

## INTRODUCING FIT-FOR-PURPOSE LAND ADMINISTRATION APPROACH IN ECUADOR

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### ABSTRACT

The importance of the land and land administration, is recognized globally and embedded in the United Nations, Sustainable Development Goals. Land administration is generally recognised as a critical success factor in economic growth, food security, natural conservation and poverty reduction. However, more than 70% of the countries in the world do not maintain complete and functional land administration systems. Conventional titling programs do not seem to have been

able to bridge this gap and often failed in providing a minimum form of land tenure security for all the citizens, including vulnerable ones. Therefore, an approach that fits the purpose of the society more importantly than being in line with the existing rules and methods of conventional land administration is needed. Fit-for-purpose land administration approach is emerging as acceptable and affordable concept. Ecuador is still in the period of creating its complete and functional land administration system. Land administration is a state function given to municipalities and it is divided in Urban and Rural cadastre. This paper presents activities done in the first half of October 2017, where, the aim of these activities was to introduce and inform the land administration audience and stakeholders about the fit-for-purpose land administration approach.

## 1. INTRODUCTION

The importance of the land and its administration, is recognized and embedded in the United Nations (UN) Sustainable Development Goals (SDG). The SDGs were agreed by the world leaders during the HABITAT III Conference, at the end of 2016 in Quito, Ecuador. Eleven out of seventeen SDGs have relation with the land component, which gives clear guidelines for sustainable future. Land administration is considered as a critical success factor in economic growth, food security, natural conservation and poverty reduction. Even though security of tenure is now at the top of the global agenda, there is a “security of tenure gap” between countries that have efficient and effective land administration systems in place and those that do not. Observing globally, 75 percent of the world’s population lacks access to formal and documented land rights. Most of the world population lives in developing countries, among these there are many poor and vulnerable. Poor and vulnerable get even more affected during the events of natural disasters, like earthquakes, hurricanes, tsunamis, volcano eruptions, etc.

Consequently, an approach that meets the requirements like economic, fast and sustainable method of land mapping, registration and titling is needed which can address all land tenures including informal tenure effectively as well as aid in the recovery and reconstruction processes after disasters. Fit-for-purpose (FFP) land administration is emerging as acceptable and affordable concept.

Ecuador is an emerging economy, currently employing several systems of land administration, using the conventional method by covering many elements of land survey, registration and provision of land administration products and services. Land administration function is under the municipalities, responsible for cadastre, especially for the urban cadastre, since 1940. Ecuador has an approximate coverage of 70-75% of the urban cadastre and 25% of the rural cadastre. If it continues in the same pace and speed it will take many years to finish its full land administration coverage. Performing like this, it is not fully supporting the economic growth, food security, natural conservation, reconstruction after disasters and poverty reduction in Ecuador. Therefore, a FFP land administration approach could be considered to accelerate the land administration coverage by focusing on the core benefits for its stakeholders.

This paper presents activities done in the first half of October 2017 in Quito, Ecuador, where the aim was to introduce and inform the land administration audience about the FFP land administration approach. Initially theoretical framework about land administration, guidelines to improve and assessment frameworks for land administration were presented. The FFP land administration basic concept with three frameworks which are: spatial, legal and institutional were reviewed. Each of the three frameworks contains four principles of FFP land administration. In addition, a study fieldwork for collecting primary and secondary data about the status of land administration in Ecuador was performed. The results from the semi-structured interviews during the study fieldwork are presented in this paper in the structure of FFP land administration approach for both rural and urban cadastre. Having this said the fit-for-purpose land

administration approach was introduced in Ecuador and in the preliminary discussions few possible principles of the FFP land administration were identified that could have possible inclusion in the spatial and institutional component.

## **2. LAND ADMINISTRATION IN GENERAL AND THE CONCEPT OF FIT-FOR-PURPOSE LAND ADMINISTRATION**

In the academic literature and publication about land and land administration, several definitions about land administration can be found. According (UN/ECE, 1996) land administration is defined as ‘ the process of determining, recording and dissemination information about tenure, value and use of land when implementing land management policies’. Another definition is: land administration is the process of regulating land and property development and the use and conservation of the land; the gathering of revenues from the land through sales, leasing, and taxation; and resolving of conflicts concerning ownership and use of land (Dale & McLaughlin, 1999). Later in 2010 Williamson, Enemark, Wallace, and Rajabifard (2010), provided the following definition: the processes run by government using public- or private-sector agencies related to land tenure, land value, land use, and land development.

In the previous decade we were witnessing many developments in the land administration area. There were several books (Williamson et al., 2010; Zevenbergen, de Vries, & Bennett, 2016), international guidelines, evaluation and assessment frameworks presented and published. Organizations like the World Bank, the Food and Agricultural Organization (FAO) of UN, UN-Habitat, United Nations Initiative on Global Geospatial Information Management (UN-GGIM), the International Federation of Surveyors (FIG) and other land-related professional bodies have a key role. From these publications and initiatives we can derive that a conventional land administration system has several limitations. It is based on a western style over centuries that focus on fixed boundaries survey, accurate mapping and surveying; it has complex bureaucratic procedures and involves advanced technologies, which does not perform well with the developing countries needs and services. Conventional land administration does not provide proof of ownership to those who are informal land right holders. Since majority of the population of developing countries lack tenure security, they are unable to prove their land ownership when it is required to execute resettlement and reconstruction services after natural disasters.

Therefore, an approach that meets the requirements like economic, fast and sustainable method of land mapping, registration and titling is needed which can address all land tenures including informal tenure effectively as well as aid in the recovery and reconstruction processes after disasters. An approach that fits the purpose of the society more importantly than being in line with the existing rules and methods of conventional land administration is needed. FFP land administration is emerging as acceptable and affordable concept. This is because it is approaching land administration system designed for serving the basic purposes such as including all land; provide secure tenure for all; control of the use of land; developing a land administration system which is not being fully guided by high tech solutions and costly/time consuming field survey procedures. The FFP land administration basic concept is presented in the following figure no. 1:

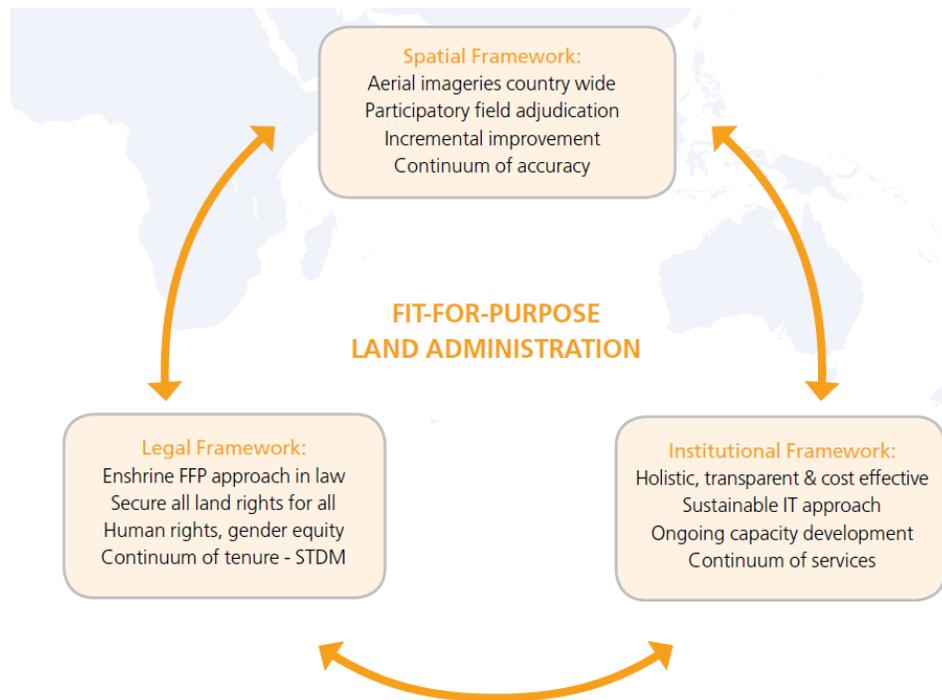


Figure no. 1: The Fit-For-Purpose concept (taken from Enemark, McLaren, and Lemmen (2016))

The concept includes three interrelated core components that work together to deliver the FFP approach: the spatial, the legal and the institutional frameworks. The spatial framework supports recording the way land is occupied and used. The scale and accuracy of this representation should be sufficient for securing the various kinds of legal rights and tenure forms recognized through the legal framework. The institutional framework is designed to manage these rights and the use of land and natural resources and to deliver inclusive and accessible services. The FFP approach includes four core principles for each of the three frameworks. See the Table no.1 below showing the overview of the “Key Principles of the FFP Approach”.

**THE KEY PRINCIPLES OF THE FFP APPROACH**

KEY PRINCIPLES		
Spatial framework	Legal framework	Institutional framework
<ul style="list-style-type: none"> <li>• Visible (physical) boundaries rather than fixed boundaries.</li> <li>• Aerial/satellite imagery rather than field surveys.</li> <li>• Accuracy relates to the purpose rather than technical standards.</li> <li>• Demands for updating and opportunities for upgrading and ongoing improvement.</li> </ul>	<ul style="list-style-type: none"> <li>• A flexible framework designed along administrative rather than judicial lines.</li> <li>• A continuum of tenure rather than just individual ownership.</li> <li>• Flexible recordation rather than only one register.</li> <li>• Ensuring gender equity for land and property rights.</li> </ul>	<ul style="list-style-type: none"> <li>• Good land governance rather than bureaucratic barriers.</li> <li>• Integrated institutional framework rather than sectorial silos.</li> <li>• Flexible ICT approach rather than high-end technology solutions.</li> <li>• Transparent land information with easy and affordable access for all.</li> </ul>

Table no.1: The Key Principles of the Fit-For-Purpose Approach (taken from Enemark et al. (2016))

### **3. METHODOLOGY**

In the first half of October 2017 fieldwork activities were performed in Quito, Ecuador, where the aim was to introduce and inform the land administration audience and stakeholder about the FFP land administration approach. The two week event was: one week write-shop and one week workshop organised in close cooperation with our colleagues from Armed Forces University ESPE and other related land administration organizations.

During the first week, after a two days of a preparations, there was a one day study fieldwork visit to MIDUVI (Min. for Housing) in charge of urban cadastre, SIGTIERRAS (Min. of Agriculture) in charge of rural cadastre, and Municipal Cadastral Office of Quito - the capital city of Ecuador. Aim of this study visit was to get familiar with the overall land administration situation in Ecuador via semi-structured interviews. 14 land administration professionals were involved in the semi-structured interviews. Primary and secondary data were collected in regard of the land administration situation in Ecuador. Last two days, of the first week, were for the write-shop, where, an Abstract for the World Bank Conference 2018 was created and submitted.

Second week was dedicated for the workshop titled: fit-for-purpose land administration and modelling. Within the opening day of the workshop, host of this event ESPE had a short presentation and opening address, which was followed by the general presentations about Faculty ITC and Kadaster International from the Netherlands. Ecuadorian land administration organisations, SIGTIERRAS and MIDUVI, had their presentations about their mandate, land administration products and services, which was announcement for the workshop presentations about modelling (including the basic concepts of modelling followed by LADM and STDM). In addition ITC and KI offered presentations about BPR – Business process reengineering, Six proven models for change (van der Molen, 2003), Basic Registers in the Netherland, FFP LA in general and FFP LA with examples from Latin America.

### **4. LAND ADMINISTRATION IN ECUADOR**

Ecuador is currently employing several systems of land administration, using the conventional method by covering many elements of land survey, registration and provision of land administration products and services. Land administration function is under the municipalities, responsible for cadastre, especially for the urban cadastre, since 1940. It includes six legally and socially accepted lands tenure types. In 2008, Ecuador enforced a new Constitution, which identified the need for creation of a national cadastre that will support the service and information provision on municipal level. Previously the cadastre was duty of the municipalities to create and maintain cadastre on their own way. According to the new Constitution, a Presidential Decree was issued in 2011, stating that the national cadastre would be composed of municipalities that will be governed by Ministry for Housing and Urban Development (MIDUVI). At the same time, there are two main governmental initiatives to support creation of the national cadastre. The first one is the SIGTIERRAS project supported by the Ministry of Agriculture (MAG); project that has collected information for one million rural properties. The second one, financed by Ecuadorian State Bank, has allowed the construction of urban cadastres in 140 municipalities. Both initiatives have contributed into the generation of a parallel cadastral coverage of the country under existing regulation. In the last two years MIDUVI has a lead in the standardization and subsequently construction of the national cadastral system, mainly with providing of national level standards that that will support municipalities to establish unified national cadastre. Under different

legislations, since 1983, later in 2011 and recently since 2016, with the approval of the Law of Territorial Order, MIDUVI is the governing body with a mandate to create and maintain the national cadastre of Ecuador. MIDUVI performance is supported with the Superintendence of Territorial Planning - established in 2016 (with a mandate for control and regulatory role for cadastre in Ecuador), for all 221 municipalities.

Land administration in Ecuador is organised in two types: urban and rural. In the period of 2010-2014 an aerial survey was carried out which resulted with orthophoto coverage for 89% of the whole territory in a scale of 1:5000. Orthophoto's are used for cadastral purposes and the aerial survey produced a digital terrain model of the country as well. MAG has a mandate, under the SIGTIERAS project, for the survey, data collection, and establishment of the rural cadastre to legalize the land tenure and guide the agricultural public policy. In the first stage of the project, one million rural properties were surveyed and rural cadastre was established for 54 municipalities which represents around 25 % of all municipalities in Ecuador. After the establishment of the rural cadastre, cadastral data, maps, and knowledge are transferred to municipalities and they have a mandate to maintain and keep up-to-date rural cadastre. The urban cadastre is also a competence of municipalities, and is mainly created and used as a tax register to collect property taxes. At present, 140 of the 221 municipalities have been implementing projects of georeferenced urban cadastral updating based on the definition of each municipality among the urban areas of the rural areas. 34 municipalities (out of 221) do not have georeferenced urban cadastre systems. 33 municipalities, on the other hand, have local urban cadastre standards and systems combined with the spatial component. All municipalities in Ecuador have previously managed at least alphanumeric systems for land administration at the urban level. However, with the support of the Ecuadorian State Bank to finance cadastral projects with standardized, systematic and georeferenced approach, adequate link between spatial component and the alphanumeric system has been accomplished.

## **5. CONCLUSIONS**

Having this said, we can summarize that Ecuador has an approximate coverage of 70-75% of the urban cadastre and 25% of the rural cadastre. If it continues in the same pace and speed it will take many years to finish its full land administration coverage. Performing like this, it is not fully supporting the economic growth, food security, natural conservation, reconstruction after disasters and poverty reduction in Ecuador. Therefore, a FFP land administration approach is required to accelerate the land administration coverage by focusing on the core benefits for its stakeholders.

## **REFERENCES**

- Dale, P., & McLaughlin, J. (1999). Land Administration. Oxford, United Kingdom: Oxford University Press.
- Enemark, S., McLaren, R., & Lemmen, C. (2016). Fit-for-Purpose Land Administration: Guiding Principles for Country Implementation. Retrieved from Nairobi, Kenya: <http://www.glt.n.net/index.php/publications/publications/download/2-glt-n-documents/2332-fit-for-purpose-land-administration-guiding-principles-for-country-implementation>

UN/ECE. (1996). Land Administration Guidelines. Retrieved from New York and Geneva:

van der Molen, P. (2003). Six Proven Models for Change. Paper presented at the FIG Working Week 2003, Paris, France.

Williamson, I., Enemark, S., Wallace, J., & Rajabifard, A. (2010). Land administration for sustainable development. Redlands, USA: ESRI.

Zevenbergen, J., de Vries, W., & Bennett, R. M. (Eds.). (2016). Advances in Responsible Land Administration: CRC Press (Taylor & Francis Group).

## **BIOGRAPHICAL NOTES**

Dr. Dimo Todorovski, is course coordinator and lecturer land administration at the University of Twente, Faculty of Geo-Information Science and Earth Observation (ITC), in Enschede, the Netherlands. He holds a PhD from University of Twente and he obtained MSc degree in Geo-Information Management at ITC, in 2006. Over the 19 years of professional engagement (1992-2011) in the Agency for Real Estate Cadastre in the Republic of Macedonia, last 12 years were on different managerial positions (Digitizing, GIS and Geo-ICT departments), and the final year he was Head of the Department for International Cooperation and European Integrations. His research interest focuses on land administration and land management, and on land administration in post-conflict contexts.