International Federation of Surveyors
Fédération Internationale des Géomètres
International Vereinigung der Vermessungsingenieure
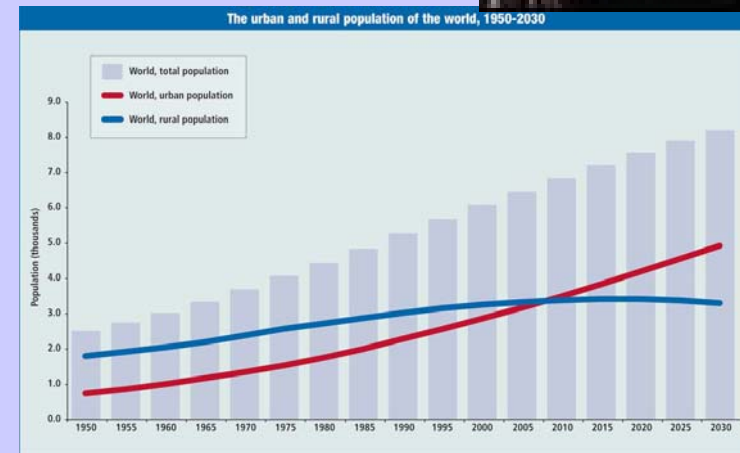
Engaging the Challenge: Enhancing the Relevance

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Challenges (I)

Certain challenges characterize our era, such as:

- **Democratization of nations** & **political reforms**, **transition** from centrally driven economies to the free market and the need for **privatization of land, business, housing, enterprise** and for registration

- **Political + climate migration, rapid urbanization, informal development** and the need for **formalization** (local government capacity?)

- **Climate change** and the need for **adaptation** and **mitigation** measures

Challenges (II)

- **Economic crisis** and the urgent need for **development**

- **Economic globalization** and the need for **reforms** and **harmonization of policies and legislation**

- The hope for more **democracy**, **transparency** and **peace** and the need for **citizen awareness, citizen participation and public support**
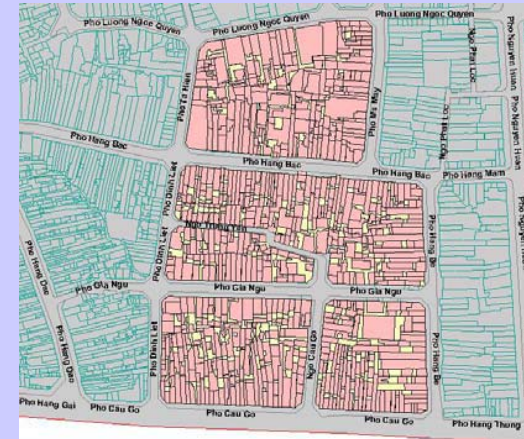

The long climb

Engaging the Challenge: Enhancing the Relevance (I)

To address the above, governments need to make *reforms - impact on property rights* (**land takings**)

These reforms will be implemented.

For better + transparent decision-making for the implementation, there is a need for reliable and updated *SDIs + cadastre*
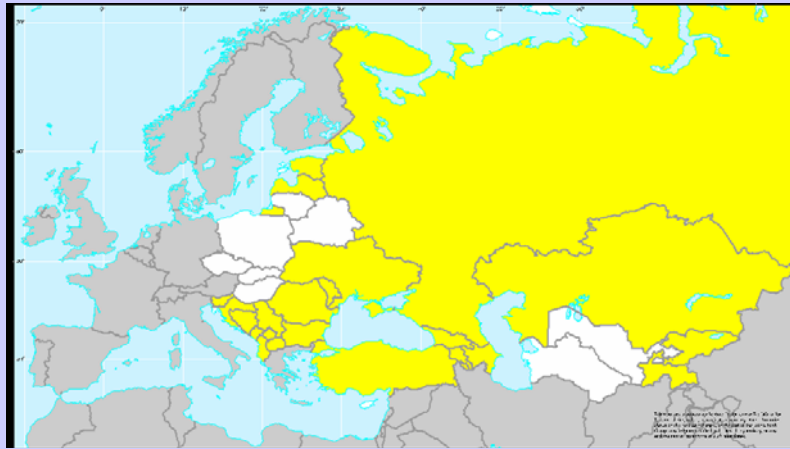
For more fairness, public acceptance + peace, there is a need for *strengthening and protecting of the existing property rights (formal and informal)*

Engaging the Challenge: Enhancing the Relevance (II)

Privatization + WB funded LA projects in Europe and Central Asia: **The largest program of land reform the world has ever seen!**

FAILURE FACTORS: **Incomplete requirements, no user involvement, lack of resources, unrealistic expectations, no support from senior management, unstable requirements, poor planning, …**
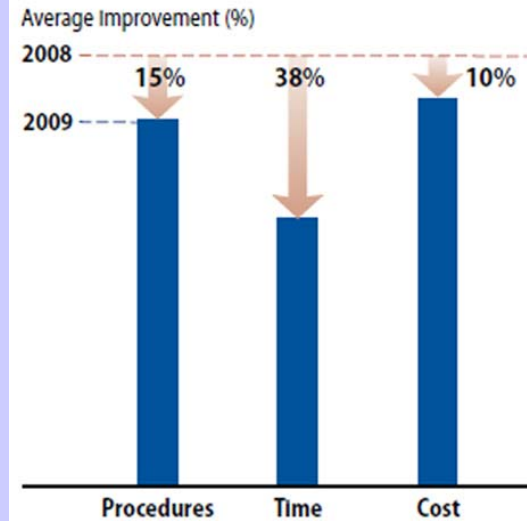
40 projects

23 countries

US$ 1.1 billion in loans and grants

19 projects currently ongoing

49 % suffer budget overruns

Rumyana Tonchovska, Gavin Adlington, 2010

Engaging the Challenge: Enhancing the Relevance (III)

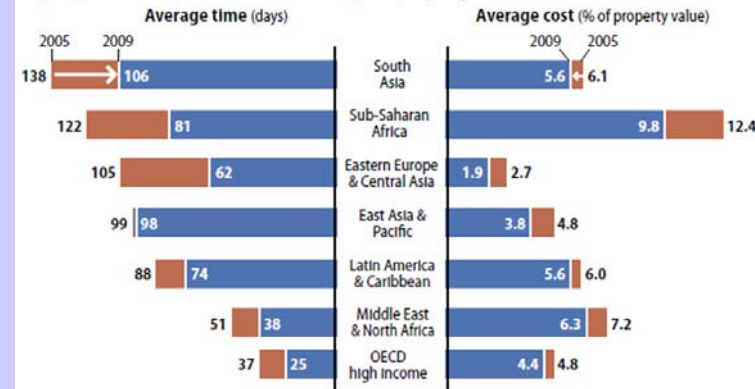**Access to land, adequate housing and property rights is a fundamental human right (UN)**

What Economy needs (WB):

- *Privatization, Formalization of weak rights, property registration*

- *Computerization: big time-saver*

- *Reducing average time and cost for property transactions*

- *Easing access to the registry*

- *Implementation of NSDIs*
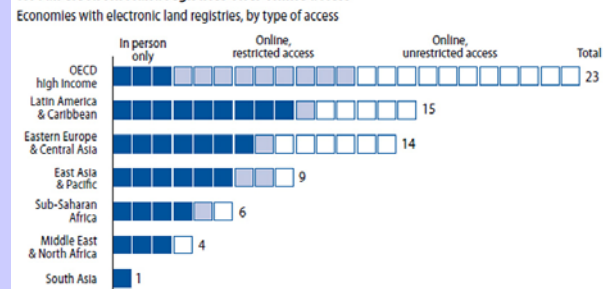
- *Easing construction permits*

- *Reducing labor costs*

Top 10 reformers in registering property
Average Improvement (%)

	Procedures	Time	Cost
2008			
2009	15%	38%	10%

Big improvements, but still harder to register property in Sub-Saharan Africa

	Average time (days) 2005 → 2009	Average cost (% of property value) 2009 ← 2005
South Asia	138 → 106	5.6 ← 6.1
Sub-Saharan Africa	122 → 81	9.8 / 12.4
Eastern Europe & Central Asia	105 → 62	1.9 / 2.7
East Asia & Pacific	99 / 98	3.8 / 4.8
Latin America & Caribbean	88 → 74	5.6 / 6.0
Middle East & North Africa	51 → 38	6.3 / 7.2
OECD high income	37 → 25	4.4 / 4.8

Not all electronic land registries offer online access
Economies with electronic land registries, by type of access

re added in subsequent years.

	In person only	Online, restricted access	Online, unrestricted access	Total
OECD high income				23
Latin America & Caribbean				15
Eastern Europe & Central Asia				14
East Asia & Pacific				9
Sub-Saharan Africa				6
Middle East & North Africa				4
South Asia				1

Engaging the Challenge: Enhancing the Relevance (IV)

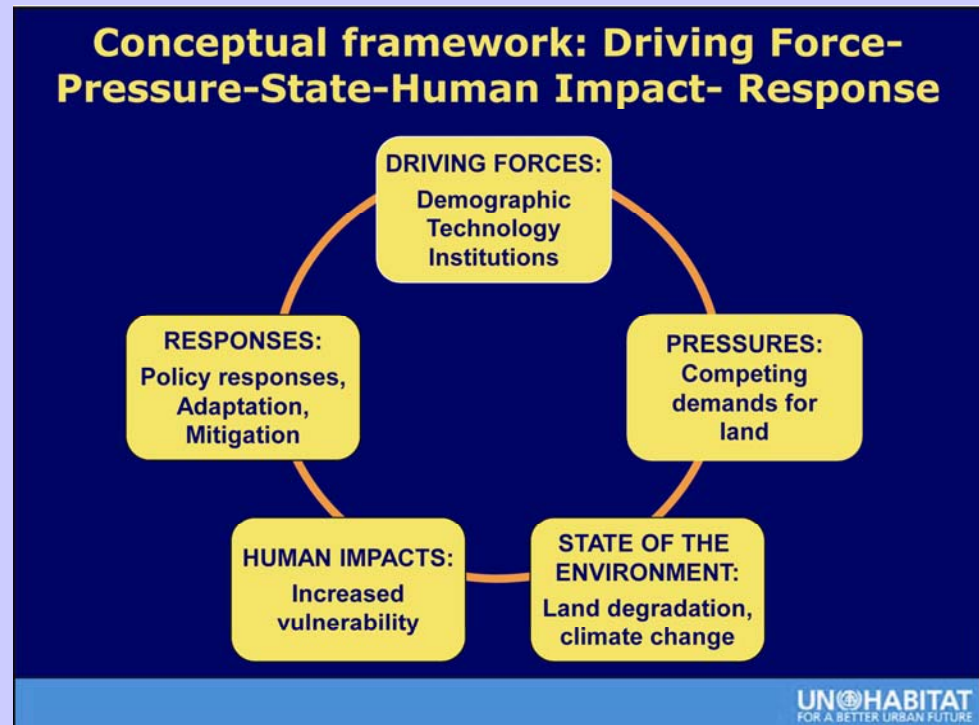*Cities and Climate Change: cities are part of the problem, thus they should be part of any solution (UN HABITAT).*

sustainable ———————→ adaptable

more sustainable cities :
increased urban densities

Need for revising:
- Land-use plans,
- Transport modalities,
- Building designs
for increased emission control and productivity

Climate Change Measures should also make Economic Sense (good business opportunity, job creation, economies of scale, etc)

Conceptual framework: Driving Force-Pressure-State-Human Impact- Response

DRIVING FORCES:
Demographic
Technology
Institutions

PRESSURES:
Competing demands for land

RESPONSES:
Policy responses,
Adaptation,
Mitigation

STATE OF THE ENVIRONMENT:
Land degradation, climate change

HUMAN IMPACTS:
Increased vulnerability

UN⊕HABITAT
FOR A BETTER URBAN FUTURE

Objectives of the joint research – Authors of the FIG pub 48
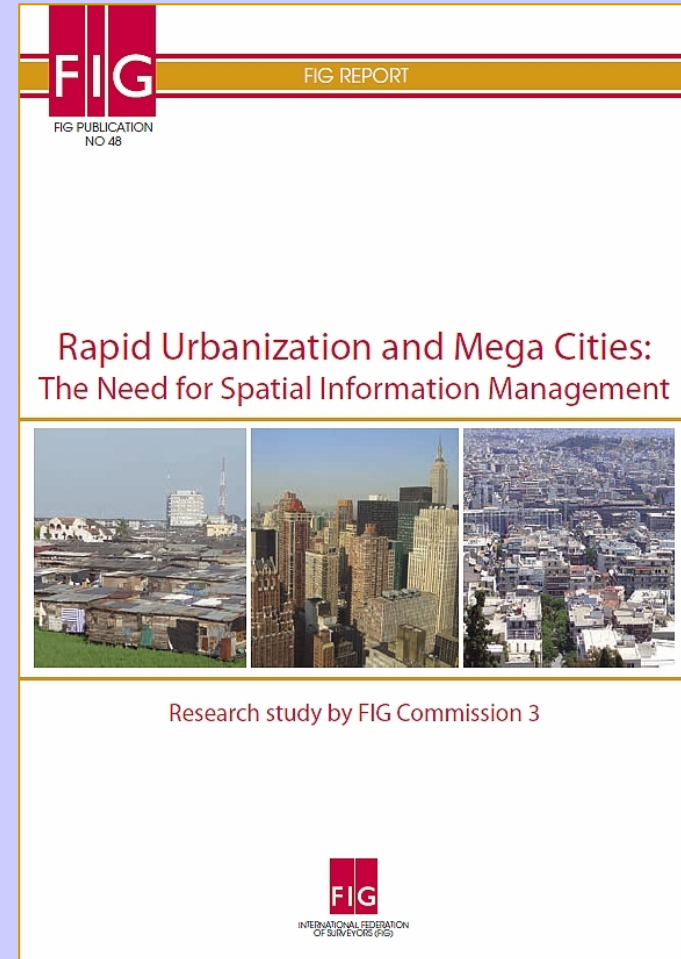
The goal of this research is to investigate the emerging needs, the current trends and the extent of using SDIs in selected mega cities, but also to identify the emerging possibilities for using new technical tools for the governance of sustainable large urban areas applied by the surveying-mapping- data processing community.

Authors: Yerach DOYTSHER, Israel,

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VGI, crowdsourcing methods

cheap, real-time, "locality"

no one knows the local area better than the residents

FIG
FIG PUBLICATION NO 48
FIG REPORT

Rapid Urbanization and Mega Cities:
The Need for Spatial Information Management

Research study by FIG Commission 3

FIG
INTERNATIONAL FEDERATION OF SURVEYORS (FIG)

What needs to be done

There is a need for:

- Better investigation of the capacity of governmental agencies to monitor, evaluate and interpret the volumes of collected data through crowdsourcing methods

- Raising public awareness about the benefits citizens will enjoy

- Raising public trust

- Establishing policy frameworks legally for the appropriate use of VGI, OpenStreetMap and OpenCadastreMap techniques.

Direct citizen contribution to LA?

As the land administration activity on the one hand deals with huge amounts of data, which moreover are of a very dynamic nature, and on the other hand requires a continuous maintenance process, the role of information technology is of strategic importance.
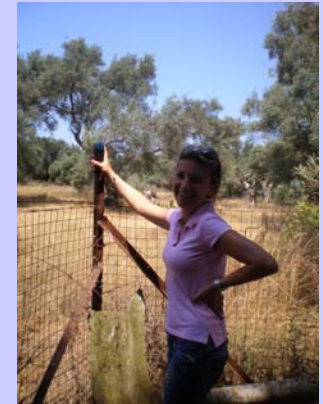
Technical and the socio-organizational concerns

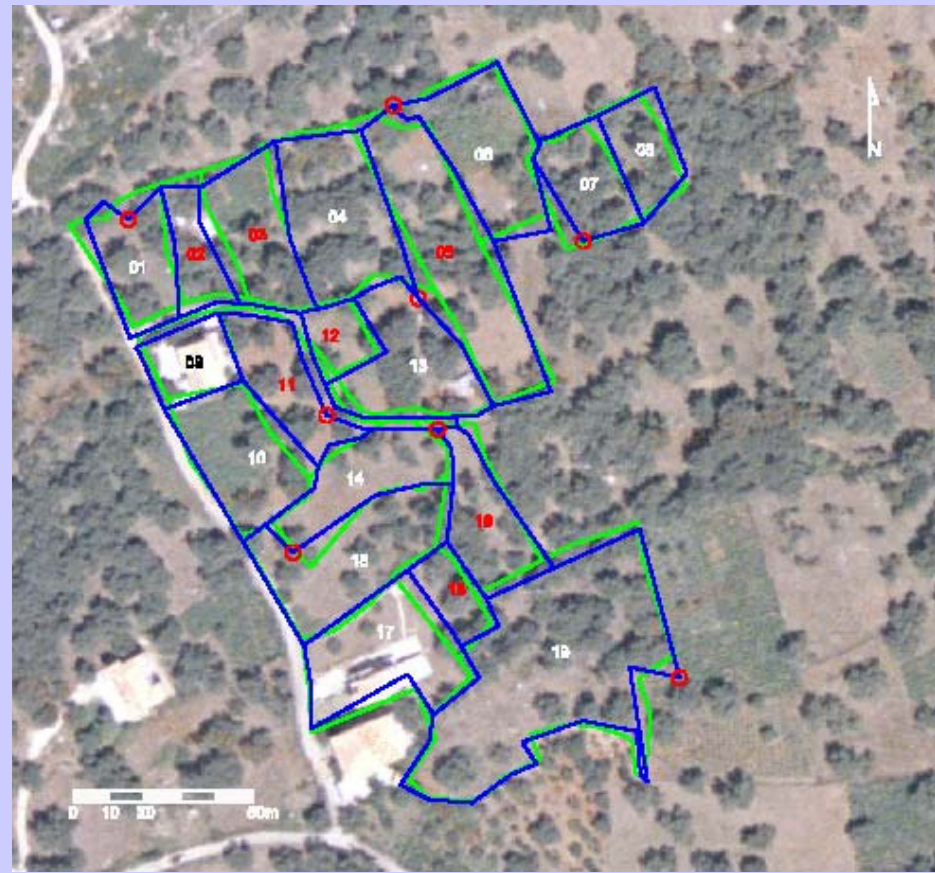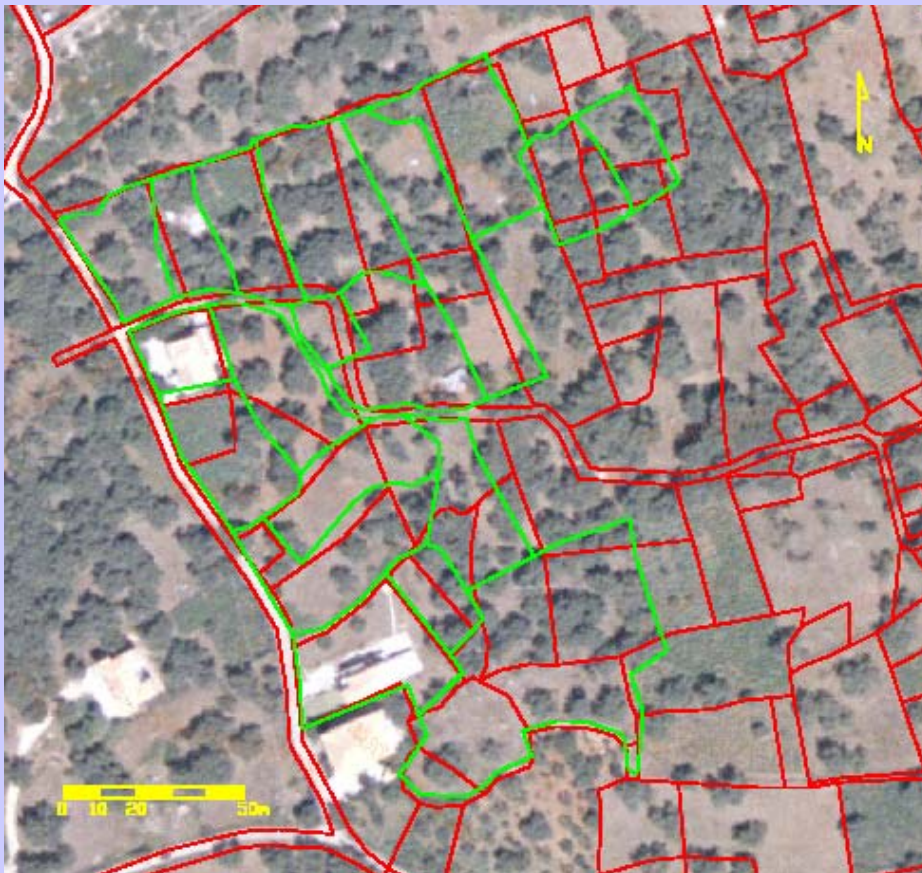# Application by NTUA research team (I)

Crowd sourcing techniques were applied by the NTUA team to investigate the possibilities to reduce the errors and speed up the cadastral survey procedure

For a number of reasons the cadastral survey in the application area lasted 12 years, the real estate market was blocked, the land owners had to pay extra costs for the objections in order to correct the errors

Land owners were enthusiastic to participate

Application by NTUA team (II)

Cadastral survey compiled by the contractor (in red); cadastral survey compiled by the KT agency in order to correct the errors (in green); cadastral survey by the land-owners (in blue). 2/3 of the boundary points are within the required accuracies.