Scaling up Responsible Land Governance

A Guide for Building Fit-For-Purpose Land Administration Systems in Less Developed Countries

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SCALING UP RESPONSIBLE LAND GOVERNANCE: GUIDING PRINCIPLES FOR BUILDING FIT-FOR-PURPOSE LAND ADMINISTRATION SYSTEMS IN DEVELOPING COUNTRIES

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Abstract

This paper describes the key principles for building sustainable and Fit-For-Purpose (FFP) land administration systems especially in less developed countries

The FFP approach has three fundamental characteristics. Firstly, there is a focus on the purpose and then how to design the means for achieving it as well as possible; secondly, it requires flexibility in designing the means to meet the current constraints; and, thirdly, it emphasizes the perspective of incremental improvement to provide continuity.

The concept includes three core components: the spatial, the legal, and the institutional frameworks. Each of these components includes the relevant flexibility to meet the actual needs of today and can be incrementally improved over time in response to societal needs and available financial resources. This paper presents the FFP concept and its three core components in some detail.

This FFP approach has been recognized by FIG and the World Bank, and it is further elaborated in a recent Guide supported by GLTN and Dutch Kadaster.

Key Words

Fit-For-Purpose, Land administration,

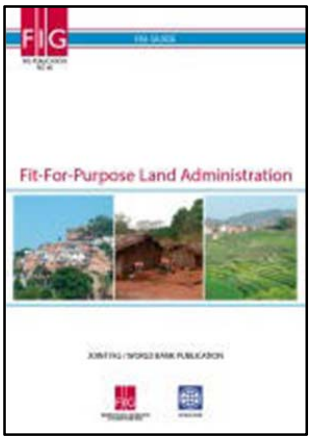
Acknowledgement

This paper draws from a recent reference document entitled “Fit-For-Purpose Land Administration – Guiding Principles” referred to as (Enemark, et al., 2015). The document was produced as a project funded by UN-HABITAT/GLTN under the overall supervision of Danilo Antonio and John Gitau. The project has been managed by The Netherlands´ Cadastre, Land Registry and Mapping Agency (Kadaster) under the leadership of Kees de Zeeuw together with Paula Dijkstra and Janine Bender. The outcome was made possible only with the support of reviews from a number of experts in the field of land administration. The authors of the reference document are Stig Enemark (DK) as lead author, Robin McLaren (UK) and Christiaan Lemmen (NL). The document is available from the GLTN website at: http://gltn.net/index.php/resources/publications/publications-list/download/2-gltn-documents/2234-fit-for-purpose-land-administration-guiding-principles.

1. INTRODUCTION

Most less developed countries are struggling to find remedies for their many land problems that are often causing land conflicts, reducing investments and economic development, and preventing countries reaching their true potential. Existing investments in land administration have been built on legacy approaches, have been fragmented and have not delivered the required pervasive changes and improvements at scale. The solutions have not helped the most needy - the poor and disadvantaged that have no security of tenure. In fact the beneficiaries have often been the elite and organizations involved in land grabbing. It is time to rethink the approaches. New solutions are required that can deliver security of tenure for all, are affordable and can be quickly developed and incrementally improved over time. The Fit-For-Purpose (FFP) approach to land administration has emerged to meet these simple, but challenging requirements.

This paper describes the key principles for building sustainable and FFP land administration systems especially in developing countries where often less the 10 per cent of the land and population is included in the formal systems. It is argued that building such FFP land administration systems is the only viable solution to solving the global security of tenure divide. The FFP approach is flexible and includes the adaptability to meet the actual and basic needs of society today and having the capability to be incrementally improved over time. This will be triggered in response to social and legal needs of economic development, investments and also financial opportunities that may emerge over the longer term. In this FFP approach, land rights can be secured for all in a timely and affordable way. The core elements of the FFP approach are laid down in joint FIG/WB declaration (FIG/WB, 2014) as follows:



"There is an urgent need to build cost-effective and sustainable system which identify the way land is occupied and used and accordingly provi for secure land rights. When considering the resources and capaciti required for building such systems in developing countries, the concepts mature, sophisticated systems as predominantly used in develop countries may well be seen as the end target, but not as the point of entr When assessing technology and investment choices, the focus should be a "Fit-For-Purpose approach" that will meet the needs of society tod and that can be incrementally improved over time."

In 2014 UN-HABITAT / GLOBAL LAND TOOL NETWORK (GLTN) decided to elaborate this approach further by initiating a project in cooperation with Dutch Kadaster on developing a Guide for Fit-For-Purpose Land Administration in collaboration with key partners. This should underpin the GLTN land tool development activities and enable implementation of sustainable land administration systems in developing countries at scale. The project was completed end of 2015 and the result is published as a reference document on the GLTN website referred to in this paper as (Enemark, et al., 2015).

This paper draws from the Guide and presents an overall understanding of FFP concept. The paper is structured by first setting the scene for land governance in support of the post 2015 Global Agenda; this is followed by a chapter providing an overall understanding of the FFP concept; then the core components of the spatial, legal and institutional framework are explained in some details; and the paper ends by presenting some concluding remarks.

2. LAND GOVERNANCE AND THE GLOBAL AGENDA

Land governance is about the policies, processes and institutions by which land, property and natural resources are managed. The organizational structures for land governance and administration differ widely between countries and regions throughout the world and reflect the cultural and judicial setting of the country and jurisdiction.

Sound land governance requires a legal and regulatory framework, operational processes and capacity to implement policies consistently within a jurisdiction or country in sustainable ways. In this regard, land administration systems provide a country with an infrastructure for implementing land policies and land management strategies in support of sustainable development. The operational component of the land governance concept is then the range of land administration functions that include the areas of: land tenure (securing and transferring rights in land and natural resources); land value (valuation and taxation of land and properties); land use (planning and control of the use of land and natural resources); and land development (implementing utilities, infrastructure, construction works, and urban and rural developments). These functions interact to deliver overall policy objectives, and they are facilitated by appropriate land information infrastructures that include cadastral and topographic datasets linking the built and natural environment (Enemark, 2004; Williamson, et al., 2010).

Land governance and administration is basically about people – it is about the relation between people and land places, and the policies, institutions and regulations that govern this relationship.

The global agenda as set by the Millennium Development Goals (MDGs) expired at the end of 2015. This agenda served the world well as a focal point for governments to reduce poverty and improve the lives of poor people. The progress in meeting the goals was monitored and published yearly as a global incentive. For example, the 2014 progress report showed that the extreme poverty rate had been halved and Goal 1 was thereby met at a global scale – but with huge regional deviations, e.g. the Sub-Sahara Africa region lagged far behind (UN, 2014a).

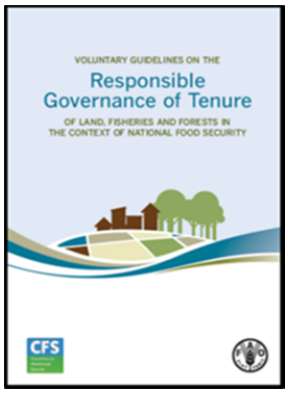
The MDGs are now replaced by the Sustainable Development Goals (SDGs) with a new, universal set of 17 Goals and 169 target that UN member states are committed to use to frame their agenda and policies over the next 15 years. The goals are action oriented, global in nature and universally applicable. Targets are defined as aspirational global targets, with each government setting its own national targets guided by the global level of ambition but taking into account national circumstances. The goals and targets integrate economic, social and environmental aspects and recognize their interlinkages in achieving sustainable development in all its dimensions (UN, 2014b)

While the MDGs did not mention land directly, the new SDGs include six goals with a significant land component mentioned in the targets. E.g. in Goal 1, that calls for ending poverty in all its forms everywhere, target 4 states that by 2030 all men and women will have equal rights to ownership and control over land and other forms of property. Similarly the land component is clearly referred to in Goal 2 on ending hunger, Goal 5 on gender equity, Goal 11 on sustainable cities, Goal 15 on life on land, and Goal 16 on peace, justice and strong institutions.

Figure 1. The 17 Sustainable Development Goals

These goals and targets will never be achieved without having good land governance and well-functioning country wide land administration systems in place. Against this backdrop there is a strong request for building basic and fit-for-purpose land administration systems in developing countries where often less than 10 per cent of the land is included in the formal systems. The is a need for reliable and robust data for devising appropriate policies and interventions for the achievement of the SDGs and for holding governments and the international community accountable through monitoring and assessment. This calls for a "data revolution" for sustainable development to empower people with information on the progress towards meeting the targets.

Responsible governance of tenure is now incorporated as part of the global agenda through the Committee on World Food Security's Voluntary Guidelines on Responsible Governance of Tenure (UN-FAO, 2012). These Guidelines represent a global consensus on internationally accepted principles and standards for responsible practices.



The Guidelines outline principles and practices that governments can refer to when making laws and administering land, fisheries and forests rights. While the Guidelines acknowledge that responsible investments by the public and private sectors are essential for improving food security, they also recommend that safeguards be put in place. These protect tenure rights of local people from risks that could arise from large-scale land acquisitions (land grabbing), and also to protect human rights, livelihoods, food security and the environment.

The Guidelines promote secure tenure rights and equitable access to land as a means of eradicating hunger and poverty, supporting sustainable development and enhancing the environment. The guidelines thereby place tenure rights in the context of human rights, such as the right to adequate food and housing.

Landownership and secure tenure can be a vital source of capital, which opens personal credit markets, leads to investments in land and buildings, provides a social safety net, and transfers wealth to next generations. However, in several developing countries most people do not have legal documents for the land they occupy or use and thereby fall outside the formal management system. This means that most decisions are made without comprehensive information. This causes dysfunctions in the management of urban and rural areas from the household up to government level, which impairs the lives of millions of people (UN-HABITAT, GLTN, 2012a).

3. UNDERSTANDING THE FIT-FOR-PURPOSE APROACH

In the context of building sustainable land administration systems in developing countries the term "Fit-For-Purpose" means applying the spatial, legal, and institutional methodologies that are most fit for the purpose of providing secure tenure for all. This approach will enable the building of national land administration systems within a reasonable timeframe and at affordable costs. The systems can then be incrementally improved over time.

The FFP approach starts by identifying and analyzing the purpose(s) that the systems are intended to serve and then deciding on the adequate means to be applied for meeting the purpose(s). This means that systems should be designed to meet / fit the purpose(s) rather than just following some rigid set of regulations and demands for accuracy. These unnecessary constraints, often imposed during colonial times, result in systems that are unsustainable and frankly unattainable at a national wide scale for developing countries. In this regard, of course, political commitment, corruption, largesse and a range of other factors play in as well.

The FFP approach focuses firstly on defining the "what" in terms of the end outcome for society and communities and then, secondly, it looks at the implementation design of "how" this could be achieved. Or to put it another way, the means (the "how") should be designed to be the most "fit" for achieving the purpose ("the what"). A catch phrase for this approach used in New Zealand is "As little as possible – as much as necessary" (Grant et al., 2007). This is just another way of saying "Fit-For-Purpose".

It is clear that the implementation proposed here is significantly different from the more advanced systems embedded in many western economies. This could lead to concerns that, by not following modern best practice for land administration as implemented predominantly in the Western world, then developing countries might be wasting precious resources on building systems that will prove to be outdated and ineffective.

What is usually forgotten in this discussion is that the advanced land administration systems of developed economies did not suddenly appear fully formed in those countries. In most developed countries the initial cadastral and registration systems were implemented very roughly and quickly – rough even by the standards of the day. These rough methods were fit for the purpose for the society at that time – and the result was a quickly developing and vibrant society and economy. As those societies and economies developed, the methods that had once been fit for the purpose were, several decades later, seen to be no longer fit. Governments undertook formal reviews, reports were written, the old ways were condemned

as inadequate and new FFP system upgrades were designed. What was easily forgotten was how well those rough and ready methods had served to quickly build and advance the societies that outgrew them.

The FFP approach, as illustrated in Figure 2 below, has three fundamental characteristics: focus on the purpose; flexibility; and incremental improvement. These three characteristics underpin the FFP concept, consisting of three core components: the spatial, legal & regulatory and institutional frameworks (see Figure 3 below). Each of the three frameworks has four corresponding key principles as presented in Table 1 below. These principles also form the structure of the following chapters 4 – 6 on the spatial, legal, and institutional framework respectively.

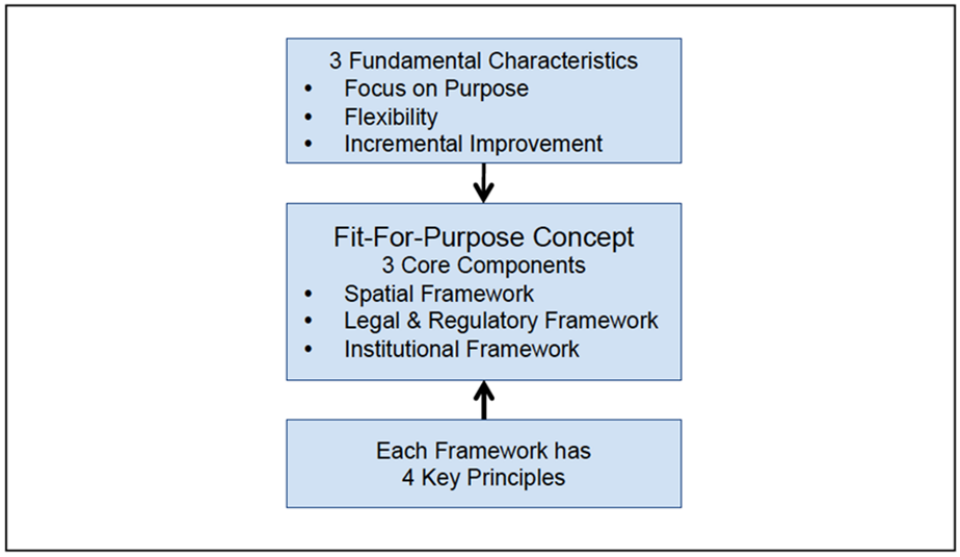


Figure 2. Structure of FFP Land Administration Concept (Enemark, et al., 2015)

The FFP approach includes three fundamental characteristics:

Focus on the purpose. This new approach is focused mainly on the purpose of providing secure tenure for all. The means to achieve this should then be designed to be the most "fit" for achieving this purpose rather than blindly being guided by rigid standards for accuracy and top-end technological solutions

Flexibility. The FFP approach is about flexibility in terms of demands for accuracy, and for shaping the legal and institutional frameworks to best accommodate societal needs. The FFP approach also includes the flexibility to meet the need for securing different kinds of tenure types, ranging from more social or customary tenure types to formal types such as private ownership and leasehold.

Incremental improvement. The systems should be designed for initially meeting the basic needs of society today. This will identify the optimal way of achieving this by balancing the costs, accuracy and time involved. This creates what is termed a "Minimum Viable Product". Incremental upgrading and improvement can then be undertaken over time in response to emerging needs and opportunities.

The FFP Concept

The concept includes three core components: the spatial, the legal, and the institutional frameworks. Each of these components includes the relevant flexibility to meet the actual needs of today and can be incrementally improved over time in response to societal needs and available financial resources. This means that the concept – in itself – represents a continuum. The three framework components are interrelated and form a conceptual nexus underpinned by the necessary means of capacity development. See Figure 3 below.

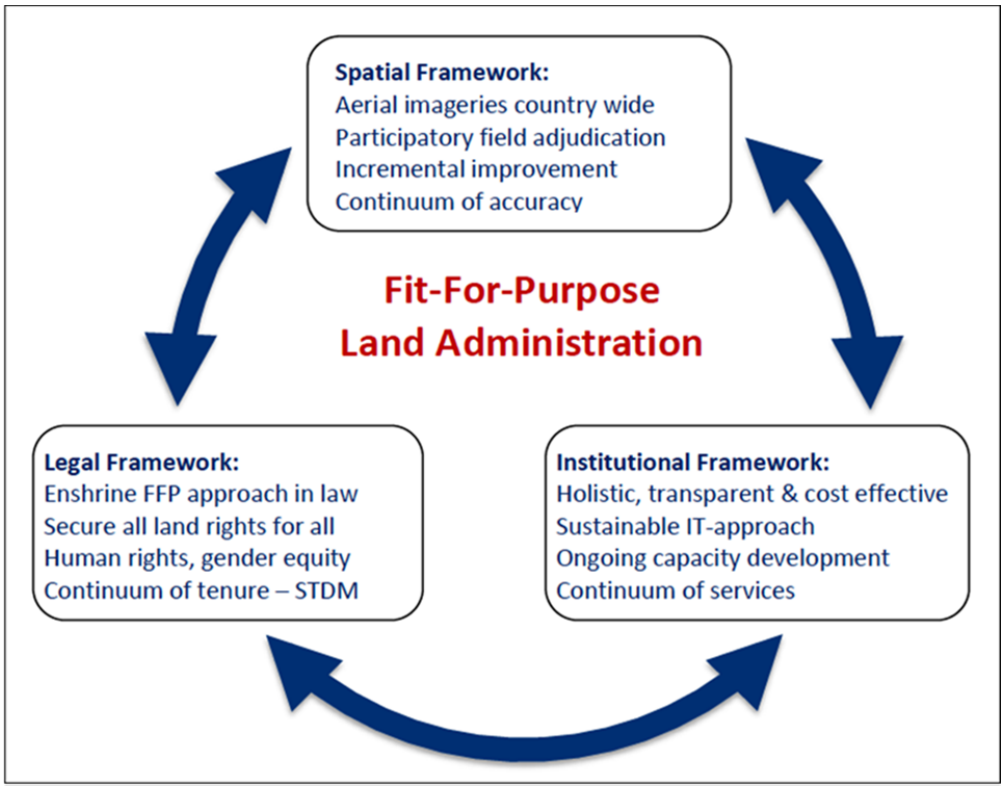


Figure 3. The Fit-For-Purpose Concept (Enemark, et al., 2015)

The spatial framework aims to represent the way land is occupied and used. The scale and accuracy of this representation should be sufficient for supporting security of the various kinds of legal rights and tenure forms through the legal framework as well as for managing these rights and the use of land and

natural resources through the institutional framework. The FFP approach therefore needs to be enshrined in the land laws, and for administering this regulatory set-up the institutional framework must be designed in an integrated, transparent and user-friendly way. This administration again requires reliable and up to date land information that is provided through the spatial framework.

The FFP concept, this way, encompasses a dynamic interaction of the spatial, legal, and institutional framework for achieving the overall land policy objectives and outcomes for society and communities – and each of the frameworks can be incrementally improved over time. These dependencies need to be carefully coordinated to ensure that the frameworks are mutually reinforcing. For example, if legitimate rights are recognized then the legal framework will have to be modified to legally enshrine the tenure type, ICT solutions will have to be adapted to support overlapping rights and new relationships prevalent in social tenures, and data recording procedures in the spatial framework modified to capture these relationships.

Key principles

The FFP approach includes four key principles for each of the three frameworks as outlined in Table 1.

KEY PRINCIPLES		
Spatial framework	**Legal framework**	**Institutional Framework**
▪ Visible (physical) boundaries rather than fixed boundaries ▪ Aerial / satellite imagery rather than field surveys ▪ Accuracy relates to the purpose rather than technical standards ▪ Demands for updating and opportunities for upgrading and ongoing improvement	▪ A flexible framework designed along administrative rather than judicial lines. ▪ A continuum of tenure rather than just individual ownership ▪ Flexible recordation rather than only one register ▪ Ensuring gender equity for land and property rights.	▪ Good land governance rather than bureaucratic barriers ▪ Integrated institutional framework rather than sectorial silos ▪ Flexible ICT approach rather than high-end technology solutions ▪ Transparent land information with easy and affordable access for all

Table 1. The key principles of the Fit-for-Purpose approach (Enemark, et al., 2015).

The principles of each of the three components as presented in Table 3.1 above are elaborated in some detail in Chapter 4-6 below. In brief, the three framework components include the following:

The spatial framework should predominantly be developed using aerial / satellite imagery for identifying the way land is occupied and used - rather than using field surveys. The imagery will show the actual physical boundaries and, in most cases, these visible boundaries are sufficient for identifying and securing the land rights. By using georeferenced imagery the identified boundaries can subsequently be vectorized and used as a cadastral index map. Conventional field surveys, handheld GPS or cell phone recording methods may of course be used where relevant, e.g. to identify non-visible boundaries or to capture the situation in dense high value urban areas. The scale and accuracy of the aerial imagery should relate to purpose and will therefore vary according to topography and density of development. The resulting spatial framework can easily be updated and also upgrading over time or whenever relevant, e.g. in relation to implementation of major infrastructure or land development schemes or when boundary disputes occurs.

The legal framework should be simple, flexible, and designed for decentralized administration rather than judicial decisions. The legal system must be adapted to accommodate the various kinds of land rights and social tenures that do exist rather than just focusing on land titling, ownership and leasehold. The various tenure systems must be enshrined in the land laws. This should allow for security of tenure within various kinds of communities and thereby enable secure land rights for all. The Social Tenure Domain Model (FIG/GLTN, 2010) should be applied, which provides a standard for representing the people to land relationships independent of the level of formality, legality and technical accuracy. Such flexibility also relates to the recordation that should be organized at various levels rather than through one central register. And, of course, the principle of gender equity should apply and should be seen first and foremost as a universal human right, independently of any other argument in favor for it.

The institutional framework should be designed for administering the rights in land along with issues related to land valuation and taxation, land use and development. The principles of good land governance should be applied, which prescribes that governments should be legitimate, transparent, accountable, equitable and dedicated to integrity. Furthermore, the Principles of Responsible Governance of Tenure (UN-FAO, 2012) should be applied to ensure efficient and transparent administration of land rights and land information with easy access for all. Importantly, administration and management of the land administration activities should be organized in a holistic perspective aiming to treat land and natural resources as a coherent whole rather than in isolated sectorial silos. Fundamental to this is the early formulation of a national land policy that provides guidance for a coherent administration of land issues

across sectors and provides benefits to society, businesses and citizens. The institutions should be underpinned by a flexible ICT-infrastructure and consider alternatives, such as the use of open source solutions.

Key demands for implementation

The FFP approach aims to build country wide land administration systems providing secure tenure for all. However, within the country context, some areas may be difficult to cover and there may be some specific legal or institutional issues that call for further consideration. In this regard, implementation of the FFP approach should not be held back for solving some specific issues, when the major part of the country, say 80 per cent, can be covered straight forwardly using this approach. The remaining, say 20 per cent, can then be completed once the specific issues are solved. More generally this 80/20 per cent distribution is known as the Pareto principle.

A key demand for implementation, of course, relates to developing the necessary capacity for building and maintaining the systems. It is critical to ensure that the systems, once they are built, can be properly and immediately maintained in terms of ongoing updating so that the systems are complete and reliable at any time. Therefore, a capacity development strategy should be adopted up front before starting the project. Another demand is about assessing the costs and establishing the budgetary base for building the systems, e.g. by seeking development aid support such as through the World Bank. And, most importantly, there is a fundamental requirement for strong political commitment and leadership for adopting the project and keeping it on the track for achieving the goals and outputs in terms of benefits for society, businesses and citizens. However, recent experiences have shown that it is possible – Rwanda, for example, has covered the whole country of about 10 million land parcels using a FFP approach within 5 years and for a cost of around 6 USD per parcel/spatial unit - see case below and (Sagashya and English, 2009)

The FFP approach is participatory and inclusive – it is fundamentally a human rights approach. Further benefits relate to the opportunity of building appropriate systems within a relatively short time and for relatively low and affordable costs. This will enable political aims such economic growth, social equity and environmental sustainability to be better supported, pursued and achieved.

The process and principles for building the spatial, legal and institutional frameworks are presented in chapter 4 – 6 below.

Case: Land Tenure Regularisation in Rwanda

Rwanda implemented a well-functioning Land Information System through a program called Land Tenure Regularisation. Nationwide systematic land registration started after piloting in 2009. The goal was to provide legally valid land documents to all rightful landholders and the program was completed in 2013. A general/visible boundaries approach was used and data were collected in a highly participatory manner. For provision of geospatial data high-resolution orthophotos and satellite imagery was used. Teams of locally recruited and specially trained local staff outlined the parcel boundaries on the imagery printouts that were scanned, geo-referenced and digitised. Printouts of the parcel plans became part of the legal parcel ownership document. The non-spatial data relating to owners' rights and particulars were captured in claim registers by legally constituted adjudication committees.

The information from the registers was entered into the Land Tenure Regularisation Support System, from which titles were processed and printed for first issuance. A Land Administration Information System is used for processing transactions and for updating the register. In May 2013 about 10.4 million parcels were registered and 8.8 million of printed land lease certificates had been issued. The unit costs were about 6 USD per parcel (that is of course subject to specific country conditions).

The expected achievements for Rwanda are social harmony arising from reduced land conflicts and secure tenure, increased investment in land, greater land productivity and an increased contribution of land as an economic resource towards national development.

E. Nkurunziza and D. Sagashya, Rwanda Natural Resources Authority

Field data acquisition in Rwanda

4. BUILDING THE SPATIAL FRAMEWORK

The spatial framework is the basic large scale mapping showing the way land is divided into spatial units (such as parcels and plots) for specific use and occupancy. It provides the basis for dealing with land administration functions such as: recordation and management of legal and social tenure; assessment of land and property value and taxation; identification and management of current land use; planning for future land use and land development; delivery of utility services; and administration and protection of natural resources.

In many developed regions of the world, this countrywide spatial framework has been developed as large-scale cadastral mapping over about two centuries and maintained through property boundary surveys conducted to a high accuracy according to long standing regulations and procedures. When considering the resources and capacities required for building spatial frameworks in developing countries, the concepts predominantly used in developed countries should be seen as the end target, but not as the point of entry. Using such advanced technical standards may well be fit-for-purpose in many developed countries, but applying such standards of adjudication, boundary marking and field surveys in developing countries are far too costly, too time consuming and capacity demanding, and in most cases, simply not relevant for providing an initial, suitable and fit-for-purpose spatial framework. The focus should therefore be on methods that are fast, cheap, complete, and reliable. The spatial framework can then be upgraded and updated whenever necessary or relevant in relation to land development and management activities (FIG/WB 2014). Also, the framework may well include volunteered information provided by citizens (crowd sourcing) where authoritative data are not required or available (McLaren, 2013).

Importantly, prior to building the spatial framework and issuing any certificates of land rights, it must be ensured that the regulations and institutions for maintaining and updating the FFP land administration system are in place. Without the institutional capacity and also incentives for the parties to update the system in relation to the transfer of land rights and land transfers, it will quickly be outdated and unreliable and lead to waste of investments for building the system in the first place.

The chapter is structured around application of the four key FFP principles for building the spatial framework:

- Visible (physical) boundaries rather than fixed boundaries.
- Aerial / satellite imagery rather than field surveys.
- Accuracy relates to the purpose rather than technical standards.
- Demands for updating and opportunities for upgrading and ongoing improvement.

4.1 Visible (physical) boundaries rather than fixed boundaries

In many developed economies the land registration systems use a fixed boundary approach based on field surveys following high accuracy standards and placing monuments such as concrete beacons or iron pipes at the boundary turning points. Field surveys are normally also connected to the national geodetic reference frame.

In developing countries, where less than 30 per cent, and often down to 10 per cent, of the land and population is included in the formal systems, it is argued that the design should enable the systems to be built within a short timeframe, within affordable financial resources, and being fit for the purpose of securing land rights for all and controlling the use of all land. In this regard the use of field surveys and boundary monuments is simply too costly, too time consuming and also too capacity demanding. Furthermore, when land is long occupied with well established, community accepted, physical boundaries such as fences, hedges, walls and ditches, a system based on fixed boundaries will hold little value in relation to the costs. Instead, it is argued, the long-time accepted physical demarcation of the boundaries should provide sufficient evidence of the occupation and the connected rights.

Countrywide implementation of effective land administration can introduce the benefits that eliminate the existing shortcomings and disadvantages. Effective administration requires a flexible legal and regulatory framework supporting an adaptable tenure system with a compliant land recordation system.

When adopting a “visible boundaries” approach, the boundaries are easily identified in aerial / satellite imagery by their physical appearance and the connected land rights can be identified directly in the field through a participatory process that involves all local stakeholders. This relates to the “real life situation” where the boundary is represented by the physical object that divides neighboring plots of land and guards the individual plots against intrusion. Once these physical boundaries are agreed to by the parties and identified on the aerial / satellite imagery then they can be described as the boundary although the precise legal line is not determined. The deriving graphical map can be updated and maintained using a variety of methods such as field surveys or UAV mapping for larger subdivisions.

Obviously, not all boundaries will be visible in the imagery. Such non-visible boundaries need to captured by complementary field surveys. Also, in dense and high value urban areas a fixed boundary approach may be justified. So the principle should rather be understood as a predominant use of visible rather than fixed boundaries.

4.2 Aerial / satellite imagery rather than field surveys

The use of aerial / satellite imagery for providing the spatial framework will be sufficient for most land administration purposes. Evidence shows that this approach is three to five times cheaper than field surveys and much less time and capacity demanding. Also, it should be noted that the mapping methodology using aerial / satellite imagery not only provides the spatial framework of spatial units, but also the general topography of land use, buildings and infrastructure that is fundamental for the planning and land development functions included in land administration systems.

The required scale of the mapping depends on topography and density of development and may vary from large scale orthophotos (1:500 – 1/1,000) in dense urban areas to smaller scale imagery (1/2,000 – 1/10,000) in rural areas and remote regions. Boundaries can easily be identified on the imagery in most cases, depending on the visibility of the physical features. Experiences in Rwanda and Ethiopia, for example, show that citizens have good spatial cognizance. They can normally easily interpret the imagery, and a participatory approach to boundary determination can then be easily applied. As mentioned above, not all boundaries will be visible in imagery (Lemmen et al., 2009).

The process for providing the spatial framework will include the following steps: (i) Producing the aerial imagery at scales according to topography, land use, and building density; (ii) Using the aerial imagery in the field to identify, delineate and adjudicate parcel boundaries (general boundaries), which can be drawn directly on the imagery and the parcels be numbered for reference to the connected land rights (see Figure 4); (iii) The resulting boundary framework can be digitized from the imagery to create a digital cadastral map to be used as a basic layer in the land information system or in combination with the satellite imagery.

Any disputes in relation to the boundaries and the connected land rights can be resolved during the delineation process with all stakeholders present – or a special administrative body (rather than judicial) may be established for this purpose when needed. In the longer term, boundary disputes will relate to the way the boundary was determined when established in the system. Therefore, it is important to store the original field map in the land agency archives. Future boundary disputes can then start by identifying the position of the boundary as it was originally established in the system. This also goes for ongoing updating and maintenance of the system – see Section 4.4 below.

Figure 4. Building the spatial framework. Left: Aerial imagery used as a field work map sheet with a georeferenced grid. The map shows the delineated parcel boundaries and parcel identification numbers. Right: A vectorized field map showing the resulting cadastral map with parcel boundaries and cadastral. Source: Zerfu Hailu, Ethiopia.

When producing the spatial framework, the requirements for scale and resolution of the mapping will vary according the topography and density of development. An overview is shown in table 4.1 (adapted from Byamugisha et al. 2012). It must be noted, though, that decisions will always depend on local circumstances. The table below is, therefore, by no means prescriptive with regard to the use of mapping methodologies for areas of certain topography or building density. Instead it illustrates the flexible choices when focusing on the purposes of the mapping such as identification of land parcels / spatial units for security of tenure and provision of basic spatial and topographic information for land use control and management.

The choice of mapping methodology may refer to the participatory aspects of identifying the spatial units. New applications are emerging in the land administration domain where citizens, usually with help from locally trained land officers, are directly capturing and maintaining information about their land and natural resource rights (McLaren, 2011). Mobile phones are becoming pervasive and in developing countries have become a global development tool. The technology is progressively integrating satellite positioning, digital cameras and video capabilities. This facility provides citizens with the opportunity to directly participate in the full range of land administration processes from accessing land information services, recording property boundaries through to secure payment of land administration fees using ‘mobile’ banking.

Area	Mapping applications
Urban central High density, high value	Dense development and very high land values require large scale mapping to be performed by conventional terrestrial surveys or large scale image maps with a preferred scale of 1/500 – 1/2,000.
Residential Urban Medium density, high value	In residential areas the dwellings and parcels are normally easily identified in image maps imagery to a scale of 1/1,000 – 1/2,000.
Peri-urban Mixed density, good value	Peri-urban areas include a mix of land uses that will require image maps to a scale of 1/2,000 – 1/5,000 depending on the density and complexity of developments.
Informal/slum Very high density	Slum areas can be mapped for many purposes. An option is use UAVs for mapping the specific area to a preferred scale of say 1/500 – 1/2,000. The individual housing structures can then be identified as a basis for various kinds of administration and service delivery.
Small towns, villages High density, low value	Rural villages may be mapped separately e.g. using UAV to a scales of 1/2,000, or they may be mapped as part of a major rural area
Rural agricultural Medium density, good agricultural value	In rural agricultural areas the individual parcels will normally be visible on satellite image maps to a scale of 1/2,000 – 1/5,000.
Rural remote, forest Low density, low value	Mapping more remote rural areas may serve various purposes, such as land rights, natural resource management, water catchment, etc. Satellite image maps to a scale of 1/5,000 – 1/10,000 will normally be sufficient.
Rural mountainous	Mountainous areas can be covered by satellite image maps to a scale of 1/5,000 – 1/50,000 depending on the topography and settlement activity.

Table 2. Mapping applications for categories of urban and rural land
(Enemark, et al., 2015; Adapted from Byamugisha et al., 2012)

4.3 Accuracy relates to the purpose rather than technical standards

Accuracy of the land information, such as the parcel boundaries, should be understood as a relative issue related to the use of this information, rather than being driven by technical standards that are often inflexible and "over the top" for the purpose. In general, the need for accuracy is clearly lower in rural areas than in densely built up and high value urban regions, where accurate field surveys may sometimes be justified. Technology development has provided a range of very useful and affordable opportunities for producing the spatial framework in various scales and suitable for various purposes (see Table 2 above).

Furthermore, the need for accuracy of the various features should be considered and determined by assessing the purpose of using this information for supporting the various land administration functions of land tenure, land value, land use and land development. E.g. the registration of legal and social tenure rights requires identification of objects, such as the land parcel / spatial unit, but the process does not call

for a high accuracy in itself. The function of valuation and taxation needs a map with identification (cadastral numbers) of the individual parcels and properties. Valuation does not need any measurements or exact identification of the boundaries. The activities related to planning and control of the use of land require a spatial framework for identifying the land parcels and the physical and spatial objects on the ground rather than ground surveys per se. And land development activities will require the same mapping base as related to land use management, even though some activities, e.g. related to major infrastructures and construction works, will often require specific high accuracy measurement prior to construction planning and implantation.

4.4 Demands for updating and opportunities for upgrading and ongoing improvement

The requirement for on-going, updating procedures is essential in order to ensure that all data are complete and reliable. The importance of this is often neglected, and once titles are issued there is often little pressure to keep the registry information up to date. These demands and procedures for updating must be stated in the regulatory framework (see Chapter 5 below) in order to ensure that all land transactions and changes of legal and social tenure rights are included in the land register and identified in the spatial framework. These demands for updating are often neglected by people due to issues such as costs, lack of awareness, difficult process and difficult access to land offices, etc. The demand for updating and maintenance also includes inheritance, marriage and divorce, which is often overlooked. The net effect is that over time, the land records will have no correlation with the rights on the ground. Therefore, it must be ensured that the institutions and procedures for updating and maintenance are in place prior to issuing any titles and recording any land rights. This will ensure that the maintenance processes can start from day one.

The processes of updating also relate to the formation of new properties through subdivision and alteration of boundaries. The procedures in the regulatory framework should ensure that any new boundaries or changes of existing boundaries are recorded either through simple measurements related to the existing boundaries so that the new boundaries can be inserted in the spatial framework, or through provision of new imagery, e.g. by using UAVs once the subdivision boundaries are established in the field.

The opportunity for upgrading should be adopted wherever relevant and allow for providing an improved map-base whenever needed for specific purposes, such as land development activities, major construction works and implementation of major infrastructure. Upgrading may also be considered for specific areas as a basis for detailed land use regulations or building more detailed information systems in support of

utility supply or implementation of renewal schemes. Upgrading activities may also be adopted as part of a strategy for a more general improvement of the base of information with regard to land and the natural environment. Depending on the budgetary base, such strategies will allow for dynamic and incremental improvement that, in turn, will aim at establishing a spatial framework in line with modern and fully integrated land information systems.

5. BUILDING THE LEGAL AND REGULATORY FRAMEWORK

The legal and regulatory framework will normally include a comprehensive land law or real property law as well as legislation that govern the conduct of land registration, such as the regulations that control the operation of the land registry and cadastral management. Other relevant laws relate to valuation and taxation of land and properties and also spatial planning and land use control in relation to urban and rural development. In this chapter the focus will be on the legal and regulatory framework for securing land rights for all.

In most developing countries the legal framework for land administration reflects colonial times and often serves only the elite. The processes for land registration are complex, costly, time consuming and with high demands for accuracy of boundary surveys and often unnecessary legal interventions by notaries, lawyers and courts. The existing legal framework is therefore often a significant barrier for implementing a flexible approach to building land administration systems. So, as well as the spatial framework, the legal and regulatory framework should be flexible and be designed along administrative rather than judicial lines. Furthermore, the legal and regulatory framework and its institutions must support both legal and social tenure, ensure that flexible regulations are enshrined in the laws and support a FFP approach (FIG / WB, 2014).

In the majority of developing countries around 80 per cent of the land is held under some form of customary tenure. This land is managed by traditional authorities and is generally outside the jurisdiction of formal land registration institutions. As a first step, the legitimate holding of land in customary areas of the country should be recognized in the formal system with the option of subsequently being recorded and eventually upgraded to a legal status. This process should be managed through co-management between the traditional authorities and the formal governmental institutions, wherever possible.

Since the middle of the last century there has been a debate, particularly within the African context, about whether these communities should be individualized or whether it is better to strengthen communal tenure. Historically, this debate did not consider a mix of both individual and communal rights within a

community landholding, but subsequently this has become more nuanced. Often the state authority is in conflict with traditional authorities since, in many cases, the state has -de facto- no authority in these areas. Therefore, legitimate tenure rights need to be recognized in formal laws. The traditional authorities may be integrated into decentralized land registration systems and support the recording and registration of these legitimate rights. This approach requires co-management by the traditional / community and state authorities, with governments managing land use, or environmental protection, for example.

The FFP approach is very well aligned to the continuum of land rights and can be implemented by applying the Social Tenure Domain Model (STDM) in the design of the legal and regulatory framework. This is explained Section 5.2 below and further in (Lemmen et al., 2016). The continuum of land rights includes rights that are documented as well as undocumented, formal as well as informal, accommodates individuals and groups, and is inclusive of pastoralists, slums and settlements that are legal as well as extra-legal (UN-HABITAT, GLTN, 2008a).

The chapter is structured around application of the four key FFP principles for building the spatial framework.

- A framework designed along administrative rather than judicial lines.
- A continuum of tenure rather than just individual ownership.
- Flexible recordation rather than only one register.
- Ensuring gender equity for rights in land.

5.1 A framework designed along administrative rather than judicial lines

In most countries the processes of securing land rights are organized in a distributed or decentralized environment. In many cases the processes are judicial in nature and significant court time is involved. This has the impact of making the recording and registering of rights slow, non-transparent, cumbersome and expensive. This is a non-inclusive process and does not normally deliver adequate results as performance is low and security of tenure for all cannot be achieved.

The FFP land administration approach recommends that the activities of recording and registering rights should be conducted by administrative institutions under delegated authority, wherever possible. This will allow the amount of court time involved in recording and registering rights to be minimized, freeing up court time to focus on resolving land disputes. The processes of recording and registering land rights under the FFP approach is illustrated in Figure 5 below:

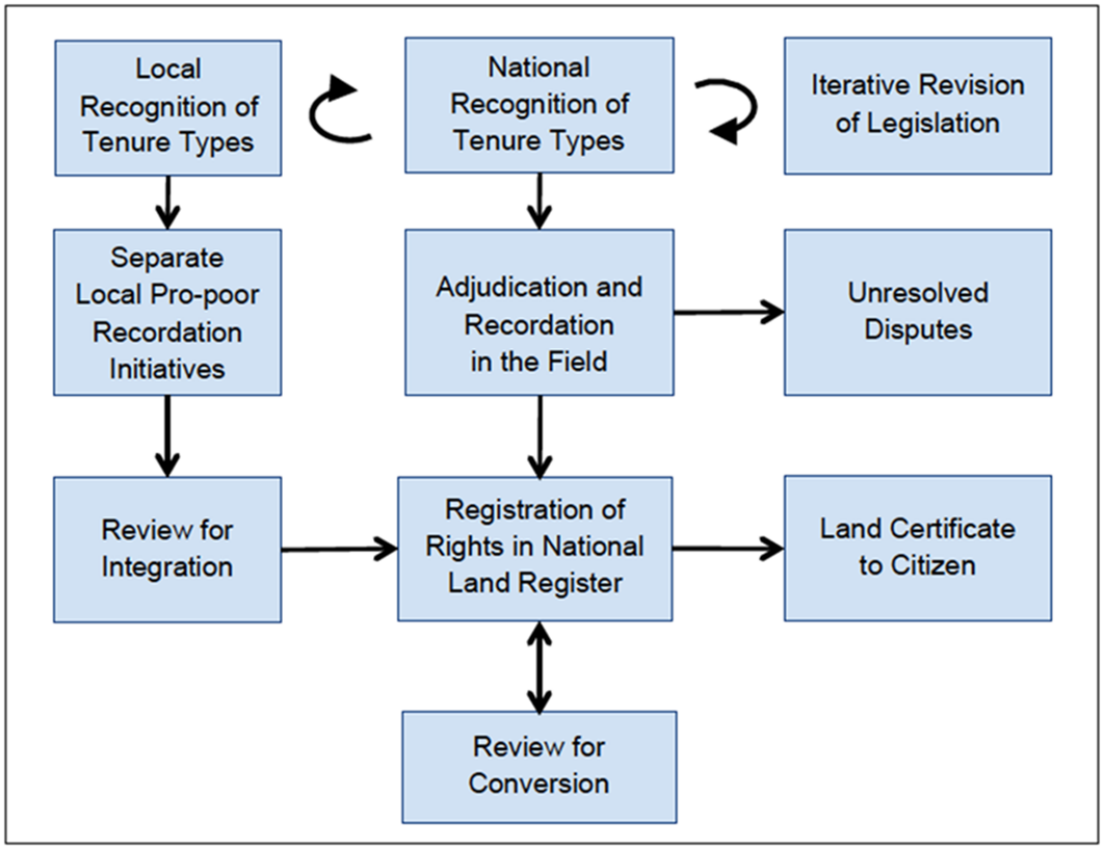


Figure 5: FFP Process for Recognizing, Recording and Reviewing Land Rights (Enemark, et al., 2015)

The FFP approach to land administration is primarily aimed at implementing national programs at scale to deliver security of tenure for all. It is a pro-poor approach that recognizes and legalizes all legitimate rights. This requires political commitment, as witnessed in Rwanda, Ethiopia and other countries, to roll out these national programs in short timeframes and at affordable costs. However, in countries where this political commitment is lacking then support may well build incrementally through the influence of local pro-poor recordation initiatives, which recognize and record legitimate rights in communities. These local initiatives may gain sufficient momentum and acknowledgement to eventually trigger wider incremental change and eventually lead to national recognition with corresponding changes to the legal and regulatory framework. The local pro-poor recordation initiatives can therefore work in parallel and be a supportive component of the national recordation process or act as a driver for change to help countries adopt the FFP land administration approach. The local pro-poor recordation is explained in more details in section 5.2 and 5.3 below while the FFP process is explained here in relation to Figure 5.1 by taking a national approach at the outset.

National Recognition of Tenure Types. Tenure rights are the means by which people are able to use and enjoy land and other natural resources. Some types of rights are defined in formal law while many legitimate rights have no legal status under a country's law. Therefore, types of rights that are legally recognized within a country need to be increased to ensure comprehensive coverage of the country. This process of including legitimate tenure types in the formal system through the revision of legislation is called national 'recognition'. This process is also consistent with the Voluntary Guidelines for responsible Governance of Tenure (VGGTs) stating (paragraph 4.4) that countries need to establish a consultative and participatory process for identifying which rights are legitimate. The end result is a set of categories of legitimate rights officially agreed to within the country, which are legitimate under current legislation or proposed revised legislation. This will ensure that the FFP approach can record and register all rights across a country and create a truly national land administration solution.

Revision of Legislation to support Legitimate Rights. Once the recognition process has been successfully completed through a consultative and participatory approach, the government agreed categories of legitimate rights will need to be protected by law. This will require changes to be made to the corresponding laws and regulations, and possibly the constitution, of the country. Furthermore, the introduction of FFP recordation approaches for the boundaries of spatial units and to necessary rather than complete proof about persons may well require that modifications be made to the corresponding laws and regulations. For example, in some countries the regulations mandate the use of specific surveying equipment, data quality specifications and complete evidence on persons such as citizenship, marriage, death and divorce certificates. These unnecessary constraints will have to be removed to accommodate flexibility under the FFP approach. Where these legal changes take a long time to implement then countries can still push ahead with the national FFP program e.g. by passing an overarching law to provide legal status to legitimate rights, or by issuing provisional land certificates in areas of legitimate rights.

Recordation in the field. The process of recording evidence of land rights in the field comprises three main elements of information: the location where the right can be enjoyed; the nature of the right such as the right to do what, when and how – including associated responsibilities and constraints; and the person(s) or body who holds the right. In this social process, people determine that their own rights are correct and that there are no conflicting claims. Locally trained land officers guide this community activity and help with solving disputes. At the end of this process the owner or occupier of the spatial unit will receive a 'piece of paper' with the unique identifier number of the spatial unit. This is taken to the land officer who is collecting the information about the nature of the right and the person and the unique identifier number will link all information about the spatial unit using standardized forms.

Registration of Rights in National Land Register. Once the recorded and adjudicated rights are completed and have no known outstanding conflicting claims then rights can be registered in the National Land Register. The land administration authority can then issue evidence of registration to the citizens in the form of a certificate. This can take many forms, e.g. title or certificate of occupancy, depending on the right, its status and the underlying legal framework. This is the stage when the initial FFP approach process to register a right is complete – even though the rights can be incrementally upgraded over time.

Review for Conversion. This activity is a due diligence process to determine whether an existing right in the national register meets a set of conditions to allow its security to be increased. The review process, for example, will investigate the procedure followed to create the right and determine if it is legal, extra-legal, legitimate or non-legitimate (Zevenbergen, et al., 2012). Any outstanding claims by third parties may also be identified and investigated. New evidence may be available to strengthen the right or the accuracy of the boundary may be increased. If the review process concludes that the agreed conditions for change are met then the security of the right will be changed along the continuum of land rights.

Local Pro-Poor Recordation Initiatives. Pro-poor recordation initiatives have a significant role in countries where there is a lack of political commitment or other constraints to recognize all legitimate rights. As well as providing local forms of security of tenure, the initiatives may also raise the profile of legitimate right holders and trigger incremental change at the national level. Wherever possible, local initiatives should coordinate with the national level to plan for future national recognition of the legitimate rights – and national government should provide guidance for undertaking such local recordation. This will include review for integration that is a due diligence process to determine whether legitimate rights, recorded under local pro-poor recordation initiatives, can be considered to meet a set of conditions to allow their integration into the national land register.

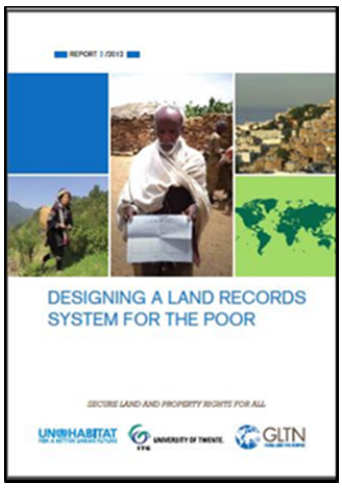
5.2 A continuum of tenure rather than just individual ownership

The FFP approach support the continuum of land rights that refers to the diversity of tenure arrangements in practice, encompassing both de facto (in fact) and de jure (in law) rights. While the rights in this range may not all enjoy the benefits of a country´s formal administrative or legal recognition, social recognition might be high, providing the de facto rights local legitimacy. Each continuum provides different sets of rights and degrees of security and responsibility and enables different degrees of enforcement (UN-HABITAT, GLTN 2008a; FIG/GLTN, 2010). The FFP approach also supports the Social Tenure Domain Model (STDM) that introduces the social element into land administration systems.

The STDM describes relationships between people and land in an unconventional manner in that it tackles land administration needs in hitherto neglected communities, such as people in informal settlements and customary areas. It supports development and maintenance of records in areas where regular or formal registration of land rights is not the norm. STDM is a pro-poor, participatory and affordable land tool for representing people to land relationships along the continuum of land rights. STDM can be implemented as a participatory enumeration. This is a survey method to gain better knowledge of the needs and priorities of a community, see (UN-HABITAT, GLTN, 2010). This is about involving and engaging poor communities in one of the first steps of any participatory planning or upgrading initiative, see also (Lemmen, et al., 2016). .

5.3 Flexible recordation rather than only one register

The objective of the FFP approach is to develop a nationwide land administration system with special emphasis on providing secure tenure for all. The FFP approach, however, is pro-poor and also supports the building of locally based land recordation systems that can run in parallel with the nationwide strategy or as separate activities in support of local needs. The resulting recorded rights will then be managed in a local solution, but normally with no national legal standing. However, these recorded legitimate rights can subsequently be reviewed and integrated into the National register as explained in Figure 5 above. Land administration authorities should then provide guidance to stakeholders performing local recordation on what information and evidence is gathered during local recordation to ensure that the data can be easily reviewed and integrated into the national register, see also (Lemmen, et al., 2016) .



UN-HABITAT, GLTN (2012b) has provided guidance for designing such a flexible approach. This is the first attempt to assist the implementation of a continuum of land rights approach at scale. It is about the development of a recording system aimed at supporting the recognition and protection of a range of rights of the poor. This publication emphasizes a co-management approach where the community performs a greater role in the design and management of the system. The design also highlights affordability, legitimacy and credibility as key requirements for success. See also (Zevenbergen et al., 2012; Lemmen et al., 2016)

5.4 Ensuring gender equity for rights in land

Despite progress on women's rights, rights to land and security of tenure are not enjoyed equally by women and men in many parts of the world. This goes against international human rights, and also impacts negatively on households and the economy. However, gender issues related to land are complicated. They involve sensitive social and cultural territories and challenge deeply rooted power structures. At the same time, we know that for a land tool to be effective, it needs to go beyond a technical lens and also consider social dimensions such as gender. GLTN has developed a set of gender evaluation criteria (UN-HABITAT, GLTN, 2008b) that can be used to check whether land tools incorporate gender issues, and to show how they can be changed.

Many women are doubly disadvantaged: by poverty and by gender. Women make up at least half the world's population but two thirds of the world's poor. In many places, national laws, social customs and patriarchal tenure systems prevent many from holding rights to land. Women often rely on their male relatives for access to land. If their relationship with the man breaks down, if they get divorced, if their husband dies, or if the male land owner decides to use the land in another way, women find themselves with no land, and no way to support themselves. Women´s access to land needs first and foremost to be seen as a universal human right, independent of any other arguments in favor of it (UN-HABTAT, GLTN, 2012a).

Inequality between men and women is a major form of discrimination, but it is not the only one. Inequality in land rights also relates to discrimination against indigenous peoples and against younger and older people. These vulnerable groups face a range of challenges with regard to rights in land. These issues are increasingly addressed through providing guidance for policymakers at national, regional and local level who are responsible for promoting access to land and security of tenure for vulnerable groups within a human rights framework.

6. BUILDING THE INSTITUTIONAL FRAMEWORK

The institutional framework in support of the FFP approach relates to good land governance, policy frameworks, institutional arrangements, organizational structures, deploying resources locally, partnerships, distribution of responsibilities, and establishing efficient, accountable government workflows for making the systems operational. The scope of the institutional framework covers functions for land information management, land tenure, land value and taxation, land use control & development supporting efficient land markets, based on spatial planning and land use planning.

This fragmentation of institutions causes problems in the delivery of integrated services to customers. For example, the separation of land registration and cadastral services across two institutions makes the engagement with the citizen complex and can lead to inconsistencies in land information if data maintenance is not managed effectively and synchronized. Many countries also tend to separate land tenure rights from land-use opportunities, thereby undermining their capacity to link planning and land-use controls with land values and the operation of the land market. These distributed responsibilities also lead to inefficiencies and high costs since each institution has considerable overheads in core functions, such as finances, human resources and ICT, which cannot be easily shared across separate institutions.

Effective engagement with customers is at the heart of success for these service oriented land institutions. Experience indicates that where access to the land administration institutions is difficult then citizens are less likely to notify the authorities of change, e.g. inheritance, and the land information quickly becomes out-of-date.

The journey to a modern land administration institutional framework involves considerable cultural change. This has to be sensitively managed and should be incrementally introduced to provide time for the institutions and customers to absorb significant change. Also, the institutional framework is not just about government. The FFP approach needs an inclusive set of partners to achieve security of tenure for all. This will include the private sector, civil society and importantly the customary authorities that can govern significant areas in developing countries.

The chapter presents a range of approaches to improving institutional frameworks and making the institutions more capable of supporting the FFP approach. These recommendations have been derived from best practice in improving land administration institutions over the past two decades. They can be considered institutional building blocks to support countries in determining their institutional framework starting point and on-going roadmap of improvements. The chapter is structured around the application of the four key FFP principles for building the institutional framework as outlined in Chapter 3 above:

- Good land governance rather than bureaucratic barriers
- Integrated institutional framework rather than sectorial silos
- Flexible ICT approach rather than high-end technology solutions
- Transparent land information with easy and affordable access for all

These four principles are elaborated below while keeping in mind that the three frameworks (spatial, legal and institutional) are interrelated and mutually reinforcing.

6.1 Good land governance rather than bureaucratic barriers

Land governance cannot be separated from governance of other sectors. Working to achieve higher standards of land administration is one way in which a dysfunctional society can improve its governance. Improvements in land governance can help realize a society's commitment to democracy, the rule of law and human rights.

Features of good land governance include (UN-FAO, 2007):

- The legitimacy of land institutions and land administrators is widely recognized by citizens;
- Land institutions serve all citizens, including the weak as well as the strong;
- Land institutions provide services that respond to the needs of their customers, e.g. in the nature of the services and accessibility to them;
- The results of the services are consistent, predictable and impartial;
- The services are provided efficiently, effectively and competently;
- The services are provided with integrity, transparency and accountability; and
- The services are sustainable and locally responsive.

Good land governance is not an absolute condition. Rather, there is a continuum between weak and good governance. This implies that it should be possible to devise ways to measure the governance of a country and to compare it to that of other countries. Evaluation frameworks and indicators, such as the World Bank's Land Governance Assessment Framework, allow the trends in governance within a country to be observed over time.

The Voluntary Guidelines on the Responsible Governance of Tenure (VGGTs) are the result of an unprecedented negotiation process, chaired by the United States that featured broad consultation and participation by 96 national governments, more than 25 civil society organizations, the private sector, non-profits and farmers' associations over the course of almost three years (UN-FAO, 2012). The VGGTs aim to secure tenure rights and equitable access to land as a means of eradicating hunger and poverty, supporting sustainable development and enhancing the environment. The VGGTs thereby place tenure rights in the context of human rights, such as the right to adequate food and housing. With the help of the VGGTs a variety of actors can determine whether their proposed actions and the actions of others constitute acceptable practices.

In accordance with the general principles of the VGGTs, States should:

- Recognize and respect all legitimate tenure rights and the people who hold them;
- Safeguard legitimate tenure rights against threats;
- Promote and facilitate the enjoyment of legitimate tenure rights;
- Provide access to justice when tenure rights are infringed upon; and
- Prevent tenure disputes, violent conflicts and opportunities for corruption.

Non-state actors (including business enterprises) have a responsibility to respect human rights and legitimate tenure rights. The principles of implementation include: Human dignity; Non-discrimination; Equity and justice; Gender equity; Holistic and sustainable approaches; Consultation and participation; Rule of Law; Transparency; Accountability; and Continuous improvement.

It is recommended that countries assess and baseline their current land governance practices to identify and prioritize areas for improvement. World Bank's Land Governance Assessment Framework (World Bank, 2011) provides an excellent process of evaluation. The quality of land governance should be regularly monitored to measure the transition from weak to good land governance and to update priorities within the land governance improvement program. The National Land Policy of a country determines the political priorities on land and natural resources. The result of the assessment of land governance should be compared with the National Land Policy to determine priorities for improvement to land governance. A land governance improvement program can then be formulated.

6.2 Integrated institutional framework rather than sectorial silos

Land administration and management in most countries is characterized by the fragmentation of responsibilities across a wide range of land institutions with little monitoring and regulation of their land activities. This laissez faire approach is contrary to international good practice that is increasingly integrating land administration and management activities to achieve a more harmonized approach to managing land. This approach has resulted in more integrated services, reduced overheads through shared services, more sustainable organizations and has delivered much improved services to their customers.

Sound Land Management. Land management requires operational processes for implementing land policies in comprehensive and sustainable ways. The four functions of land tenure, land value, land use and land development interact to ensure the proper management of rights, restrictions, and responsibilities in relation to property, land and natural resources.

In order to implement the rules and prescriptions promulgated in the land laws, the government assigns mandates within the public administration with regard to the tasks to be carried out. This includes policies on centralization / decentralization, public / private sector roles, customer orientation, public participation, accountability, liability, and good governance in general. In order to exert the given mandate, the organizations have to define their business objectives, work processes, ICT policy, quality management procedures, and their relationships with other organizations. This allocation of mandates should reflect the integrated and sustainable approach argued above.

Clear descriptions of work processes, in terms of activities, requirements and responsibilities are important for having good control of the organization's performance. This is the basis for monitoring and accountability. At the same time, a clear description offers opportunities to identify and remove inefficiencies, especially when introducing major change in business processes around the FFP approach. Collaboration across institutions is essential to deliver joined-up services to the customer and this must be supported by a shared information infrastructure and associated agreements – a National Spatial Data Infrastructure (NSDI).

State and public land management. The implementation of land administration solutions is conventionally driven by the need to support land markets and therefore normally have an initial focus on administering private land and properties. However, land and natural resources need to be managed as a whole and this requires the usually considerable state and public land holdings to be effectively managed. The administration and management of state and public land within a country are usually assigned to Ministries to support the delivery of government programs. These organizations are commonly referred to as "custodians" and should be regulated by an oversight body to ensure that land is managed throughout its life cycle in a sustainable and financially responsible manner. This will underpin more cost-effective and efficient delivery of government programs. The regulatory oversight body should be responsible for creating and managing a national state and public land inventory that is used to keep the government and citizens informed about the size and major components of its land inventory.

Land use management & development control. Rights to land and property also include the right of use. However, the right to use may be limited through public land-use regulations and restrictions, sectoral land use provisions, and various kinds of private land-use regulations such as easements, covenants, etc. Many land-use rights are therefore in fact restrictions that control the possible future use of the land (Enemark & McLaren, 2008).

Land-use planning and restrictions are becoming increasingly important as a means to ensure the effective management of land-use, to provide infrastructure and services, to protect and improve the urban and rural environment, to prevent pollution, to safeguard natural resources and to pursue sustainable development. Specific land policies are laid down in the sectoral land laws within areas such as Agriculture, Forestry, Housing, Natural Resources, Environmental Protection, Water Supply, Heritage, etc. These laws identify the objectives within the various areas and the institutional arrangements to achieve these objectives through permit procedures etc. The various areas produce sectoral programs that include the collection of relevant information for decision making within each area. These programs feed into the comprehensive spatial planning carried out at national, state/regional and local level. The FFP spatial framework is a combination of spatial units and imagery and provides an excellent, multi-purpose framework to be used across all land administration functions, including land use management & development control. This facilitates greater coordination across the land administration functions.

A National Land Policy. Land policies in most developing countries are currently fragmented across a range of land management sub-sectors, such as property rights, tourism, agriculture and forestry. Each Minister believes that they have responsibility for land policy and there is normally no top-level lead. Consequently, there is no overarching National Land Policy that provides a framework to guide and add cohesion to the underlying sub-sector policies. A National Land Policy is considered important and needs to be considered and formulated at some stage along the journey of change in implementing FFP land administration; however, it is not considered a prerequisite. It identifies what a government wishes to achieve utilizing land as a resource and what access and rights people will have with regard to the land. The National Land Policy coordinates and aligns the various existing and future policies relating to land to more fully achieve the government's overall policy objectives.

Formulating a National Land Policy is inherently a highly collaborative and transparent process and must include the private sector and civil society. It can also be very politically sensitive and this can cause delays, as has happened in Kenya. The process will require access to comprehensive information about land and must consider input from a wide range of land management sectors and associated issues such as access to land, property rights and types of tenure, gender equity issues, state land management, agriculture, forestry, environmental management and biodiversity, nature and heritage protection, natural resource management, mining, water management, climate change and disaster risk management, national territorial planning, regional development, tourism, open government, and open data policies, etc.

The African Land Policy Initiative (LPI) provides excellent guidelines for formulating National Land Policies (UN-ECA, LPI, 2011) and good examples can be found in Sub-Saharan Africa countries such as: Kenya, Uganda, Tanzania, Ghana, and others. Once the National Land Policy has been formulated and signed off, the policies and land management strategies for land sub-sectors, such as forestry, agriculture and water management will have to be to created / updated to ensure alignment with the overall land policy framework. The outcome should be a comprehensive policy document clarifying the legal, organizational and technological frameworks, and providing, guidance and support for the governance and management of land issues.

6.3 Flexible ICT approach rather than high end technology solutions.

ICT is not just about technology – it's about the ways in which information and technology are used to deliver better services and enhance trust and confidence in land administration and government. Adopting an effective, scalable supporting ICT infrastructure is considered to be crucial for the implementation of the FFP approach

The Principles for Digital Development (http://digitalprinciples.org/) are "living" guidelines and designed to help development practitioners integrate established best practices into technology-enabled programs. They are written by and for international development donors, multilateral organizations, and implementing partners, and they are freely available for use by all. The Principles are intended to serve as guidance rather than edict, and are updated and refined over time. The Principles find their roots in the efforts of individuals, development organizations, and donors alike who have called for a more concerted effort by donors and implementing partners to institutionalize the many hard lessons learned in the use of ICTs in development projects. See also (Lemmen, et al., 2016). The following principles support the FFP approach and a more detailed set of ICT guidelines are contained in Appendix A.

The saying: "If you want to go fast, go alone. If you want to go far, go together" is attributed to an African proverb. However, this could easily be a mantra for technology-enabled development projects. Strategies should be adopted for leveraging and contributing to a broader commons of resource, action, and knowledge. This will extend the impact of development interventions through engaging diverse expertise across disciplines and industries at all stages. Working across sector silos will create more coordinated and harmonized approaches and the documentation of work, results, processes and best practices will allow them to be shared widely. For example, the e-services being developed for land administration services can utilize generic tools being developed by wider e-government initiatives.

6.4 Transparent land information with access for all

One of the key principles underlying the FFP approach is the provision of open, transparent access to land information, subject to the protection of privacy. For example, land register information can be freely accessed, prices paid for properties are available from the land registry, land tax assessments can be inspected so that taxpayers can challenge the fairness of assessments, decisions on changes to land use are made in meetings that are open to the public, an appeal system is available in the case of disputed information and citizens can present arguments to the decision-makers. This is essential to ensure accountability, build trust with citizens, and encourage them to participate in FFP land administration. Transparent land information is key to tenure security.

The opening up of governmental data, free for re-use, has been justified on economic grounds since access to this data has major benefits for citizens, businesses, society and for the governments themselves. Data are an essential raw material and can be integrated into a wide range of new information products and services. Open Data policies need to balance the common good against commercial sustainability of organizations. Funds are required to continually maintain and improve land information.

Although the outreach of e-services and the use of mobile phones to communicate with customers are significantly increasing, the digital divide still excludes many customers from these communication channels. Therefore, to provide security of tenure for all, more conventional channels, such as distributed offices and mobile offices, should be provided. This ease of access to services must remain in place nationwide to support the on-going maintenance of land rights and not just be transient through the first registration phase.

7. CONCLUDING REMARKS

Most developing countries are struggling to find remedies for their many land problems that are causing land conflicts, reducing economic development and preventing their countries reaching their true potential. The FFP approach provides developing countries with a new, innovative and pragmatic solution to land administration. The country specific solution is directly aligned with immediate needs, is affordable, is flexible to accommodate different types of land tenure and can be upgraded when economic or social requirements and opportunities arise. It is highly participatory, can be implemented quickly and will provide security of tenure for all. Most importantly, the FFP approach can start very quickly using a low risk entry point that requires minimal preparatory work.

The politicians and decision makers in the land sector are key in this change process and need to become advocates of change through understanding the social, environmental and economic benefits of this journey of change. This top-level support for change will then allow any barriers to changes in the legal framework and the professions to be dismantled. However, in many developing countries land issues are highly political and controversial. Therefore, drivers for change cannot just be designed at the highest levels, but will have to be initiated through influencers at other entry points in the network of stakeholders across the land sector; and written in a language that they can understand (see McLaren et al., 2016).

The UN family of organizations has a significant role to play in this advocacy for change. GLTN will have a pivotal role in disseminating the messaging for change and providing tools to support change. The World Bank, UN-GGIM, UN-HABITAT and UN-FAO should ensure that the land administration projects they support are designed around FFP by default. The FFP approach for land administration directly supports the implementation of the VGGTs. There are opportunities for the FFP approach for land administration to be used innovatively in areas of priority for the UN, such as post-conflict situations. Support of these high profile applications of FFP will help to promote the importance and gain support for the FFP approach.

Effective capacity building is fundamental to success. Society must understand that these simpler, less expensive and participatory methods are just as effective and secure as conventional surveying methodologies. Formal organizations such as government agencies, private sector organizations and informal organizations, such as community based or voluntary organizations, need to ensure the awareness and up-to-date skills of their members and staff. Although there are short-term training needs to effect FFP approaches in land administration, there is a longer-term capacity building initiative required to create a new generation of land professionals who have deep understanding of the FFP approach to land administration and the ICT management of land (see McLaren et al., 2016).

It is hoped that the FFP approach as presented in this paper – and more comprehensively in (Enemark, et al., 2015) - will pave the way forward towards implementing sustainable and affordable land administration systems enabling security of tenure for all and effective management of land use and natural resources. This, in turn, will facilitate economic growth, social equity, and environmental sustainability.

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