



# **GCRO Self-Review Report – 2019**

This organisational self-review report was written in July 2019 in preparation for a five year review of the Gauteng City-region Observatory (GCRO) by an external panel whose work started in August 2019. It marks a particular moment of reflection, assessing the period 2014 to mid-2019. It has not been subsequently updated with more recent progress and developments.

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# 1. Introduction

## **The focus of this review**

The Gauteng City-Region Observatory (GCRO) is a unique partnership between two universities (the Universities of Johannesburg and the Witwatersrand), the Gauteng Provincial Government (GPG) and organised local government (SALGA) in Gauteng. The GCRO was established as a research agency with the brief to generate insight and understanding on the Gauteng City-Region, for use by government agencies and civil society to inform governance and development across the region.

The GCRO receives core funding from the GPG, and in-kind support from the two universities. An important principle of the partnership is the scholarly independence of the GCRO, while at the same time it is emphasised that the Observatory's work should be responsive and sensitive to the preoccupations of government in the city-region. This 'embedded autonomy', and the consistent and inflation-linked funding from GPG, are often referenced as among the key factors contributing to the success of the GCRO.

Established in late 2008 with the appointment of an Executive Director, the GCRO has grown over the intervening decade to a staff complement of twenty-one and an established repertoire of research outputs and government support activities.

The GCRO was previously externally reviewed in late 2013, with the review report finalised in 2014. It is thus due for its next such review this year, 2019/20. The five-yearly review is intended to reflect on the recent performance of the GCRO (over the past three to five years especially), the ways in which its role is taking on new dimensions, and especially to provide considered advice on the strategic directions and priorities for the future. In particular, the review ought to address the following:

- Given the current global policy context (including the New Urban Agenda, the Sustainable Development Goals, etc.), the current national policy frameworks (including the National Spatial Development Framework, the Integrated Urban Development Framework, and the emerging five-year Implementation Plan for the National Development Plan, etc.), and the urgent socio-economic development priorities confronting our city-region, what should the current strategic purpose or role of the GCRO be?
- In light of the strategic role that the GCRO ought to be playing, to what extent are its current organisational form, its priorities and its modalities of operation suited to the fulfilment of its organisational purposes? Have these forms, priorities and modalities evolved productively in recent years, such that the GCRO is becoming better adapted to suit the role it should play?
- What are some of the most significant initiatives and projects undertaken in recent years, and how useful have these been in advancing the purposes of the GCRO and supporting the city-region project? Are there any critical gaps that the GCRO should seriously consider?
- The output of the GCRO takes various forms, including major applied-research publications produced internally, responsiveness to government requests for

presentations and strategy support, scholarly publications, facilitated public debates and seminars, and a diversification of modes of public dissemination (from interactive visualisations to media op-eds). Has the mix been appropriately configured, and what conclusions can be reached about the influence of this diverse set of outputs? What has worked well, and what hasn't, in the effort to strike a balance between internally planned work and often impromptu external requests?

- In what ways has the GCRO contributed to policy-formulation and other decision-making processes in government? How could this contribution be strengthened, or addressed differently, into the future?
- What conclusions could be reached on the purposes, the form, the functional modalities, the funding, the research priorities and the balance of sometimes competing work commitments of the GCRO into the future?

## **Overview of this self-review document**

This self-review report has been prepared by GCRO staff in June/July 2019 as a resource for the External Review Panel (which convenes in August 2019), and for the GCRO's own five-yearly strategic planning phase (due to conclude in November 2019). This report provides an overview and summary of notable trends in the organisation, and the key research initiatives and thematic areas it has addressed in recent years. This synopsis is intended to be broadly comprehensive in scope while not being overly detailed, and interested readers should also refer to the downloadable reservoir of published material on the GCRO's website, as well as the digital resources available there.

Following this introduction, this self-review report provides a brief history of the GCRO and a discussion of the main points of the previous strategic review process in 2013. The third section details our staff capacity and organisational structure. The following three sections are devoted to describing our outputs in our three core areas: own-published outputs; academic outputs; and policy contributions. Each of these sections provides some measures and assessment of the scale and range of outputs, as well as, where possible, any discernible impacts they have made. Figure 1 below represents all of these outputs combined and shows the growth in production in the GCRO since 2009, and especially the dramatic increase since 2016. It should be noted that this data may be incomplete because, for example, some resources could not provide us with numbers of downloads, or some researchers have not set up Google Scholar profiles. Section 7 of this report is divided into a number of substantial subsections. The subsections reflect on what has been done in the Quality of Life Survey, and each of the seven thematic focus areas into which we have divided our work. This section, although as succinct as possible, illustrates the full breadth and depth of GCRO research. The final section of the report provides a synthesis of our overall accomplishments and a reflection on the past five years.

This report deliberately does not include an extended executive summary. However to assist the review process we provide upfront:

1. An overview of how GCRO responded to key recommendations in the 2013/14 review;
2. A synthesis of key recent accomplishments; and
3. An assessment of areas for possible further improvement, synthesized from the document as a whole.

## Key developments following the last review

At the end of the GCRO's first five year phase, an external panel undertook a review of the organisation's institutional structure, outputs, and organisational capacity and structure. The review included a wide range of reflections, and some recommendations for the GCRO in its second five-year period. The following section presents some of the ways in which the GCRO has responded to its recommendations.

- The review highlighted the importance of increasing the academic rigour of the GCRO's policy-related outputs through peer-review. This recommendation has been fulfilled through the establishment of an internal research committee that coordinates blind peer review and internal review workshops for major GCRO outputs (e.g. Research Reports and Occasional Papers).
- The GCRO was challenged to expand and diversify the dissemination of its research outputs and findings. In the past five years, the GCRO has enhanced dissemination through a major redesign and upgrade of the GCRO website, and has initiated and sustained a social media presence on numerous platforms including Facebook, Twitter, Instagram and YouTube. In addition, GCRO has widened its range of outputs to enable engagement with the research findings by a broader set of users. Some of the enhanced outputs include: interactive online visualisations, story maps, interactive websites, videos and exhibitions at major conferences.

### ***GCRO profiled in academic publications***

The Gauteng City-Region Observatory as a research organisation and as a model of urban research is beginning to attract the attention of academics around the world. Most notably, political geographer and urban theorist, Edward Soja, mentioned the GCRO as an innovative response to the complexity of Gauteng's polycentric urban form, in a book chapter on regional urbanisation<sup>1</sup>. In an article proposing the need for solid scientific advice for city governments, the GCRO is cited as a key organisation driving academic-city partnerships<sup>2</sup>. The GCRO as an organisation has been cited in a recent article in *The Conversation*, discussing the benefits of building an evidence base for urban policy<sup>3</sup>. A further article on urban observatories, which especially profiles the GCRO, has been accepted for publication in the journal *Urban Research and Practice*.

- In response to the review's call for greater engagement in the international sphere, the GCRO has actively pursued opportunities to engage on the global stage, particularly around urban observatories and their role in building a critical evidence base for urban decision-making. GCRO has facilitated sessions at the following international fora: Habitat III in Quito (2016), XII Metropolis World Congress in Montreal (2017), the African Centre for Cities International Urban Conference in Cape Town (2018), the

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<sup>1</sup> Soja, E. W. (2016). Regional urbanization and the end of the metropolis era. In Nel-lo, O., & Mele, R. (Eds.) *Cities in the 21st Century* (pp. 71-89). Routledge.

<sup>2</sup> Acuto, M. (2018). Global science for city policy. *Science*, 359(6372), 165-166.

<sup>3</sup> Jenny McArthur and Tim Moonen (2019) 'Liveable cities rankings: how a global enterprise is influencing urban change', *The Conversation*, 11 April 2019. Available online: <https://theconversation.com/liveable-cities-rankings-how-a-global-enterprise-is-influencing-urban-change-113948>



Moscow Urban Forum (2018), the World Urban Forum in Kuala Lumpur (2018), and the UN-Habitat Assembly (Nairobi 2019). The GCRO also hosted a stand at the Seoul Biennale of Architecture and Urbanism (2017) and the Metropolis Annual Meeting in Johannesburg (2018). Moreover, the GCRO and its work has recently been showcased as an exemplary research agency by the European Commission's Joint Research Centre (Pretoria 2018, Nairobi 2019), UN-Habitat Global Urban Observatory (Nairobi 2019), the UCLG's Metropolis organisation (Barcelona 2019).

- The GCRO has actively pursued a range of partnerships with both local and international stakeholders, as recommended in the 2013 review. These partnerships include formal research projects and collaborations with local universities, including contributing to a network of urban studies institutes (the BRICS-Plus Urban Lab). The GCRO has partnered with people and departments at a range of international institutes such as the University of Sheffield, Brookings Institute, the Institute for Housing and Urban Development Studies (IHS) at Erasmus University, and at the University of Cambridge. The GCRO has cultivated a partnership with University College London's Department of Science, Technology, Engineering and Public Policy (STeAPP). GCRO has also entered into partnerships with local government departments in Gauteng in both project and ongoing research collaborations (e.g. the Office of the Premier, the Gauteng Department of Agriculture and Rural Development, the Gauteng Department of Economic Development and the City of Johannesburg).
- The first 5-year review also encouraged the GCRO to expand its team through postdocs and an enhanced GIS team. This resulted in the development of a GIS internship programme, and an expansion of the GIS capacity from a team of two to a team of four full-time staff and three interns. In addition, the GCRO hosted two UJ-funded postdocs from 2016 to 2018.
- The 2013 review emphasised the importance of increasing the academic research outputs, including self-reflective pieces on the modes of knowledge production and exchange undertaken by the GCRO. The GCRO has afforded all staff a few weeks of writing time each year to give dedicated focus to writing academic journal articles. This has contributed to a significant increase in academic publications over the past five years including articles reflecting on the GCRO as a boundary organisation, co-production of knowledge through the Green Infrastructure CityLab, and the evolving research process around data collection and alternative modes of research.

## **Key achievements of the last five years – a summary**

- Over the last five years, the GCRO has grown substantially in the number of researchers employed full time. The GCRO currently has 21 staff members, with 13 dedicated researchers. As noted above, the GCRO staff complement has also expanded through postdocs and new interns making up an enhanced GIS team.

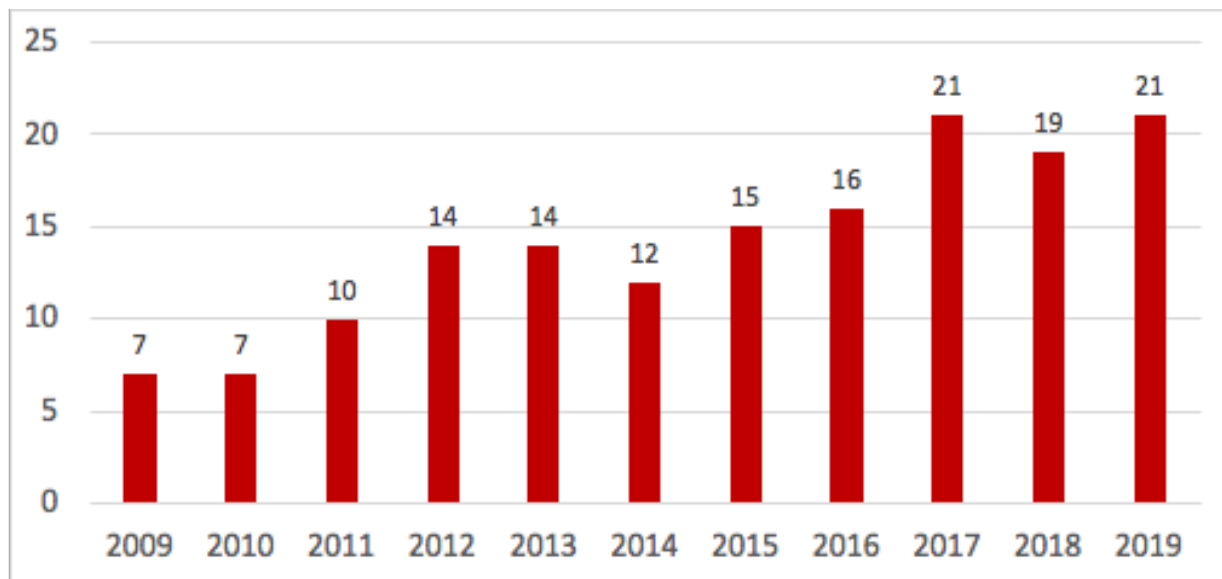


Figure 1.1: Staff numbers as 1 July of each calendar year

- Over the period 2013/14 to 2016/17, GCRO lost four excellent young researchers who left to take up PhD study opportunities abroad, and others because the opportunities for promotion seemed clearer elsewhere. While the pull factors of international qualifications and tenure certainly played a role here, an important consideration was the policy that GCRO staff could not advance to more senior positions without PhDs, yet no provision was made for any time or space to undertake PhD study, as well as the lack of clarity around career pathing. Over the last few years, the GCRO has introduced a PhD- and academic writing-time policy, and a clearer promotions policy. Under these new policies, five staff members are now pursuing their PhDs, and two have recently been promoted to senior researchers. This has arguably helped stem the outflow of young talent and stabilised the organisation.
- With a growing staff, but ever more cramped offices, GCRO motivated for the allocation of new and enlarged space on the Wits campus. Over 2015/16 and 2016/17 the GCRO offices were completely renovated. The newly designed space resonates with GCRO's identity as an urban observatory, it provides much better facilities for the hosting of seminars and workshops, and individual offices for research staff enhances productivity.
- The GCRO has increased the academic rigour of its own-published research outputs through double-blind peer review, fulfilled through the establishment of an internal research committee.
- The number of outputs has increased significantly over the last five years. This includes an increased number of accredited academic publications following a series of interventions to improve and attain writing objectives.

## All GCRO outputs since 2009

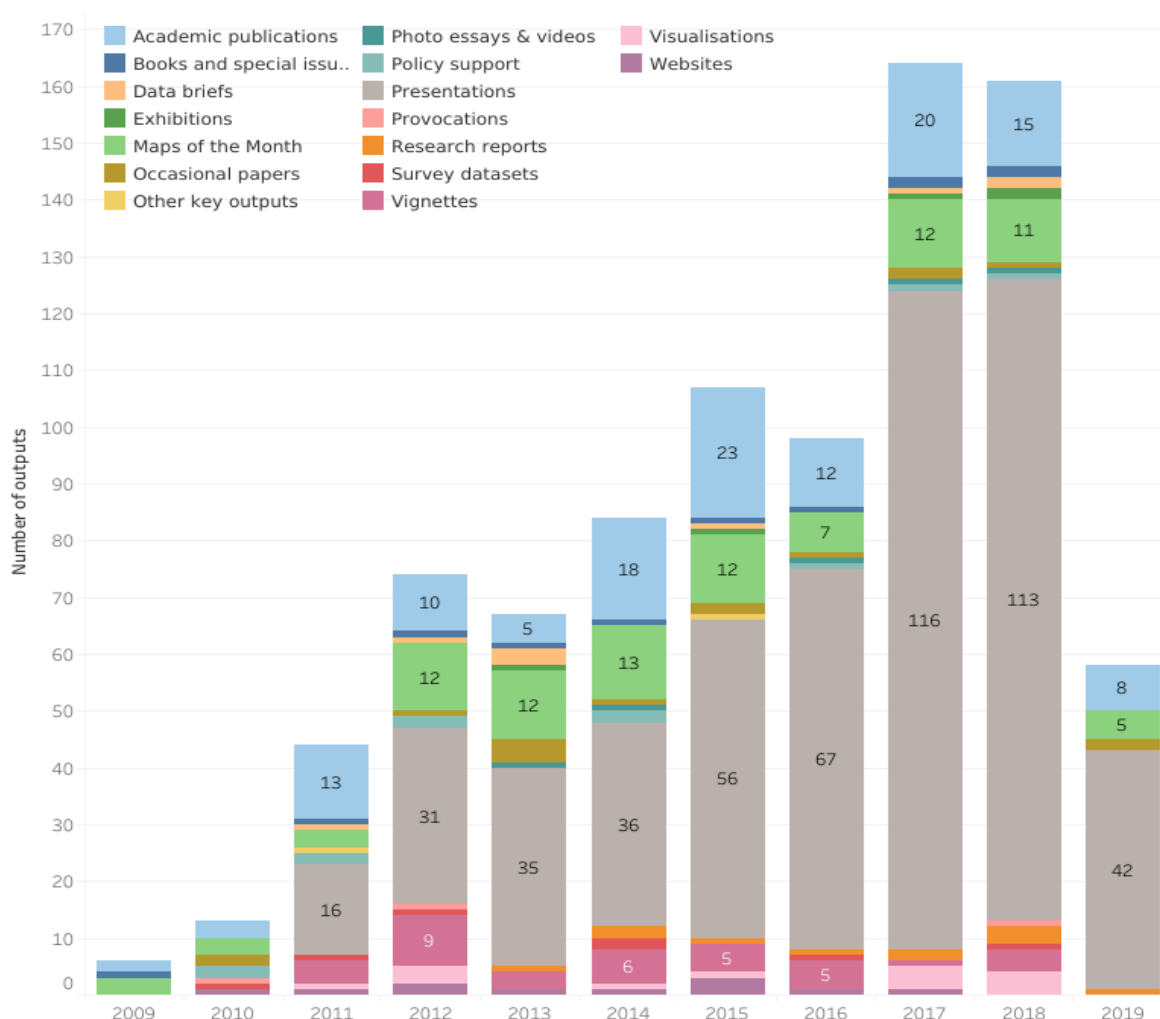


Figure 1.2: All GCRO outputs published since 2009

- In the past five years, the GCRO has enhanced dissemination through a major redesign and upgrade of the GCRO website, has initiated and sustained a social media presence on numerous platforms, including Facebook, Twitter, Instagram and Youtube, and has increased its media presence through the publication of op-eds and pieces in *The Conversation*.
- In addition, the GCRO has widened its range of outputs with a range of innovative new products, including: interactive online visualisations, exhibitions, story maps, interactive websites, videos and exhibitions at major conferences.
- As outlined above, in response to recommendations in the last review, the GCRO has actively pursued opportunities to engage on the global stage, particularly around urban observatories and their role in building a critical evidence base for urban decision-making. It has also participated in, and exhibited and presented at, multiple international events and conferences.

- The GCRO has also actively built a range of partnerships with both local and international stakeholders. These include formal research projects and collaborations with local universities, including contributing to projects underway in a network of urban studies institutes (the BRICS-Plus Urban Lab).
- The GCRO has deliberately become increasingly responsive to requests for support from government and has produced significant policy-support work in line with this outward-facing objective. Key policy-support outputs include a set of social cohesion analyses and frameworks, a firm-level survey, a Gauteng water security plan, and a major end-of-term review.

## **Areas for potential improvement moving forward**

- The GCRO is uniquely configured with one foot in the academy and one foot in the public sphere. Its proximity to government means that it is frequently called upon to inject analysis of trends and key strategic thoughts and insights into workshops and planning forums, including at the most senior level. However, it is sometimes taxing to manage short-term requests from government, particularly for ad hoc data analysis and presentations on topics that GCRO staff have limited expertise in.
- Although the GCRO has grown substantially in terms of the number of researchers, some issues of staffing remain. The organisation has a wealth of talented early-career researchers, but is light on very experienced (ideally black!) senior research capacity. There has been an enormous increase in the administrative load in support of GCRO activities, and the low ratio of admin-research staff has occasionally placed excessive burdens on some administrative staff. In addition, periods of high staff turnover have meant that some projects have not moved forward because the key researcher has left the organisation, and we do have not had a project redundancy process.
- When GCRO was smaller, it was possible for management staff to provide input and mentorship at the various stages of every project, including project design, analysis, argument development and writing. While this still happens, it does not happen to the same degree as before, since there are now 44 active projects being driven by researchers. This has produced major bottlenecks of draft work to comment on, for example. Over the last two years GCRO has made use of external reviewers to advise on the publishability of draft work, effectively as a way of outsourcing the kind of supervision and quality control that cannot be fully done in house. It has also instituted internal workshops for the presentation of draft work to colleagues. However a more systematic approach to providing input throughout the life cycle of a project is still in the process of evolution.
- While a new promotions policy has clarified career-pathing, there is still no provision for GCRO research staff to achieve academic titles (associate professor, professor). This is purely because of the institutional quirk that the GCRO falls administratively under the Wits Research Office, rather than a faculty, and so it does not align with any faculty staffing and promotions committee. The inability to achieve title matters for three reasons: first, more senior staff have no way of attaining the customary due recognition of their academic status and achievements within the parameters of the GCRO, and so

are structurally inclined to look elsewhere for positions that do have titles attached to them; second, with no associate or full professors on its staff lists, GCRO will continue to *appear* to be academically lightweight to any local or international partners; third, it is more difficult to attract senior staff (who might want the due recognition of their academic stature) in appointment processes, limiting the pool of excellent candidates for positions at the principal researcher level. A more systematic approach is needed to structure affiliation with academic faculties and departments.

- The number of academically rigorous, often peer-reviewed, GCRO outputs is substantial but efforts to have this research accredited for the purposes of Department of Higher Education and Training (DHET) subsidy have not been successful. There have also been some lost opportunities in not publishing GCRO research in accredited academic publications. Discussions have begun on how to allocate digital object identifier (DOI) numbers to each output on the GCRO website, and this may assist in seeing GCRO published output attain due recognition.
- Recent approaches to apply for National Research Foundation (NRF) rating have revealed limits in how NRF processes regard the quality of applied, policy-facing but academically rigorous research. More work needs to be done to build an appreciation of the value, and distinct challenges, of working in the research–policy nexus.
- The pipeline of outputs currently in progress is significant but production processes can be slow and immensely time-consuming. The GCRO has recently brought on board contracted production management support, but more needs to be done to reduce the cost and time that it takes to publish an output from start to finish, especially larger GCRO outputs that are heavily designed.
- Our flagship Quality of Life survey has run into issues with fieldwork implementation for the last three iterations. The enormous time, energy and funds that it has taken to pull off each QoL arguably means that other aspects of the GCRO’s work programme have not received the attention required at key moments. A review of the last ten years of QoL is underway and will address key technical aspects of survey management and implementation. This will guide key decisions that need to be taken on the scale of QoL, the approach to internal quality control of fieldwork, the role of the survey in contributing to the GCRO’s overall aims and objectives, and the levels of appropriate internal resourcing, both in terms of funding and the structuring of staff capacity.
- In the previous five-year strategic review, the GCRO was asked to increase its public presence, in general terms and through ‘public intellectuals’. GCRO researchers have increased their media presence and published more op-eds, but admittedly more could be done to develop public personas.
- This self-review report attempts to quantify our impact. The report musters the best information available for this purpose, but this ‘evidence’ is often limited to standard measures such as citation counts or website page views. It is recognised that impact is so much more than this, but is difficult to quantify. Alternative measures of impact will be considered and developed.

## 2. GCRO's evolution and organisational development

### **GCRO's formative period and the evolution of its work**

The GCRO was publicly launched on 11th of September 2008 as an institutional partnership between the Gauteng Provincial Government (GPG), University of Johannesburg (UJ) and University of the Witwatersrand, Johannesburg. The first Executive Director, Prof. David Everatt, assumed office on the 1st of December 2008. Although wholly funded by the provincial government, the GCRO was established as an independent, university-based research centre to bridge the gap between government and the academy. The GCRO was tasked with generating high quality data and making them accessible to government, the business community and the general public.

Appearing at the peak of the global financial crisis, the GCRO had an immediate task of gathering data showing the impact of the crisis on the Gauteng province. Within the first year of its establishment, the GCRO undertook four major research projects: a benchmarking exercise into what other cities and regions elsewhere in the world were doing in response to the financial crisis; a review of literature on city-regions; a Territorial Review led by the OECD; and the first Quality of Life survey which was intended to set a basis for measuring progress in the Gauteng City-Region. Other projects rapidly followed, including early work on the green economy in support of the Gauteng Department of Economic Development, which in turn set the tone for a major sustainability thrust in the GCRO's work, the design of a first of its kind GIS website serving geo-spatial data into the public domain, and major academically oriented research into xenophobia and non-racialism.

Early years also saw the development of some of the GCRO's primary modes of research dissemination that have endured to this day. Most significant here was the launch of its main website, which holds all research outputs; the start of the regular Map of the Month series; experimentation with less regular, but no less significant, forms of visualising data-driven insights, such as the Vignettes series and various interactive visualisations (including the substantial 2011 and 2013 State of the GCR interactive online platforms); and first releases of the Occasional Papers, Provocations and Data Briefs series. The first Research Report was released in 2013, and over time this series has become the most significant, albeit very demanding, form of GCRO publication.

In its early years the GCRO took a rather haphazard and undirected approach to the identification of research priorities. Research projects were indeed presented to and signed-off by the GCRO Board as part of annual work-planning and budgeting. But they were not organised into any overarching framework of strategic purposes. This changed when the GCRO developed a first three year strategic plan for 2011-2014. The strategic plan gave shape to a number of thematic focus areas each containing several discrete research projects. Medium term planning further evolved in 2013/14 when, guided in part by the previous review, as well as key priorities emerging from the 2014-2019 government term of office, the GCRO developed a five-year strategic plan for the period 2014/15 to 2019/20. The current five year plan is again

anchored on a series of thematic focus areas, each with an array of shorter or longer term projects, as follows:

1. Government support
2. Analytics, cartographies and visualisations
3. Changes in the social fabric / changing the social fabric
4. Rationalities of government and governance
5. Histories and futures of the GCR in comparative perspective
6. New regional economies
7. Landscapes in transition
8. Sustainability transitions

In this schema, the Quality of Life survey was organised as part of a series of other projects under the theme ‘Analytics, cartographies and visualisations’. However it does deserve a special note given both the immensity of the undertaking, and the way it cuts across many of the other projects in other themes, providing a rich and regularly refreshed stream of original data. Indisputably GCRO’s ‘flagship project, it has grown from some 6600 respondents in 2011, to 16 729 in 2011, 27 490 in 2013/14, 27 490 in 2015/16 and 24 889 in 2017/18.

## Changes in the GCRO staff complement since 2014/15

The GCRO is a modest-sized research centre that depends on close collaboration between the various disciplinary specialists in the unit.

At its inception in late 2008 the GCRO had one staff member, the Executive Director. The staff complement grew to seven in the 2009/2010 financial year. Within three years it had doubled in size to 14 staff members, and it now stands at 21 in mid-2019. The table below reflects the staff numbers, for both research/management and administrative staff, as well as the numbers who joined and left the GCRO each year since 2009.

|      | Joined<br>GCRO | Staff at at 1 July of each calendar year |                         |                        | Left<br>GCRO |
|------|----------------|--|-------------------------|------------------------|--------------|
|      |                | Research<br>staff                        | Administrative<br>staff | <b>Total<br/>staff</b> |              |
| 2008 | 1              |  |                         |                        |              |
| 2009 | 6              | 5  | 2                       | 7                      | 0            |
| 2010 | 1              | 5  | 2                       | 7                      | 1            |
| 2011 | 3              | 8  | 2                       | 10                     | 0            |
| 2012 | 4              | 8  | 2                       | 14                     | 0            |
| 2013 | 5              | 12                                       | 2                       | 14                     | 6            |
| 2014 | 3              | 10                                       | 2                       | 12                     | 1            |
| 2015 | 2              | 13                                       | 2                       | 15                     | 2            |
| 2016 | 14             | 14                                       | 2                       | 16                     | 5            |
| 2017 | 1              | 18                                       | 3                       | 21                     | 5            |
| 2018 | 3              | 16                                       | 3                       | 19                     | 4            |
| 2019 | 2              | 18                                       | 3                       | 21                     | 0            |

Table 2.1: Staff growth and change 2009-2019

The figures in the table suggest a natural process of growth over a period of time. However, a number of key moments of both rupture and dramatic development do need to be highlighted. First, the GCRO saw a steady period of growth between 2009 and 2012 with a natural but limited degree of staff turnover. However 2013 saw a large number of staff leave the GCRO, with the departure of some of our first cohort of interns, some staff taking up other employment opportunities, and one staff member taking an international PhD opportunity. However 2013 also saw the injection of new energy and capacity with four new researchers, and a new office administrator hired.

The 2013/14 review strongly recommended that the GCRO increase very dramatically in size. Although there was some debate internally about whether this would indeed be advisable, 2014 and early 2015 saw GCRO make a number of new very senior appointments to bolster the capacity to implement its five year strategic plan. The Executive Director also negotiated the shift from three to five year contracts for all staff, and this seemed to promise the further stabilisation of the organisation. However these positive gains were offset by a major rupture in mid-2015, when the inaugural Executive Director, Prof. David Everatt, resigned to take up the position of Head of the Wits School of Governance. Consequently, or coincidentally, his departure preceded a slew of resignations, including the invaluable Senior Systems / GIS Manager who had been with the GCRO since 2009, and a second Research Director hired the year previously. Two very talented young researchers also left during this period to take up PhD opportunities overseas.

In early 2016 the new Executive Director, Dr. Rob Moore, who had been part of the very early deliberations to establish the GCRO, and who had previously served as chair of the GCRO Board over several years, joined the GCRO. In mid-2016 and following he led four important processes:

1. A recruitment drive that saw GCRO arrest a period of decline and grow rapidly to 21 staff in the second half of 2016 (a process that also brought more black South Africans into the unit than ever before in its history);
2. The completion of much expanded and more conducive new office space on the sixth floor of University Corner. The new space provides facilities for the hosting of seminars and workshops, and individual offices for research staff in an architectural design that still enables and encourages team interactions;
3. The development of new policies facilitating (a) structured research leave for younger staff wanting to pursue higher degree opportunities and (b) a system to enable staff promotions based on clear procedures and criteria. The GCRO attracts talented young researchers, who then benefit from excellent exposure to a wide research field, and opportunities for personal growth and productivity. Inevitably this talent often also then finds enticing fresh opportunities. In the period under review we have seen colleagues take up doctoral studies at Harvard, UCL, SOAS and Oslo. But the new policies have also helped stabilise the organisation by giving research staff both the space to grow academically through the achievement of higher degrees, and clearer lines by which to map out a future career path within the organisation.



4. The outward re-orientation of the GCRO to be more responsive to government needs for strategic intelligence and policy support, strengthening the focus of GCRO staff as engaged scholars able to work equally effectively across the policy-science divide in the public sphere and the domain of academic knowledge production.

These processes, together with other capacity building measures led by other staff as outlined below, have arguably helped stabilise the organisation at a much larger size than was previously possible.

## Current organisational structure

The GCRO has a relatively flat organisational structure that is led by an Executive Director. Reporting directly to the Executive Director are a Research Director, an Operations and Partnerships Senior Manager and Finance and Office Manager. There is an Office Administrator who reports to the Finance and Office Manager. The Research Director is responsible for overseeing and managing all research-related work. On the administrative side, the Operations and Partnerships Senior Manager is responsible for managing the internal workflow processes, the external responsiveness and partnerships that the GCRO sustains, as well as organisational development strategies. The Finance and Office manager is responsible for the financial health and smooth running of the office and the organization more generally. The Office Administrator is responsible for all administrative support for the Executive Director and the Management Committee.

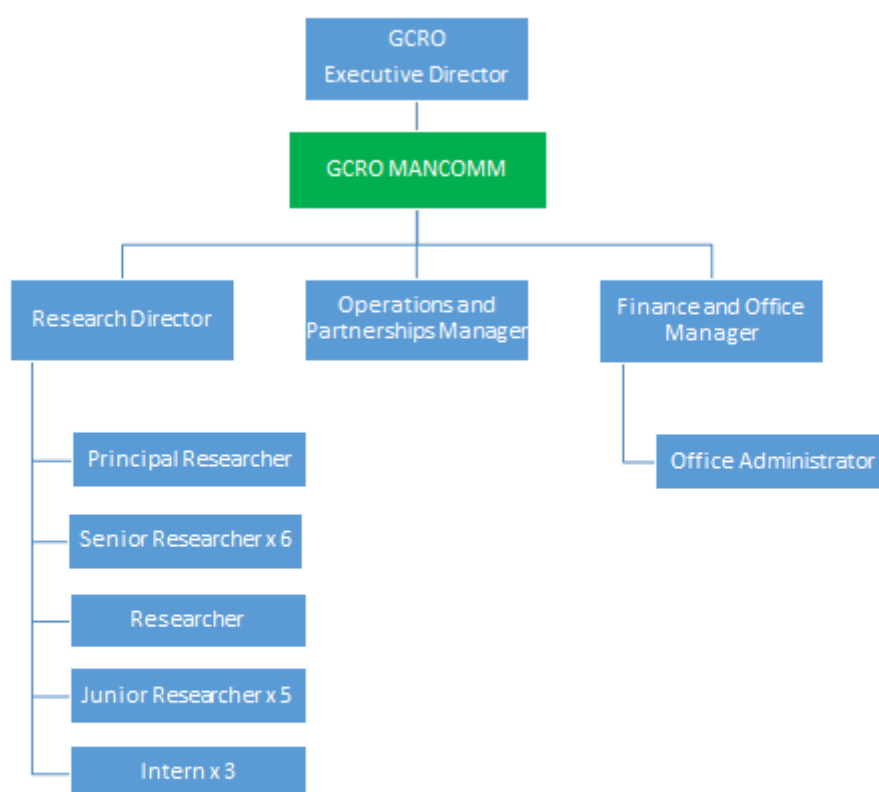


Figure 2.1: Current organogram of the GCRO

Table 2.2 breaks down how the GCRO is currently organised based on seniority, gender and race. The GCRO is made up of 57% people of colour (of these 42.8% are black Africans) and 57% females.

|                                      | Female   |          |          |          | Female Total | Male     |          |          |          | Male Total | Grand Total |
|--------------------------------------|----------|----------|----------|----------|--------------|----------|----------|----------|----------|------------|-------------|
| Rank                                 | African  | Coloured | Indian   | White    |              | African  | Coloured | Indian   | White    |            |             |
| <b>Research</b>                      |          |          |          |          |              |          |          |          |          |            |             |
| Executive Director                   | 0        | 0        | 0        | 0        | 0            | 0        | 0        | 0        | 1        | 1          | 1           |
| Research Director                    | 0        | 0        | 0        | 0        | 0            | 0        | 0        | 0        | 1        | 1          | 1           |
| Specialist Researcher                | 0        | 0        | 0        | 0        | 0            | 0        | 0        | 0        | 1        | 1          | 1           |
| Senior Researcher                    | 0        | 0        | 0        | 4        | 4            | 2        | 0        | 0        | 0        | 2          | 6           |
| Researcher                           |          |          |          |          |              | 1        |          |          |          | 1          | 1           |
| Junior Researcher                    | 2        | 0        | 0        | 0        | 2            | 2        | 0        | 0        | 1        | 3          | 5           |
| Interns                              | 2        |          | 1        |          | 3            |          |          |          |          |            | 3           |
| <b>Administration</b>                |          |          |          |          |              |          |          |          |          |            |             |
| Operations and Partnerships Director | 0        | 0        | 0        | 1        | 1            | 0        | 0        | 0        | 0        | 0          | 1           |
| Finance and Office Manager           | 0        | 1        | 0        | 0        | 1            | 0        | 0        | 0        | 0        | 0          | 1           |
| Office Administrator                 | 0        | 1        | 0        | 0        | 1            | 0        | 0        | 0        | 0        | 0          | 1           |
| <b>Total</b>                         | <b>4</b> | <b>2</b> | <b>1</b> | <b>5</b> | <b>12</b>    | <b>5</b> | <b>0</b> | <b>0</b> | <b>4</b> | <b>9</b>   | <b>21</b>   |

Table 2.2: Current staff composition of the GCRO

## Organisational capacity building and development

Eight members of staff have joined the GCRO relatively early in their respective careers. Following this, the GCRO has employed a number of methods to help individuals to grow and develop their capabilities. This section outlines the GCRO's various capacity development programmes, including mentorship and career advancement activities, and the internship and student assistant programme.

### Capacity building and development in the GCRO

The GCRO's approach provides for early, mid-career as well as senior researchers. These include writing development, support for higher degree studies, training opportunities and support for conference attendance. Four GCRO staff members are currently registered for doctoral studies, 2 interns are currently finishing off their Masters degrees, while other members of administrative staff are enrolled in short course opportunities directly related to career advancement.

GCRO staff members are eligible for free studies at Wits, and for 10 days study leave per annum. GCRO ManCom also established a time-away policy to support GCRO staff members currently busy with their doctoral studies (which are focused on questions central to the GCRO's interests).

Some key initiatives include:

1. A Writing Support Group and 'Writing Wednesdays' - initiated in 2018, which aim to provide an uninterrupted writing time, and writing mentorship, in ways that benefit the full range of staff members.
2. Brown bag seminar - The GCRO's Brown Bag sessions were established in 2015 and are held at least once a month, providing a space for researchers at all levels, both internal and external, to present on their research and receive feedback from their colleagues and peers.
3. Reading groups - The GCRO has various reading groups, namely: Data analytics and visualisation reading group (established in 2016, by three GIS team members), Education reading group (established in early 2019) and the Scale and Belonging reading group (established in 2018 as part of a book project run by Dr Richard Ballard).
4. PhD and writing leave - The GCRO has a time-out-of-office policy for PhD-enrolled students, who have worked at the GCRO for three years, up to a maximum of 40 days per annum. All GCRO staff may apply for 20 days dedicated academic writing 'leave' per annum, allowing them extended, focused time for academic research and writing.

The GCRO also presents several training and advancement opportunities for staff members. Instances of these training opportunities over the last five years include:

- In 2014, Farah-Naaz Moosa, an administrative staff member, started studying towards a BA degree in Psychology.
- In 2015, Christina Culwick completed a PGCE qualification.
- In 2016, two GIS staff members, Samy Katumba and Mncedisi Siteleki, attended a GIS training programme through ESRI.
- In 2016, Christina Culwick, participated in a two week course at the African Centre for Cities(ACC) on Democratic Practices of Unequal Geographies.
- In 2016 and 2017, the GCRO arranged SPSS Statistical training for a large number of staff members.
- In 2017, several GCRO staff members attended an online course on Sustainable Development and Governance.
- In 2017, Julia de Kadt completed an online course on applied data science methods for social scientists, and in 2018 a course on practical data management using R.
- In 2018, Nadine Abrahams got her Matric qualification.
- In 2018, Samkelisiwe Khanyile and Alexandra Parker completed an online course on Data Visualisation for Journalism.
- In 2018, Samkelisiwe Khanyile completed an online HTML course on Codecademy.
- In early 2019, GCRO arranged a data visualisation course using Tableau for a number of staff members.
- In early 2019, 2 GCRO GIS staff members, Samy Katumba and Yashena Naidoo attended a one-week course on Remote Sensing at the University of Pretoria.
- Over and above all this, GCRO staff members have the support to engage in Mass Open Online Courses (MOOCs) as long as they can motivate their usefulness for ongoing work within the GCRO. A number of staff members have taken this opportunity, e.g. in 2019 Christina Culwick did a MOOC on Water for Liveable and Resilient Cities.

## **GCRO interns, post-docs and student assistants**

GCRO spends considerable time developing the skills and expertise of early-career researchers, which includes a sought-after internship programme and occasional student assistants.

In recent years, the GCRO has hosted six interns, four student assistants, two volunteers for job shadowing purposes. In 2017, three young researchers who had served internships were offered positions as Junior Researchers after a rigorous interview selection process. In 2018/19 three new interns have joined the GCRO, and currently make strong contributions to a number of projects. For the first time during this last five-year period, the GCRO hosted two post-doctoral fellows, Dr Aidan Mosselsson and Dr Sian Butcher, both funded by the University of Johannesburg from 2016 to 2017.

The GCRO has also created opportunities for visiting scholars and has provided work space and other support during their stay. In recent years, the GCRO has hosted over 10 visiting scholars and academics:

- 2014: Prof. LaDawn Hugland, from the Global Institute of Sustainability at Arizona State University and her PhD student Julie Gwiszcz.
- 2014: Prof Jenny Robinson from UCL and Prof Martin Murray from the University of Michigan.
- 2016: Dr Carla Washbourne from the Department of Science, Technology, Engineering and Public Policy (STeAPP) University College London(UCL). This was the first of several visits.
- 2017: Prof. Stephen Graham, Professor of Cities Society, at Global Urban Unit at Newcastle University.
- 2017: Dr Carla Washbourne, on her second visit, continued previous research on GCRO and was joined by Joanna Sawkins (STeAPP, UCL).
- 2019: Dr. Marcus Walton, from Brown University, serving a postdoc at PARI
- 2019: Dr Carla Washbourne (STeAPP, UCL) for her third visit.

## **Reflection on organisational structure and staff capacity**

In the last 5-year review, the GCRO set out to make provisions for the growth of the GCRO, with a broader range of skills, and thus a greater flexibility to meet different demands from different quarters. In response to this, the GCRO has achieved modest overall growth (keeping within its budget envelope), but has experienced some inevitable turnover of staffing during this period. In an effort to improve talent and skills within the organization, as noted above, the GCRO has in place a range of supportive initiatives including seminars, reading groups, conference attendance, a PhD support programme, writing leave and general study support. Moreover, the administrative capacity within the GCRO now rests upon three members of staff, noting the addition of a new Senior Manager of Operations and Partnerships.

# 3. GCRO outputs

## Overview

The GCRO produces an extraordinary range of outputs (14 different types to be exact) targeted at different audiences. GCRO outputs include written outputs such as research reports, occasional papers and provocations. The GCRO also produces a number of more visual or graphic outputs including maps of the month, vignettes, interactive visualisations, photo essays and videos. Data briefs straddle written and visual outputs by providing data analysis with text and charts. The GCRO also produces datasets, such as those from the Quality of Life surveys, and makes these datasets available to researchers, civil society and government officials. Figure 3.1 below provides an overview of the number of GCRO outputs published each year since 2014. In 2018 we managed to produce a total of 144 outputs, or roughly one output every 2.5 days. The majority of our outputs are presentations, and further discussion on our various presentations is provided in the detail of this section.

GCRO outputs since 2014

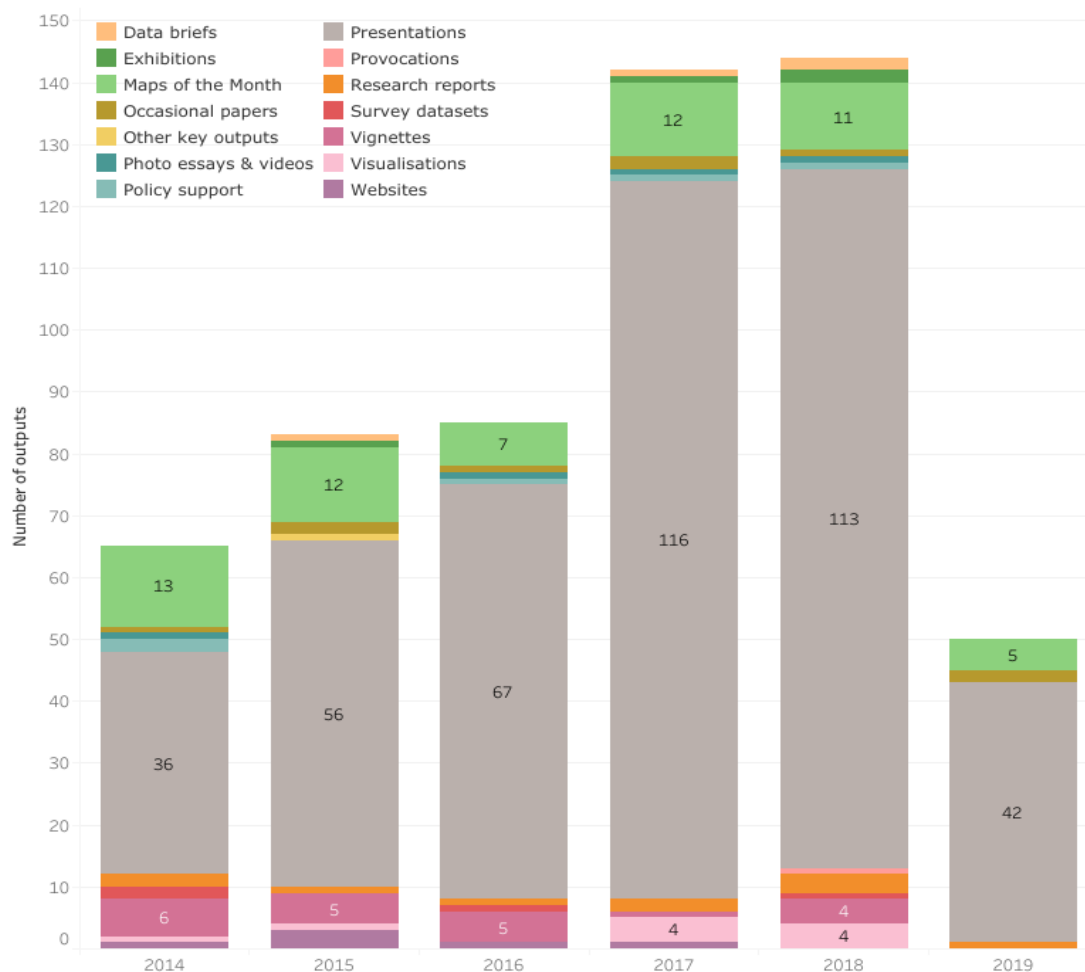


Figure 3.1: All GCRO outputs published since 2014.

The GCRO has also developed a number of platforms and strategies for the dissemination of our research. Our website is the primary platform for digital dissemination, and is supported

by several other GIS data websites such as the QoL viewer, that enable access to data and analysis (see Figure 3.2 below). GCRO researchers attend international and local conferences and frequently give presentations on their research to government and academia. In addition, the GCRO engages with traditional media on a regular basis and has a social media team promoting the Observatory’s work on five social media platforms.

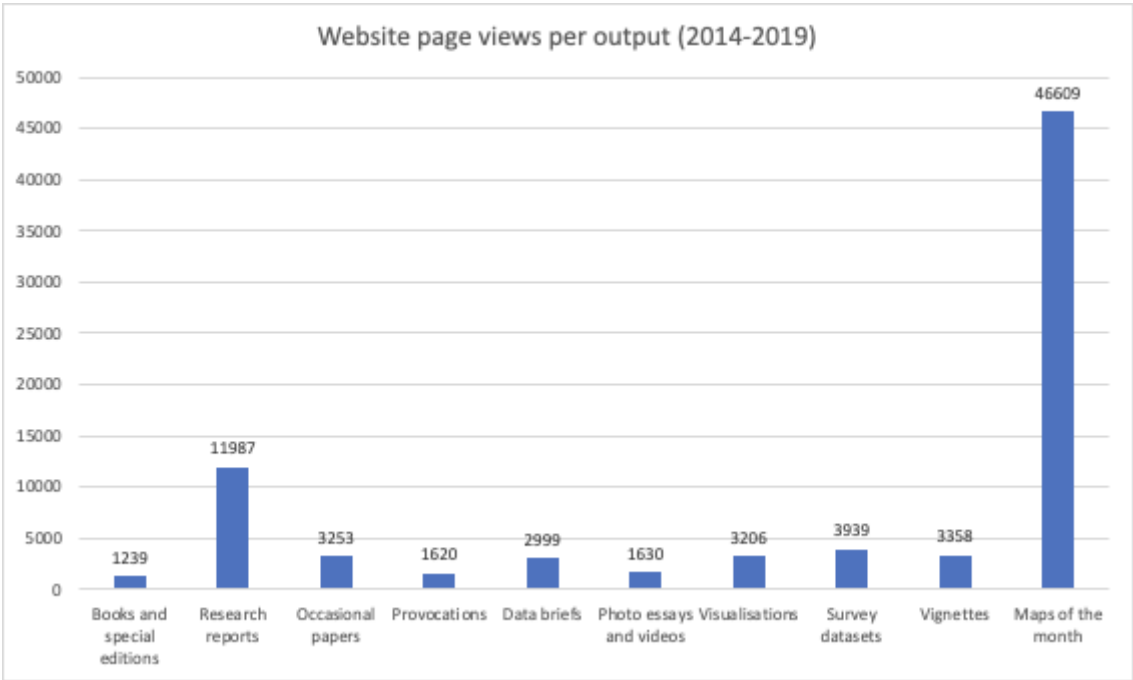


Figure 3.2: The number of page views on the GCRO website (excluding GIS data websites) for each category of outputs for the period 1 April 2014 to 31 March 2019 (last five years).

The chart above demonstrates the significant impact that our regular series of ‘maps of the month’ achieves in terms of driving traffic to our website, and reveals the level of interest in this innovative GCRO output. The second largest is the research report category, with just under 12 000 page views; again, a testament to the quality of these outputs and the interest they generate.

This section of the report provides details on our various outputs and gives some indication of their impact. A summary of our efforts to disseminate our research to a wide audience is also provided.

## Major written outputs

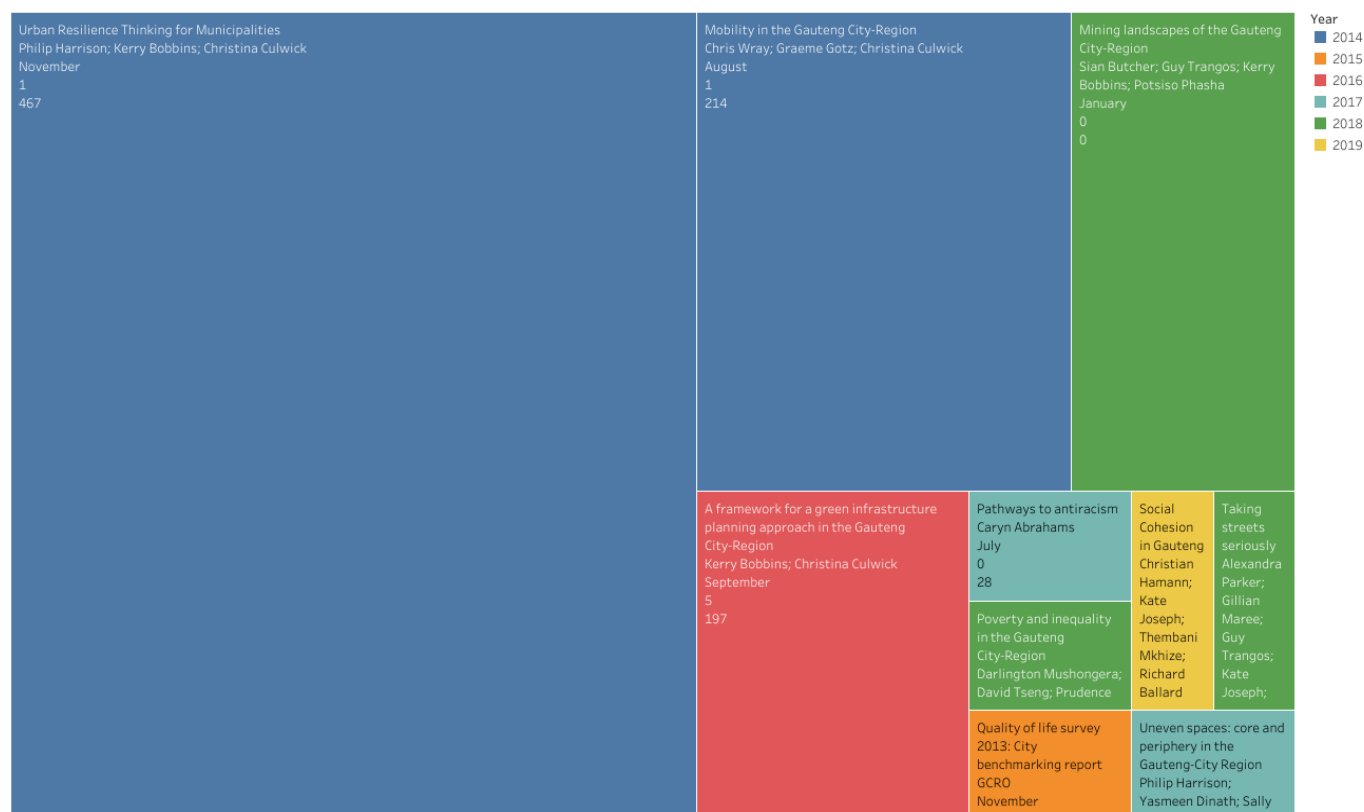
### Research Reports ([website link](#))

The GCRO has produced ten full-scale research reports between 2014/15 and 2019/20. These reports aim to explore extensively various phenomena that are pertinent to the dynamics and developments within the GCR. Usually multi-authored, our research explores both urgent current issues (like poverty and inequality), or looks ahead to major issues that will become critical in addressing urban livelihoods and sustainability (e.g. the now very influential – and prize-winning - series of reports on green infrastructure, or on various dimensions of urban

place-making). These research reports are significant pieces of work on the Gauteng City-Region context, and are gaining increasing stature as reliable reference works on the city-region.

Our researchers have been involved in the dissemination of the key storylines emerging in the research reports through radio interviews and other forms of public engagement. The treemap below visualises each of these outputs. The cells in the treemap are sized according to the Google Scholar citations for each research report, and are colour coded by year of publication.

Research reports (2014-2019)



The labels in each cell are ordered as follows:

- Title of research report
- Author(s) of research report
- Month of publication
- ResearchGate citations
- ResearchGate reads

### Occasional Papers ([website link](#))

Occasional papers (often single-authored) are a form of GCRO output that allows for deeper academic analysis on a sharply defined topic of interest. Between 2014 and 2019, a total of nine occasional papers have been published (earning 28 Google scholar citations, 79 Researchgate citations, and 3 253 views on the webpage). The occasional papers with the greatest impact were Sally Peberdy's 'International migrants in Johannesburg's informal economy' with 15 citations on Google Scholar, and 'GCRO Barometer 2014' by Darlington Mushongera with 47

citations from ResearchGate and three from Google Scholar. There have also been a number of citations for 'Quality of Life IV Survey (2015/16): City benchmarking report' by Christina Culwick in 2018, with 22 citations from ResearchGate.

### **Provocations ([website link](#))**

The GCRO's series of provocations are intended to be concise thought-pieces that take one key topic and explore its relevance for city-region planning, without necessarily attempting to provide conclusive resolution to what are usually a complex series of issues associated with the topic. A provocation is often a signal of an important research theme that needs more systematic and larger-scale attention into the future. They are usually written and presented in a highly accessible style and attractive format, with the intention of appealing to a wide audience of researchers, policy-makers, business people, activists, and members of the public. The series aims to challenge conventional understandings, stimulate new thinking, stir up debate and incite readers to respond with interpretations of their own. The GCRO has published a total of three provocations so far (viewed 1 620 times on the GCRO website), and a series on city-region governance issues, titled [Governing the Gauteng City-Region](#), is currently under preparation, the first of which is already available, titled 'Institutionalising the Gauteng City-Region', co-authored in 2018 by Jesse Harber and Kate Joseph.

### **Data Briefs ([website link](#))**

Data briefs are GCRO outputs which rely on the use of statistical analysis to present various facts and figures in interesting and concise ways, often drawing on our Quality of Life survey data. A substantial amount of effort goes towards analysing and cross-checking data to ensure accuracy. During the course of the review period, four data briefs were published, tackling a range of issues including health, social cohesion, crime and perceptions of safety, and informal sector enterprises. The most publicised and cited data brief was published in 2015, examining informal sector enterprises and employment in Gauteng.

### **Maps of the Month ([website link](#))**

The GCRO produces a map of the month on a regular basis and has published 55 maps since 1 April 2014. The impact of these maps is substantial, as mentioned above, with over 46 000 page views on our website in this five year period. These outputs have been cited 23 times in different publications, including in two academic books and, most notably, in the Spatial Development Framework 2040 (SDF) for Johannesburg, published in 2016.

It is worth mentioning the top five maps of the month, with over 2 000 page views each, as an indication of the breadth of research covered in this series of outputs. 'Backyard and informal dwellings (2001–2016)', February 2018, examines the growth of informal settlements and backyard dwellings (4 967 page views); 'Voting patterns in the 2016 local government elections', December 2016, discusses the results from the local elections in 2016 (3 732 page views); 'Green vegetation and impervious surfaces in Gauteng', May 2017, uses satellite data to show vegetation types in Gauteng (2 903 page views); 'Location of formal and informal businesses and their suppliers', February 2017, draws on Quality of Life survey IV (2015/16) data to understand businesses in Gauteng (2 386 page views); and 'Watershed boundaries of the GCR', August 2017, highlights some of Gauteng's complex topography with regards to water systems (2 298 page views).



## Website pages views per Map of the Month (2014-2019)

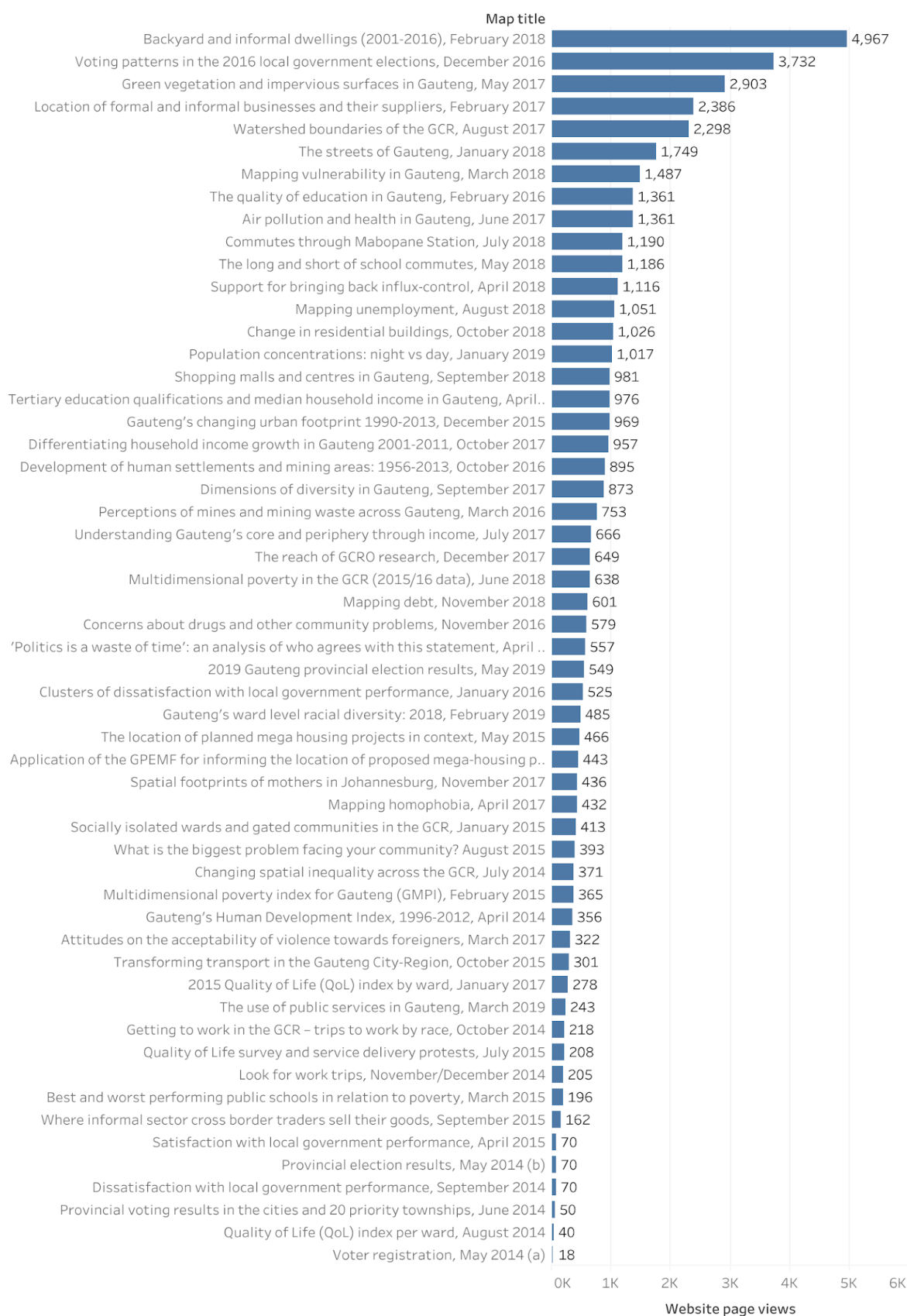


Figure 3.4: Page views for each map of the month published 1 April 2014 to 1 July 2019

## Survey Datasets

In addition to the biennial Quality of Life survey dataset, GCRO conducts research and collates datasets on an ad hoc basis. In 2019, the QoL V 2017/18 questionnaire was used to conduct an additional survey on the northern peripheries of the GCR, areas where hundreds of thousands of people live, with significant and fewer discernible economic centres. In total, 970 respondents were interviewed from February to April 2019, using SurveyToGo software on tablets. The survey complements the qualitative aspects of the Landscapes of Peripheral and Displaced Urbanisms research project. It addresses the need to know how these areas have changed since 1994. In 2014, 2 837 interviews were conducted with foreign migrant entrepreneurs and cross-border traders. In 2018, the GCRO conducted a survey of 412 business owners sampled from our 2015/16 and 2017/18 Quality of Life surveys. 2019 will also see the completion by the UJ-based CCRED of a ‘census’ of businesses operating in ten industrial areas across Gauteng. These serve as examples of the kind of data needed to inform economic strategy in the city-region, and the more recent business surveys are ideally a fore-runner of a possible ‘Quality of the Economy’ Survey (currently under discussion with GDED).

## Quality of Life survey data

One of the GCRO’s most widely recognised outputs is the biennial Quality of Life Survey. Further information on this unique project and the data generated is provided in Section 6.1 below. The GCRO makes its Quality of Life data freely available for non-commercial purposes. Data can be accessed directly through the GCRO, or using the DataFirst data repository at the University of Cape Town. The table below shows the number of QoL data requests that have been received, both by the GCRO and DataFirst combined. It is important to note that most of the data requests, with the exception of QoL IV, have been received directly by the GCRO. The bulk of the requests have been fielded from academics, including students who want to use the data for research projects and researchers wishing to use the data as part of their teaching material. Approximately one third of data requests originate from countries outside of South Africa, reflecting the growing international reputation of the dataset.

|                   | QoL I     | QoL II    | QoL III   | QoL IV    | QoL V     |
|-------------------|-----------|-----------|-----------|-----------|-----------|
| <b>Academic</b>   | 50        | 51        | 54        | 79        | 23        |
| <b>Government</b> | 4         | 5         | 6         | 7         | 1         |
| <b>Other</b>      | 5         | 6         | 2         | 13        | 4         |
| <b>Total</b>      | <b>59</b> | <b>62</b> | <b>62</b> | <b>99</b> | <b>28</b> |

## GIS data dissemination

As a service to government and researchers, the GCRO holds and shares a number of GIS datasets (not always data generated by the GCRO). The tables below show the number of GIS data requests that have been received. The first table speaks to the groups of people that have requested the data and the second speaks to international versus local requests. As with QoL data, most of the data requests have been for academic purposes.

|                    | 2014      | 2015      | 2016      | 2017     | 2018     | 2019 (until July 2019) |
|--------------------|-----------|-----------|-----------|----------|----------|------------------------|
| <b>Academic</b>    | 10        | 16        | 14        | 2        | 2        | 9                      |
| <b>Government</b>  | 0         | 0         | 0         | 0        | 0        | 1                      |
| <b>Other</b>       | 0         | 0         | 0         | 0        | 0        | 0                      |
| <b>Unspecified</b> | 1         | 0         | 0         | 0        | 2        | 0                      |
| <b>Total</b>       | <b>11</b> | <b>16</b> | <b>14</b> | <b>2</b> | <b>4</b> | <b>10</b>              |

|                      | 2014      | 2015      | 2016      | 2017     | 2018     | 2019 (until July 2019) |
|----------------------|-----------|-----------|-----------|----------|----------|------------------------|
| <b>International</b> | 1         | 4         | 2         | 0        | 2        | 1                      |
| <b>Local</b>         | 9         | 12        | 12        | 2        | 0        | 8                      |
| <b>Unspecified</b>   | 1         | 0         | 0         | 0        | 0        | 0                      |
| <b>Total</b>         | <b>11</b> | <b>16</b> | <b>14</b> | <b>2</b> | <b>2</b> | <b>9</b>               |

## Visualisations and online outputs

The GCRO makes extensive use of a range of different media and multimedia projects. This ensures our work reaches diverse audiences in a range of accessible and engaging ways. Key categories of these outputs, and their impact, are documented below.

### Photo essays and videos ([website link](#))

The GCRO has produced three videos and one photo essay during the review period. In addition to their dissemination via our website and mailing list, these products reach audiences through their inclusion in presentations and exhibitions, and as content displayed during events hosted by the GCRO. Videos are additionally made available on YouTube.

The photo essay, produced in May 2014, was titled ‘Scavenger economies of the mine dumps’. The first video, produced in 2016, was based on a series of interviews with youth in Braamfontein on the topic of race and racism. In 2017, a video on green infrastructure in the GCR was produced. This video had particular reach, attracting over 1 900 views on YouTube. In 2018, a video, providing a brief overview of the GCR and the GCRO, was designed both for online viewing and for inclusion in GCRO presentations.

### Visualisations ([website link](#))

Besides static visualisations, such as the map of the month and vignettes, the GCRO produces compelling interactive visualisations and applications that highlight key trends in the GCR. A dedicated web page on the GCRO’s website called ‘[urban data gallery](#)’ has been specifically created to offer a single view of these interactive applications, presenting a digital overview of the GCR. During the review period, seven interactive applications and 13 interactive visualisations have been included in the urban data gallery page. A detailed description of the

interactive visualisations and applications produced during the review period is provided in the 'Analytics and visualisation' section.

### **Vignettes** ([website link](#))

Vignettes provide an engaging, visual format with which to communicate data-based insights. Comprising of a small amount of text and a series of infographics, they effectively communicate often technical content to a broad audience. During the review period, the GCRO produced 19 vignettes, covering areas such as basic services, the economy, transport, education and quality of life (an average of one vignette every quarter). The GCRO has frequently responded to topical events to guide the production of vignettes of broad public interest. For example, in the wake of the #FeesMustFall movement in 2016, two vignettes were produced exploring the multiple axes of inequality and the question of the 'missing middle'. Similarly, in May 2015, a vignette was produced on xenophobic attacks. In other instances, vignettes provide a more accessible accompaniment and draw attention to other outputs. For example, the June 2018 Quality of Life vignette provides an intuitive explanation of how the GCRO's Quality of Life index was calculated; and the vignette produced in 2014 on informal cross-border traders drew on a substantive survey of this demographic. The vignettes, primarily disseminated through our mailing list and social media, attract attention from mainstream print and radio media.

### **Exhibitions**

In the last five years, the GCRO has curated and staged four exhibitions through both local and international platforms. Most notably, the GCRO was invited to take part in the Cities Exhibition at the inaugural Biennale on Architecture and Urbanism in Seoul, South Korea, in 2017. The Gauteng City-Region and GCRO research was showcased with 50 other cities from around the world. In addition to the stand, the exhibition included four detailed interactive story maps, which were subsequently published on our website as well. As atypical GCRO outputs, these exhibitions' impact is hard to measure. However, visits to our website more than double during them, thereby expanding our reach and widening our audience.

### **Websites**

Besides our main [website](#), the GCRO has produced or updated three other sites over the last five years, namely, the GIS viewer, Ward profile viewer and the Quality of Life viewer.

The GIS viewer provides online access to spatial data across the GCR and is accessible from all the major browsers and devices. It features a number of new datasets, arranged in eight themes (administrative boundaries; demographics; economics; environmental; spatial structure; spatial change; transport; and quality of life), as well as new tools for visualising and interacting with the data.

The Ward profile viewer is an innovative application developed to view a wide range of socio-economic, indicator-based, ward-level data. This viewer offers a comparative spatial view across the GCR at provincial, municipal and ward levels, assisting with the identification of local ward-level areas for targeted interventions.

The Quality of Life (QoL) survey viewer provides online access to the GCRO's QoL survey datasets. It offers users the choice of a single or multiple variable report that can be generated

at either a provincial or municipal level. A detailed description of these viewers is provided in the ‘Analytics and visualisation’ section of this report.

## Research dissemination

While producing and publishing GCRO outputs is a key element of our mandate, even more important is disseminating this research to a wide audience. GCRO has a number of strategies and tools for the dissemination of our data, research and outputs and these are detailed below.

The GCRO is often seen as a first port of call for data by government. GCRO researchers are frequently contacted by individuals within government when there is a need for data or technical expertise in areas of our work. In addition, although academic recognition for policy-focused work remains a challenge, many GCRO researchers are able to obtain scholarly recognition. This is detailed in the ‘Academic outputs’ section of this document.

### Presentations ([website link](#))

The GCRO staff have given a total of 412 presentations during the review period, with topics spanning our thematic research areas. These presentations are an essential part of profiling and disseminating the GCRO’s work to specialist audiences both locally and internationally, and mediating our work to specific audiences in government (often top executive groups or planning departments) and at academic conferences. The demand from government is increasing steadily, and it is interesting to note that we are increasingly invited to present our work for conferences hosted by multilateral agencies, which indicates that the GCRO and the QoL survey data are seen as exemplary models of high-quality research informing urban policy-making. Note that not all the presentations have been quantified in the Figure 3.5 below; many QoL presentations to government have not been individually recorded due to the volume.

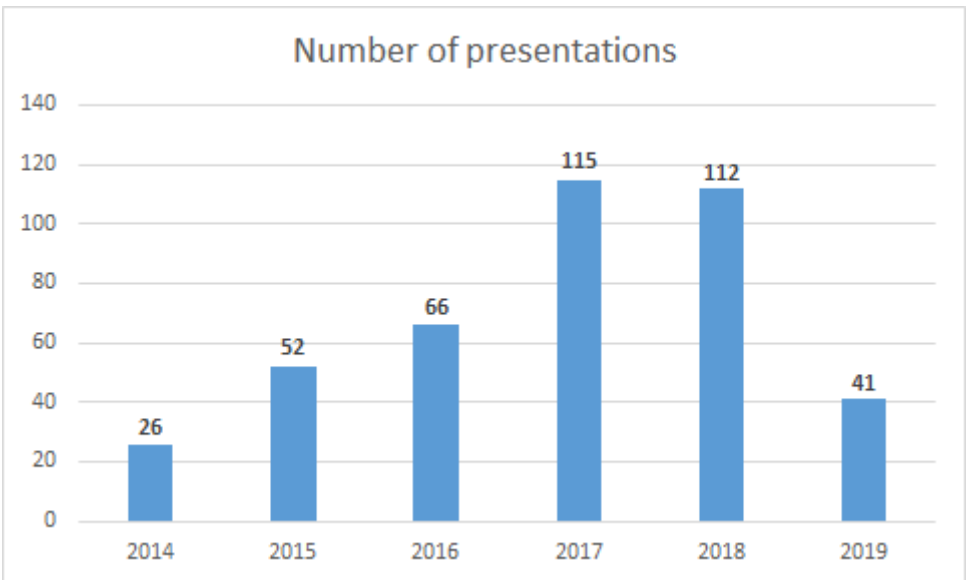


Figure 3.5: Number of presentations by year.

### Website dissemination

Between 1 April 2014 and 31 March 2019 the GCRO website recorded a number of 96 009 users/visitors who viewed its web pages 514 171 times. On average the GCRO website’s visitors

spent at least 3 minutes navigating and interacting with webpages (this is above the industry standard of 2–3 minutes). The bounce rate is the percentage of visitors to a website who navigate away from the site after viewing only one page. Our average bounce rate is 22.52%, but this is misleading because the bounce rates on our new website are below 5%. Furthermore, the recognised industry bounce rate is 50%, significantly higher than our most recent figures. It should also be noted that the GCRO website enjoys a continental (Africa) and international footprint with users accessing it from countries such as Kenya, India, United Kingdom, Germany, France, Netherlands, Canada and the United States of America to mention a few. The quality of the content available, combined with the intuitiveness of its user interface are among the key factors that contribute to the GCRO website's success.

| <b>Year</b>                     | <b>Page views</b> | <b>Number of users</b> | <b>Sessions</b> | <b>Bounce rate</b> | <b>Average session duration</b> |
|---------------------------------|-------------------|------------------------|-----------------|--------------------|---------------------------------|
| 2018/2019<br>(1 April–31 March) | 160 634           | 29 657                 | 40 713          | 4.84%              | 2m/18s                          |
| 2017/2018<br>(1 April–31 March) | 112 039           | 15 924                 | 23 223          | 3.03%              | 3m/06s                          |
| 2016/2017<br>(1 April–31 March) | 67 227            | 8 190                  | 12 120          | 4.08%              | 3m/50s                          |
| 2015/2016<br>(1 April–31 March) | 71 154            | 15 033                 | 21 609          | 41.97%             | 3m/10s                          |
| 2014/2015<br>(1 April–31 March) | 103 117           | 26 008                 | 34 934          | 50.43%             | 3m/31s                          |

## **Media ([website link](#))**

In the last five years, GCRO staff have been working on improving their engagement with the media across all platforms. Since 2014, GCRO researchers and research have made 316 appearances in the media, including 25 articles authored by GCRO staff. Nearly a third of these appearances were the result of a media campaign run for the launch of the 5th Quality of Life (2017/18) survey results in November 2018. The QoL survey continued to be mentioned in media articles well into 2019.

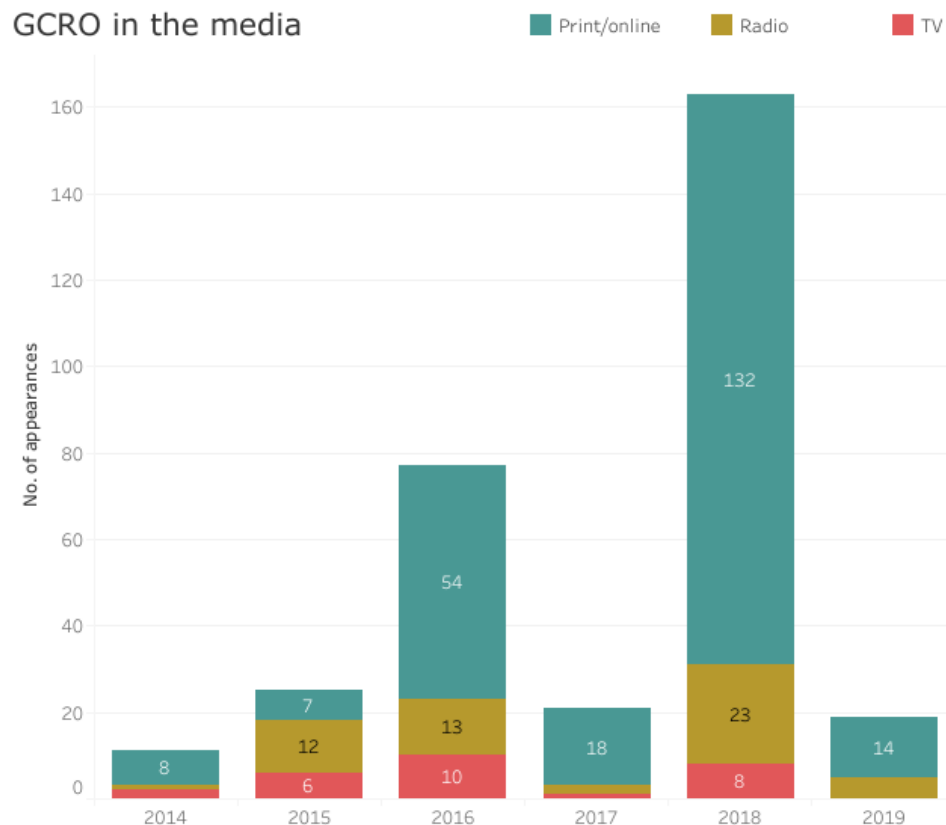


Figure 3.6: Number of GCRO media appearances by year.

Since 2016, several GCRO staff members have authored seven articles for *The Conversation Africa* with a combined readership of 53 220 readers. *The Conversation Africa* is an independent online journalism platform that publishes news about research from the academic community, and enjoys a wide audience in Africa and globally.

### GCRO mailers

The GCRO sends out two emails per month to a subscription database of about 6 000 subscribers. Mailers include every GCRO output, quarterly newsletters and GCRO events (such as symposia). Our average open rate is 17.3%, just below the industry average of 25%.

### Social media

The GCRO is active on four social media platforms, with a combined audience of 3 340 followers. We joined Twitter in September 2012, Facebook in June 2013, Instagram in March 2017, and have operated actively on LinkedIn since February 2019. A team of five staff manages these platforms, sharing GCRO research, activities and articles of interest. Since 2016, GCRO staff have been actively tweeting, thereby steadily increasing our reach over the years.

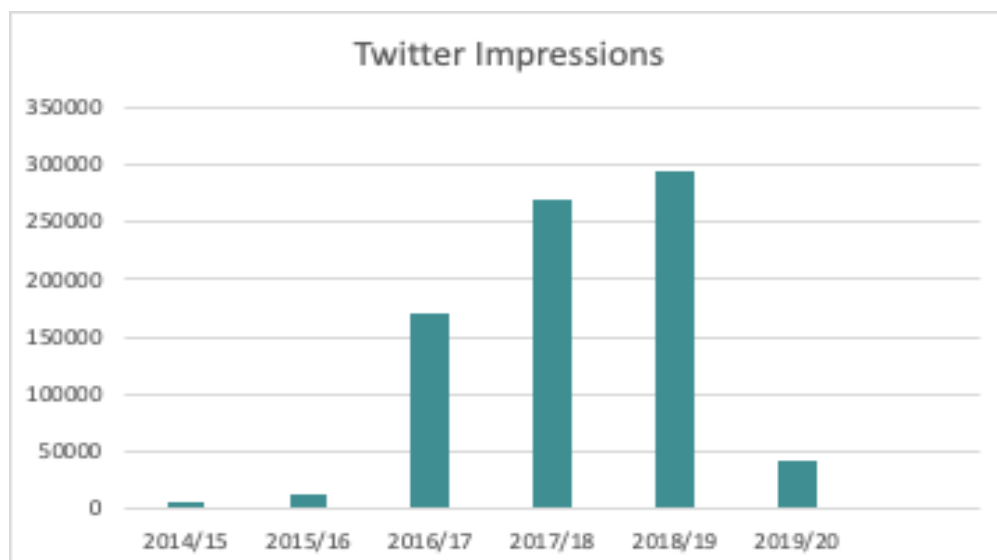


Figure 3.7: Number of Twitter impressions per year from 1 April 2014.

It is worth noting the impact of the QoL V (2017/18) survey's media campaign on Twitter. Despite Twitter's attempt to prohibit us from trending, we did manage to trend successfully in both Johannesburg and in South Africa as a whole on 13 November. We remained in the number one spot for more than four hours, with more than 2 412 retweets of the hashtag #GCROQoL18. During this trend, our hashtag impressions reached 207 million and our hashtag reach was over 2.7 million.

Every month on Facebook, we average about 11 posts, with a reach of 6 600 impressions. Since joining Instagram, we have posted 134 photographs and images of our research, and gained 398 followers. Although we have only been active on LinkedIn since February 2019, we have gained 161 followers, generating 12 additional page views per month.

Social media represent a key feature of our strategy to disseminate our research outputs and organisational profile to a wider audience.

## Challenges and areas for further development

While the outputs published by GCRO have been significant, it is also fair to concede that there is a large pipeline of outputs of all kinds that have not yet been finalised and published. A number of other Research Reports, Occasional Papers, Data Briefs and Provocations are still planned to come out before the end of the 2019/20 financial year, but even then there will still be others, long in development, that will not have been concluded in the final months of the current five-year strategic plan. There are a number of reasons for these lags that GCRO is currently seeking to address. When GCRO was smaller, it was possible for senior staff to provide input and mentorship at the various stages of every project, including project design, analysis, argument development and writing. While this still happens, it does not happen to the same degree as before, since there are now 44 active projects being managed by researchers. This has produced major bottlenecks of draft work to comment on, for example. Over the last two years GCRO has made use of external reviewers to advise on the publishability of draft work, effectively as a way of outsourcing the kind of supervision and quality control that cannot be fully done in house. It has also instituted internal workshops for the presentation of draft work to colleagues. However the challenge remains to find a way of



providing input throughout the life cycle of a project. Discussions have begun about a more systematic approach to this.

There have been some obstacles to Google Scholar picking up our research reports and occasional papers from our website, and this has impacted negatively on their reach. We are currently exploring various methods to ensure our research is disseminated efficiently, including loading our reports onto Google Books and registering DOI (digital object identifier) numbers for all our major outputs. This should ensure the quick scanning of our research output by academic search engines and repositories.

The 2013 GCRO self-review suggested the need to expand our media presence and develop our staff as 'public intellectuals'. While the GCRO has significantly increased our media presence, our development as 'public intellectuals' remains a challenge.

## 4. Academic outputs

### Overview

GCRO researchers invest substantial time in the production of GCRO outputs and in government support work. However, our researchers also produce a range of academic outputs, bridging a range of disciplines. These outputs strengthen the GCRO's reputation as a research organisation, contributing to perceptions of scholarly independence and an openness to critical inquiry. In addition, they ensure that the GCRO's work reaches a broader academic and scholarly audience in addition to the audiences reached by the GCRO outputs discussed above. The following sections outline the extent and focus of the GCRO's academic outputs, as well as their impact. Figure 4.1 illustrates our overall rates of academic publication since 2014. This category includes journal articles, book chapters and conference proceedings. Further detail on each of these outputs is provided below.

Academic publications since 2014

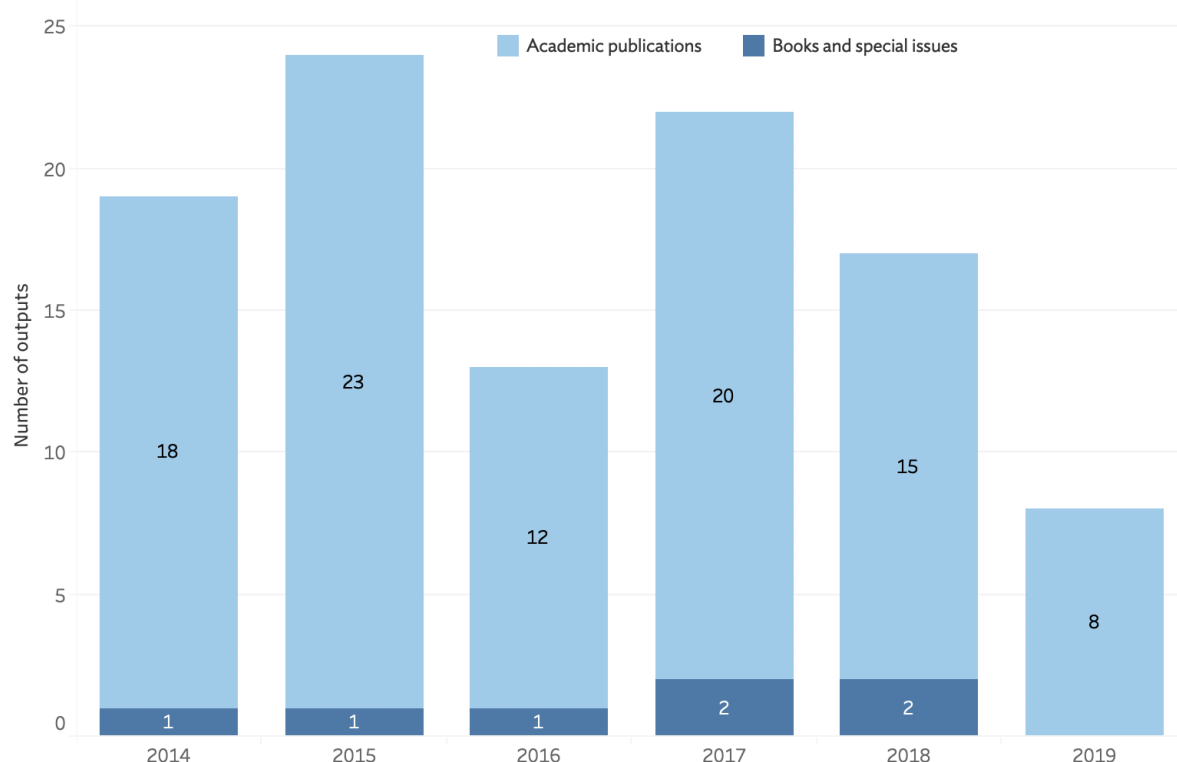


Figure 4.1: All academic publications produced by GCRO staff since 2014.

Figure 4.2 shows the number of Google Scholar citations of cited GCRO outputs by year. The chart does not reflect the number of citations GCRO achieves each year since the citations are attributed to each output as it is published. For example, all citations earned for a 2012 publication will be reflected in the column for 2012 rather than over the period since it was published. This means that the graph reflects the years in which our outputs have had the biggest impact – seen clearly in 2014. One would also expect that older outputs would have

accumulated more citations over time – so we would expect to see that citation number decrease with more recent years and outputs. In total, GCRO research (including academic and GCRO outputs) have been cited 1 126 times, with 457 of these citations coming from outputs produced since 2014 (the review period).

### Google Scholar citations by year of cited output

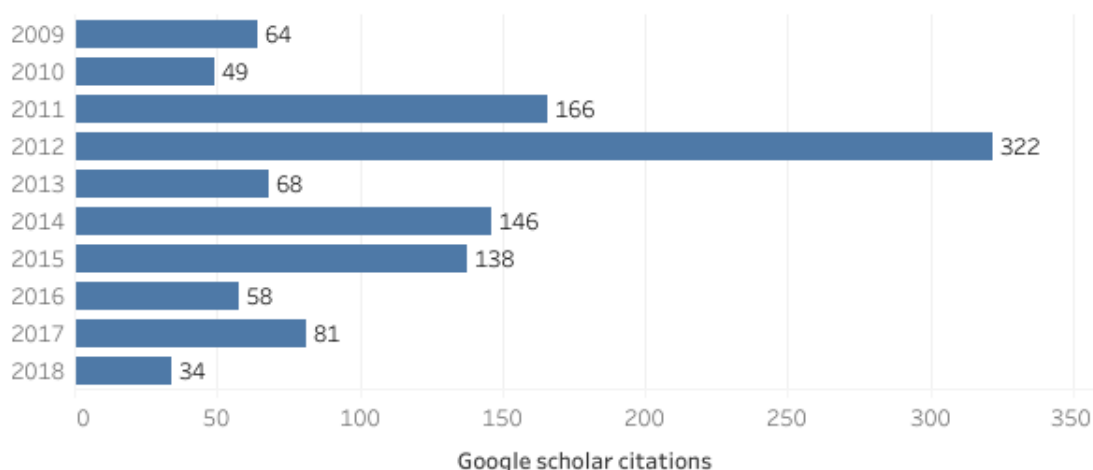


Figure 4.2: Number of Google Scholar citations by year of cited GCRO output.

## Academic outputs

### Books and journal special editions ([website link](#))

GCRO counts as books any volume formally published by an external academic publisher. Since 2014, GCRO staff have written or edited four books:

1. Harrison, P., Gotz, G., Todes, A., & Wray, C. (Eds.). (2014). [Changing space, changing city: Johannesburg after apartheid](#). Johannesburg: Wits University Press.
2. Asmal, Z., & Trangoš, G. (2015). [Movement Johannesburg](#). Cape Town: The City. (Academic in orientation, but not peer reviewed).
3. Cheruiyot, K. (Ed.) (2018). [The changing space economy of city-regions: The Gauteng City-Region, South Africa](#). Switzerland: Springer Publishers.
4. Mosselson, A. (2019). [Vernacular regeneration: Low-income housing, private policing and urban transformation in inner-city Johannesburg](#). Abingdon, UK: Routledge.

Of note, in 2017, *Changing space, changing city: Johannesburg after apartheid* won the National Institute of Humanities and Social Sciences (NIHSS) award in the category Best Non-Fiction: Edited Volume. The R60 000 prize money was donated back to Wits University Press to fund the conversion of part of the book to an online open-access publication on [OAPEN](#). The full book has also subsequently become available online at [JSTOR](#).

On occasion, when it is clear that doing so enhances a key line of enquiry aligned to its areas of focus, the GCRO also provides targeted support to the publication of books being written by external non-GCRO scholars. Two such examples are:

1. The GCRO co-funded the publication of Gurney, K. (2017). [\*August House is dead, long live August House: The Story of a Johannesburg Atelier\*](#). Johannesburg: FourthWall Books.
2. The GCRO facilitated provincial government funding for a book being prepared by SARChI Professor Phil Harrison on city-region governance in the BRICS nations (Brazil, Russia, India, China and South Africa). The GCRO also hosted a series of seminars to review the research findings. A year of field research followed by extensive writing has led to the project being split into two book-length outputs: (i) a case-by-case write-up of city-region governance in the BRICS, to be published as a GCRO research report; and (ii) a thematically focused book on key city-region governance issues cutting across the case studies. This volume has been proposed to, and provisionally accepted by, the IJURR Studies in Urban and Social Change (SUSC) book series.

Three other edited books are currently in preparation. One, on 'Scale, belonging and exclusion in Gauteng', is significantly advanced with drafts of theoretical and empirical chapters already written. A volume on the peripheries of the city-region, and another on the GCR as a concept, construct and political device, are currently being conceptualised.

In addition, GCRO principal researcher Richard Ballard has led the conceptualisation, development and editing of three journal special issues:

1. [\*The Society of South African Geographers Centenary Special Issue\*](#), *South African Geographical Journal*, August 2016.
2. [\*Megaprojects for SA's settlements\*](#), *Transformation*, 95, December 2017.
3. Differentiating the work of developers, *Environment and Planning A: Economy and Space* (forthcoming, five of seven articles accepted and published online).

## Book chapters

GCRO researchers have contributed chapters to a range of books. Since 2014, 31 book chapters have been published, with a total of 122 Google Scholar and 34 ResearchGate citations. In 2018, GCRO researchers produced a number of chapters for a book edited by GCRO senior researcher Koech Cheruiyot, *The changing space economy of city-regions: The Gauteng City-Region*, South Africa. Book chapters which have received particular attention include those by Gotz and Todes in 2014, Peberdy et al. in 2015, Vogel et al. in 2016 and Abrahams in 2017.

## Journal articles

During the review period, GCRO researchers published 43 articles in academic journals. Publication figures vary by year; 2015 and 2017 were particularly productive, with 13 and 12 articles appearing in each year, respectively. Journal articles touch on disciplines ranging from urban studies and geography to informatics and public health. A few journals feature regularly in the list of publications, such as *Transformation*, *Social Indicators* and *Urban Studies*, amongst others.

The average journal citation report (JCR) impact factor of journals in which we have published is 2.5, while the average scientific journal rankings (SJR) score is 1.1. The weighted averages, taking into account the number of articles published in each journal, are 2.2 and 1.0. The

journals with the highest JCR impact factors are *Progress in Human Geography* and *Environmental Research Letters*.

On average, articles produced by the GCRO during the review period have been cited 4.2 times, according to Google Scholar analytics. However, citation figures vary, ranging from zero to 19. Articles published in 2017, which have been particularly frequently cited, include Richard Ballard's article 'Megaprojects and urban visions: Johannesburg's Corridors of Freedom and Modderfontein', Aiden Mosselson's article in *Urban Studies*, and Darlington Mushongera's article in *Social Indicators*. Of the 2016 journal articles, Christina Culwick's article in the *South African Geographical Journal* received the most citations. Of 2015 articles, Graeme Gotz's piece in *Current Opinions in Environmental Sustainability* and Richard Ballard's article in *Progress in Human Geography* have attracted the most attention.

In addition, during this period, GCRO researchers have contributed eight book reviews to academic journals, and published articles in trade publications such as *ArchSA* and *TourismWatch*. Academic work has also been published in the form of policy documents.

### **Academic conference presentations**

The GCRO's staff presented at several academic conferences, both internationally and locally. In the period April 2014 to July 2019, GCRO staff presented in 87 such academic conferences. This is broken down as follows: eight in 2014, nine in 2015, 28 in 2016, nine in 2017, 32 in 2018, and one in 2019 so far. Please note that these figures are included in the overall presentation figures in the GCRO outputs section.

Besides academic conference proceedings, GCRO staff also contribute to academic and policy discourse in other fora. These include the GCRO's organised seminars (e.g. monthly 'Faces of the City', organised with Wits School of Architecture and Planning, and monthly GCRO 'brown bag' sessions) as well as colloquia organised by various Wits schools, schools in other South African universities and by government or quasi-government institutions (e.g. StatsSA).

GCRO staff also present as invited guest lecturers to students in Wits schools and other local or international schools, as well as to international students visiting the GCRO or other Wits schools. In addition, GCRO staff have made presentations as keynote speakers and panel experts at (local and international) workshops organised by several international, government/quasi government and non-governmental organisations.

### **Researcher academic profiles**

GCRO researchers are recognised for the quality and impact of their academic work. This is reflected by the perception of stakeholders in multiple government departments that the GCRO is the first port of call when looking for data and expertise on particular topics.

The academic credibility of GCRO researchers is also evident through an examination of various analytics. Google Scholar analytics provide a series of three measures. Current GCRO researchers have an average citation count of 325.7. The average h-index is 5.8, and the average i10-index is 6.2. ResearchGate also provides a set of analytics. Current GCRO researchers have an average impact score of 10.6, research interest score of 77.8, citation count of 102.1, and

reads of 540.6. There are, however, a number of researchers who do not have profiles on either one or both of these sites, and consequently do not contribute to these figures.

Additionally, it is worth noting that many current GCRO researchers are still at a relatively early point in their careers – as of the writing of this report, we have three interns and five junior researchers. These individuals naturally have fewer publications to their names. Consequently, it is also worth paying particular attention to the analytics of those with more developed careers. For GCRO researchers at the level of senior researcher or above, Google Scholar citation counts average 426, ranging from 15 to 1 689. The average h-index is 7.4, and the average i10-index is 8. Principal researcher, Richard Ballard, performs particularly well across all analytics.

|                   | Researchgate    |                   |            |              | GoogleScholar |              |           |
|-------------------|-----------------|-------------------|------------|--------------|---------------|--------------|-----------|
| Researcher        | Impact          | Research interest | Reads      | Citations    | Citations     | h-index      | i10-index |
| Alexandra Parker  | 8.33            | 8.9               | 429        | 7            | 19            | 3            | 0         |
| Christina Culwick | 13.40           | 104.2             | 2 912      | 94           | 195           | 7            | 6         |
| Gillian Maree     | 11.13           | 176.3             | 766        | 334          | 497           | 7            | 5         |
| Graeme Gotz       | 9.18            | 70.6              | 774        | 119          | 771           | 11           | 16        |
| Julia de Kadt     | 15.85           | 58.0              | 623        | 100          | 202           | 7            | 7         |
| Koech Cheruiyot   | N/A             | N/A               | 92         | 0            | 30            | 3            | 1         |
| Ngaka Mosiane     | 1.81            | 4.2               | 96         | 7            | 15            | 2            | 1         |
| Richard Ballard   | 19.02           | 265.8             | 1 513      | 506          | 1696          | 19           | 28        |
| Rob Moore         | 10.15           | 107.4             | 922        | 191          | NA            | NA           | NA        |
| <b>Average</b>    | <b>11.10875</b> | <b>99.425</b>     | <b>903</b> | <b>150.9</b> | <b>426</b>    | <b>7.375</b> | <b>8</b>  |

Table 4.1: Analytics of senior researchers and above as of July 2019.

An additional measure of academic credibility is the active participation of GCRO researchers in a range of scholarly organisations and activities. For example, Rob Moore is a member of the strategy group of the World Universities, World Cities Network. Richard Ballard is a co-editor of the journal *Transformation* and a member of the editorial board of *Urban Forum*, and the Council of the Society of South African Geographers. Christina Culwick is a member of the NRF Global Change Science Committee, and Samy Katumba is a committee member of the Geo-Information Science Society of South Africa (GISSA)–Gauteng Region.

GCRO researchers also engage in some teaching, and are regularly invited to provide guest lectures to groups of students. Many GCRO researchers also contribute to the supervision of post-graduate students at Honours, Masters and PhD levels. Researchers are also called upon to externally examine for various universities.

## GCRO's academic productivity in comparative perspective

The GCRO's productive capacity is spread across a range of activities and outputs. As mentioned previously, while we do not carry a teaching mandate, many staff do in fact teach and supervise at Honours, Masters and PhD levels. We also provide support for a wide variety of government policy and strategy processes, and produce an array of GCRO-published outputs, from the relatively minor, but nonetheless demanding, map of the month, to book-length research reports. We run the very challenging Quality of Life survey every two years and a range of other smaller surveys in addition. Accordingly, the GCRO's academic output must be seen in the light of this wide focus. That said, academic publication remains a core requirement of GCRO staff for three reasons.

First, we are a university research centre, with staff employed as academics. Their progression to more senior academic positions therefore depends on a strong and consistent publication record.

Second, publication outputs submitted to the Department of Higher Education and Training (DHET) bring the submitting university subsidy – an estimated R100 000 per submitted unit (where journal articles equal one unit; books, depending on length, up to ten units; book chapters one unit; and items in published conference proceedings 0.5 units). The more publications, the more funds to the university. In a constrained fiscal environment for higher education institutions (HEIs), this is increasingly important.

Third, an interpretation of our core mandate is that we simultaneously help to bring academic expertise to bear on challenges faced in the public sphere and, in turn, infuse into academic enquiry the insights (that would not otherwise be available) derived from our close engagement with the public sphere, thereby producing new knowledge. In the GCRO, academic publication and government support work are not at odds, even though each might seem to 'take time' away from the other; rather, each completes or fulfills the other in the same circle of value addition.

While it is necessary to take into account that the GCRO is busy across many fronts, it is therefore also important to assess whether its academic output is substantial enough. Table 4.2 below compares the number of publication units claimable by the GCRO between 2014 and 2019 (to date) against that for a number of other Wits departments and research units for 2016–2018 (the data available for download in the Research Outputs Collection Service (ROCS) system). The data for [2019 is projected](#) based on the work already published or certain to be published<sup>4</sup> before the end of the calendar year.

|                 | <b>2014</b>   | <b>2015</b>   | <b>2016</b>   | <b>2017</b>   | <b>2018</b>   | <b>2019</b>       |
|-----------------|---|---|---|---|---|-------------------|
|                 | Pre-ROCS. Record adjusted to credits for one university and book chapters (=1 unit) and conference proceedings (=0,5 units) | Pre-ROCS. Record adjusted to credits for one university and book chapters (=1 unit) and conference proceedings (=0,5 units) | ROCS adjusted to credits for one university and book chapters (=1 unit) and conference proceedings (=0,5 units) | Actual Wits ROCS record (was not split with UJ) but two late claim journal articles shifted from 2018 | Actual Wits ROCS record (was not split with UJ) but two late claim journal articles shifted to 2017 | Projected to date |
| # of DHET units | <b>4.94</b>   | <b>7.00</b>   | <b>2.25</b>   | <b>6.66</b>   | <b>7.83</b>   | <b>11.05</b>      |

<sup>4</sup> Journal articles must be formally published with volume, issue and page numbers, not simply online and awaiting final publication. While a number of other articles had been submitted for review at the time of writing, these are not counted here.

|   |      |      |              |              |              |      |
|---|------|------|--------------|--------------|--------------|------|
| Number of research staff  | 10   | 13   | 14           | 18           | 16           | 18   |
| Weighted research staff   | 9.5  | 12.2 | 11.4         | 14.8         | 13.6         | 1.,0 |
| Output per research staff   | 0.49 | 0.54 | 0.16         | 0.37         | 0.49         | 0.61 |
| Output per weighted staff   | 0.52 | 0.57 | 0.20         | 0.45         | 0.58         | 0.74 |
| <b>COMPARISON WITH OTHER WITS UNITS / DEPARTMENTS (# of DHET UNITS)</b> |      |      |              |              |              |      |
| African Centre for Migration & Society                                  |      |      | <b>23.51</b> | <b>27.02</b> | <b>14.13</b> |      |
| Architecture and Planning   |      |      | <b>26.14</b> | <b>21.23</b> | <b>25.22</b> |      |
| Global Change & Sustainability Institute                                |      |      | <b>3.49</b>  | <b>6.64</b>  | <b>5.03</b>  |      |
| Society. Work & Development Inst (SWOP)                                 |      |      | <b>36.00</b> | <b>25.10</b> | <b>18.60</b> |      |
| Political Studies Dept  |      |      | <b>6.00</b>  | <b>18.26</b> | <b>28.22</b> |      |
| WISER   |      |      | <b>45.00</b> | <b>24.70</b> | <b>24.11</b> |      |
| Wits School of Governance   |      |      | <b>29.78</b> | <b>29.13</b> | <b>33.71</b> |      |
| Centre for Health Policy  |      |      | <b>9.68</b>  | <b>7.09</b>  | <b>12.04</b> |      |

**Table 4.2 GCRO academic productivity over time (measured by DHET units, in comparison to other roughly comparable Wits research entities**

Notes: Weighted research staff is derived by applying a factor to each research staff member depending on seniority (based on a comparable analysis of Wits faculties from the late 2000s), as follows: Prof equivalent - 1.3; Ass Prof equivalent - 1.1; Senior Researcher - 1; Researcher - 0.8; Junior Researcher / Post Doc / Intern - 0.6. On the weighted measure the larger the number of more junior staff in the organisation, the higher the effective output per weighted staff.

Note that the table does not capture all of our academic outputs. A number of articles were not accounted for because the staff member who produced them left for another position, where, in some cases, the units were counted instead. Some book chapters were not accepted because, though they were published in books produced by recognised international presses, the peer-review process was deemed not to meet the standards required. A 2018 peer-reviewed conference paper was not accepted because an ISBN number for the proceedings is required – yet the conference has a long practice of only publishing online. However, it is acknowledged that these issues are likely to affect all university departments and units.

The analysis suggests that the GCRO is relatively underweight in academic outputs compared to other, roughly similar departments and research centres at Wits. It does need to be recognised that some other centres with small research staff compliments have a practice of claiming the outputs of an extended-family of high-level research associates based at universities overseas. This inflates their scores. However, notwithstanding these nuances, the GCRO's academic production has been comparatively on the low side, and guidance from the panel on further measures to boost output would certainly be welcomed. However, it is also clear that output has improved considerably since a low water mark in 2016, the year following the departures of a number of experienced staff.



While this acknowledgement is made, two key points need to be borne in mind. First, the analysis above is based on academic outputs recognised in the DHET accreditation system. GCRO spends enormous intellectual time and effort on outputs for which DHET credits cannot be claimed, most notably on the Quality of Life survey conducted every two years. There is an argument to be made that a QoL dataset in and of itself, not simply the published pieces that rely on it, should be appropriately acknowledged as an academic output.

Second, over the last three years GCRO has institutionalised a system of double-blind peer review on many of its written outputs, most notably on Research Reports and Occasional Papers. There is an argument to be made that, as peer reviewed volumes often reaching 200 pages, Research Reports in particular should be regarded as meeting the criteria for books in the DHET policy on publication subsidy. In early 2019 GCRO sought to get such recognition for the peer reviewed *Taking Streets Seriously* Research Report by claiming its individual chapters, written by different GCRO authors, as book chapters. The chapters were not accepted into the Wits ROCS system on the grounds that the work was a ‘report’, even though the gazetted 2015 policy does not explicitly exclude ‘reports’, only “reports forming part of contract research and other commissioned work”. GCRO Research Reports are not that.

The inability to obtain academic credit for these rigorously researched and externally peer reviewed outputs has a number of potentially negative implications, including:

- The possible disinvestment in these outputs by GCRO staff seeking to build academic careers (they would naturally put more value in journal articles, which are largely inaccessible to government officials and members of the public);
- The undervaluation of GCRO’s work within the wider academic community of which it is a part; and
- The possible refusal of academic partners to publish important work via the GCRO. SARCHI Prof. Philip Harrison, for example, is currently preparing a major GCRO Research Report based on several years of academic research (including a year of sabbatical leave) into comparative city-region governance in the BRICS. It would not be appropriate to regard his enormous intellectual effort, to be published as a GCRO Research Report, as not meeting the criteria for academic scholarship set out in the DHET policy.

## **Initiatives to support academic writing and academic development**

Since the last strategic planning process, the GCRO has implemented a number of initiatives to improve the number of academic publications staff members publish. One of the initiatives was to implement dedicated writing leave for each researcher of up to 20 days per annum. This provides researchers with time outside the office to pursue academic outputs. Another initiative has been to introduce monthly ‘brown bag sessions’ – lunchtime presentations that enable staff to share current academic pieces and get feedback from their colleagues. A third initiative is the funding of membership to scholarly societies – each researcher can belong to an academic organisation or scholarly body and the GCRO will cover the cost of membership. In addition to these initiatives, the GCRO implemented a writing support group from January 2018, with monthly meetings to discuss the challenges involved in writing in the academic field. In 2019, this was further bolstered through paper-review workshops and off-campus writing

retreats. The writing support group has provided a platform for collegial support and mentorship in the domain of academic writing. These efforts have contributed to the increase in academic outputs and should be continued over the next five years.

## **Challenges and areas for further development**

The GCRO faces a challenge in that many of its researchers have very applied careers, and outputs related to work of this nature do not always receive the academic recognition that they might be due.

Much of the work that is published in the various GCRO outputs could be published with some modification in academic formats. For example, considerable analysis is produced for each map of the month that, with the addition of a literature review, could be published as a journal article. There have been some missed opportunities in this regard, and the GCRO needs to find ways to support researchers to do this.

Registration of the QoL datasets as academic products could substantially boost the GCRO's performance in a range of academic metrics. Efforts to ensure that these datasets, along with other GCRO outputs, are appropriately cited by researchers who draw on them will be important.

An enormous challenge remains in getting certain GCRO outputs accredited as academic outputs. While substantial effort has been applied to improve academic rigour, this has yet to be recognised by institutions such as the DHET and the National Research Foundation (NRF). Producing outputs for GCRO that are not accredited can, therefore, put a strain on those GCRO researchers who wish to maintain academic careers.

The previous two sections on GCRO and academic outputs have attempted to quantify the impact of GCRO research by collating accessible data such as Google Scholar citations and website analytics. However, this does not fully encapsulate the impact of GCRO research, particularly for non-academic audiences. Beyond these measures, and quantifying the volume of our output, how do we more effectively measure our impact for our government and civil society audiences?

# 5. Policy contributions

## Overview

Much of the GCRO's work is, in one way or another, 'government facing'. Our major applied-research publications such as research reports and occasional papers almost always focus on key governance concerns, with either immediate or longer-term implications. Maps of the month or vignettes aim to insert easily digestible slices of information into the public sphere to deepen the understanding of key trends and dynamics, and our other outputs have similar intentions in terms of audience and influence. However, the GCRO is often asked to assist more directly in government policy and strategy development processes. A key focus of this support has historically been the Gauteng Planning Division (GPD) in the Office of the Premier in Gauteng. However, recent years have seen a significant uptick in requests from other sectors of Gauteng's provincial government and its municipalities. Some of these requests have been for major support on key policy initiatives while others were for more short-term and ad hoc assistance.

It is impractical to list each and every instance of government support provided during the period of review. Support ranges from an hour or two's work providing officials with selected academic background papers or compiling powerpoint slides from QoL data, to occasionally sitting on tender bid-evaluation panels or project steering committees, to much longer-term support such as advice and suggestions to the Gauteng education department on the delineation of new school feeder zones. Table 5.1 synthesises some of the largest and most important policy-support processes over the last five years, as well as where we have more systematically assisted key departments on an array of different matters over the years.

GCRO staff are also regularly called upon to participate as speakers in government workshops, planning sessions or public forums. This provides an opportunity to directly input new thinking derived from GCRO research. The number of presentations into these government spaces continues to increase each year, and this is perhaps an important marker of how our research is valued.

## Selected government support projects

|  | 2014/15  | 2015/16  | 2016/17   | 2017/18   | 2018/19 | 2019/20 |
|--|--|--|---|---|---------|---------|
| Key government policy support projects                               |  |  |   |   |         |         |
| <b>eTolls socio-economic impact study (Gauteng Premier's Office)</b> | On request from GPG Premier to support an eTolls Review Panel, commissioned research for and wrote an eTolls socio-economic impact study |  |   |   |         |         |
| <b>Metropolis 'Caring Cities' study (City of Joburg)</b>             | GCRO asked by CoJ to support it on a Metropolis theme project to develop a 'Caring Cities Barometer'                                     | Conceptual work written up as a theoretical framework & presented to 2 international | Residents' survey questionnaire developed. Piloted in Berlin & Jhb. Designed as an online tool by | Data from Jhb survey written up into a final report. Online survey tool / 'barometer' remained live for |         |         |

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|   |  | workshops & the SA Cities Conference  | JCSE. BMR commissioned to survey 500 Jhb residents   | some time  |  |   |
| <b>Social cohesion (Gauteng Premier's Office, Champion's Group)</b> |  |   | GCRO asked to provide research support to a 'Social Cohesion Champions' panel, appointed by the Premier. Attended all meetings of the panel and wrote a draft 'conceptual framework'   | Conceptual framework developed by GCRO was presented to special session of GPG EXCO  | Based on conceptual framework and Research Report (see below) GCRO was re-engaged to help prepare the final report from the Champion's Group   |   |
| <b>Social cohesion (City of Joburg)</b>                             |  |   | Requested by CoJ to undertake research into social cohesion to inform City policy  | Finalised a comprehensive report covering key social cohesion concepts, analysis of social cohesion related QoL data & review of social cohesion interventions                                   | With work done for Social Cohesion Champions, CoJ report published as a GCRO <a href="#">Research Report</a>   |   |
| <b>Firm-level survey (Gauteng Growth &amp; Development Agency)</b>  |  |   | Following presentation of QoL IV 2015/16 economic data, MEC asked GCRO to help GGDA with a 'cost of doing business survey'. Various workshops held to clarify expectations. Wrote detailed proposal in collaboration with HSRC and CCRED | Commissioned HSRC to undertake scan of 'tradable services sector'. Laid basis for own 'firm survey': commissioned survey service provider, developed questionnaire, clarified target sample, etc | HSRC report finalised. Contracted CCRED to undertake 'census' of firms in 10 industrial areas. Conducted own survey (366 telephonic and 46 face-to-face interviews). HSRC report and results of own survey presented to GGDA Board.    | Survey data further analysed and results continue to be presented to various forums   |
| <b>Green Infrastructure Strategy (City of Joburg)</b>               |  |   |  | GCRO asked to lead development of 'greening strategy' for CoJ  | Various experts commissioned and case studies written up   | Strategy being consolidated   |
| <b>End of term review (Gauteng Planning Division)</b>               |  |   |  |  | GCRO asked by DDG in GPD to help with end of term review. 7 background thematic papers prepared btw June and December. In Jan/Feb 2019, also assisted with synthesis document  | Synthesis work presented to GPG Lekgotla. Partly based on background papers and synthesis, conference papers and book chapter being written |
| <b>Water security plan for GCR</b>                                  |  |   |  | GCRO asked to present insights from Cape Town water crisis to EXCO Lekgotla & PCF  | Following Lekgotla presentation GCRO asked to work with GPD to develop GCR water security plan. Consultants commissioned; consultations undertaken; and plan done in three months. Water Plan presented multiple times to various fora |   |
| <b>GPG HEI's MoU and regional system of innovation</b>              |  | Initial discussions with MEC around GCRO leading process to strengthen relations between GPG and HEIs |  | After a meeting between the Premier and HEI VCs, GCRO asked to lead discussions to enhance relationships between GPG and HEIs. Series of meetings was held                                       | Key idea emerging from 2017/18 consultations was need for collaboration on a regional system of innovation. GCRO moved to broker strategic approach with OoP, eGov,  | Brokerage work on regional system of innovation expanding. Through GCRO, international expert input being solicited                         |

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|  |   |  |  | through 2017/18  | GDED, DST<br>academia &<br>industry  |  |
| <b>Support to selected departments</b>                           |   |  |  |  |  |  |
| <b>National DPME</b>   |   |  | The Gauteng City-Region Observatory: A Case Study. Published by DPME's Programme to Support Pro-Poor Policy Development  |  |  | Asked to draft chapter on the city-region scale of planning and development for the NDP 5-year Implementation Plan |
| <b>Gauteng Planning Division / Office of the Premier</b>         | - Presented to EXCO Lekgotla on QoL III (2013/14) results<br>- Gave input into a Gauteng Infrastructure Master Plan, and an updated Gauteng Spatial Development Framework | - Presented to EXCO Lekgotla on public perceptions of GPG and on Xenophobia<br>- Contributed various other presentations, e.g. on 'megatrends' and to the GPG Spatial Planning Summit'<br>- Assisted GPD on how SDGs could be incorporated into outcomes reporting | - Presented to EXCO Lekgotla on QoL IV (2015/16) results<br>- Gave advice on data options for GPG service delivery war room  | - Presented to EXCO on social cohesion conceptual framework<br>- Assisted with deliverology indicators<br>- To support Premier's new co-presidency of Metropolis helped GPD organise workshop on SDGs<br>- Supported GPD to mount exhibition in KL for WUF                                       | - Presented to EXCO Lekgotla on Gauteng water security challenges, QoL V (2017/18) results, and insights from QoL into protests in 'coloured communities'<br>- Provided substantial support to hosting of Metropolis AGM, and mounted GCRO exhibition<br>- Assisted GPD with proposal for Metropolis co-presidency portfolio | - Presented to EXCO Lekgotla on population dynamics, poverty, inequality & social mobility                         |
| <b>Gauteng Department of Economic Development</b>                |   |  | - Served as part of a steering committee to design an economic barometer   |  | - Working with the dept. and GPD conceptualised and negotiated establishment of a UP Chair in Inclusive Economies  |  |
| <b>Gauteng Department of Agriculture &amp; Rural Development</b> |   | - Served on steering committee for Gauteng Environmental Management Framework (GEMF)   | - Substantial written input into pollution buffers policy<br>- Signed a cooperation agreement with the dept for environmental research<br>- Served on a steering committees for Gauteng Environmental Management Framework (GEMF) and the Gauteng Environmental Outlook report | - Working with GDARD officials, developed a climate-change related vulnerability map of Gauteng<br>- Continued work on steering committee for Environmental Outlook report<br>- Served on Environmental Steering Coordination Forum, and project steering committee on research into use of SUDS | - Continued work on the various GDARD linked steering committees<br>- Based on vulnerability map support helped GDARD develop poster for presentation at various fora<br>- Represented Gauteng at Rampal Institute workshop on pollution   | Continues support on steering committees Presentation and content support to Poverty Summit                        |
| <b>Gauteng Department of Roads and Transport</b>                 | - Researcher served as member of Gauteng Transport Commission panel of experts and advised on a capacity building programme   | - On special request from the MEC for Transport gave input into a Conference on Transport Authorities<br>- Continued to serve on Gauteng Transport Commission panel of experts and advised on a capacity building programme  | - Requested by MEC to help conceptualise a 'Transport centre of research excellence'<br>- Continued to serve on Gauteng Transport Commission panel of experts  |  |  | - Gave input on data systems to support transport decision making  |

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|---|--|---|-------------|-------------|-------------|---|
| <b>Gauteng<br/>Department of<br/>Human<br/>Settlements</b>      | - With GDHS &<br>SARCHI co-<br>organised seminar<br>on mega-human<br>settlements | - Helped GDHS<br>with an internal<br>report on<br>migration and<br>human settlement |             |             |             | - Asked by GDHS<br>to help design a<br>system of strategic<br>intelligence for<br>better data on<br>human settlements |
| <b>Presentations to government forums per year</b>              |  |   |             |             |             |   |
| <b>Number of<br/>presentations to<br/>government<br/>forums</b> | 6  | 17  | To be added | To be added | To be added | To be added   |

Table 5.1. Overview of selected government support work over the term of review

## 6. Overview of thematic focus areas

### 6.1 Quality of Life surveys

Unlike other projects, the GCRO's Quality of Life Survey (QoL) project is presented as a stand-alone section rather than being embedded within a theme. This is due to the scale of the project, its cross-cutting nature and its unique role within the organisation.

#### Overview

The GCRO's QoL was first conducted in 2009, measuring the self-reported well-being and satisfaction of adult residents of the Gauteng City-Region (GCR), and has been repeated every two years since. The three most recent surveys, taking place in 2013/14, 2015/16 and 2017/18, have provided ward-representative data, with sample sizes over 24 000.

QoL is the GCRO's flagship project, and has become an inextricable element of the organisation's identity and reputation. Through high-quality data, and the analysis this supports, the survey provides concrete benefits to multiple stakeholders. It also provides substantial internal benefits to the GCRO. The data feeds directly into various research projects as well as providing a contextual background from which other projects can develop.

QoL's primary objective is to provide a reliable, fine-grained measure of well-being in the province. This is based on the premise that rich, high-quality data is essential for appropriately developing and implementing the policies that will improve the lives of residents of the GCR. QoL, guided by academic literature and best practice, very intentionally takes a broad and multi-dimensional approach to measuring quality of life. Survey content covers domains such as basic services, living conditions, transport, health, employment, community engagement, and political and social attitudes. Critically, respondents are asked to provide both objective measures of well-being and subjective perceptions about their quality of life.

When viewed over ten years, the QoL data tells a cautiously optimistic story about life in the GCR; but it also makes extremely clear the scale and nature of the challenges that remain. Overall quality of life, as measured by a multi-dimensional indicator, has shown a consistent, though very gradual upward trend over time. Despite massive population growth in the province during the past ten years, access to basic services has largely held steady. Satisfaction with government has been generally low, with some variation over time. However, satisfaction with government shows an encouraging recent increase, particularly at the provincial level; but there remains a persistent disjuncture between access to, and satisfaction with, services and the relative dissatisfaction with the government delivering these services.

Data on social fabric is mixed. While residents are increasingly tolerant of legal immigrants and sexual minorities, inter-racial distrust is increasing. Over the last few surveys, crime, unemployment and lack of services have consistently been three of the biggest problems in

communities, and alcohol and drug abuse has increased substantially as a problem over time. Economic conditions are increasingly placing strain on residents, and hunger among lower-income residents has increased notably. Inequality persists, and appears to be worsening across many dimensions. Strikingly, quality of life improvements have been greatest for whites and the most affluent while improvements for Africans and the more disadvantaged have been more gradual.

QoL's value is widely recognised, especially because of the scale of the survey, the broad spatial distribution of completed surveys, and the GCRO's commitment to ensuring exceptionally high-quality data. De-identified survey data is freely shared for non-commercial purposes, representing an invaluable resource for provincial and local government in the province, researchers and students, and civil society.

|                            | 2014/15   | 2015/16                             | 2016/17  | 2017/18  | 2018/19   | 2019/20   |
|----------------------------|---|-------------------------------------|--|--|---|---|
| <a href="#">QoL III</a>    | Finalisation of data collection<br><a href="#">Launch of results and data set</a><br><a href="#">QoL viewer</a> | <a href="#">Benchmarking report</a> |  |  |   |   |
| <a href="#">QoL IV</a>     |   | Data collection                     | Finalisation of data collection<br><a href="#">Launch of survey results: 8 headline briefs</a><br>Infographics sheet | <a href="#">Village of 100 people</a><br><a href="#">Crime and safety Data Brief</a><br><a href="#">Social Cohesion Data Brief</a> | <a href="#">City Benchmarking Report</a><br><a href="#">Health Data Brief</a>   |   |
| <a href="#">QoL V</a>      |   |                                     |  | Data collection  | Finalisation of data collection<br><a href="#">Launch of survey results</a><br><a href="#">Frequently asked questions</a> |   |
| <a href="#">QoL Review</a> |   |                                     |  | Conception of review scope and structure   | Expert interviews and landscaping conversations<br>Preparation of two briefing documents<br>Two expert workshops convened | Third expert workshop convened<br>Finalisation of review report<br>Fourth workshop planning underway<br>Planning of QoL Research Report |
| QoL VI                     |   |                                     |  |  |   | Planning underway<br>Data collection scheduled to start early 2020  |

## Projects

### QoL III (2013/14)

The majority of the data collection for QoL III was conducted in 2013, in advance of the current review period. However, data collection was finalised in 2014, with a sample size of 27 490, representing every ward in the province. Data collection was implemented by GeoSpace. Survey results were launched in mid-2014, attracting extensive media coverage. Data was shared directly with users on request, and also made available via the online QoL data



viewer. A benchmarking report was produced in the 2015/16 financial year, and the QoL III dataset was also used for multiple maps of the month and vignettes.

### **QoL IV (2015/16)**

Data collection for QoL IV began in the 2015/16 financial year, and was concluded in mid-2016. Data collection was conducted by AskAfrika. This survey achieved the largest sample size of GCRO's QoL surveys, with 30 002 respondents. With the launch of the QoL IV results, a series of eight headline briefs were prepared. Each of these shared preliminary insights of a particular thematic area from the survey. A page of accessible infographics was also prepared. A series of data briefs, covering topics of social cohesion, safety and security, and health, were produced using the QoL IV dataset. Additionally, a substantial municipal benchmarking report was published.

### **QoL V (2017/18)**

QoL V data collection began in late 2017, and continued through to mid-2018. Data collection was implemented through an innovative collaboration with ResearchGo, based at the University of Johannesburg. Unemployed youth were employed as field workers through the Harambee Youth Employment Accelerator. The QoL V results were launched in late 2018, at an event which received extensive media coverage (including radio, television, print and social media). A series of 18 data insights were prepared to highlight a range of interesting findings from across the survey. A pack of responses to frequently asked questions was also created, together with interactive visualisations accessible through the website. Four map of the month publications have also resulted from the survey data to date.

### **QoL ten-year technical review process**

In recognition of the ten-year anniversary of this remarkable project, a two-part review process was launched. Firstly, a technical review process was convened. This was externally chaired by Prof. Mark Orkin, and has drawn on survey and quality of life experts around the country to closely examine core aspects of the survey design and implementation. Three technical review workshops have been hosted, focusing on sampling, survey management, and questionnaire design and indexing. Participants have included representatives of StatsSA, the Human Sciences Research Council (HSRC), and the Southern Africa Labour and Development Research Unit (SALDRU), amongst others. The GCRO has benefited enormously from the generosity and openness of the participants during the workshops. Prof. Orkin is currently preparing a review report, which will provide the GCRO with guidance on how best to ensure the long-term sustainability of the QoL. An additional, fourth workshop is currently being planned, with a focus on data use and dissemination.

The second part of the review process, a research report celebrating the evolution of the survey, and drawing on content from the review workshops, is in the planning stages.

## **Achievements, impact and reflection**

### **The challenges of QoL**

Implementing a survey of this nature is not without its challenges. As the scale of the survey has grown, the demands of implementation have become increasingly problematic for the

GCRO. Serious problems have arisen during the implementation of each of the previous three iterations of the survey. These difficulties have had an enormous and negative impact on the GCRO during the protracted periods required for their resolution. Key areas of challenge include financial resourcing, adequate and appropriate staffing, the impact of the project on overall organisational productivity, appropriate management of service providers, and ensuring appropriate data use and dissemination.

Implementing a household survey with random sampling, particularly in contemporary Gauteng, is an extremely costly exercise. As a small organisation, the GCRO is not able to manage a data collection exercise of this scale internally, and we thus outsource survey implementation. A mid-level market rate for a single household interview is R750, meaning that implementing a ward-level representative survey costs at least R15 million purely in operational costs. Historically, the GCRO has been able to accumulate funds over two grant years to fund the survey, as well as receiving additional funds from the metropolitan municipalities. However, it has not been possible to accumulate an adequate budget, meaning that survey implementation has been under-resourced. This has exacerbated the challenge of finding a service provider able to implement the survey.

In addition to constraints on resources available for data collection, internal capacity for the survey has historically been limited. In QoL III and IV, various GCRO researchers supported the survey implementation in addition to their existing responsibilities. Given the difficulties experienced, this impacted negatively on the ability of the researchers involved to meet other obligations and to pursue their own research. Survey implementation also drew heavily on senior management, impacting negatively on other organisational processes.

A decision was made to appoint a dedicated senior researcher to lead QoL V, which did shift some of the day-to-day burdens of survey implementation away from other researchers. Due to the challenges experienced, however, this provided limited relief for senior management. As a result of the level of involvement required of senior management, other organisational processes largely grind to a halt, meaning that other outputs and research projects are substantially delayed.

Identifying appropriate methods of managing the service provider, and ensuring high-quality data without micromanaging the process has also been a challenge, exacerbated by budgetary constraints. A tendency towards excessively stringent oversight has contributed to the delays and challenges experienced.

Finally, given all of these challenges, planning for data dissemination and outputs drawing on the data has tended to fall by the wayside. The GCRO is unable to adequately support stakeholder use of the data, and our online data viewers have become dated, limiting the extent to which stakeholders can meet their own data needs. Relatively few substantial GCRO outputs are generated from the completed datasets.

In response to these difficulties, in late 2018, the GCRO initiated an in-depth ten-year review of the survey, with the objective of building on the survey's existing strengths, while also ensuring sustainability into the future. Further information on the review process is provided below, and a preliminary draft of the review's external synthesis report is available to panelists. However, this review has been relatively technical in focus, and broader questions about the

role of the survey in contributing to the GCRO's overall aims and objectives remain open and in need of interrogation. This will be critical in guiding appropriate project resourcing and internal structuring into the future. Engagement with these questions would be a valuable contribution from the panel.

### **GCRO's use of the QoL data**

GCRO researchers regularly draw on QoL data to support their research interests. In some instances, the data forms a central part of the analysis, while in others, it provides important background information. The breadth and representative nature of the survey allows researchers to draw data for a wide variety of thematic areas and research interests, but also analyse sub-samples and focus on geographic case studies. This means that the survey offers content to support most areas of the GCRO's work. Products which rely entirely on QoL data are listed in the table above, but QoL data has also supported numerous internal publications, such as vignettes and maps of the month.

### **External impact of the QoL survey**

The QoL survey has impact across multiple domains, including academia, government and civil society.

The GCRO works to ensure that QoL data is available to government – who is in a sense the primary client of the survey – to guide evidence-based policy and planning. While we share our datasets with government at the provincial and municipal levels, capacity to work with the data using statistical software is limited, and it is therefore critical for the GCRO to support requests for particular information directly. This is often done through additional analysis and presentations. We also work to strengthen capacity within government to use our data.

In academia, QoL data feeds into academic research on a broad range of topics, and is also widely used for teaching purposes. QoL surveys have been cited in 91 academic publications, with authors based in five different countries. Of these, 41 were journal articles and 19 were theses. As QoL V has only recently been released, it does not yet feature. Appropriate citation of the survey by users is a challenge, and data users rarely lodge completed outputs with the GCRO. It is therefore likely that these figures represent an under-count of the contributions QoL data makes to academic research.

The GCRO is increasingly receiving requests for QoL data from academics, particularly for the purpose of teaching. While much of the use is for teaching standard data analysis, a lecturer in artificial intelligence recently requested our data to enable him to decolonise his teaching materials.

Civil society organisations frequently approach the GCRO for information on particular issues or populations of interest. Where feasible, the GCRO directs users to existing analysis, or prepares a small amount of analysis for the organisation. Resources such as the QoL data viewers, which allow lay people to explore the QoL data directly, are particularly valuable, and it is essential that they are updated and maintained. In addition, we receive requests from the media, and assist with information wherever possible. This is particularly prevalent immediately following the launch of each of our surveys, or when topical issues covered by the survey make headlines.

## Areas for future development

The GCRO is currently concluding the ten-year review process, and is preparing for QoL VI (2020). Moving forward, it will be essential to use the learnings from the review process to ensure the GCRO can continue to run this flagship project sustainably into the future. This will require more appropriate alignment of the project budget and scale, and ensuring that the data collected delivers its full potential to all users. The GCRO will need to invest in efforts to make data increasingly accessible through online data viewers, as well as working closely with government to ensure that the data meets key needs. Appropriate data indexing will enhance data use in academia, as well as appropriate citation. Closer and more systematic tracking of data use and ad hoc requests for information will also strengthen our understanding of the value of the project.

## 6.2 Analytics and visualisation

### Overall framing

The ‘Analytics and visualisations’ research theme is at the core of all work conducted within the GCRO as it intersects with all other research themes within the GCRO (see Figure 1). The research focus of this thematic area is on data collection, data analytics, data mining and visualisation. As such, projects within this theme encompass the collection of primary data (i.e. the Quality of Life Survey and other surveys), data sourced from commercial data providers, and a range of open-data initiatives (including geospatial data) aimed at making information on the Gauteng City-Region (GCR) publicly available and accessible, in particular, to government officials as well as to students and academics of the two partner universities that host the GCRO.

The research in this theme deepens the analysis of available data through advanced spatial analysis and by employing innovative data visualisation techniques. In the effort to deepen our understanding of the GCR, other data analytic methods and techniques that are increasingly being used in the disciplines of artificial intelligence, machine learning and data science are explored under this theme. An in-depth analysis of the GCR data is essential for providing insights towards attaining some of the provincial government priorities of state modernisation, governance and public service.

|                               | 2014/15  | 2015/16                                    | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|-------------------------------|--|--|---------|---------|---------|---------|
| Public information on the GCR | GCRO Quality of Life Survey Viewer (website) updated with <a href="#">2013 QoL survey data</a> |  |         |         |         |         |
| GCRO website & dissemination  |  | Launch of the <a href="#">GCRO website</a> |         |         |         |         |

|  |   |  |  |   |  |   |
|--|---|--|--|---|--|---|
| Esri Urban Observatory                 |   | GCRO led initiative to include two metropolitan municipalities (Tshwane and Ekurhuleni) on the <a href="#">ESRI urban observatory online platform</a> .  |  |   |  |   |
| Ward Profile Viewer                    |   | Launch of the <a href="#">ward profile viewer</a> /  | Re-launch of the <a href="#">ward profile viewer</a> (updated with the 2015 QoL survey data)   | Annual maintenance and server software upgrade  | Annual maintenance and server software upgrade   |   |
| Next generation interactive GIS viewer |   | Launch of the <a href="#">interactive GIS viewer</a>   | Annual maintenance and server software upgrade   | Updated with 2017 QoL survey data   | Annual maintenance and server software upgrade   |   |
| Advancing data visualisation           |   | 1 Story map (Transforming transport), 2 presentations, 3 lectures  | 1 Interactive visualisation (Village of 100)<br><br>Establishment of a reading group besides individual reading sessions.<br><br>1 lecture   | 5 story maps), 1 Exhibition (Shifting borders and bridges),<br><br>1 lecture  | 1 Video (What is the GCR), 1 Exhibition (We are here), 4 Interactive visualisations, 2 presentations<br><br>1 lecture  | Resumption of reading group   |
| Data smart GCR                         |   | 1 Article published in UrbanAfrica.net (African Centre for Cities) on 'An open data revolution for the GCR?' (Wray, 2015)  | 1 Presentation   | 2 presentations   |  | 1 provocation on strengthening governance in the GCR through SDI address data is currently under review.  |
| Vignettes                              | Getting to work in the GCR (linked to interactive visualisation and map of the month), October 2014<br>Social Attitudes in the GCR, October 2014<br>Informal sector activity in the GCR, September 2014<br>Gauteng's bread and butter, April 2014 | 1 (Culwick et al. (2015) on Mobility patterns in the Gauteng City-Region)<br>Transforming transport in the Gauteng City-Region, November 2015<br>Informal sector cross border trade spending in Gauteng, October 2015<br>Xenophobic attacks - are migrants the only victims? May 2015<br>LGBTI attitudes in the GCR, March 2015<br>Social Isolation in the GCR, January 2015 | #FeesMustFall 2 – the missing middle and the top 2%, November 2016<br>#FeesMustFall 1 – multiple axes of inequality, November 2016<br>Youth and transport in the GCR, October 2016<br>Making a life in informal dwellings in Gauteng, September 2016<br>The quality of education in Gauteng, February 2016 | The 1%, October 2017  | Quality of Life in Gauteng, June 2018<br>Satisfaction with local government by dwelling type, June 2018<br>Best rated services per municipality, April 2018<br>Inadequate access to services, April 2018 |   |
| Maps of the month                      | Look for work trips, November/December 2014<br>Getting to work in the GCR – trips to work by race, October 2014<br>Dissatisfaction with local   | Gauteng's changing urban footprint 1990-2013, December 2015<br>Transforming transport in the Gauteng City-Region, October 2015   | Voting patterns in the 2016 local government elections, December 2016<br>Concerns about drugs and other community problems, November 2016  | The reach of GCRO research, December 2017<br>Spatial footprints of mothers in Johannesburg, November 2017<br>Differentiating household income growth in Gauteng | Mapping debt, November 2018<br>Change in residential buildings, October 2018<br>Shopping malls and centres in Gauteng, September 2018  | 2019 Gauteng provincial election results, May 2019<br>'Politics is a waste of time': an analysis of who agrees with this statement, April 2019<br>The use of public |

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|---|--|---|--|---|--|
| government performance, September 2014<br>Quality of Life (QoL) index per ward, August 2014<br>Changing spatial inequality across the GCR, July 2014<br>Provincial voting results in the cities and 20 priority townships, June 2014<br>Provincial election results, May 2014 (b)<br>Voter registration, May 2014 (a)<br>Gauteng's Human Development Index, 1996-2012, April 2014 | Where informal sector cross border traders sell their goods, September 2015<br>What is the biggest problem facing your community? August 2015<br>Quality of Life survey and service delivery protests, July 2015<br>Application of the GPEMF for informing the location of proposed mega-housing projects in Gauteng, June 2015<br>The location of planned mega housing projects in context, May 2015<br>Satisfaction with local government performance, April 2015<br>Best and worst performing public schools in relation to poverty, March 2015<br>Multidimensional poverty index for Gauteng (GMPI), February 2015<br>Socially isolated wards and gated communities in the GCR, January 2015 | Development of human settlements and mining areas: 1956-2013, October 2016<br>Tertiary education qualifications and median household income in Gauteng, April 2016<br>Perceptions of mines and mining waste across Gauteng, March 2016<br>The quality of education in Gauteng, February 2016<br>Clusters of dissatisfaction with local government performance, January 2016 | 2001-2011, October 2017<br>Dimensions of diversity in Gauteng, September 2017<br>Watershed boundaries of the GCR, August 2017<br>Understanding Gauteng's core and periphery through income, July 2017<br>Air pollution and health in Gauteng, June 2017<br>Green vegetation and impervious surfaces in Gauteng, May 2017<br>Mapping homophobia, April 2017<br>Attitudes on the acceptability of violence towards foreigners, March 2017<br>Location of formal and informal businesses and their suppliers, February 2017<br>2015 Quality of Life (QoL) index by ward, January 2017 | Mapping unemployment, August 2018<br>Commutes through Mabopane Station, July 2018<br>Multidimensional poverty in the GCR (2015/16 data), June 2018<br>The long and short of school commutes, May 2018<br>Support for bringing back influx-control, April 2018<br>Mapping vulnerability in Gauteng, March 2018<br>Backyard and informal dwellings (2001-2016), February 2018<br>The streets of Gauteng, January 2018 | services in Gauteng, March 2019<br>Gauteng's ward level racial diversity: 2018, February 2019<br>Population concentrations: night vs day, January 2019 |
|---|--|---|--|---|--|

## Projects

Research projects under this theme have guided the development of online based Web GIS applications to contribute to the open access and visualisation of the city-region's geospatial data. Examples of these Web GIS applications include the interactive GIS viewer, Ward profile viewer and the Urban Observatory. Other projects focused on devising innovative methods of analysing the city-region's data to derive information that is made publicly available through online interactive visualisation platforms that users find intuitive and easy to use. These interactive visualisations include online story maps, interactive vignettes, photo essays, QoL survey data viewer, interactive data visualisations, videos and 'Village of 100' activities.

The main goal of these research initiatives and online interactive visualisations is to enable the GCR to better understand itself as well as compare itself to equivalent city-regions in other parts of the world. A detailed description of the current and completed projects under this theme is provided in subsequent sections. The outputs of each research project are provided in the above table.

### **Next generation interactive GIS viewer (2015)**

The project built on the initial success of the GCRO's GIS website. It aimed at further investment in similar Web GIS facilities to ensure the continued development of innovative Web GIS tools and data, and the development of new tools, especially with a view to innovation that makes information more accessible and understandable to the public. Since its launch in 2010, the GCRO GIS interactive viewer has become a key feature of the GCRO's data visualisation and information dissemination. As a result, the GIS viewer has consistently received the highest number of page views on the GCRO website; it is utilised by government officials, NGOs, students and academics, and the general public. The need to adapt to new technological advancements in the field of geovisual analytics made redeveloping the website and considering alternative computer hardware solutions imperative. The ultimate goal of this project was to ensure that the GCRO GIS interactive viewer continues to be accessed by as wide an audience as possible across multiple technology platforms (e.g. desktop computers, laptops, mobile phones and tablets).

### **Ward profile viewer (2015)**

The ward profile viewer is an innovative application developed to view a wide range of socio-economic, indicator-based, ward-level data. It represented an upgrade of the '50 priority wards' viewer that was developed using indicators to identify 50 priority wards in the Gauteng province based on a wider set of factors than just poverty in its basic sense. The ward profile viewer offers a comparative spatial view based on selected socio-economic indicators from StatsSA Census 2011 (e.g. demographics and income variables) and the 2015 QoL survey (socio-economic and attitudinal variables) across the GCR at provincial, municipal and ward-level. This is specifically meant to assist both local and provincial government with identifying local ward-level areas for targeted interventions.

### **Esri Urban Observatory (2015)**

The Urban Observatory was a project that began in 2015 through a partnership with Esri, an international supplier of geographic information system software, web GIS and geodatabase management applications. The Urban Observatory is an interactive tool that enables the user to compare different indicators and themes (e.g. demographic, socio-economic, land use and transport) across selected major global cities. Under this research project, the GCRO led the collaborative initiative with Esri South Africa, the City of Tshwane and the City of Ekurhuleni to include these two major South African cities in the Urban Observatory online platform so that, alongside the City of Johannesburg, they can also be compared with other major cities of the world.

### **Advancing data visualisation (current)**

The GCRO is continuously striving to develop new and innovative ways for data to be shared, accessed and disseminated. In our first ten years, we have produced several original data visualisations and analytics including our maps of the month, vignettes, and 'State of the GCR' websites for 2011 and 2013. However, new and more advanced forms of visualisations are constantly being developed globally and the GCRO needs to train and build skills and knowledge to keep pace with these exciting innovations in data visualisation. The 'Advancing data visualisation' project allows the GCRO to continue to capture the public imagination by presenting information in creative ways. Information disseminated in accessible and interesting formats has also proved successful with policy-makers and government officials,

and the GCRO continues to build on these successes. It is relevant to mention that during the period 2014/2015 to 2018/2019, a variety of compelling interactive visualisations were produced under the 'Advancing data visualisation' project. Please refer to the table above and also to the 'GCRO outputs' section where these interactive visualisations are listed.

### **QoL viewer 2nd generation (current)**

Through the GCRO QoL viewer, the QoL survey data is made available online to a wide audience, which allows for various stakeholders, academics, students and government officials to visualise, interact with and use the QoL data. Although the 2013 QoL survey data can be used at ward-level representation, the current QoL viewer only displays data at the municipal level. Furthermore, a considerable amount of time and effort went into incorporating the 2013 QoL survey into the current QoL viewer to ensure the accuracy of the data as processed and stored in its original format. This is an ongoing project which focuses on the redevelopment of the current GCRO QoL viewer to incorporate all five iterations (2009, 2011, 2013, 2014/2015 and 2017/2018) of QoL surveys to date. A ward-level representation of the data from 2013 to 2017/2018 survey iterations is being considered.

### **Data smart GCR (current)**

The key research question to be explored in this research project is: 'how can the GCR become data smart?'. This question is specifically relevant in the GCR context, but at the same time there is a dire need to get the basics right within government in terms of data access and Professional GIS resourcing. Therefore this research project initially focuses on supporting the efforts of the Gauteng Planning Division's efforts to establish a corporateGIS and central spatial database (geoportal). In that perspective, an evaluation of how Spatial Data Infrastructure (SDI)'s concepts and best practices can contribute in the design and development of a suitable model for sharing and making geospatial data available among different government institutions and to the public is explored in this research project.

In 2015, the GCRO hosted a one day symposium and exhibition to debate concepts of a smart city and what this means for the GCR. Furthermore, as part of the ongoing work of this project, the GCRO has been participating in and contributing to GIS forum meetings organised by the GIS unit at the Gauteng Planning Division (Office of the Premier). A GCRO Provocation (*Strengthening governance in the Gauteng City-Region through a spatial data infrastructure – the case of address data*) is currently being finalised.

### **GCRO website and dissemination (current)**

The primary purpose of this project is to provide a mechanism through which the GCRO's online presence could be managed, and the organisation's research, news and events disseminated. This project comes to support one of the GCRO's key priorities of dissemination of information in a clear and accessible format suited to policy makers, government employees, academics, and the public. The key output of this project was the redesign of the GCRO website launched in 2015. The website provides access to all past and current projects and all the organisation's outputs including GIS viewers, interactive data visualisations and our well-known maps of the month. While the major output of this project has been achieved, the GCRO will continue to work on our online presence to ensure that accessing the GCRO's array of interesting outputs is an easy and pleasant experience.



## **Achievements, impact and reflection**

Through data collection, analytics and innovative online and interactive visualisations, the GCRO has significantly contributed towards understanding the socio-economic, attitudinal and physical environmental dynamics that characterise the GCR. The two online GIS viewers (websites), the QoL viewer and various online interactive visualisations and maps are platforms to which academics, government and the general public have access and that facilitate their understanding of the opportunities and challenges the city-region faces. Hence, it can be said that primary data collection, as well as secondary data collection, data analysis and visualisation, are in some ways the GCRO's most significant research contributions. It should be mentioned that these maps and online interactive visualisations are accessed by both a wide local and international audience. For example, between 1 April 2014 and 31 March 2019, the GCRO interactive GIS viewer alone recorded a number of 12 759 visitors (and 17 685 page views) from around the world while the ward profile viewer recorded a number of 2 653 (and 4 021 page views). Furthermore, the work of the GCRO on this thematic area of research continues to draw the attention of various individuals and organisations (academic institutions, government departments and agencies, and municipalities), who have shown a keen interest in engaging with the GCRO. Over the ten years of its existence, the GCRO has continued to respond to GIS data requests from students, academics, government officials and the general public. From 2014 to 2019, the GCRO has facilitated 62 GIS data requests initiated by students and academics from local and international institutions (e.g. from the UK and the USA). GCRO maps of the month and related content are frequently published or cited in newspaper articles, magazines and in numerous academic articles.

In future, this thematic area of research will continue to advance research on data analytics and visualisation in order to stay abreast of the current developments and trends in both academia and the technological industry. Methods and techniques used to analyse and visualise data will be robustly interrogated for their suitability. Besides methods used in data science, machine learning and remote sensing (i.e. for image analysis and processing), methods and techniques employed in spatial econometrics and spatial statistics suitable for analysing regional data will also be employed in the analysis of our data on the GCR.

## **6.3 Changing social fabric**

### **Overall framing**

While Gauteng's income inequality measures have improved slightly since the mid 2000s, they remain amongst the worst for any conurbation in the world. This has a profoundly differentiating effect on society. Higher-income households are able to afford an excellent quality of life, underpinned by private healthcare, good (often private) education and high-quality living environments. The modest incomes of the stable working class afford them an adequate quality of life augmented by public services. Meanwhile, large numbers of people struggle with incomes that are unable to cover their most basic needs. State provision closes some but not all of the remaining gaps. At all levels, people go to great lengths to enhance their capacities and their position in the city-region: building backyard shacks to rent out, sending children great distances each day to 'better' schools, occupying land or investing in property.

A remarkable degree of social functionality exists notwithstanding acute inequality. People relate to one another in positive, enabling and accommodating ways across social and economic differences. Yet alongside these pro-social aspects of our society, there are undoubtedly a number of anti-social difficulties: violence on the basis of gender, race, political alignment, nationality, sexual orientation and gang activity; open expressions of prejudice; covert or implicit prejudice; the biased behavior of institutional gatekeepers; attempts to seclude and avoid sharing space; hoarding of wealth and opportunities; the exploitation of people on the basis of race, migration status or gender; and the psychic and physical trauma of systemic violence.

The changing social fabric theme straddles the economic basis of life and the social life resulting from these conditions. This theme had 11 active projects during the review period, two of which are now complete.

|  | 2014/15  | 2015/16  | 2016/17  | 2017/18  | 2018/19  | 2019/20   |
|--|--|--|--|--|--|---|
| <a href="#">Anti-racism in the GCR (2017)</a>                              | Research commissioned and drafts received.   | GCRO collaborated in the launch of the Anti-Racism Network South Africa; Video published ( <a href="#">Abrahams and Nemakhavhani 2016</a> ). | Research report edited and prepared for design.  | Research report published ( <a href="#">Abrahams 2017</a> ).   |  |   |
| <a href="#">Understanding poverty and inequality in the GCR (2018)</a>     | Research & writing for Occasional Paper; Map of the Month published ( <a href="#">Mushongera et al 2015</a> ). | Review & editing of Occasional Paper.  | Occasional Paper reworked into Research Report.  | Published article ( <a href="#">Mushongera et al 2017</a> ).   | Research report published ( <a href="#">Mushongera et al 2018</a> ); Map of the Month published ( <a href="#">Mushongera &amp; Katumba 2018</a> ). |   |
| <a href="#">Hungry city-region</a>   | Partners contracted and research conducted.  | Partners submitted draft reports, which were edited and revised.   |  |  | GCRO hosted <a href="#">workshop on governance of food security</a> .  |   |
| <a href="#">Understanding the objective of post apartheid urban mixing</a> |  | Project started with an extensive literature review.   | Co-hosted Thought Leadership seminar on Gated Communities.                                 | Map of the Month published ( <a href="#">Ballard &amp; Hamann 2017</a> ).  | Drafting two book chapters; Map of the Month published ( <a href="#">Katumba 2019</a> ).   | One draft book chapter submitted; another in preparation. |
| <a href="#">Gauteng's geography of education</a>                           |  | Map of the Month published ( <a href="#">Hamann 2016</a> ).  | GCRO participated in the Gauteng School Feeder Zone Task Team.                             | May 2018 Map of the Month ( <a href="#">Parker et al 2018</a> ); Op ed published ( <a href="#">Parker et al 2018</a> ).              | Ongoing support to the Gauteng Department of Education.  |   |
| <a href="#">Poverty in the GCR: A capabilities approach</a>                |  |  | Presentation at the 2016 Human Development Capabilities Association conference in Tokyo.   | Additional partners - experts in the field - are included in the project.  | First drafts of Occasional paper produced.   | Review and further development of the Occasional Paper.   |
| <a href="#">Scale, belonging and exclusion in Gauteng</a>                  |  |  | Project planned; Research conducted.   | Research conducted.  | Research conducted; writing of case studies.   | Preparation of articles for a special issue               |
| <a href="#">Mothers in the city</a>  |  |  | Project began in 2014 in another research centre and transferred in with new staff member. | Occasional Paper ( <a href="#">Parker and Rubin 2017</a> ) and Map of the Month ( <a href="#">Parker and Rubin 2017</a> ) published. | Second phase of research planned.  | Research conducted.                                       |
| <a href="#">Street renaming</a>  |  |  |  | Preparation for research.  | Research conducted.  | Literature being reviewed.                                |
| <a href="#">Graffiti in the city</a>                                       |  |  |  | Project planned; partners engaged;   | Occasional paper drafted, edited,  | Further phase of research under                           |

|   |  |  |  |                     |  |      |
|---|--|--|--|---------------------|--|------|
|   |  |  |  | research conducted. | reviewed and published ( <a href="#">Parker, Khanyile and Joseph 2019</a> ). | way. |
| <a href="#">Network for Gender and Urban Research</a> |  |  |  |                     | Hosted first meeting of Network for Gender and Urban Research.               |      |

## Projects

### Anti-racism in the GCR (completed 2017)

Debates about multi-racialism and non-racialism have long shaped South Africans' imaginations about social life beyond apartheid. However the authors of the 2017 Pathways to antiracism research report raise the prospect of an anti-racist project to confront the enduring legacies of apartheid. The authors reviewed how other countries have responded to the challenge by the 2001 World Conference on Racism to create national action plans to combat racism, and express concerns that South Africa has taken so long to finalise its own plan.

### Understanding poverty and inequality in the GCR (completed 2018)

While poverty is often measured as low income, the 'Poverty and inequality' report argues that poverty should be measured in a way that more accurately reflects its multidimensional nature. This approach shows the relationship between different areas of deprivation. The report also offers an income and expenditure analysis and a labour market analysis of poverty.

### Hunger city-region

The 'Hungry city-region' project explores food systems within the GCR. Food insecurity has increasingly become a marker of urban poverty. Within a context of socio-economic inequality, the project aims to explore the role that food governance has to play in addressing poverty within the GCR. Research has been commissioned from external partners and received, and GCRO hosted a meeting of the Food Governance Community of Practice.

### Understanding the objective of post-apartheid urban mixing

This project takes a critical look into what it means to shed the legacy of separation left by the apartheid city and how it can be achieved. On the one hand, the project aims to understand intricate demographic shifts (such as 'white flight') and challenges conceptions of mixing by analysing different dimensions of diversity (race, language, income, occupation, etc.). On the other hand, the project explores the role of policy – as an input, a mechanism and an outcome – in the process of re-stitching the post-apartheid city and achieving greater social justice. Two chapters for academic books have been drafted, one for a volume to follow up on the classic book, *Homes Apart* (1991), and another for a book comparing socio-economic segregation in cities around the world.

### Gauteng's geography of education

Apartheid created significant spatial variation in the quality of education in South Africa, which is deeply embedded in the unequal geography of towns and cities. This research project examines the geography of education in Gauteng to gain a better understanding of the

complexity of the problem and better understand the policy directions that would make universal access to quality education more of a reality than it is today, including a broad objective of understanding the different dimensions of inequality within and between schools in the GCR, and the implications of this for both residents, and the nature and form of the city itself.

### **Poverty in the GCR: A capabilities approach**

Amartya Sen's capabilities approach offers an important framework for developing a multidimensional idea of poverty and ways of addressing poverty. This project considers this framework in relation to Gauteng. Draft reports have been prepared.

### **Scale, belonging and exclusion in Gauteng**

This project explores the different scales at which communities imagine belonging in the post-apartheid GCR landscape. What kinds of boundaries constitute imagined communities in the city-region? Who belongs and who is excluded at these different scales of imagined communities? The project has been conceptualised as an edited book that will cover various imagined communities across the GCR that exist at different scales. The book will consist of both theoretical and empirical chapters which will analyse different scales of community-making. Five case studies have been conceptualised and are at various stages of completion. The project aims to address questions around how people conceptualise social membership; how efforts to open up or restrict social membership are practised and implemented through language; and the implications that these imaginings and practices of community-making have for achieving social justice.

### **Mothers in the city**

This project considers the interface of space, gender and social reproduction, focusing as it does on the daily mobility of mothers as they move from home to earn an income, deliver their children at schools, go to shops and participate in social life. The resulting occasional paper (2017) exposes important compromises and sacrifices made by mothers in their daily movements within Gauteng. Follow-up field research for a new phase of the project is currently underway.

### **Street renaming**

The 'Street renaming project' critically analyses the social dynamics that have accompanied street renaming in the post-apartheid urban landscape of the GCR. The renaming of sites from apartheid-affiliated names with 'neutral' names has been largely uncontested. However, the renaming of sites after anti-apartheid political heroes has been a highly emotive and greatly contested issue. The project aims to explore the motivations behind the decision to rename sites after certain figures; the extent to which the renaming exercise serves to rebrand the GCR; the implication of the renaming practice for governance in the city-region and how these practices may be influenced by party-politicking; and assist local municipalities and the provincial government with policy directives that may enable them to mitigate the costs of these renaming processes.

## **Graffiti in the city**

This project explores the role played by graffiti in urban spaces within the GCR. Using the Maboneng precinct of inner-city Johannesburg, the occasional paper explores the various aspects and facets of urban art and graffiti. These include questions around how graffiti is used to create neighbourhood identities in different contexts; how 'legitimate' graffiti spaces are defined and managed; and what conversations are being conducted through the medium of graffiti in the GCR. More broadly, the project explores the role played by graffiti in post-apartheid urban governance and relations.

## **Network for gender and urban research**

The GCRO contributed to the establishment of a Network for Gender and Urban Research in 2018, whose opening meeting attracted significant interest and support. The aim of the network is to support research being conducted on gender issues in the urban context, strengthen the field of gender and urban studies, and to explore collaboration and publication opportunities across disciplines and institutions.

## **Achievements, impact and reflection**

Projects in this theme generated six maps of the month, two research reports, two occasional papers, one academic article, one op-ed and a video. Three workshops related to some of these projects were also hosted.

Projects under this theme have contributed to policy and government support work. First, over a two year period, the GCRO acted as technical support to the Gauteng Champions for Social Cohesion. Second, the City of Johannesburg commissioned the GCRO to conduct a benchmarking report on social cohesion. Third, the GCRO was asked to attend meetings by the Gauteng Department of Education to advise on the constitutional court ruling that school catchment zones needed to be expanded.

Projects under this theme have contributed to the convening of a series of forums such as the Anti-Racism Network of South Africa and the Network for Gender and Urban Research.

# **6.4 Government and governance**

## **Overall framing**

Although the concept of the 'Gauteng City-Region' has been in circulation since the early 2000s, it remains an elusive scale of actual planning and governance. While the influence of the provincial government extends across a large proportion of the functional city-region, the levels of coordination and collaboration between the spheres and agencies of government remain fitful and episodic, and obvious areas of priority collaboration (e.g. over integrated arrangements for transport, or aligned support for economic growth) remain thus far unfulfilled. At this point, the only secure institutionalisation of the city-region is the fact of the GCRO itself, although the recently approved Gauteng Transport Authority Act promises the inauguration of another (and vital) institution. As earlier iterations of the GCRO's strategy have observed: 'Building a city-region is fundamentally about getting the sometimes fragmented architecture of government, with different parts responsible for different areas and functions,

to cohere around agreed development plans. A dynamic city-region also depends on the ability or willingness of government to forge productive partnerships with a range of other organisations in the public, private and civil society sectors, and on more positive relations between government and communities.’

The current weak levels of economic growth, high unemployment, limited inclusion of new black business and persistently high levels of social discontent make the need for effective cooperative government (within and across spheres of government) and wider associative governance (with partners beyond government) all the more imperative. As a subject for research, this theme is a particularly sensitive area, with considerable contestations over the idea itself (e.g. local government bodies are loathe to surrender powers) and a degree of defensiveness given the political and social consequences of the elements of transparency that collective governance would entail. The last five years have been characterised by insights into the uneven capacity for effective governance, as well as some very public lapses, including the lamentable episode of the Esidimeni tragedy.

Governance in transitional societies is inherently complex and challenging, requiring simultaneously the maintenance of steady-state, routine service-delivery functions while also attempting to deal adaptively with fluid and unanticipated contexts of change. Indeed, our society is ideally undertaking a project of transformative governance where systemic change is the goal, enabling a fundamentally changed distribution of social goods while maintaining a relatively stable society. Gauteng experiences constant in-migration, mostly of relatively poor people seeking improved livelihoods, while also contending with a stuttering economy, community protests, patronage systems, xenophobia and other forms of social violence, among other things. In this context, a deeper understanding of the entailments and conditions of governance in each of these modalities (routine, adaptive and transformative) is helpful to understand why we succeed or fail in the governance endeavour. Among other things, our research is suggesting that each of these modalities has implications for the varying knowledge resources required to inform decision-making in each case, the kinds of capability needed to understand and respond to the governance problematics of each level of complexity, and the organisational forms required for effective cooperative or associational governance. These three categories vary with the level of governance complexity that is being attempted and it is likely that many initiatives in government are under-supplied across one or more of these categories. A fuller analysis of these insights will become available in publications currently in progress.

The GCRO’s approach has been to work to better understand the barriers to more effective governance and, through comparative studies, the conditions that might inspire greater success in this domain.

The ‘Governance and government research’ theme has worked to shed light on some of these issues through a number of projects. Some of these are reflected in the table below.

|  | 2014/15  | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 |
|--|--|---------|---------|---------|---------|---------|
| <a href="#">Transformation in Higher Education</a> | GCRO Occasional Paper published (Bergman 2014) |         |         |         |         |         |

|  |   |   |  |  |   |   |
|--|---|---|--|--|---|---|
| <a href="#">The GCRO Barometer</a>   | GCRO Occasional Paper published ( <a href="#">Mushongera 2015</a> )   | Journal article on the Barometer published  |  |  |   |   |
| <a href="#">Metro form of government in Gauteng</a>  | Work began in the fourth quarter with a review of the available documentation and setting up of key informant interviews.   | Research continued, but at a slow pace because of pressures of QoL.   | Project was placed on hold.  | Project on hold.   | Project on hold.  | Project is currently on hold.   |
| <a href="#">State function in Infrastructure Planning</a>                                    |   | Collection of secondary data started. Manuscript writing continued. Part of the work was presented at an internal GCRO workshop and feedback was incorporated into the manuscript. Part of work was presented at a seminar by the Wits School of Governance | Analysis framework for the report was begun, but not much was done during this financial year.   | Negotiations began with City of Jhb departments. Fieldwork began concurrently with fieldwork for the Ethnographies of the State project.   | Ethnographic fieldwork was completed and analysis of data has been commenced  | Analysis of data has been commenced.  |
| <a href="#">Ethnographies of the State</a>   | Conceptualisation began in the first quarter and suggestions were made to merge project with project on infrastructure choices. Several interviews were had with key informants. Writing began. | Collection of secondary data started. Discussions with City of Johannesburg on the possibility of an ethnographic study were started. Fieldwork in the Group Strategy Department of the City of Johannesburg were begun.                                    | Ethnographic fieldwork in the City of Johannesburg begun by Mushongera in June 2017. Part of work presented at the RC21 Conference in Leeds (UK) in September 2017 | Negotiations with the City of Johannesburg departments were begun. Fieldwork began concurrently with fieldwork for the 'Infrastructure Planning' project. Interview transcriber contracted.                    | Five chapters of the principal researcher's PhD that the project is running parallel with were completed and will be refined going forth.   | Analysis of data ongoing. PhD chapters currently being refined. First draft of provocation currently being prepared by Mushongera.  |
| <a href="#">Knowledge Partnerships for Urban Futures: Policy-oriented research alliances</a> |   |   | Publication of: <a href="#">The Gauteng City-Region Observatory: A Case Study</a> . DPME (PSPPD)   | Establishment of GCR Chair in Trade and Investment at Wits University.   | Establishment of GCR Chair in Inclusive Economies at the University of Pretoria. GCRO presents at EC-funded Evidence-Informed Policy Management Master Classes for policy - makers and policy - researchers from across Africa. | - Draft chapter on city-region scale of planning & development for NDP5-year implementation plan.<br>- GCRO convenes GPG policy group on regional system of innovation<br>- Book chapters on adaptive governance being written and presented in Sao Paulo in July |
| <a href="#">Governing the GCR</a>  |   |   | Conceptualisation and framing. Initial meetings with potential contributors (internal and external).   | First drafts of most provocations received. Rough outlines of some unfinished provocations also received. Internal workshop was held to refine them. Faces of the City presentations by several staff members. | First framing provocation published ( <a href="#">Harber and Joseph 2018</a> )  | Provocations on Ile de France (Mabin) and TOD (Harber) have been received and are currently being internally reviewed. Three provocations by Mareee, Mkhize and Mosiane currently being finalised.  |

## Projects

### Transformation in higher education (2014)

The project used Richard Florida's (1995) concept of the 'learning region' to examine how it may be applied to the GCR through the institutional vehicle of the region's higher education institutions (HEIs). It has also been shown that many changes are required within HEIs in order to engage successfully with the city-region, promote alignment of their activities with the priorities of the city-region and build long-term strategic relationships with key stakeholders in the region. This research project attempted to pose critical research questions about the role of HEIs in meeting the priorities and challenges of the city-region and explore how best to unlock the potential of HEIs in collaboration with other important stakeholders such as government, business, civil society and organised labour. Two research outputs were generated under this project, namely a 2013 data brief on 'Transformation of higher education in the GCR' by A. Nyar, and an occasional paper, 'Towards more effective collaboration by higher education institutions for greater regional development in Gauteng City-Region' by R. Bergman.

### The GCRO barometer (2015)

This project involved pulling together a range of datasets that reflect upon the development progress in the GCR. It utilised existing datasets from official and private sector sources as well as data generated from the GCRO's own research. A total of 38 development indicators were identified to make up the GCRO barometer. These were carefully chosen to allow for international benchmarking. This project generated three research outputs. The first was a web-based interactive visual tool. The second is an occasional paper that gives succinct analyses of all the 38 indicators for the period 2002 to 2012. The third was a journal article in *Development Southern Africa* titled 'Beyond GDP in assessing development in Africa: The Gauteng City-Region socio-economic barometer'. The barometer is a useful tool for monitoring government performance as well as displaying the state of the province to the public in a manner that is easy to decipher. The output identifies areas where urgent policy intervention is needed, as well as areas that require further inquiry through research.

### State function in infrastructure planning

This project initially focused on the efficient and sustainable management of water resources as a key priority for the GCR. It recognised that water service authorities were hard-pressed to strike an appropriate balance between efficiency, equity and sustainability in the overall supply and management of water resources. Hence there was a need to understand how current water pricing and social assistance mechanisms affect water consumption patterns as a first step towards the development and implementation of appropriate methods of water management in the future. This project suffered a setback because of lack of access to relevant data for the intended analysis. This shifted the focus to analysing planning process through interviews with municipal officials which were completed with a number of important roleplayers in local and provincial government, academia and litigation. This project, together with the 'Ethnographies of the state', forms part of a greater PhD project currently underway by a GCRO staff member.



## **Ethnographies of the state**

This is a multi-year ethnographic study into internal decision-making processes around development and service delivery planning in the City of Johannesburg. It uses an ethnographic approach to analyse state official practices based on actual experiences involving in-situ observations and participation on work process in one of the City's departments. By focusing on individuals' everyday experiences in the city, ethnography can extract the logic and meanings that these individuals attach to their actions. Hence, ethnographic detail helps to answer the 'Why' questions about officials' practices and service delivery outcomes. This project together with the 'State function' project forms part of a greater PhD study by a GCRO staff member. The project outputs will include a GCRO provocation on unpacking the policy-practice problematic through an ethnographic exploration of state apparatus.

## **Knowledge partnerships for urban futures: Policy-oriented research alliances**

This project focuses on the imperative for closer collaboration between government and academic research institutions. While the need for this cooperation has long been evident, the practical implementation of partnerships to this end has been elusive (as noted in the 2014 Bergman publication mentioned above). Powerful structural factors succeed in preserving the boundaries and insulations between these institutional forms (government and university), and overcoming these obstacles to collaboration requires both similarly structured interventions as well as clearer insight into the enabling (and disabling) conditions for fruitful transdisciplinary knowledge flows. This is a project with two components. This first focuses on the establishment of selected pilot strategic knowledge partnerships between government and universities in order to enhance evidence-based governance. The second looks at university-to-government knowledge brokering and analytic insights to inform approaches to the governance of policy-oriented research partnerships. Eleven presentations have been made by GCRO staff on these issues at various conferences and seminars, locally and globally. In addition, a case study report was prepared for the Department of Planning, Monitoring and evaluation. This current review process provides an opportunity for another critical appraisal of the role of an observatory in supporting the strengthening of urban governance.

## **Governing of the GCR**

The Gauteng City-Region is increasingly recognised in official and other discourses. Nonetheless, this increasing recognition has not resulted in consensus as to what this means (or should mean) for planning, public investment, or governance. As a prompt for thinking through the resulting complexities, this project entails a series of GCRO provocations, each of which takes on a discrete aspect of governance related to the city-region. Taken together, the series intends to trigger debate and dialogue on various issues and ways of thinking about governance, signalling key priorities for consideration as we think about the future and the fortunes of the city-region. Most recently, a provocation was published on 'Institutionalising the Gauteng City-Region' by Jesse Harber and Kate Joseph. It interrogates approaches to the institutionalisation of the city-region in Gauteng, noting the inherent challenges in this scale of governance, and the considerations that must be confronted in approaching this complex goal. Two other provocations in the series are in final review stages, and a further three are in the process of being drafted.

## **Comparative study of city-region governance across the BRICS countries**

The GCRO participates in a six-country collaborative project that looks at the evolving governance approaches in Moscow (Russia), São Paulo (Brazil), Delhi (India), Shanghai (China) and Gauteng (South Africa). Led by Professors Phil Harrison (Wits University), Ivan Turok (Human Sciences Research Council), Patrick Heller (Brown University, USA), as well as Dr Rob Moore (GCRO), the project has established a conceptual framework for approaching the analysis of varying governance arrangements across complex city-regions and, in collaboration with groups of urban researchers in each of these centres, work is under way on an edited collection of comparative case studies. All of these societies are (in one respect or another) transitional societies, having experienced major socio-political transitions in recent decades, and the research shows how the historical trajectories, together with socio-political legacies, play powerful roles in shaping the systems of governance that function in each context. In each of these contexts, how do we understand the achievement of various modalities of governance, whether these be routine, adaptive or transformative in intent and effect?

## **Achievements, impact and reflection**

The GCRO's approach has been to work to better understand the barriers to more effective governance, through both the wide-angle large-scale view arising from comparative studies, as well as the micro-level in-depth understanding arising from ethnographic studies within service departments. The intention is to better understand the conditions that might inspire greater success in this domain. The challenge of city-region governance is vast, and the avenues of enquiry, and resources, of the GCRO are comparatively very limited in scale and scope. Given the critical importance of this focus area and its sensitivity, it is all the more important that the GCRO is able to work constructively, and in relationships of trust, to strengthen insight and effectiveness in how this topic is approached into the future.

# **6.5 Histories and futures**

## **Overall framing**

This thematic area has two major projects: 'What is the GCR?' and 'Futures of the Gauteng City-Region', with the involvement of three staff members: Graeme Gotz, Guy Trangos (until 2016) and Alexandra Parker (from 2016).

In its first five years, the GCRO undertook some research into the histories of the city-region and others into options for future growth modelling. But there is a need to expand and deepen analysis of where the city-region is 'evolving towards'. 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.

This thematic area seeks to deepen the approach to theorising the Gauteng City-Region, rather than just reflecting on the trends and dynamics that are shaping it. One line of enquiry is to understand what defines the GCR as a 'city-region' – as opposed to a mere cluster of cities, or a mega-region – as a condition for understanding it in comparison to similar formations

elsewhere in the world, and what the GCR can demonstrate about global urbanisation processes. A second line of enquiry is to view the GCR's historical development paths and future possibilities from a comparative perspective with those of similar places elsewhere to enable more adequate theorising of its 'city-regioness'. This gives 'benchmarking' a deeper meaning beyond the mere tabulation of comparative data on key indicators.

|  | 2014/15   | 2015/16                            | 2016/17   | 2017/18  | 2018/19  | 2019/20                                     |
|--|---|------------------------------------|---|--|--|---|
| <a href="#">What is the Gauteng City-Region?</a>   |   |                                    | Project initiated. Work began on the international exhibition for the Seoul Biennale. | <a href="#">Shifting borders and building bridges. Cities Exhibition. Seoul Biennale on Architecture and Urbanism. DDP, Seoul, South Korea. 1 September - 5 November 2017.</a> | <a href="#">We are here. Metropolis Annual Meeting Exhibition. Sandton Convention Centre, Johannesburg, South Africa, 27-29 August 2018.</a> | Drafting of a conceptual frame for the book |
| <a href="#">Futures of the Gauteng City-Region</a> | Project initiated with the intention to commission an Occasional Paper on key international urban trends within which to 'place' the possible future of the GCR | Project on hold                    | Project on hold   | Project on hold  | Project re-initiated with new terms of reference   | Project being reanimated                    |
| City-Region governance in the BRICS                |   | Contract with Prof Harrison agreed | Research conducted  | Research conducted. Insights presented in a <a href="#">series of seminars</a> at GCRO   | Write-up of research   | Write-up of research                        |

## Projects

### What is the GCR?

This multi-year project is designed to interrogate the Gauteng City-Region as a concept, construct, political device and mode of governmentality. It is a longer-term project with the eventual outcome envisaged as an LSE Cities 'Endless City'-style book on the GCR. The year 2016/17 saw initial work in this direction by project lead, Alexandra Parker.

The 'What is the GCR?' project produced two major international exhibitions in the last two years. The first was an exhibition at the Seoul Biennale in October 2017 on Architecture and Urbanism, entitled 'Shifting borders and building bridges'. The exhibition stood for two months in the biennale exhibition hall alongside 50 other global cities and city-regions, and was then restaged as part of the Gauteng Provincial Government and Gauteng Tourism Authority's stand at the World Urban Forum in Kuala Lumpur in February 2018.

A second exhibition, called 'We are here', was designed and curated for the Metropolis Annual Meeting that was held in Johannesburg in August 2018. The exhibition included panels of data and information on the topics of population, diversity, economy, governance, settlements and transport; an overview of how the GCRO uses data with a specific focus on the Quality of Life survey; a new explainer video on the Gauteng City-Region and the GCRO; interactive components including the GCRO's 'Gauteng as a village of 100 people' and a participatory mapping of neighbourhood trust.

## **Futures of the GCR**

This project is currently being reframed and recalibrated. It is intended that an external specialist be commissioned to write a GCRO occasional paper that provides a ‘futures perspective’, situating the GCR within projected long-term global urban trends and dynamics. Terms of Reference were prepared and provided to a key academic collaborator of the GCRO, who has unique capabilities and insights in this area, but unfortunately his pressured schedule has meant that he has not yet been able to fully engage the work.

## **City region governance in the BRICS**

With additional funding from the Gauteng Planning Division, the GCRO facilitated the contracting of Prof. Philip Harrison – the South African Research Chair in Spatial Analysis and City Planning – to research and write a book comparing governance of city-regions across the BRICS countries (including the GCR). In 2017 Prof. Harrison undertook six months of research in Russia, Brazil, India and China. Following the presentation of preliminary results in a series of seminars hosted by the GCRO in late 2017, the project will find effect in two outputs: (i) a GCRO research report to be released in the 2019/20 financial year; and (ii) a book that will be published by a prestigious international press. This work will provide an important conceptual architecture for understanding the challenges of governance across complex city-regions, as well as a view on how systems of governance have evolved differently in the varying historical and socio-political contexts of these transitional societies.

## **End of term review papers as GCRO’s reflection on 25-years of democracy**

This is being developed as a new project. There is a great deal of introspection currently underway across society, examining how the country has fared over the quarter century since the end of apartheid. As part of a commitment to the Gauteng Planning Division to support its end of term review process, GCRO developed a series of thematic background papers in late 2018 examining, inter alia: spatial transformation; sustainability dynamics; poverty, inequality and social mobility; economic trends; quality of life; and governance. Many of these take a long-term view, and track trends since the mid-1990s. These background papers are to be reworked as a set of Occasional Papers and will be GCRO contribution to reflecting on progress in Gauteng over the 25 years of democracy.

## **Achievements, impact and reflection**

This is a minor thematic area in terms of the researchers and projects involved, but it has had a significant impact with the two major international exhibitions staged in three countries. In addition to the exhibitions, work has also been published as interactive visualisations and as a GCRO map of the month ensuring that the research continues to reach the GCRO’s loyal audiences through its website and mailing list.

# **6.6 Landscapes in transition**

## **Overall framing**

Spatial inequalities and settlement distortions left by apartheid remain as scars on the urban landscape – despite significant spatial change over the last 25 years. Various spatial and

mobility issues (including unsustainable urban expansion, fragmented public transport and spatial inequality) have been a key focus for the GCRO since its establishment. An important aim of this research theme was to go beyond normatively driven research to carefully examine actual spaces and spatial processes through a multidisciplinary perspective. It was hoped that a ‘landscape’ study approach – involving both careful empirical analysis of specific places over an extended period, as well as new theorising of the urban processes shaping them – will better elucidate the global and generalisable and the local and idiosyncratic forces (including government policy) producing this city-region’s settlement forms. In doing so, projects under this theme highlighted the following understandings of landscapes in the GCR. First, while people shape landscapes, landscapes also shape people. Second, landscape dynamics should be understood at different scales and from different viewpoints. Third, as part of a process of change, a landscape may at particular times be a space of opportunities or threats.

The ‘Landscapes in transition’ theme had 16 active projects during the review period, seven of which are now complete.

|  | 2014/15   | 2015/16  | 2016/17   | 2017/18  | 2018/19   | 2019/20   |
|--|---|--|---|--|---|---|
| <a href="#">Spatial change in the GCR (2014)</a>                 | Edited volume published ( <a href="#">Harrison, Götz, Todes &amp; Wray 2014</a> ).  |  |   |  |   |   |
| <a href="#">Mobility in the GCR (2014)</a>                       | Research report published ( <a href="#">Wray and Gotz 2014</a> ).   |  |   |  |   |   |
| <a href="#">Modelling urban spatial change in the GCR (2015)</a> |   | Article published ( <a href="#">Wray and Cheruiyot 2015</a> ).   |   |  |   |   |
| <a href="#">Peripheries and rural / urban transitions (2017)</a> | Research & writing for research report.   | Research updated with QoL III 2013 data.   | Research report designed.   | Research report published ( <a href="#">Peberdy, Harrison and Dinath 2017</a> ).   |   |   |
| <a href="#">Mining landscapes of the GCR (2018)</a>              | Research & writing for research report.   | Occasional paper published ( <a href="#">Bobbins 2015</a> ); article published ( <a href="#">Trangoš and Bobbins 2015</a> ); research report submitted for internal reading. | Research report designed.   | Research report published ( <a href="#">Bobbins and Trangoš 2018</a> ).  |   |   |
| <a href="#">Untangling transport</a>                             | Published an interactive visualisation ( <a href="#">Culwick 2014</a> ), a vignette ( <a href="#">Culwick 2014</a> ) and a map of the month ( <a href="#">Wray, et al 2014</a> ). | Published article ( <a href="#">Culwick et al 2015</a> ) and a story map ( <a href="#">Culwick 2015</a> ).   | Phone app ‘MyJoziMoves’ run to track commuter movements. Vignette published ( <a href="#">Culwick et al 2016</a> ). | Report on MyJoziMoves received from service provider.  | Analysis of MyJoziMoves data.   |   |
| <a href="#">Spatial statistical modeling</a>                     | Preliminary data analysis.  | Map of the Month ( <a href="#">Wray, et al. 2015</a> ).  | Article published ( <a href="#">Cheruiyot et al 2015</a> ); Map of the Month ( <a href="#">Wray, et al. 2016</a> ). |  | Article published ( <a href="#">Katumba 2018</a> ); Two Maps of the Month published ( <a href="#">Cheruiyot et al 2018, Katumba 2019</a> ). | Article published ( <a href="#">Cheruiyot et al 2019</a> ). |
| <a href="#">Spatial imaginaries</a>                              |   | GCRO cosponsored a symposium on megaprojects; Field research conducted.  | Conceptual framework drafted. First drafts of research report chapters received.                                    | Edited <a href="#">special issue</a> including three articles ( <a href="#">Ballard 2017, Ballard &amp; Rubin 2017</a> , and <a href="#">Ballard et al 2017</a> ). | Op ed piece published ( <a href="#">Ballard and Rubin 2018</a> ); Further draft chapters for research report received.                      | Compilation of research report.                             |
| <a href="#">Taking streets seriously</a>                         |   |  | Hosted taking Streets Seriously Symposium, 5 April. Work began  | Research report published ( <a href="#">Harber, Parker, Joseph, &amp; Maree 2018</a> ); Map  | GCRO hosted an exhibition at the Fassler galler, University of the  |   |

|   |  |  |   |   |  |  |
|---|--|--|---|---|--|--|
|   |  |  | on research report.   | of the Month published ( <a href="#">Harber et al 2018</a> ).   | Witwatersrand based on research report contents.   |  |
| <a href="#">Landscapes of peripheral and displaced urbanisation</a> |  |  | Review of secondary material and site visits.   | Qualitative fieldwork in Mabopane, Rustenburg, and Moloto Road Corridor.  | Quantitative fieldwork in Mabopane, Rustenburg, and Moloto Road Corridor. Map of the month published ( <a href="#">Mosiane et al 2018</a> ). | Quantitative fieldwork completed.  |
| <a href="#">Building Gauteng</a>                                    |  |  | Hosted <a href="#">Understanding the role of urban developers workshop</a> , 25-27 July 2016. | Proposal for a special issue accepted by <i>Environment and Planning A</i> . Papers for collection edited by guest editors. | Papers submitted to <i>Environment and Planning A</i> for review.  | Published article ( <a href="#">Ballard and Harrison 2019</a> ) <i>Environment and Planning A</i> special issue being finalised. |
| <a href="#">A political economy analysis of transit corridors</a>   |  |  | Division of with partners at UCL and ACC finalised.   | Field research and archival work conducted.   | Field research and archival work conducted.  |  |
| <a href="#">Conceiving, producing and managing a neighbourhood</a>  |  |  | Fieldwork conducted.  | Fieldwork in Norwood and Hillbrow.  | Text for occasional paper finalised and in production.   | Occasional paper published ( <a href="#">Mkhize and Mosselson 2019</a> ).  |
| <a href="#">Biometric evictions</a>                                 |  |  |   |   | Funding awarded by the 'Security at the Margins' project.  | Fieldwork under way.   |
| Drosscapes of the GCR   |  |  |   |   |  | Project launched..   |

## Projects

### Spatial change in the GCR; Modelling urban spatial change; Spatial statistical modelling

The 'Spatial change in the GCR' research project considered whether the current spatial form, fabric and functions are resilient enough to cope with change and whether spatial change is gainfully reshaping or reproducing apartheid legacies. The result of this project was an edited book, *Changing space, changing city: Johannesburg after apartheid*.

Further to understanding rapid spatial change in the GCR, the research project 'Modelling urban spatial change in the GCR' was a technical inquiry into the various urban modelling typologies, opportunities and challenges that can inform urban growth models and subsequent urban planning decisions. Two outputs were achieved in this project: an occasional paper and a journal article, 'Key challenges and potential urban modelling opportunities in South Africa, with specific reference to the Gauteng City-Region'. The ongoing projects based on various spatial analytical approaches include an examinations of (i) youth participation in local development planning processes; and (ii) racial residential segregation in the GCR.

### Peripheries and rural/urban transitions; Landscapes of peripheral and displaced urbanisms

The main contribution of 'Peripheries and rural/urban transitions' project was in explaining the notion that the periphery is relational and needs to be understood in terms of scale. There are places of relative peripherality within the GCR which require attention. The project

examined the socio-economic and demographic dimensions of change in the GCR's peripheries to contribute to our understanding of the idea of these areas and to guide policy-makers to further reduce inequalities between the core and the periphery. From a perspective of lived experiences, this project is being extended to those parts of the GCR that are outside the Gauteng province. The latter is part of the 'Landscapes of peripheral and displaced urbanisms' project, which examines the production, reproduction and representations of landscapes of the extended northern GCR.

For its part, mining has had a profound impact on the GCR landscape. The research project on 'Mining landscapes of the GCR' reveals several prominent risks and opportunities, which require a comprehensive, interdisciplinary and collaborative management approach towards future development. Such landscapes hamper attempts at creating a balanced social geography and pose various environmental risks to communities in their proximity, but their future development potential is invaluable. In order to carry this project forward, a new project has just been launched to study 'Drosscapes of the GCR' (the post-mining landscapes), focusing on a few case studies across the city-region.

### **Mobility in the GCR; Untangling transport**

Transportation, access and mobility are important aspects of the GCR's rapid urban change because facilitating urban efficiency and sustainability will have positive effects on the quality of life of the city-region's people. In that sense, the 'Mobility in the GCR' project used Quality of Life survey data and observations in key transport contexts to better understand the challenges and successes of transport and mobility in the region. The research responded to a moment of significant transport innovation in the GCR, with detailed quantitative analysis of transport trends, infrastructure as well as a quality of transport index. A more qualitative study of the Moloto Corridor is currently underway, conducted as part of the 'Landscapes of peripheral and displaced urbanisms' project. Moreover, the 'Untangling transport' project studies how new systems (Gautrain, Rea Vaya BRT and A Re Yeng BRT) may lead to a shift from private car to public transport usage. This research project also seeks to improve the information and knowledge base on transportation through new data collection methodologies. It also seeks to promote integration across modes of transport within the GCR and to enhance our understanding of how people traverse the region. Transport infrastructure offers both a means to move around and a major kind of public space.

### **Spatial imaginaries; Building Gauteng**

There are additional projects related to urban change in the GCR that are currently under way. The 'Spatial imaginaries' project is in the process of finalisation. It examines the complexities of developing an integrated city-region – how the forces and strategies related to various development plans and visions, at different scales, shape the GCR's built environment. While this project is about the representational and symbolic aspects of space-making in Gauteng, the 'Building Gauteng' project explores a more material set of considerations, including an understanding of various actors and role-players (the state, landowners, developers, construction firms and labour). This project has produced a special issue in the journal *Environment and Planning A: Economies and Space*. Many of these articles are now available online, although they will only be fully published later in 2019 or early 2020.

## **Conceiving, producing and managing a neighbourhood**

A key output of this project was a GCRO occasional paper that examined two instances of urban upgrading and neighbourhood improvement in Johannesburg, Gauteng. It is primarily concerned with exploring different strategies and approaches to urban governance and upgrading adopted in the vastly different sub-regions which make up Johannesburg's urban landscape. Using the case studies of the Ekhaya residential city improvement district and the Norwood Grant Avenue Precinct Plan, the occasional paper illustrates the various ideals, ambitions, visions, challenges, compromises and creative strategies required to make interventions at the sub-local level. It also outlines the fault lines, points of divergence and conflicts that exist in different settings, and that frequently hinder or frustrate state-led efforts at urban improvement.

## **A political economy analysis of transit corridors**

Research on the political economy surrounding transit-oriented development explores its potential to address power plays regarding Johannesburg's 'corridors of freedom', particularly in relation to the quest for gainful spatial restructuring. This research is being conducted in partnership with the African Centre for Cities and the Bartlett Development Planning Unit at UCL (UK). A GCRO occasional paper is a planned output.

## **Taking streets seriously**

At a local scale, the 'Taking streets seriously' research report (2018) provokes us to consider the various logics at play on streets in Gauteng from the point of view of designers, builders, inhabitants and users. This research project responded to a growing need for detailed ethnographic work on public spaces (buildings, streets and precincts) to understand social and economic changes at different scales. It connects with other discreet GCRO projects that, in different ways, examine the governance of public and community space, including: two Occasional Papers, one on graffiti in Maboneng, and the other on neighbourhood level planning in Hillbrow and Norwood; a book on an artists' residence and working space in inner-city Johannesburg, August House; and emerging work on street renaming.

## **Achievements, impact and reflection**

The projects under this theme generated 11 journal articles, seven maps of the month, four research reports, two occasional papers, two vignettes, a visualisation and a story map. Three workshops were hosted, with one culminating in the production of a special issue in the journal *Transformation*. A landmark edited book, *Changing space, changing city: Johannesburg after apartheid* (2014), was also published. The edited volume is an authoritative, comprehensive account, and a key text in understanding contemporary Johannesburg.

In many ways, the 'Landscapes in transition' theme has covered much of the ground laid at the onset. Through various projects, the theme has shown how people shape landscapes and how such landscapes, in turn, shape people. It has also shown that landscapes are, at various scales and at particular times, spaces of opportunity or threat. These kinds of research interests are being pursued in new projects such as a pilot project on 'Biometric evictions', which explores how security measures, such as fingerprint scanner operated turnstiles, contribute to driving



residents out of rented accommodation. In the review above, more ongoing projects are highlighted, indicating the many directions and perspectives this theme continues to take.

## 6.7 New regional economies

### Overall framing

Since 1994, the GCR economy has expanded significantly, which has resulted in an improved quality of life for its citizens. However, structural factors remain which impede efforts towards establishing a competitive, sustainable, resilient, equitable and all-inclusive city-region.

In the 'New regional economies' thematic area, the GCRO has focused on a number of areas, including (i) the economic geography of the GCR; (ii) township economies; (iii) street trading; and (iv) the positioning of the city-region with regards to the rest of the subcontinent. During the period under review, seven active projects have been carried out under this theme, two of which have been completed.

|   | 2014/15  | 2015/16  | 2016/17   | 2017/18  | 2018/19 | 2019/20 |
|---|--|--|---|--|---------|---------|
| <a href="#">Gauteng's urban space economy</a> | Journal article published in Urban Forum (Gotz et al, 2014)  |  | Workshop with GGDA & GPD regarding firm-level survey<br><br>Proposal for four interlocking surveys by GCRO, HSRC, CCRED & Tshepo 500 000  | Mini-workshop convened with firm-level survey partners<br><br>Lecturing at Institute for Housing & Urban Development Studies at Erasmus university |         |         |
| <a href="#">Trade in the GCR</a>              | Collaboration between GCRO, ACC, SAMP & University of Eduardo Mondlane (Maputo)<br><br>Survey of cross-border traders conducted (August 2014)<br><br>Data brief published ( <a href="#">Peberdy, 2015</a> )<br><br>Growing informal cities workshop co-hosted with ACC & SAMP (February 2015)<br><br>SAMP migration policy series published (Peberdy et al, 2015)<br><br>Various media appearances | Vignette published ( <a href="#">Peberdy, 2015</a> )<br><br>Vignette published ( <a href="#">Peberdy, 2015</a> )<br><br>Article published (Peberdy et al, 2015)<br><br>Book chapter published (Peberdy et al, 2015)<br><br>SAMP migration policy series ( <a href="#">Peberdy, 2016</a> )<br><br>Map of the month published ( <a href="#">Wray et al, 2015</a> ) | GCRO/SAMP joint Occasional Paper published ( <a href="#">Peberdy, 2016</a> )<br><br>GCRO/SAMP joint Occasional paper published ( <a href="#">Peberdy, 2017</a> )<br><br>Map of the month published ( <a href="#">Siteleki et al, 2017</a> ) | Book chapter published (Peberdy, 2018)   |         |         |
| <a href="#">Economic geography of the GCR</a> |  | Contracting of external authors  | Drafting of book  | Edited book published ( <a href="#">Cheruivot, 2018</a> )<br><br>Map of the month published ( <a href="#">Hamann et al, 2017</a> )                 |         |         |

|   |  |  |  |   |  |  |
|---|--|--|--|---|--|--|
| <a href="#">Township economies in the GCR</a>                   |  |  |  |   | GCRO & UJ Innovation & Inclusive Industrialisation collaboration<br><br>Map of the month ( <a href="#">Matjomane et al. 2018</a> )<br><br>Township economies workshop convened with academics & government officials<br><br>Drafting of provocation  |  |
| Real estate research  |  |  |  | Continued supervising a PhD student in Corporate real estate and others | Article published (Ramantswana, et al. 2019)<br><br>Graduated PhD student in Corporate real estate   |  |
| <a href="#">Methods of regional economic analysis</a>           |  |  |  |   | Project conceptualisation<br><br>Abstract submitted as a potential contribution to the Special Edition on "Urban agglomeration in global and local city-regions" in Cities journal<br><br>Other abstracts submitted for conference presentations<br><br>Three outputs are complete - 1 with comments received from ERSA reviewers, 1 under review in Development Southern Africa, and 1 being finalised for submission to Local Economy journal.<br><br>A Research Brief completed and submitted to ERSA |  |
| <a href="#">Street trader organisations in policy processes</a> |  |  |  | Fieldwork in Gauteng and Ahmedabad conducted                            | Writing of PhD chapters as basis for Occasional Paper  |  |

## **Projects**

### **Gauteng's urban space economy**

This project investigates the distribution of economic activity in the GCR, with a particular focus on cities' spatial forms and how they are affected by changing economic activity. This has involved an inquiry into how the GCR's space economy functions in various categories, such as economic opportunities, constraints and the changing nature of the economy. As such, this inquiry contributes towards the development of effective strategies for government-led spatial intervention in the city-region's economic activity.

### **Trade in the GCR**

This project was completed in 2017 as a series of publications, including occasional papers, vignettes, maps of the month and data briefs, as well as presentations at various local and international fora. The project explored issues around cross-border trading, the informal sector, trade flows in and out of the city-region, and their contributions to the local economy. Some of this research involved partnerships with other institutions, such as the South African Migration Programme (SAMP) at Queen's University, the African Centre for Cities at the University of Cape Town and the University of Eduardo Mondlane in Maputo, and was funded by the GCRO and the Canadian International Development Research Centre.

### **Economic geography in the GCR**

This project, completed in December 2017, was published as a book with a thematic focus on the city-region and its changing space economy, its successes and challenges. The book also explores the polarised nature of the region's economy, where high economic output exists alongside high levels of poverty.

Making a significant contribution to the literature on city-region economies, the book's findings offer potential learning experiences for policy development in other city-regions, especially in the Global South. Contributions – from planners and policy makers as well as academics working in various areas of economic specialisation – were clustered into four thematic areas, namely:

- Theoretical, conceptual, empirical and methodological issues concerning the GCR's space economy;
- Economic geography debates relating to city and economic regions;
- Discourses on internal and external drivers of change in the context of global economic dynamics; and
- Relevant lessons learnt.

### **Township economies in the GCR**

This project examined township economies in the context of the provincial government's policies on the transformation, modernisation and revitalisation of township areas. The main focus was on how government interventions have impacted entrepreneurship in the province. This line of inquiry sparked interest in government and academia, and resulted in

collaborations between the GCRO and the Innovation and Inclusive Industrialisation Unit at the University of Johannesburg.

### **Real estate research**

The health of any city-region depends, among other things, on the health of its real estate sector. As evidenced by the global financial crisis of 2008, crises in the macro-economy are sometimes triggered by imbalances in the real estate market, including overbuilding in the office sector and housing deficits that lead to skyrocketing rental rates and house prices. Such imbalances are typically caused by the absence of rigorous analysis aimed at fully understanding the real estate market system and how it links to the rest of the economy. Work in this project is currently focused on a journal article, submitted for publication, and analysis of data to be procured in 2019/20.

### **Methods of regional economic analysis**

This is an ongoing, multi-year project expected to generate a series of articles looking at (i) regional economic analysis techniques and how they can be used to examine specific questions confronting the GCR; and (ii) facilitated learning with overseas partners (e.g. Prof. Rainer vom Hofe, School of Planning, University of Cincinnati, USA). The envisioned output is a collection of articles published as a monograph.

### **Street trader organisations in policy processes**

Research has shown that street trader organisations play a crucial role in the governance of street trading in cities such as Johannesburg. This project investigated the role of such organisations in urban governance, and involved a comparative study of the three main metro municipalities in the GCR and Ahmedabad in India. Extensive fieldwork was conducted in 2017 and 2018, which included a six-week excursion to Ahmedabad. The project explored the dynamics of street trading as an economic activity for thousands of people in the Global South, in a context plagued with hostility towards the practice.

### **Achievements, impact and reflection**

A number of research outputs were produced from projects conducted under this thematic area. The various publications and collaborations included:

- A multi-authored volume of ten chapters on *The Changing Space Economy of City Regions: Gauteng City-Region, South Africa*. Edited by GCRO senior researcher Dr Koech Cheruiyot, it was published in 2018 by Springer. The book gave birth to new lines of inquiry focusing on micro-analyses of economic trends in the GCR, such as understanding agglomeration in the Ekurhuleni municipality.
- Three journal articles, two book chapters, a data brief, two vignettes, two policy series and three maps of the month.
- Media appearances and presentations, on various platforms, drawing on insights generated from outputs and project work. Four workshops hosted across the projects culminated in various collaborations between GCRO researchers, government officials and other organisations.
- Collaborative research with local partners under the theme 'City-regions' economies'. Research produced so far includes:

- A draft report on 'The performance of tradable services in the Gauteng province' by the Human Sciences Research Council;
- A firm-level survey. Data collection has been successfully completed and analysis is underway towards the production of an occasional paper. Meanwhile, several presentations have been made to the Gauteng Growth and Development Agency's board and staff;
- An interlocking set of firm surveys in Gauteng industrial nodes conducted by the Centre for Competition, Regulation and Economic Development at the University of Johannesburg;
- A partnership between GCRO, the Southern African Migration Programme, the African Centre for Cities and the University of Eduardo Mondlane, which culminated in co-hosted workshops and co-authored papers for the 'Trade in the GCR' project.
- Collaboration between GCRO and the University of Johannesburg's Innovation and Inclusive Industrialisation Unit as part of the 'Township economies in the GCR' project.

## 6.8 Sustainability transitions

### Overall framing

The focus of the 'Sustainability transitions' theme emerged from an earlier project in 2009, which focused on how cities and regions in other parts of the world were responding to the global financial crisis. This project revealed that green jobs and green industry support were becoming a conscious economic development strategy for many regions. Inspired by the shifting global focus and growing evidence of resource limits, this research theme centres on the argument that the GCR will face a crisis in the future (economic, social and otherwise) unless it can find ways to limit the unsustainable use of resources and depart from previous growth paths that externalise costs to future generations.

Routinely externalising environmental costs to other places and to future generations will rebound on our economy in the form of suffocating constraints at unexpected moments (witness South Africa's dramatically rising costs of electricity and water, and the pressing matter of acid mine drainage). By contrast, a society that invests wisely in maintaining green assets and enhancing ecological systems services, one that proactively exploits opportunities in the production of green goods and services, may turn the sustainability challenge into a 'competitive advantage'.

The various projects within this theme build on the research required to support a comprehensive, government-led transition towards sustainability across society and the economy in the GCR. Accordingly, the research focuses on (i) the difficult choices with respect to the political economy that are necessary for such a transition; (ii) the prospects for infrastructure transitions; (iii) resource-security challenges; (iii) green infrastructure; and (iv) the green economy. Seven research projects focused on this theme during the review period, one of which is now complete.

Table X: Activities and outputs associated with the projects in the ‘Sustainability transitions’ theme for the period 2014/15-2019/20.

|  | 2014/15  | 2015/16   | 2016/17  | 2017/18  | 2018/19   | 2019/20   |
|--|--|---|--|--|---|---|
| <a href="#">Metabolic flows and infrastructure transitions</a>                         | Research and stakeholder collaboration   | Attended Urban Met. workshop, Stellenbosch. Research & writing for OC   | - Workshop attended (Sheffield)<br>- Writing towards journal article   | Article published in ERL ( <a href="#">Culwick et al., 2017</a> ).   | - TOR for finalising OP finalised   | - Research partner contracted and research underway                           |
| <a href="#">Green assets and infrastructure</a>  | - Hosted Green infrastructure CityLabs<br>- Commissioned studies were finalised<br>- Journal article published ( <a href="#">Bobbins &amp; Culwick, 2014</a> ) | - Research & writing for report 2;<br>- Commissioned studies finalised (for report 3)<br>- Urbanafrica.net article ( <a href="#">Bobbins 2015</a> )                                     | - CityLab<br>- Research report 2 published ( <a href="#">Culwick et al., 2016</a> )<br>- <a href="#">Green infra video</a> published<br>- STEaPP research stay at GCRO<br>- Presentation at Habitat III (Quito) & others<br>- Journal article published ( <a href="#">Vogel et al., 2017</a> ) | - NDVI MotM ( <a href="#">May 2017</a> )<br>- STEaPP Masters group project on Urban agri received<br>- Research & mapping for Report 3<br>- Conference attended (Resilience for Dev Colloquium, ACC Urban Intl Conference) | - Report 3 editing<br>- STEaPP Masters project converted into OP (by Benn)<br>- Report 2 won Research category <a href="#">SALA Sust Arch &amp; Innov</a> | - Journal article published ( <a href="#">Culwick et al., 2019</a> )          |
| <a href="#">Dimensions of a green economy</a> (Green economy)                          | - Wrote & finalised journal article  | - Journal article published ( <a href="#">Gotz &amp; Schaffler, 2015</a> );<br>- TOR for 2 commissions finalised<br>- Municipal green economy piece commissioned & final draft received | - Work not published because of party political changes at local government level  | - Project on hold  | - Project on hold   | - Project on hold   |
| <a href="#">Water security</a>   | Engaged with Wits Water group  | - Study commissioned and received draft   | - Review of commissioned piece & discussed potential way forward   | - Watershed MotM ( <a href="#">Aug 2017</a> )<br>- Revised commission received   | - Water Security Plan finalised   |   |
| <a href="#">Intersections between disaster vulnerability and sustainability</a> (2015) | - Photo essay published ( <a href="#">Phasha, 2014</a> )<br>- AMD OP editing<br>- Journal article published ( <a href="#">Piketh et al., 2014</a> )            | - AMD Occasional paper published ( <a href="#">Bobbins, 2015</a> )  |  |  |   |   |
| <a href="#">Just sustainability transitions</a>  |  | - Research & writing<br>- Wrote & presented RC21 paper ( <a href="#">Culwick, 2015</a> )  | - Research & planned commissioned studies for report   | - Case studies commissioned<br>- 2 workshops hosted at GCRO<br>- Hosted session at ACC Urban Intl Conference<br>- Culwick began PhD<br>- Research & writing  | - Workshop held with research collective<br>- Received case studies<br>- Research & writing<br>- PhD Fieldwork  | - PhD fieldwork<br>- Research & writing for research report & journal article |
| <a href="#">Gauteng as a long term ecological study site</a>                           |  |   |  | - Framed research & engaged stakeholders   | - Engaged stakeholders  |   |

## Projects

### Metabolic flows and infrastructure transitions

The overall objective of this project is to investigate the prospects for reducing resource consumption and waste flows through the transformation of infrastructure networks in the GCR. The aim has been to trace the throughput of water, energy, biomass (food and non-food), waste and, if possible, other materials resulting from economic and human activity in the GCR, as well as to analyse the infrastructure that conducts flows of these inputs and waste outputs

into, around and out of the city-region. This project has seen the collection of various datasets on waste, energy, food, water and materials, either through the commissioning of experts or through research by GCRO staff.

### **Green assets and infrastructure**

Initiated in 2011/12, this multi-year project examines the current state of green infrastructure (the network of ecological systems and features) in the GCR. The overall objective is to influence the approach to green asset management by assessing the extent to which green infrastructure has been valued by various stakeholders in the city-region, and by demonstrating ways to incorporate it within government budgeting and planning processes. Over the past five years, this project has developed swiftly from the first report, which was published in 2013/14, and worked collaboratively with government, academia and the private sector to enhance the argument for – and further develop the evidence base required – to adopt a green infrastructure approach in the GCR.

### **Green economy**

Green economies have gained a lot of traction in recent years, both locally and internationally, with increasing emphasis placed on a sustainable economic growth trajectory. The overall objectives are to critically review (i) the institutional infrastructure that inhibits or supports green economy transitions; (ii) the status of national, provincial and local government co-ordination of green economy commitments; and (iii) the decision-making processes affecting green economy projects in the GCR. Some of the work has culminated in a paper on the evolution of Gauteng's green economy in the journal *Current Opinion in Environmental Sustainability*. In addition, this project expands on existing green economy work and knowledge by asking what the main urban centres in the GCR in particular are doing to promote green economy growth and the green economy agenda.

### **Water security**

Water security is an issue that will remain high on the GCR agenda for some time. This project aims to unravel water security challenges and includes seeking to understand both the critical biophysical and governance factors at play in the GCR urban water management landscape, with more immediate attention on how to respond to future drought conditions and ways to deal with water quality challenges.

### **Intersection between disaster vulnerability and sustainability**

The objective of this project, which began in 2011/2012 and ended in 2014/15, was to explore settlement vulnerability to environmental hazards and other social influences across the Gauteng province. This project consisted of a series of sub-projects which fell under the theme of sustainability and vulnerability, with a particular focus on the physical environment and the 'locational disadvantage' of settlements exposed to the different environmental risks associated with dolomitic limestone, flooding and mine residues. The findings provided diverse policy insights on the various locational risks associated with settlements and their physical environment. A major output of this project has been an occasional paper on acid mine drainage and the governance thereof.

## **Just sustainability transitions**

This research explores the potential for urban development and infrastructure transitions to meet the growing demand for urban-based amenities while building a more just and sustainable city-region. The project has worked over time to develop a set of case studies exploring the trade-offs between social justice and environmental sustainability objectives. It interrogates how government in the GCR juggles the trade-offs between these two, often opposing, agendas, and begins to unpack some of the complexities inherent in related decision-making processes.

## **Gauteng as a long term ecological study site**

Work at the GCRO on the 'Metabolic flows and infrastructure transitions' project has demonstrated the difficulty in analysing urban ecological systems. The ability to effectively engage with sustainability issues within the city-region requires deeper knowledge and analysis into understanding socio-ecological systems, processes and drivers. A long-term ecological research (LTER) project provides data that will answer questions about the structure and function of urban ecosystems, and contribute to the knowledge base for sustainability in the GCR. This project undertakes activities to better understand what a LTER for the GCR would look like, as well as who the key role-players, contributors and partners are. The research will result in a concept note and plan for developing the LTER. The project has experienced challenges in finding the appropriate stakeholders and government role-players with whom to engage.

## **Achievements, impact and reflection**

The 'Sustainability transitions' theme has been highly productive over the period under review. The majority of the projects have been sustained, with one project completed and two new projects initiated. Altogether, the 'Sustainability transition' projects have resulted in the publication of two research reports (with another at an advanced stage), one occasional paper, a video, a photo essay, four maps of the month, six academic publications, eight other publications and one poster. There have been a number of staffing changes within this theme over the period, which, on the one hand, has delayed the publication of some outputs, but on the other, new staff have injected additional energy and expertise that have greatly strengthened the research and engagement with government within this theme.

As part of the 'Sustainability transitions' theme, we pioneered the GCRO's first CityLab – the Green Infrastructure CityLab. The CityLab was a platform for engagement and knowledge co-production between government, academia and other relevant stakeholders regarding the implementation of a green infrastructure approach in Gauteng. The CityLab was instrumental in guiding the direction of the GCRO's green infrastructure project and is a key example of GCRO's undertaking transdisciplinary research. The GCRO's engagement with government around green infrastructure has been extended through our appointment to help develop a green infrastructure strategy for the City of Johannesburg (CoJ).

During the review period, GCRO researchers have been engaged in issues concerning water security and water governance. Water shortages were experienced in many parts of South Africa during 2018 and as a result of engagements with Gauteng government, the GCRO was appointed by the Gauteng Planning Division to articulate the key interventions necessary to



secure water for Gauteng. The 'Water security plan for the Gauteng City-Region: securing water for continued growth and well-being' was finalised in July 2018.

Relationships with local government and environmental organisations also help ensure that the GCRO's research and data collection are relevant to current issues within government and reach key role-players. In this regard, an ongoing partnership with the Gauteng Department of Agriculture and Rural Development (GDARD), which includes a formal agreement to collaborate on sustainability research matters in the GCR, has proved valuable, resulting in a number of successful collaborations, including:

- Participation at a number of key government meetings and conferences, including the annual Climate Change Indaba and the 2019 Gauteng Poverty and Urban Hunger Eradication Summit;
- A review of the Gauteng Pollution Buffers policy;
- Participation on various project steering committees (e.g. the Gauteng Environmental Management Framework, Gauteng Environmental Outlook and the Use of Sustainable Urban Drainage Systems in Gauteng);
- Becoming a member of the Gauteng Environmental Coordination Forum.

The GCRO has worked together with GDARD on two maps of the month, namely, 'Application of the GPEMF for informing the location of proposed mega-housing projects in Gauteng' (2015) and 'Mapping vulnerability in Gauteng' (2018). The 'Vulnerability mapping' project, which included the spatial mapping of household vulnerability using the Quality of Life data, was one of the more substantial projects undertaken collaboratively with GDARD. This map is part of a wider ongoing study by GDARD into where and how risks from climate change may arise in the GCR. The vulnerability index developed from this study has also been presented to the CoJ to form part of their climate adaptation work.

During this period, we initiated and have since fostered a research collaboration with UCL's Department of Science, Technology, Engineering and Public Policy (STePP). The partnership has included co-organising and hosting a Habitat III Urban Future event (2016), and a session at the ACC International Urban Conference (2018). GCRO and STePP researchers have co-authored a paper published in 2019, and have been working together to replicate the GCRO's CityLab model in London.

The impact of the GCRO's work within the 'Sustainability transitions' theme can best be seen in the update of the work by government and partners. The green infrastructure research resulted in the GCRO's appointment to develop the CoJ's Greening and Green Infrastructure Strategy. The Water Security Strategy for the GCR has had good traction with provincial government, leading to their ongoing interaction with the GCRO on key urban water issues.

## 7. Concluding reflections

The GCRO is uniquely positioned in the research–policy nexus, and this has a number of implications for our staff. The focus and relevance of our attention needs, Janus-like, to be facing in two directions simultaneously, sensitive to the interests and requirements of two very different institutional forms (universities and government), with differing priorities, values and rhythms. The GCRO has to mobilise the skills and strengths of the one to serve the purposes of the other. This enterprise is far from straightforward, and among many other things, any appraisal of the unit’s work must consider how this process of strategic prioritisation, scholarly production, translation, brokerage and engagement has been conceived, given effect and evolved over time.

In summing up our own self-review, we have considered the following audiences for our work:

- Our primary and secondary ‘client base’ (the various agencies of government which make use of our work);
- Our scholarly and peer audiences (in the university and other research sectors), which has been comprehensively covered in Section 4 of this report;
- The sphere of organisations also preoccupied with this domain of work internationally.

We also differentiate between supply-side and demand-side appraisal, distinguishing between what the GCRO itself prioritises and produces, and the direct requests that come to us from our partners in government. We conclude with a reflection on the evolving role of the GCRO as an intermediary organisation.

In approaching this, we have considered in the reviews above both the ‘countable’ and visible productivity of our work across multiple thematic areas, as well as the more intangible considerations of influence, credibility and respect arising from the quality of our work and equally in terms of the trust that has been won in building relationships. These latter considerations are important for brokering relationships with other research partners, but more especially for maintaining our relationships with our government client base. In our (increasing) role as an intermediary organisation, relationships based on trust enable us to gain insight into the context of policy making and governance, and to craft our engagement accordingly. Our credibility and trustworthiness also enable our work to be more readily absorbed while, importantly, our independence remains respected.

Our impact is thus to be understood both in terms of tangible research outputs and visible dissemination strategies, and in the reach and influence we achieve in less visible and measurable forms. While our more ‘countable’ impact has already been detailed in this self-review, the following section provides a reflection on how we engage with key partners and prominent individuals in order to influence thinking and conversations on complex urban issues.

## **Primary and secondary client bases**

The primary audience for our research is the public sector, ultimately across the three spheres of national, provincial and local. However, in the first instance, this means the Gauteng Provincial Government (GPG), which was among the original constitutive partners of the GCRO, followed closely by local government in the form of the Gauteng City-Region (GCR).

Over the last five years, the GCRO has responded to a continual flow of requests to brief the Office of the Premier and various departments within the GPG at strategic and planning levels on the city-region's issues and dynamics. These include giving presentations at the Premier's lekgotlas (strategy-planning meetings), participating in the strategic planning sessions of numerous departments, serving in advisory roles and on steering committees (e.g. on climate change), participating in major provincial initiatives (e.g. social cohesion, economic development and water security management), and participating in formal international delegations (e.g. exchanges with the Emilia-Romagna region in Italy).

During this period, the GCRO has collaborated on environmental research matters with the Gauteng Department of Agriculture and Rural Development (GDARD), and has partnered with the Gauteng Department of Economic Development (GDED) and the Gauteng Growth and Development Agency (GGDA) on research and innovation initiatives. The demand from the GPG has been consistent and ever-growing, and staff have worked hard to keep up with the flow of requests (often at short notice). On those occasions when the requests necessitate expertise beyond our immediate capacity, we then act as intermediaries to access the appropriate expertise from elsewhere.

The GCRO has played a central role in producing several formal frameworks for the GPG, including the Gauteng Water Security Plan and Inclusive Gauteng, the conceptual framework document for the Premier's Social Cohesion Champions. The GCRO also provided a number of summative reports for the GPG's five-yearly End of Term Review process in 2018/19.

The partnership with the GPG has often led to our playing an intermediary role within provincial government itself by convening meetings between departments and individuals in order to drive key projects forward. A notable example here is the approach towards the development of a Regional System of Innovation whereby the GCRO sets up consultative and planning meetings, both among GPG departments and with external actors. Recently, the national Department of Science and Technology has noted these efforts and provided their backing for work to continue in this direction. This intermediary role is wholly dependent on the relationships of trust that have developed over time between the GPG and individuals within the GCRO.

Our impact on government is informed both by what we do and by the government's ability to engage with our data and research. It is clear that the appetite for the GCRO's input is most strongly articulated at the level of political leadership and senior technocrats, and the extent to which influence filters through to operational decisions and performance is not always clear. The Premier's referencing of GCRO work in his public speeches and strategy-planning lekgotlas is encouraging, but further study is needed to assess the extent of our influence's penetration. For example, it would be valuable to evaluate the extent to which various departments have absorbed the GCRO's conceptual framework on social cohesion and adapted their respective strategies accordingly, as the Premier has requested.

At the level of local government, the demand for GCRO support has come mostly from the three metros (Johannesburg, Tshwane and Ekurhuleni) and rather less from the other municipalities. Engagements have often been focused on particular areas or policy domains (notably service delivery and transport issues). The trend has been for requests to come from the executive level and from planning departments. In most cases, the preference is for high-level overview conclusions and only seldom for whole datasets, such as the Quality of Life (QoL) data. Sometimes the QoL data requests come from contracted consultants who have the technical skill to engage with the content. It seems clear that there is considerable room to grow the capacity of departments (at both provincial and municipal levels) to work with evidence – both in commissioning research and in using it effectively to inform decision-making. The GCRO has offered ‘data-lab’ workshops to some metro partners, but our capacity to do this at scale is very limited. We are thus continually challenged to examine how we release our research in easily digestible ways, and innovation in dissemination is a constant preoccupation (see our reflections in this regard earlier in this report).

### **The global audience**

Given that the ‘urban turn’ has now been firmly embedded in global policy frameworks, such as in the Sustainable Development Goals and the New Urban Agenda, we must reflect on the GCRO’s participation in these spheres.

The GCRO has consistently taken the opportunity to present its work at the international fora prioritising urban concerns, and we are pleased to note that several global multilateral organisations are now taking the initiative to profile the GCRO and its work as a valuable exemplar of urban policy research more broadly. The GCRO model (partnerships between government and universities, but with consistent core funding from the public sector) is celebrated, as is the granularity of the QoL survey and its utility for spatially-specific interventions. Recently, three such organisations have showcased the GCRO in this way. These include:

- UN-Habitat – Global Urban Observatory (Nairobi 2019);
- UCLG – Metropolis (Barcelona 2019); and
- European Commission – Joint Research Centre (EIPM Master Classes, Pretoria, 2018; Nairobi, 2019).

On the academic front, the GCRO has worked with a number of universities internationally, and some of these collaborations have developed into larger partnerships. Together with Prof. Phil Harrison (Wits University), Ivan Turok (Human Sciences Research Council) and Patrick Heller (Brown University, USA), the GCRO works with a collective of urban research agencies across key BRICS (i.e. Brazil, Russia, India, China and South Africa) city-regions to conduct research on complex city-regions’ governance models.

Collaboration with UCL’s Department of Science, Technology, Engineering and Public Policy (STeAPP) resulted in a number of activities highlighted in the ‘Sustainability transitions’ section above, with continued collaboration that includes the profiling of the GCRO model as an exemplar of effective urban observatories. Research partners from other European universities are also involved in a number of GCRO initiatives.

A notable point here is the absence of collaboration with researchers in other African cities, a deficit which should be addressed in the future.

### **The supply-side contributions of the GCRO**

As an independent research agency, the GCRO needs to be alert to both the current short- and medium-term preoccupations of government, as well as the medium- to longer-term view on urbanism more broadly. In other words, the GCRO has a responsibility to reflect (and contribute to) wider global theorisation around urban issues, especially in relation to the urban challenges of the (near) future and how the ‘urban dividend’ can be optimised in the longer run. These themes may not be strong priorities on current local government radars, but they are considerations likely to be vital in the future.

Previous examples of the GCRO’s foresight in this regard include sustainability-related issues, where the GCRO’s work has subsequently been taken up by the GPG or the metros – for example, water security, food security and green infrastructure.

In particular, the GCRO has invested in a number of research themes that reflect on how urban societies make sense of their spatial contexts, develop a sense of belonging, take ownership of the resources available to them, and strive for social mobility in one form or another. In a city-region with deep socio-economic inequality and high levels of poverty, understanding the potential for societal change and individual social mobility is the pre-eminent constitutional priority. One body of urban theory emphasises ‘place-making’, and the way neighbourhoods (with their physical and social infrastructures) enable or constrain opportunity and the formation of agentic social identities. Put slightly differently, how do the urban spaces of Gauteng enable South Africans to re-invent themselves, whether this is an escape from poverty, a retreat from racist tropes, or resilience in the face of change?

So, while the GCRO invests heavily in the vital priorities of economy, transport, housing and governance, we work also to understand how societies make and re-make themselves in urban contexts, how the particularities of spatial economies provide affordances or blockages to human fulfilment, and how public policy plays a role in shaping these contexts. Significant among these themes are our studies on social cohesion, neighbourhoods, spatial imaginaries, racism, parenting, graffiti and streets. All of these approaches to reflecting and modelling social fabric and urban change have important implications for future policy and planning aimed at regenerative and fulfilling urban societies.

Another way the GCRO builds the narrative and imaginary of the city-region is through the continuing production of shorter outputs that accumulate in the ongoing conversation about Gauteng as a city-region, rather than a set of adjacent metros and municipalities. These outputs include our maps of the month, vignettes, data visualisations, story maps, presentations, datasets and others. Many of these get picked up and reused, sometimes long after they are first published on our website and disseminated across our distribution list. Each of these productions reflect our broader research programmes, but often also constitute a mini-research exercise on their own, as varying data sets are brought into conversation with each other to produce a pointed insight about one issue or another.

The urban agenda in South Africa has increasingly made itself apparent in the national agenda, and in the last few years there has been a notable increase in the levels of engagement with

national government. The GCRO has recently been able to contribute to the thinking on the role of city-regions (working with colleagues from the GPG) in the drafting of a chapter on this theme for the draft Five-year Implementation Plan for the National Development Plan. Further, we are working with the Department of Science and Technology towards developing a regional system of innovation in Gauteng, hopefully as an exemplar for similar RSIs elsewhere in the country.

### **Diversifying modes of dissemination**

Another way of viewing our impact is through the number of media requests that the GCRO receives. The section on GCRO outputs has shown the steady increase in requests from the media, not only for GCRO data and maps, but also for insights into key trends across the city-region.

While maintaining and measuring our academic paper outputs and impacts is important (as detailed in Section 4), it is a narrow representation of the relationships we maintain with academia. Our ability to partner with university departments, leading academics and grow the pool of research talent is important. The GCRO physical office space is specifically set up to allow for visiting researchers, PhD and postdoctoral students to spend time with us and engage with our work. Many GCRO research staff are actively involved in teaching and supervising postgraduate students, many of whom make use of GCRO data in their research. Some of these students have gone on to join the GCRO as interns or full-time staff. In recent years, GCRO staff have taught postgraduate classes locally at the University of Johannesburg, Wits University, the University of Pretoria, and internationally at the Institute for Housing and Urban Development Studies (Rotterdam) and Strelka (Moscow).

The ability of the GCRO to have reaching impact on our stakeholders and partners is dependent on our ability to stay at the forefront of critical issues and the dynamics of the urban fabric in the GCR. It is also about maintaining a balance between longer-term deep research into key thematic areas and meeting shorter-term requests from government by means of our research and knowledge bases. This gives rise to the question of how we use the GCRO's position to strengthen the recognition of, and support for, evidence-based policy research. The GCRO could not have the impact it does without the consistency of funding from the GPG and its continued support for the independence of our research and insight.

### **In conclusion**

The 2019 State of the Province Address by Premier David Makhura (1 July 2019) identifies the following priorities:

- Economy, jobs, infrastructure;
- Education, skills revolution and health;
- Integrated human settlements and land release;
- Safety, social cohesion and food security; and
- Building a capable, ethical and developmental state.

The GCRO has various research outputs focused on elements of each of these priorities, including proactive as well as requested themes of work. The trick will be to anticipate new areas of research to contribute to the GCR, such as: complex coalition governance in metros and municipalities; expanding public information strategies to disseminate research outputs

to all GCR residents; the inclusion of minorities in all research projects and methodologies (e.g. children, young people, women, LGBTIAQ+ people and refugees); issues of GCR leadership and management models; democratising data access; tackling wicked problems that may be considered national but manifest locally, such as transitioning to a green economy and tackling climate change; healthcare and wellness; and education. In this year of strategic planning, the GCRO will need to refine and streamline its research priorities in dialogue with its partners in government.

As South Africa's most populous and economically diverse agglomeration, the Gauteng City-Region in many ways is where South Africa's post-apartheid society re-invents itself most visibly. The successes and failures of the GCR have both material and symbolic consequences for our society more broadly. The fact that the leadership figures of the provincial government have endorsed the value of a credible and independent knowledge base for effective governance, and have steadfastly supported the GCRO's role in this regard, is an important signal for urban governance more broadly in the country. Recent acknowledgement in this direction (especially via the Department of Planning, Monitoring and Evaluation) is intended to influence national approaches, and the need to reproduce the GCRO model in other regions has been explicit.

As the governance of the city-region grows in complexity, there is pressure on the GCRO to expand our scope of work, build our network of collaborators and develop methodologies of networked knowledge production. Although some progress has been made in these areas, much more is expected from the GCRO than can currently be delivered in terms of specialist capacity, and the financial and human resource constraints in this small organisation. In turn, capacity-building of various GPG departments, and other partners, to interact with GCRO-generated data remains a challenge to be addressed. A number of challenges that the organisation grapples with have been outlined in the introduction, and in the various sections of this report. In order to continue delivering on this important work, the GCRO will need to consolidate the organisation's gains, and continue to strengthen a robust organisational structure that optimises research output efficiencies and the reach of its influence.