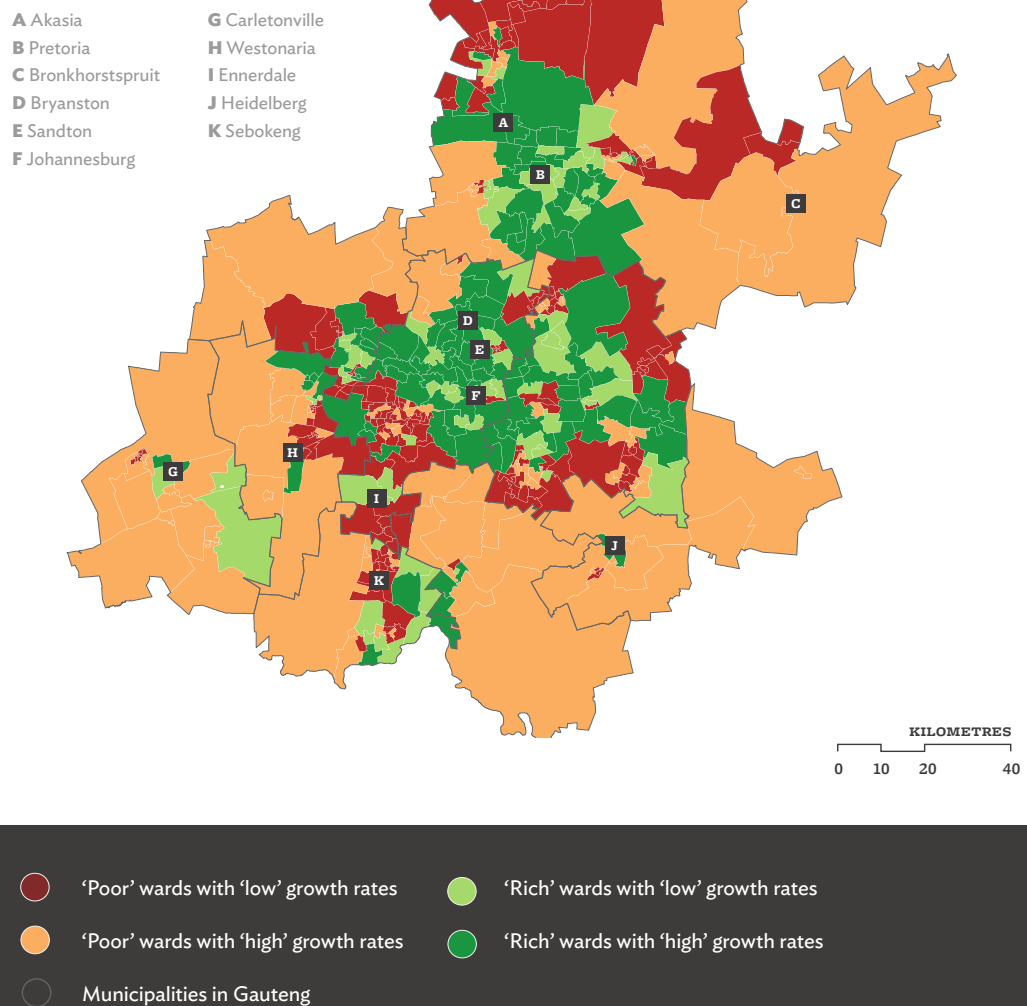
This project aims to facilitate a process of empowering economic development officials with tools and techniques to better understand regional economy dynamics. It was re-invigorated with the completion of the book edited by the project lead, *The changing space economy of city-regions*. An outline for the work was finalised after an agreement was reached on sharing the workload on the project between the project lead and a contracted co-author.

Street trader organisations in policy processes

This project entails an investigation of the role and influence that street trader organisations have on policy processes and practice through a comparative study between the City of Johannesburg, City of Tshwane, City of Ekurhuleni and Ahmedabad in India. The project lead participated in several academic activities, including a panel discussion, a writing retreat and a colloquium presentation organised by the Centre for Urban and Built Environment Studies (CUBES), School of Architecture and Planning, Wits University. The colloquium saw a panel discussion – a 'Spatial justice roundtable' – where the project lead presented on 'What would just governance of street trading look like?'. The three-day writing retreat gave the project lead an opportunity to define and begin drafting a paper titled 'Losing battles and winning the war? Street traders' influence on policy making in India'. The project lead's PhD research is proceeding well. After her initial fieldwork in Ahmedabad, India, between October and December 2017, she will complete her fieldwork in the GCR. Several outputs are expected from this project.

Economic geography of the GCR | GCRO Map of the Month, October 2017

Differentiating household income growth per ward in Gauteng: 2001-2011



Data Source Statistics South Africa (2001, 2011)

7. Sustainability transitions in the GCR

Environmental sustainability is a critical consideration for the current and future success of Gauteng's economy and society. This research theme explores various factors that affect environmental sustainability in the city-region. The project also pushes the boundary of research approaches that may enable a transition towards a more sustainable city-region.

Metabolic flows and infrastructure transitions

This project continues to build an argument for the sustainable use of natural resources and management of waste. The 2017/18 financial year saw the publication of a journal article by GCRO staff members entitled 'Doing more with less (data): Complexities of resource flow analysis in the Gauteng City-Region', in the journal *Environmental Research Letters*.

Green assets and infrastructure

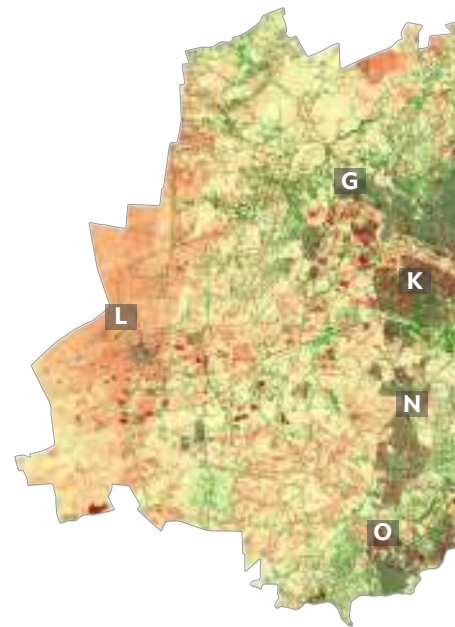
The GCRO's multi-year 'Green assets and infrastructure' research, first initiated in 2012, has developed into a sustained multidimensional project attracting significant attention within both government and academia. This project set out to influence how green assets are planned and managed in Gauteng. It has provided insight into how to incorporate green infrastructure as part of the critical infrastructure trajectory that is being developed at both the provincial and local level. Over the years, the project has adopted a wide range of research methods and mobilised numerous forms of dissemination to widen the relevance and accessibility of the research.

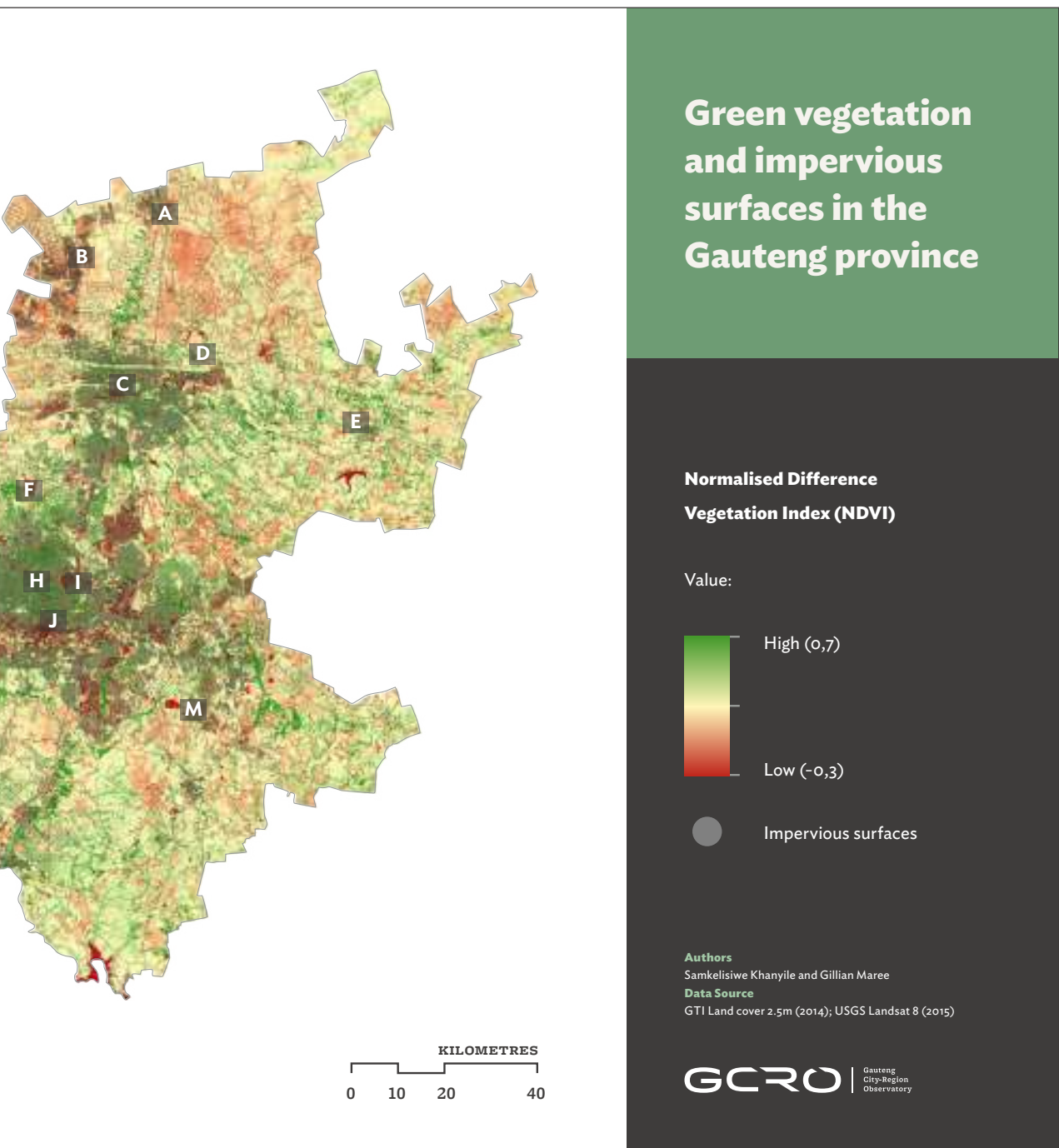
Significant strides were made during 2017/18 on the mapping components of the project. An analysis was undertaken to derive a Normalised Difference Vegetation Index map for Gauteng using satellite imagery. This was published as the May 2017 GCRO Map of the Month. In the second quarter, two students from the Wits School of Geography, Archaeology and Environmental Studies were contracted to assist with mapping, spatial analysis, data creation, database



GCRO
Map of the Month

- | | |
|--------------------------|-------------------------|
| A Hammanskraal | I Alexandra |
| B Soshanguve | J Johannesburg |
| C Pretoria | K Soweto |
| D Mamelodi | L Khutsong |
| E Bronkhorstspuit | M Tsakane |
| F Diepsloot | N Orange Farm |
| G Krugersdorp | O Vanderbijlpark |
| H Sandton | |





management and data manipulation. This work has laid the foundation for deeper mapping and analysis which will be conducted in 2018/19.

Over the 2017/18 financial year, a research collaboration with UCL STEaPP was sustained through GCRO involvement in one of their Masters programmes. The students were guided and supported by the 'Green assets and infrastructure' project team in compiling a report on the role of urban agriculture in Gauteng's green infrastructure network.

This financial year saw the project's researchers, Christina Culwick, Samkelisiwe Khanyile and Gillian Maree, participate in and present at numerous academic conferences and government events. These included the Colloquium on Resilience for Development (May 2017); the Stockholm Resilience Centre's GRAID Workshop (Guidance for Resilience in the Anthropocene: Investments for Development) (May 2017); the Gauteng Provincial Government's Gauteng Infrastructure Investment Conference (July 2017); and the African Centre for Cities International Urban Conference (February 2018).

The 2018/19 financial year will see work towards finalising the project's third Research Report, which includes various case studies into applying green infrastructure in practice in the city-region, as well as recent progress in the mapping and spatial analysis of Gauteng's green infrastructure network.

City transitions to a green economy

Following the GCROs support work looking at green economies in 2010/2011, this research focuses on building empirical research on the nature of the emerging green economy in the Gauteng City-Region. The project aims to use a number of case studies to highlight the current state of the green economy of the city-region. The 2017/18 financial year saw the re-editing of a commissioned report on the state of readiness of Gauteng's metropolitan municipalities to implement green economy principles. The report will be lodged on the GCRO's website when editing is finalised.

Water security in the GCR

Water shortages and severe droughts around South Africa have highlighted the importance of water for the long-term growth and development of the Gauteng

City-Region. In spite of its water scarcity, the GCR has over a period of more than 130 years supported its urban growth through the implementation of mega water supply schemes. However, as Gauteng reaches the limits of water supply solutions, and continues to be the hub of the South African economy, challenges such as a rapidly growing urban population and increasing urban demand for water are major risks to urban water security. This project saw the commissioning of a GCRO Occasional Paper to explore what water security would mean to the GCR. Work on this Occasional Paper continued in this financial year.

Gauteng as a long-term ecological study site

GCRO project work on metabolic flows and infrastructure transitions has demonstrated challenges in analysing urban ecological systems. Decision-makers in the Gauteng City-Region need to grapple with urbanisation and economic growth while considering environmental and resource limits. In many cases, the knowledge to support these processes either does not exist or is not useful. Most ecologists are unfamiliar with urban systems and most urbanists work in social and economic sciences, allowing little interaction or joint research with those in sustainability fields.

The ability to effectively engage with sustainability issues within the GCR requires deeper analysis into understanding socio-ecological systems, processes and drivers. A Long-Term Ecological Research (LTER) project, as it has been applied in other parts of the world, may provide long-term records that will answer questions about the structure and function of urban ecosystems, and contribute to the knowledge base for the sustainability of the GCR. During the 2017/18 financial year, this project looked at international cases of LTER to better understand what a LTER for the GCR would look at and identified key role-players, contributors and partners. The next financial year will develop a concept note and plan for a GCR LTER.

Justice and sustainability transitions

In the context of rapid urbanisation, cities and urban regions in the global South are faced with the challenge of planning development without leading to unjust or unsustainable outcomes. Gauteng has committed

to developing in a way that reduces inequality and ensures the long-term sustainability of the region. Despite these commitments and the theoretical alignment between social justice and environmental sustainability imperatives, there remains limited progress towards the concurrent achievement of these goals. Despite assertions in literature and policies that environmental sustainability and social justice are mutually attainable goals, in reality there is a much more complex relationship between these imperatives. This project builds towards a deeper understanding of how a just sustainability transition can be achieved in Gauteng by exploring where the theoretical alignment between environmental sustainability and social justice proves more complex in reality.

During the 2017/18 financial year, the project made progress towards a major Research Report, which will include a range of case studies, each exploring different contexts in which there is a tension between justice and sustainability. A research collective has emerged including a number of researchers from both within and outside of the GCRO. During the course of the year, the GCRO hosted

two workshops with this research collective. These workshops helped to build and align the theoretical framework across the various cases and the project as a whole. These workshops also provided an opportunity for each chapter to be presented and discussed in conversation with the overall theoretical framing. Each respective contribution to the research collective was presented in a two-part panel at the African Centre for Cities International Urban Conference on 1 February 2018. This provided a useful opportunity to get feedback on the various pieces and the overall framing of the research collective. Further progress on the Research Report will be made in the 2018/19 financial year.

Project lead Christina Culwick registered for her PhD, which is directly linked to this project. Christina presented and finalised her PhD proposal, and will undertake work towards her literature review and fieldwork in the coming financial year. In line with the project focus, Christina also attended a Transport Justice Master Class held at the University of Cape Town in July 2017.



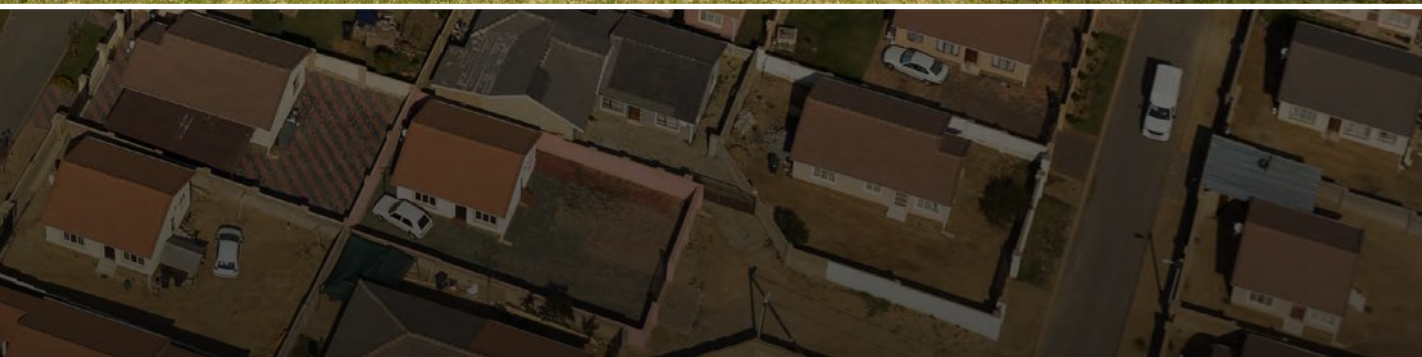
Photograph by Clive Hassall



Photograph (back) by Clive Hassall | Photograph (front) by Mpumelelo Buthelezi



**GCRO outputs,
academic publishing,
presentations and
academic citizenship**



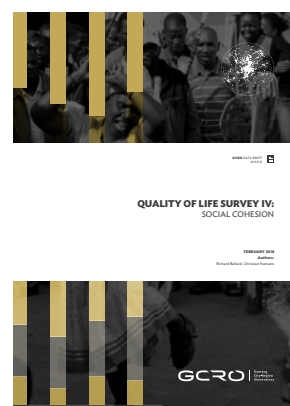
GCRO outputs, academic publishing, presentations and academic citizenship

GCRO outputs and events

Research Reports, Occasional Papers, Data Briefs and Provocations

- Abrahams, C., Erwin, K., Hamann, C., Jacqui the Poet, Nemakhavani, R., & Spiropoulos, L. (2017). *Pathways to antiracism*. GCRO Research Report 5. July 2017.
- Peberdy, S., Harrison, P., & Dinath, Y. (2017). *Uneven spaces: Core and periphery in the Gauteng City-Region*. GCRO Research Report 6. September 2017.
- Parker, A., & Rubin, M. (2017). *Motherhood in Johannesburg: Mapping the experiences and moral geographies of women and their children in the city*. GCRO Occasional Paper 11. November 2017.
- Siteleki, M., Ballard, B., & Mosselson, A. (2017). *Quality of Life Survey IV (2015/16): Crime and perceptions of safety in Gauteng*. GCRO Data Brief 7. October 2017.
- Bobbins, K., Trangoš, G., Phasha, P., Butcher, S., & Munakamwe, J. (2018). *Mining landscapes of the Gauteng City-Region*. GCRO Research Report 7. January 2018.
- Harber, J., Parker, A., Joseph, K., & Maree, G. (2018). *Taking streets seriously*. GCRO Research Report 8. February 2018.
- Ballard, R., & Hamann, C. (2018). *Quality of Life Survey IV (2015/16): Social cohesion*. GCRO Data Brief 8. February 2018.





GCRO data outputs

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
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Map of the Month

<p>April 2017: Mapping homophobia</p> <p>May 2017: Green vegetation and impervious surfaces in the Gauteng Province</p> <p>June 2017: Air pollution and health in Gauteng</p>	<p>July 2017: Understanding Gauteng's core and periphery through income</p> <p>August 2017: Watershed boundaries of the Gauteng City-Region</p> <p>September 2017: Dimensions of diversity in Gauteng</p>	<p>October 2017: Differentiating household income growth in Gauteng 2001-2011</p> <p>November 2017: Spatial footprints of mothers in Johannesburg</p> <p>December 2017: The reach of GCRO research</p>	<p>January 2018: The streets of Gauteng</p> <p>February 2018: Change in backyard and informal dwellings: 2001-2016</p> <p>March 2018: Mapping vulnerability in Gauteng</p>
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Vignettes

		<p>Vignette 33: The 1%</p>	<p>Vignette 34: Inadequate access to services</p> <p>Vignette 35: Best rated services per municipality</p>
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Interactive visualisations

	<p>'Shifting borders and building bridges', 4 interactive visualisations</p>	
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Jesse Harber speaks at the GCRO's Taking Streets Seriously Symposium, April 2017

Conferences, seminars and symposia organised by the GCRO

The GCRO continued to co-organise the Faces of the City Seminar Series with the NRF Chair of Spatial Analysis and City Planning, the Wits City Institute and the Centre for Urban and Built Environment Studies (CUBES).

- On 5 April 2017 the 'Taking streets seriously' team organised a symposium of the same name to represent initial research findings, and start building an interested community.
- The GCRO co-hosted a session event at the 12th Metropolis World Congress, Montreal (Canada) from 19-22 June 2017. The session was entitled 'Urban observatories and the governance of city-regions' and included contributions from UCL STEaPP and GPD.
- The GCRO hosted Prof. Philip Harrison's four-part seminar series 'Governing Complex City-Regions' (October & November 2017)
- The GCRO arranged the City Support Programme (CSP) & World Bank Urbanisation Review Dialogue (8-9 November 2017).
- Social cohesion and violence prevention symposium (22 January 2018).
- Three panels at the ACC Urban International conference were organised by GCRO staff (1-3 Feb 2018).
- The GCRO organised a Networking event at the 9th World Urban Forum, Kuala Lumpur (Feb 2018) together with STEaPP and GPD. The event was entitled 'Multi-scalar governance for urban sustainability in resource constrained urban regions'.
- A colloquium was hosted by the GCRO in honour of the launch of the book *Building a capable state: Service delivery in post-apartheid South Africa* (8 February 2018).

Published works

Published books, journal articles, book chapters and conference proceedings

- Butcher, S. (2018). Making and governing unstable territory: Corporate, state and public encounters in Johannesburg's mining land, 1909-2013. *Journal of Development Studies*, special issue on 'Informal practices of the State in the governance of cities: views from Southern Africa'. Online first doi:10.1080/00220388.2018.1460464
- Cheruiyot, K. (2018). Dualisms in the Gauteng City-Region: Summary and implications. In K. Cheruiyot (Ed.), *The changing space economy of city regions: The Gauteng City-Region, South Africa* (pp.275–285). Switzerland: Springer Publishers.
- Cheruiyot, K. (2018). City-regions and their changing space economies. In K. Cheruiyot (Ed.), *The changing space economy of city regions: The Gauteng City-Region, South Africa* (pp.1–24). Switzerland: Springer Publishers.
- Cheruiyot, K., & Mushongera, D. (2018). Testing economic growth convergence and its policy implications in the Gauteng City-Region. In K. Cheruiyot (Ed.), *The changing space economy of city regions: The Gauteng City-Region, South Africa* (pp.213–239). Switzerland: Springer Publishers.
- Cheruiyot, K., Desai, A., & Lengaram, E. (2018). Assessing the Gauteng City-Region's global presence and positioning through current global-city measures. In K. Cheruiyot (Ed.), *The changing space economy of city regions: The Gauteng City-Region, South Africa* (pp.63–92). Switzerland: Springer Publishers.
- Harber, J. (2018). One hundred years of movement control: Labour (im)mobility and the South African political economy. In T. Priya Uteng & K. Lucas (Eds.), *Urban mobilities in the global South* (pp.155–172). New York: Routledge.
- Peberdy, S. (2018). Locating the informal sector in the Gauteng City-Region and beyond. In K. Cheruiyot (Ed.), *The changing space economy of city regions: The Gauteng City-Region, South Africa* (pp.185–211). Switzerland: Springer Publishers.



The GCRO hosts the CSP and World Bank Urbanisation Review Dialogue, November 2017

- Vom Hofe, R., & Cheruiyot, K. (2018). Importance of industrial clusters and inter-industry linkages for regional policy in the Gauteng City-Region. In K. Cheruiyot (Ed.), *The changing space economy of city regions: The Gauteng City-Region, South Africa* (pp.93–129). Switzerland: Springer Publishers.
- Ballard, R. (2017). Prefix as policy: megaprojects as South Africa's big idea for human settlements. *Transformation*, 95.
- Ballard, R., & Rubin, M. (2017). A 'Marshall Plan' for human settlements: How megaprojects became South Africa's housing policy. *Transformation*, 95.
- Ballard, R., Dittgen, R., Harrison, P., & Todes, A. (2017). Megaprojects and urban visions: Johannesburg's Corridors of Freedom and Modderfontein. *Transformation*, 95.
- Butcher, S. (2017). Book Review – *Changing space, changing city: Johannesburg after apartheid*, by P. Harrison, G. Götz, A. Todes & C.Wray (Eds). *Thesis Eleven*, 141(1), 123–127.
- Coetzee, S., Steiniger, S., Köbben, B., Iwaniak, A., Kaczmarek, I., Rapant, P., Cooper, A.K., Behr, R.-J., Schoof, G., Katumba, S., Vatseva, R., Sinvula, K., & Moellering, H. (2017). The academic SDI – towards understanding spatial data infrastructures for research and education. In M. Peterson (Ed.), *Advances in cartography and GIScience: Selections from the International Cartographic Conference 2017* (pp.99–103). Switzerland: Springer Publishers.
- Culwick, C., Götz, G., Butcher, S., Harber, J., Maree, G., & Mushongera, D. (2017). Doing more with less (data): complexities of resource flow analysis in the Gauteng City-Region. *Environmental Research Letters*, 12(12), 125006. doi: 10.1088/1748-9326/aa7c21
- Katumba, S., & Coetzee, S. (2017). Employing Search Engine Optimization (SEO) techniques for improving the discovery of geospatial resources on the web. *ISPRS International Journal of Geo-Information*, 6(9), 284.
- Mosselson, A. (2017). 'It's not a place I like, but I can live with it': Experiences of living in state-subsidised housing in Johannesburg's inner-city. *Transformation: Critical Perspectives on Southern Africa*, Special Issue, Living in State Housing in Southern Africa, 93, 142–169.
- Mosselson, A. (2017). 'Joburg has its own momentum': Towards a vernacular theorisation of urban change. *Urban Studies*, 54(5), 1280–1296.
- Mosselson, A. (2017). Caught between the market and transformation: Urban regeneration and the provision of low-income housing in inner-city Johannesburg. In P. Smets & P. Watt (Eds), *Urban renewal and social housing: A cross-national perspective* (pp. 351–390). Emerald Books.
- Mushongera, D. (2017). Beyond GDP in assessing development in South Africa: The Gauteng City-Region Socio-Economic Barometer. *Development Southern Africa*, 34(3), 330–346.



Photograph by Mark Lewis

- Mushongera, D., & Culwick, C. (2017). Boundary organisations and the New Urban Agenda: The importance of policy research for evidence-based planning. *International Development Planning Review*, 39(4), 368–371.
- Parker, A. (2017). Book Review - *Changing space, changing city: Johannesburg after apartheid*, by P. Harrison, G. Götz, A. Todes and C. Wray (Eds). *International Journal of Urban and Regional Research*, 41(2). doi:10.1111/1468-2427.12471–12478
- Gillian Maree (March 2018). 'Water and food security challenges in the Gauteng City-Region'. Presentation to the MSc Specialisation: Urban Competitiveness and Resilience (UCR), IHS–Erasmus University Rotterdam, 28 February 2018.
- Gillian Maree (March 2018). 'Sustainable city transitions for the Gauteng City-Region'. Presentation to the MSc Specialisation: Urban Competitiveness and Resilience (UCR), IHS–Erasmus University Rotterdam, 28 February 2018.
- Rob Moore (March 2018). 'Knowledge for urban governance: The Gauteng City-Region'. Masters Group, Institute for Human Settlements, Erasmus University, Rotterdam, 27 February 2018.
- Samy Katumba (February 2018). 'Spatial statistical analysis to assess the spatial extent and directional trends in multidimensional poverty in Gauteng based on Quality of Life Survey data'. Geoinformation Science Society of South Africa (GISSA), Moreleta Park, 23 February 2018.
- Koech Cheruiyot (February 2018). 'Testing for economic growth convergence to understand space economy in the Gauteng City-Region'. Geography Department, Wits University, 22 February 2018.
- Samy Katumba (February 2018). 'Spatial statistical analysis to assess the spatial extent and directional trends in multidimensional poverty in Gauteng based on Quality of Life Survey data'. Geography Department, Wits University, 21 February 2018.
- Alexandra Parker (February 2018). 'God's land: Heritage on Yeoville Ridge'. UP Theology Masters Seminar, GCRO offices, 21 February 2018.
- Gillian Maree (February 2018). 'Water security in the GCR'. Joint Strategic Planning Retreat for GDED and GDARD, Parktonian Hotel, Johannesburg, 21 February 2018.
- Christina Culwick (February 2018). 'Enhancing knowledge development through partnerships and urban data'. UP Theology Masters Seminar, GCRO offices, 21 February 2018.
- Samy Katumba (February 2018). 'Web GIS guest lecture'. GIS Honours Class, Wits University, 19 February 2018.

Presentations

- Alexandra Parker (March 2018). 'Urban science: Observing the city-region'. GCRO Brown Bag Seminar, GCRO offices, 28 March 2018.
- Samkelisiwe Khanyile (March 2018). 'Towards a digital mine: A spatial database for accessing historical data on mining and related activities'. Wits DigiMine Celebration Seminar, 26 March 2018.
- Gillian Maree, Christina Culwick and Graeme Götz (March 2018). 'Water security in the GCR'. Gauteng Premier's Coordinating Forum (PCF), Sunnyside Hotel, 23 March 2018.
- Ngaka Mosiane (March 2018). 'Rustenburg as an extended city region of Gauteng'. School of Geography, Archaeology and Environmental Sciences, Wits University, 22 March 2018.
- Christina Culwick (March 2018). 'Just sustainability: Juggling trade-offs in urban decision-making'. Faces of the City Seminar Series, Wits University, 12 March 2018.
- Gillian Maree (March 2018). 'Water Security in the GCR'. Joint Executive Management Team, GDED group and GDARD, 7 March 2018.
- Rob Moore (March 2018). 'Knowledge infrastructure for governance of city-regions: The Gauteng City-Region Observatory'. Presentation for Technische Universität Leipzig, 2 March 2018.
- Graeme Götz (March 2018). 'Overview of selected GCRO data sources'. Urban Competitiveness and Resilience (UCR) Masters Class, Institute for Housing and Development Studies (IHS), Erasmus University, 1 March 2018.

- Mamokete Matjomane (February 2018). 'The politics of The Piles: Contestations of street trading on De Villiers Street'. Faces of the City Seminar, Wits University, 13 February 2018.
- Alexandra Parker (February 2018). 'The conception and contestation of public space in Johannesburg suburbia'. Faces of the City seminar, Wits University, 13 February 2018.
- Jesse Harber (February 2018). 'Seeing the better Braamfontein'. Faces of the City seminar series, Wits University, 13 February 2018.
- Rob Moore (February 2018). 'The Gauteng City-Region Observatory: Knowledge for urban governance'. UNHabitat World Urban Forum 9, Kuala Lumpur, Malaysia, 7–13 February 2018.
- Gillian Maree and Christina Culwick (February 2018). 'Knowledge use and decision-making for sustainable development: A green infrastructure approach in Gauteng'. UNHabitat World Urban Forum 9, Kuala Lumpur, Malaysia, 7–13 February 2018.
- Gillian Maree, Christina Culwick, Graeme Götz (February 2018). 'Population trends, settlement dynamics and water security prospects in the GCR'. Gauteng Provincial Government Lekgotla, 6 February 2018.
- Mamokete Matjomane (February 2018). 'The politics of The Piles: Contestations of street trading on De Villiers Street'. ACC International Urban Conference, University of Cape Town, 1–3 February 2018.
- Christina Culwick (February 2018). 'Building quality of life through partnerships and developing urban data: Gauteng City-Region Observatory (GCRO)'. ACC International Urban Conference, University of Cape Town, 1–3 February 2018.
- Jesse Harber (February 2018). 'Unbuilding the apartheid city: Johannesburg's Corridors of Freedom'. ACC International Urban Conference, University of Cape Town, 1–3 February 2018.
- Gillian Maree (February 2018). 'Moving beyond the conservation versus development debate: Managing contradictions, conflicts and complexities'. ACC International Urban Conference, University of Cape Town, 1–3 February 2018.
- Gillian Maree (February 2018). 'Developing a green infrastructure strategy for the City of Johannesburg'. ACC International Urban Conference, University of Cape Town, 1–3 February 2018.
- Samkelisiwe Khanyile (February 2018). 'Mapping green infrastructure and assets in the Gauteng City-Region'. University of Cape Town, 1–3 February 2018.
- Christina Culwick (February 2018). 'Applying a green infrastructure approach in Gauteng'. ACC International Urban Conference, University of Cape Town, 1–3 February 2018.
- Alexandra Parker (February 2018). 'The conception and contestation of public space in Johannesburg suburbia'. ACC International Urban Conference, University of Cape Town, 1–3 February 2018.
- Ngaka Mosiane (February 2018). 'Living, making a living, and infrastructural changes in Phokeng, Rustenburg'. ACC International Urban Conference, University of Cape Town, 1–3 February 2018.
- Ngaka Mosiane (February 2018). 'Displaced urbanisms, belonging, and the changing landscapes of Mabopane'. ACC International Urban Conference, University of Cape Town, 1–3 February 2018.
- Christian Hamann, Alexandra Parker and Julia de Kadt (February 2018). 'Expanding school feeder zones: Universalism and spatial inequality'. ACC International Urban Conference, University of Cape Town, 1–3 February 2018.
- Richard Ballard (February 2018). 'Precarious belonging: Residents of Diepsloot who are constructing high-end golf estates in Johannesburg'. ACC International Urban Conference, University of Cape Town, 1–3 February 2018.
- Richard Ballard and Philip Harrison (February 2018). 'Transnational urbanism: Chinese investors seeking approval to build the "New York of Africa" at Modderfontein'. ACC International Urban Conference, University of Cape Town, 1–3 February 2018.



GCRO Board Member Rashid Seedat and Rob Moore at the World Urban Forum, Kuala Lumpur, Malaysia, February 2018

- Christina Culwick (February 2018). 'Deconstructing sustainability and justice in social housing developments'. ACC International Urban Conference, University of Cape Town, 1–3 February 2018.
- Graeme Götz (February 2018). 'Complexities of urban social policy in the gap between sustainability and justice: A re-reading of the "Phiri matter"'. ACC International Urban Conference, University of Cape Town, 1–3 February 2018.
- Rob Moore (January 2018). 'The Gauteng City-Region Observatory: Knowledge for urban governance and innovation'. GPG Delegation to Emilia Romagna and Reggio Emilia, January 2018.
- Richard Ballard (January 2018) 'Problematising social cohesion'. Social Cohesion and Violence Prevention, GCRO and ACMS workshop, Wits University, 22 January 2018.
- Rob Moore (October 2017). 'University-government collaboration: Innovating the city-region', Presentation to the Tshwane University of Technology, Vaal University of Technology, Wits University and University of Pretoria, 23 October 2017.
- Alexandra Parker (December 2017). 'Shifting borders and building bridges' in meetings with Gauteng Provincial Government Strategic Planning and GTA, 15 and 18 December 2017.
- Anne Appelbaum and Alexandra Parker (December 2017). 'Suburban densification: Houghton, Orange Grove Norwood and Rosebank'. Urban Densification Workshop, Tshimologong Precinct, Wits University, 13 December 2017.
- Graeme Götz and Christian Hamann (December 2017). 'Ekurhuleni: key trends and challenges'. Ekurhuleni Strategy and Corporate Planning Department Strategic Breakaway, 13 December 2017.
- Gillian Maree (December 2017). 'Water supply and water security in the GCR'. Gauteng Planning Forum, 7 December 2017.
- Christina Culwick (November 2017). 'Deconstructing sustainability and justice in housing: Knowledge, power and competing rationalities in the global south'. GCRO Brownbag Seminar, GCRO offices, 5 December 2017.
- Christina Culwick (November 2017). 'Deconstructing sustainability and justice in housing: Knowledge, power and competing rationalities in the global south'. UCT EGS Proposal presentations, University of Cape Town, 30 November 2017.
- Graeme Götz and Christian Hamann (November 2017). 'Tshwane: key trends and challenges'. Tshwane Mayoral Committee Strategic Breakaway, 27 November 2017.
- Christian Hamann (November 2017). 'The GCRO's Quality of Life IV (2015) Survey: Analysing social attitudes, service delivery and quality of life in Gauteng'. Department of Sport, Arts, Culture and Recreation Strategic Planning Session, Johannesburg, 23 November 2017.

- Graeme Götz and Christian Hamann (November 2017). 'Developments in Gauteng townships since 1994'. Gauteng Provincial Legislature Portfolio Committee for COGTA and Human Settlements, 17 November 2017.
- Richard Ballard (November 2017). 'Agency and social change: The right to the city in the South, everyday urban experience and the rationalities of government'. University of Paris Diderot, 15–17 November.
- Kate Joseph (November 2017). 'Social cohesion as a concern of local government: Learning from past and current initiatives'. Social Cohesion in KZN: A Deliberation on this Complexity, Durban, 13 November 2017.
- Christina Culwick (November 2017). 'The new urban agenda'. GPD Roundtable Discussion on the Global Urban Agenda, 7 November 2017.
- Gillian Maree (November 2017). 'Environmental sustainability challenges in Gauteng'. GPD Roundtable Discussion on the Global Urban Agenda, 7 November 2017.
- Samy Katumba (November 2017). 'Improving the discovery of geospatial data on the web by publishing spatial metadata as web pages' contents using search engine optimisation (SEO) techniques'. GCIS Mini-Conference, University of Pretoria, 2 November 2017.
- Christina Culwick (November 2017). 'Mapping vulnerability in Gauteng'. GDARD Climate Change Indaba, 2 November 2017.
- Rob Moore (October 2017). 'Innovating the city-region. Government-university knowledge partnerships'. Presentation to the Senior Executive Team, Wits University, October 2017.
- Rob Moore (October 2017). 'Overview of the Gauteng City-Region', Lecture for Postgraduate Group at Strelka University, Moscow, October 2017.
- Rob Moore (October 2017). 'The Gauteng City-Region Observatory: Constitution and function'. Presentation for the Auckland (New Zealand) City Council, October 2017.
- Christian Hamann, Michael White, Richard Ballard and Anna Kriesberg (October 2017). 'Racial residential patterns in urban South Africa'. 2017 International Population Conference, Cape Town, 30 October 2017.
- Samkelisiwe Khanyile (October 2017). 'Mapping active and abandoned mines in the Witwatersrand: Issues of data availability, data quantity and data availability'. GCRO Brown Bag Seminar Series, GCRO offices, 25 October 2017.
- Ngaka Mosiane (October 2017). 'Cities, resources, and philanthropy: Can South Africa reinvent itself?' Symposium of the Independent Philanthropy Association South Africa,



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- Stellenbosch Institute for Advanced Studies, 23–24 October 2017.
- Graeme Götz (November 2017). 'Quality of Life in the GCR: QoL survey 2015/16'. Office of the Premier Service Delivery Unit Deliverology Exchange Visit with New South Wales, 20 October 2017.
 - Samy Katumba (October 2017). 'The GCRO Ward Profile Viewer: Geovisualising the socio-economic status of Gauteng at the ward level'. ESRI Southern Africa User Conference, Drakensberg, 17 October 2017.
 - Samkelisiwe Khanyile (October 2017). 'Mind the gap: Assessing the quality of spatial data on mining activities of the Witwatersrand'. Wits Stats and Actuarial Science Seminar Series, 12 October 2017.
 - Richard Ballard (September 2017). 'Catalytic projects and meta projects'. Presentation to 'Commission 2 spatial targeted investments and intergovernmental and multi-sector planning and alignment' of the Human Settlements Summit, Kempton Park, 21–22 September 2017.
 - Richard Ballard (September 2017). 'A big solution to a big problem? Mega human settlements as a policy idea'. Guest lecture for Wits Planning 3rd year students, 21 September.
 - Gillian Maree (September 2017). 'Moving towards sustainable urban development: A framework for a green infrastructure planning approach in the GCR'. Presentation at the First Gauteng Environmental Coordination Committee, 21 September 2017.
 - Mncedisi Siteleki (September 2017). 'Applying PGIS and IKS in archaeology'. Geospatial Science Seminar, School of Geography, Archaeology and Environmental Studies, Wits University, 20 September 2017.
 - Graeme Götz (September 2017). 'GCRO & GDED/ GGDA: An emerging data partnership'. Gauteng Department of Economic Development (GDED) Workshop on Transformative Data Partnerships, 15 September 2017.
 - Jesse Harber (September 2017). 'Unbuilding the apartheid city: Johannesburg's "Corridors of Freedom"'. International Initiative for the Promotion of Political Economy Conference, 14 September 2017.
 - Jesse Harber and Barbara Lipietz (September 2017). 'Seeing like a transformative state: The Corridors of Freedom and the promise of spatial justice in Johannesburg, South Africa'. RC21, Leeds, 13 September 2017.
 - Ngaka Mosiane (September 2017). 'Changing forms of Johannesburg's urbanisms'. JournAfrica! Workshop on Journalism Practice on Urbanism: The Role of Media in Building Better Cities, Rosa Luxemburg Foundation, Randburg, 12 September 2017.



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The GCRO's Taking Streets Seriously Symposium, April 2017

- Rob Moore (August 2017). 'The "urban turn": Leadership and governance for an inclusive social compact'. GIBS Investec Social Leadership Programme, August 2017.
- Koech Cheruiyot (August 2017). Lead discussant on 'Recommendation of a method to measure city-level gross domestic product in Africa – Chapter 4 of Draft Technical Report'. Experts Group Meeting, National Urban Policies in Africa: The Contribution of Cities to Economic Growth, Social Development Policy Division, Economic Commission for Africa, United Nations Conference Center, Addis Ababa, Ethiopia, 30 August 2017.
- Ngaka Mosiane (August 2017). 'Synecdochic governance of the Gauteng City-Region periphery'. Faces of the City Seminar, Wits University, 29 August 2017.
- Gillian Maree (August 2017). 'Urban agriculture and food security in the GCR'. Competition, Concentration and Employment in the Food Sector Colloquium, 24 August 2017.
- Thembanani Mkhize (August 2017). 'The primacy of party politics in governing the GCR: Sedibeng's pending re-demarcation, amalgamation and metropolitanisation'. Faces of the City Seminar, Wits University, 22 August 2017.
- Richard Ballard, Gareth Jones and Makale Ngwenya (August 2017). 'Relational anxieties: The concerns of precarious labour employed to build a gated community'. Urban Anxieties in the Global South Workshop, Wits University, 18 August 2017.
- Alexandra Parker and Margot Rubin (August 2017). 'The moral geographies of mothers in Greater Johannesburg'. GeoViz Reading Group, Wits University, 2 August 2017.
- Christina Culwick (August 2017). 'Experiments in mapping travel patterns in the Gauteng City-Region'. GeoViz Reading Group, Wits University, 2 August 2017.
- Kate Joseph (August 2017) 'Social cohesion as a concern of local government: learning from past and current initiatives'. Faces of the City Seminar, Wits University, 1 August 2017.
- Ngaka Mosiane (July 2017). 'Livelihoods, and body, and city space'. Stellenbosch Institute for Advanced Studies and African Centre for Cities conference on Refractions of the National, the Popular, and the Global in African Cities, University of Stellenbosch, 31 July–1 August 2017.

- Gillian Maree (July 2017). 'Cities of the future: Smart cities in the Gauteng City Region'. GDARD Strategic Planning Retreat, Emperors Palace, 31 July 2017.
- Rob Moore (July 2017). 'Transport systems governance: priority challenges for innovation'. Gauteng Infrastructure Investment Conference, 27 July 2017.
- Christina Culwick (July 2017). Invited panelist to session 'Investing in green infrastructure: Green buildings, renewable energy, water security and waste'. Gauteng Infrastructure Investment Conference 2017, Johannesburg, 27 July 2017.
- Christina Culwick (July 2017). 'Designing a survey more equal than others: Negotiating sample methodology challenges in the Quality of Life survey'. Wits Stats and Actuarial Science Seminar, 27 July 2017.
- Kate Joseph (July 2017). 'Social cohesion as a concern of local government: Learning from past and current initiatives'. GCRO Brown bag Seminar, GCRO offices, 26 July 2017.
- Christina Culwick (July 2017). 'QoL Survey 2015: city benchmarking'. EMM Senior Management Meeting, Germiston, 24 July 2017.
- Richard Ballard (July 2017). 'Inclusive Gauteng: A resource document on the possibilities of achieving greater social cohesion in Gauteng'. Gauteng Provincial Cabinet Special Session, Johannesburg, 19 July 2017.
- Rob Moore (July 2017). 'Knowledge partnerships for urban futures: The Gauteng City-Region Observatory'. Moscow Urban Forum, 7 July 2017.
- Rob Moore, Philip Harrison and Rashid Seedat (July 2017). 'Governing Africa's economic powerhouse: The Gauteng City-Region'. Moscow Urban Forum, 6 July 2017.
- Jesse Harber (July 2017). 'The impact of transport on Gauteng as South Africa's economic heartland'. Transport Forum, Johannesburg, 6 July 2017.
- Ngaka Mosiane (July 2017). 'Informal housing and sustainable human settlements'. Symposium on Sustainable Settlements, Spatial Planning, Land Use Management and Economic Development, Ekurhuleni, 5 July 2017.
- Samy Katumba, Darlington Mushongera and Koech Cheruiyot (July 2017). 'Exploring spatial change in multidimensional poverty in Gauteng: Evidence of Quality of Life Survey data'. 3rd ISIBalo CRUISE Conference, Stellenbosch, 4 July 2017.
- Koech Cheruiyot (July 2017). 'A geographical weighted regression approach to understanding dissatisfaction with government performance in the Gauteng City-Region, South Africa'. 3rd Biannual Urban and Regional Science Conference, CRUISE, Department of Geography and Environmental Studies, Stellenbosch University, 3 July 2017.
- Rob Moore (June 2017). 'GCRO constitution and function'. Presentation to eThekweni City Planning Commission, June 2017.
- Aidan Mosselson (June 2017). 'Producing Urban Security: Between spectacle and everyday contingency'. ECAS 2017, University of Basel, 28 June 2017.
- Ngaka Mosiane and Mamokete Matjomane (June 2017). 'The lives, sights and sounds of the Gauteng City Region Periphery'. GCRO Brown Bag Seminar, GCRO offices, 28 June 2017.
- Richard Ballard (June 2017). 'Social cohesion in the City of Johannesburg'. City of Johannesburg Strategic Research Workshop, Braamfontein, 27 June 2017.
- Christina Culwick (June 2017). 'QoL Survey 2015: city benchmarking'. Ekurhuleni Research Forum, Birchwood Ekurhuleni, 27 June 2017.
- Richard Ballard (June 2017). 'Development without/for/by the poor'. Lecture to NRF funded postgraduate workshop entitled Resilience and Spatial Justice in South Africa's Built Environment, Wits University, 20 June 2017.
- Thembani Mkhize and Christo Botes (June 2017). 'Inclusive urban regeneration in Johannesburg: The case of Ekhaya Residential City Improvement District in Hillbrow'. Economic Development for Inclusive Cities: Combating Inequalities in Urban Regeneration with the Social Economy. Metropolis World Congress, Montreal, Canada, 19 June 2017.
- Mncedisi Siteleki (June 2017). 'Web GIS and story-maps'. Guest Lecture, School of Geography Archaeology and Environmental Studies, Wits University, 9 June 2017.

- Christina Culwick (June 2017). 'Moving towards sustainable development: A framework for a green infrastructure planning approach in the GCR'. SALGA Transport Working Group, Johannesburg, 2 June 2017.
- Christina Culwick (June 2017). 'Challenges in achieving a just inclusive Gauteng City-Region'. Leadership in Urban Transformation Lecture, GCRO offices, 2 June 2017.
- Richard Ballard (June 2017). 'Concept document: Social cohesion'. Internal workshop to present interim documents commissioned by City of Johannesburg officials, 2 June 2017.
- Samy Katumba (June 2017). 'Towards establishing a spatial data infrastructure (SDI) to make the Gauteng City-Region data smart'. Gauteng GIS Forum meeting, Centurion, 1 June 2017.
- Richard Ballard (May 2017). 'Moving beyond anti statism: what can the state get right?' Lecture to students from Northeastern University, GCRO offices, 31 May 2017.
- Graeme Götz (May 2017). 'Towards firm-level surveying in Gauteng'. Gauteng Department of Economic Development Data Seminar, Johannesburg, 30 May 2017.
- Indra de Lanerolle and Jesse Harber (May 2017). 'Civic Tech: Dragging governance into the 21st century'. ERLN Technical Working Group on Subnational Economic Data, Pretoria, 25 May 2017.
- Graeme Götz (May 2017). 'Towards firm-level surveying in Gauteng'. Economies of Regions Learning Network Data Technical Working Group, Pretoria, 25 May 2017.
- Mamokete Matjomane (May 2017). Panel titled 'What would "just" governance of street trading look like in Johannesburg?'. Spatial Justice Round Table, Wits University, 15 May 2017.
- Richard Ballard (May 2017). 'A "Marshall Plan" for human settlements: How mega projects became South Africa's housing policy'. Lecture to housing certificate students, Wits School of Governance, 11 May 2017.
- Christina Culwick (May 2017). 'Green infrastructure: The "luxury" we can't afford to live without'. Resilience and Development Colloquium, Johannesburg, 9 May 2017.
- Christina Culwick (May 2017). Panelist on 'Achieving the right to food in the anthropocene – is a human rights approach the best option for South African policy?'. Resilience and Development Colloquium, Johannesburg, 9 May 2017.
- Samkelisiwe Khanyile (May 2017). Poster presentation 'Mapping green infrastructure in the Gauteng City-Region'. Resilience and Development Colloquium, Johannesburg, 8 May 2017.
- Samkelisiwe Khanyile (April 2017). 'Towards a digital mine: Spatial database for accessing historical geospatial data on mining and related activities'. Wits Mining Institute, Wits University, 26 April 2017.
- Mamokete Matjomane (April 2017). 'The politics of street vending policy making: The case of Ahmedabad, India'. GCRO Brown Bag Seminar, GCRO offices, 26 April 2017.
- Alexandra Parker and Margot Rubin (April 2017). 'The moral geographies of mothers in Greater Johannesburg'. Faces of the City Seminar Series, Wits University, 25 April 2017.
- Samkelisiwe Khanyile (April 2017). 'Spatial database design'. Guest lecture to MSc GIS and RS Geog 7045, School of Geography, Archaeology and Environmental Studies, Wits University, 25 April 2017.
- Mncedisi Siteleki (April 2017). 'The use of PGIS and IKS in archaeology'. Guest Lecture, School of Geography, Archaeology and Environmental Studies, Wits University, 21 April 2017.
- Mncedisi Siteleki (April 2017). 'GCRO – who we are and how we work'. Itshekeng Educational Tours, GCRO offices, 20 April 2017.
- Samkelisiwe Khanyile (April 2017). 'Fundamentals of geospatial data management and introduction to PostgreSQL (PostGIS)'. Guest lecture to MSc GIS and RS Geog 7045, School of Geography, Archaeology and Environmental Studies, Wits University, 18 April 2017.
- Richard Ballard and Margot Rubin (April 2017). 'A "Marshall Plan" for human settlements: How mega projects became South Africa's housing policy'. Faces of the City Seminar Series. Wits University, 11 April 2017.



GCRO exhibit as part of the GPG stand, World Urban Forum, Kuala Lumpur, Malaysia, February 2018

- Christian Hamann (April 2017). 'Social cohesion in the City of Johannesburg: Benchmarking report'. City of Johannesburg Group Strategy, Policy Coordination and Relations, Johannesburg, 10 April 2017.
- Kate Joseph (April 2017). 'Social cohesion meta analysis: Intervention initiatives'. City of Johannesburg Group Strategy, Policy Coordination and Relations, Johannesburg, 10 April 2017.
- Richard Ballard (April 2017). 'Concept document: social cohesion'. Workshop to present interim documents commissioned by City of Johannesburg officials, Johannesburg, 10 April 2017.
- Kate Joseph (April 2017). 'At the intersection of informality: Following Moshoeshoe Street'. Taking Streets Seriously Symposium, Wits University, 5 April 2017.
- Mamokete Matjomane (April 2017). 'The politics of "The Piles": Contestations of street trading on De Villiers Street'. Taking Streets Seriously Symposium, Wits University, 5 April 2017.
- Jesse Harber (April 2017). 'Seeing the better Braamfontein'. GCRO Taking Streets Seriously Symposium, Wits University, 5 April 2017.
- Alexandra Parker (April 2017). 'Pedestrians, parking and public space: Streets in suburban Johannesburg'. Taking Streets Seriously Symposium, Wits University, 5 April 2017.
- Aidan Mosselson (April 2017). 'Producing urban security: between spectacle and everyday contingency'. Faces of the City Seminar Series, Johannesburg, 4 April 2017.

Media publications and appearances

Alexandra Parker wrote an article, 'City streets: Why South Africa should design more people-friendly spaces', for *The Conversation Africa*, 25 March 2018.

GCRO has a team of five staff members who work to promote GCRO on three social media platforms. In early 2018, we reached over 1000 followers on Twitter. Several key outputs have been picked up and shared on our social media platforms generating additional traffic and interest in our website.

GCRO research was cited in the following media:

- GCRO research was cited in 'Traffic management of the future through internet of things' by Teddy Daka, opinion piece in *IT News Africa*, 13 February 2018.
- Gillian Maree was quoted in 'Water Crisis: Gauteng forewarned of its own drought risks' by Sheree Bega in the *Saturday Star*, 4 February 2018.
- The GCRO's 'Gauteng as a Village of 100 People' featured in Naked Data's newsletter #167 – *Millennials, music, machine learning and the media*, December 2017.
- The GCRO's exhibition 'Shifting borders and building bridges' for the 2017 Seoul biennale on architecture and urbanism featured online with UrbanNext, November 2017.
- GCRO QoL Survey data was cited in 'A matter of fact with Africa Check' on the Azania Mosaka show, 20 November 2017.
- Jesse Harber was quoted in *TimesLive* article 'Malls are forced to think out of the box to survive' by Ufrieda Ho, 15 November 2017.
- The GCRO's vignette on the 1% was featured in an article in *Business Day* by Claudi Mailovich, 'Bottom half of Gauteng's richest 1% earn 32 times more', 13 November 2017.
- GCRO QoL Survey data was cited in *TimesLive* article 'Gauteng is becoming vulnerable to floods as development booms', 19 October 2017.
- GCRO QoL Survey data cited in *Netwerk24.com* online article 'Gauteng kan nie byhou met dienste', 18 October 2017.
- GCRO QoL Survey data cited in *SABC News* online article 'Gauteng might be out of water by 2025', 18 October 2017.
- GCRO QoL Survey data cited by Tshwane Mayor, Solly Msimanga in *Pretoria News* in an article titled 'We treat all in the city fairly, equally', 16 October 2017.
- GCRO QoL Survey data cited in *The Daily Vox* in an article titled 'LGBT folks share their coming out stories', 12 October 2017.
- The GCRO's exhibition 'Shifting borders and building bridges' for the 2017 Seoul Biennale on Architecture and Urbanism featured online with EE Publishers, 4 October 2017.
- Rob Moore was interviewed for online television station Joburg Today discussing the GCRO's QoL Survey (4 October 2017).
- GCRO research was cited in an article in *Southern Courier* on debt, 13 September 2017.
- Rob Moore and Christian Hamann were cited in an article on Africa Check on undocumented foreigners in Johannesburg's CBD, 7 September 2017.
- The GCRO's Shifting Borders and Building Bridges (Cities Exhibition at the Seoul Biennale) was featured in *Wits News*, on Biz Community and on Architect Africa.
- Jesse Harber was interviewed on PowerFM with Ayabonga Cawe, talking about alternative financing for public transport, 14 August 2017.
- Jesse Harber was interviewed on PowerFM with Ayabonga Cawe, talking about transit-oriented development and spatial justice, 7 June 2017.
- The GCRO's Mothers in the City research project was featured in the *Wits Curiosity* magazine, 24 May 2017.



Teaching, supervision, external examination, etc.

Where appropriate, GCRO staff will contribute to the teaching and learning work of various universities, predominantly through lecturing and supervision, but also in other ways.

- Alexandra Parker supervised BSc Hons URP student Tiisetso Mokgopo, Wits University.
- Alexandra Parker, Jesse Harber and Mncedisi Siteleki tutored Masters in Architecture students from the University of Johannesburg.
- Julia de Kadt supervised Hlologelo Malatji, PhD candidate in School of Public Health, Wits University.
- Koech Cheruiyot supervised two students (one MSc and one PhD) in Building Science/Property Studies, Wits University.
- Darlington Mushongera supervised one honours student in the School of Architecture and Planning, Wits University.
- Jesse Harber gave a lecture on 'Architects in capitalism' to Masters in Architecture students from the University of Johannesburg.
- Thembanani Mkhize externally examined an undergraduate (2nd year) planning student's video presentation titled 'Tracing protest' at Wits University, 9 October 2017. The presentation formed part of the 'Histories, theories and futures of planning' course which is facilitated by Nqobile Malaza.
- Gillian Maree has supported and reviewed Wits University student Busisiwe Dube's MSc proposal on 'The City of Johannesburg and Joburg Road Agencies stormwater management perceptions and expertise'.
- Christina Culwick, Samkelisiwe Khanyile and Gillian Maree supported UCL StePP Masters Programme (MPA) students project: 'Modelling food gardens in Johannesburg'.
- Gillian Maree, Rob Moore and Graeme Götz provided a series of lectures to HIS-Erasmus University Students MSc Specialisation: Urban Competitiveness and Resilience, 26 February–1 March 2018.
- Richard Ballard is supervising three PhD students at the University of KwaZulu-Natal: Ndwa Tshishonga, Clive Greenstone and Danford Chibvongode; one PhD student at the University of Johannesburg: Busane Ngcaweni; and co-supervising one PhD student at Wits University (also junior researcher at GCRO) with Prof. Claire-Benit-Gbaffou: Mamokete Matjomane.
- Richard Ballard is supervising the following Masters students: Geniver Tebeila and Carla Soudien (both at Wits University).
- Richard Ballard is the external examiner of the University of Cape Town Human Geography undergraduate and postgraduate programmes.

Photograph by Clive Hassall



Wider academic citizenship

As a research organisation embedded in two universities, it is important that the GCRO's researchers are good academic citizens. Academic citizenship entails a mix of external examining, supervision, teaching and support. The following provides an indication of the breadth of contributions:

- Christina Culwick reviewed journal articles for *Environment, Development and Sustainability and Urban Forum*, and a chapter in a geography book collection.
- Alexandra Parker reviewed articles for *Architecture, Media, Politics, Society* and the *Journal of African Cinema*.
- Darlington Mushongera reviewed a report on youth unemployment for the School of Public Management at the University of Pretoria.
- Julia de Kadt reviewed an article for the *Journal of Nationalism, Memory and Language Politics*.
- Gillian Maree acts as an ongoing project proposal reviewer for the Water Research Commission (WRC).
- On 4 December 2017, Richard Ballard hosted a writing support workshop on behalf of the Society of South African Geographers. Five early-career academics were given feedback on draft articles intended for publication in a journal.
- Ngaka Mosiane reviewed journal articles for *Development Southern Africa; Theoria: A Journal of Social and Political Theory; Urban Forum*; and a chapter in a geography book collection.



Christina Culwick speaks at the African Centre for Cities Conference, Cape Town, February 2018



Photograph by Kgao Mashego

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