GCRO Gauteng City-Region Observatory
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2 **The Gauteng Government Barometer**
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3 **Some reflections on methodology from the FIFA panel survey**
This study was the first longitudinal research undertaken at GCRO and represented an interesting learning curve on this form of research.

4 **Trade and the GCR**
The GCRO is embarking on a two-year project, to examine trade flows into and out of the GCR and establish their potential contribution and costs to the GCR economy.

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The visit was an intense methodological and benchmarking exercise which informed the GCRO's closely linked projects on metabolic flows and green assets and infrastructure.

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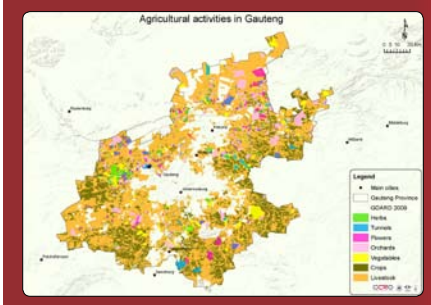
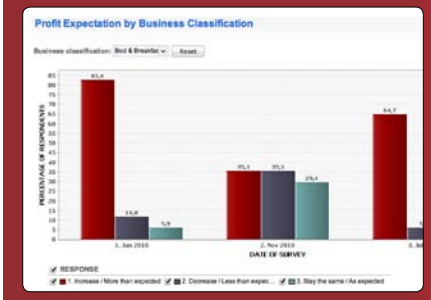
STAFF profile



MAP of the month



GRAPH of the month

1 | New GCRO research projects approved for 2012/13 – *Graeme Gotz*

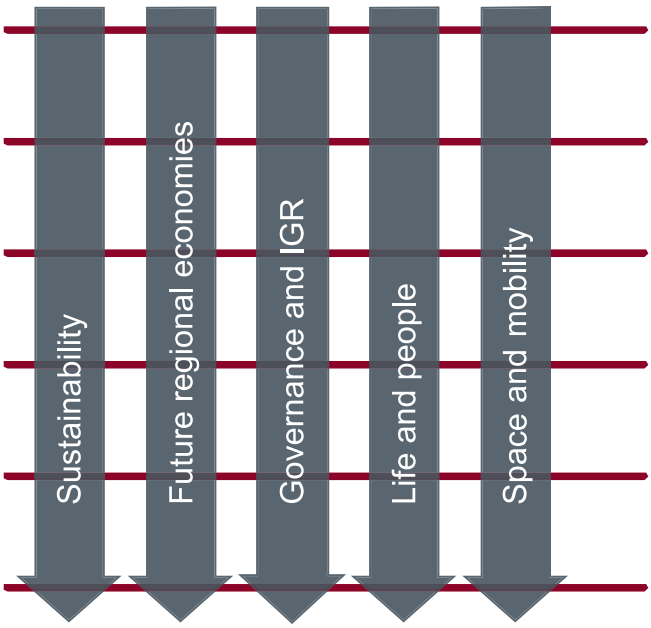
A number of our projects involve either partnerships with or commissions to academics from both UJ and Wits (and occasionally other universities).

On 29 March the GCRO Board approved projects and budgets for the April 2012 – March 2013 financial year. The decision confirms an array of exciting new research projects for the second year of GCRO's three-year strategic plan.

GCRO was formally established in late 2008. Over the last three years we have concluded a variety of large and small-scale projects, some requested by government, others of a more applied academic nature. Some of the most noteworthy have included:

- Building on a study to benchmark city-region responses to the unfolding economic crisis, completed late 2009, the design of a Developmental Green Economy Strategy for Gauteng, completed January 2010. This was followed up in 2011 with the development of a comprehensive Green Strategic Programme for the province;
- The 2009 'Quality of Life' survey, with 6,600 respondents from across the Gauteng City-Region (GCR);
- A nation-wide study into civil society responses to xenophobia, working with partners from the Universities of Johannesburg, KwaZulu-Natal, and the Western Cape;
- Working with technical expertise from the Wits Centre for Software Engineering, the design of an interactive GIS website;
- The development of an indicator-based interactive tool to determine 50 Priority Wards in the province. This was launched as an interactive web-based viewer in early 2012;
- Working with the Ahmed Kathrada Foundation, a multi-author study into race, identity and non-racialism, with authors responding to insights from 18 focus groups;
- A FIFA Soccer World Cup panel survey, with some 150 traders surveyed three times in June 2010, November 2010 and mid to late 2011;
- On behalf of the Gauteng Provincial Government, research support to the Paris-based Organisation for Economic Co-operation and Development in order to produce an OECD Territorial Review of the GCR;
- A first State of the GCR – an interactive online- and CD-based review in ten sections.

In March 2010, the Board approved a three-year strategic plan which builds on this foundation. In terms of this plan our applied research work is focused into five thematic areas, with a sixth area, 'data collection, analysis and visualisation', cutting across the others (see figure below).



- Regular, extensive 'Quality of Life' survey for whole GCR
- A series of panel studies (repeat visits to the same respondents)
- Spatial data representation through GIS, GIS analysis and map-innovation
- Other creative data-visulaisation techniques
- Rigourous and systematic benchmarking with other regions
- Other data innovations, including mining and merging of databases

Various projects under this plan were already started in 2011/12, and 2012/13 sees the continuation of some of these, and the initiation of others. Interesting current projects include:

- Under the 'Government, governance and IGR' theme, a project on Higher Education in the city-region, as well as new initiatives to develop a government barometer, and to investigate the idea of a metro-form of government;
- Under 'Future regional economies', a new project on trade in the city-region, with a special focus on small-scale cross border traders;
- Under 'Life and people', projects on poverty and inequality in the region, and on the politics of identity and the implications for social cohesion;
- Under 'Sustainability', projects on metabolic flows and infrastructure transitions, green assets and infrastructure, and settlement vulnerability and risk;
- Under 'Space and mobility', a new project to investigate the urban peripheries of Gauteng, and another to investigate options for long-range spatial modeling.

A full description of all our projects, listed by theme, can be found on our website, at http://www.gcro.ac.za/projects/by-theme

While GCRO is not a funding agency, our mandate is to use the resources we get from government to leverage the best academic expertise. A number of our projects involve either partnerships with or commissions from academics from both UJ and Wits (and occasionally other universities). We welcome approaches to work together on any of the projects listed.

GOVERNMENT

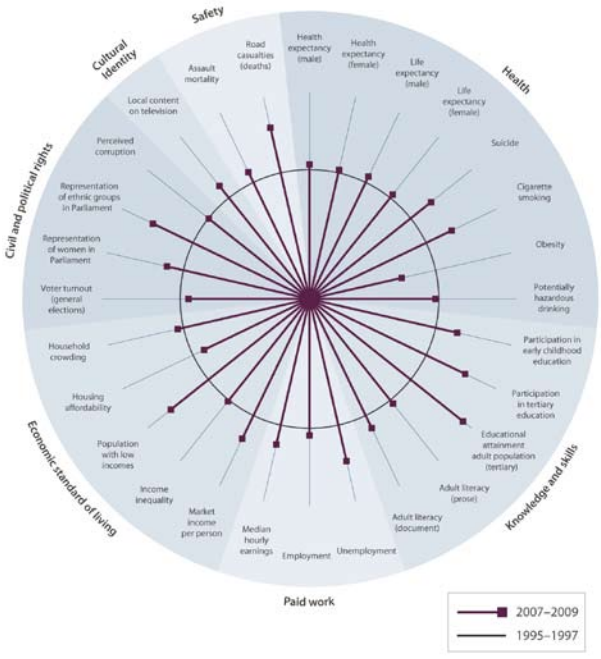
2 | The Gauteng Government Barometer – *Darlington Mushongera*

In 2012/13 the GCRO will develop and publish the first ever Gauteng Government Barometer (GGB).

Monitoring is an important element for measuring government performance, societal progress and levels of development. In 2012/13 the GCRO will develop and publish the first ever Gauteng Government Barometer (GGB). The Barometer will link to a repository of datasets reflecting on a range of sector-specific indicators. This linkage will enable an automated update of the indicators as and when new and more recent data become available. These datasets will be compounded into a web-based visually-interactive device that displays the overall state of the province to the public in a manner that is easy to view and interpret.

The Barometer attempts to provide a composite picture that will assist government and citizens to quickly and easily identify those sectors that are performing well and those that are underperforming. The final output will be an interactive visual tool representing key development trends in an easy to understand format, based on selected indicators. The Barometer will link to various datasets which could provide an automated update of results as it becomes available, reflecting on a range of sector-specific indicators. Each sector will be populated by the indicators in the form of spikes (similar to spokes on a wheel) designating the value of the indicator at the time that it is viewed. The device will also be designed to provide narrative information on each sector and indicator. While the datasets may be obtained fairly easily from a variety of publically accessible sources, the device itself will take time and resources to design and become functional. The first GGB will be published at the end of September 2012. Once produced, the Barometer will be updated annually. The process of exploring the various design options is already underway.

Example of what the Barometer may look like



Source: Social Report 2010, Ministry of Social Development, New Zealand, http://socialreport.msd.govt.nz/documents/the-social-report-2010.pdf

For further queries on this work, please contact Mr. Darlington Mushongera at darlington.mushongera@gcro.ac.za

LIFE & PEOPLE

3 | Some reflections on methodology from the FIFA panel survey – *Annsilla Nyar*

This study was the first longitudinal research undertaken at GCRO and represented an interesting learning curve on this form of research.

Dr. Danny Jordaan, now special advisor to the 2014 World Cup in Brazil, opening the Sport and the City conference

An art exhibition showcasing the 2010 FIFA World Cup

GCRO's interest in the 2010 FIFA Soccer World Cup was about assessing the extent to which high expectations for economic development could be fulfilled for 'ordinary' South Africans who needed the boost that a mega-sporting event such as the World Cup could offer. Our longitudinal study into the impact of the World Cup on small and micro-scale traders in Gauteng presented an opportunity to creatively design the kind of research instrument that would do justice to the complex questions we intended to address.

Being well aware that longitudinal research can often be costly and time-consuming, a small team at GCRO got together to brainstorm the methodological approach best suited to the research. One of our most important methodological challenges involved ensuring continued access to a highly mobile cohort (small-scale businesses trading at the lower end of the market, i.e. street traders) for all the three phases of the survey. Our team wondered how we would track this cohort longitudinally as respondents that cannot be easily located on formal databases or small business records anywhere in the country, nor do they remain spatially stationery over time. We were mindful of the challenges of both maintaining contact with the same group of respondents and sustaining their motivation throughout the study. There was especially a need for respondents to be comfortable with the research team, particularly in terms of our language proficiency.

We wondered whether panel surveys would be enough to fully draw out all the research issues. Ideally we wanted our approach to integrate a mix of methodologies while still being manageable for a very small team of researchers. We were also facing some formidable time pressures given that the World Cup was due to take place within months of the start of the project. We had to work fairly quickly in order to design an effective methodology and begin conducting the research before the commencement of the event.

The GCRO team eventually decided on a three-part survey. The first part was a baseline survey of 200 respondents timed to take place just before the FIFA Soccer World Cup in order to measure expectations. From that initial baseline study conducted in June 2010 we were able to trace a group of 150 respondents for the second and third survey, which took place in November 2010 and July 2011 respectively. The selection of respondents was based on their willingness to participate in the research for the entire duration of the study, as well as their stated intention to stay in Gauteng regardless of the World Cup. This strategy was felt to be an adequate insurance against respondents leaving Gauteng and/or dropping out of the study.

We decided on a creative combination of methodologies that included panel surveys, in-depth qualitative interviews and participant observation. Our intention was to try to understand the respondents as fully as possible. However, the lead researcher for the project, Dr. Sizwe Phakathi, left GCRO soon after the first phase of the research and we were unable to complete all the qualitative research to the extent that we had planned. We were able to track respondents, but not without complications, throughout the different phases of the research. One particular logistical challenge was that the final phase of the survey ended up taking place about 14 months after the end of the World Cup, which was slightly later than we had originally planned.

This study was the first longitudinal research undertaken by GCRO and represented an interesting learning curve for the undertaking of this form of research. It also reiterated the importance of a focused and well-planned methodology in order to ensure the success of a complex research project.

Some of the results of the research were presented at the 'Sport and the City Conference', which was co-hosted by GCRO and the School of Architecture and Planning at Wits and the Johannesburg Development Agency (JDA), on 26 and 27 March 2012. More details are available at: http://www.gcro.ac.za/news/gcro-discusses-impact-world-cup-sport-and-city-conference or http://sportandthecity2012.blogspot.com while a GCRO vignette of the Economic legacy for micro-traders can be accessed at: http://www.gcro.ac.za/vignette/2012/fifa-2010-economic-legacy-micro-traders

For further queries on GCRO's 2010 FIFA World Cup research, please contact Ms. Annsilla Nyar at annsilla.nyar@gcro.ac.za

FUTURE ECONOMIES

4 | Trade and the GCR – *Dr. Sally Peberdy*

The GCRO is embarking on a two-year project, to examine trade flows into and out of the GCR and establish their potential contribution and costs to the GCR economy.

Long distance taxis lining up

Traders in Johannesburg CBD

Trucks trundling through GCR

Hat stall – Pretoria

The GCRO is embarking on a two-year project, Transitions to a future economy: Trade and the Gauteng City-Region. The objective of the project is to examine trade flows into and out of the GCR and establish their potential contribution and costs to the GCR economy. In 2012/13 the project will focus on formal, large-scale, cross border trade flows and small and medium enterprise (SME) cross border trade of the GCR with the rest of Africa, concentrating on Southern African Development Community (SADC) nationals involved in such trade. In 2013/14 the research focus will shift to intra- and inter-provincial trade with the GCR.

Trade in goods makes a significant contribution to the economy of South Africa and the GCR. This is reflected in the strength of the retail and wholesale sector as well as the manufacturing sector of the Gauteng province. Research on SME cross border trade and the SADC suggests that the terms 'small' and 'medium' in SME mask the significant aggregate contribution made by SADC SME traders to the Gauteng economy in the retail, wholesale and hospitality sector, as well as manufacturing and possibly agriculture. Furthermore, tourism data show that of the five leading countries in terms of direct spend by visitors to South Africa (many of whom are traders buying in Gauteng) four were SADC countries – Mozambique, Zimbabwe, Lesotho and Swaziland.

The research will provide information to policy makers on the shape of trade in the GCR, the extent of the spatial reach of the economy of the GCR, as well as how to maximise future opportunities presented by trade to the key retail and wholesale, hospitality, manufacturing and transport sectors. These sectors all provide opportunities to expand job creation and entrepreneurial opportunities for residents of the GCR, including those with a lower skills base. The study will also contribute to the academic and theoretical literature relating to conceptualisations of city-regions as well as that exploring SME cross border trade. It will also provide opportunity for comparisons with other city-regions.

The project will over the next few months explore the extent of formal trade taking place with the GCR, including:

- the geographical extent of trade and transport networks;
- the volume and primary sectors of trade; and
- obstacles to and opportunities for trade.

In the realm of SME trade it will examine:

- the spatial extent of trade and transport networks;
- types of goods;
- where goods are bought;
- use of the retail, wholesale and hospitality sectors;
- relationships with the informal and formal sectors; and
- obstacles to and opportunities for maximising benefits of SME trade for the future GCR economy.

For further queries on this work, please contact Dr. Sally Peberdy at sally.peberdy@gcro.ac.za

SUSTAIN ABILITY

5 The state of GCR data on green assets and infrastructure – *Alexis Schäffler*

Preliminary findings from the GCRO's digital green space data collection

"Green infrastructure challenges popular perceptions about green-space planning and protection. To many people, open space is simply land that is not yet developed, and green space refers to isolated parks, recreation sites, or natural areas…Green infrastructure emphasizes the importance of open and green space as part of interconnected systems that are protected and managed for the ecological benefits they provide".

(Benedict & McMahon, 2006: 1-2)

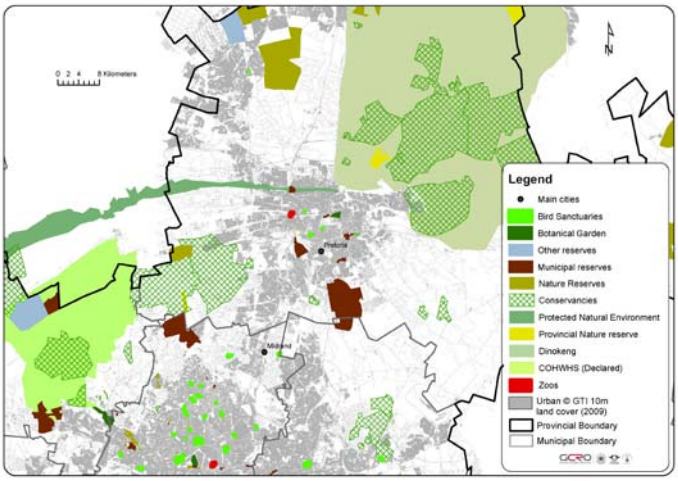
The GCRO's three-year project (running from April 2011 to March 2014), entitled Green Assets and Infrastructure, analyses the state of our green infrastructure and whether this infrastructure and its services are being adequately recognised as equivalent to hard engineered, bulk infrastructure. One of the key steps in such an analysis is to assess the existing knowledge and data relating to green assets held by official custodians of our ecological assets and networks. The GCRO's digital green space data collection exercise set out to answer this question by identifying all publicly available digital spatial data on green spaces in Gauteng and its key urban nodes. In conjunction with EcoGIS the GCRO has collected and collated into a set of data layers, the most recent available green space data in the GCR.

Key findings emerging from this intensive data collection exercise are the existence of a large degree of data irregularity across different municipalities in terms of reporting on the one hand, and large gaps in the data on the other. Responding to these challenges, the research team developed a categorisation of green infrastructure data to provide a new basis for conceptualising and visualising the spatial dynamics of the green assets as infrastructure networks in the GCR. Armed with this new set of data, the GCRO created a series of original maps showing the region as having a set of interconnected ecological and biophysical systems. Importantly, this provides an alternative way of conceptualising the functional set of networks that sustain our urban form in the GCR. While the GCR's urban core is often perceived as consisting of largely built-up, impervious infrastructure, networks of green space constitute major elements of our landscape that should be sustained and remain connected, or be re-connected retrospectively. Maps such as the ones presented here are laying the foundation for the GCRO's envisaged State of Green Infrastructure Report, which will identify green infrastructure components, their state and quality, and the processes in place or needed to enhance connectivity between them.

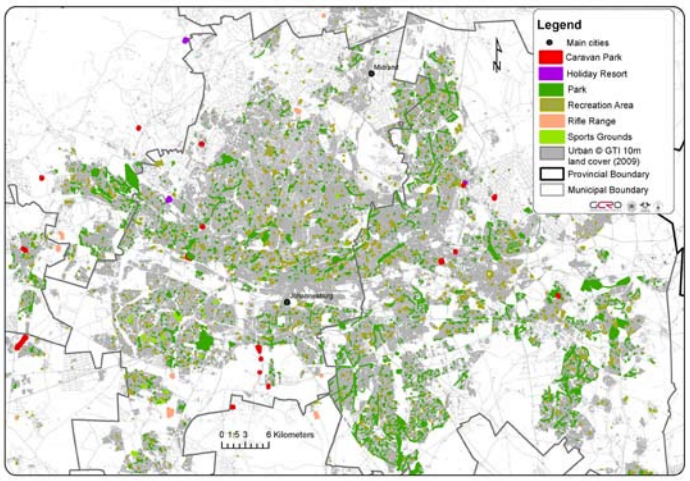
The figures below show public open spaces in the area known as the Witwatersrand. The parks are formally developed and maintained, while recreation areas may be parks or open spaces that are designated for public use but not necessarily developed or maintained.

For further queries on this work, please contact Ms. Alexis Schäffler at alexis.schaffler@gcro.ac.za

Nature areas in central and northern Gauteng City-Region



Public open spaces in the Witwatersrand



Data sources for both maps: Ekurhuleni Metropolitan Municipality Corporate GIS (2012); Johannesburg City Parks (2012); City of Tshwane (2012); West Rand District Municipality (2012); Randfontein Local Municipality (2012); Merafong City Planning and Environmental Management (2012); GDARD (2012); SANBI (2012)

SUSTAIN ABILITY

6 Exploring data needs for metabolic flows assessment in the GCR – *Dr. Josephine Musango*

Our Metabolic Flows research has now taken a major leap forward with the completion of four scoping studies in May 2012 into water, energy, waste and food/biomass.

In mid-2011, building on prior work towards various green strategies for Gauteng, GCRO embarked on a multi-year and multi-phase study into Metabolic Flows and Infrastructure Transitions in the GCR. The project aims to quantify the resource inputs and waste outputs flowing into, through, and out of Gauteng. Further, it investigates how transformations in infrastructure networks and urban forms might help improve the total quantum of these flows that serve our economy, enhancing the long-term sustainability of the region. This research has now taken a major leap forward with the completion of four scoping studies in May 2012 into water, energy, waste and food/biomass respectively.

Three of these scoping studies, namely water, energy and food/biomass flows, were done internally by GCRO researchers. The fourth study on waste flows was commissioned from a consortium made up of Reid Consulting, the Palmer Development Group (PDG) and The Green House. The four studies sought to determine the availability of appropriate data for each metabolic flow. They examined current institutional and infrastructural arrangements and assessed the feasibility of sourcing information from a range of role players. Together they lay the foundation for an intensive data collection phase that will take up much of the next year. This, in turn, will enable the construction of various models to quantify and determine trends within current and future metabolic flows.

Each of the scoping studies provides interesting insights into what data are available and how it should be collected. For example the water study found that data on potable water supply and use should be available from the Rand Water Board and individual municipalities. However, it will be a challenge to combine this with data on naturally-occurring water sourced from within, and flowing into, through and out of the catchment areas crossing Gauteng, as well as data on how the two systems connect at the points of wastewater outflow back into the natural system.

Originally, the intention was to have separate scoping studies on biomass and food. The scoping exercise determined that it would be better to analyse food as the major component of biomass, as this would align our data collection approach with established methods used internationally for economy-wide material flow analysis. The study also brought to light the availability of remarkable food production data from a 2009 GDARD census of agricultural fields in the province (see 'map of the month' in this newsletter for more detail).

The waste scoping study systematically details the complex institutional architecture of waste management, in everything from household domestic waste to hazardous waste. It concludes that waste data on even simple flows may be difficult to collect. Some of the difficulties include for example the National Waste Information System which is being reconfigured, which has data that is both sketchy and outdated. Furthermore, access to information on private sector production of waste is likely to be restricted by recent Competition Commission rulings on the sharing of propriety data.

Availability of reliable data remains fundamental in undertaking any rigorous metabolic flows assessment. Collectively the scoping studies clarify the difficulties that will be faced in data collection on key flows in the next phase of our work, including data scarcity, incompatible data from different sources even within the same flow, and complex issues such as the approriate geographical scale of analysis, as well as the correct 'system boundary' at which to measure inflows and outflows. These challenges are not unusual in urban metabolic flows analyses. Indeed, such complications are cited by most researchers who have attempted quantitative analysis of this nature in the past, and metabolic flows science has developed various techniques to compensate for data-gaps in the construction of dynamic system models. This was a key focus of GCRO discussions with experts in the field during a recent research visit to MIT, an account of which is given hereafter.

For further queries on this work, please contact Dr. Josephine Musango at josephine.musango@gcro.ac.za

An example of elements of energy metabolic flows (Source: GCRO)

SUSTAIN ABILITY

7 GCRO research visit to MIT, Virginia Tech and New York City

– Alexis Schäffler & Dr. Josephine Musango

The visit was an intense methodological and benchmarking exercise which informed the GCRO's closely linked projects on metabolic flows and green assets and infrastructure.

Senior researcher, Dr. Josephine Musango and researcher, Ms. Alexis Schäffler recently returned from a three week research visit to the United States (US). The visit included interactions with the Massachusetts Institute of Technology (MIT) in Boston, Virginia Tech in Washington D.C., New York City's Department of Environmental Protection, and other leading policy and research units in selected cities in the US. It was an intense methodological and benchmarking exercise which informed the GCRO's closely linked projects, Metabolic Flows & Infrastructure Transitions, and Green Assets and Infrastructure, both of which are detailed in the previous two items of this newsletter.

We spent the first week of the visit with leading international scholar and expert in the study of urban metabolism, Professor John Fernandez in MIT's Department of Architecture: Building and Technology Programme. Professor Fernandez and his team of Masters and Doctorate students are involved in intensive investigation of various aspects of urban metabolism for specific regions such as water-stressed Singapore, and ancient civilizations such as Caral, in Peru. We presented some of our work to date to a group of MIT graduates who are interested in designing more sustainable urban metabolisms. We also brainstormed the applicability of specific methodologies for a context such as the GCR which relies heavily on its hinterland for key urban resources. One of the key insights for data collection, which is the next phase in our metabolic flows work, is how urban metabolism work could be most effective in the face of data scarcity and complexity. In this regard, key methodological highlights from the research visit include:

- Utilising generally available data such as population, gross domestic product, and population density, to explain the typology of an urban region;
- Relating data to space and locality and utilising information on the urban form, to estimate urban metabolism;
- Using household inventories data, which includes products and consumables, collected through a bottom-up approach, in order to estimate material flows thereon;
- Using dynamic modelling approaches, particularly systems dynamics, to assess specific problems relating to specific material flows;
- Inter-disciplinary collaboration is key to a project of this nature and requires input from experts in, for example, architecture, industrial ecology, engineering, ecological economy, political ecological and urban ecology.

Ms. Alexis Schaffler giving a talk to researchers at Virginia Tech, Washington DC

Dr. Josephine Musango giving a talk on to MIT PhD students taking the course 'Designing urban metabolism'

Our time with Professor Fernandez and his team showed that while predicting resource intensity is the primary point of enquiry for urban metabolism studies, the key 'sustainability' questions are more often than not rooted in political-economic dimensions of infrastructure transitions. This begs the question as to why transitions are not occurring if we already know that our resource use and infrastructure choices are unsustainable.

After Boston, we visited a number of US cities involved to varying degrees in implementing green infrastructure programmes and plans. While in Washington D.C. and New York City, we met with Federal Agencies involved in the US Green Capitols Programme, the Partnership for Sustainable Communities, New York's Department of Environmental Protection and the US Conservation Fund, to discuss models for funding, implementing and designing green infrastructure in pressurised urban environments. A noticeable trend is the role of public-private partnership models for engaging communities in green infrastructure implementation/development, which is then sustained through ownership of on-site projects such as bio-infiltration and rainwater gardens. Importantly, the relative success of green infrastructure planning in the US has been the legislative stimulants, though their federal Clean Water Act (1972); and while the focus is mainly on storm water, there is a major fiscal and regulatory incentive for cities and local communities to invest in alternative infrastructure for water problems.

A key player in broadening the green infrastructure dialogue in the US and internationally is Virginia Tech, with whom we spent a week comparing research and insights. Virginia Tech's Dr. Courtney Kimmel is part of an international research team facilitating a more tangible community of practice in the field of green infrastructure. With a particular focus on the BRICS countries, this knowledge network finds particular purchase in developing countries where infrastructure demands need to be met with a new generation of infrastructure that is more sustainable and connected to the ecological functionality of landscapes.

SUSTAIN ABILITY

8 Flood lines and flood hot spots in Gauteng – *Maryna Storie*

The GCRO collected data on flood plains, flood hot spots and flood danger areas in the Gauteng province.

As have been alluded to elsewhere in this newsletter, one of the GCRO's key mandates includes collecting and making available data that may not have been available or accessible previously. One such data category is the visualisation of flood prone areas across the GCR. The GCRO therefore undertook a systematic data collection effort over several months in late 2011 and early 2012, collecting all the available digital spatial data on flood plains and flood hot spots in the Gauteng province. This is significant in that this data has historically been collected separately by different departments or units within municipalities, and never before collated and combined to give an integrated overview across the province.

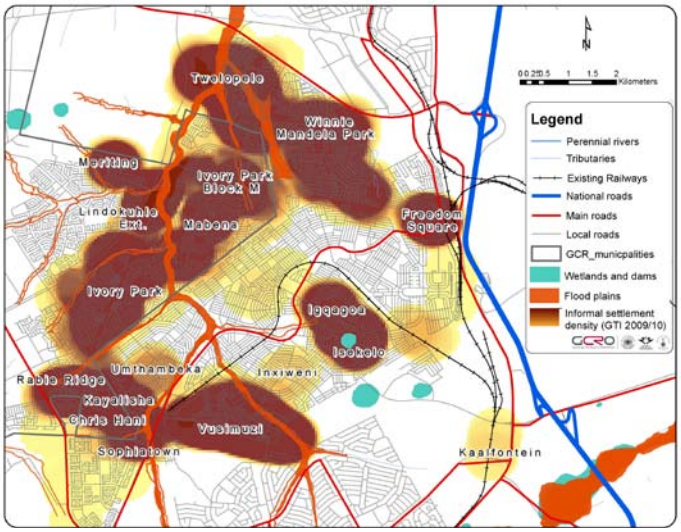
The data originated from a wide variety of sources and was captured using different Geographic Information System (GIS) methods. The GCR brought the datasets together as a compilation of separately generated datasets, rather than as one spatial data layer. This also means that the data are not of equal quality or quantity across the GCR. For example, the flood line data for metropolitan municipalities were generally derived via engineering-driven hydrological modelling processes which included detailed analysis of the topography, flood history, rainfall, and runoff regimes of areas that could be as small as stand-level, but may go as far as covering and entire region within a municipality. Depending on the requirements of each municipality, these flood lines have been delineated as 1-in-50year flood lines, or 1-in-100year or 1-in-200year indicative flood lines.

On the other end of the scale, flood hot spots have been captured through the manual plotting of known hazard areas by the roads and stormwater or disaster management practitioners who operate in these areas. The latter data layers have limited scientific verified basis and are captured as 'indigenous knowledge'.

The map presented here shows the regional topography of the GCR, with the hydrology of Gauteng highlighted. The hydrological features include perennial and non-perennial rivers and wetlands, with the delineated flood plains and flood hot spots shown in orange. The locations of informal settlements in the mapped area are also indicated, representing the extent to which vulnerable communities often live in or near these flooding areas. The dark brown areas indicate densely populated informally settled areas while lighter yellow areas indicate less densely populated or peripheral areas of such informal settlements. From this map it is clear that flooding remains a concern in the province. A map showing the flood lines and flood hot spots for the entire Gauteng is downloadable in high resolution as GCRO's 'map of the month' for February 2012 from http://www.gcro.ac.za/maps-gis/map-of-the-month

For the City of Tshwane, the 100 and 200-year flood line delineation was done as a region-wide excercise, using regional as well as small-scale region-wide data (such as topographic data, rainfall isohetes, etc.). The flood lines were demarcated using hydrological engineering principles, processes and software programmes, between 2004 and 2009.

Selected low income settlements in the GCR, shown with flood lines and flood hot spots in the area



Sources: GeoTerraImage Informal Settlement Density (2009); Ekurhuleni Metropolitan Municipality Corporate GIS (2012); Johannesburg Roads Agency (2012)

The City of Johannesburg's flood line delimitation was done in the same manner, i.e. applying hydrological engineering processes. However, it was done as part of area-based projects where different catchments or river triburaties may have been done by different engineering companies at different times over the past few years.

Ekurhuleni Metropolitan Municipality's (EMM) flood lines were also done based on hydrological engineering principles. The flood hazard areas, on the other hand, were identified between 2004 and 2007, during the municipality's Disaster Risk Assessment key stakeholder engagement phase. As part of this process, the areas that were most affected by dangerous or disastrous magnitudes of flooding were marked on hard copy maps by EMM stormwater engineers and disaster management personnel, and digitised by the engineering consultants that conducted the assessment.

In the West Rand, no flood plains have been formally delineated. The flood hot spots were digitised by the Disaster Management Centre, from hard copy maps on which officials indicated where floods had generally occurred in recent years.

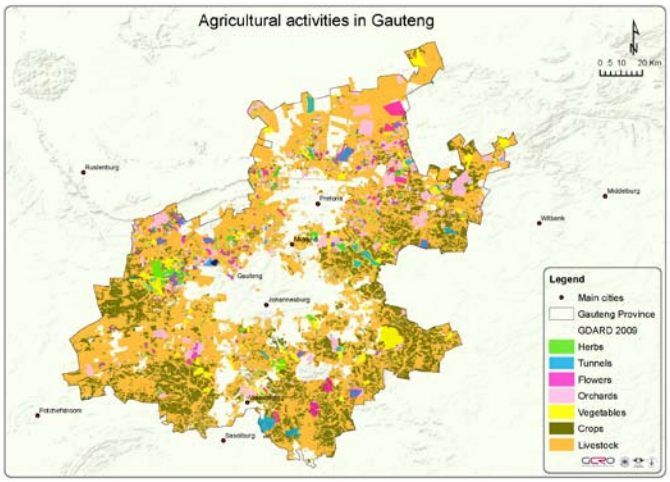
For further queries on this work, please contact Mrs. Maryna Storie at maryna.storie@gcro.ac.za

9 | Map of the month: Agricultural activities in Gauteng

The latest GCRO map of the month depicts the results of the Gauteng Department of Agriculture and Rural Development (GDARD) Agricultural Census of 2009.

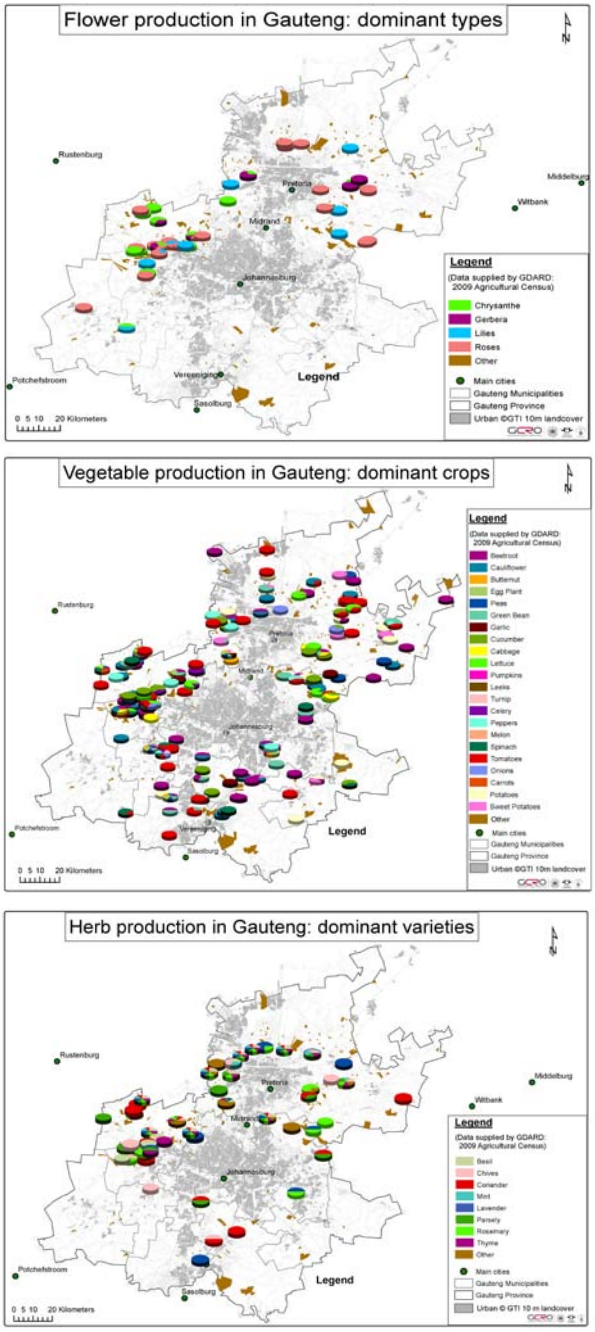
The latest GCRO map of the month depicts the results of the Gauteng Department of Agriculture and Rural Development (GDARD) Agricultural Census of 2009. GDARD commissioned the census for Gauteng in 2008 and it was completed in October 2009. The census provides field-level, georeferenced data of high-value crops and livestock in the province, wherever access to fields and farms was possible. Specific crop types, cultivation regimes and cultivation of winter and summer crops were defined per field for many parts of the province.

The GCRO's April map of the month presents some of the agricultural activities that were recorded through the GDARD-commissioned survey. It shows the significant land-use allocated to the cultivation of crops, vegetables, fruit, flowers and herbs, as well as livestock farming, despite the region being viewed as a predominantly urban hub. Some agricultural space-economy choices are clearly visible from the map. For example, the location of flower and herb farming close to the centre of the province reflects the time-sensitive nature of production of these crops, where easy access to transport infrastructure and export facilities affects the financial viability of these businesses. The map is downloadable in high resolution as GCRO's 'map of the month' for April 2012 from http://www.gcro.ac.za/maps-gis/map-of-the-month



Source: GDARD Agricultural Census, 2009, as visualised by GCRO

Based on this 'map of the month,' the GCRO also developed a range of subsequent maps that indicate specific details that are available regarding the cultivation of vegetables, flowers, herbs and fruit, under tunnels and on open fields. Some of the maps are displayed below. Unfortunately, some fields are known to be used for agricultural purposes but there are no records of the crops that are cultivated on them – in these instances they are shown on the maps as brown shapes resembling the geographical expanse of the fields, while the pie graphs represent the percentages of mono-culture or varieties of crop types that are cultivated for each field that was surveyed and where information is available. These maps highlight the importance of agricultural production on the fringes and in some instances even inside the urban areas of Gauteng.



Source for all the above: GDARD Agricultural Census, 2009, overlaying GeoTerraImage 2009 Land Cover data at 10m resolution, as visualised by GCRO

For further queries on this work, please contact Mrs. Maryna Storie at maryna.storie@gcro.ac.za

NEWS bytes

GCRO appoints three interns

GCRO has appointed three interns for one year each, starting on 1 June 2012. The purpose of the internships is to provide post-graduates with the opportunity to gain meaningful workplace experience and to develop their skills in line with the research and other work objectives of the GCRO. The interns are:

For GIS and information systems

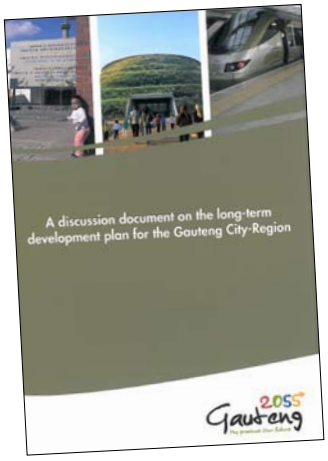
Kavesha Pillay-Damon has been appointed as a GIS intern. She has a BSc Honours degree (Geography) and Masters in Environment and Development (Land Information Management) which she completed at the University of KwaZulu-Natal. During her studies, Kavesha was widely involved in the use of information systems such as GIS and remote sensing software, with her Masters dissertation researching land use change detection of small-scale sugarcane farming. Kavesha will be assisting with the GIS mapping and analysis of the extensive spatial data covering the GCR that GCRO has spent the past three years collating.

Kerry Bobbins holds a BSc Honours degree in Integrated Water Management and completed her MSc in Environmental Water Management in 2011. She completed her degrees at Rhodes University in Grahamstown where she was also a graduate assistant and practical administrator. Kerry has also worked on developing a form-process framework to identify and characterise alluvial fans in the Baviaanskloof Valley and has developed restoration guidelines to address water retention capacity issues in the valley. This work fed into broader project objectives spearheaded by a Dutch funded NGO, Living Lands, and the Eastern Cape Restoration Programme (ECRP). Kerry has recently returned from Wageningen University in The Netherlands having completed two additional Masters courses in Environmental Policy through the SKILL (Stimulating Knowledge Innovation through Life-long Learning) Programme.

For urban research and analysis

Potsiso Phasha holds a BSc Honours degree in Town & Regional Planning and has completed his MSc in Development Planning (graduating in July 2012). Potsiso completed his degrees at Wits where he was also a senior tutor and lecturer assistant. Potsiso has worked on reviewing local municipality spatial development frameworks and has undertaken research into the National Treasury National Development Partnership Grant. He has a strong interest in urban photography and was an active member of the Yeoville Studio, which is an initiative of the Wits School of Architecture and Planning. He has been the winner of several awards including the University of the Witwatersrand's Post-Graduate Merit Award (2010/11); the Mallows-Pintoroux Prize for academic excellence; and the South African Planning Institute Award for 'Innovative research method in understanding how urban youth perceive public space' (2010). Potsiso has also recently returned from attending the Human Cities Symposium held in Belgium, where he presented his paper titled 'Autophotography: a tool for recording ways in which street skaters and street artists have appropriated space in Johannesburg'.

Gauteng Province launches 'G2055'



The Gauteng Provincial Government (GPG) launched a Discussion Document towards "Gauteng Vision 2055", also known as 'G2055', on Thursday 24 May. The launch, which took place in Newtown, Johannesburg, was hosted by the Premier of Gauteng, Mrs. Nomvula Mokonyane. GCRO played a research support role in the preparation of the document, providing in particular maps and data, and assisting with the running of four Working Groups of a Gauteng Advisory Council that is responsible for steering the process. This was the first time that the G2055 Discussion Document was presented to the public. The launch marks the start of a public participation process during which the analysis, vision and long-term strategic plan that will make up G2055 proper will be fully developed in consultation with stakeholders and communities. The Premier noted that in particular "As part of the public participation campaign, we will engage with academics, researchers and students, with the support of the Gauteng City Region Observatory." The Discussion Document will be available at www.gauteng2055.gov.za, where details of public participation events can also be found. To read the Premier's full speech go to http://www.gcro.ac.za/project/gauteng-g2055

GAUTENG PROVINCIAL GOVERNMENT REPUBLIC OF SOUTH AFRICA

2055 Gauteng My province Our future

Greg Clark shares insights with the Gauteng Provincial Government and GCRO

Esteemed thought leader on development and investment strategies, Greg Clark, visited the GCR for a few days in mid-May. Greg works with city, regional, and national governments and with universities, corporations, and financial institutions worldwide to make more of their current opportunities for collaboration and effectiveness. Some of Greg's most recent reports include among others:

- The Business of Cities: City Indexes and Rankings
- Seven Habits of Successful Cities: City Branding, Reputation, and Identity
- City Strategy in the New Development Cycle
- Cities hosting global events
- Business leadership in Cities
- Understanding OpenCities Book 1 July 2010
- Internationalisation and OpenCities Book 2 Dec 2010
- Leadership and Governance of OpenCities Book 3 Oct 2010, and
- Managing Diversity in OpenCities Book 4 Feb 2011.

He met with selected members of the Gauteng Planning Commission (GPC) and other key government and academic stakeholders to discuss city-region strategies and shared some of the lessons learnt from large cities and city-regions across the world. Our hope for the GCR is that these lessons, and some of the development strategies that worked in other parts of both the developed and developing world can be effectively utilised in order to strengthen the GCR and in particular the development of the Provincial Governments' vision for 2055.

GCRO was also privileged to meet with him during his visit. We gained valuable insights into our work and envisaged projects for the next two years. Greg also chatted to us about our role as an observatory and the strategic integration of our work with that of government and the private sector. One of his key observations includes the importance of housing and infrastructure interventions in the transition of cities from a low income to a medium income status. We look forward to future interactions with Greg which enrich our understanding of the challenges which face the GCR.

Wits Art Museum opens to the public

GCRO is proud to be located in the same building that houses the new Wits Art Museum. The museum, which opened to the public on 19 May 2012, hosts a wide range of art by African artists – from sculptures and artefacts, to paintings and photographs. In time it will also feature a coffee shop in the gallery's forecourt.

The gallery won the architecture category of the Absolut VISI Designer of the Year Award. The well-deserved accolade was awarded for the gallery's clean, flowing lines and interactive nature of the exhibition space. The launch that took place on 10 May was attended by a colourful mix of artists, art-lovers and the media who came to pay their respects to Johannesburg's newest gallery.

Conferences, workshops and presentations

- Alexis Schäffler and Josephine Musango gave a number of presentations to various institutions in the US during early May. The presentations focussed on the Green Assets and Infrastructure, and Metabolic flows and Urban Transitions projects of the GCRO.
- Maryna Storie represented the GCRO at a seminar entitled 'Aerosols over Gauteng: Science and Public Policy Issues' which was hosted by UJ, SeTAR Centre on 14 March 2012.
- Maryna presented the GCRO's research regarding the intersection between Dolomite and Low Income Human Settlements to the Gauteng Provincial Department of Local Government and Housing Cross-boundary Forum. A copy of the presentation is available at http://www.gcro.ac.za/project/intersection-between-disaster-vulnerability-and-sustainability

- Maryna also presented details regarding Acid Mine Drainage and Dolomite as two physical hazards facing the GCR, to the Johannesburg Disaster Management Forum.
- Maryna presented a paper entitled 'Potential for urban transformation through the utilisation of stormwater infrastructure: considerations from the Gauteng City-Region' to the Wits School of Geography, Archaeology and Environmental Sciences in March 2012.
- GCRO was present at the EMM GDS2055 Stakeholder engagement sessions that took place in early May 2012.
- Annsilla Nyar presented a paper entitled 'Nation-building, Africanism and the 2010 FIFA World Cup: what did they do for social cohesion in post-apartheid South Africa?' at the 'Sport and the City' conference on 27 March 2012. The conference was co-hosted by GCRO, the School of Architecture and Planning at Wits and the JDA. It was held at Humanities Graduate Seminar Room, South West Engineering Building, East Campus, Wits on 26th and 27th March 2012. Other presentations that were delivered at the City Conference is available on: http://www.gcro.ac.za/news/gcro-discusses-impact-world-cup-sport-and-city-conference
- Graeme Gotz attended a two day workshop organised by Ivan Turok from the HSRC, on behalf of UN-Habitat, on 'Unleashing the Economic Potential of African Cities', 23-24 February 2012
- Maryna Storie attended a two-day workshop organised and hosted by the Human Rights Commission (HRC) on Acid Mine Drainage (AMD) in early March.
- Alexis Schäffler and Josephine Musango attended an Integrated Modelling Workshop at the CSIR on 16 March to establish a platform for modelling economic-energy-water-land people links in South Africa.

Reports and publications

- The OECD Territorial Review of the GCR has been GCRO's largest project to date. It involved a two-year research and consultation process, starting in late 2009. It concluded at the end of 2011 with the publishing of a comprehensive report on the challenges and opportunities facing the city-region in comparative perspective with 90 other metropolitan regions across the world. The Review was formally launched by the Gauteng Provincial Government at a well-attended launch in Sandton on 30 November 2011. It is available for viewing at http://www.oecd-ilibrary.org/urban-rural-and-regional-development/oecd-territorial-reviews-the-gauteng-city-region-south-africa-2011_9789264122840-en;jsessionid=adv0mjbhji5q.epsilon while a summary of the review can be accessed at http://www.oecd.org/document/2/0,3746,en_2649_34413_49046018_1_1_1_1,00.html
- Chris Wray published a paper entitled 'Promoting g-government in the Gauteng City-Region' in PositionIT, a magazine for GIS professionals, in March 2012 (pp. 33-35). A digital version of the paper is available at http://eepublishers.co.za/article/gcro-056-03.html
- Annsilla Nyar recently published a paper entitled 'Some new perspectives on South African Indians and "non-racialism": Findings from the AKF Non-Racialism Focus Group Data' in a special edition of the SAPSE accredited journal Politikon-South African Journal of Political Science on non-racialism (Volume 39, Issue 1). The paper is available at http://www.tandfonline.com/doi/abs/10.1080/02589346.2012.656915
- David Everatt guest edited the same edition, which includes a foreword by Ahmed 'Kathy' Kathrada, and a paper by David entitled 'Non-Racialism in South Africa: Status and Prospects', and it is accessible at http://www.tandfonline.com/doi/abs/10.1080/02589346.2012.656910

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