Play your part in advancing regional science in Africa!
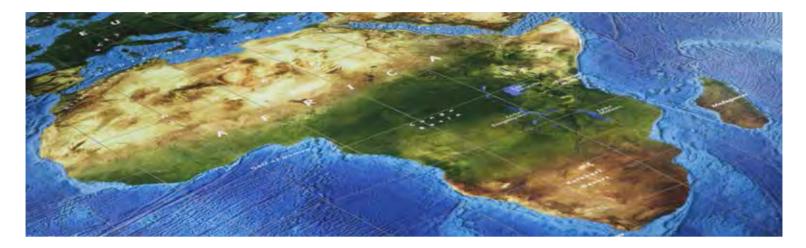

Today saw the true conception of the African Regional Science Association, an idea that was formulated by the Statistician-General (SG), Dr Pali Lehohla, a number of years ago. While the SG was not present to observe this historic moment, Prof. H.S. Geyer, together with Prof. Tomaz Dentinho, Executive Director of the Regional Science Association International (RSAI), took delegates through what is needed to establish an African chapter of the RSAI.

The Regional Science Association International, founded in 1954, is an international community of scholars interested in the regional impacts of national or global processes of economic and social change. It is an international association set up to advance, for the benefit of the public, regional analysis and related spatial and areal studies. The RSAI comprises superregional associations which, in turn, comprise affiliated local sections/associations.

In order to establish a supra-organisation for Africa, as is the case for Europe, the Americas and Asia, a number of African countries would have to establish regional associations; this is a process that has to start now. Currently only Morocco has an established association.

South Africa is in the process of establishing an association, and the 3rd ISIbalo CRUISE conference is the first step towards this. Prof. Geyer said that while it would be a challenge for South Africa to organise activities as per RSAI prescripts, this conference should be the starting point of something that is durable and lasting and will result in something tangible. While regional scientists are thin on the ground in South Africa, the people who have participated in this conference will form the foundation of the group.

Individuals who attended the conference and who can serve as actors to identify people in their field of interest can work to start the process of identifying others who may be interested in the field of regional science and use this to network in South Africa and Africa.

Once the South Africa association has been created a formal link between Morocco and SA will be established. This will assist with the creation of an initial framework that other actors can tap into with the idea of becoming a fully-fledged African section.

All active researchers should be part of this association – not just academics, but also those who are represented here today from outside of academia, e.g. public sector officials who presented at the conference. People who are fired up for the work we do as public officials and practitioners are needed to create an organisation that filters through all spheres of regional science.

Work will be done with RSAI to create a legal framework (constitution) that will make it possible for different countries to tap into the larger framework. Once the South Africa association has been created a formal link between Morocco and SA will be established. This will assist with the creation of an initial framework that other actors can tap into with the idea of becoming a fully-fledged African section. **How long will this take? ... It depends on us!**

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THE SOUTH AFRICA I KNOW, THE HOME I UNDERSTAND

Exploring poverty in Gauteng

It has been referred to South Africa's triple challenge. Inequality, unemployment and poverty lie at the heart of many of the country's social and economic ills.

The measurement of poverty is a wide field and, for Samy Katumba, an academic passion. During the Welfare session in the morning, Katumba outlined work done, together with like-minded colleagues, on developing a multidimensional poverty index for Gauteng.

If you can imagine the shape of Gauteng in your mind, it's important to realise that the administrative boundaries that define the province are arbitrary in the sense that they do not fully contain or hinder economic or migratory flows. For this reason, the multidimensional index was calculated for a wider area, referred to as the Gauteng City Region, or GCR.
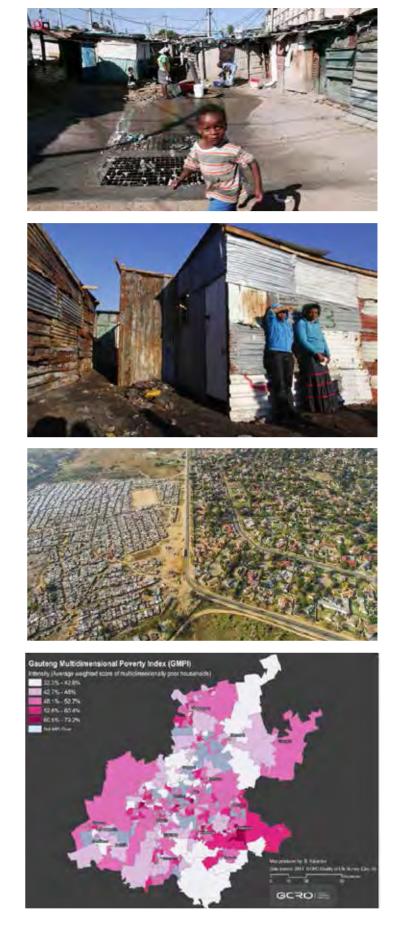
The GCR is defined as a group of cities with Gauteng as its core. Also included are the areas of Rustenburg and Klerksdorp to the west, Middelburg, Witbank and Secunda to the east, and Sasolburg to the south. The entire region is home to 13,3 million people, contributing 33,8% to South Africa's gross domestic product (GDP).

Using Quality of Life survey data, and guided by Stats SA's South African Multidimensional Poverty Index (SAMPI), an index was created from a set of variables. Examples of variables include access to service delivery, extent of household overcrowding, and extent of households living in shacks.

The index, referred to as the Gauteng Multidimensional Poverty Index (GMPI), was calculated for all electoral wards in the region.

The results? The majority of wards at the core of the GCR were relativity well off, according to the results, with multidimensional poverty concentrated on the periphery of the region.
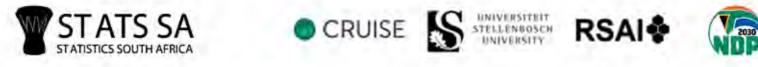
The beauty of the study is that comparisons between 2013 and 2015 provide an indication of the direction in which poverty is spreading. For example, in Tshwane,the index for wards directly east of a poverty hotspot in Soshanguve has dropped, indicating that poverty is spreading eastwards from that location.

Not only do poverty indices such as the GMPI provide policy makers with knowledge of where poverty is entrenched within South Africa's economic hub, but they can also provide an indication of where poverty might be spreading. Mastering poverty measurement takes us one step closer to knocking down this particular leg of the triple challenge.

Rustenburg and Klerksdorp to the west, Middelburg, Witbank and Secunda to the east, and Sasolburg to south is home to 13,3 million people, contributing 33,8% to South Africa's gross domestic product (GDP).

Are the walls giving way to fences?

In a constantly changing world, understanding the reasons for the underlying growth and development patterns of our cities and neighbourhoods greatly assists planners (both private and public) in the development of policies or processes that will in all likelihood promote and foster effective transitional change for people and the neighbourhoods they reside in.

Social cohesion, urban sprawl, segregation, density, growth, tourism and leisure are some of the key phrases emphasised during this session themed "Neighbourhood Change".

Social cohesion, urban sprawl, segregation, density, growth, tourism and leisure are some of the key phrases emphasised during the session themed "Neighbourhood Change". Having long pondered over and ultimately researched how much society has changed within the KwaDukuza Municipality in Kwa-Zulu Natal, Mr. Vishanth Singh utilised "Maly's Neighbourhood Diversity Index" to measure diversity amongst the South African racial groups between 2001 and 2011 at a small area level.

Results show a pattern of increasing segregation of coastal areas (containing gated communities) whilst traditional areas are becoming more integrated. Mr Singh concludes that walls have indeed given way to fences within this municipality. His recommendation is to replicate the study across other municipalities before any generalisations can be made across all municipal spaces in South Africa.

Mr. Faizel Mohammed's research entitled *"Analysis of changes in neighbourhood poverty in Cape Town Municipality between 2001 and 2011"* started off with a practical demonstration inside the venue to provide the audience with an understanding of how groups with similar characteristics (neighbours in this instance), with respect to their heterogeneous economic circumstances, may or may not influence neighbourhood change over time using a harmonised sub-place level to depict spatial neighbourhoods.

Using the Census 2011 income bands to attain poverty cutoff limits, it was found that 50% of neighbourhoods in the city remained stable. He further mentioned the reasons why these neighbourhoods have remained stable and highlighted that investors or planners from all spheres should rather invest in people instead of places or physical areas, as this may have far-reaching effects on the growth, health and development of a city.
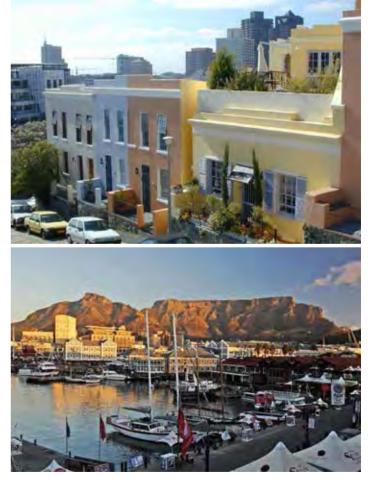
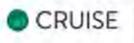The causal power of urban tourism and leisure cannot be underestimated in the development and infill of areas through property and industrial development in traditionally enclosed spatial areas around Cape Town. Starting off with a picture of the Waterfront, Mr. Gustav Visser's presentation titled *"Urban leisure and tourism-led (re) development in central Cape Town*

since the 1990's" displayed numerous figures of iconic areas in the city and briefed the audience that at face value (or registered deeds data depicting the use of these areas) these areas are not necessarily what they actually are.

The form and function of the city changes based on tourism and although local government may plan, there have been cases whereby interventions with respect to development are often initiated through private capital and the local authorities then act reactively. Examples of cities such as New York, Paris etc. displayed these tendencies as they become cities of entertainment in order to attract the younger generation and consequently placed key propositions in the minds of individuals around earning more money vs. the value an individual attaches to the quality of life.

De Waterkant

The Waterfront

Do universities influence their host city?

How much do we know about the amount of influence a university brings to bear on the city that hosts it? Surprisingly, very little. Universities and other institutions of higher learning can have significant impacts on the cultural, economic and social characteristics of their host cities. But despite this, relatively little research has been done.

Deon Kleinsmith has done work to address this gap, by exploration of the impact that Sol Plaatje University has had on the Northern Cape city of Kimberly.

Two new South African universities opened their doors in 2014: Sol Plaatje University in the Northern Cape and Mpumalanga University in Mpumalanga province. In 2015, Sefako Makgatho Health Sciences University opened for business in Pretoria, bringing the total national university count to 26 institutions (this includes 20 universities and 6 universities of technology).

Data from 2015 show that University of South Africa (Unisa) was the largest, servicing 337 944 students. Only a year in existence, Sol Plaatje University had 328 enrolled students.

Universities don't operate in a vacuum but also influences the politics, demography, economy and culture of the area in which they are located. Think of how the opening of a tertiary education institution can influence the income flows, housing, traffic, medical services and community participation in a host city. Kleinsmith's research focussed on determining if available data indicated if fledging Sol Plaatje University had an influence on Kimberly, in terms of population, employment, the level of construction, student spending and the property market.

Interestingly, flight data from the Airports Company of South Africa (ACSA) shows that flights to Kimberly increased by 3,5% year-on-year in 2015/16 and 6,2% in 2016/17, generally higher than previous years. Could these be a result of increased travel to the city due to the opening of the university? Further research is required to determine the exact link.

Using data from other sources, including Census 2011 and Community Survey 2016, the results showed that there could be potential positive influences on construction and employment, but a potential negative impact on property markets. Census 2021 data, however, will provide a much more comprehensive picture.

University	Students
Unisa	337 944
North West	64 070
Tshwane	57 246
Pretoria	55 984
Johannesburg	49 452
KwaZulu-Natal	45 506
Wits	33 777
Cape Peninsula	32 674
Free State	30 418
Stellenbosch	29 613
Cape Town	27 809
Durban	27 023
Nelson Mandela	26 305
Walter Sisulu	25 993
Western Cape	20 382
Limpopo	18 907
Vaal	17 678
Zululand	16 891
Central	14 193
Venda	14 146
Fort Hare	13 458
Mangosuthu	11 518
Rhodes	8 007
Sefako Makgatho	5 074
Mpumalanga	816
Sol Plaatje	328

There were **985 212** students enrolled in higher education in 2015

Source: Department of Higher Education

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THE SOUTH AFRICA I KNOW, THE HOME I UNDERSTAND

Corridor and economic development

Prof. H.S. Geyer chaired a session focusing on corridor development. A corridor is defined as an integrated network of infrastructure linked to nodes to stimulate economic development.

A. Brand presented on his doctoral work, which looks at corridor development in Gauteng. He asserts that there is no specific integrated approach towards spatial planning. He proposed a spatial corridor model as a theoretical framework to provide direction in the restructuring of economic spaces.

Five elements (population count, economic activity, Gross Value Added, distance and key gateways) were used to explain the model. Daily and weekly systems of commuting were examined. Research shows that three primary nodes dominated in South Africa, namely Johannesburg, eThekwini and Cape Town. The corridors were strong in Johannesburg and eThekwini, but there is no real coastal corridor from Cape Town. Bloemfontein and Port Elizabeth were strong secondary nodes. The work is ongoing with a proposed end date of October 2017.

M.E. Kgansi looked at the East-West Development Corridor (EWDC) in the Johannesburg inter-metropolitan corridor development between 2001 and 2011. The EWDC links the Soweto-Sandton-Midrand-Tshwane areas, which are connected by multimodal transport networks and land-use to promote the developmental visions of communities of these areas. One of the goals of EWDC is to promote economic regeneration and integration.

Post-1994, more black Africans moved into suburbs. There was an increase in the number of blocks of flats and formal housing in the region, as well as informal shacks. In mining areas, residential areas had also increased, due to industrialisation. Ownership increased among black Africans and Coloureds. Higher education and increased employment increased within the corridor, especially among Black Africans.

X. Pillay was curious as to why MTN and Vodacom were located in close proximity along the N1. He focused on business clustering along the M1-N3-N1 corridor for the period 2001-2012. He used 2012 imagery, and physically demarcated businesses along the corridor, using GPS.

The following agglomerations were found:
- Home industry cluster
- High technology
- Medical companies and pharmaceuticals
- Mall of Africa
- Food distribution and light industries

Spatial Framework

He looked at business cluster growth between the years, and found that the landscape changed along the corridor; businesses filled the gaps over time.

M. Nkiwinika investigated the changing relationship between population growth, land use, and transportation in the northern part of the City of Tshwane Metropolitan Municipality (CTMM). Using the National Household Transport Survey, he compared the northern part of the CTMM with the rest of the municipality. Service points were used to see mobility between the two areas. Multinomial logistic regression was utilised to find the likelihood of using mode of transport. He was able to estimate what happens when travelling to service points (e.g. welfare office, police station, municipal office, etc.)

The results showed that it does not matter whether one travels in or outside of the northern part of CTMM – i.e. there is no significant difference. Most relationships examined were not statistically significant.
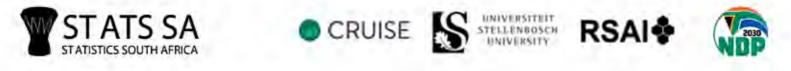
One of the findings is that household-based sample surveys can be used when using statistical domain analysis.

These surveys can be used to fill the information gap required to monitor and evaluate the implementation of municipal integrated developmentplans of municipalities.

The Regional Science Association International

The Regional Science Association International (RSAI), founded in 1954, is an international community of scholars interested in the regional impacts of national or global processes of economic and social change. It is an international association set up to advance, for the benefit of the public, regional analysis and related spatial and areal studies. The RSAI comprises superregional associations which, in turn, comprise affiliated local sections/associations.

The four superregional organizations recognised by the RSAI are: The European Regional Science Association (ERSA), comprising sections in the European realm; The North American Regional Science Council (NARSC), comprising sections from North America; The Pacific Regional Science Conference Organization (PRSCO), comprising sections in Asia (East, South East and South), Australasia and the Pacific Rim facing parts of the Americas and the Latin American and Caribbean Regional Science Association (LACRSA), comprising sections from Latin America and the Caribbean.
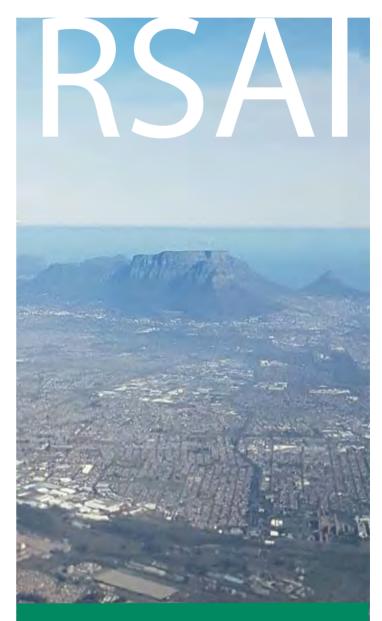
An affiliated section/association of RSAI shall consist of a grouping of regional scientists defined on a geographic, language, or cultural basis who desire to organise scholarly meetings, publications, and other activities that contribute to the advancement of regional science.

RSAI membership is drawn from all parts of the world, and includes people from a wide range of academic disciplines and professions who share an interest in spatial issues.

The main objectives of the Association are the fostering of exchange of ideas and the promotion of studies focusing on the region, including the utilisation of tools, methods and theoretical frameworks, specifically designed for regional analysis as well as concept, procedures and analytical techniques of the various social and other sciences.

These objectives are supported through the acquaintance and discussion among its members and with scholars in related fields, by the encouragement of publication of scholarly studies and by performing services to aid the advancement of its members and the field of regional science.

To retain its position as the worldwide leading organisation of scientists and practitioners in regional science, RSAI has the ambition to take the lead and promote regional science in parts of the world not yet covered by RSAI sections. The main reason is to welcome scientists and practitioners in regional science in parts of the world not covered by existing RSAI sections to the RSAI network, congresses, workshops, journals, and other meetings organised by RSAI sections.

RSAI also has the ambition to, through its sections, organise congresses, workshops, and other meetings in parts of the world not yet covered by RSAI sections in order to spread regional science and recruit both scientists and practitioners to the field of regional science. Therefore, RSAI welcomes initiatives to form new RSAI sections.

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THE SOUTH AFRICA I KNOW, THE HOME I UNDERSTAND

Improving the governance of urban land

The presentation on "Spatial inequalities in South Africa cities" by Professor Ivan Turok, Executive Director in the Economic Performance and Development Unit of the HSRC, was especially timely in light of the recent unrest in Hout Bay by protestors who believe that the City of Cape Town has failed to deliver basic services in Imizamo Yethu within a promised three-month period following devastating fires in March.

Professor Turok made mention of the Urban Agenda that has been passed by the United Nations General Assembly to encourage better regulation of land to capture agglomerations in cities. It further asserts that cities function more effectively through the improvement of infrastructure and coherent planning.

The presentation focused on two projects, work done for the Cities Support Programme and Barriers to spatial planning. There were persistent disparities within South Africa cities since 1994. This was due to multiple compounding causes, including government regulations and processes. The compounding effect requires a systemic view of the governance of urban land. Government tends to regulate, set targets and react. There is a compliance culture in municipalities, which stifles creative problem-solving. It is also difficult for people to move close to opportunities and for informal enterprises to access affluent markets. This results in spatial continuity being more pervasive than spatial change.

Forms of spatial inequality identified in the research include residential segregation, physical separation (spatial mismatch), and a lack of affordable housing close to where people work. These create resentment, feelings of unfairness and instability, the consequences of which are seen in the media.

Spatial poverty traps are found all over South Africa. Most development is along economic corridors and the coastal belt, which are inaccessible to the poor. Density increases with distance in SA, creating inefficient cities. Transport consumes up to 30% of the income of the poor. In Gauteng, high-income households are found in the core and low-income households at the periphery.

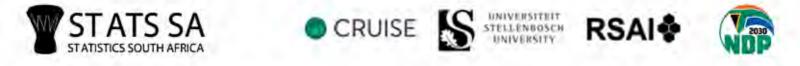Spatial inequalities are perpetuated as jobs are located away from the population concentrations. Travel-to-work patterns show that high-income households have shorter distances to travel than other income categories.

Causes of the perpetuation of inequality include path dependency, as restructuring a city takes decades. The affluent often resist low-income areas being moved closer to theirs and use regulation to ensure that this type of development is stifled.

It is hard to distinguish between challenges posed by the actual legislation and regulations; how these are interpreted; the implementation and application of legislation; and wider conditions such as factors that reinforce each other and cause resistance to spatial change.

Government therefore has to be strategic and coherent when engaging in removing the inequalities. A systemic spatial perspective is required, through consistent application of standards; coordination and alignment in space and time and integration and interdependence.

The systems are not working effectively. They are rigid and disjointed, inefficient and legalistic, resulting in an unresponsive system and a culture of compliance. The elements that are missing in creating systemic spatial planning includes cooperation and partnership, especially between the public and private sector; negotiation around development; and experimentation, learning, adaptability, etc.

Prof Turok suggests an improved system, which should leverage the opportunities presented by public-owned land. Partnerships between public- and private sector on infrastructural projects is important. Procurement systems need to be improved to reduce blockages caused by red tape. Business processes need to be streamlined and simplified, and become more flexible. Success should be rewarded with additional freedom and flexibility, e.g. local municipalities who get clean audits for a number of years should be allowed to be more flexible in the application of legislation.

He also believes that spatial inequality can be reduced by moving jobs closer to townships; improving transport connectivity and moving township enterprises closer to affluent markets.

Photo: Ashraf Hendricks/GroundUp

The impact of changing demographics

The session on Demographic Change saw presentations from three Stats SA employees who have been through the CRUISE programme. Mr Roux's presentation examined how household composition had changed in the City of Tshwane between 2001 and 2011.

Significant changes in the number, size, structure and distribution of households have been observed globally. This can be attributed to a combination of demographic and lifestyle changes. Mr Roux' research zoomed in on a range of social and spatial changes that occurred in the City of Tshwane Metropolitan Area between 2001 and 2011.

There was an increase in the percentage of single-person households between 2001 and 2011. Along with the change in family structure came changes in the demographics and socio-economic status of the areas under review.

Racial diversity was also examined. Within Tshwane increased racial diversity was seen to be occurring within historically white suburbs. The data was mapped graphically to highlight the changes.

Understanding changing patterns of household formation are important to ensure that planning of services is correctly resourced. The data also confirmed rapid household growth relative to population growth. The decline in average household size is indicative of the number of couples without children.

Ms Mosidi examined demographic transition trends in Gauteng over the period 1996 to 2011.

Persistent low mortality and fertility in most developed nations over a long period have started to produce unexpected demographic outcomes beyond what was predicted by the original or first demographic transition theory. To understand the variations, a second demographic transition model is proposed, which looks at increasing childlessness, even within marriage, increasing cohabitation prior to and after marriage and even cohabitation without converting to marriage. Gauteng municipalities were used to see where this theory had applicability and also how this differed within the various population groups.

The results of this study indicated that the observed variation was not only a function of race but also marital status and area of residence. All metropolitan municipalities maintain a total fertility rate (TFR) above replacement. The four racial groups show aspects of both first and second transition stages. Childbearing in Gauteng essentially occurs within unions, both marriage and cohabitation. Females within the White population group in Johannesburg and Tshwane had the lowest TFR and the highest proportion of childlessness. Vulnerability, which can be characterised by teenage fertility and other factors, was also discussed. The results indicated that African women show significant vulnerability in all municipalities except Tshwane. This vulnerability is found both in and outside unions. African women fare much better in Tshwane than in any other municipality.

Mr Jacobs presented on *"Migration patterns and migrant characteristics in the Western Cape through a differential urbanisation lens".*

In-migration patterns and trends to the Western Cape over the period 2001 to 2011 have been in both the media spotlight and of concern to policy makers, but we lose understanding of migration flows if we only look at the aggregate picture. Mr Jacobs also sought to understand the socio-economic profile and household characteristics of in-migrants to the Western Cape through a Differential Urbanisation lens.
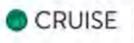
There were 312 013 in-migrants to the Western Cape from other provinces between 2001 and 2011, of which the majority originated from the Eastern Cape. The study found that mainstream in-migrants were mostly unmarried and youthful, had a low level of income, were moderately skilled, with many unfortunately unemployed and living in informal dwellings in backyards or informal settlements. When viewed from a differential lens a second stream emerges, which consists of affluent, highly skilled, married, and older migrants from the metropolitan municipalities, especially Gauteng.

Productionism or economic reasons were the dominant motivating factor for mainstream migration to the City of Cape Town. Smaller sized cities adjacent to the Eastern Cape are also drawing in migrants, which speaks to evidence of polarisation reversal adjacent to the Eastern Cape. Environmentalism is evident in that there is a sub-stream of migrants aged more than 35 years who favoured the coastal municipalities of Overstrand, Mossel Bay, Knysna and Bitou in the Western Cape. Detailed research on push factors and the implications for policy & strategy development was noted for further development.

"Understanding changing patterns of household formation are important to ensure that planning of services is correctly resourced".

South Africa (Africa) as an organisation: LEADERSHIP MESSAGE!

"Improving the attractiveness of the industry requires ongoing interventions by the Department of Public Works, as well as by industry and professional associations..."

2006
Skills for infrastructure delivery in South Africa:
The challenge of restoring the skills pipeline
http://www.publicworks.gov.za/PDFs/programmes/skills_for_infrastructure_delivery.pdf

Play your part in advancing regional science in Africa!

"Accurate and Reliable Data: Maintaining accurate and reliable data on supply and demand is a prerequisite for ongoing planning, monitoring and evaluation..."

One of the most important things that we must do as future leaders is to ask questions! Leaders ask questions! We ask problematic questions! We ask uncomfortable questions! We ask questions even though the answers may disappoint us, but we still ask those questions, because it's through asking questions that we begin to think differently about the future.

Wherever you are, whatever you do, whatever you are confronted with – ask questions! Be it in a classroom! Be it of your teachers! Be it of your classmates! Be it in the community where you live! Be it of leaders who may have barricaded themselves and a whole range of other things – let's ask questions, because it is the only way we can help determine a better future for ourselves. So, what is it that leaders do? We ask questions and in that way, we will be able to find answers! Not only do we ask questions of others, but we also ask questions of ourselves. Why is it that I am here? Where I am? What is my role? What is my contribution? What kind of a society do I want to see as a young leader? It does not matter where you are, or what grade you are in at this particular point - you are a leader!

Deputy Minister in the Presidency, Buti Manamela, addressing future leaders (June 2017)

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Science in the mix

Building scientific networks through colloboration & partnerships

CRUISE'ing towards innovation
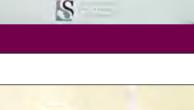## Building a statistical and data literate society!

South Africa Welcomes RSAI
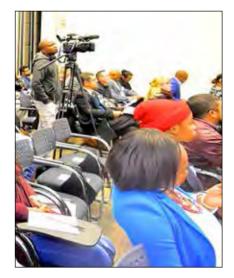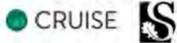
A quest for scientific answers from a new altitude

IT ALWAYS SEEMS

IMPOSSIBLE

UNTIL IT'S DONE!

NELSON MANDELA

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