



**ENSURING THE RAPID RESPONSE TO CHANGE**  
**ENSURING THE SURVEYOR OF TOMORROW**

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## Ensuring the Rapid Response to Change

## Ensuring the Surveyor of Tomorrow





FIG has always acknowledged “change” as a reality of our world:

- In 1938: *the role of the surveyor in the social order of today.*
- 1990s: *information society; globalization; shaping the change; facing the challenges, engaging the challenges.*
- 2015: *respond to change; respond intelligently.*

**“Timing” is introduced as the crucial factor in our theme**



## Investigate the Change



Geospatial information is recognized as the tool to address issues like :

- ❑ Population growth
- ❑ Rapid urbanization
- ❑ Tendency of development to cluster within the coastal zones
- ❑ Rapid response to natural disasters
- ❑ Interconnectivity



[www.dailyrecord.co.uk](http://www.dailyrecord.co.uk)

## Changing economies, markets & societal needs: **security of tenure**



- ❑ The empowerment of *private property rights*
- ❑ Implementation of these rights
- ❑ Registration of property rights
  - ❑ *Provide secure ownership to land and real property, and*
  - ❑ *Support the operations of the property market*

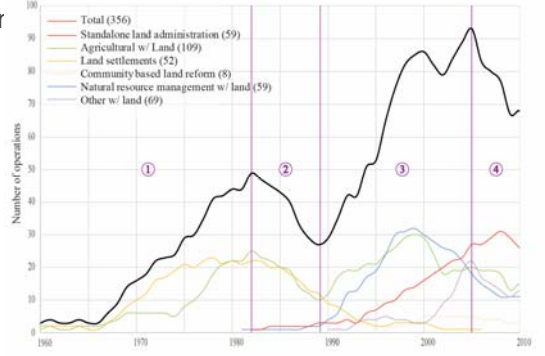


Photo: GLTN

## The World Bank land tenure projects



- The WB has financed land tenure projects for more than half a century
- More than US\$3.1 billion
- The ECA land reform
- Land given at *low cost* or *free*

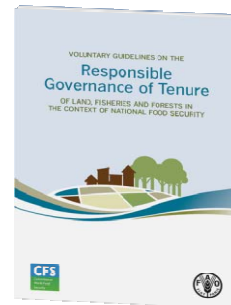


Source: The World Bank

## The VG on The Responsible Governance of Tenure (VGGT)



- FAO gave *strategic priority to the security of tenure*
- The implementation phase had two pillars:
  - Raising awareness through 10 regional conferences
  - Organizing national workshops to provide concrete proposals



Source: FAO

## Changing economies, markets & societal needs: the role of Surveyors



- *Value of cadastre for a national economy*
- Most developing countries have less than 30 % cadastral coverage
- Innovative, fit-for-purpose universal parcel recordation



### Fit-For-Purpose Land Administration



## Changing economies, markets & societal needs



- *Urbanization* is a major global change
- Concentration often produces *economies of scale* and leads to social and economic benefits
- It is also a matter of human rights that *people are free to choose* where they will live and work
- Population growth at a rate of **5 million** every month
- *Limited capacity* of authorities to provide affordable urban land & affordable housing



[www.projects.aegee.org](http://www.projects.aegee.org)  
[www.artbaseafrica.org](http://www.artbaseafrica.org)

## Changing economies, markets & societal needs: housing property markets



- A growing global *housing gap*
- Unplanned areas with disaster risks; *low-paying* job opportunities.
- Management needs *technical skill* but also *expertise* in social, economic and environmental aspects.
- Many existing land tools *are not efficient* in providing pragmatic solutions



Source: UN-HABITAT

## Changing economies, markets & societal needs: housing property markets



- Lack of affordable housing is a *reality even in the developed world*.
- *Shrinkage of labor force*
- No business investment where no affordable housing for workers
- Job location vs distant housing
- A disappearing *middle class*?
- Social problems due to lack of quality affordable housing



Source: Joint Center for Housing Studies of Harvard University

## Changing economies, markets & societal needs: the role of surveyors



- Many live in informal settlements
- housing is not only a shelter but a *tool to create wealth*
- Unclear property rights & use regulations: “*uncertainty*”, “*economic exclusion*”, “*social unrest*”
- *Fit-for-purpose formalization*

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE  
INTERNATIONAL FEDERATION OF SURVEYORS

### Formalizing the Informal

Challenges and Opportunities of Informal Settlements in South-East Europe



## Changing economies, markets & societal needs: **the role of private sector**



- A country's housing policy is connected to
- Its basic infrastructure; development policy
- Its general land policy
- A need for **increased public funds**
- A need for **private sector participation**
- The **role of the state**: from *provider* of growth to an *enabler* of growth

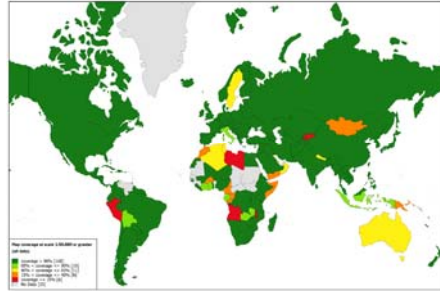




## Changing Technology



- Improvement in information technology: digital electronics; *big data management & distribution.*
- Until 1986, the average age of maps varied from 20 to 50 years. Only 33.5% of the world mapped at a scale of 1:25,000; only 65.6% at a scale of 1:50,000.
- Statistics of 2012 show that globally the availability of mapping at 1:50,000 is high
- *Remaining global need for large scale mapping*



(source: Konecny, 2015)

## Changing Technology



- The current rise of *UAVs* with cameras and laser scanners
- *Developments in point cloud processing*
- High resolution orthophotos and 2D site maps; 3D maps that can be navigated online; 2D and 3D measurements; change detection.



## Changing Technology

- Technical developments include *airborne Lidar*
- Advanced *aerial multi-camera*
- *Dense image matching*
- *Modernization of software* to be more 'app-like'
- *Interconnectivity* (total stations, GNSS, mobile devices, etc)

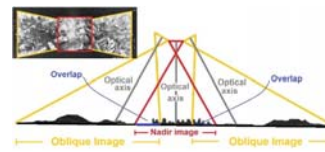


FIG Congress 2014

## Changing Culture

- Interconnectivity creates new **security concerns**, but it offers **huge benefits**.
- The innovative process of **crowdsourcing**
- Tendency towards **more open data**
- A need for **national information strategies**

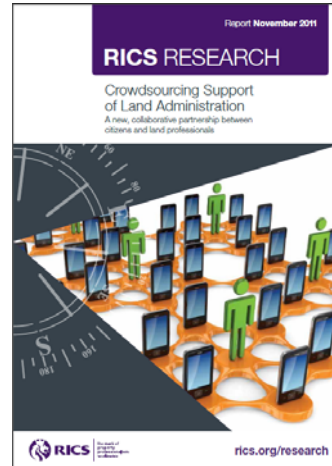




## Changing culture: the role of the Surveyor



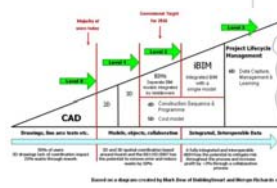
- There is a *changing culture for web-based authoritative spatial information*
- A need for increasing capacity building in assessing the value of data derived through crowd sourcing
- Authoritative data can be provided and assured by government agencies but also by crowdsourcing but always *with the engagement of surveyors*



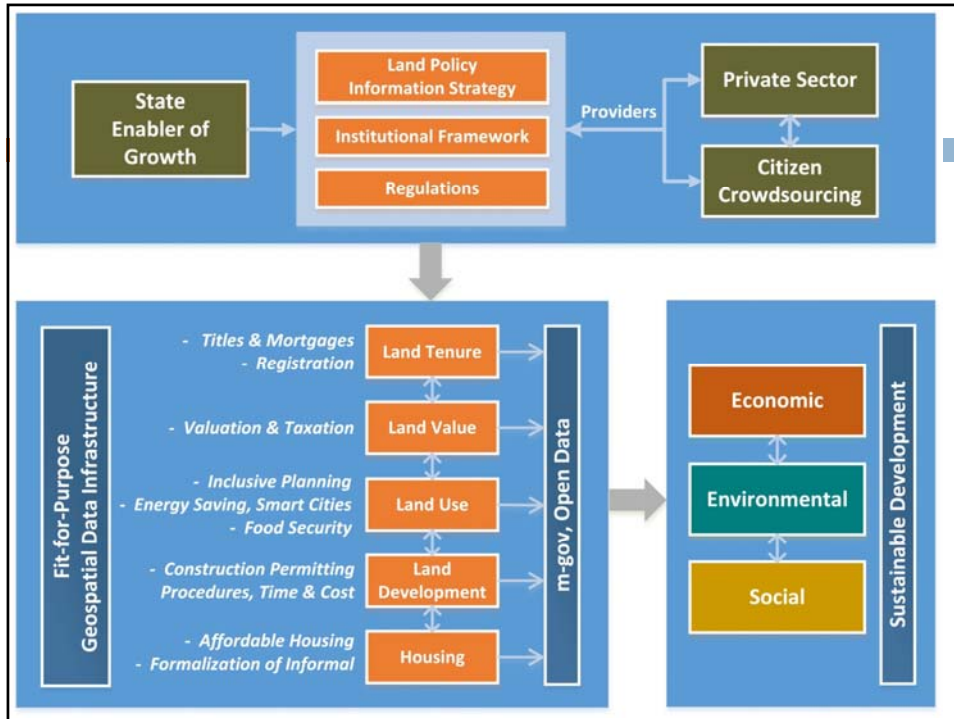
## Surveyors in construction management



- Global construction volume is expected to be US\$12 trillion by 2020.
- BIM in activities such as cost planning and budget estimating, value management, risk management and calculation, bid documentation, commercial management and contract administration, dispute resolution, etc
- BIM enhances team collaboration and understanding among various professionals as well as better information management, reduction of errors and time requirements.
- *Combining BIM with Land Administration*



Source: SeeLian Ong



## Our response



- In the urbanization and globalization era, a **globalization of science**
- As competition increases surveyors must maintain high **technical education** & in-depth **technical research**, & should be prepared to cope with large amounts of **spatial information**
- Cooperation with other professionals; **solution functionality, reliability, affordability**
- The relationship between **quality and cost**



## Our Vision

The logo for FIG (International Federation of Surveyors) is displayed in white text on a red rectangular background.

- It is urgent that the surveying profession will *think ahead*, predict future changes, *foresee the requirements of the next generation of the public and structure the way ahead*
- It is the purpose of FIG to lead “*global*” surveyors
- working at local level with an understanding of global issues, capable of contributing to an ambitious post-2015 global sustainable development agenda *to contribute to the post 2015 global sustainable development agenda*

