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FIG Vice President**

**Shifting the Paradigm:
Land Professionals' Relevance in a
Transformative world**

**Botswana Institute of Geomatics
Africa Regional Network
Gaborone, Botswana 16th to 18th October 2018**

Transforming Our World



The 2030 Agenda

An agreed global and united policy to manage and **transform the social**, economic and environmental dimensions of humanity and our planet

17 SDG's defined the new universal development agenda relating to urbanisation and rural settlements.

Our deliberations: The importance and influence of Smart Cities on our profession

- Internal professional adaptation, and
- External professional outreach

Urbanisation



- Urbanisation is a powerful driver of economic development and social mobility. It is also a catalyst for technological progress.
- Africa is no exception.
- We are home to the fastest growing cities. It is estimated that half of Africans will be living in cities by 2030..... This is fundamentally positive.

H.E President P Kgamae, Launch of
Smart Africa blueprint for smart sustainable African cities (2017)

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Reflections



- SDG Goal 11
- “Make cities and human settlements inclusive, safe, resilient and sustainable
- Technology making cities smarter can contribute
- In our SDG era,
 - Much has changed
 - World has awoken to the issue of Tenure

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Objective

Are we being smart enough about Smart?

FIG and ARN evidence base:

- How Land professionals could best serve the global agenda to transform it into implementation

**Can we remain relevant in the
Transformation of our world and
Shift the Paradigm?**

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Overview

1. FIG International Reach
2. The Global Agenda
3. Moving to the high ground
4. Dealing in Global Trends
5. Final Remarks

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1. Overview

1. FIG with International reach

- Who
- What
- How

2. The Global Agenda

3. Moving to the high ground

4. Dealing in Global Trends

5. Final reflective words

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FIG



Who: International Federation of Surveyors

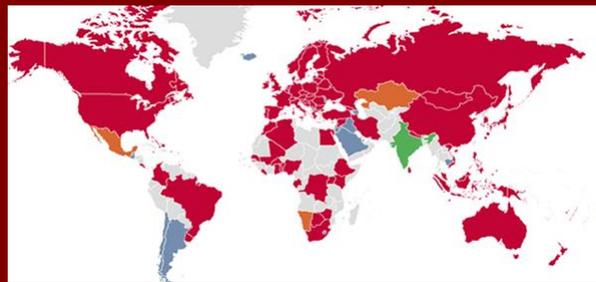


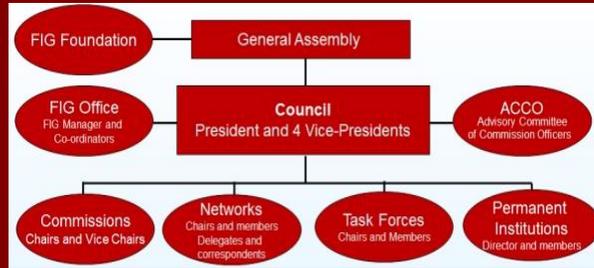
FIG:

- Members organisation,
- Comprising national associations, academics, and corporate members
- Drawing from over 120 countries

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FIG

What: Global Members Organisation



- General Assembly – oversight and voting
- Council: President and 4 VP’s over a 4 year term (2015-18)
- Other administrative bodies
 - 3 Networks: Young Surveyors, Regional Capacity development (Africa + Asia Pacific), Standards.
 - 10 Commissions (ACCO)

How: Contribution

Professional Development

- - Global forum for professional discussions and interactions
- - Conferences, symposia, commission working groups,

Institutional Development

- - Institutional support for educational and professional development at national and international level

Global Development

- - Cooperation with international NGO’s such as the UN agencies, World Bank, and sister organisations
- - Joint activities and common policy-making to reduce poverty and encourage sustainable development



Depth of experience (2014-18)



Activity and outputs with Commissions:

1. Professional standards & practice
2. Professional Education
3. Spatial information management
4. Hydrography
5. Positioning and measurement
6. Engineering surveys
7. Land management & cadastre
8. Spatial planning and economic development
9. Valuation and real estate
10. Construction economics



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2. Overview

1. FIG with International reach

2. The Global Agenda

- **SDGs**
- **The World awakes to Land**
- **Good land governance**

3. Moving to the high ground

4. Dealing in Global Trends

5. Final reflective words

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Transforming Our World



UN Sustainable development summit Sept 2015

- An agreed global and united policy to manage and transform the social, economic and environmental dimensions of humanity and our planet
- Blueprint to guide us for next 15 years with greater accountability than the MDGs

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FIG

The 2030 Agenda for Sustainable Development 17 Goals, 169 targets, and about 230 indicators



<https://sustainabledevelopment.un.org/?menu=1300>



- GOAL 1** **End poverty** in all its forms everywhere
- GOAL 2** **Zero hunger**; achieve food security and improved nutrition and promote sustainable agriculture
- GOAL 3** **Good Health and well being**; ensure healthy lives and promote well-being for all at all ages
- GOAL 4** **Quality education**; ensure inclusive and equitable quality education and lifelong learning for all
- GOAL 5** **Gender equality** and empower all women and girls
- GOAL 6** **Clean water and sanitation**; availability and sustainable management of water and sanitation for all
- GOAL 7** **Affordable and clean energy**; access to affordable, reliable, sustainable and modern energy for all
- GOAL 8** **Decent work and economic growth**; sustained, inclusive economic growth, full and productive employment and decent work for all
- GOAL 9** **Industry, innovation and infrastructure**; resilient infrastructure, inclusive and sustainable industrialization and innovation
- GOAL 10** **Reduced inequality** within and among countries
- GOAL 11** **Sustainable cities and communities**; make cities and human settlements inclusive, safe, resilient and sustainable
- GOAL 12** **Responsible consumption and production**; sustainable consumption and production patterns
- GOAL 13** **Climate action**; combat climate change and its impacts
- GOAL 14** **Life below water**; conserved and sustainably use the oceans, seas and marine resources for sustainable development
- GOAL 15** **Life on land**; protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and biodiversity loss
- GOAL 16** **Peace, justice and strong institutions**; peaceful, inclusive societies for sustainable development, access to justice for all and effective, accountable and inclusive institutions at all levels
- GOAL 17** **Partnerships for the goals**; strengthen the means of implementation and revitalize the global partnership for sustainable development

The World awakes to Land...



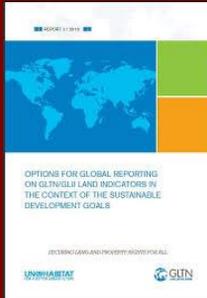
6 SDG goals with land component:

- G1: Ending Poverty (tg4)
- G2: Zero Hunger (tg3)
- G5: Gender Equality
- G11: Sustainable Cities
- G13: Climate Action
- G15: Life on land

Recognising

- Land is cross cutting: it is the root of how our societies operate (econ/social/ env)

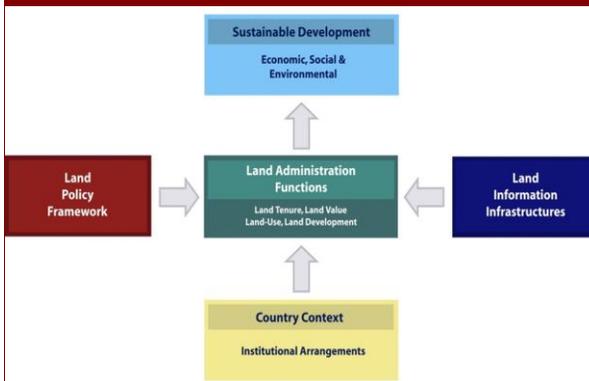
Measure and Monitor



- Implementation will require good policy, science, technology and data
- Measuring and monitoring, from local to global requires 'data'.. But where does data come from, and in a sustainable manner?
- Effective monitoring is essential, so
- GLTN/WB/ MCC aiming to develop a set of core land indicators to measure tenure security (2014)
- A lack of, and non transparent data makes risk mitigation difficult, so underpinning the need for stronger institutional capacity.

...good governance and land

Land Governance



The land management paradigm: Prof S Enemark, et al

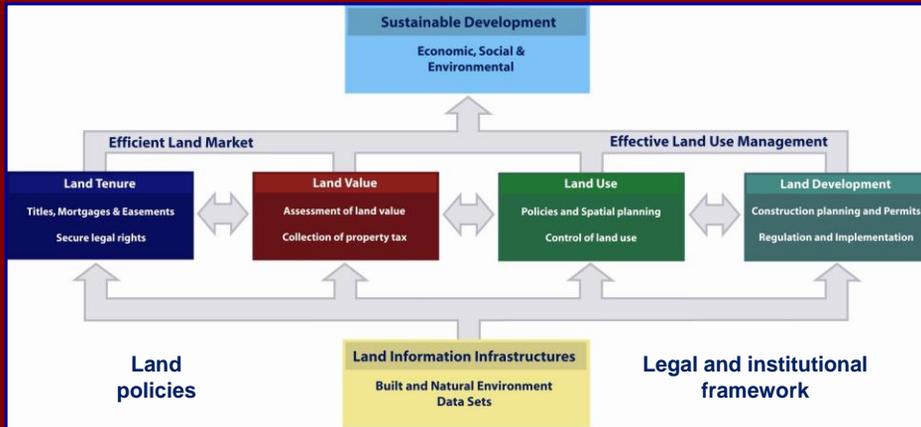
Land governance is about the policies, processes and institutions by which land, property and natural resources are managed.

This includes decisions on access to land; land rights; land use; land development.

Land management is about determining & implementing sustainable land policies.

Land Administration Systems

Land Administration Systems provide the infrastructure for implementation of land policies and land management strategies in support of sustainable development.



Land Tenure: Allocation and security of rights in lands; legal surveys of boundaries; transfer of property;
Land Value: Assessment of the value of land and properties; gathering of revenues through taxation;
Land-Use: Control of land-use through adoption of planning policies and land-use regulations at various levels;
Land Develop: Building of new infrastructure; implementation of construction works and the change of land-use



3. Overview

1. FIG with International reach

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3. Moving to the high ground

- **What: The wider global agenda**
- **How: Stories from African Land Professionals**

4. Dealing in Global Trends

5. Final Remarks

What: The Global Agenda – Master Plan

Promoting human rights and gender equity

Applying responsible governance of tenure

Applying the social tenure domain model

Climate change mitigation and adaptation

Rapid urbanisation and slum upgrading

Building Fit-For-Purpose LA systems - fast, affordable and upgradeable.

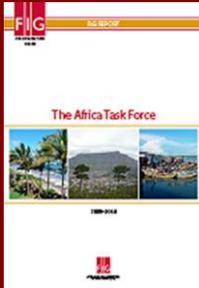
How: People & Partnerships



Stories from FIG Land professional working as Agents of Change:

- i. Collective: Africa network
- ii. Collaborate & Create: Action tools
- iii. Communicate: Generational diversity
- iv. Coordinate: International policy, and
- v. Contribute: International policy
- vi. Connect: emerging.....

The Big Picture – ARN 2009+



Responsibility to step back

- The long term public interest
- Understanding and **adapting global trends that affect us locally**

In context of our working world, We need to:

- Re-examine long standing assumptions
- Think imaginatively about how the world may change
- Reshape professional responsibilities and accountabilities.....

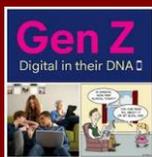
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(ii) Communication: Across the Generations

- **Younger generations: digital quick and promoted** new approaches in our outputs.
- **Recognising Four generations beginning to be reflected** the workplace, consequently
- ***Greater inter-generational understanding is needed***

- **Attracting young talent** our profession has to remain relevant and attractive to future generations.



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(iii) Collaborate & Create

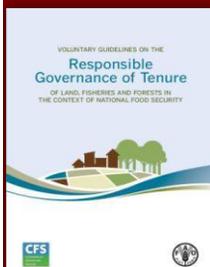


- Collaborative ARN Workshops, highly participatory
- Outcome is action orientated
- Create Tools in context of MDGs then SDG's
- Developed for Member Associations to progress, disseminate, build upon
- SDG themes included: Mentoring, VGGT's, Infrastructure, Big Data and Leadership skills

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(iv) Co ordinate: Responsible Governance of Tenure - VGGT's



International soft law

- Adopted by the world community, setting out principles and practices that can be used to improve the governance of tenure.

ARN 2016- Ivory Coast, Abidjan

- **Theme: Working to ensure good land governance: What you can do about it** to build future resilience
- With Federation of French Geomatics Surveyors
- Promoting Anglophone & Francophone (challenges accepted)

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(vi) Contribute

- FIG Mandate: - Joint activities with sister organisations and common policy-making to reduce poverty and enforce sustainable development
 - GGIM
 - F4P
 - NUA
- Significant **change in attitudes** toward land with the rise of human rights law and the proposals in the MDG/ SDG



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Contribute...UN Global Geospatial Information Management



- **Mandate** (part) to provide a platform for the development of effective strategies on **how to build and strengthen national capacity on geospatial information**, and
- Includes an **expert group** on land administration and management
- Aiming to increase the amount of **standards** e.g. geodetic framework, and guidance to the geospatial community (Kadaster and FIG VP Mikael Lilje)
- Output so far: 2014 guide to standards in geospatial information management
 - ***My Plea, African professional representation***

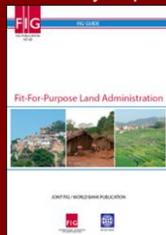
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Contribute....Fit-For-Purpose Approach

Cadastral Gap:

- “There is an urgent need to build systems which can identify the way land is occupied and used and provide security of tenure and control of the use of land”.
- “When building such systems the focus should be on a **“fit-for-purpose approach”** that will meet the needs of society today and can be incrementally improved over time”.



3 Fundamental Characteristics

- Focus on Purpose
- Flexibility
- Incremental Improvement



Fit-For-Purpose Concept

3 Core Components

- Spatial Framework
- Legal Framework
- Institutional Framework



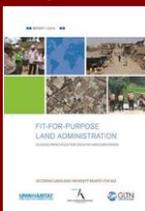
Each Framework has
4 Key Principles

<http://www.fig.net/pub/figpub/pub60/figpub60.htm>

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.....Delivery, influence and moving to implementation



- **Fit for Purpose**
 - Conceptualisation
 - Workshop – consultations/ EGMs
 - Partnering with other organisations
 - Awareness building/ raising
 - Influence
- Moving to implementation.....
 - Workshops/ Multi stakeholder roundtables
 - Range of activities being undertaken by cluster partners...
 - **GLTN/ FIG Africa Regional Network: Implementing FFP (Rwanda 2017)**

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4. Overview

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- **Global to Local**
- **Trend watching**
- **Being Smart**

5. Final Remarks

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Global to Local



- After all development happens locally, it is
 - where people and grassroots campaigns push their governments to do their jobs;
 - where NGOs and social enterprises find creative solutions to seemingly intractable problems;
 - where responsible business create jobs and innovation;
 - where visionary leaders cut fuels subsidies and leave office when they are meant to.

(Devex Dec 2015)

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Trend: Is it all about Big Data?



Big Data (BD) Defined:

- Refers to large, complex data sets that cannot be analysed using traditional data analysis techniques
- **Spatially referencing BD is impacting every aspect of the survey profession**
- We recognise the need to understand
 - What it is &
 - To engage with its implications.
- Recall- Thought leadership ARN workshop 2015 **Generational Diversity and Technology in the Land Professionals Sector**, Hosted by Institute of Surveyors in Kenya (ISK) Supported by Thomson Reuters



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Our current professional World ..



- Platforms/ convergence
 - Smart cities
 - Big data
 - IoT- network world of connected devices, objects and people
 - Block chain, decentralised network of digital records (ledgers) that link to a particular asset



- Data:
 - Building Information Modelling (BIM) based on 3D CAD. Level 3/ open BIM a centralised storage repository
 - BIM data on building interaction with local environment.
 - Intelligent buildings: Whole application of property information to spectrum of professions (costs, value, planning, survey etc.)

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Trend: Smart Cities and Data



The development of
Smart Cities & Urban Big Data
go hand in hand

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FIG

Smart cities: Definable?

Beyond the Rhetoric: 2019 African smart cities summit

- Cities **declare their intention** to become smart cities, initiate smart city programs and deploy smart city technologies
 - After all, a strategic driver for regeneration and growth, employing information and communication technologies for sustainable economic development and fostering new forms of collective life.....
- **It appears that** a well delineated and agreed definition is lacking
- Ultimately it **uses networked digital technologies and urban big data to tackle a range of issues** such as
 - improving governance & service delivery, resilient critical infrastructure, local economy growth, better mobility, gaining transparency & accountability, increasing safety and security – using a wide range of smart city technologies.

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FIG

What is a Smart city?

Differing views, Principally about :

- **1 digital instrumenting cities** to change how urban infrastructures and city services are configured and managed.
- **Vision-** networked, digitally enabled devices directly embedded into the fabric of cities- digital cctv, smart meters, sensor networks

- **2 Improving urban policy, development and governance** by using advances in ICT to creativity, innovation, participation.
- **Vision-** e govt, publishes open data, citizen centric city performance, nurture start up programs, actively leverages technologies and data.

- 3. using digital technologies and ICT to **promote a citizen centric model of urban development** to social innovate & social justice
- **Vision-** a smart city promoting smart society that provides equal opportunities, serves local communities and reduces inequalities

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Geographical Variations (broad based)



.....Not mutually exclusive

- **Europe/US** = concerned with improving the efficiency of city services, creating resilience and sustainability, strengthening security and control, and fostering economic development

- **China, India, Africa**= a way of enabling modernisation and national development, responding to population growth/ migration, managing economic & urban transitions

- The retro fitting or building from scratch (e.g. **Songdo/ South Korea**, 100 planned in **India**)

Expectations



- Central to the creation of smart cities is precisely about making cities data-driven, enabling city systems and services to be responsive to and act upon data, preferably real-time data.
- It is no coincidence that the drive to create smart cities dovetails with the unfolding data revolution i.e a
 - Smart economy
 - Smart government
 - Smart mobility
 - Smart environments
 - Smart living
 - Smart people.....

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**Are we being
smart enough about Smart?**

**Can we remain relevant in the
Transformation of our world and
Shift the (*OUR*) Paradigm?**

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African thought leadership



Launch of 'Smart Africa Blueprint for Smart Sustainable African Cities (2017)

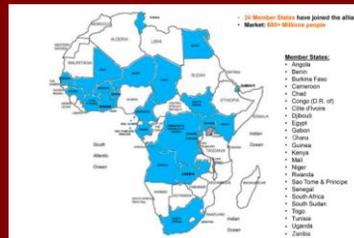
Africa is no exception.

- Urbanisation is a powerful driver of economic development and social mobility. It is also a catalyst for technological progress.....
- **We have to plan ahead, and adequately** for urban expansion by anticipating the higher standard of public services, housing, liveability and economic opportunity.
 - Connect
 - Innovate
 - transform

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Reference



Smart Africa:

Alliance of 14 Member states

<http://smartafrica.org/membership-and-sponsors/member-states/>

Blue print is explained....

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Defined: What is a Smart City



- Leaders and citizens use data, information and knowledge to ensure a co-related resilient & sustainable future,
- Achieved by
 - Inclusive data-led management and planning
 - Efficient community based infrastructure and services
 - Localised and shared innovation and economic development

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People- citizens



- Cities are built by people for people and big data can be used to glean greater knowledge of how cities function for their residents
- Increasingly big data is recording these spatial interactions sometimes overlaid with temporal referencing, and interaction with the infrastructure and the environment.
- Leads us onto People, Talent and....

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Trend: Talent And Data

Lacking in the right skills is “a significant and pressing challenge” (Mckinsey 2011)



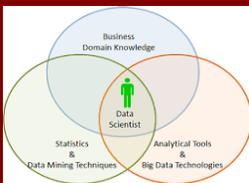
- **Historically** data has formed part of land (all) professionals expertise; this is increasingly moving into the public domain
- **Data applications** are fast: Volume, Velocity and Variety
- Clearly **includes AI**- Noting that the fields/ professions least under threat are those that require more creative intelligence
- Importantly, conversion from **analogue to digital** is generational, young people entering the profession now will only have known a digital environment.

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Talent - Jobs and skills

There is a talent gap that will affect the ability of firms Governments to maximize the potential of big data (Hoskins 2014) & ARN 2016



- Three specialist expertise are needed:
 - **Domain**: deep theoretical factual and practical knowledge of the field (many of us trained when data was scarce!)
 - **Data**: familiar with how data collected and curated and relationship been modelled objects and digital representations
 - **Analytical**: and managerial to SWOT and to teach others!
 - (and **probably** Project management)

Graphics, both: Petaa Bytes Analytics Pvt. Ltd

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Attracting Talent (RICS)



Our organisations need

- Diversity & Inclusivity have people from different backgrounds who think differently and can share a wide range of experiences
- Four generations in the work place, collaborative working.
- Show case the reputation that it is valued and that it can (and does) offer **exciting careers with a social purpose**
- Above all, young people entering the profession now will only have known a digital environment

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- **Stepping up**
- **Shaping**

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Surveyors Stepping Up - 3 Pillars of Influences?

(K Bell WB/ FIG WW 2016)



Science and technology

- Measure, model and monitor
- Data integration
- Provide the evidence
- Innovation, tools and outcomes

Policy framework

- Political awareness
- Evidence based policy
- Inter-governmental
- Decision making
- Influence

Sustainable development

- Local to global issues
- People, cities
- Livelihoods
- Ecosystems
- Development

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What is the Paradigm shift?

11 SUSTAINABLE CITIES
AND COMMUNITIES



- Over the years, ARN has developed thought leadership aligned to Global trends specifically in the context of the UN indicators (MDGs & SDG's)

Provocative thoughts:

- As a profession, do we do enough to be part of this reality?
- Is our professional paradigm shift all about Data and Talent?

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ARN: Rewarding and Thanks to.....



Energy, Enthusiasm and input from:

- African land professionals
- Member Associations
- Young Surveyors Network
- Support from GLTN, FAO, AU, FGF



AND, Trimble,
Thomson Reuters,
ESRI Rwanda, ESRI,

And

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ARN: Rewarding and Thanks to.....



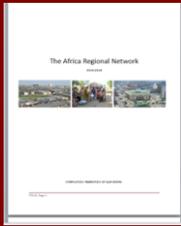
Our Hosts:

- Institute Surveyors Kenya (ISK), Kenya
- Fédération des Géomètres Francophones (FGF) and L'Ordre des Geometres-Experts de Cote d'Ivoire (OGECI), Ivory Coast,
- INES- Ruhengeri, Rwanda,
- ***Botswana Institute of Surveyors (BIG)....***

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We've delivered for Africa



- **Engagement:** Open to All
- **Launch:** Publication # 70,
- **Deliberations:** Wrap up our business term ending 2018

- **Look forward** to our next term (2019-22):
 - **Incoming Chair:** Jennifer Whittal, Associate Professor, University of Cape Town, and the South African Geomatics Institute (SAGI),
 - Importantly with support from all African Regions

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The Future We Want to Shape



Cities are where the battle of sustainable development will be won or lost (food security, rural sustainability etc.)

To remain relevant we must be part of the Paradigm Shift and to be Adaptive and Agile

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**Thank You for your
attention**



**Wishing you well in 2018 your
deliberations**



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- www.fig.net/organisation/networks
 - Email alerts
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Regional Capacity Network www.fig.net/organisation/network