

# "Sustainable Urban Development" The Role of Land and Built Environment Professionals



**KAMPALA 1<sup>ST</sup> & 2<sup>ND</sup> APRIL, 2022**

Surv. Kwame TENADU, FGhIS  
FIG Vice President  
Past President - LiSAG



# Greetings

The Honorable Minister of Works and Transport

The Registrar of the Surveyors Registration Board,

The President and Governing Council of the Institution of Surveyors of Uganda,

Surveyors,

Invited Guests,

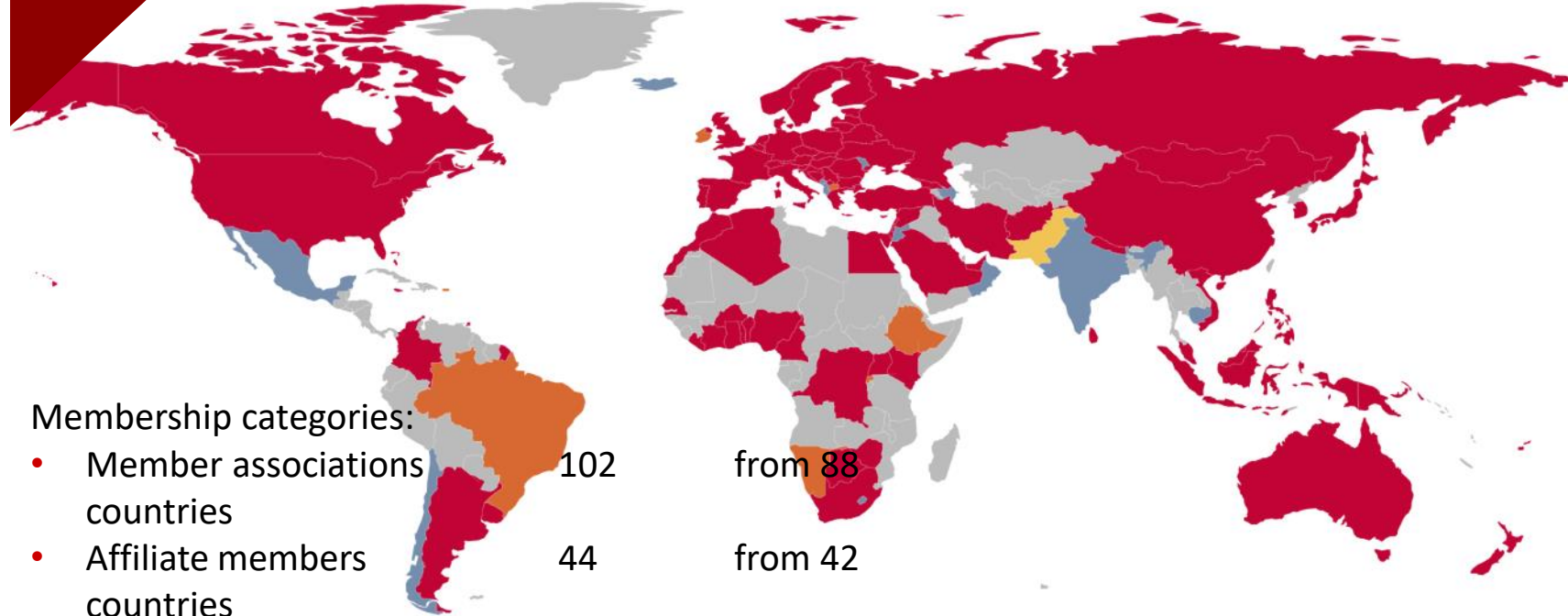
Members of the Press,

Ladies and gentlemen,



## Members

Over 120 countries represented in 2021 – more than 300,000 individuals



### Membership categories:

- Member associations countries 102 from 88
- Affiliate members countries 44 from 42
- Academic members countries 89 from 51
- Corporate members 24
- Correspondents 4
- Honorary presidents 8
- Honorary members 32
- Honorary ambassadors 2

**WHO**

# FIG Council 2019-2022



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2019-2022**

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Sweden**

**Vice President  
2017-2020**





**WHO**

**FIG represents the  
interests of surveyors  
worldwide**





# WHO

6



# HOW

## Commission 1: Professional Practice

- International Ethics Standards (WG 1.1)
- Women in Surveying (WG 1.2)
- International Boundary Settlement and Demarcation (WG 1.3)

## Commission 2: Professional Education

- Developing academic networks for knowledge sharing (WG 1.1)
- Curriculum on the Move (WG 2.2)
- Learning styles in surveying education (Joint WG with YSN)

## Commission 3: Spatial Information Management

- Geospatial Information Infrastructure for Smart Cities (WG 3.1)
- Geospatial Big Data: collection, processing, and presentation (WG 3.2)
- User-Generated Spatial Content Empowering Communities (WG 3.3)
- 3D Cadastres (WG 3.4)
- GIS Tools for Spatial Planning (WG 3.5)
- Geospatial Next (WG 3.6)



# HOW

## Commission 4: Hydrography

- Standards and Guidelines for Hydrography (WG 4.1)
- Blue Growth & UN Sustainable Development Goal 14 (WG 4.2)
- Mapping the Plastic (WG 4.3)
- Marine Development and Administration (WG 4.4)

## Commission 5:

### Positioning and Measurement

- Standards, Quality Assurance and Calibration (WG 5.1)
- 3D Reference Frames (WG 5.2)
- Vertical Reference Frames (WG 5.3)
- GNSS (WG 5.4)
- Multi-Sensor-Systems (WG 5.5)
- Cost Effective Positioning (WG5.6)

## Commission 6:

### Engineering Surveys

- Deformation Monitoring and Analysis (WG 6.1)
- Landslides Monitoring (WG 6.2)
- UAV in Surveying (WG 6.3)





## Commission 7:

### Cadastral and Land Management

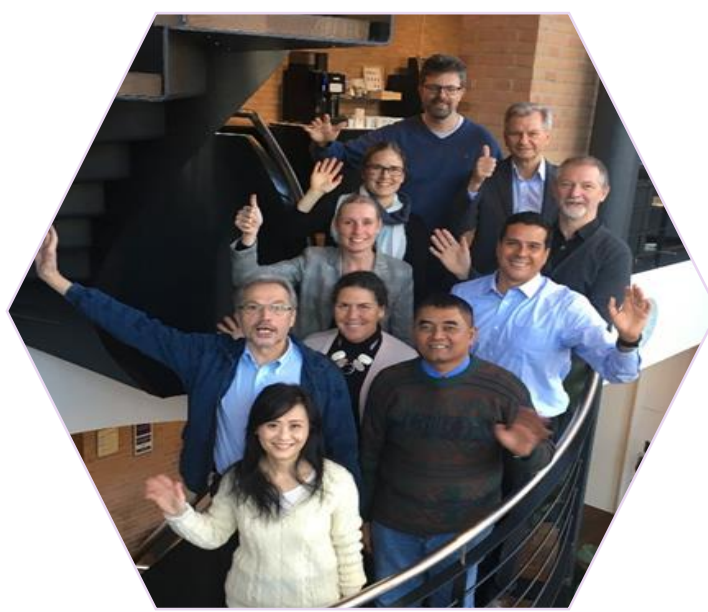
- Cadastre Technologies and Smart City (WG 7.1)
- Fit-for-purpose (FFP) implementation (WG 7.2)
- Cadastral Template 2.0 and the SDGs (WG 7.3)
- Urban Challenges (Joint WG)

## Commission 8:

### Spatial Planning and Development

- Rural – urban dependency (WG 8.1)
- GIS tools for spatial planning (WG 8.2)
- Urban Challenges (Joint WG)
- Land policy instruments for spatial development (WG 8.4)
- African Water Governance (WG 8.5)



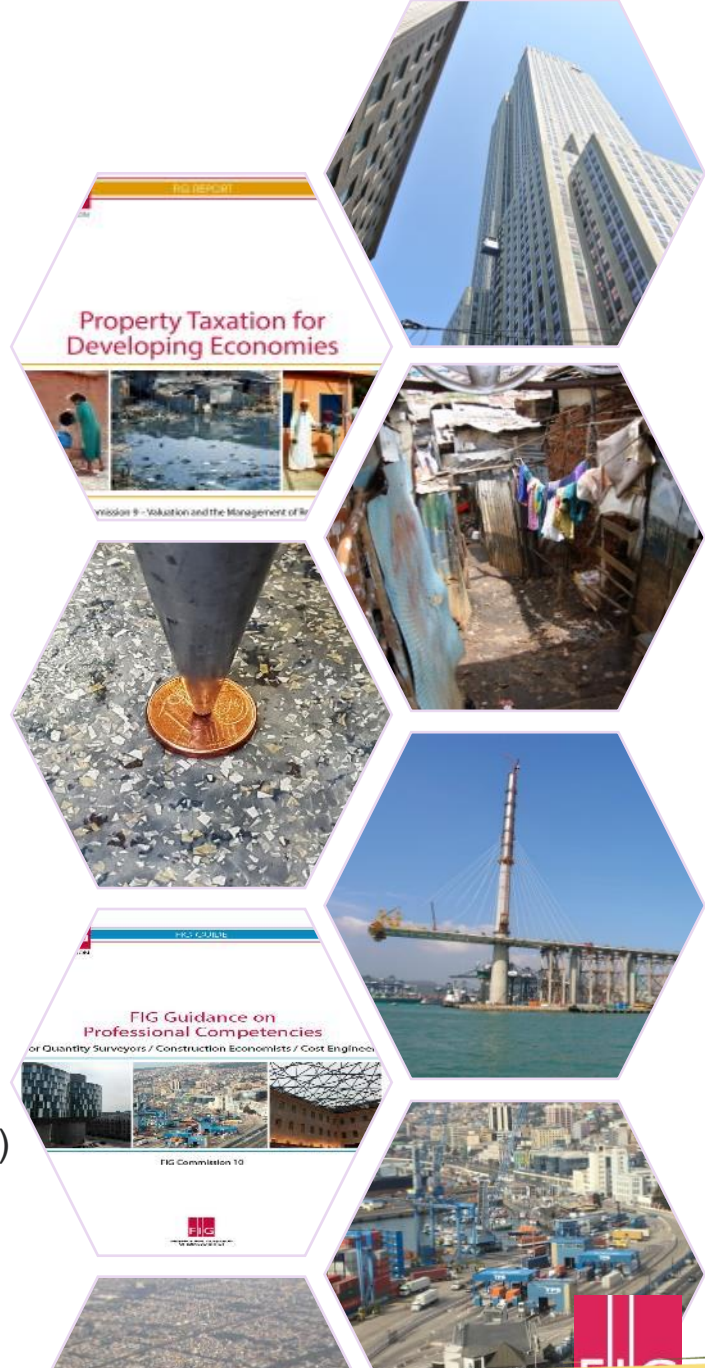


## Commission 9: Valuation and the Management of Real Estate

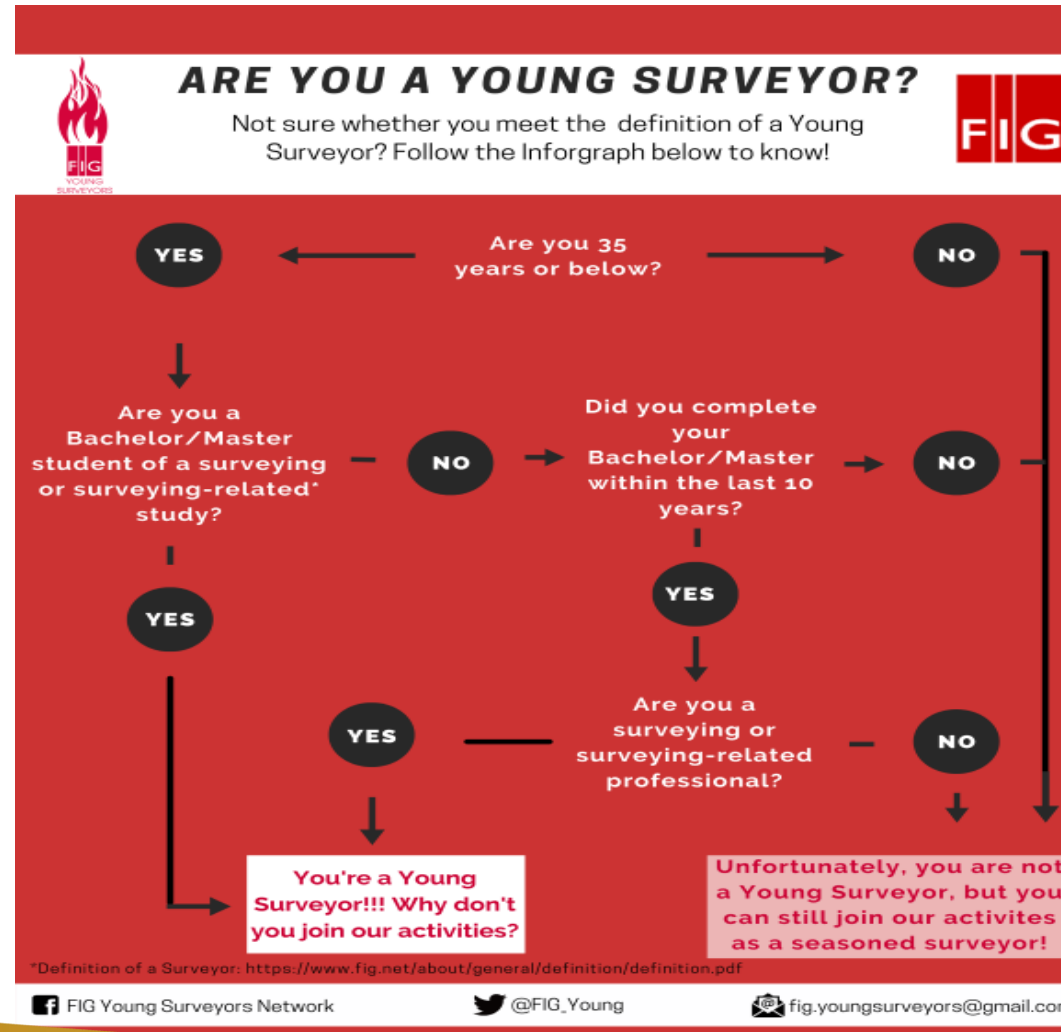
- Manual and due diligence protocol for the 'Valuation of Unregistered Lands and informal property' (WG 1.1)
- Blockchain (WG 1.2)
- Urban Challenges (Joint WG)

## Commission 10: Construction Economics and Management

- International Construction Measurement Standards (WG 10.1)
- Digital Construction (WG 10.2)
- Education and Research (WG 1.3)



# FIG YOUNG SURVEYORS NETWORK



Source: [www.fig.net](http://www.fig.net)





# FIG STANDARDS NETWORK

- Building and maintaining relations with the secretariats of standardisation bodies,
- Proposing priorities on FIG's standardisation activities, including advising the Council on priorities for spending,
- Setting up necessary Liaison relationships with standardisation bodies,
- Ensuring that lead contacts to Technical Committees etc. are in place,
- Maintaining an information flow on standardisation to FIG members, including through the FIG website, and more directly to relevant Commission Officers,
- Maintaining the [Standards Guide](#), and related material on the FIG website,
- Working with other NGOs, within the framework of the MOUs signed by the Council,
- Advising FIG's officers and members on standardisation activities as necessary.



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Source: [www.fig.net](http://www.fig.net)



# XXVII FIG CONGRESS

AUGUST/SEPTEMBER 2022  
Warsaw, Poland



*Volunteering  
for the future –  
Geospatial excellence  
for a better living*

13



2023 FIG Working Week  
Hilton Orlando Bonnet Creek / Waldorf Astoria Orlando  
Orlando, Florida USA  
27 May – 3 June



2025: Brisbane, Australia  
2026: Cape Town, South Africa



# FIG IN BRIEF – CORE VALUES AND VISION

## ➤ CORE VALUES

- It is a UN-recognized non-government organization (NGO), representing more than 120 countries throughout the world, and its **aim is to ensure that the disciplines of surveying** and all who **practise them** meet the needs of the markets and communities that they serve.

## ➤ FIG'S VISION

- A modern and sustainable surveying profession in support of society, environment and economy by providing “**innovative, reliable and best practice solutions to our rapidly changing and complex world, acting with integrity and confidence about the usefulness of surveying, and translating these words into action**”.

*These Values and Vision reflects the ideals of Multilateralism*

Source: [www.fig.net](http://www.fig.net)





# FIG IN BRIEF

*JUST A REMINDER OF WHAT FIG STANDS FOR !! – A  
“UNITED NATIONS” OF SURVEYORS*

- FIG is the premier international organization **representing the interests of surveyors worldwide.**
- It is a **federation of the national member associations** and covers the whole range of professional fields within the global surveying, geomatics, geodesy and geo-information community.
- It provides an international forum for discussion and development aiming to **promote professional practice and standards.**

Source: [www.fig.net](http://www.fig.net)



# Context of my presentation

- There is no shortage of problems and challenges in AFRICA, UGANDA
- **Hack the technology** and don't reinvent the wheels
- Knowledge – Expertise – Experience – **Common sense**
- Strategic/critical planning & thinking (The most easiest of action by man), Do **creative thinking**. The ONLY instance you fail is when you give up!
- Self reliance - Do it yourselves (poverty is business and opportunity for strategic planners and CREATIVE thinkers)



# ISU

- **Vision**

To become a world class professional Surveying Institution

- **Mission**

To promote a basic professional Surveying Practices that can enhance the **quality of services** under the various surveying disciplines in Uganda

- **Our Values**

- Act with Integrity
- Promote Professionalism
- **Excellence at Service Delivery Advancing Innovation**





# The Objectives of the Institution are as follows:

1. To secure the advancement and facilitate the acquisition of that knowledge which constitutes the profession of a surveyor.
2. **To promote the general interest of the profession and the Institution, and to maintain and extend their usefulness for public advantage;**
3. To consider and determine matters of professional practice and conduct;
4. To act as the voice of the profession in matters affecting its relation with Government and Public bodies and with the public generally, and particularly to advise Government before the issue of work-permits to foreign surveyors:
5. To nominate representatives of the profession to Boards and Committees on which representation of the profession is required and desirable;
6. To organize professional meetings and activities



# Global Challenges

- Health
- Urbanisation
- Changes in social fabric
- Security
- Climate change



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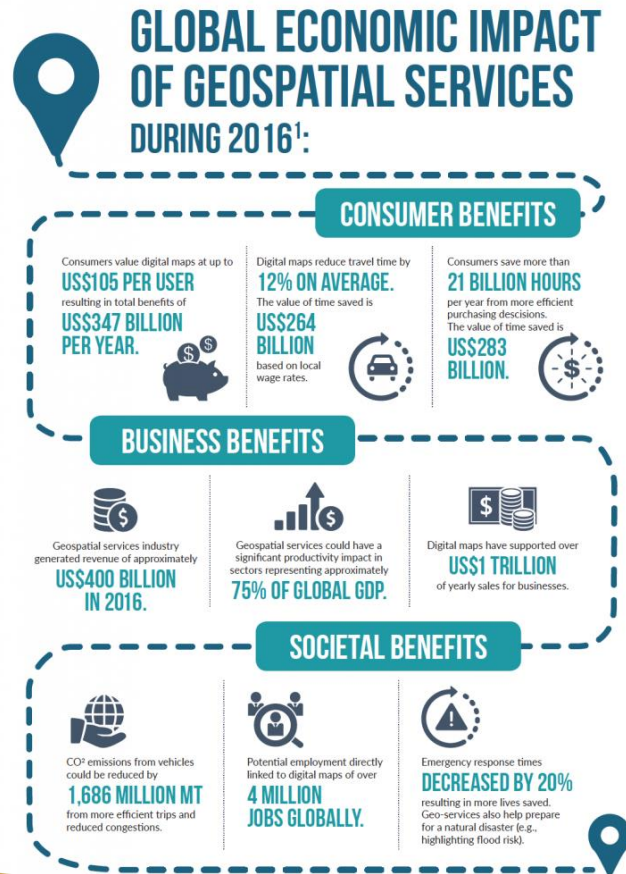
# JOURNEY TO SGD'S GOALS

- Alignment to the SDG'S through AGENDA 2040 VISION
  - EDUCATION
  - GENDER EQUALITY
  - HEALTH
  - SUSTAINABLE CITIES
  - INNOVATION
  - LOCAL CONTENT ACT of 2014
    - Statutory Instruments 2016 No 44 (The Petroleum (Exploration, development and production) regulation 2016 to address (SDG 1 Poverty)





# GEOSPATIAL SERVICES - IMPACT



[https://www.bbrief.co.za/content/uploads/2017/10/Google\\_Geospatial-impact\\_South-Africa-report.pdf](https://www.bbrief.co.za/content/uploads/2017/10/Google_Geospatial-impact_South-Africa-report.pdf)

<https://www.geospatialworld.net/blogs/economic-impact-of-geospatial-services-need-know/>



# The value of geospatial services examined in three areas

- Social and environmental benefits

- Job creation ▪ Traffic congestion ▪ Urban planning ▪ Civic engagement ▪ Public Health ▪ Safety & emergency response ▪ Disaster preparation and responsiveness ▪ Environment and wildlife preservation ▪ Knowledge creation and human capital development



- Business benefits

- New products and services ▪ Productivity benefits for other sectors ▪ Boosting growth (particularly for SMBs) ▪ Tourism spend



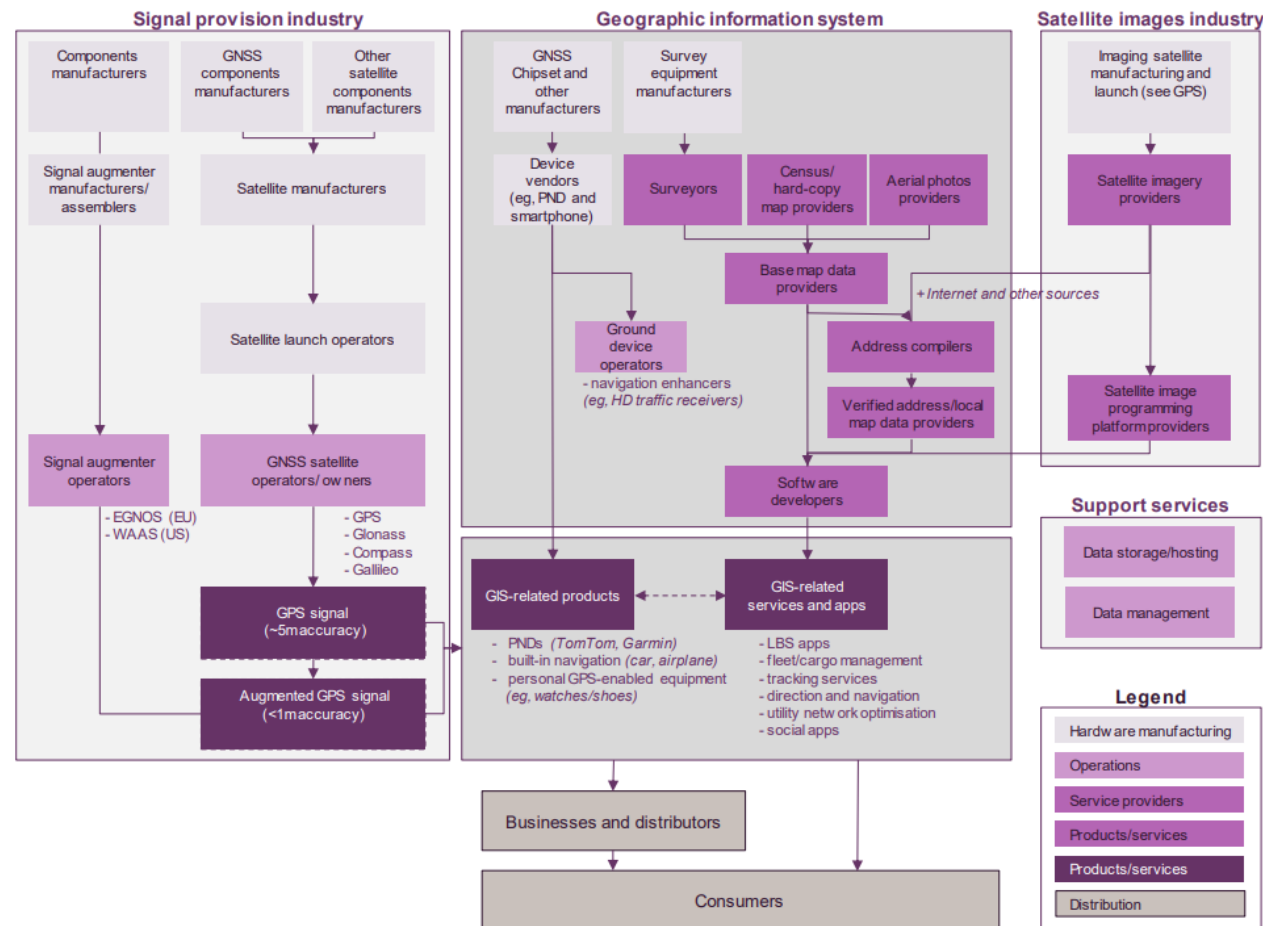
- Consumer benefits

- Commuting efficiency: beating congestion ▪ Fuel efficiency: saving money at the pump ▪ Personal safety: safer routes and driving ▪ Purchasing efficiency: faster shopping



Source: [https://www.bbrieff.co.za/content/uploads/2017/10/Google\\_Geospatial-impact\\_South-Africa-report.pdf](https://www.bbrieff.co.za/content/uploads/2017/10/Google_Geospatial-impact_South-Africa-report.pdf)

Figure 2.1 Stylised value chain for Geo services



Source: Oxera.



## OUR CHALLENGE –THE NEW REALITY IN CONTEXT? - PERSPECTIVE

### NEW REALITY

- **TECHNOLOGY - DRIVERS FOR DEVELOPMENT (4IR, IoT, AI, BIG DATA)**
- **UNFAIR WORLD ECONOMIC ORDER, DISASTER, ETC**
- **PANDEMIC – NOTHING IS CONSTANT !**

### PEOPLE PLACES MARKETS

- **COMMUNITIES - CONNECTING PEOPLE – PLACES & THE MARKETS**
- **? WHAT - SKILLS?**
- **HOW - ENGAGE?**

### MANAGE CONFLICTS

- **RESOURCE (PASTORAL AND WATER)**
- **LAND (USE )**
- **POLITICAL**
- **ECONOMIC**

**ACCOUNTABLE – TRANSPARENT –INCLUSIVE  
EQUALITY – DIVERSITY - ENGAGEMENT  
THEY REQUIRE THE WILL OF PEOPLE  
& SUPPORT OF PROFESSIONALS**





# Summary of facts & stats

<b>Population</b>	<b>(2021 est.) 42,886,000</b>
<b>Form Of Government</b>	<b>multiparty republic with one legislative house (Parliament [465<sup>1</sup>])</b>
<b>Official Languages</b>	<b>English; Swahili</b>
<b>Official Religion</b>	<b>none</b>
<b>Official Name</b>	<b>Jamhuri ya Uganda (Swahili); Republic of Uganda (English)</b>
<b>Total Area (Sq Km)</b>	<b>241,555</b>
<b>Total Area (Sq Mi)</b>	<b>93,265</b>
<b>Monetary Unit</b>	<b>Ugandan shilling (UGX)</b>
<b>Population Rank</b>	<b>(2021) 35</b>
<b>Population Projection 2030</b>	<b>55,723,000</b>
<b>Density: Persons Per Sq Mi</b>	<b>(2021) 459.8</b>
<b>Density: Persons Per Sq Km</b>	<b>(2021) 177.5 (434 in England, 149.7 China)</b>
<b>Urban-Rural Population</b>	<b>Urban: (2020) 10.6% • Rural: (2020) 89.4%</b>
<b>Life Expectancy At Birth</b>	<b>Male: (2019) 65.5 years • Female: (2019) 70 years</b>
<b>Literacy: Percentage Of Population Age 15 And Over Literate</b>	<b>Male: (2017–2018) 77.5% • Female: (2017–2018) 69.9%</b>
<b>Gni (U.S.\$ '000,000)</b>	<b>(2020) 36,421</b>
<b>Gni Per Capita (U.S.\$)</b>	<b>(2020) 800</b>

Source: <https://www.britannica.com/facts/Uganda>



# ISU - MEMBERSHIP

CHAPTER/MEMBERSHIP CATEGORY	LAND SURVEYING	QUANTITY SURVEYING	VALUATION SURVEYING
FELLOWS	80	42	40
PROFESSIONAL MEMBERS	110	36	69
ASSOCIATE MEMBERS	20	37	10
GRADUATE MEMBERS	476	218	312
TECHNICIANS	140	3	19
TOTAL	826	336	450



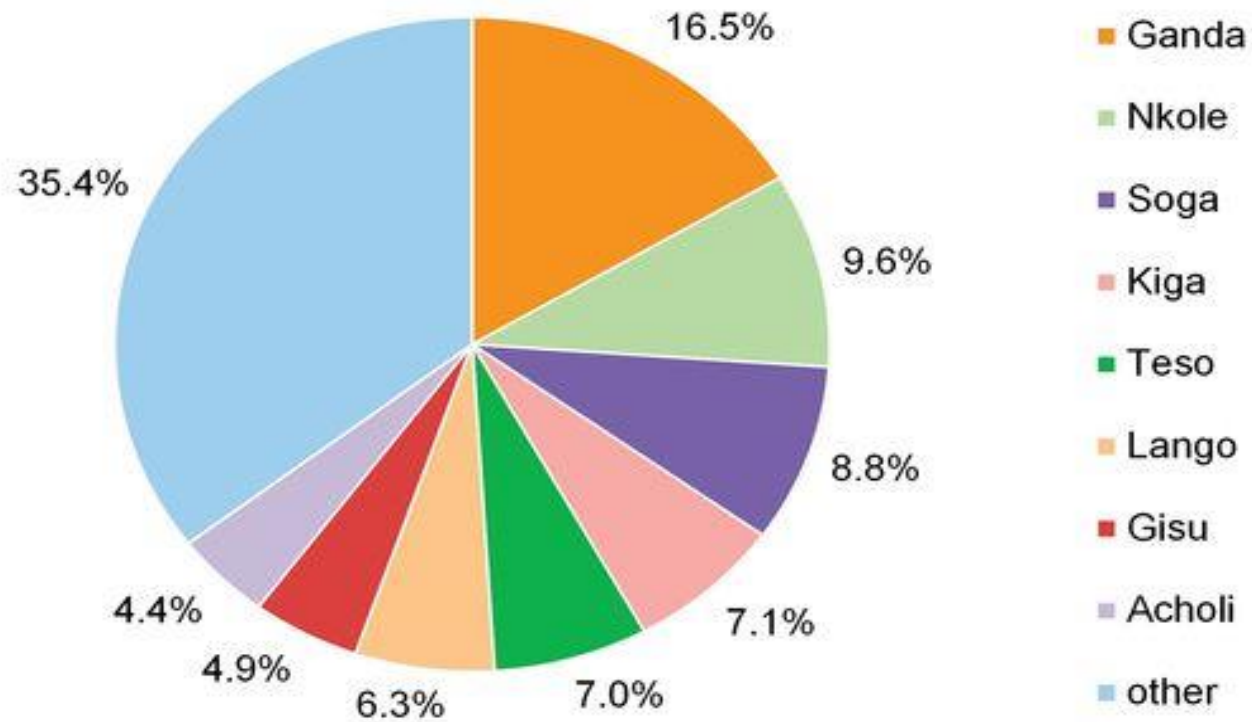
# PER CAPITA OF SURVEYORS

- Land Surveyors @ 1: 51,920
- Quantity Surveyors @ 1: 127,636
- Valuation Surveyors @ 1: 95,302
- PER CAPITA DISTRIBUTION IN POPULATION



# Notable Languages

Uganda ethnolinguistic composition (2014)



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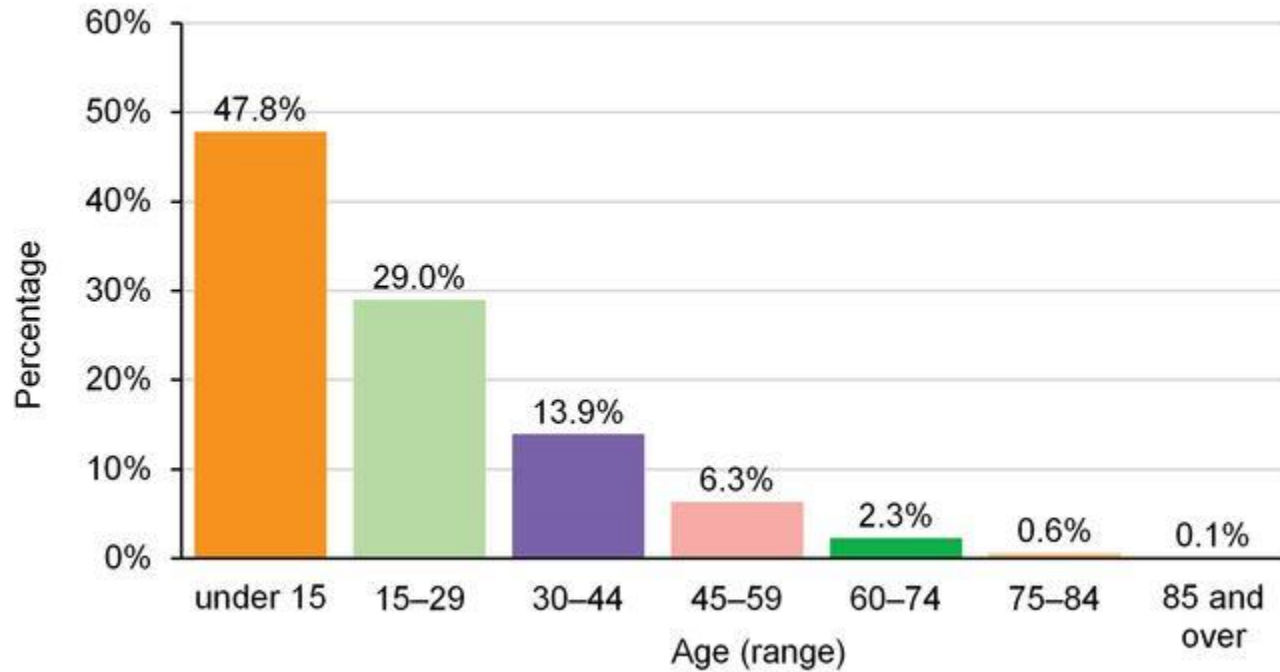
Source :<https://www.britannica.com/facts/Uganda>





# Demographics - Uganda

Uganda age breakdown (2018)



Source: <https://www.britannica.com/facts/Uganda>



# MEETING UGANDA'S JOBS CHALLENGES

- Young Ugandans need faster economic growth combined with a faster pace of economic transformation to create higher productivity jobs for the future economy.
- With a median age of just 15.9, Uganda is the world's second youngest country;<sup>1</sup> it also has one of the world's highest fertility rates at 5.91 per woman (2010–2015).
- Youthfulness means the working-age population grew at a very fast 3.92 percent per annum between 2011–2017.
- This will continue, with the number of job seekers increasing in the coming generation. We estimate that the working-age population will increase by 13 million people between 2017 to 2030.
- With one dependent per person of working age, and 1.42 dependents per employed person in 2017, dependency in Uganda is unusually high



Source: <https://documents1.worldbank.org/curated/en/693101582561426416/pdf/Uganda-Jobs-Strategy-for-Inclusive-Growth.pdf>

# UGANDA'S JOBS CHALLENGES IN TEN FACTS

- Fact 1: Trend economic growth has been slowing down
- Fact 2: Uganda's labor force growth has been speeding up
- Fact 3: Access to jobs is deteriorating
- Fact 4: The quality of jobs is deteriorating
- Fact 5: Spatial Inequalities are increasing
- Fact 7: The urbanization process is slow
- Fact 8: Transition from non-wage to wage employment has not taken place
- Fact 9: Private sector demand for wage workers is low
- Fact 10: Jobs are not shifting into higher productivity firms

<https://documents1.worldbank.org/curated/en/693101582561426416/pdf/Uganda-Jobs-Strategy-for-Inclusive-Growth.pdf>



# Labour Stats

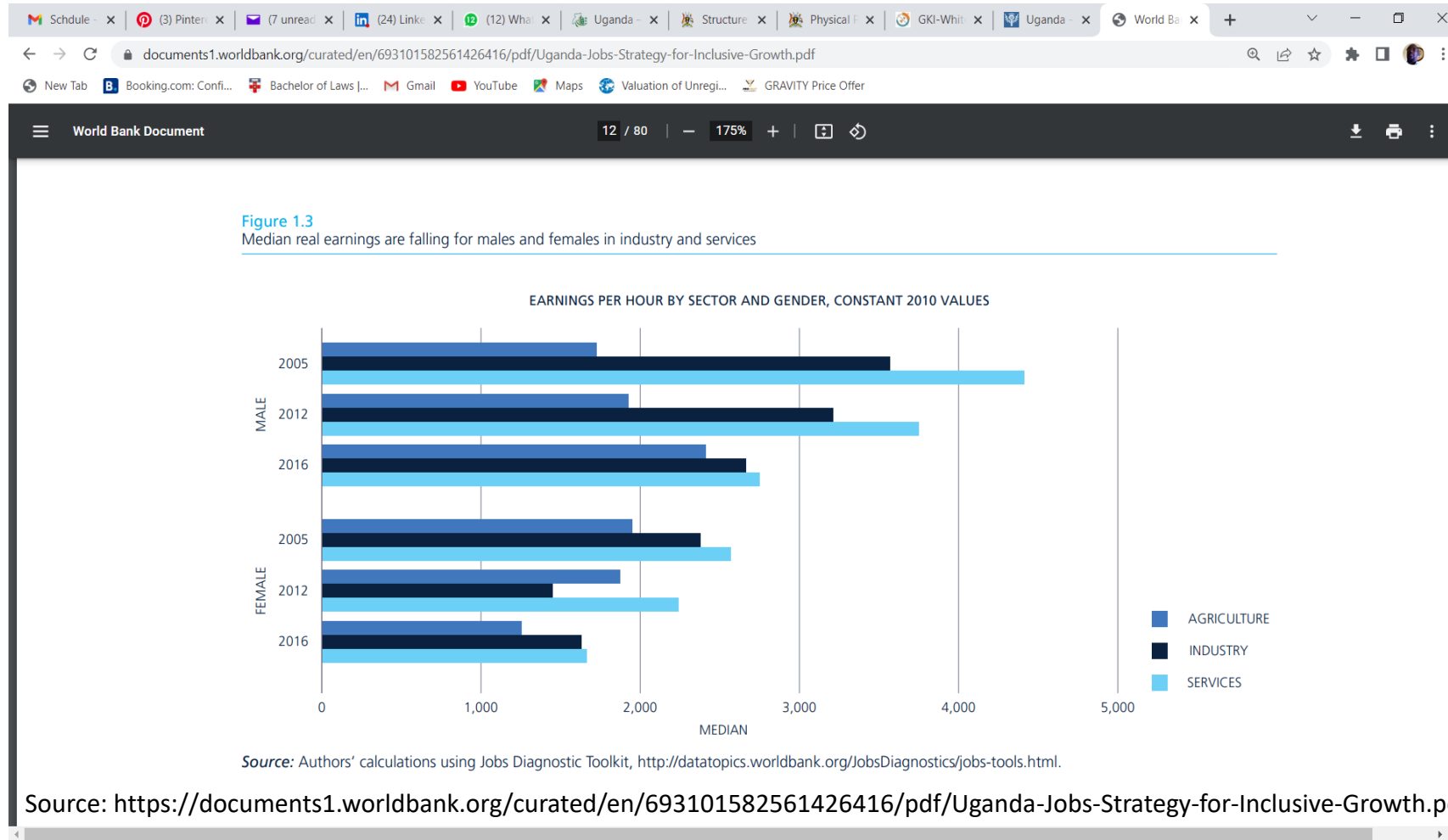
- Unemployment Rate (%) 9.85
- Employment to population ratio (%) 44.25
- Share of Youth Not in Employment, Education or Training (%) 29.8
- Average monthly earnings of employees in local currency UGX 383,447.95

Source: [https://www.ilo.org/gateway/faces/home/ctryHome?locale=EN&countryCode=UGA&\\_adf.ctrl-state=i3ibkvzc1\\_9](https://www.ilo.org/gateway/faces/home/ctryHome?locale=EN&countryCode=UGA&_adf.ctrl-state=i3ibkvzc1_9)





# “DEMAND OF SERVICE”?



WHAT SERVICE IN  
THE LAND SECTOR  
DO WE LACK?



# Institutional & Land Administrative framework



**MINISTRY OF LANDS, HOUSING  
AND URBAN DEVELOPMENT**



The Directorate is made up of the Office of Director, Department of Land Registration, Department of Land Administration, Department of Surveys and Mapping, and a Land Sector Reform Coordination Unit.

The Directorate of Physical Planning and Urban Development, comprises of the office of Director, Physical Planning and Urban Development; the Department of Physical Planning; the Department of Urban Development and the Department of Land Use Regulations and Compliance.

The major aim of this directorate is to attain an orderly, progressive and sustainable urban and rural development as a framework for industrialization, provision of social and physical infrastructure, agricultural modernization and poverty eradication.



# Duties: District Land Boards (DLB)

- In performing their duties, DLBs must follow the provisions of the Constitution, Land Act and the land Regulations, on the ownership and management of land. The national and district policies and the customs or guiding principles of an area have to be born in mind. The duties include:



# DEVOLUTION OF POWER IN LA NLC vrs DLB

- In performing its duties, the District Land Boards are independent of any person or authority. They cannot be controlled, directed, used or influenced. DLBs are independent of the Uganda Land Commission. This independence gives them the powers to do any of the following:
- Acquire by purchase or otherwise, rights or interests in land and easements;
- Erect, alter, enlarge, improve or demolish any building or other erections on any land held by it;
- Sell, lease or otherwise deal with the land held by the Board; and
- Do and perform all such other acts, matters and things as may be necessary for or incidental to the exercise of those powers and the performance of the above functions.





# BE A DISRUPTOR, INFLUENCE CHANGE

- **DEFINE YOUR SPACE**

- & Adopt a strategy
- And keep your vision in focus
- Create and celebrate your independence with the existing normal

- **CELEBRATING THE CHAMPIONS**

- YSN as a Movement (not event)
  - Willy Franck Sob - Cameroun –crowd sourced mapping tools
  - <https://www.linkedin.com/in/willy-franck-sob-b400bb85/?originalSubdomain=cm>
  - Dennis Duffour- Ghana – covid 19 tracker, crime alert
  - <http://www2.umat.edu.gh/gjt/index.php/gjt/article/view/344>



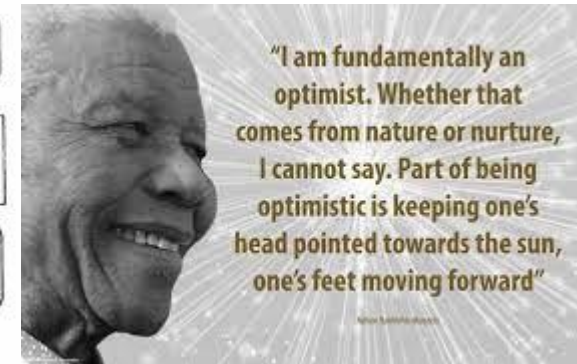
# World Bank Curator

Defeating river blindness in Africa:  
successful human development  
through PARTNERSHIP



# IMPERATIVE OF CHANGE

## 50 Reasons Not To Change



# CREATE OUR NARRATIVES

- LET'S DOCUMENT OUR STORIES OF CHANGE
  - IN OUR LANGUAGE – mindful of the population we connect with
  - OUR CULTURE – our values
- FROM OUR PERSPECTIVE & ACTIONABLE AGENDA
  - Practical Training hubs across in Countries – Universities / online programs
  - Rethinking global cooperation in higher education and research. (a hub for practical training in GIS)
  - Annual country/regional competition (for mentoring)



# Lessons from my Cambodian friend

- TALK LESS
  - DO MORE
  - DO MORE VERY OFTEN, EVEN AFTER YOU FAILED
  - DO MORE
- DO MORE...
  - TEACH LESS - Coaching
  - ELEPHANTS DON'T TRAIN DOGS – impactful learning





# STOP CRYING!!

## SEARCH FOR AFRICA'S PATH

- Search for yourself by yourself.
- Do not allow others to make your path for you.
- It is your road, and yours alone.
- Others may walk it with you, but no one can walk it for you.
- AFRICAN REAL ESTATE SURVEYORS –AfRES
- AFRICAN ASSOCIATION OF QUANTITY SURVEYORS – AAQS
- NONE FOR LAND SURVEYORS !!!!!

# WHY ANGRY????

*Holding onto anger is like  
drinking poison and  
expecting the other person  
to die.*

*Buddha*

<http://coachingpositiveperformance.com>



# ADDRESSING CONTINENTAL AFRICAN SURVEYORS' CHALLENGE

## UNITING AFRICA THROUGH


- CORS NETWORK – AFREF
- MENTORING & NETWORKING
- SOCIAL COMMUNICATION & VIRTUAL PLATFORM

# Role of the built environment professional

- Role of
- land surveyor, Land Valuation Surveyor, Quantity surveyor, Hydrogeological surveyor
- Civil engineers
- Architects .....
- In fact, 'what', 'where' and 'when' questions cannot be answered in the virtual world without the use of geospatial technologies. Imagine adding location at the time of mobile money transaction as a product!
- How to communicate? Language
- The spirit of benevolence – Nationalism - Multilateralism
- The spirit of passion to championing values of the BE Professional (young & old)
- SMART Surveyors/BE professional – What do we have to offer?
- What character must a BE professional have/form? –
  - believe in yourself (self realization and self fulfilment)
  - Remove envy and celebrate togetherness
  - Rationalize your actions to take away greed
- The level of geospatial infrastructure, KNOWLEDGE and support systems (internet & IoT, CORS, AI, ETC) digital base map are :  
QUA NON



# PROTECT SURVEYORS



**PRESS STATEMENT ON KILLING OF GEOLOGICAL (MINING) SURVEYORS ON DUTY IN MOROTO DISTRICT**

**23<sup>rd</sup> March, 2022**

On 22nd March 2022, we received sad news about a raid by the Karamajong cattle rustlers. The rustlers attacked and killed a Geological Surveyor Mr. Kiggwe Richard, Mr. Olweny Charles (Field support staff), Miss Edna Kafaaku Musiime a promising Geological Surveyor and security operatives amidst their professional duties.

This occurrence has rather been a common practice mainly involving Land Surveyors being lynched by the public in disguise of defending their land. As much as we resonate with the people on insecurities of land tenure and the desire for protecting their interests, we believe and strongly advise the general public to understand that Surveyors are simply executing their professional work and shouldn't be sacrificed in the middle of misunderstandings.


We urge the public to use civil means and avoid acts of mob justice. In the incident, we urge the government to intensify and hastily complete the disarming of Karamajong communities.

We convey our sincere condolences to the families and friends of the deceased, colleagues at various work places, Ministry of Energy and Mineral Development, security agencies, the Surveyors' fraternity, professionals in the natural resources environment and the general public.

As the Institution of Surveyors of Uganda (ISU) we are engaging relevant authorities to come up with guidelines on fieldwork to mitigate on such occurrences.

We continue to strongly encourage the general public to desist from harsh means of resolving any sort of misunderstanding.

Everybody's life matters.



Dr Nathan Kibwami  
President ISU



# Safety of professional and work (ILO Conventions)

- [Promotional Framework for Occupational Safety and Health Convention, 2006 \(No. 187\)](#)
- It is direct contribution to the 2030 Development Agenda, in particular [SDG 8.8](#) – “8.8 Protect labour rights and promote safe and secure working environments of all workers, including migrant workers, in particular women migrants, and those in precarious employment”.
- Safe work results first and foremost from shared values that do not tolerate accidents, injuries, diseases;
- from relentless focus on coordinated action between policymakers, law enforcers, workers and employers, health professionals and training institutes.





# ILO- C155 - Occupational Safety and Health Convention, 1981 (No. 155)

- For the purpose of this Convention--
- (a) the term ***branches of economic activity*** covers all branches in which workers are employed, including the public service;
- (b) the term ***workers*** covers all employed persons, including public employees;
- (c) the term ***workplace*** covers all places where workers need to be or to go by reason of their work and which are under the direct or indirect control of the employer;
- (d) the term ***regulations*** covers all provisions given force of law by the competent authority or authorities;
- (e) the term ***health*** , in relation to work, indicates not merely the absence of disease or infirmity; it also includes the physical and mental elements affecting health which are directly related to safety and hygiene at work.

Source: [https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100\\_INSTRUMENT\\_ID:312300:NO](https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312300:NO)



# Occupational, Safety & Health (OSH)

- I would call for ISU & Ministry's responsible for BE to take the lead in establishing a national advisory mechanism on OSH.
- Secondly, as economies develop, become more diversified and market forces play a greater role, employers need to be put in the driver's seat when it comes to assessing the risks to safety and health inherent in their commercial operations and determining preventive measures.

Source: [https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100\\_INSTRUMENT\\_ID:312300:NO](https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312300:NO)



# THANK YOU FOR YOUR ATTENTION

