

**International Symposium & Exhibition on Geoinformation (ISG 2013)**  
 Land Administration Domain Model Workshop (LADM 2013) workshop  
 Universiti Teknologi Malaysia, Kuala Lumpur, 24-25 September 2013

**The Land Administration Domain Model and the Continuum of Land Rights**

Fédération Internationale des Géomètres  
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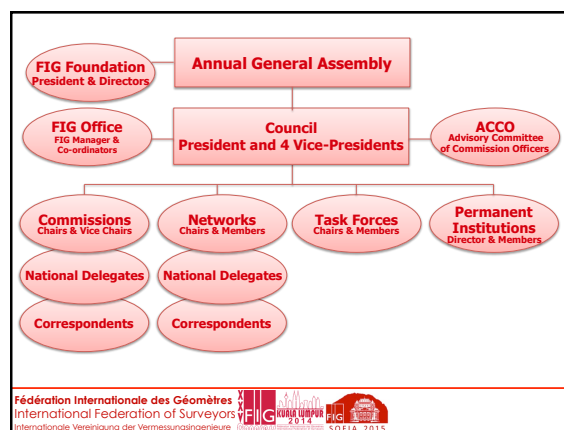
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Member Associations; Affiliate Members; Academic Members; Corporate Members & Correspondents  
**120+ Countries**

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**FIG Council**

FIG Commission 1 Professional Practice	FIG Commission 2 Professional Education	FIG Commission 3 Spatial Information Management	Commission 4 Hydrography and Administration of Marine Spaces	Commission 5 Positioning and Measurement
Commission 6 Engineering Surveys	Commission 7 Cadastral and Land Management	Commission 8 Spatial Planning and Development	Commission 9 Valuation and Management of Real Estate	Commission 10 Construction Economics and Management
Standards Network		Young Surveyors Network		
Task Force for Africa		Task Force on Surveyors and Climate Change		Task Force on Property and Housing
FIG Permanent Institution on History of Surveying and Measurement			FIG International Office of Cadastre and Land Records	
FIG Foundation				

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**2011 - 2014 Work Plan:**  
 Engaging the Challenge: Enhancing the Relevance

**Engaging the Membership**

- Communications
- Commissions
- Conference Structures

**Engaging Global Challenges**

- Collaborating
- Contributing
- Cascading

**Enhancing the Significance and Relevance towards the betterment**

- Society
- Environment
- Economy

**Vision**  
 A Profession, armed with knowledge and best practices, extending the usefulness of surveying for the benefit of society, environment and economy, increasingly positioned in significance and relevance, next door to everywhere.

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**Professionals are equipped with both additional knowledge and training to make informed decisions and judgment and perceived to bring with it both authority and standing in society**

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FIG 2014 SOFIA 2015

**Problem statement**

- 70 % of developing country populations outside formal register (Zevenbergen: 2011)
- Increasing insecurity of tenure - globalisation
- 1.5 billion out of 6 billion rights registered (McLaren : 2011)
- Conventional land administration too expensive (Zevenbergen: 2011)
- Problems of sustainability (Childress: 2004)
- Cannot go to scale (Zevenbergen: 2011)
- No secondary rights, affordable group rights etc
- Need to develop affordable scalable approach - 'continuum'

(Clarissa Augustinus, 2013)

UN HABITAT  
FOR A BETTER URBAN FUTURE

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FIG 2014 SOFIA 2015

“climate change is becoming a risk multiplier for the poor and the vulnerable and a core development challenge for both developing and developed economies alike”

Chawal Subprasom, Reuters (2011)

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FIG 2014 SOFIA 2015

TABLE I. POPULATION AND AVERAGE ANNUAL RATE OF CHANGE OF THE WORLD AND DEVELOPMENT GROUPS, ESTIMATES AND THREE SCENARIOS: 1950-2000

Year or period	World			More developed regions			Less developed regions		
	Medium	High	Low	Medium	High	Low	Medium	High	Low
1950	2 519	—	—	813	—	—	1 706	—	—
1975	4 068	—	—	1 047	—	—	3 021	—	—
2000	6 071	6 071	6 071	1 194	1 194	1 194	4 877	4 877	4 877
2025	7 851	8 365	7 334	1 241	1 282	1 199	6 610	7 082	6 135
2050	8 919	10 633	7 409	1 220	1 370	1 084	7 699	9 263	6 325
2075	9 221	12 494	6 601	1 153	1 467	904	8 068	11 027	5 696

World urban/rural population 1950-2050 (esa.un.org)

United Nations Department of Economic and Social Affairs - Population Division

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FIG 2014 SOFIA 2015

**YOUNG SURVEYORS**

Median Age in Years

	1950	1980	2010	2050	2100
Latin America and Caribbean	20.1	20.1	27.9	41.0	46.6
Africa	19.2	17.5	19.8	26.4	35.9
World	23.9	23.1	29.4	37.9	41.9

Percentage of population younger than 15 by major area

(United Nations Department of Economic and Social Affairs)

addressing the needs of Youth as a broad category within Society and Economy.

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FIG 2014 SOFIA 2015

Total Urban Population (billions)

Source: United Nations (2010)

**URBAN STATISTICS 2013**

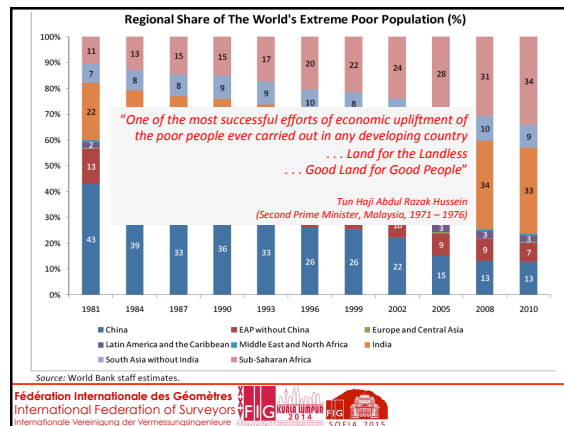
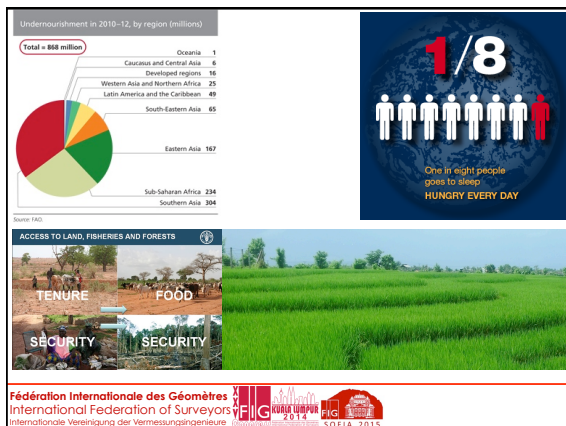
Region	Total Population	Urban	Slums
WORLD	7 billion	3.6 billion (52%)	862.5 million (24%)
AFRICA	1 billion	413 million (40%)	225.9 million (51%)
LATIN AMERICA	596 million	472 million (79%)	113.4 million (23.5%)
ASIA	4.2 billion	1.9 billion (45%)	522.7 million (30%)

- 1 out of 2 people in the world lives in urban areas
- 1 out of 4 people living in urban areas lives in slums
- 1 out of 2 people living in urban areas in Africa lives in slums
- 1 out of 4 people living in urban areas in Latin American lives in slums
- 1 out of 3 people living in urban areas in Asia lives in slums

Source: UN-Habitat, State of the World Cities Report 2012/2013

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FIG 2014 SOFIA 2015



IMF World Economic Outlook Update  
"Growing Pains" July 09, 2013

Global growth is projected to remain subdued at slightly above 3 percent in 2013, the same as in 2012. This is less than forecast in April 2013. ...

Photograph: Pawel Koczyński/Reuters

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High-level Panel on the Post-2015 Development Agenda

THE WORLD WE WANT

The High Level Panel Report is of the view that "business-as-usual is not an option. We concluded that the post-2015 agenda is a universal agenda. It needs to be driven by five big transformative shifts"

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2013 LOUGH ERNE

**Land**  
44. We will support greater transparency in land transactions including at early stages, and increased capacity to develop good land governance systems in developing countries. Last year, the G8 welcomed the UN Committee on World Food Security's Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests. ...

**Food Security and Nutrition**  
53. G8 member reaffirm their commitment to respond with the scale and urgency needed to achieve sustainable global food and nutrition security. ...

**Climate Change**  
56. Climate change is one of the foremost challenges of our future economic growth and well-being. ...

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**RIO+20**  
United Nations Conference  
on Sustainable Development

“Recognize the importance of comprehensive hazard and risk assessments, and knowledge and information sharing, including reliable geospatial information”

*“The Future We Want”  
2012 Rio +20 Conference*

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VOLUNTARY GUIDELINES ON THE  
**Responsible Governance of Tenure**  
OF LAND, FISHERIES AND FORESTS IN  
THE CONTEXT OF NATIONAL FOOD SECURITY

“We now have a shared vision. It’s a starting point that will help improve the often dire situation of the hungry and poor”

Jose Graziano da Silva  
(FAO Director General)  
May 2012

ACCESS TO LAND, FISHERIES AND FORESTS

TENURE → FOOD

SECURITY → SECURITY

Endorsed on 11<sup>th</sup> May 2012 by the United Nations Committee on World Food Security

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UN-GGIM  
United Nations Integrated  
Global Geospatial  
Information Management

“Sound geospatial information is crucial for addressing the complex problems the world is facing today. These problems are global in nature and affect different regions, rural and urban areas alike, requiring coordinated efforts, more innovative and sophisticated approaches, as well as effective tools to ultimately guide our way to sustainable development”

Prof. Paul Cheung  
(UN Statistics Division & GGIM Secretariat),  
February 2012

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Landmark resolution on “Sustainable urbanization through equitable access to land, housing, basic services and infrastructure” adopted. (April 2011)

WELCOME TO THE 23RD GOVERNING COUNCIL

UN HABITAT

Continuum of Land Rights

Global Land Tool Network, UN-HABITAT (2010)

Perceived tenure approaches: Customary, Adverse possession, Leases

Occupancy, Anti evictions, Group tenure, Registered

Informal land rights → Formal land rights

The Social Tenure Domain Model  
A Pro-Poor Land Tool  
FIG Publication No. 52

include rights that are documented as well as undocumented, from individuals and groups, from pastoralist and informal settlers, that are legal as well as extra-legal and informal

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INTERNATIONAL STANDARD

ISO 19152

Geographic information — Land Administration Domain Model (LADM)

Information géographique — Modèle du domaine de l’administration des terres (LADM)

First edition 2012-12-01

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Perceived tenure approaches: Customary, Adverse possession, Leases

Occupancy, Alternatives to eviction, Group tenure, Registered freehold

Informal land rights → Formal land rights

Continuum of Land Rights

Global Land Tool Network, UN-HABITAT (2010)

include rights that are documented as well as undocumented, from individuals and groups, from pastoralist and informal settlers, that are legal as well as extra-legal and informal

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**Statement 1 on Cadastre 2014**

Cadastre 2014 will show the complete legal situation of land, including public rights and restrictions!

Comment: The population of the world is growing. The consumption of land is increasing. The absolute control of the individual or of legal entities of land is increasingly being restricted by public interest. To provide security of the land tenure, all facts about land must be made obvious by the cadastral system of the future.

Consequences: A new thematic model is necessary. Surveyors must take into consideration public law.

*Jürg Kaufmann • Daniel Steudler  
with the Working Group 1 of FIG Commission 7*

July 1998

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**Statement 2:**  
The separation between “maps” and “registers” will be abolished

**Statement 3:**  
The Cadastral mapping will be dead! Long live modelling!

**Statement 4:**  
“Paper and pencil cadastre” will have gone!

**Statement 5:**  
“Cadastre 2014 will highly privatized! Public and private sector are working closely together!”

**Statement 6:**  
Cadastre 2014 will be cost recovering

*Jürg Kaufmann • Daniel Steudler  
with the Working Group 1 of FIG Commission 7*

July 1998

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“Land tenure is not changed by Cadastre 2014, but it is a part of it. If a legal land object is the property of an individual or juridical person, it is a form of individual land tenure. If the property right belongs to a traditional tribe or clan, it is a customary tenure; if it is given to a co-operative it may be called a co-operative tenure, and if the property right belongs to the state, we can call it a communist tenure”  
*(FIG Cadastre 2014, 1998)*

Relation between man and land in deed system			Relation between man and land in title system		
man – rightful claimant	subject	right	parcel – legal land object	object	right
right	legal relation	parcel – legal land object	right	legal relation	man – rightful claimant
man – rightful claimant	subject	right	parcel – legal land object	object	right

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Stakeholder	Activity	Scale
Government, Industry, Community	Policy / Community Service Delivery	State / Region
Government, Industry, Community	Environmental Management	ENVIRONMENT
Government, Community, Planners	Census, Electoral, Social Planning	DEMOGRAPHIC
Utilities, Government, Land Owners, Local Government, Community	Transport, Communications, Utilities	INFRASTRUCTURE
Developers, Planners, Land Owners, Local Government, Community	Planning, Development, Land Management	LAND USE
Government, Valuers, Rate Payers, Land Owners, Local Government	Valuation, Taxation	FISCAL
Government, Land Owner, Conveyancing, Real Estate, Solicitors, Financial Institutions	Land Registration, Conveyancing, Mining Tenure, Native Title	LEGAL
Government, Surveyors	Surveying	LAND PARCEL BOUNDARY
Government, Surveyors	Surveying	GEODETIC FRAMEWORK (SURVEY CONTROL)

*(Bell, Keith C, 2001)*

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PCGIAP-Working Group 3 “Cadastre”  
The University of Melbourne Department of Geomatics  
FIG-Commission 7 “Cadastre and Land Management”

## Cadastral Template

*A Worldwide Comparison of Cadastral Systems*

Cadastral country reports based on a jointly developed PCGIAP/FIG template. Established under UN mandate by Resolution 4 of the 16th UNRCC-AP in Okinawa, Japan in July 2003. UN endorsement for cooperation with UN-ECE WPLA, UN-ECA CODI, and PCIDEA.

*(Cadastral Template 2.0 (2013 – 2016) is currently being scoped and prepared for its launch in 2014. It is a collaborative activity between FIG and University of Melbourne CSDILA)*

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**Sustainable Development**  
Economic, Social & Environmental

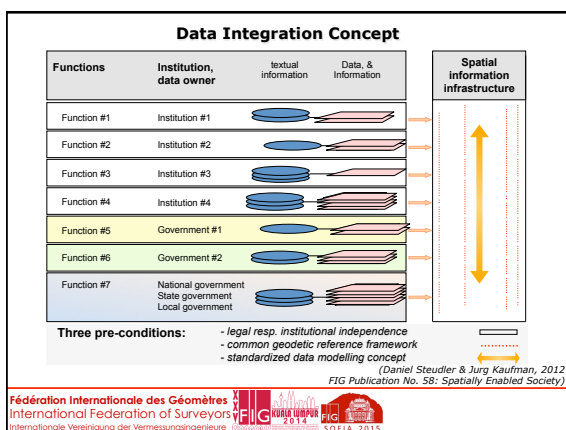
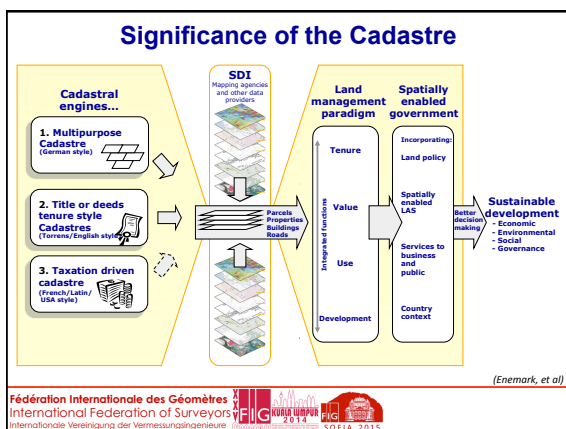
**Efficient Land Market**  
Land Tenure (Titles, Mortgages & Easements, Secure legal rights)  
Land Value (Assessment of land value, Collection of property tax)

**Effective Land Use Management**  
Land Use (Policies and Spatial planning, Control of land use)  
Land Development (Construction planning and Permits, Regulation and Implementation)

**Land Policies**  
**Institutional Framework**  
Land Information (Cadastral and Topographic Data, Geospatial Data Infrastructures)

Land Administration systems provide the infrastructure for implementation of land policies and land management strategies in support of sustainable development.  
*(Enemark, et al)*

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**Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security**

Adopted on 17<sup>th</sup> May 2012 by the United Nations Committee on World Food Security

**Responsible Governance of Tenure**

OF LAND, FISHERIES AND FORESTS IN THE CONTEXT OF NATIONAL FOOD SECURITY

**Abogado y Comunicación (Advocate & Communicate)**

**Desarrollar y Ofrecer (Deliver & Offer)**

**Incluir y Educar (Include & Educate)**

**Participar y Promover (Engage & Promote)**

The guidelines address a wide range of issues including recognition and protection of legitimate tenure rights, even under informal systems; best practices for registration and transfer of tenure rights; managing expropriations and restitution of land to people; rights of indigenous communities; ensuring that investment in agricultural lands occur responsibly and transparently; dealing with the expansion of cities into rural areas

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