

## **FIG Commission 7 – Cadastre and Land Management**

### **Work Plan 2015–2018**

#### **1. Title**

Cadastre and Land Management

#### **2. Terms of Reference**

Commission 7 deals with all issues of land rights and land administration, as well from a service provider as from a user and citizen perspective. A special focus is given to cadastre and land management infrastructures as being fundamental for sustainable development.

Key topics of Commission 7 activities are:

- land tenure in diversity of cultures and society
- cadastre and land registration
- legislation / governance / e-governance / reforming cadastre
- security of land tenure, data and information / access to information for citizens
- public trust in land administration systems / fraud prevention
- Fit-For-Purpose and pro-poor land administration / low cost models
- new technologies for remote and in-situ data acquisition on land rights / social media and third party data capture / crowdsourcing / role of land owners
- land use and land policy
- valuation and taxation of land / land markets
- land consolidation and land readjustment for rural and urban areas
- multi-dimensional and multi-temporal cadastre
- impact of climate change and disasters on land rights
- standards in land administration
- capacity building in land administration

#### **3. Mission statement**

The Mission of Commission 7 is:

- to provide a global forum for enhancing and exchanging knowledge about cadastre, land administration and land management
- to encourage the development of pro-poor land management and land administration tools
- to promote the importance of sustainable land administration infrastructures as being essential for sustainable development and economic growth
- to underpin the use of innovative and advanced technology in cadastre and land administration;
- to raise awareness of the role of surveyors in land administration matters to the public and among stakeholders.

## 4. General

Commission 7 builds upon a long term expertise from national delegates, experts and partners with different professional background. Based on results from previous years, Commission 7 will continue to provide assistance and knowledge for the implementation of the overall FIG strategy as far as related to cadastre and land management.

There is a focus on

- providing visions for future cadastre and land management
- taking the role as a mastermind in developing effective land management
- thinking about new models of land administration for sustainable development
- initiating professional discussions on new business models as required by a changing society
- securing land tenure and advocating citizens' rights

but at the same time, Commission 7 aims at staying pragmatic about what is feasible in a surrounding of cultural and social diversity and how commitment among stakeholders can be created for the benefit of the society and for the reputation of the profession in providing sustainability and advocacy to citizens, land owners and stakeholders.

The Commission work is assigned to 4 Working Groups who will address the objectives of this Work Plan by various activities, such as

- contributing to FIG Conferences, FIG Working Weeks, workshops and seminars
- presenting papers in national, regional and international conferences
- reporting findings from FIG Commission 7 Annual Meetings
- organising platforms and discussion forums for communication
- producing reports and publications in cooperation with other interest groups
- preparing documentation of activities and results
- co-operating with other FIG Commissions and Task Forces and Networks
- organising annual meetings in various regions of the world
- co-operating with relevant regional and international organisations from outside FIG including UN, World Bank, NGOs, NPOs, CSOs, professional associations and networks such as GLTN
- encouraging national delegates and representatives from all FIG member associations to participate in the Commission 7 work and to disseminate information to national associations and professionals
- encouraging representatives from professional associations who are not yet members of FIG to participate in Commission 7 activities

## 5. Working Groups

### Working Group 7.1 – Fit-For-Purpose Land Administration

#### Policy Issues

- identify role of Fit-For-Purpose Land Administration in relation to sustainable land use, food security, climate change etc. in the post-2015 Development Agenda
- implementing the 'Continuum of Land Rights' and the STDM into operation at country level including innovative methodologies for fast and low cost recording of

land rights and appropriate land rights for future housing, including proposals for innovative land rights (new models of leasehold, tenure of public land etc.)

- identify the value of land consolidation and land readjustment for rural and urban areas in poverty prevention programmes
- develop the second edition of the Land Administration Domain Model with ISO on behalf of FIG by integrating partners from local-national, regional and international organisations, NGOs, NPOs, insurances, re-insurances, bank companies, bar associations
- promoting the development of innovative hard- and software solutions for land administration
- identify the needs for further development, quality improvement and system optimisation after Fit-For-Purpose Land Administration is implemented

#### Chair

Dr. Ir. Christiaan Lemmen, The Netherlands, email: [Chrit.Lemmen@kadaster.nl](mailto:Chrit.Lemmen@kadaster.nl)

#### Specific project(s)

Working Group 7.1 aims at generating answers to the globally growing demands on land governance, the Continuum of Land Rights and on responsible tenure by continuing its work on developments of STDM, LADM and Fit-For-Purpose in cooperation with partners from UN FAO and UN Habitat/GTLN and others for the goals of the post-2015 Development Agenda. Cooperation on the implementation of Voluntary Guidelines with UN FAO will continue. Further activities will focus on providing appropriate models including innovative land rights and tools for improving global coverage of evidence. Aspects of land consolidation and readjustment of land will be investigated in cooperation with FIG Commission 8. Trainings will be developed in cooperation with the YSN.

#### Workshop(s)

- presentation of results and findings in international and national workshops, conferences and particularly in events of the global community (UN FAO, UN Habitat, UN GGIM, World Bank)
- initiating panel discussions with experts from in- and outside the profession in high-level conferences
- international FIG Commission 7 Workshop (planned for 2017 or 2018) on Fit-For-Purpose Land Administration
- international FIG Commission 7 Workshop on LADM/STDM with UN FAO and UN Habitat/GLTN and in cooperation with FIG Standards Network, Joint WG on 3D Cadastre, YSN and INTERLIS Switzerland (proposed for 2016 in Portugal)
- training courses at national and regional level for stakeholders, trainers and land owners together with YSN

#### Publication(s)

- second edition of LADM in cooperation with ISO
- special issue of Land Use Policy on LADM in a high impact Scientific Journal
- study on STDM strategy for increasing global acquisition of land tenure information
- Proceedings of an international FIG Commission 7 Workshop
- papers about land tenure in scientific magazines and newsletters

### Timetable

- special issue of Land Use Policy in 2015
- analysis of approaches for bringing the 'Continuum of Land Rights' into operation at FIG Working Week 2016
- progress of work and draft publications will be presented at FIG Working Weeks during the term of this Work Plan
- organising special sessions in FIG events as well as in other specific events throughout the term of this Work Plan
- edition II of ISO 19152 LADM until 2018
- Guidelines STDM for presentation in FIG Congress 2018

### Beneficiaries

International and regional NGOs and NPOs (UN FAO, UN Habitat, UN GGIM, World Bank), national and regional governments, decision-makers, FIG member associations, producers of handheld tools, software and service providers, global society, citizens.

## **Working Group 7.2 – Land Management in Climate Change and Pre- and Post-Disaster Areas**

### Policy issues

- assessment of land tenure in post-disaster areas
- pre-disaster assessment / documentation of land tenure
- legal/institutional/technical Fit-For-Purpose methods to secure land rights in pre- and post-disaster areas
- impact of climate change on land tenure / loss of land, land use changes
- compensation for value changes, consolidation of agricultural land, adjustment of urban land in post disaster regions
- new technologies for data capture in pre-disaster areas / validation of third party data
- cooperation models with public authorities / voluntary guidelines in conflicts
- capacity building in disaster response bodies
- spatial data infrastructures for pre-, during and post-disaster response (link to FIG Commission 3)

### Co-Chairs

Daniel Páez (PhD), Colombia, email: [dpaez@uniandes.edu.co](mailto:dpaez@uniandes.edu.co)  
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### Specific project(s)

Working Group 7.2 aims at building upon results of cooperation with UN FAO and at establishing links to the networks of professionals from land administration institutes and organisations and from international and national bodies who are in charge of disaster management in order to raise awareness about the need of appropriate documentation of land rights in disaster situation and to facilitate cooperation with the relevant institutions in terms of securing rights of land owners in areas of high risks (e.a. with SIDS Small Islands Developing States and others).

Climate change entails long-term impacts on land and land tenure which may affect citizens significantly in their economic situation. Working Group 7.2 will analyse about long-term strategies for compensating impacts on land owners.

WG 7.2 is also interested in supporting the development of better land information systems that reduce risk, optimise resources during response activities and help reconstruction efforts after a disaster has occurred. In this, it is proposed to incorporate new data collection technologies, such as by drones, as a core element of better land management for disaster response.

#### Workshop(s)

- participation in regional and international workshops / conferences
- contact with global community (UN), NGOs and NPOs
- international FIG Workshop of Commission 7 on Security of Land Rights in PP disaster areas in 2017 (proposed venue – Bogota/Colombia)
- presentation of results and findings in international and national workshops, conferences and particularly in events of the global community (UN FAO, UN Habitat, World Bank)
- Working Group members meetings during main FIG events (Congress, WW, Commission 7 Annual Meetings)
- web-seminars on key topics and projects

#### Publication(s)

- Proceedings of international Workshop on Security of Land Rights in PP disaster areas
- Guidelines for pre- and post-disaster management of land rights
- Whitepaper on the use of new technologies for spatial data collection for disaster prevention and management
- analysis of climate change impacts on land management
- Guidelines for spatial data infrastructures (SDI) development and sharing for disaster management
- papers in scientific magazines and newsletters

#### Timetable

- consultation draft of the Whitepaper on new technologies will be presented in Commission 7 Annual Meeting 2015
- intermediate results of assessment study about impact of climate change and disasters on land tenure will be presented in FIG Working Week 2016
- analysis of approaches for pre- and post-disaster management in land administration will be prepared for FIG Working Week 2017 along with a first draft of the Guidelines for SDI in disaster management
- final assessment about impact of climate change and disasters on land tenure will be prepared for FIG Congress 2018
- progress of work and draft publications will be presented at FIG Working Weeks during the term of this Work Plan
- organising special sessions in FIG events as well as in other specific events throughout the term of this Work Plan
- Final Report and Guidelines on PP disaster management on land rights and SDI Guidelines will be presented in FIG Congress 2018

### Beneficiaries

International and regional NGOs and NPOs, disaster response and disaster risk management bodies, governments, citizens, FIG member associations, GIS developers and users, producers of survey equipment and software providers, insurances and re-insurances.

## **Working Group 7.3 – Crowdsourcing of Land Rights**

### Policy issues

- family of mobile devices supporting remote and in-situ capture of evidence of land rights
- global platforms managing evidence of land rights and obligations
- service delivery models
- scalability and capacity building of trusted intermediaries and land owners
- role of social media / validation of third party data
- impact on perception of security of tenure
- managing unintended consequences and privacy
- cooperation with public authorities in recognition or conversion of informal rights
- link to Working Group 7.1 Fit-For-Purpose Land Administration
- impact on land professionals and associate curriculum

### Chair

Dr Robin McLaren, United Kingdom, email: [robin.mclaren@KnowEdge.com](mailto:robin.mclaren@KnowEdge.com)

### Specific project(s)

Working Group 7.3 aims at establishing permanent links to interest groups and partners from outside FIG for providing a forum for linking technology, society and established stakeholders in order to develop a sustainable, citizen centric structure of services.

The statement on role of land professionals will be drafted in cooperation with Commission 1 of FIG.

### Workshop(s)

- participation in workshops / conferences
- international joint FIG Commission 3 and Commission 7 Seminar 2015 (proposed venue - Malta/Europe)
- conference in 2016 (proposed venue - Portugal/Europe)

### Publication(s)

- review and analysis of approaches for crowdsourcing of land rights, identifying pros and cons to regulated procedures
- Guidelines in managing unintended consequences and privacy
- Guidelines in migrating informal land rights to formal land rights
- statement on role of land professionals in the context of democratisation of land rights
- papers in scientific magazines and newsletters

### Timetable

- review and analysis of approaches will be presented latest at FIG Working Week 2017
- statement on role of land professionals will be prepared for FIG Congress 2018
- progress of work and draft publications will be presented at FIG Working Weeks during the term of this Work Plan
- organising special sessions in FIG events as well as in other specific events throughout the term of this Work Plan
- Final Report and Guidelines will be presented in FIG Congress 2018

### Beneficiaries

Citizens, FIG member associations, international and regional NGOs and NPOs, CSOs, governments, decision makers, GIS developers and users, producers of survey equipment and software providers.

## **Working Group 7.4 – Citizen Cadastre**

### Policy issues

- land tenure and culture and society needs
- multi-dimensional and multi-temporal cadastre
- security of land tenure
- alternative forms of land tenure in changing society (generation property, affordable land, temporary urban and agricultural land tenure) complementary to WG 7.1
- role of land owner as key stakeholder
- privacy issues / access to data for citizens
- responsibilities of public authorities / cooperation models / fraud prevention
- analysis of trust in different land administration models
- assessment models for performance of land administration systems
- training of land owners / capacity building in institutional bodies
- building codes and IPMS
- standards for data in land administration
- representation in Joint WG on 3D Cadastre of Commission 3 and 7

### Chair

Gyula Iván (M.Sc.), Hungary, email: [ivan.gyula@fomi.hu](mailto:ivan.gyula@fomi.hu)

### Specific project(s)

Working Group 7.4 aims at investigating about quality criteria and benefits of involvement of stakeholders in all kind of land administration processes as well as about strengths and weaknesses of established land administration systems in a changing environment and from changing society requirements.

The role of the UN FAO Voluntary Guidelines and criteria to assess the performance of systems in order to optimise trust of citizens and land owners into systems will be a topic of interest on the agenda.

The recently launched web-service for maintenance of the Cadastral Template as a publicly accessible tool for information about Land Administration systems will be evaluated and maintained in a joint effort with the Cadastral Template 2.0 project.

### Workshops

- presentation of results and findings in international, regional and national workshops, conferences
- participation in and co-organising of 3D Cadastre Workshops
- international FIG Commission 7 Workshop on Role of Land Owner as key Stakeholder
- panel discussions with experts from in- and outside the profession in FIG Conferences and other events
- joint Workshop on professional education in land administration with FIG Commission 2 and YSN (tbd, proposed for 2017)

### Publications

- analysis of specific requirements related to culture and society needs
- implementing VG into models
- study about use of international standards
- FIG Publication on professional education for land administration in cooperation with FIG Commission 2 and YSN

### Timetable

- statement on role of land owner will be prepared for FIG Working Week 2016
- assessment of performance of land administration systems will be presented at FIG Working Week 2017
- Proceedings of FIG Commission 7 Workshop will be published not later than 6 months after the event
- organising special sessions in FIG events as well as in other specific events throughout the term of this Work Plan
- progress of work and draft publications will be presented at FIG Working Weeks during the term of this Work Plan
- study about alternative forms of land tenure will be prepared for FIG Working Week 2017 in cooperation with WG 7.1
- Final report and results will be presented in FIG Congress 2018

### Beneficiaries

Land owners, citizens, FIG member associations, governments, decision makers, real estate companies, economy.

## **6. Cooperation with Other Commissions and organisations**

Commission 7 will continue with cooperation and establish new links where relevant to other Commissions of FIG, in particular with Commission 1 on aspects of land administration and state boundaries, with Commission 2 on capacity building and professional education, with Commission 3 on 3D Cadastre and on aspects of Big Data and Crowdsourcing in SDI, with Commission 9 on the role of cadastre for taxation and valuation and with Commission 10 on registration of buildings and condominium rights.

Cooperation on topics of joint interest will be supported by

- co-organizing and participating in FIG seminars and workshops (joint Workshop with Commission 3 in autumn 2015 in Malta/Europe, joint Workshop with Commission 2 on professional education in Land Administration, date tbd).
- cooperation with Commission 1 Working Group “International Boundaries Settlement and Demarcation”
- cooperation with Commission 2 on organizing a joint Workshop and preparing a FIG Publication on Professional Education in Land Administration
- cooperation with Commission 8 on land adjustment and land consolidation (WG 8.1/WG 7.2)
- participating actively in international events organized from partners of FIG and from related professional organisations
- co-organizing technical sessions and discussion forums on specific topics of interest thus linking with topics of interests of other Commissions within FIG
- co-operating on a regular basis in joint Working Groups within FIG

particularly in

### **Joint Working Group on 3D Cadastre of Commission 3 and 7**

The results of the previous term (2010-2014) of the joint WG provide a solid basis for the next 4-year term of the WG. The concept of 3D Cadastre is here to stay and the number of implementations is increasing, quite often with ambition to become LADM (ISO 19152:2012) compliant.

In 3D, physical and legal 3D objects are aligned and land administration is connected to other registrations via SDI: buildings, tunnels, cables/pipelines, terrain elevation, etc.

Most of the objectives, topics and scope of the previous term will be continued, but with additional emphasis on the following topics:

- collect and exchange experiences of operational 3D Cadastral systems (law, organization, technology)
- 3D Cadastre in mega-cities, often in Latin-America (Brazil, Mexico), Asia (China, Malaysia, Korea, Singapore) and Africa (Nigeria)
- 3D Cadastre usability studies, web-dissemination and 3D cartography
- 3D Cadastre as part the full life cycle of spatial development in 3D spatial plan, zoning, register restrictions, design solutions, acquire space/land, request/provide permits, obtain financing, realize/develop, survey/ measure results, submit final RRRs/SUs, check/validate submitted RRRs/SUs, store/ analyse data, disseminate, visualize and use the 3D (cadastral) objects
- contribute to the upcoming revision of ISO19152:2017 or 2018 (LADM) by further developing the 3D aspects in this international standard; e.g. provide a more formal taxonomy of different types of 3D parcels (spatial units)

#### Timetable:

2015-2018 maintain website incl. list of literature and interest-group

<http://www.gdmc.nl/3DCadastres>

2015 analyse and complete second questionnaire status 3D Cadastres 2014-2018

2015-2017 3D Cadastres session at FIG Working Weeks

2016 organize 5<sup>th</sup> workshop on 3D-Cadastres  
2017-18 FIG-publication on 3D-Cadastres  
2018 conduct third questionnaire status 3D Cadastres 2018-2022  
2018 presentation of the results at FIG Congress

Chair:

Prof. Dr. Ir. Peter van Oosterom, Commission 3, The Netherlands,  
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## **Cadastral Template 2.0**

The Cadastral Template 2.0 project is a follow-up of the Cadastral Template, which was originally established under the UN mandate by Resolution 4 of the 16th UNRCC-AP in Okinawa, Japan in July 2003. In 2014, the 3<sup>rd</sup> Plenary of UN GGIM-AP 2014 adopted as Resolution 5(d) “to support the development of the Cadastral Template 2.0, the successor to the Permanent Committee on GIS Infrastructure for Asia and the Pacific (PCGIAP) supported Cadastral Template and encourage Member States to contribute information to the Cadastral Template 2.0 towards promoting better knowledge dissemination and sharing and promoting better practices”.

FIG Commission 7 in close cooperation with the Centre for SDIs and Land Administration, Department of Infrastructure Engineering of the University of Melbourne and swisstopo is strongly supporting this project and intends to increase the number of participating countries, to initiate regular updates of the content, to evaluate the indicators and information provided by the country delegates, and to further develop the structure according to user needs in cooperation with the FIG-HO and member associations and delegates.

Project leaders:

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Prof. Abbas Rajabifard (PhD), email: [abbas.r@unimelb.edu.au](mailto:abbas.r@unimelb.edu.au)

## **FIG Standards Network**

The Network is continuing the work of a former FIG Task Force which was established in 1998 in response to concerns from the Commissions, the Council and the General Assembly that standards were becoming increasingly important in the work of surveyors and that the issue was not being addressed sufficiently by FIG.

Commission 7 is represented in the FIG Standards Network by Dr. Ir. Christiaan Lemmen (NL). All Working Groups are linked to the topics and co-operate as required.

## **7. Cooperation with United Nation Organisations, Sister Associations and other Partners**

Commission 7 has a long-term history in cooperation with the World Bank, UN agencies, such as UN Habitat, UN FAO, UN ECE, UNESCO and others, which will be continued. Links to the recently launched UN GGIM initiative are likely to start in 2015.

## **8. Commission Officers**

### **Commission Chair**

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### **Vice-Chair of Administration and Communication**

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### **Vice-Chair and Chair of Working Group 7.1**

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### **Vice-Chairs and Co-Chairs of Working Group 7.2**

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### **Vice-Chair and Chair of Working Group 7.3**

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**Vice-Chair and Chair of Working Group 7.4**

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Chair, FIG Commission 7

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