

The Cadastral Challenge of the 21<sup>st</sup> Century

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# The Cadastral Challenge of the 21<sup>st</sup> Century

Gerda Schennach, Austria  
*Chair FIG Commission 7*



The World Cadastre Summit  
20-24 April 2015, Istanbul/Turkey

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## A human right

### UN DECLARATION OF HUMAN RIGHTS

*Article 17 par (1) Everyone has the right to own property alone as well as in association with others.*

**75 % of global population  
has **no** access  
to formal land registration**



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### Land and registration

- land tenure/property is
  - of fundamental interest of citizens
  - essential for keeping economy alive
  - a part of society
- no security of interests without "registration"
- registration needs
  - ☺ political willingness
  - ☺ a legal framework
  - ☺ communication to raise awareness of value
  - ☺ acceptance of property models by society
  - ☺ technology



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### Cadastre in society

- cadastre provides a feeling of security to land owners
- cadastre is a „local“ service
- strong personal relationship between land owners / beneficiaries and professionals
- stakeholders are considered powerful
- high responsibility for providing confidence
- cadastral information is an asset for creating business
- more and more awareness about sensitive data and privacy
- a valuable tool for preventing from land abuse and corruption

**but**

sometimes too slow, too costly, not on political agenda



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**Cadastral systems**

- different requirements (taxation, geometry e.a.) but always reflecting land or housing rights
- diversity of systems linked to culture and to history
- in many countries private and public stakeholders with different PPP models
- cadastre is often still considered as a privilege to selected groups of professionals
- public authorities and professionals in private practice keep most of the information

```
graph LR; A[There] --> B[Accepted]; B --> C[Expertise]; C --> D[Technology]
```

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**Cadastre in a changing world**

```
graph TD; A(global challenges) --> B(technology); B --> C(budgets); C --> A
```

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**For society - by society**

- land owners active information providers
- citizen as passive data providers ▶ communities
- new age user society growing
- user profiles changing
- community creates their own "regulations"
- communities get part of the (formal) processes
- citizen are owner of information
- quality assurance system secure fit-for-purpose -quality


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**Citizen as part of the process**



|                      |                    |                    |
|----------------------|--------------------|--------------------|
| <b>professionals</b> | <b>land owners</b> | <b>communities</b> |
| <b>data</b>          | <b>data</b>        | <b>big data</b>    |

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**Challenges for the future**



The diagram features a central red rounded rectangle labeled 'Challenges'. Four arrows point outwards from this center to four colored boxes: a purple box labeled 'Transparency' (top-left), an orange box labeled 'Security' (top-right), a yellow box labeled 'Business models' (bottom-left), and a green box labeled 'Trust' (bottom-right). The entire diagram is set against a light pink circular background.

**Transparency**      **Security**

**Business models**      **Trust**

**Challenges**

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**Trust**

- land owner/citizen as main partner
- into technology/systems/web/clouds
- society trust systems rather than stakeholders
- sustainability of systems
- availability of data
- accessibility for citizen, new silos
- give long-term evidence on land and changes in land tenure
- historical evidence on who and when and what (WWW)
- transparency of conditions for access
- transparency of processes to stakeholders
- keep selective at data collection

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### Transparency

- procedures need to be understandable and transparent to public
- training of citizen by publicity
- transparency of business models
- make origin of data available
- categorize authenticity / legal status
- community self-monitoring procedures
- publicity of data under privacy aspects to increase quality
- access to silos, awareness of clouds
- transparency of conditions for access
- track routes of information – what is where
- clear definition of responsibilities



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### Security

- long-term existence of infrastructures / archives / cloud
- key moderators / facilitators / responsibility
- protection of data against
  - manipulation of data
  - data grabbing
  - fraud
  - attacks by interest groups
- alternative models of land tenure
  - leasehold, community land, shareholder models, generation property, affordable land, non-permanent land tenure .....
- securing land rights and systems in post- and pre-disaster and post- and pre-conflict areas
- archives



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### Business models

- communities produce similar products / substitutes
- society is user **and** producer
- public authorities take role as facilitator and moderator
- open source technologies vers. proprietary solutions
- power moves to land owners / society / communities
- ownership of data (citizen, third party, community data...) and structures (hosts, clouds.....)
- infrastructures and potential of systems for big data mgt.
- financing / self-financing / cost-benefit models
- open government data vers. open data
- distributed responsibility models



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### Civil society as stakeholder

- requirements from society, economy, global environment....
- role of NGOs, interest groups ...
- role of global networks
- role of international professional associations (FIG, ISPRS, .....)
- global community
- strong partnerships, 4P Cadastre (Public, Private, People, Professionals)
- overcome slow, costly, intransparent systems
- raise awareness for need
- establish sustainable systems (financing, conflict resistance, adaptable to new technologies, stable in changing environments)



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**FIG Commission 7 on  
Cadastre & Land Management**




**Chair** *G. Schennach (A)*

|   |  |  |  |
|---|--|--|--|
| <b>WG 7.1</b><br>Fit-For-Purpose<br><b>LA</b><br><i>Ch. Lemmen (NL)</i> | <b>WG 7.2</b><br>LM in<br>CC and PP<br>Disaster areas<br><i>D. Páez (CO)</i> | <b>WG 7.3</b><br>Crowdsourcing<br>of Land Rights<br><i>R. McLaren (UK)</i> | <b>WG 7.4</b><br>Citizen<br>Cadastre<br><i>G. Iván (HUN)</i> |
|---|--|--|--|

**Joint WG C3/C7 3D Cadastre**

**Cadastral Template 2.0** *D. Steudler (CH)*


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**Let us cadaster our world.....**



**see you**  
**FIG Com3/Com7**  
**Internat. Workshop on Crowdsourcing**  
19-23 Oct 2015, Malta

**FIG Com7 Annual Meeting and**  
**Internat. Workshop C2/C7 on Professional**  
**Qualification**  
23-28 Nov 2015, Nepal

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