



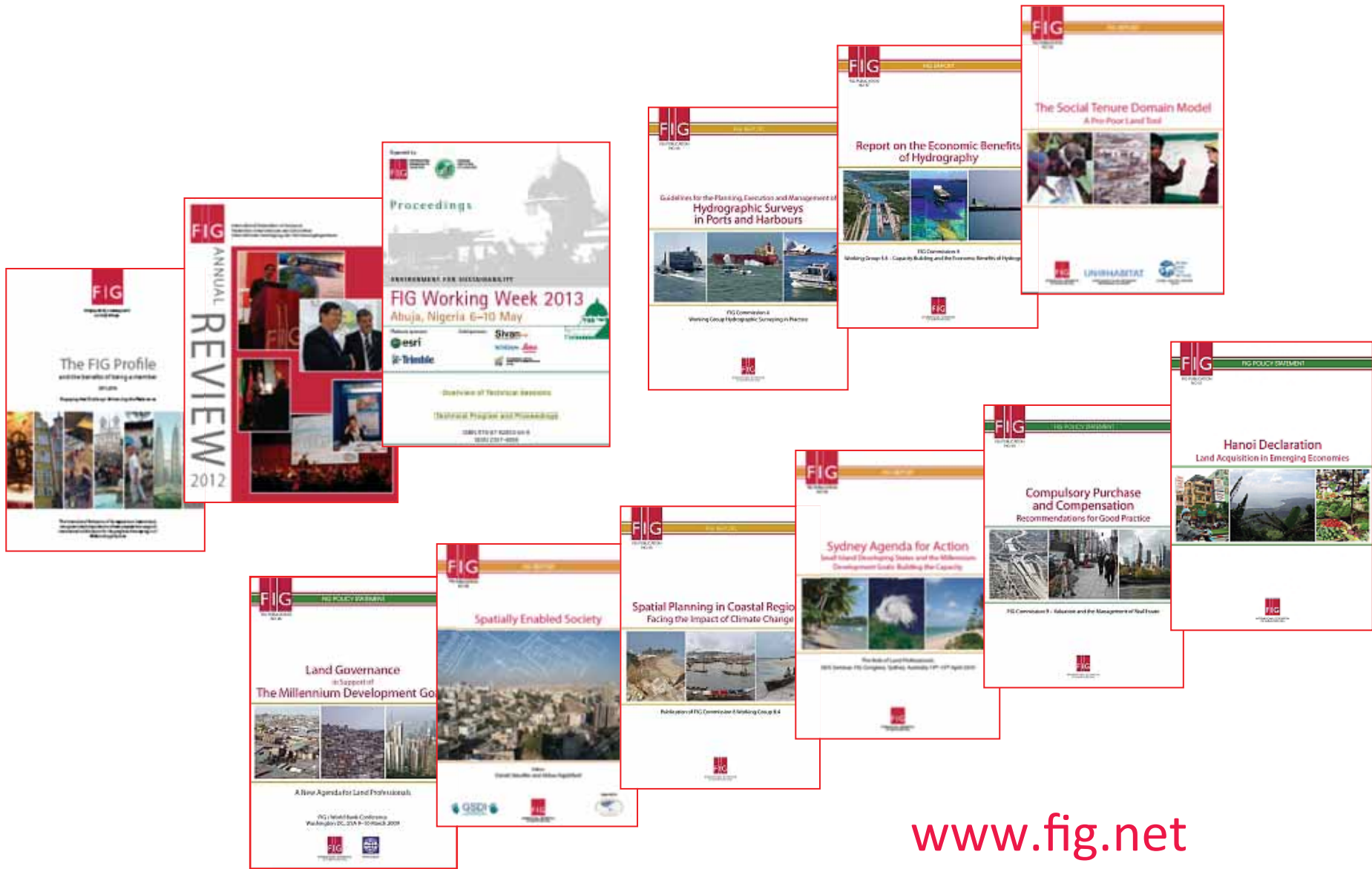
The Land Administration Domain Model and the Continuum of Land Rights

Fédération Internationale des Géomètres
International Federation of Surveyors
Internationale Vereinigung der Vermessungsingenieure

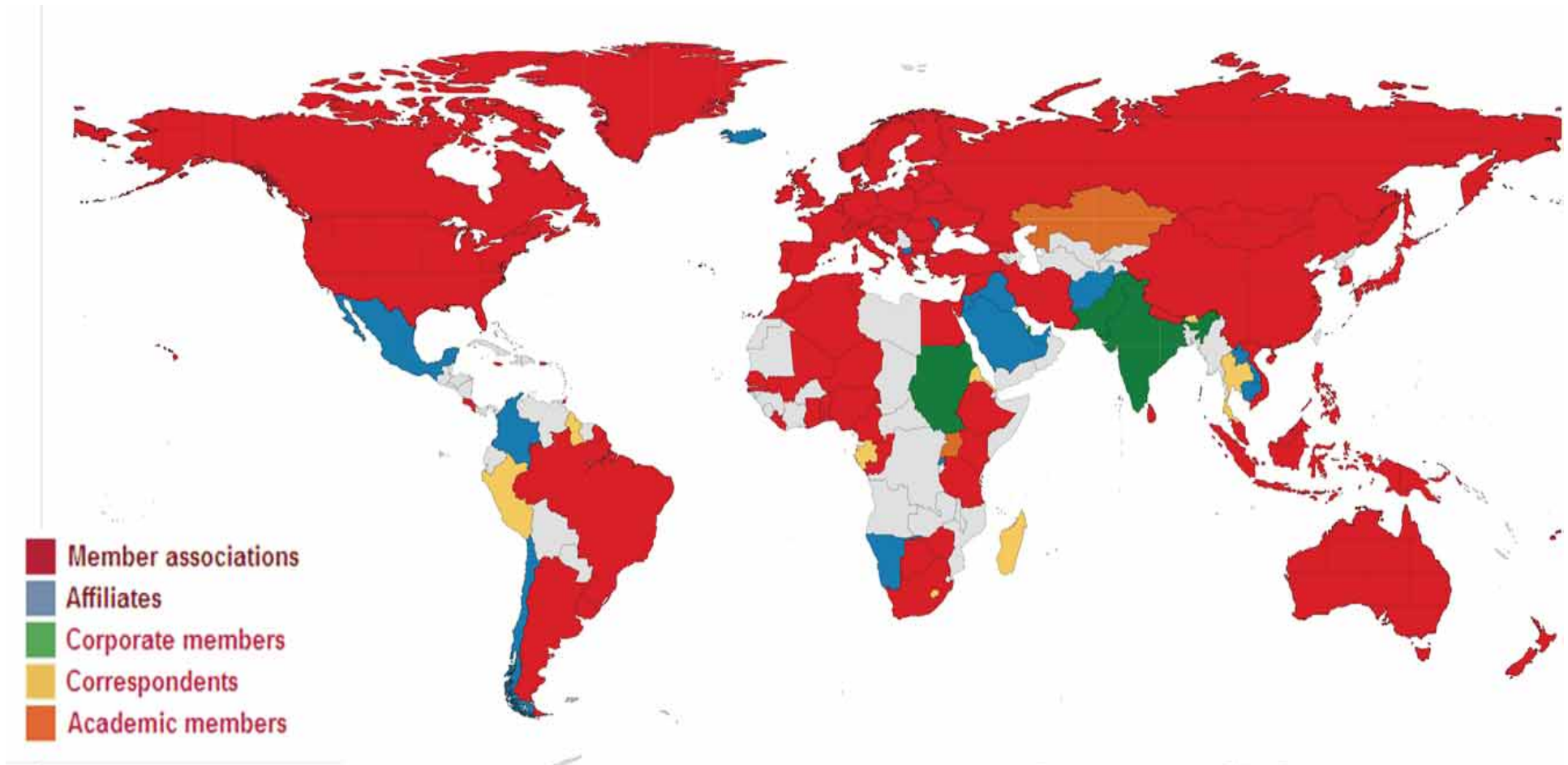


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url: www.fig.net





www.fig.net



Member Associations; Affiliate Members; Academic Members;
 Corporate Members & Correspondents
120+ Countries



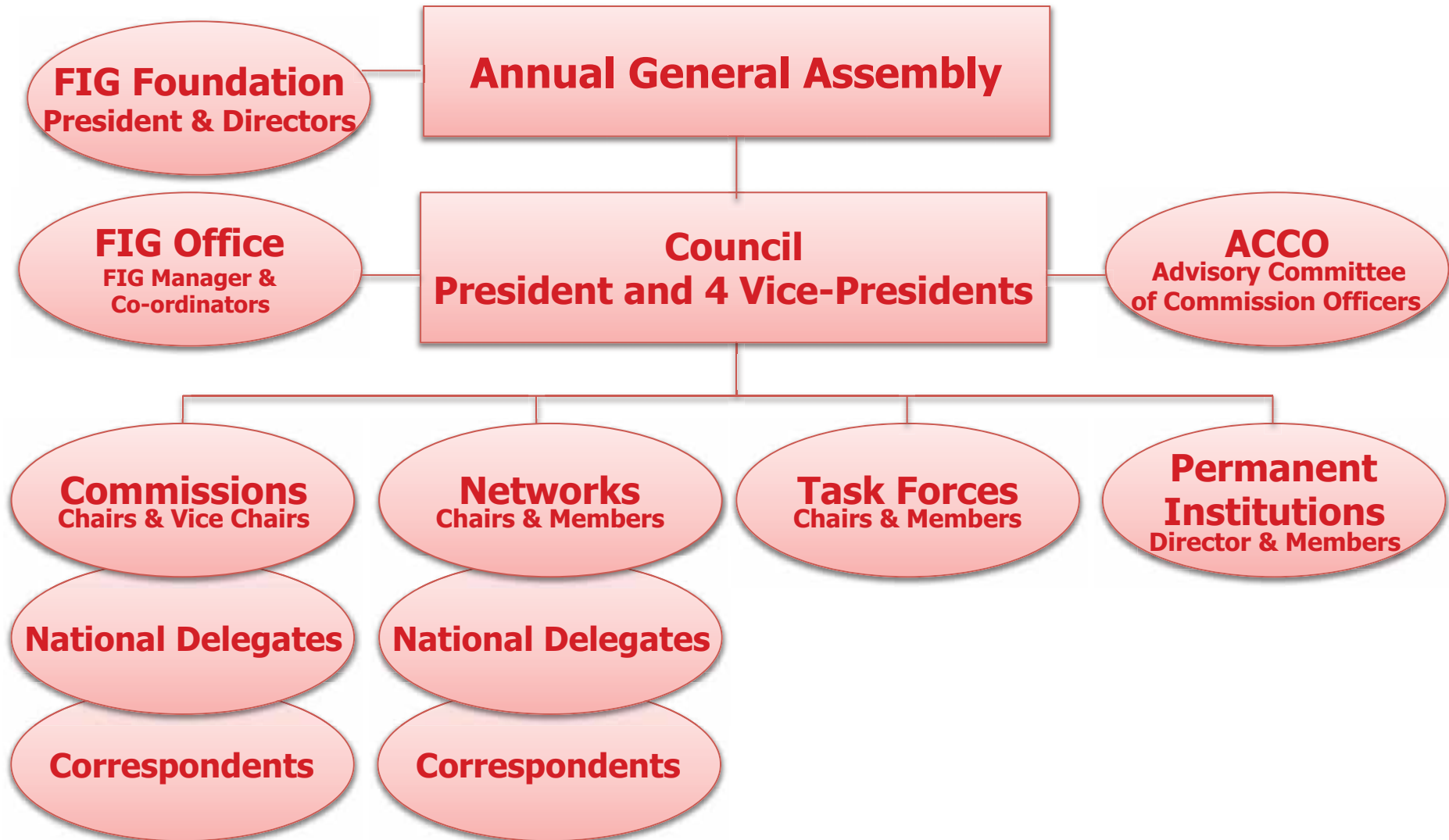


FIG Council

**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
Cadastre 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**

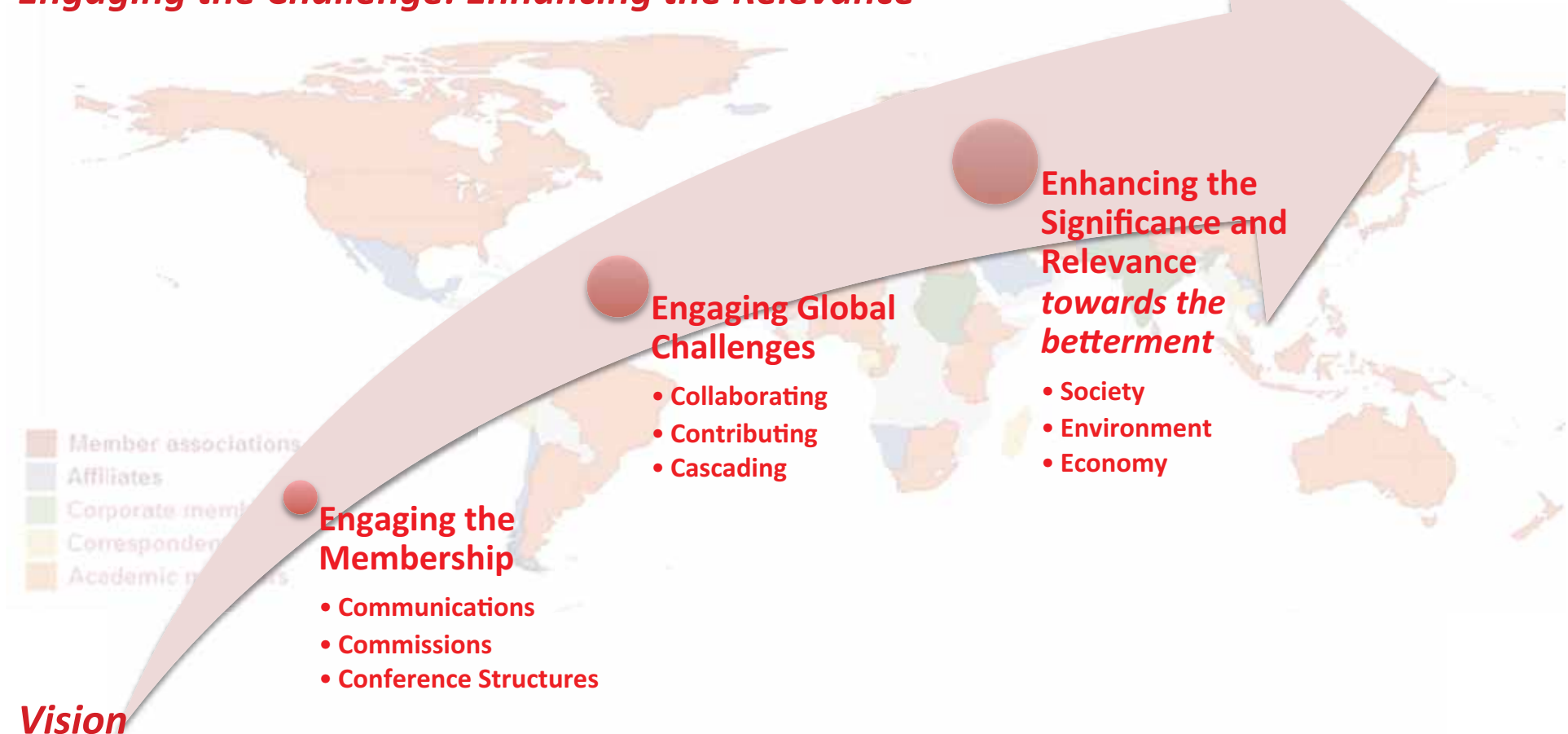
**Task Force on Property
and Housing**

**FIG Permanent Institution on History of
Surveying and Measurement**

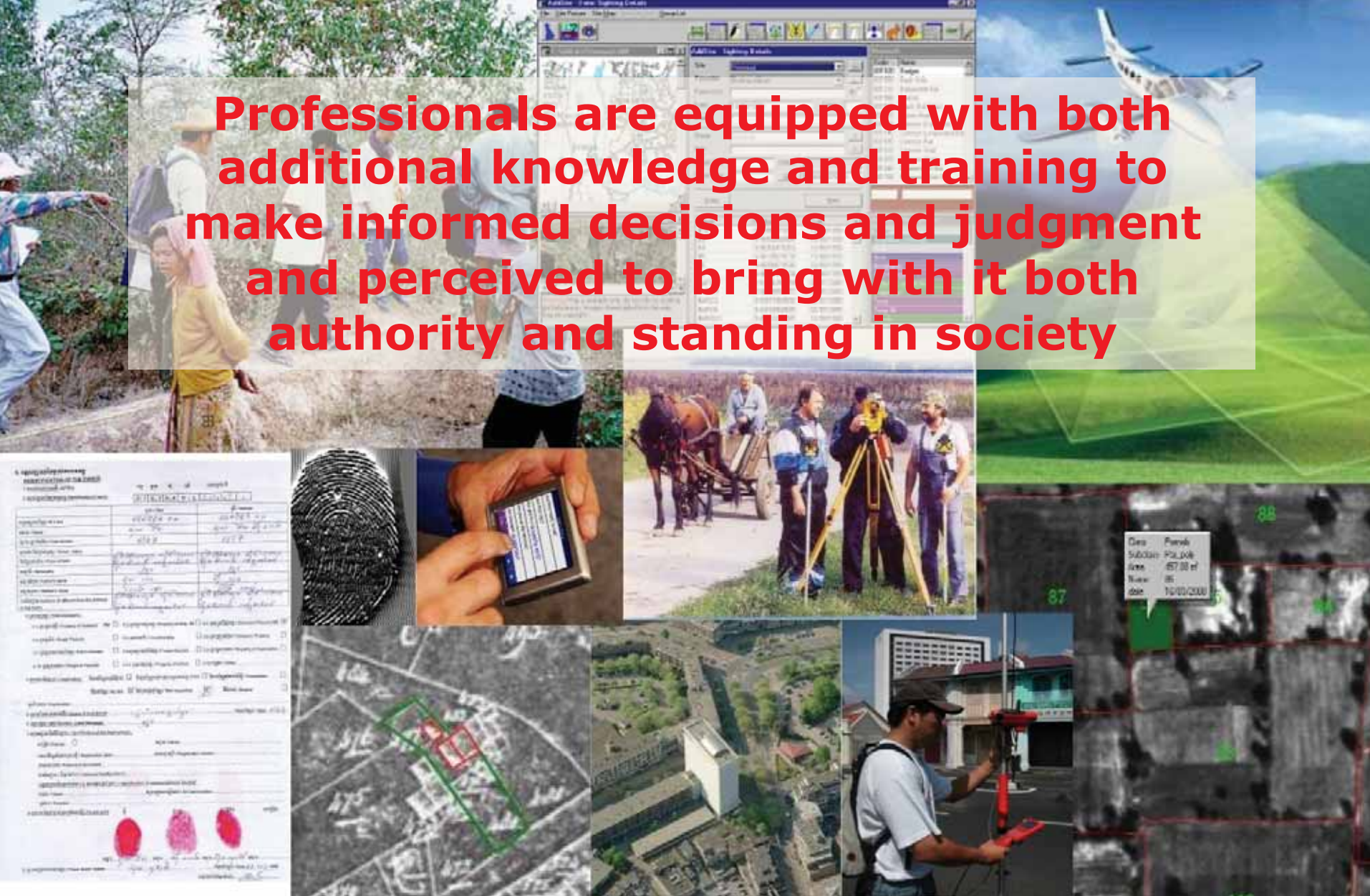
**FIG International Office of Cadastre and
Land Records**

FIG Foundation

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



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.



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

Problem statement

1. 70 % of developing country populations outside formal register (Zevenbergen: 2011)
2. Increasing insecurity of tenure - globalisation
3. 1.5 billion out of 6 billion rights registered (McLaren : 2011)
4. Conventional land administration too expensive (Zevenbergen: 2011)
5. Problems of sustainability (Childress: 2004)
6. Cannot go to scale (Zevenbergen: 2011)
7. No secondary rights, affordable group rights etc
8. Need to develop affordable scalable approach – ‘continuum’

(Clarissa Augustinus, 2013)

UN HABITAT
FOR A BETTER URBAN FUTURE



Norbert Lantschner, 2010



Time, 2009



Chaiwat Subprasom, Reuters (2011)

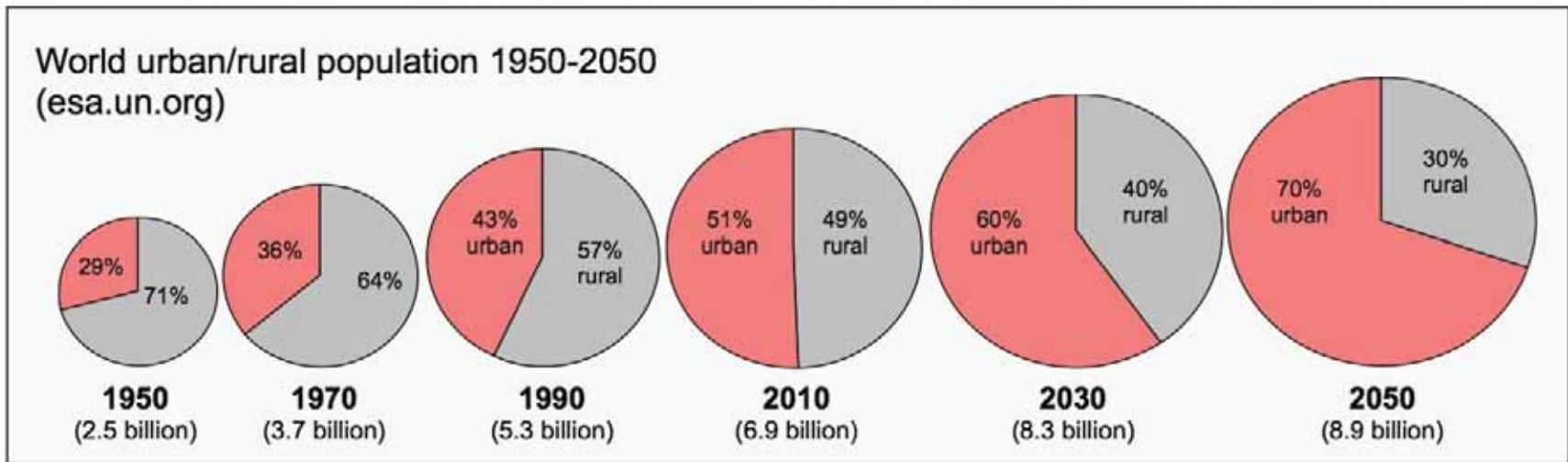


“climate change is becoming a risk multiplier for the poor and the vulnerable and a core development challenge for both developing and developed economies alike”



TABLE I. POPULATION AND AVERAGE ANNUAL RATE OF CHANGE OF THE WORLD AND DEVELOPMENT GROUPS, ESTIMATES AND THREE SCENARIOS: 1950-2300

Year or period	World			More developed regions			Less developed regions		
	Medium	High	Low	Medium	High	Low	Medium	High	Low
<i>Population (millions)</i>									
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



Source: United Nations, Department of Economic and Social Affairs, Population Division (2011). *World Population 2010 (Wall Chart)*. ST/ESA/SER.A/307.

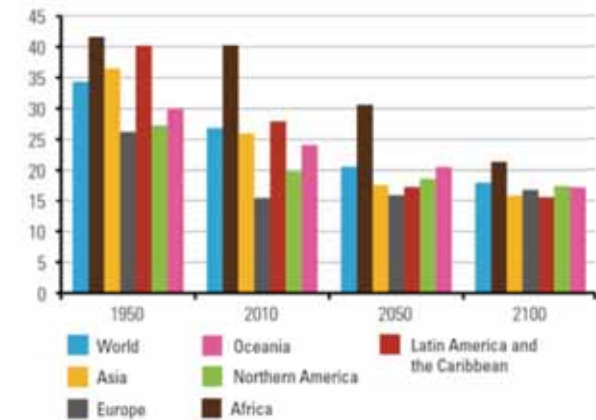


Median Age in Years	1950	1980	2010	2050	2100
Latin America and Caribbean	20.1	20.1	27.9	41.0	46.6
Africa	19.2	17.5	19.8	26.4	35.9
World	23.9	23.1	29.4	37.9	41.9

(United Nations Department of Economic and Social Affairs)

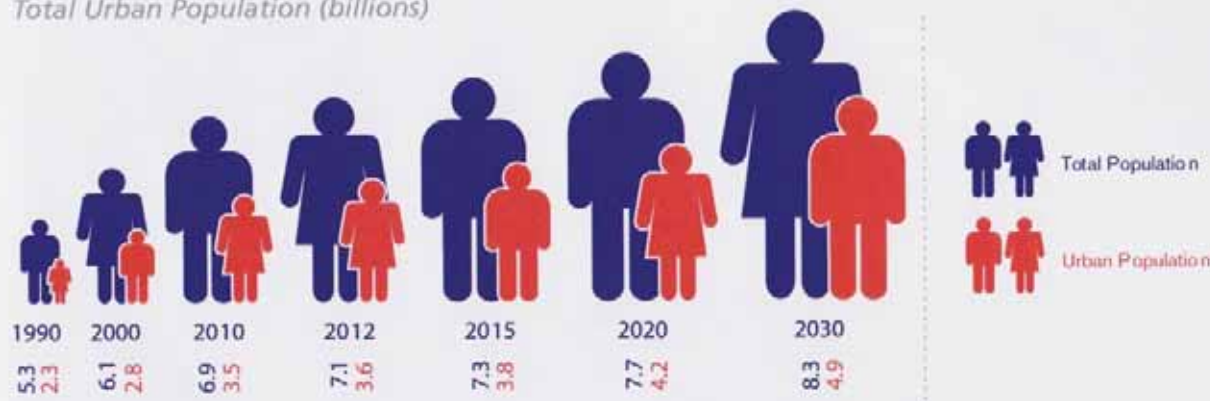


Percentage of population younger than 15 by major area



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

Total Urban Population (billions)



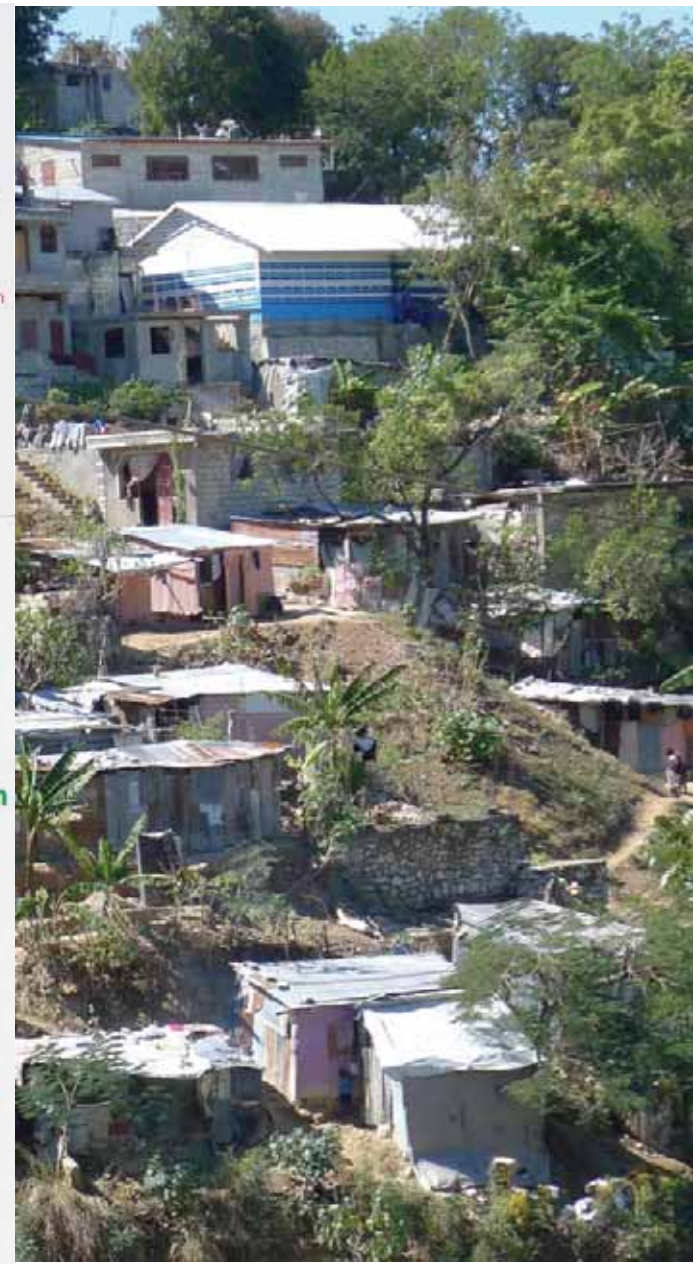
Source: United Nations (2010).

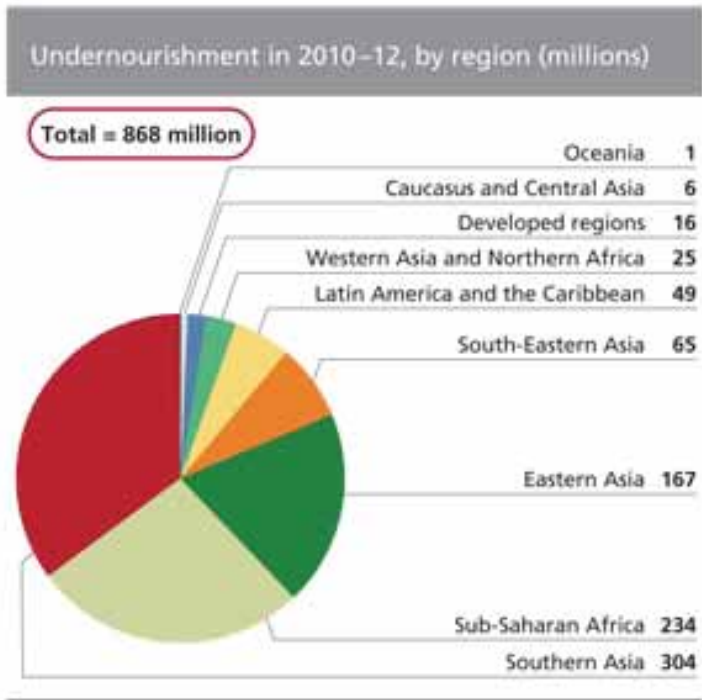
URBAN STATISTICS 2013

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

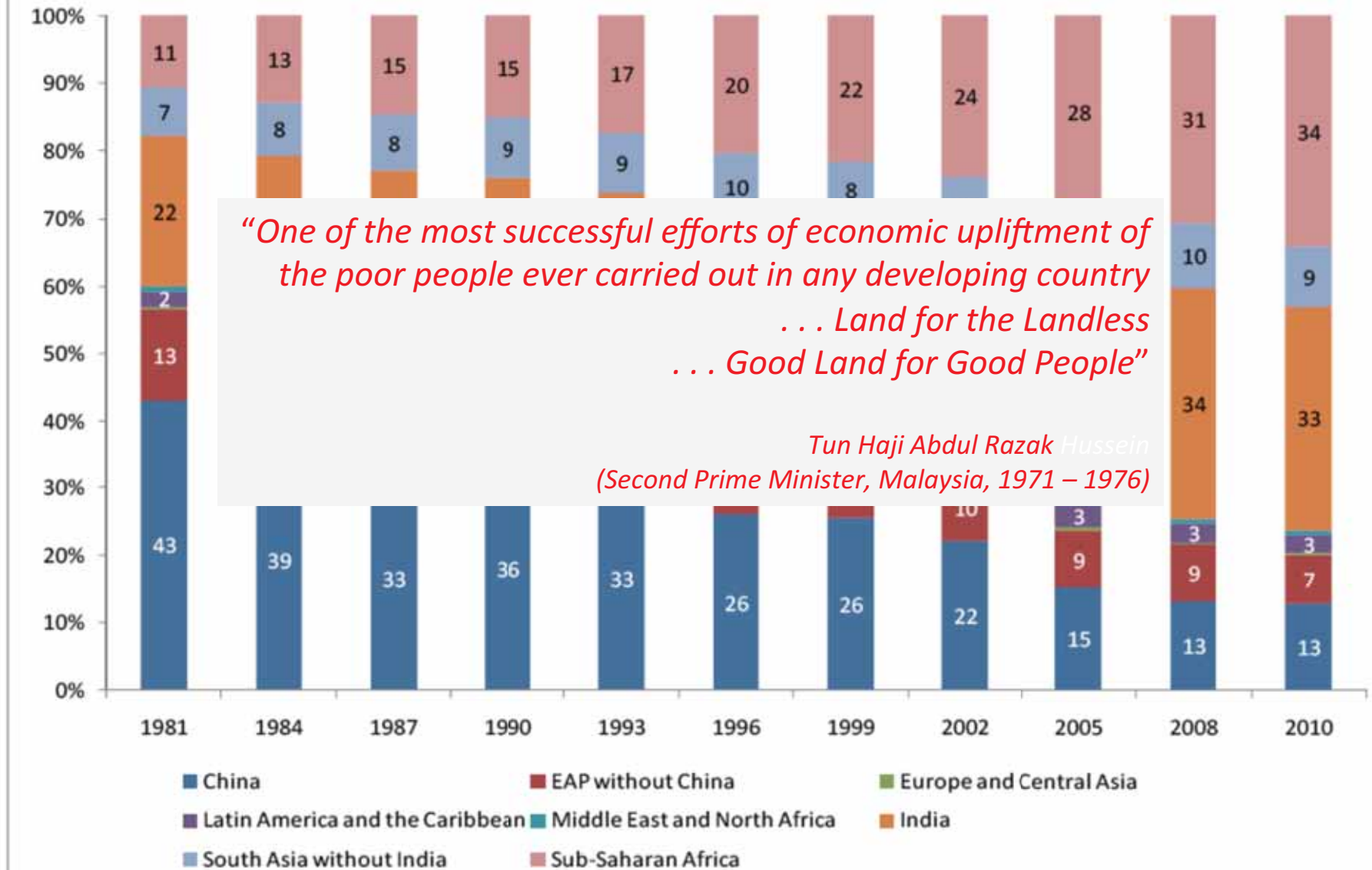




Source: FAO.



Regional Share of The World's Extreme Poor Population (%)



“One of the most successful efforts of economic upliftment of the poor people ever carried out in any developing country . . . Land for the Landless . . . Good Land for Good People”

*Tun Haji Abdul Razak Hussein
(Second Prime Minister, Malaysia, 1971 – 1976)*

Source: World Bank staff estimates.

Technology is Changing Rapidly

Coevolving with Other Enabling Technologies



Building the technology platform for land administration.....

(Brent Jones, ESRI, FIG-Montevideo, 2012)



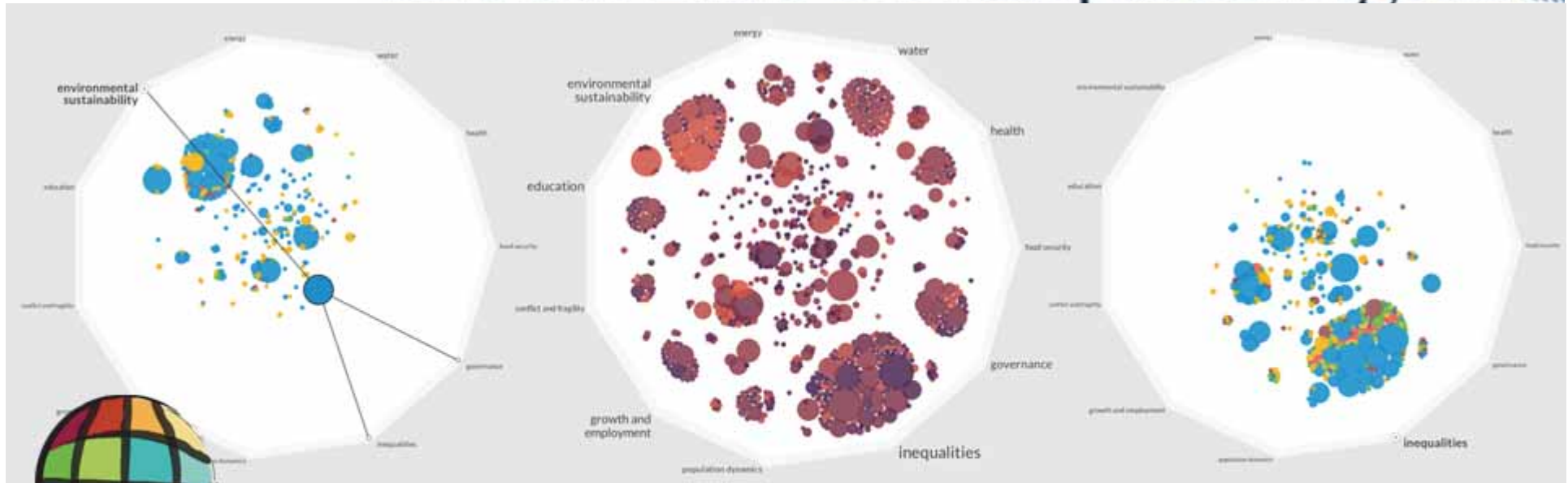
**IMF World Economic Outlook Update
“Growing Pains”**

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 Kopczynski/Reuters

High-level Panel the Post-2015 Development Agenda



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”



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.



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*

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



Endorsed on 11th May 2012 by
 the United Nations Committee
 on World 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





“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*

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

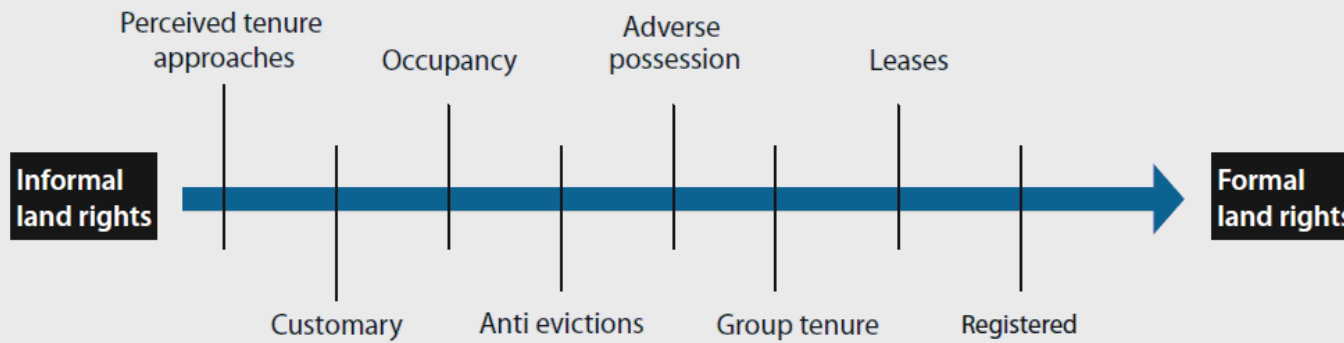


Continuum of Land Rights

Global Land Tool Network, UN-HABITAT (2010)



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



INTERNATIONAL
STANDARD

ISO
19152

First edition
2012-12-01

**Geographic information — Land
Administration Domain Model (LADM)**

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

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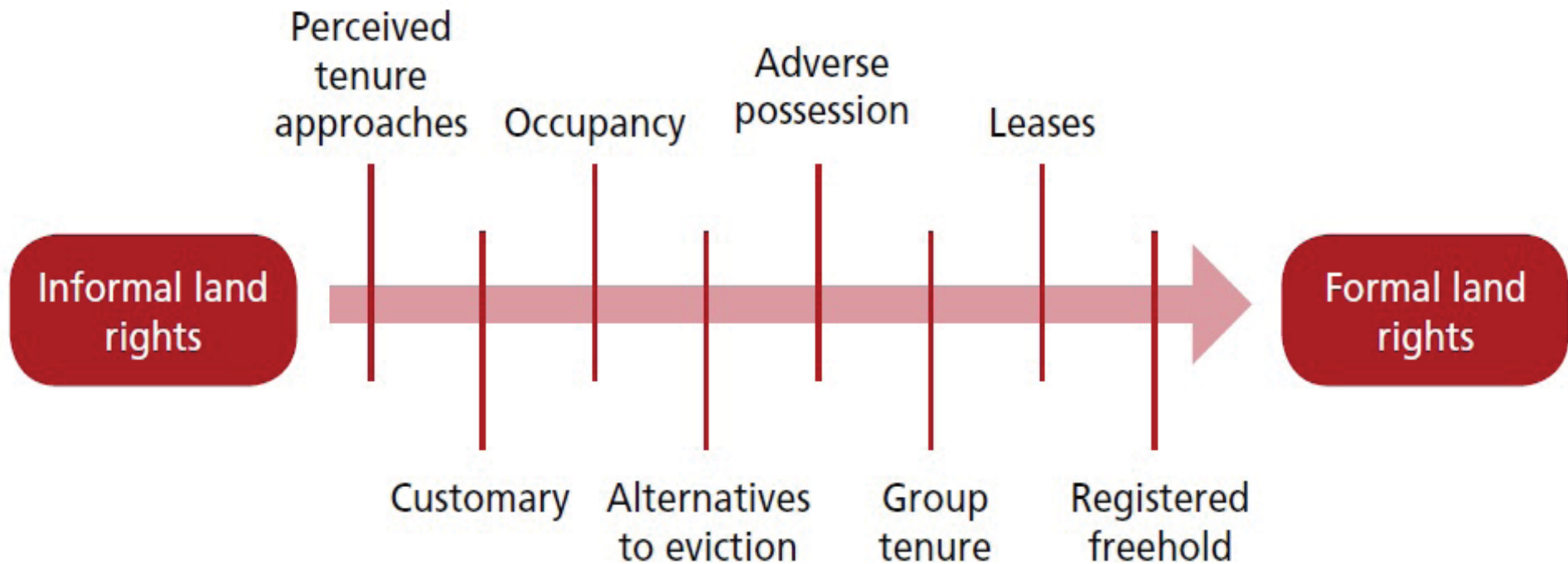
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Geographic information — Land
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Information géographique — Modèle du domaine de l'administration
des terres (LADM)

Reference number
ISO 19152:2012(E)

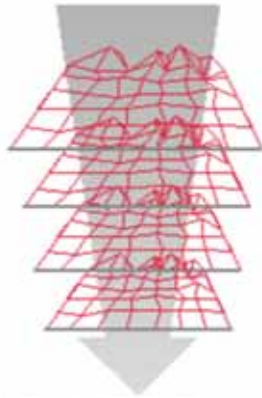
© ISO 2012



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



CADASTRE 2014

A VISION FOR A FUTURE CADASTRAL SYSTEM

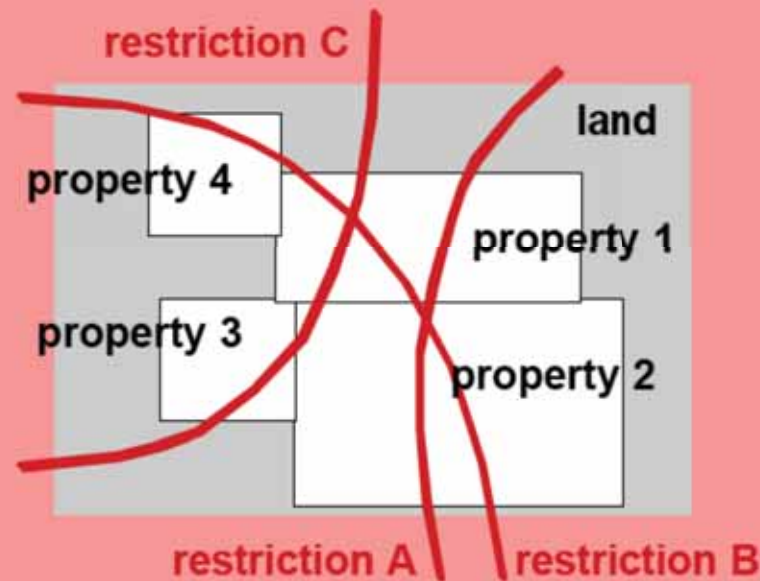
Jürg Kaufmann • Daniel Steudler
with the Working Group 1 of FIG Commission 7



July 1998

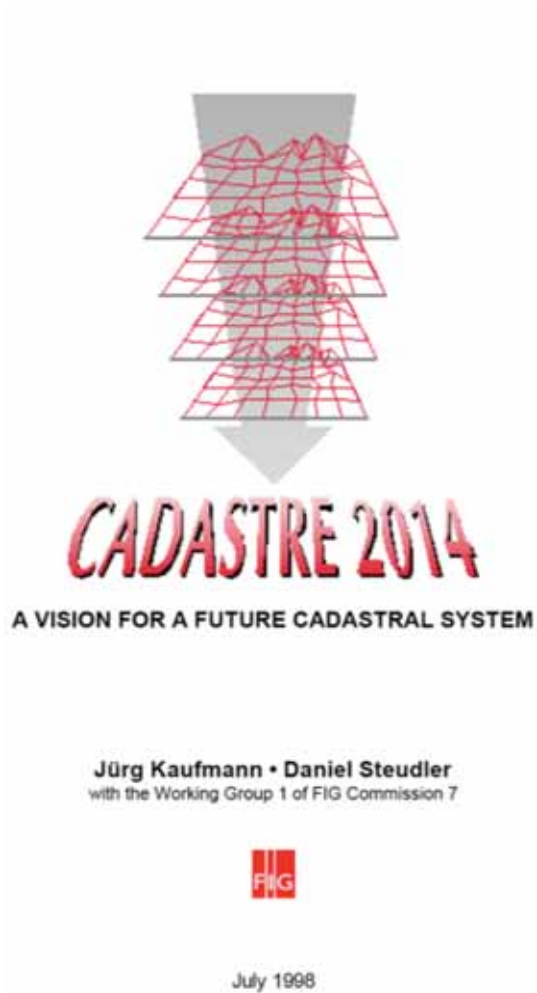
Statement 1 on Cadastre 2014

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.



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:

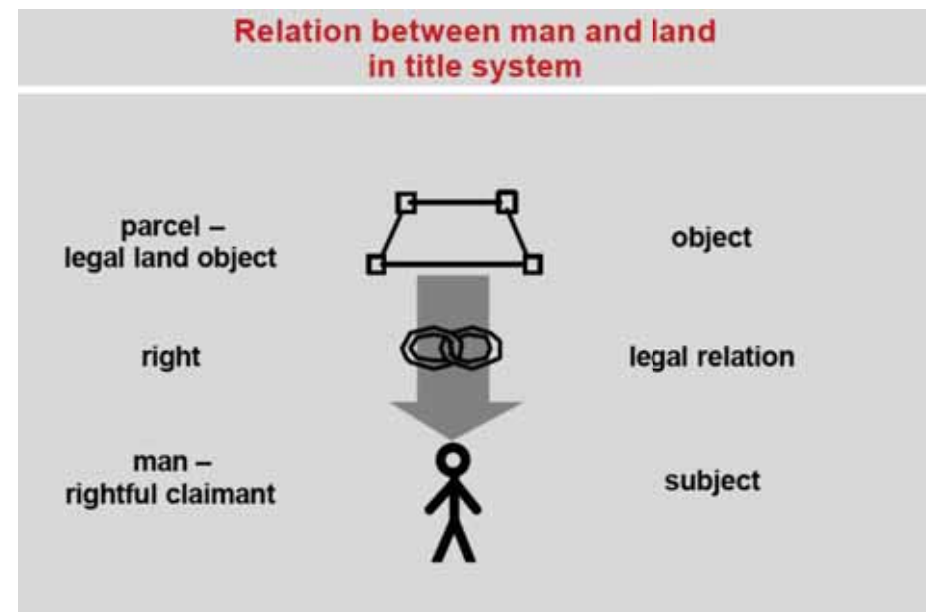
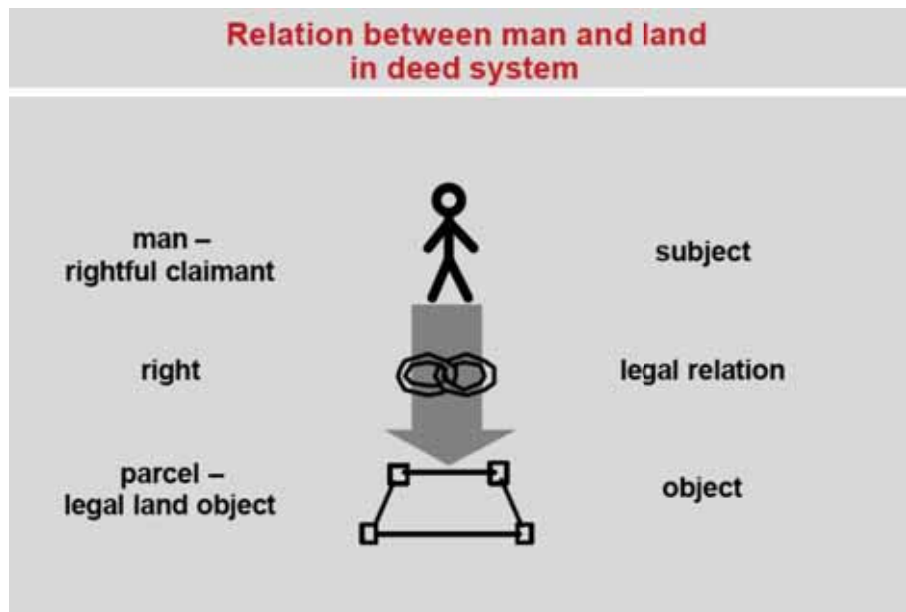
“Cadastre 2014 will highly privatized! Public and private sector are working closely together!

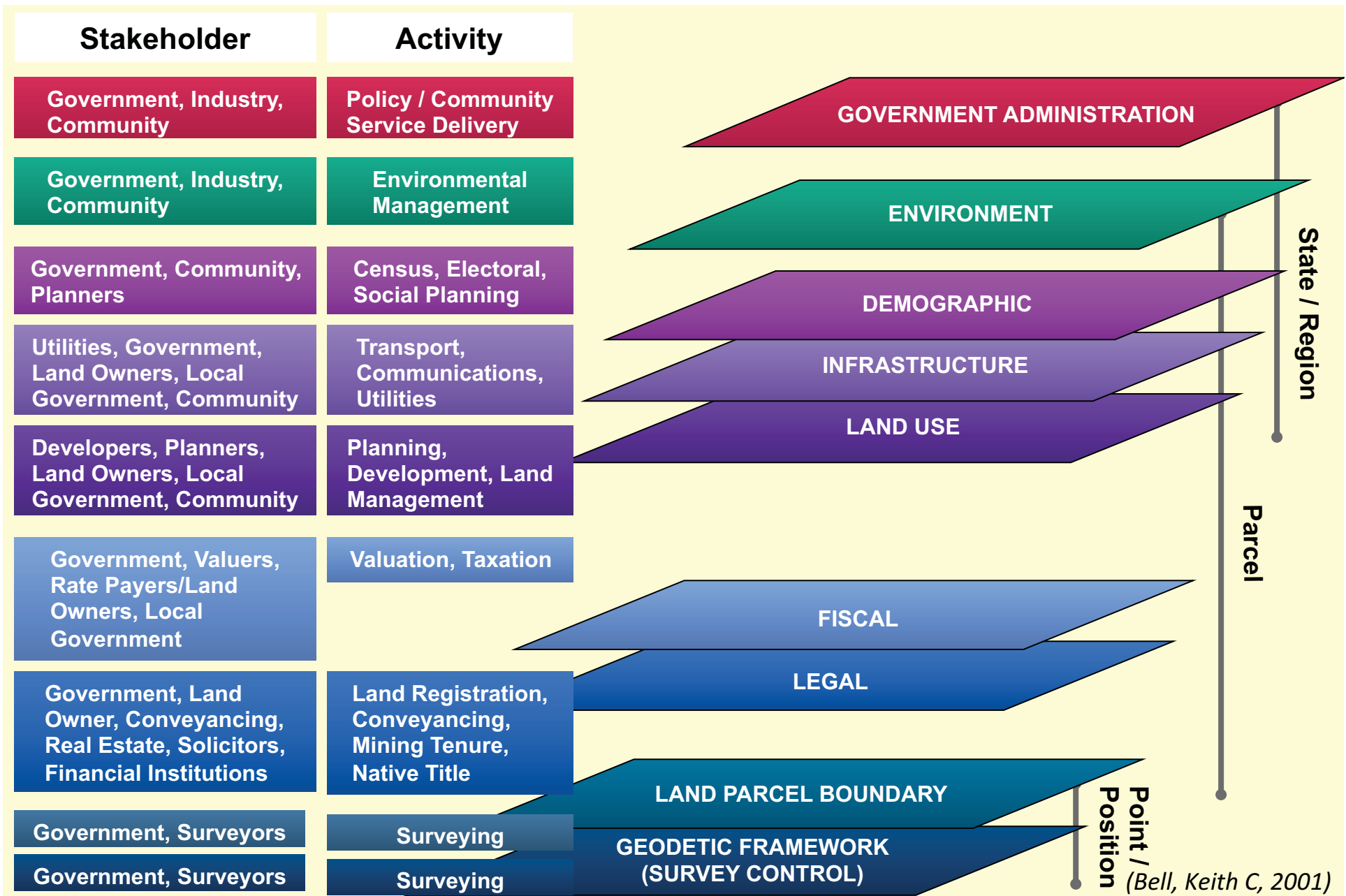
Statement 6:

Cadastre 2014 will be cost recovering

“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)





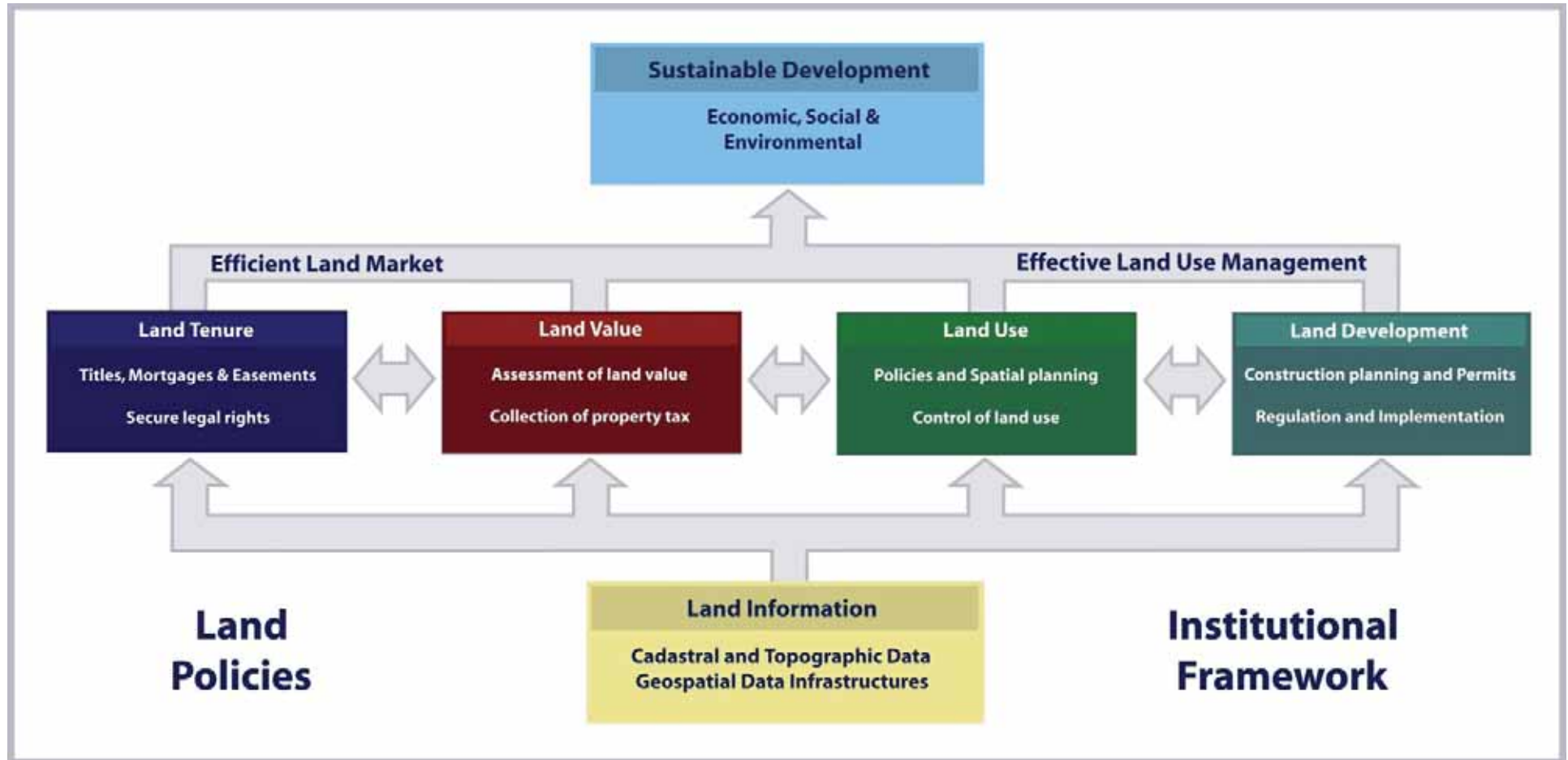


Cadastral Template

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.**

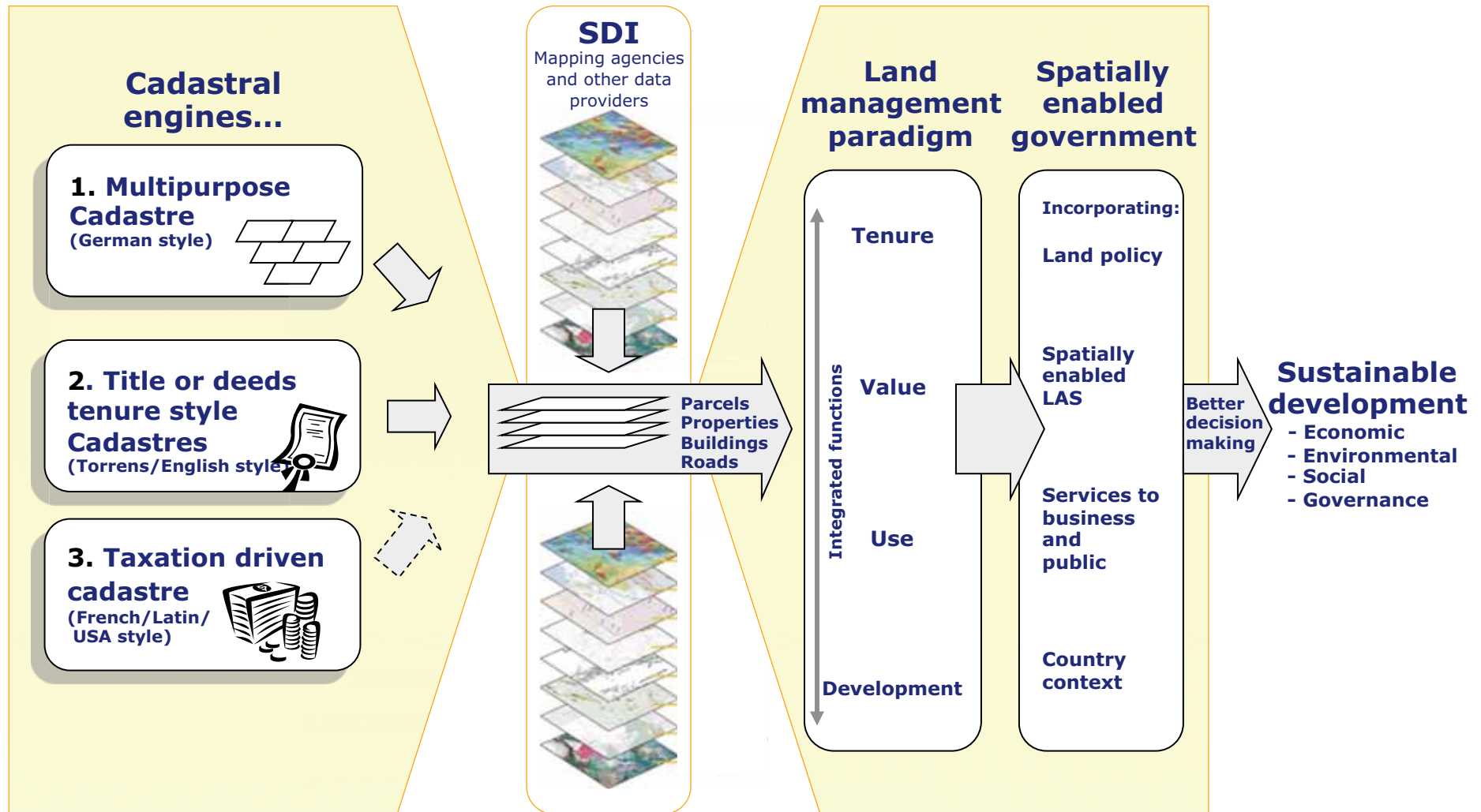
(Cadastral Template 2.0 (2013 – 2016) is currently being scoped and prepared for its launch in 2014. It is a collaborative activity between FIG and University of Melbourne CSDILA)



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

(Enemark, et al)

Significance of the Cadastre



(Enemark, et al)



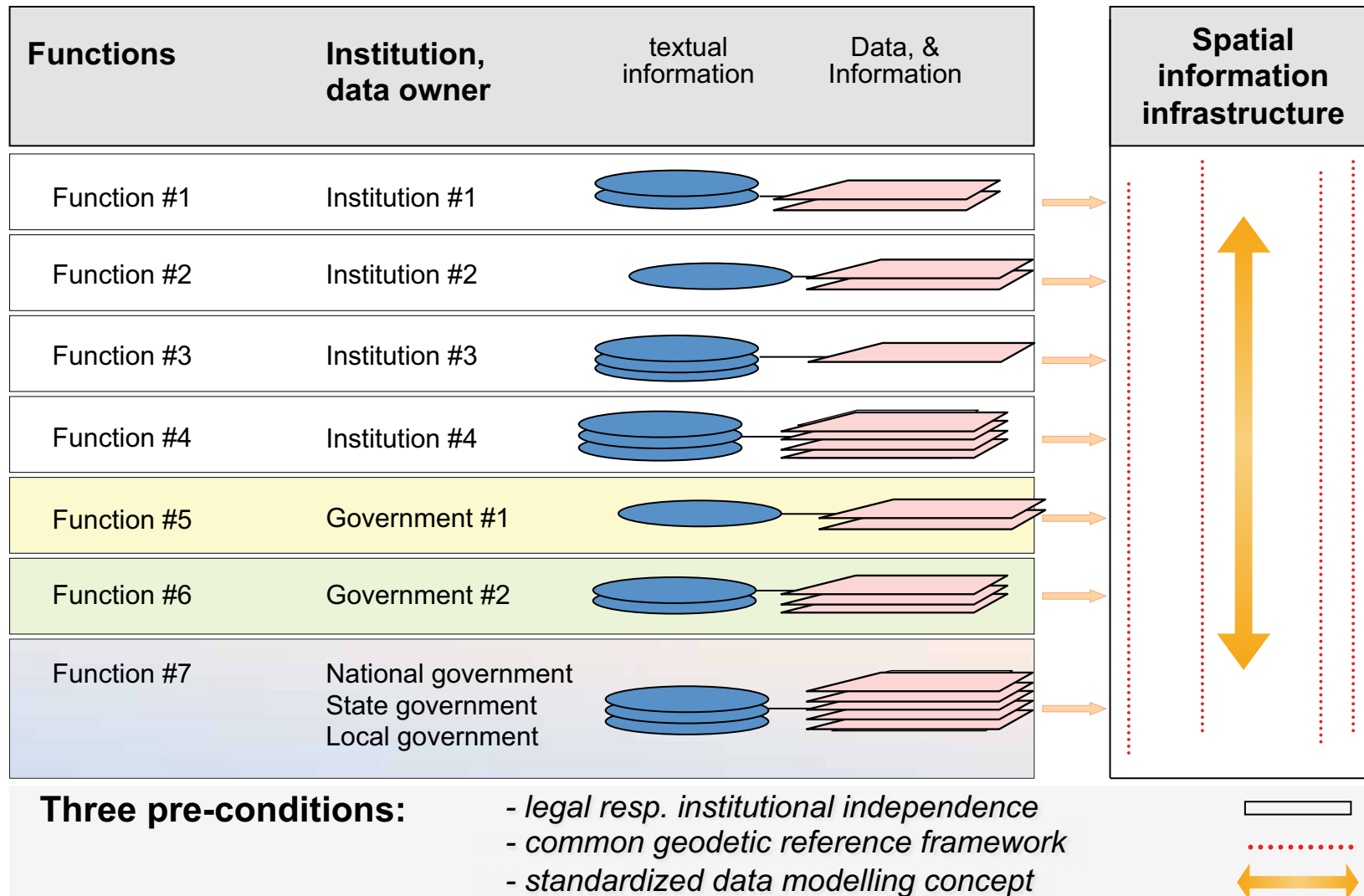
(Abbas Rajabifard, 2012)

Spatially enabled Government and Societies, recognizing that all activities and events have a geographical and temporal context, make decisions and organize their affairs through the effective and efficient use of spatial data, information and services.



UN-GGIM-AP Kuala Lumpur Declaration on Spatially Enabled Government and Society, 2012

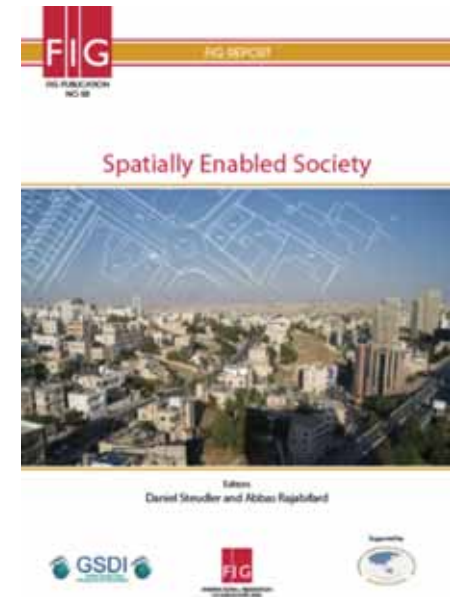
Data Integration Concept



(Daniel Steudler & Jurg Kaufman, 2012
 FIG Publication No. 58: Spatially Enabled Society)

Society can be regarded as spatially enabled when location and spatial information are commonly available to citizens, businesses and governments to encourage creativity, innovation and product development, evidence based decisions and informed actions. It promotes transparency and e-Democracy

(FIG Spatially Enabled Society)





Fédération Internationale des Géomètres
International Federation of Surveyors
Internationale Vereinigung der Vermessungsingenieure **FIG**



Fédération Internationale des Géomètres
International Federation of Surveyors
Internationale Vereinigung der Vermessungsingenieure **FIG**

DIRECTRICES VOLUNTARIAS SOBRE LA
Gobernanza responsable de la tenencia
DE LA TIERRA, LA PESCA Y LOS BOSQUES EN
EL CONTEXTO DE LA SEGURIDAD ALIMENTARIA NACIONAL

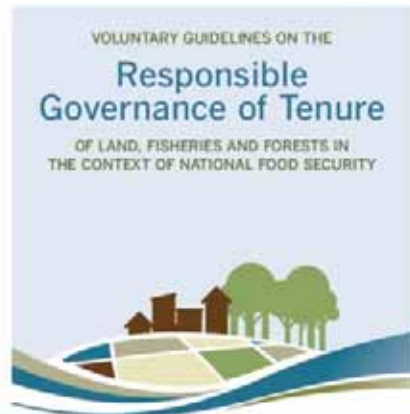
Abogado y Comunicación
(Advocate & Communicate)

Desarrollar y Ofrecer
(Develop & Deliver)

Incluir y Educar
(Include & Educate)

Participar y Promover
(Engage & Promote)

Fédération Internationale des Géomètres
International Federation of Surveyors
Internationale Vereinigung der Vermessungsingenieure **FIG**



"Nous avons maintenant une
vision partagée. C'est un point de
départ qui aidera à améliorer la
souvent terrible situation des
pauvres et affamés"

Jose Graziano da Silva
(FAO Director General)

"... une urgence et un
défi immédiat dans l'édification
d'une mise à jour, crédible et
complète et faisant autorité,
inventaire des terres (et des
mers) qui comprend des
informations concernant la
durée, la garde et la propriété."

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

FIG 2014

FGF

FIG

FGF

FIG

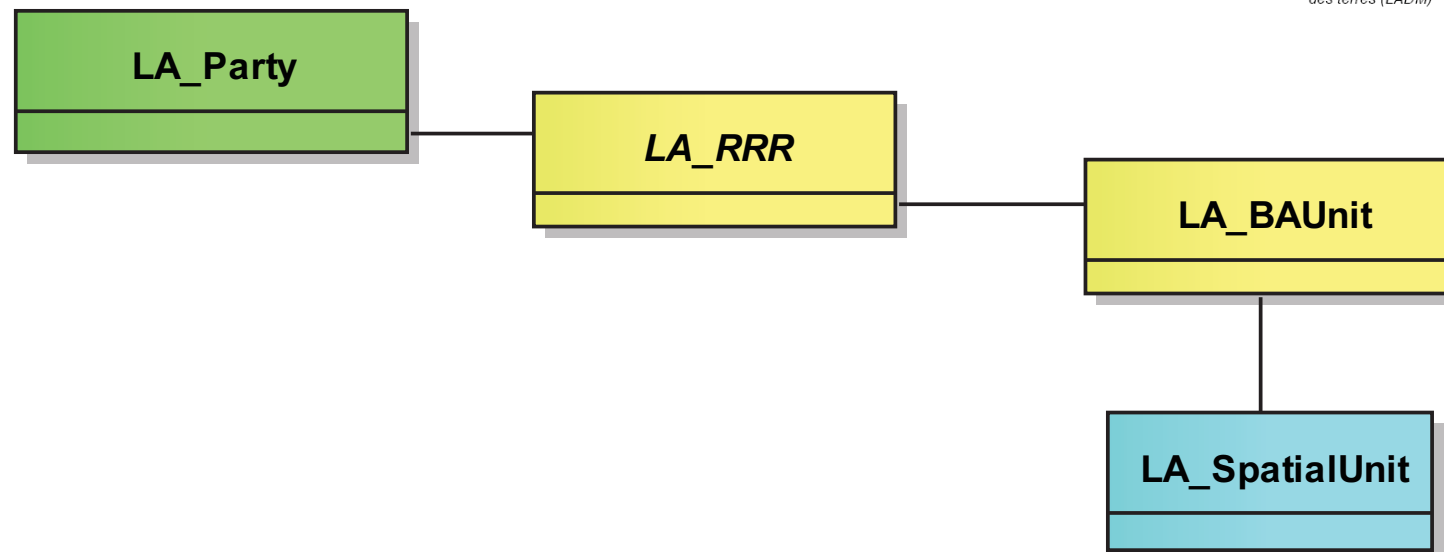




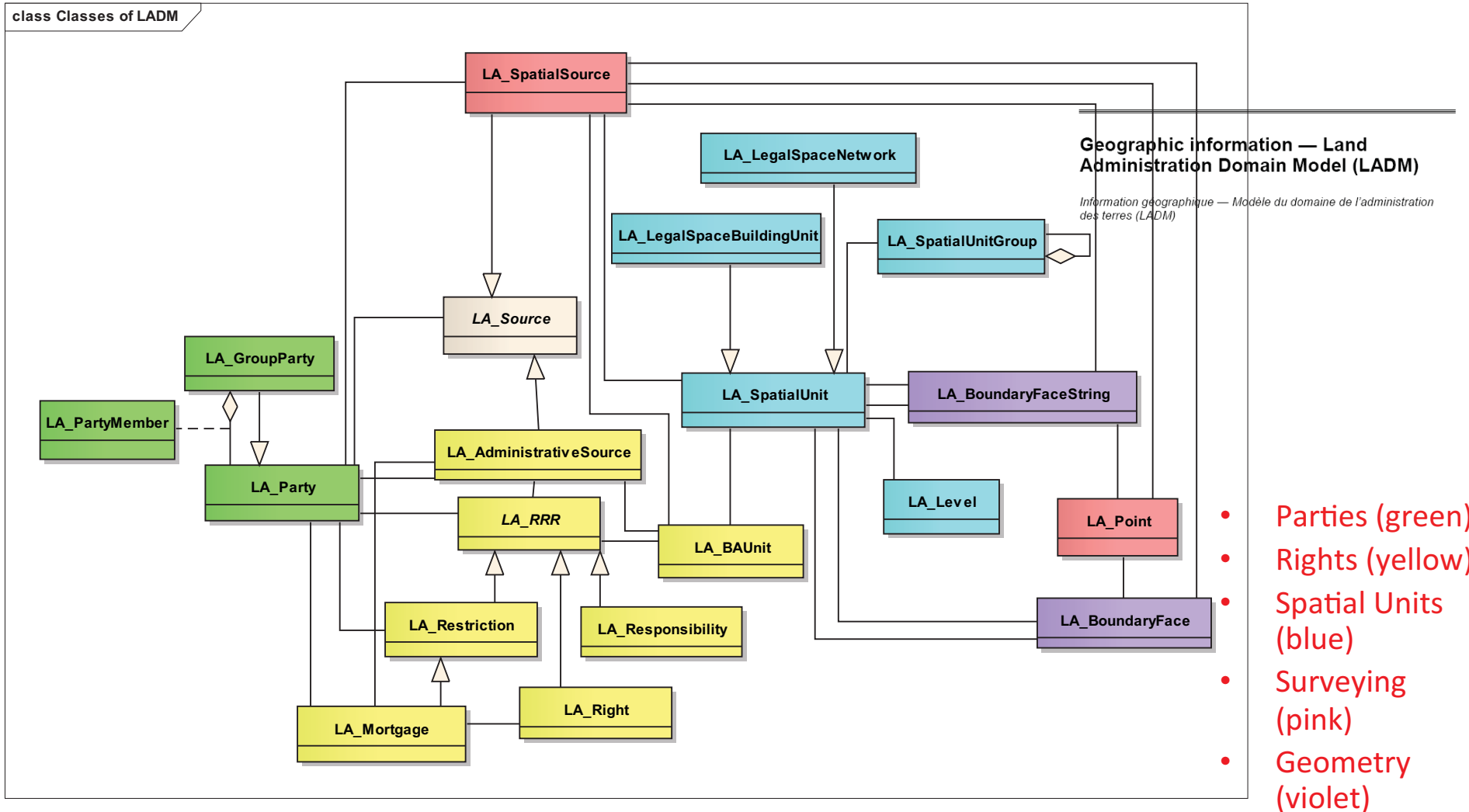
class Figure 2. Basic classes of LADM

Geographic information — Land
Administration Domain Model (LADM)

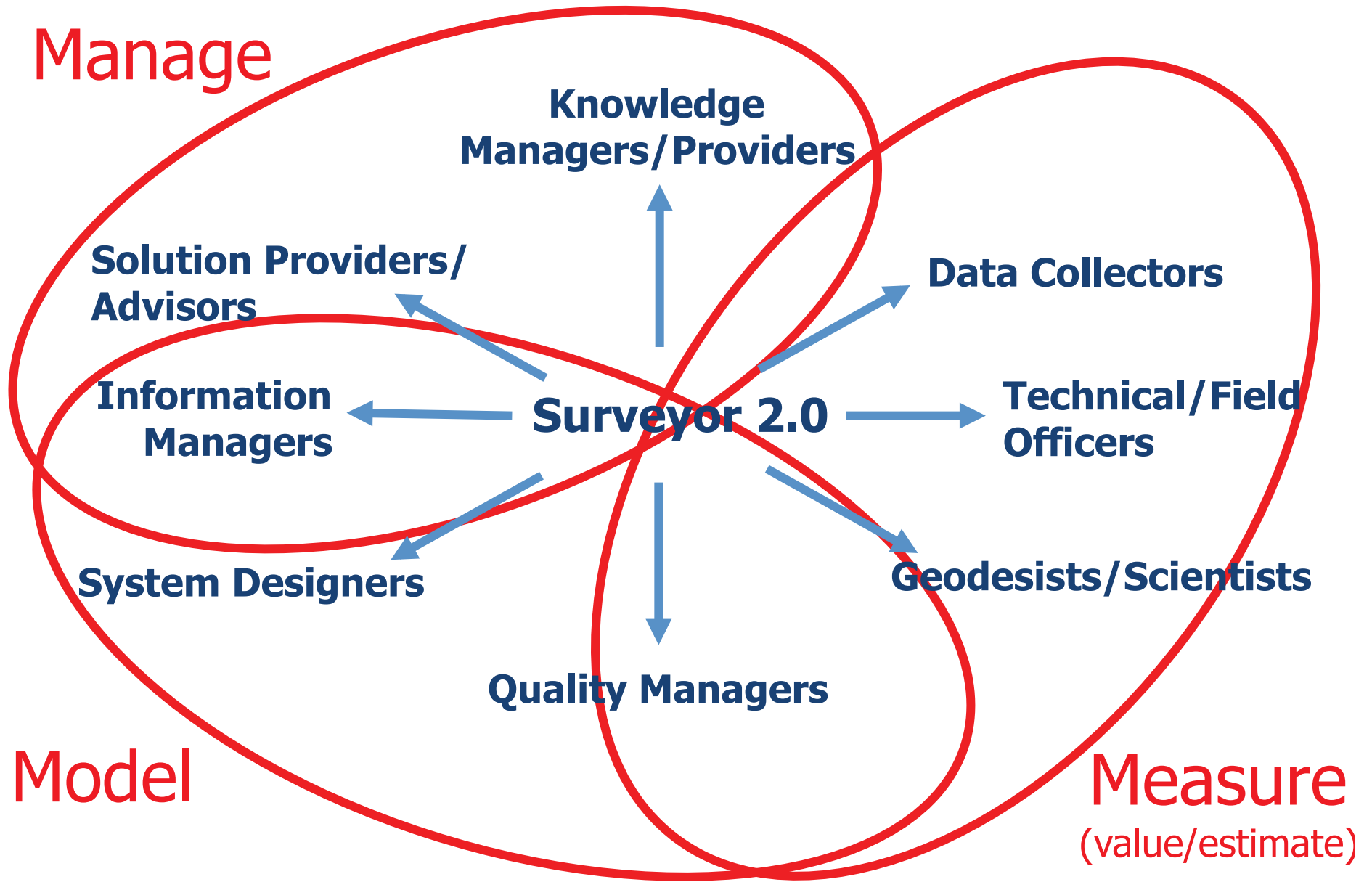
*Information géographique — Modèle du domaine de l'administration
des terres (LADM)*



class Classes of LADM



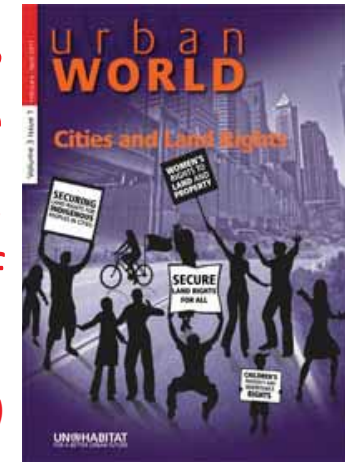
Manage





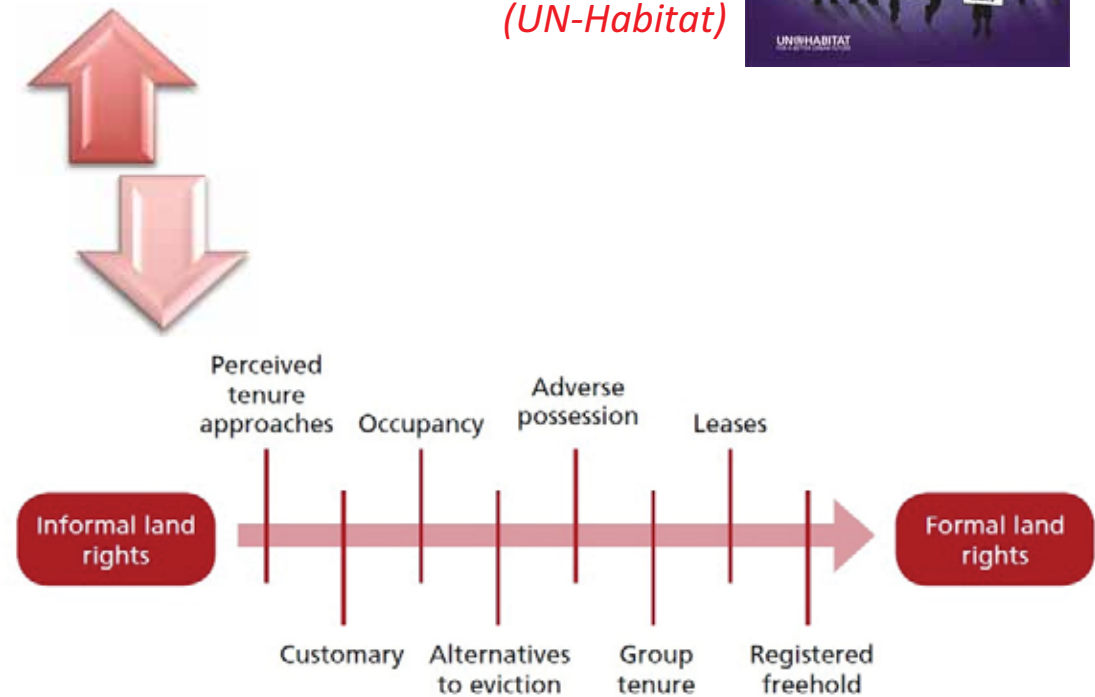
“Land is a scarce resource involving a wide range of rights and responsibilities. When poorly managed, it can become contentious often leading to disputes, conflict, degradation and other problems, all of them drivers of slum development and poverty in urban areas.”

(UN-Habitat)



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Geographic information — Land Administration Domain Model (LADM)

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**THE
WORLD
WE WANT**



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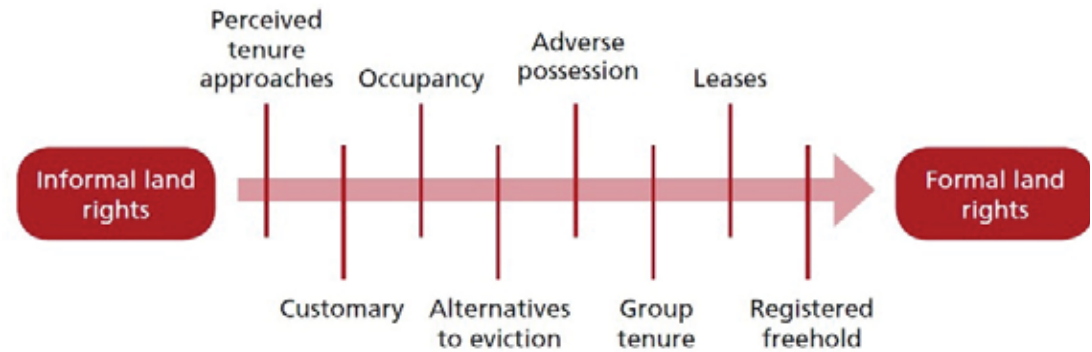
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High-level Panel 
the Post-2015 Development Agenda



Land Administration Domain Model and The Continuum of Land Rights providing the key that unlocks the wealth of existing knowledge about people to land relationship for “The World We Want”?