

FIG

# *Ensuring the Rapid Response to Change Ensuring the Surveyor of Tomorrow*



**Prof Chryssy Potsiou, FIG President**  
National Technical University of Athens  
School of Rural and Surveying Engineering, Greece  
*chryssy.potsiou@gmail.com*

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

We are expected to provide solutions that will be:

Functional, reliable, affordable, inclusive & fit-for-purpose

To satisfy a world that cannot wait (does NOT want, or can NOT wait!)



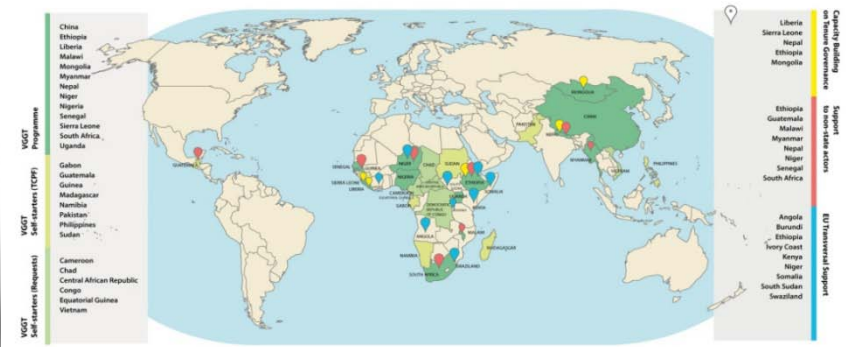
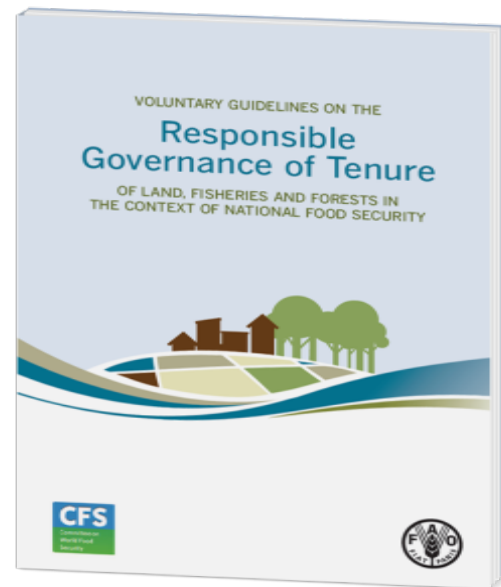
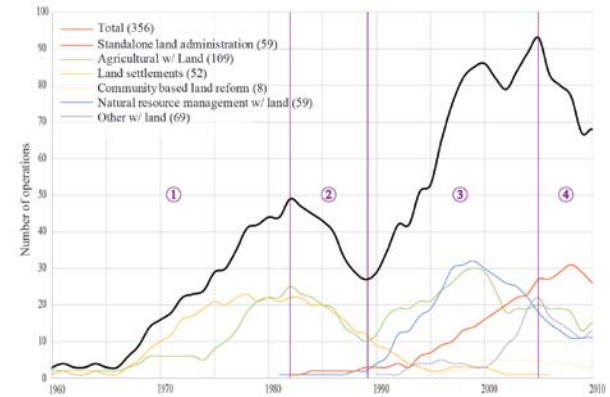
# Changing economies, markets & societal needs: **security of tenure**

- ❑ 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*



# Security of tenure

- The WB has financed land tenure projects for more than half a century
- FAO gave *strategic priority to the security of tenure*
- The VG on The Responsible Governance of Tenure



# 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
- In the cities of the developing world population grows at a rate of **5 million** every month





## 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 tools *are not efficient* in providing pragmatic land use planning solutions



Source: UN-HABITAT

# 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





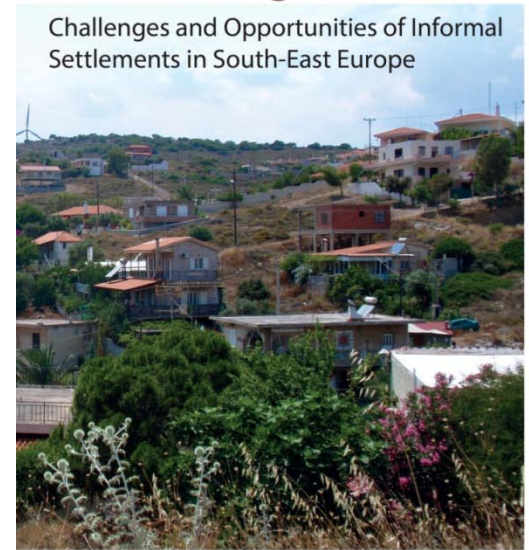
# Formalizing the Informal

- ❑ Many in the UNECE region live in informal settlements
- ❑ housing is not only a shelter but a *tool to create wealth*
- ❑ Unclear property rights & use regulations cause “*uncertainty*”, “*economic exclusion*” and “*social unrest*”

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE  
INTERNATIONAL FEDERATION OF SURVEYORS

## Formalizing the Informal

Challenges and Opportunities of Informal Settlements in South-East Europe



INTERNATIONAL FEDERATION  
OF SURVEYORS



UNITED NATIONS  
ECONOMIC COMMISSION FOR EUROPE



# The role of private sector in affordable housing

- ❑ 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



**State  
Enabler of  
Growth**



Providers

**Private Sector**

**Citizen  
Crowdsourcing**



**Fit-for-Purpose  
Geospatial Data Infrastructure**

- *Titles & Mortgages*  
- *Registration*
- *Valuation & Taxation*
- *Inclusive Planning*  
- *Energy Saving, Smart Cities*  
- *Food Security*
- *Construction Permitting  
Procedures, Time & Cost*
- *Affordable Housing*  
- *Formalization of Informal*

**Land Tenure**

**Land Value**

**Land Use**

**Land  
Development**

**Housing**

**m-gov, Open Data**



**Economic**

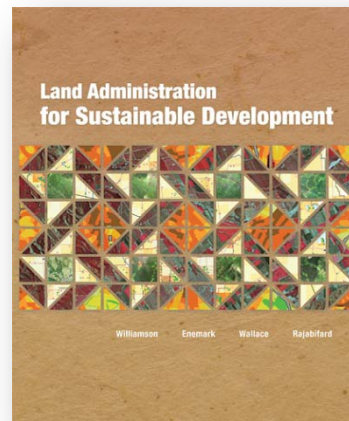
**Environmental**

**Social**

**Sustainable Development**

# Fit-For-Purpose approaches: 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



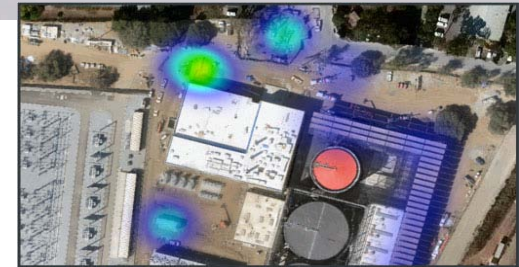
## Fit-For-Purpose Land Administration



JOINT FIG / WORLD BANK PUBLICATION

# Fast Large-Scale Mapping

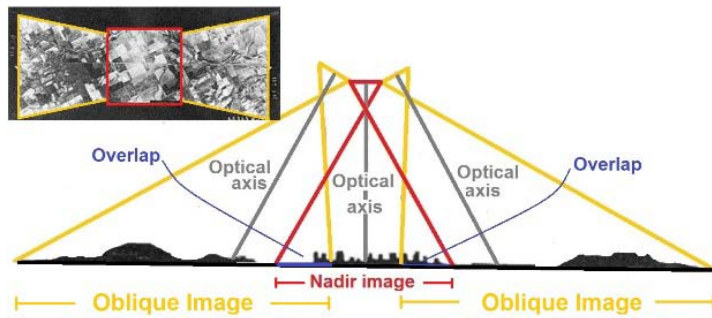
- The current rise of *UAVs* with cameras and laser scanners
- *Developments in point cloud processing*
- High resolution orthophotos and 2D site maps; 3D maps that can be navigated online; 2D and 3D measurements; change detection.





# Changing Technology

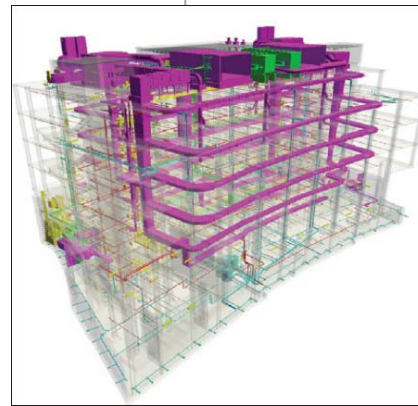
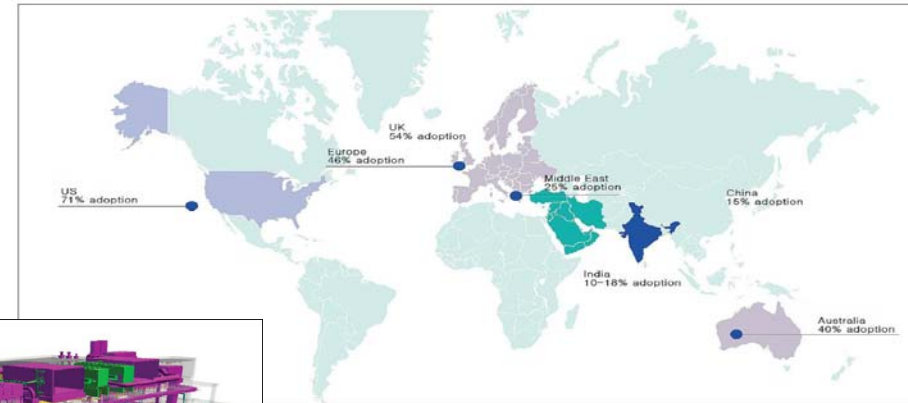
- Technical developments also include *airborne Lidar*
- Advanced *aerial multi-camera*
- Dense image matching*
- Modernization of software* to be more 'app-like'
- Interconnectivity* (total stations, GNSS, mobile devices, etc)





# Surveyors in city 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

# FIG The response

- In the urbanization and globalization era, a **globalization of science** is taking place
- 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

- ❑ 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*

