REPORT 3/2018

FRAMEWORK FOR COSTING AND FINANCING LAND ADMINISTRATION SERVICES

SECURING LAND AND PROPERTY RIGHTS FOR ALL

UN HABITAT
FOR A BETTER URBAN FUTURE

FIG

GLTN
GLOBAL LAND TOOL NETWORK

REPORT 3/2018

Framework for Costing and Financing Land Administration Services (CoFLAS)

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NOTE: This document is still work in progress and is subject to periodical updates. Comments and suggestions should be emailed to gltn@unhabitat.org with the subject 'Comments on the Framework for Costing and Financing Land Administration Services Publication'

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ACRONYMS

B2B	Business-to-Business
BPR	Business Process Reengineering
C2B	Customer-to-Business
CoFLAS	Costing and Financing Land Administration Services
CORS	Continuous Operating Reference Station
ETS	Electronic Tracking System
FAO	Food and Agriculture Organization of the United Nations
FIG	International Federation of Surveyors
GEC	Gender Evaluation Criteria
GIS	Geographic Information System
GLTN	Global Land Tool Network
GNSS	Global Navigation Satellite System
GRN	Geodetic Reference Network

HRD/M	Human Resource Development/Management
HRSI	High Resolution Satellite Imagery
ICT	Information Communication Technology
LAS	Land Administration Services
LGAF	Land Governance Assessment Framework
M&E	Monitoring & Evaluation
NGO	Non-Governmental Organization
NSDI	National Spatial Data Infrastructure
PPP	Purchasing Power Parity
STDM	Social Tenure Domain Model
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

The Global Land Tool Network (GLTN) is committed to promoting pro-poor land policies, legislative processes, land administration systems and procedures. The costing and financing of land administration services (CoFLAS) directly addresses one of the 18 core land tools identified by GLTN; that is, ***"modernizing the land agencies' budgetary approach".*** This document provides a practical implementation guide that accompanies the overarching Framework for Costing and Financing Land Administration Services (CoFLAS) tool document.

CoFLAS is essentially a decision-support tool for land administration. It prompts discussion on a country's readiness for land reform and provides a series of templates to assist public agencies to identify the core needs and necessary investment for land reform processes. The outcome of a CoFLAS assessment is a series of reports that guide decision making related to land reform, identify the cost-implications of decisions and support fit-for-purpose approaches.

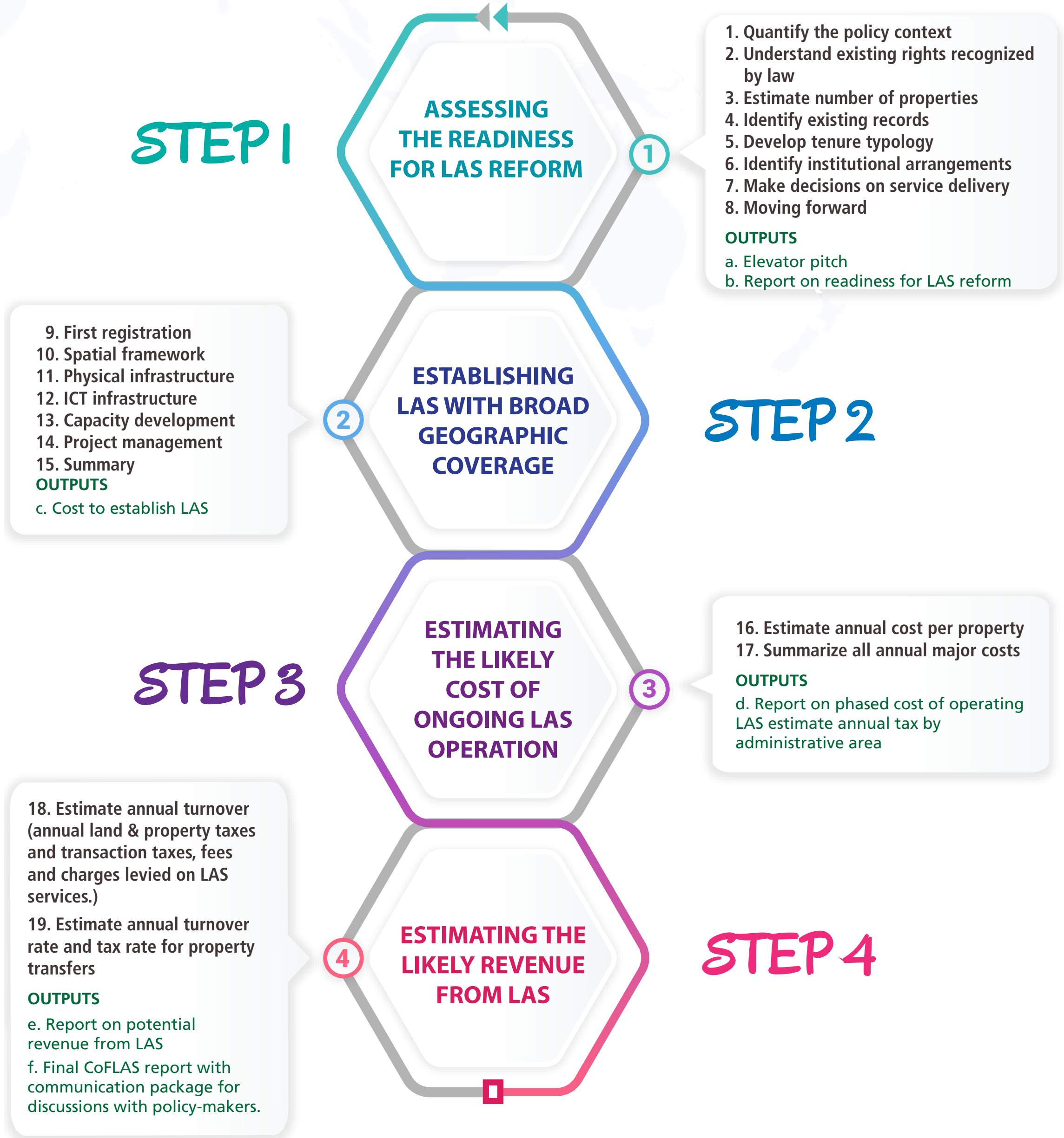
The CoFLAS assessment includes:

1. The policy context that drives LAS reform (core needs assessment);
2. Options for implementation that identify decision-impacts (such as immediate and ongoing cost, particularly to acknowledge that "best is not necessarily optimal");
3. The costs of Land Administrative Services reform, based on selected optimal implementation methods; and
4. Potential revenue from LAS reform implementation.

CoFLAS is primarily a tool that supports governments and government staff with the following:

a) Preparing proposals for LAS reform (land sector staff);
b) Assessing such proposals and making a case for support within government and from development partners (policy makers); and
c) Reviewing LAS reform proposals and ensuring that such proposals provide value for money (ministry staff and development partners).

This document provides guidance for implementing the CoFLAS tool. Figure 1: One Page Guide to CoFLAS, provides a summary guide for the CoFLAS tool.



STEP 1

ASSESSING THE READINESS FOR LAS REFORM

1. Quantify the policy context
2. Understand existing rights recognized by law
3. Estimate number of properties
4. Identify existing records
5. Develop tenure typology
6. Identify institutional arrangements
7. Make decisions on service delivery
8. Moving forward

OUTPUTS

a. Elevator pitch
b. Report on readiness for LAS reform

STEP 2

ESTABLISHING LAS WITH BROAD GEOGRAPHIC COVERAGE

9. First registration
10. Spatial framework
11. Physical infrastructure
12. ICT infrastructure
13. Capacity development
14. Project management
15. Summary

OUTPUTS

c. Cost to establish LAS

STEP 3

ESTIMATING THE LIKELY COST OF ONGOING LAS OPERATION

16. Estimate annual cost per property
17. Summarize all annual major costs

OUTPUTS

d. Report on phased cost of operating LAS estimate annual tax by administrative area

STEP 4

ESTIMATING THE LIKELY REVENUE FROM LAS

18. Estimate annual turnover (annual land & property taxes and transaction taxes, fees and charges levied on LAS services.)
19. Estimate annual turnover rate and tax rate for property transfers

OUTPUTS

e. Report on potential revenue from LAS
f. Final CoFLAS report with communication package for discussions with policy-makers.

Figure 1 - One Page Guide to CoFLAS, provides a summary guide for the CoFLAS tool.

INTRODUCTION

01

INTRODUCTION

The Costing and Financing of Land Administration Services for Developing Countries tool (CoFLAS) has been developed to address the core need of enabling public agencies to effectively cost the establishment and operation of a Land Administration Service (LAS). A component of the Global Land Tool Network's (GLTN) Modernizing the Budgetary Approach of Land Agencies tool development, CoFLAS has been developed at a time of decreasing international development budgets and increased competition across critical public sector priorities, including health, education, water, infrastructure, disaster mitigation, etc. The core aim of CoFLAS is to assist decision-making in the land sector, by promoting a "fit-for-purpose" approach to ensure that LAS are created in a cost-effective manner that focuses on service-delivery for all.

There are four stages to the application of CoFLAS and each contains a set of policy and contextual questions that should be addressed. The answers to these questions provide the basis for making decisions on reform and systematic registration methodologies which, in turn, affect the estimation of related costs.

The four stages are:

1. Readiness Assessment;
2. Establishment Cost Assessment;
3. Operational Cost Assessment; and
4. Likely Revenue Assessment.

This document outlines the steps to be taken in each stage, the preliminary work needed, the relationships between the stages, and how the information can be used to support fit-for-purpose land reform. Given the inherent flexibility of CoFLAS, however, this document should be treated as a guide only and local context should be taken into consideration.

HOW DOES CoFLAS WORK WITH OTHER GLTN TOOLS?

The GLTN partners have identified 18 key land tools that together are needed to address poverty and land issues at country level, to promote innovative land policies and laws, to enable land systems to work for the poor, to be gender and youth responsive, and to address issues of customary and informal land. Over the last decade, GLTN has made notable progress in developing and piloting several of these tools. Some have matured (e.g. Social Tenure Domain Model (STDM) and the Gender Evaluation Criteria (GEC)), while others are at the piloting stage or are under development. The STDM tool provides the technical backdrop to enable affordable and responsive land administration systems, while the Gender Evaluation Criteria (GEC) tool supports inclusive and equitable land administration. The Valuation of Unregistered Lands is essential to facilitate pro-poor compensation, land and property transfer, and taxation in hitherto neglected communities – all of which are important variables in the financial equation underpinning the importance of CoFLAS. Although the current version of CoFLAS tends to focus on the formal end of the Continuum of Land Rights (a concept for understanding the rich diversity of tenure arrangements that exist between the extremities of formal/informal, legal/extra-legal, secure/insecure, *de facto*/*de jure*), subsequent versions will support the understanding of less formal aspects to strengthen linkages with tools that are specifically meant to support less developed systems.

CoFLAS also promotes and is supported by a fit-for-purpose approach, drawing on the work of the International Federation of Surveyors (FIG) and the World Bank in their joint publication ***Fit-For-Purpose Land Administration*** (FIG/World Bank, 2014). While it is not a new term, "fit-for-purpose" in this context is newly applied to the building of sustainable land administration systems. It indicates a need for flexibility in the approach used for building land administration systems in less developed countries, including a focus on citizens' needs, such as providing security of tenure and control of land use, rather than technical solutions or high accuracy. The fit-for-purpose approach is not itself a GLTN tool, but is a concept that underlines and supports the GLTN approach. Something that is "fit-for-purpose" has the following elements:

- It has a flexible spatial data capture approach to provide for varying use and occupation.
- It is inclusive in scope and covers all tenure and all land.
- It is participatory in its approach to data capture and use to ensure community support.
- It is affordable for the government to establish and operate, and for society to use.
- It is reliable in terms of information that is authoritative and up-to-date.
- It is attainable in relation to establishing the system within a short timeframe and within available resources.
- It is upgradeable incrementally and can be improved over time in response to social and legal needs and emerging economic opportunities (FIG/World Bank, 2014).

01

COSTING AND FINANCING OF LAND
ADMI STRATION SERVICES ELAS)

Participants pose for a photo during the CoFLAS validation workshop held between the 15-16 October 2014 in Bangkok, Thailand. Photo ©UN-Habitat/Rebecca Ochong

PRELIMINARY STEPS TO IMPLEMENTING COFLAS

02

CoFLAS focuses on the cost of developing and maintaining LAS and the likely returns from it.

CoFLAS is intended as a tool to support:

a) Land sector staff in preparing proposals for LAS reform;
b) Policy makers in the land sector in assessing such proposals and in making a case for support within government and from development partners; and
c) Key government agencies, such as finance and development partners, in reviewing LAS reform proposals and ensuring that such proposals provide value for money.

There is great variety in land administration arrangements and systems globally. Even with the qualifications on the scope of CoFLAS, any attempt to be a tool that is applicable to many developing countries must be generic in its formulation.

There are four stages in the application of CoFLAS:

1. Stage 1: the initial investigation (Readiness Assessment) of:
    - the policy, legal and institutional context for the LAS
    - the number of land parcels/properties and the scope of any LAS reform initiative
    - the status of existing land records
    - the land tenure types in the jurisdiction and the clear presentation of these tenures in a typology
    - the current LAS processes with proposals for Business Process Re-engineering (BPR)
    - key land sector issues and other initiatives by government and development partners in the land sector.

    This investigation provides the basic information to support the design and costing of a major LAS reform.

2. Stage 2: the review of the resource requirements and capital costs in establishing an appropriate LAS.
3. Stage 3: a review of the options and likely costs of running LAS.
4. Stage 4: an estimation of the likely revenue that can be generated by LAS.

These four stages are illustrated in the schematic set out in Figure 2 and are described in following sections.

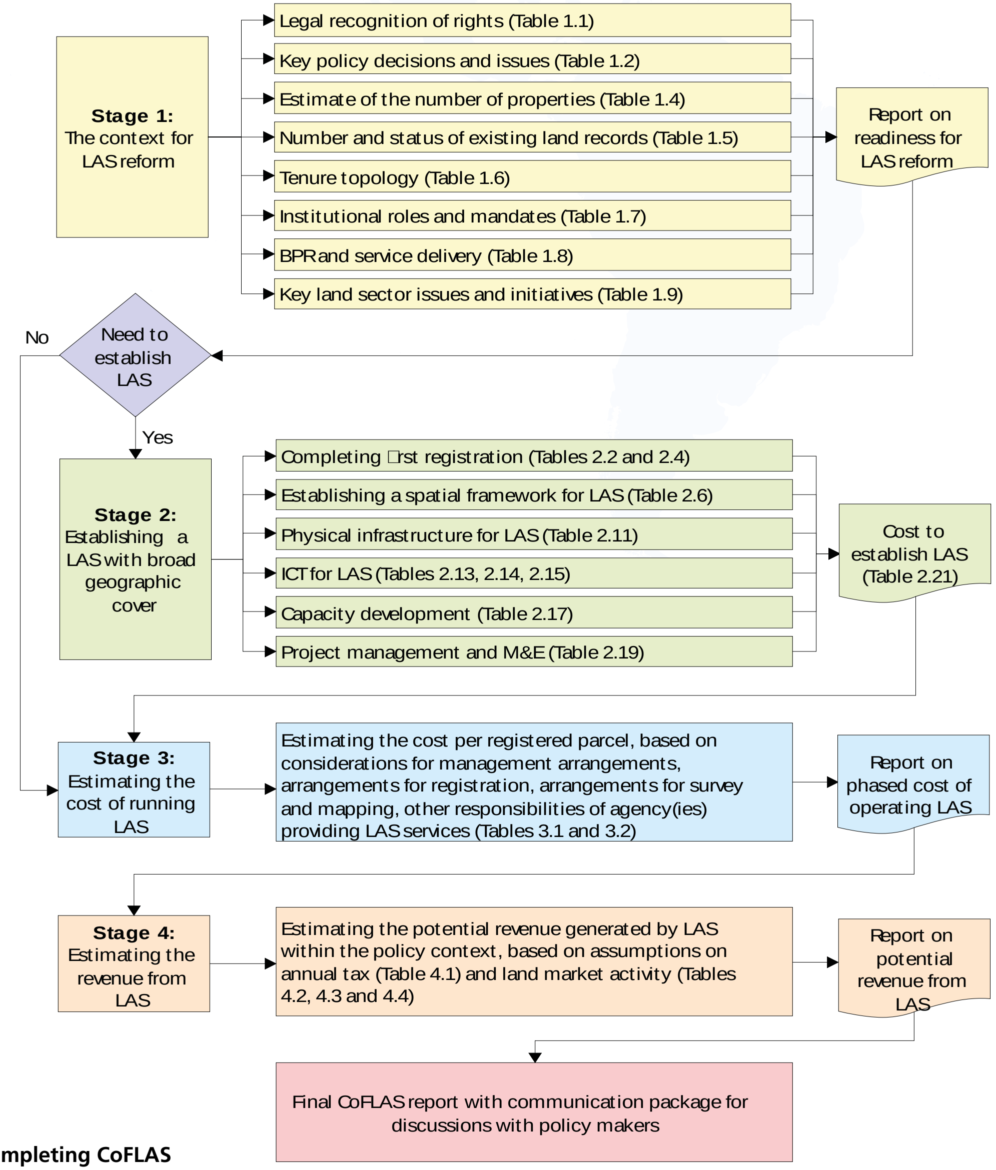

Stage 1: The context for LAS reform
Legal recognition of rights (Table 1.1)
Key policy decisions and issues (Table 1.2)
Estimate of the number of properties (Table 1.4)
Number and status of existing land records (Table 1.5)
Tenure topology (Table 1.6)
Institutional roles and mandates (Table 1.7)
BPR and service delivery (Table 1.8)
Key land sector issues and initiatives (Table 1.9)
Report on readiness for LAS reform
No
Need to establish LAS
Yes
Stage 2: Establishing a LAS with broad geographic cover
Completing first registration (Tables 2.2 and 2.4)
Establishing a spatial framework for LAS (Table 2.6)
Physical infrastructure for LAS (Table 2.11)
ICT for LAS (Tables 2.13, 2.14, 2.15)
Capacity development (Table 2.17)
Project management and M&E (Table 2.19)
Cost to establish LAS (Table 2.21)
Stage 3: Estimating the cost of running LAS
Estimating the cost per registered parcel, based on considerations for management arrangements, arrangements for registration, arrangements for survey and mapping, other responsibilities of agency(ies) providing LAS services (Tables 3.1 and 3.2)
Report on phased cost of operating LAS
Stage 4: Estimating the revenue from LAS
Estimating the potential revenue generated by LAS within the policy context, based on assumptions on annual tax (Table 4.1) and land market activity (Tables 4.2, 4.3 and 4.4)
Report on potential revenue from LAS
Final CoFLAS report with communication package for discussions with policy makers

Figure 2 - Schematic of the Process in Completing CoFLAS

02

IDENTIFYING KEY STAKEHOLDERS AND PREPARING A CORE TEAM TO DRIVE CoFLAS IMPLEMENTATION.

Land administration reform typically requires a large investment over a long period, with successful reform largely dependent on the strong support of key stakeholders. At the start of a CoFLAS assessment, key stakeholders should be identified, informed and engaged – including those from the public and private sectors, non-government and civil society sectors, and academic institutions.

AUGMENTING THE SCOPE OF CoFLAS, PREPARING THE APPROPRIATE BACKGROUND KNOWLEDGE.

Land is a complex area and many key stakeholders have differing views on the key issues and problems and the possible strategies to address them. As previously noted, there are several items that are outside the scope of CoFLAS and particularly pertain to the framing of the reform process, including:

- **Promoting an understanding of why land reform is needed.** This may be required in presenting a business case to government and/or donors. Texts that provide this information, including the benefits of land reform, include Deininger (2003) and Williamson, Enemark, Wallace and Rajabifard (2009)[3].
- **Identifying core land administration issues or prioritizing actions to address those issues.** CoFLAS provides a framework that supports issue identification, where possible issues are known. Better references to support this include Dale and McLaughlan (1988), who provide a checklist for evaluating a cadastral system; the USAID Land Tenure and Property Rights (LTPR) Situation Assessment and Intervention Planning Tool (USAID, 2013); and the Land Governance Assessment Framework (Deininger, Selod and Burns, 2012). These texts should be reviewed and their implementation discussed before beginning the CoFLAS assessment.
- **Determining the methods to be used in undertaking land administration reform**. Whilst CoFLAS provides some indication of the budgetary impact of choosing some methods over others, it does not provide a full and comprehensive list of available approaches and options to LAS reform. CoFLAS implementers should augment CoFLAS by using references such as Land Law and Registration (Simpson, 1976), Land Administration (Dale and McLaughlan, 1999), Evolving Land Rights in Africa (Toulmin and Quan, 2000), and Securing Africa's Land for Shared Prosperity (Byamugisha, 2013).

In partial support of the latter point, a key objective of CoFLAS is to highlight these key decisions and the potential cost and financing implications of them. Five key decisions and their implications are set out in Table A and options that might be adopted to reduce costs are set out in Table B. The first stage in CoFLAS includes a check-list which is intended to assess the readiness for land administration reform and to identify key issues.

SETTING TIMELINES AND GOALS IN PLACE

Prior to implementing CoFLAS, several discussions need to take place, stakeholders need to be informed and prepared to engage in those discussions, and the core goals of CoFLAS implementation need to be identified.

---

[3] Reference details for this and other useful publications are on page 12.

Table A - Strategic decisions that have cost implications for establishing and running LAS

		Simple / Low Cost	**Complex/High Cost**
Strategic Approach to building LAS with broad geographic cover	**Approach**	Sporadic approach, relying on individual requests	Systematic registration on a village-by-village approach
	Implications	• There are costs in responding to sporadic requests (need staff, maps etc.) • Can create issues with data (gaps, overlaps) • Lack of transparency • Can take a long time – +100 years	• Large initial investment • Shortest time frame (although some areas need to wait) • Strong community engagement • High transparency
Resourcing for LAS reform	**Approach**	Large involvement by community and/or local government	Mobilize central government and/or outsource some/all Systematic Registration activity
	Implications	• Essential to motivate local leaders – may need to pay fee • Need to ensure activity is a priority • Need to build capacity • Can build community support	• Large cost • Must manage interface between government/ contractor • Need to ensure community engaged • Need strong Project Management skills
Survey methodology	**Approach**	Use of photomaps with a general boundary approach	Full ground survey with professional surveyors
	Implications	• Lowest cost • Limited requirement for capacity development • Will need process to settle boundary disputes	• High cost • Risk of limited resources • No country has been able to scale this approach
Boundary marks (fixed or general boundaries)	**Approach**	General boundaries (using key environment features identified on ground or via image maps)	Fixed boundary; with boundary marks or beacons appropriately emplaced
	Implications	• Lowest cost • Lack of mark can lead to disputes – but marks can be moved • Higher cost for resurveys	• High cost – both for mark and logistics/transport • Permanent reference – but can be moved • Difficulties where boundaries are occupied
Delivery of LAS services	**Approach**	Establish central LAS office(s)	Establish network of LAS offices linked to administrative area
	Implications	• Can create difficulty and cost to access • Need to develop access strategies (local front office, intermediaries, information and communication technology (ICT)	• Significant investment • Need establish oversight, monitoring and evaluation (M&E) • Difficult to balance resources

Table B - Strategic decisions - options to reduce costs

	Options to Reduce Costs
Strategic Approach to building LAS with broad geographic cover	• Convert existing documents where possible • Can reduce cost by undertaking systematic registration in priority areas.
Resourcing for LAS reform	• Establish voluntary committees in community • Link to existing local institutions/processes
Survey methodology	• Can adopt a mixed approach • Accuracy can be improved over time
Boundary marks (fixed or general boundaries)	• Use low-cost marks • Participatory or community supported boundary delineation procedures that where necessary, emplace appropriate boundary markers
Delivery of LAS services	• Phase opening new offices • Create front/ back/office

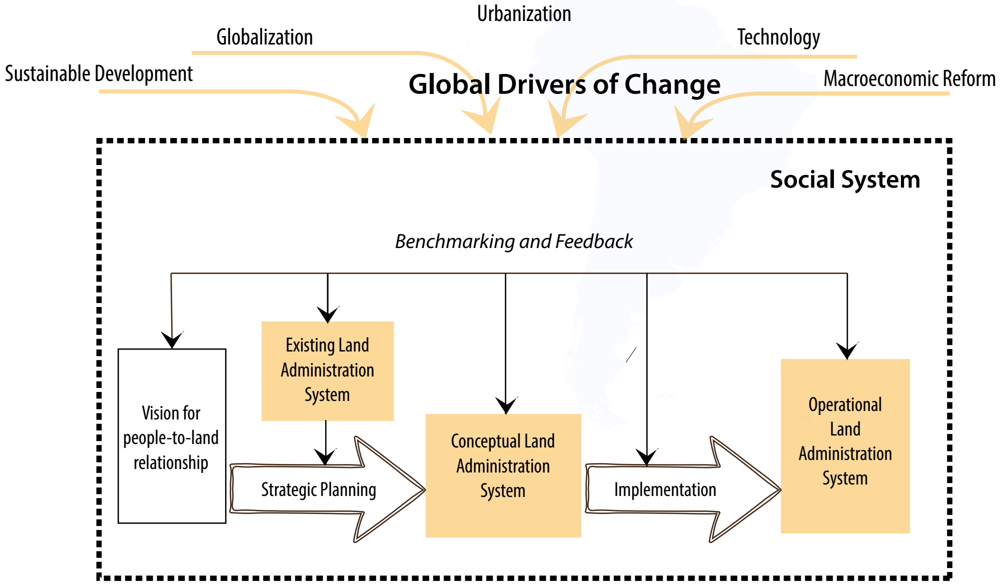
The following steps can assist in guiding the process:

- A lead project manager should be identified to drive the process and to establish and meet key timelines.
- A core group of committed stakeholders should be engaged, with clear roles and responsibilities outlined. (These stakeholders should include critical decision-makers who will enable the process; core information holders who will provide and review the necessary datasets; and reviewers who will provide guidance to the project from a variety of perspectives – including government, NGO, community and private enterprise).
- A timeframe to undertake the CoFLAS implementation should be agreed on, including a milestone date for the completion of each stage and a specific person identified to report to and use the ultimate outcome.

ASSESSING THE READINESS FOR LAS REFORM

As previously noted, CoFLAS is not a tool to identify and agree on the key issues and possible solutions to LAS reform. There are several other tools that can support that process. Once there is agreement on the key issues, significant strategic planning is required to prepare for and implement the reform. One conceptualization of this process is illustrated in Figure 3.

Figure 3 - Re-engineering LAS (from Williamson et al (2009))


Urbanization
Globalization
Technology
Sustainable Development
Global Drivers of Change
Macroeconomic Reform
Social System
Benchmarking and Feedback
Existing Land Administration System
Vision for people-to-land relationship
Conceptual Land Administration System
Operational Land Administration System
Strategic Planning
Implementation

Framework for reengineeing land administration system

Although CoFLAS is not a tool to design and implement land administration reform, users of CoFLAS need to look at some key issues, understand the existing LAS, and prepare an indicative scope so that decision-makers can readily understand some of the key cost implications of the approaches to LAS reform that are being proposed and possible alternative approaches that may or may not be discussed. This leads us to the first stage of CoFLAS.

ASSOCIATED READING:

The following texts have been highlighted above and in the attached CoFLAS report as relevant and guiding background material to land reform. They should be reviewed by experts and policy-makers prior to embarking on a period of reform:

- Byamugisha, F.F.K. (2013). Securing Africa's Land for Shared Prosperity: A programme to scale-up reforms and investments. Washington D.C.: Agence Française de Développement and World Bank.

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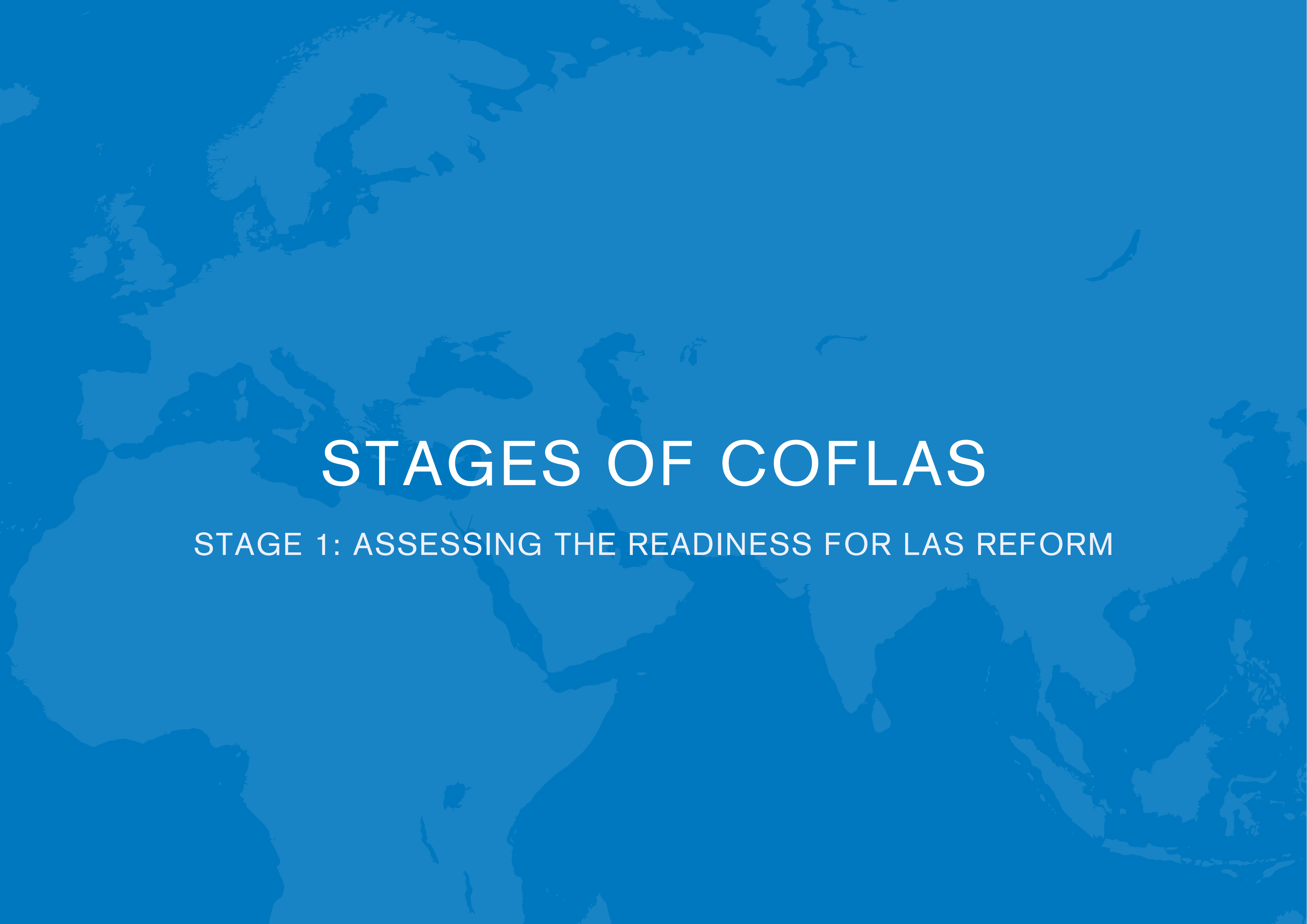


STAGES OF COFLAS

STAGE 1: ASSESSING THE READINESS FOR LAS REFORM

03

The following section provides a guide to the implementation of CoFLAS for developing countries at national level. CoFLAS is implemented through a series of tables to be completed with the relevant country-level data. These tables are provided below, with guidance on how they should be completed. An accompanying Excel spreadsheet is also available as a template for inserting this detail, including necessary formula and linked cells.

STAGE 1: ASSESSING THE READINESS FOR LAS REFORM

The first stage of CoFLAS gathers the following information:

1. Key policy issues that impact on establishing LAS in the country;
2. Information to estimate the number of properties;
3. Analysis of existing records of rights in land;
4. Preparation of a tenure typology for the country and an estimate of the properties that could be registered;
5. Preparation of an Institutional Matrix to identify key institutional actors and potential overlaps;
6. A review of the major LAS processes with proposals for re-engineering;
7. Demonstration of knowledge of:
    - the key issues,
    - the status of stakeholder consultation,
    - other government initiatives, and
    - existing development partner support.

Step 1: Quantify the policy context for LAS reform activity

The first step to CoFLAS is to articulate the policy context for LAS reform. This step assists in providing a ministerial briefing and/or "elevator pitch", by succinctly answering the following set of questions as indicated in Table 1.1.

In this document, the questions are followed by an explanation of what the response indicates and how this information can be used. Answers should be filled in on the Excel template.

There are several methods to assist with the collection of this information. Some questions can be completed with the background knowledge of policy staff. Other questions may require interviews with more senior departmental staff or even respected academics or NGO leaders. A more constructive method leads to, or derives from, a strategic planning approach, where a meeting of core stakeholders is hosted to discuss and record the information with a view to determining what is needed as much as what exists.

Table 1.1: Key policy issues that may impact LAS reform

	Question	Follow-up / How to use this information
1	Does a national land policy exist?	Answer format: Yes/No and Describe If yes, is the national policy in an acceptable form (i.e. up to date) to guide the LAS reform and CoFLAS estimate? If no, the reasons for this absence should be discussed, and the pros and cons of developing such a policy noted as part of this process.
2	Are urban and rural policies integrated?	Answer format: Yes/No and Describe. If not, separate versions of this tool may need to be created to address both rural and urban contexts.
3	What levels of administration exist in the country, and how many units are there at each level?	Answer format: Describe. The number and type of administration levels in a country, including number of units, will impact the initial and ongoing administration costs of reform and will influence decisions made at Stages 2 and 3. Identifying the levels of administration also assists in identifying where existing information is held, and potential stakeholders/custodians who may be needed to assist in gathering data.
4	At what level are land registration services provided to the public and how many offices have been established at this level?	Answer format: Describe. The devolution of land registration services to the public and the number of offices will again impact costing and decision making. It may be sensible to discuss whether it will be more efficient (acknowledging fit-for-purpose) to maintain the status quo or to redefine needs.
5	Is there a policy that land registration services be provided at a particular level of administration?	Answer format: Describe. If yes, describe the policy and explore the reasoning behind choices made. Discuss what the implications of the policy on costings may be. If no, review what the cost implications of providing land registration services at the current level may be, and what options there may be to change.
6	Is the registration system deeds registration or title registration?	The existing setup of registration system by deeds or title will have an impact on the collection and maintenance/distribution of data, as well the ongoing costs of operation. Any intention to migrate from a deeds system to a title system should be considered at this point, as it will have both time and cost implications.
7	If title registration, does the state guarantee title?	Guarantee of title may necessitate additional workflows and checks, but additionally provides incentive for the registration of properties, so may see early uptake. Additional budget may be needed to provide insurance.
8	Are strata titles (condominium, unit titles) recognized under the law?	The recognition of strata titles is likely to increase the estimate for the number of parcels. If strata titles are not recognized, there may be a need for revision of the applicable legislation to allow these in the future.

	Question	Follow-up / How to use this information
9	Can a right be registered without a survey plan?	Rights registration without a survey plan (i.e. using high-resolution satellite imagery instead) is one example of a fit-for-purpose method where other methods may less effective to implement. Flexibility in the legislation and survey policies is required, however. This question will impact on the costs of first registration. It may also increase uptake of early registration opportunities.
10	Does adverse possession of land lead to formal rights?	Adverse possession leading to formal rights will impact the ability of the state to guarantee title, and may further impact the security of rights. Current and potential policies on this issue should be evaluated alongside their implications.
11	What procedures exist for the adjudication of rights?	The procedures in place should be reviewed and documented. Complex procedures requiring the efforts of a number of experts will incur costs and will take time. Fit-for-purpose opportunities should be reviewed and discussed. Based on the analysis from the CoFLAS document, some conclusions can be drawn of the likely unit costs for systematic registration under various conditions: Adjudication can be undertaken with substantial work by local volunteers and with no spatial framework: USD 1/parcel If there is not significant investment in base mapping and the geodetic network, systematic registration can be undertaken for about USD 9-10/parcel If significant investment is required in the geodetic network or base mapping, systematic registration can be undertaken for about $15-20/parcel If all survey is undertaken by ground survey methodology, then the cost is likely to be USD 50/parcel or more. All decisions relating to systematic registration will have significant workforce resourcing implications.
12	Does the law permit systematic registration?	Systematic registration implemented in priority areas can reduce the costs of building LAS with broad geographic coverage. Most successful systematic registration programmes have adopted the image map/ground survey approach. There should be legal provision for the systematic registration approach identified – if selected as a suitable approach.
13	How are boundaries monumented?	Legislation and survey policies dictating the monumentation requirements for boundaries will have considerable time and cost implications for large scale registration efforts (and will have ongoing user cost implications for registration). In reviewing the 'in-practice' and legislated monumentation of boundaries, policy-makers should consider what is necessary under a fit-for-purpose approach.
14	In a dispute over boundaries, which are more important, boundary monuments or registered survey plans or coordinates?	Answer format: Describe. The answer to this question will impact decisions around the requirements for sporadic or systematic registration, if undertaken.
15	Is there a legal requirement that land parcels are surveyed?	Impacts the costs and required approach to first-registration.
16	Are cadastral surveys connected to the national geodetic control network?	If yes, there may be increased cost implications for both the first registration and for further investment in the geodetic network. Timeframes for implementation may also be longer. If no, this may speed up and lower the costs of first registration, but the longer-term implications of such a policy should be discussed.

	Question	Follow-up / How to use this information
17	Can land parcels be defined on the basis of maps?	Defining land parcels on the basis of maps through a participatory approach may best fit the needs of a country where few parcels have been registration and where there is a strong need for pro-poor tenure security. Such a process will require supportive legislation, satellite or aerial imagery and a review/discussion of the contexts which may not be supported (eg. urban high rise). Legislation and land policies that do not permit the definition of land parcels based on satellite or aerial image maps should be reviewed in terms of a 'fit-for-purpose' approach.
18	Do cadastral surveyors have to be registered? If so, what is the process of registration and what body manages the registration process.	The development of a surveying profession will support land administration over the longer term, and consideration should be given to ensuring adequate structures are in place to ensure the quality and transparency of survey services. Care should be taken to ensure a fit-for-purpose approach – especially in the context of first registration – and advice can be sought from the International Federation of Surveyors (FIG).
19	Are cadastral surveys undertaken by government surveyors, private surveyors or both?	The implications of the approach taken should be discussed. The use of government surveyors may enable greater provision for planning and control over land registration processes, but this will likely come at a higher cost. If private surveyors are enabled, a professional body to support them should be established (see Qn 18) and consideration of pro-poor approaches should also be made.
20	How many registered surveyors are there who can undertake cadastral surveys?	Consider this question in the context of Qns 17, 18 and 19. Are there enough registered surveyors to undertake first (and later) registration? In what timeframe and at what cost? A fit-for-purpose approach should be promoted.
21	Are cadastral index maps available?	Cadastral index maps will facilitate the land reform process and may enable the conversion of records as a cheaper, preliminary approach to land reform.
22	If so, are they kept up-to-date?	Cadastral index maps that are considerably out of date may not be cost-efficient if simply converted.
23	Is there an annual land tax?	If in existence, the data compiled to tax land may support the land-reform process. In addition, land taxation will support the funding required to establish and maintain LAS.
24	If so, how is it assessed, how is it collected?	Identify the data annual land taxation is based on, and evaluate its potential to support the land reform process. The costs in collecting land tax should be assessed against the profits and should be later reviewed in the context of the calculated operating costs for the LAS.
25	What taxes, fees and charges apply to the registration of a transfer by sale?	Taxes, fees and charges will both promote and limit the capacity of the LAS. Community education is required to promote an understanding of the services that taxes, fees and charges provide. However, pro-poor policies must be adopted to ensure an equitable land reform process and delivery of LAS.
26	What regulations govern the maximum and minimum sizes of land parcels and details such as road reserve widths, parcel frontages etc.?	Discuss these regulations in the context of what is known to informally exist – can these regulations be changed or relaxed temporarily? What options are there for enabling the formalization of informal areas, whilst promoting pro-poor and equitable land policies?
27	What controls exist over land use? How are they enforced?	To what extent will the proposed LAS reform process impact, limit and promote land-use controls?

Step 2: Understand existing rights recognized by law

Table 1.2 provides a framework for recording the property rights recognized in a country's laws that can be formally registered in the country. This table is a guide to what is currently possible under existing laws.

It should be completed by a government staff member or an individual who has similar or relevant knowledge relating to land and property legislation. Some consultation with other staff members, agencies, academics, non-government organizations and community representatives may be required to determine if they provide an adequate basis for recording property rights.

Key issues to be discussed with reference to this information include:

- How complex is it to gather this information; are there many laws governing property rights and/or many agencies (and ministers) responsible for implementing these laws?
- What are the existing challenges of these legally recognized property rights; are they representative of *de facto* property rights in place?
- What is the strategic vision for the future (developed from Table 1.1) and what is the likely impact on property rights?
- How are these rights recorded and what are the ongoing implications for cost, time and resourcing if all these property rights are maintained?

Table 1.2: **Existing rights recognized by law**

Name of Right	Legal Basis (specify law)	Can be upgraded to (specify if appropriate)	Term of Right			Rights (Y or N)						Comments/Elaboration For example, the historical basis for this right, any comment on its use, etc.
			Perpetual	Fixed Term (yr)	Basis for Extension	Sale	Inheritance	Mortg.	Sub-Divide	Develop	Other (specify)	

Step 3: Estimate the number of properties

The number of properties estimated in a country is the basis for estimating the costs of first registration and the ongoing operation of LAS. It also provides a basis for estimating potential revenue in the form of taxes and transactional fees.

Figure 4 gives a workflow to estimate the number of properties in a country. Where reliable land holding (property) information is not available (i.e. where the existing LAS is not well developed., the population is deemed to provide the best estimate of the number of land parcels, although this relationship will vary due to factors such as the land tenure regime in place, population density, percentage of population in urban areas, etc.

Table 1.3 provides a template for recording the information gathered from the workflow and for estimating the number of properties. The number of properties is estimated per administration area (based on the lowest available administration area, for example zone, region, district, ward, etc.), which can be added to provide a nationwide estimation. Clearly, while one person should be responsible for completing this table, contact needs to be made with each administration area to collect and, in some cases, provide a best estimate and relevant information. In some cases, civil society organizations may be able help provide "best local estimates" where a local administrative area does not have the data or capacity to do so.

In this table (Table 1.3):

- The number of items in **Column A** should tally with the number of administration areas (at the lowest level) within the country.
- **Column B** uses the best estimate of population available for each administration

Table 1.3: Basic census and other data

A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
Administrative Area	**Population**	**Households**	**Ave. Pop/HH**	**% Pop. Urban**	**% urban pop. in condomin.**	**% of urban prop. non-resident.**	**% rural pop. in agric.**	**Ave. plots/HH in agric.**	**% of rural plots non-agric.**
- For the lowest level of administration - There should be one row to each administration area	Provided by local sources or census data.	Provided by census or calculated as: = (Column B) / (Column D)	Best local estimate.	Local sources or World Bank.	Best local estimate or 0.	Best local estimate or 25%.	Best local estimate or 100%.	Agricultural census data or best local estimate.	Best local estimate or 25%.
Total									

area and the source of this information should be recorded.

- **Column C** is the number of households per administrative area.
  - Where census information is **available**, this should be used.
  - Where census information is **unavailable**, values in this column should be calculated as: value in column B (population of administrative area) divided by value in column D (estimate of the average population per household) to provide the estimated number of households.
- **Column D** should only be estimated if census information is unavailable, as per the point above.
- Values for **Column E,** the percentage of the population residing in urban areas are obtained from local sources or from World Bank "country at a glance" information (http://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS). The source used should be recorded.
- **Column F,** the percentage urban population living in condominiums is based on the best local estimate (or assumed to be zero if no information is available).
- **Column G,** the estimate of the percentage of urban property that is non-residential (commercial, industrial, public land) is based on local knowledge or assumed to be 25 per cent if no information is available.
- **Column H,** the percentage of the rural population dependent on agriculture is based on the best local estimate or assumed to be 100 per cent if no information is available.
- **Column I,** the average number of land parcels per rural household dependent on agriculture is based on agricultural census data or local knowledge of the agricultural activity. An allowance should be made for a residential plot, plus some agricultural plots, per household.
- **Column J,** the percentage of land parcels in rural areas used for non-agricultural (and household) purposes (i.e. reserves, public land, commercial use, etc.) is estimated based on local knowledge or assumed to be 25 per cent if no information is available.

Typically, even where full information exists (and particularly where the information is derived from tax mapping), there is a strong likelihood that the number of land parcels in an administration area (particularly urban) has been underestimated. This is due to the existence of informal settlements and/or the number of legal land parcels that may not be subject to or accounted for through taxation. There is also the possibility that condominium properties have not been adequately accounted for.

Table 1.4 is then automatically generated from the responses to Table 1.3:

Of course, given the central role that the number of estimated properties in a country and administration area will have on the overarching costing of land administration services, a significant amount of time should be spent validating and discussing the accuracy of these estimates. Figure 4 should again be used for this validation, including the following actions:

- Strategies 2, 3 and 4 are used to fill-in information from Table 1.4 that is not available from existing data, possibly either in terms of urban or rural sectors or in terms of administrative districts. A new table of estimated properties is produced by merging the existing data that is deemed reliable with the new information from Table 1.4. The following strategies are used to prepare the fill-in information in Table 1.4:

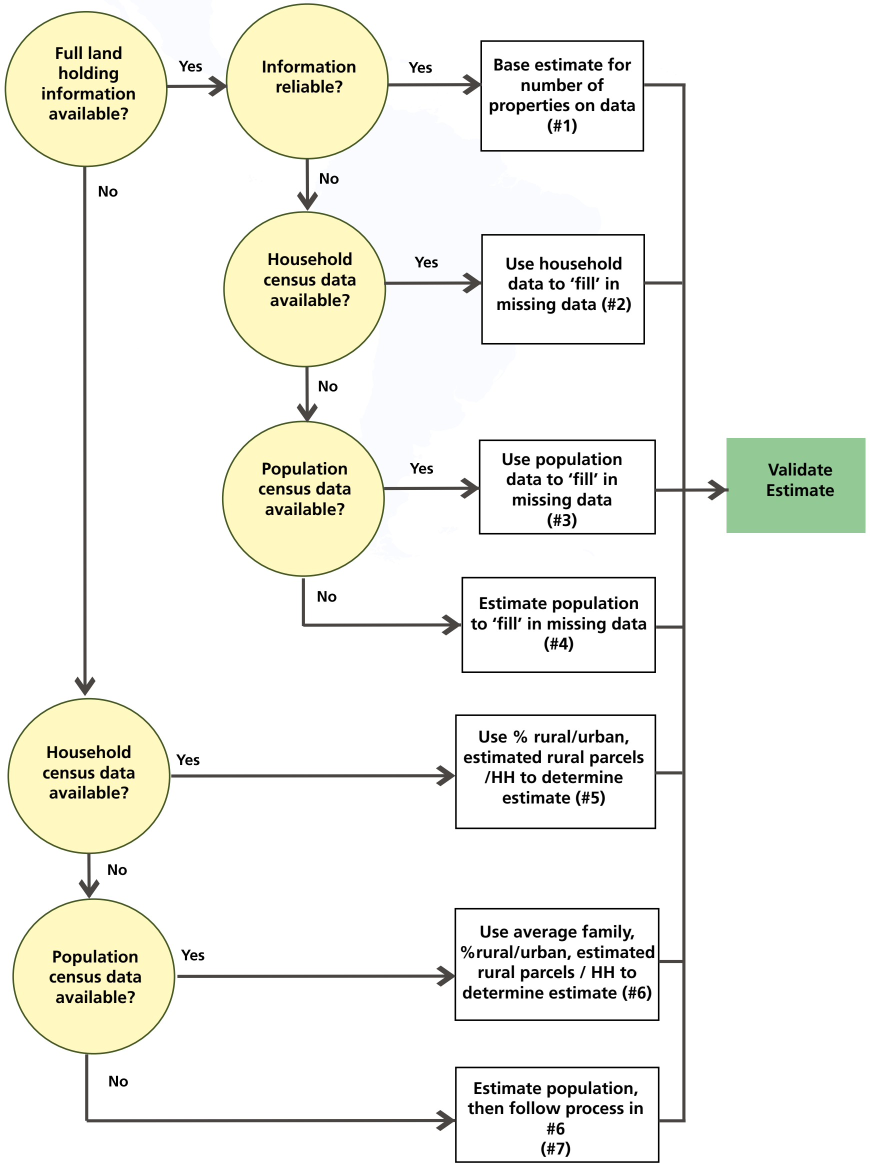

Full land holding information available?
Yes
Information reliable?
Yes
Base estimate for number of properties on data (#1)
No
No
Household census data available?
Yes
Use household data to 'fill' in missing data (#2)
No
Population census data available?
Yes
Use population data to 'fill' in missing data (#3)
Validate Estimate
No
Estimate population to 'fill' in missing data (#4)
Household census data available?
Yes
Use % rural/urban, estimated rural parcels /HH to determine estimate (#5)
No
Population census data available?
Yes
Use average family, %rural/urban, estimated rural parcels / HH to determine estimate (#6)
No
Estimate population, then follow process in #6 (#7)

Figure 4: Workflow to estimate the number of properties in a country

Table 1.4: **Estimated properties by administrative area**

Administrative Area	Land Properties		Condominiums	Total Properties
	Urban	Rural		
Copied from Column A, Table 1.3	From Table 1.3: [C * (E * (1 – F) * (1 + G)]	From Table 1.3: [C * (1-E) * { (H*I) + (1–H) } * (1+J)]	[C * E * F]	Sum urban, property and condominium properties.
Total				

  - Strategy 2 uses existing household census data;
  - Strategy 3 uses estimates for average household sizes and population census data to estimate the number of households; and
  - Strategy 4 uses estimates for average household sizes and an estimate of population in the administrative areas to estimate the number of households.
- Strategy 5 uses existing household census data to prepare the information in Table 1.4, which sets out the estimated number of properties.
- Strategy 6 uses estimates for average household sizes and population census data to estimate the number of households in order to prepare the information in Table 1.4, which sets out the estimated number of properties.
- Strategy 7 uses estimates for average household sizes and an estimate of population in the administrative areas to estimate the number of households in order to prepare the information in Table 1.4, which sets out the estimated number of properties.

The final estimates should be further validated with land sector experts (both in government and academic sectors), demographic experts and civil society organizations. These figures should be compared and considered against those available internationally. Further, the impact of an under- or over- estimation on future costings should be considered; would a range, in this case, be a more useful tool than a single figure?

Step 4: Identify the extent and value of existing records

At this step, the cover and availability of existing registration and cadastral data is investigated and documented to provide an indication of:

- The number and location of properties already registered;
- The scope and necessary work to improve or convert existing records;
- The number of properties not registered and hence the scope of first registration activities.

Table 1.5, is used to record this information. Columns should be added (or additional tables made) as required to ensure that each tenure type (identified in Table 1.2) is included. The administration areas are the same as those recorded in Tables 1.3 and 1.4. Where data is not available, the linking of multiple administration areas (and an explanation) may be useful, or the percentage of registered properties supported by a survey plan could be estimated. In all cases, the reliability and source of data should be noted.

This table ultimately provides a summary of the extent to which each tenure type within a given administrative area has been surveyed, with the number of parcels estimated for each.

Step 5: Develop a tenure typology

The following table now synthesizes existing information, including that on the informal sector.

For each of the tenure types listed in Table 1.1 and repeated in Table 1.5 and all informal tenure types (tenure types present in your country but which do not conform to legislation), estimate the approximate population living on this tenure type and the area that the tenure type covers (to nearest 1,000 km2). For formal tenure types, this area will be equal to or greater than the sum of all administrative areas for that tenure type in Table 1.5 (noting that Table 1.5 includes only the area registered, not any unregistered).

Note that these areas need not add up to the total area in the country as tenures may overlap, but these tenure overlaps should be noted.

The quality of all datasets should also be recorded; this can be indicated by an estimated range in the area and population values. Assumptions or other comments on data should be recorded as footnotes. Sources for this data include statistics agencies, academic reports, administrative data, expert estimates based on the number of properties, etc. All sources should be indicated.

Table 1.5: Summary of existing data registered/recorded

Administrative Area	[Tenure Type from Table 1.2]			[Tenure Type from Table 1.2]			[Tenure Type from Table 1.2]			[Tenure Type from Table 1.2]		
	Parcels	Area	% Surv.	Parcels	Area	% Surv.	Parcels	Area	% Surv.	Parcels	Area	% Surv.

This tenure typology uses the LGAF approach. It may be useful to create several versions of this table with current and future opportunities, i.e.:

- Version 1: Current status of what can be registered and/or exists within the existing legal framework
- Version 2: What could be registered under future possible changes to the policy and legal framework.

Step 6: Identify institutional arrangements

Key information now needs to be captured on the institutional arrangements and mandates that will inform any proposal for land administration reform. Table 1.7 provides the framework to do so, including identifying any overlap between institutional responsibilities and/or any lack of clarity. This information would also have been captured, qualitatively, in Table 1.1, and the discussions around this data should be noted, including the potential implications of reform and reform needs on institutions and mandates.

In the table, identify all institutions present at central and decentralized levels of government and note the type of land/resource each institution's mandate covers, the main laws it is responsible for or operate under, its main responsibilities and the institutions these responsibilities may overlap with.

Table 1.6: Existing rights

Tenure	Area and Population	Legal Recognition and Characteristics	Overlaps with other Tenures
[specify tenure type]	Area: Population:	Legal recognition: Registration/recording: Transferability:	
[specify tenure type]	Area: Population:	Legal recognition: Registration/recording: Transferability:	
[specify tenure type]	Area: Population:	Legal recognition: Registration/recording: Transferability:	
[specify tenure type]	Area: Population:	Legal recognition: Registration/recording: Transferability:	

Table 1.7: **Institutional responsibilities and mandates**

Institution	Type of Land/ Resource	Main Laws	Main Responsibility/ Mandate	Overlaps with other Institutions

Step 7: Decisions on service delivery

A service delivery approach is essential to large-scale land reform and may necessitate a change in an institutional mindset from that of an agency implementing government policy to an agency providing a service that is appreciated and valued by the community. Such a change in mindset promotes the success of land reform by ensuring the public update their land records as a matter of routine when rights are traded or succeeded.

Implementing a service delivery approach requires the following:

i. A careful review of all procedures to update records *in order to re-engineer procedures to promote the most efficient process for end users*
ii. A careful review of the fee schedule to *promote affordability to all sectors of society*
iii. Identification of all offices directly providing LAS services to society *and development of an implementation plan for a service delivery approach*
iv. Development and implementation of a public awareness campaign

In well-developed LAS, there has been a trend to show full or partial cost recovery for LAS.

The requirements to establish a focus on service delivery and undertake **Business Process Reengineering** (BPR) will be context specific. The aim of Table 1.8 is to facilitate decisions on the range of strategies that can be implemented in land offices to support a shift to service delivery; this includes clarity and clear promises on what is being provided, what it will cost and how long it will take.

Table 1.8: Decisions on service delivery

Question	Comment
Is there a clear policy on service delivery, particularly on time and cost?	*If yes, are any changes necessary?* *If no, a BPR process may be required to best ensure and promote a service delivery approach.*
If BPR has been undertaken, has the BPR process been used to rationalize the number, structure and content of the forms and records?	*If yes, no further action is required for this question.* *If no, review the BPR undertaken and identify any need for further BPR or review to promote a streamlined process.* *If no BPR has been undertaken, no further action is required for this question.*
What processes are in place to receive and manage customer complaints?	*List these processes and any workflows. Where possible, review records to determine if changes to this process are required.*
Has the schedule of fees and charges been reviewed to ensure that the charges are affordable to all sectors of society?	*If yes, no further action is required for this question.* *If no, a review should be conducted, in particular to identify any issues that low-income or marginalized members of society may face in registering land rights.*

Step 8: Key issues and initiatives moving forward

There is a need to understand the wider context and influences on land administration reform. The following table of key issues and initiatives should be responded to in consultation with relevant agencies, experts and stakeholders. It supports the identification of constraints and opportunities that may impact decisions and assumptions as part of CoFLAS Stages 2 – 4.

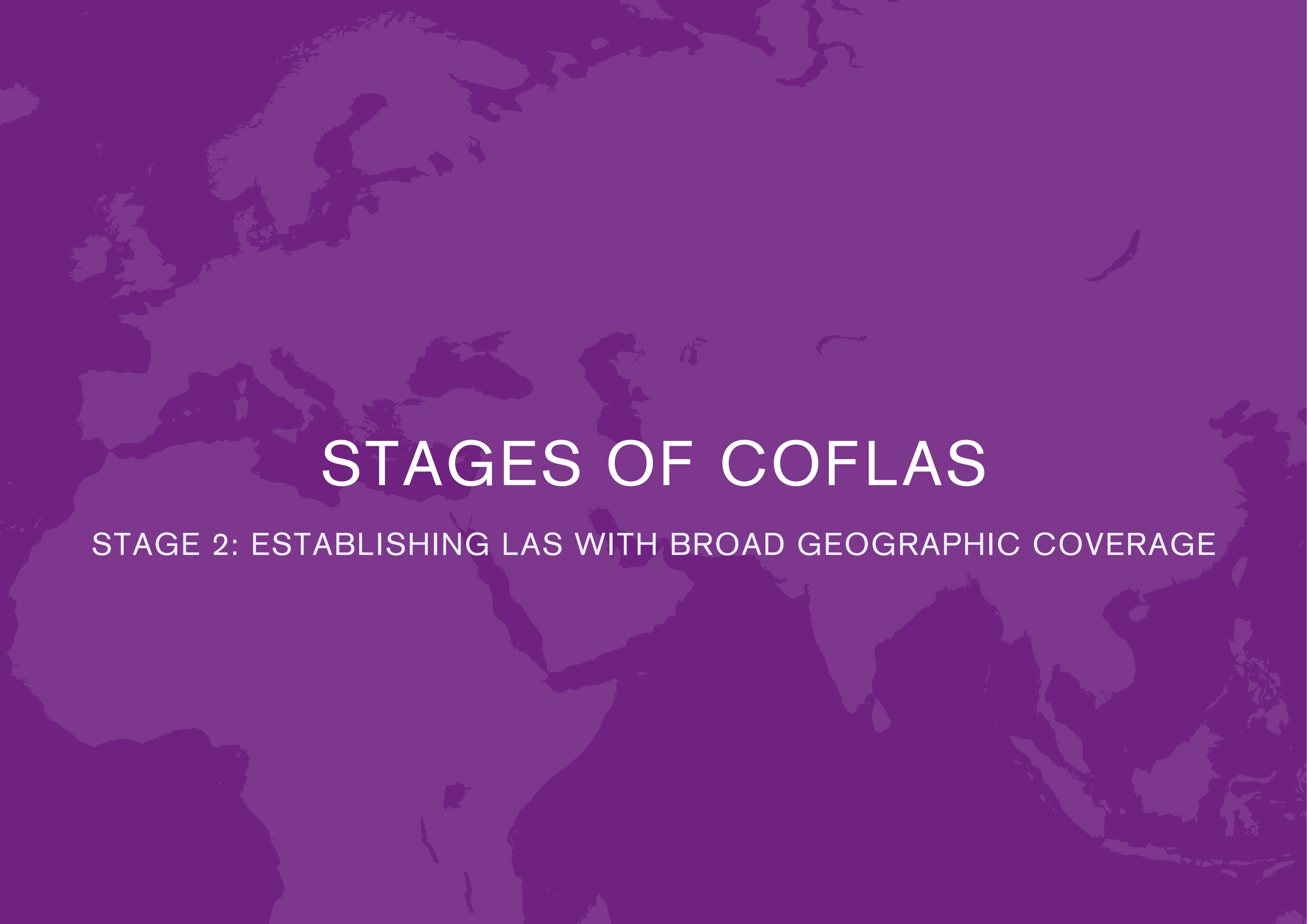
Once this table has been completed, a report on the readiness for LAS reform should be developed, using Tables 1.1-1.9 and including the following information:

- Policy context overview
- What existing rights are enshrined in law?
- Estimated number of properties in the country
- Cover and availability of of registration and cadastral data
- Tenure typology in the country
- Institutional arrangements and mandates
- Overview of service delivery approach
- Overview of wider context and influences on land administration reform.

Table 1.9: Key issues and initiatives

Question	Comment
Is there a list of the key land sector issues?	*If yes, and if the list is up to date, it should be reviewed to provide an insight into key needs that may inform future decisions.* *If no, the development of such a list, in discussion with key stakeholders and experts and preferably using a tool such as LGAF, will inform CoFLAS Stages 2 -4.*
Are these issues documented (for example in a LGAF or other land sector report)?	*If yes, then discuss and confirm agreement across stakeholders.* *If not, there is perhaps less credibility to the list and it should be noted why not.*
How extensive has the discussion been with other key stakeholders in preparing the list of issues?	*I.e.: can you ensure that the viewpoints of all stakeholders have been considered, particularly those of marginalized and less powerful groups?*
If a major LAS reform is planned, have the core processes that will be scaled up been piloted and is there a good understanding of the key process parameters (resource requirements, unit cost, timeframe, stakeholder engagement, etc.)?	*If yes, please document in detail.* *If no, one or more pilots should be designed and established to help inform determine the parameters listed.*
Has LAS capacity development plan been prepared and, if so, does the plan consider capacity development at the three key levels of: i) societal/system; ii) entity or organization; and iii) social group or individual?	*A capacity development plan should be developed*
Does any proposal for LAS reform set out appropriate arrangements and budget for project management and monitoring and evaluation?	*Detail them here.*
What are the main existing government projects/initiatives in the land sector?	*Document all existing government projects/initiatives that may be impacted by, or impact upon this project (including detailing how they will do so).*
What support are development partners providing to the land sector?	*What is the support?* *How will this support be impacted by the project?* *How will the project impact this support?*
Have the land issues been discussed with development partners?	*Yes/no and detail if possible.*

Government authorities hosting a Policy dialogue with local community members at Bulungkhani village in Nepal. Photo ©UN-Habitat



STAGES OF COFLAS

STAGE 2: ESTABLISHING LAS WITH BROAD GEOGRAPHIC COVERAGE

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This stage covers the initial costs of first registration and the establishment of systems and offices to support land reform and LAS. It does not cover ongoing operational costs, which are covered in Stage 3.

Step 9: Completing first registration

The first consideration for undertaking first registration is to explore options for converting lesser documents (documents with lesser rights, lacking survey information, etc.) into new records with improved status or information – known as conversion.

This step draws information from Tables 1.1 and 1.5 from Stage 1. Using this information, the conversion cost (USD per property) can be estimated using Table 2.1. Documents that are in good condition and are easy to scan using automatic document scanning will naturally have a much lower conversion cost per property than existing records and documents that require significant field verification work or which are in poor condition. Where possible, a selected conversion process should be piloted (or a pilot of a conversion process in a relevant area reviewed) to ensure the cost estimate is based on empirical evidence.

Obviously, more than one conversion process (and hence cost) may be applicable in any one country, across multiple administrative areas. Table 2.2 recognizes this and provides a framework to record the breakdown of conversion processes and costs by administrative area. For each administrative area, identify the conversion processes necessary and the estimated unit costs – tallying the total costs and total record/properties covered.

The next step is to estimate the cost of completing first registration by systematic registration. The estimated unit cost of systematic registration is decided based on

Table 2.1: **Estimated unit cost of conversion**

Conversion process from [tenure type] to [tenure type]					
Current status of existing records and documents	Documents sorted and consolidated, in good condition and regular sizes for automatic document scanning.	Documents sorted and consolidated, but additional work due to poor condition and/or irregular sizes	Some additional work required, but no need for field verification (sorting/ consolidation, irregular sizes)	Significant work required for conversion (extensive travel, sorting/ consolidation, poor condition/ irregular sizes, some field verification)	[other]
Conversion cost/property (US$)	0.50	1.00	2.00	5.00	[specify cost]

Table 2.3. Where possible, the unit cost should be based on systematic registration pilot activity with a careful assessment of the likely unit cost of scaling up systematic registration under the range of expected conditions. Table 2.4 sets out the scope of the requirements for systematic registration (based on the estimated properties in Table 1.3, less existing registered properties from Table 1.5, less the properties planned for conversion from Table 2.2), the cost of systematic registration and the estimated person months required (based on either the international experience of 50 properties/person month or better information available from pilot systematic registration activity. Note that the scope of the proposed systematic registration activity may be less than the total estimate for the number of unregistered properties as systematic registration may be phased or some types of properties (for example condominiums) excluded from systematic registration.

Table 2.2: Estimated cost of first registration by conversion

Administrative Area	**Conversion Process 1**		**Conversion Process 1**		**Conversion Process 1**		**Total**	
	Record/Prop.	**Unit Cost**	**Record/Prop.**	**Unit Cost**	**Record/Prop.**	**Unit Cost**	**Record/Prop.**	**Cost**
Total								

Table 2.3: Estimated unit cost of systematic registration

Systematic Registration process	Adjudication by local volunteers, no surveys	Use of large-scale image maps with little investment in the geodetic reference network, paid field staff.	Use of large-scale image maps with investment in the geodetic reference network, paid field staff.	Ground surveys, with investment in GRN, paid field staff.	[other]
Systematic Registration cost/ property (USD)	1	10	15	50	[specify cost]

The estimated cost of first registration is calculated based on Tables 1.3 (estimation of total number of properties) and 1.5 (estimation of existing registration). Taking account of the records that are already registered, and/or can be easily converted, Table 2.4 estimates the number of properties that would need to undergo first registration, by administrative area, and provides an estimation of the unit cost based on the method selected from Table 2.3.

The last step in preparing the plan for first registration is completing the following set of questions. Comments are provided below as guidance to consider in responses.

Table 2.4: Estimated cost of first registration by systematic registration

Administrative Area	**Land Properties**				**Condominiums**		**Total** (person months (pm) estimated at 50/___ [specify] properties/pm)		
	Urban		**Rural**						
	Prop.	**Unit Cost**	**Prop.**	**Unit Cost**	**Prop.**	**Unit Cost**	**Prop.**	**Person mths.**	**Cost**
Total									

Step 10: Establishing a spatial framework for LAS

The proposal for LAS reform is not expected to include costs for establishing or upgrading the geodetic reference network (GRN) or for photogrammetric line mapping. It is also not expected to provide maps at small- to medium-scales that have little direct relevance to LAS (i.e. hydrographic charts, levelling networks, topographic mapping, digitising existing mapping, etc.). Despite this, it should be noted that such activities and outputs still have a broad value for society, and a cost benefit analysis is recommended to identify opportunities for revenue and/or low-cost service provision.

CoFLAS does support the estimation of costs that may result from establishment of Continuously Operating Reference Station (CORS) networks and acquisition of High-Resolution Satellite Imagery (HRSI) that may support first registration efforts. HRSI is required to be sub-metre pixel, and preferably sub 0.5 metre pixels. The CORS

Table 2.5: Strategy to complete first registration

Question	Comment
Has the proposed conversion activity been piloted? If, so summarize the results.	*Conversion activities should be piloted to ensure cost estimates are accurate, they meet the needs and to identify early-on any necessary adjustments.* *Summarize here the key points that should be noted for ongoing conversion activities.*
Has the proposed systematic registration activity been piloted? If, so summarize the results.	*As above, for systematic registration.*
Is the systematic registration and/or conversion activity to be phased? If so, provide details of the planned phasing.	
Are any changes to legislation necessary to undertake systematic registration and conversion?	*Changes to legislation may include greater flexibility in survey standards (i.e. allowing demarcation on high-resolution satellite imagery and/or the use of community enumerators and dispute-resolution processes).*
Have lower cost approaches for conversion and/or systematic registration been explored?	*Lower cost approaches include adjudication by local volunteers with few or no surveys (may require legislative change).*
Have time-based work plans been prepared for the conversion and systematic registration activities? If so, provide detail.	*Table 2.4 promotes the identification of person-months required for first registration. This should be used as a basis to develop work plans and identify the time frame required for such activities.*
What is the strategy to staff the systematic registration activity?	*Additional staff are likely to be needed – how will they be acquired, trained, etc.?*

stations are classed into two types: prime CORS stations covering about 15,000 km^2 and "fill-in" CORS stations covering about 1,000 km^2.[4]

Table 2.6 provides for the costing of base mapping and surveying relating to CORS and HRSI. These costs may be included and reported as unit costs for systematic registration.

Items 1 – 3 calculate the number of prime and fill-in CORS required, based on the size of the country.

Items 4 – 7 provide an estimate of the costs, pending decisions on the existing infrastructure that may be adopted (i.e. CORS in urban areas can be located on existing buildings, but in rural areas may require an additional building or electricity supply).

Items 8 – 9 provide the cost for purchase of HRSI, pending decisions on imagery provider and resolution. One or more vendors should be approached to best estimate these items.

Again, a number of questions should be discussed amongst key stakeholders to justify costs (or the absence of costs) in this section. There are multiple options and configurations that should be considered.

Land surveying activities in Kalehe Territory, South Kivu Province in the Democratic Republic of Congo. Photo ©UN-Habitat

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[4] It is assumed that the prime CORS stations cover a circular region with a radius of 150 km and the "fill-in" CORS stations cover a circular region with a radius of 35 km, with both coverages reduced by 50 per cent to due overlaps and irregular boundaries for the jurisdiction.

Table 2.6: Spatial Framework – Questions to justify costs[3]

#	Item					Number/Cost
1	Area of country	Square kilometres (km^2)				
2	Number of prime CORS	= integer (row 1 divided by 35,000 km^2 + 0.5)				
3	Number of "Fill-in" CORS	= integer (row 1 divided by 2,000 km^2 + 0.5)				
4[3]	Cost of Prime CORS (row 2 x appropriate cost)[1]	Existing buildings with power and internet	Existing building with power	Need to provide building and utilities	Other [specify]	
		USD 30,000	USD 40,000	USD 60,000	[specify]	
5	Cost of "fill-in" CORS (row 3 x appropriate cost)	Existing buildings with power and internet	Existing building with power	Need to provide building and utilities	Other [specify]	
		USD 20,000	USD 30,000	USD 50,000	[specify]	
6	Annual operating cost (row 4 x appropriate cost)	Cost/station (minimal)	Cost/Station (low internet costs)	Cost/Station (high internet costs)	Cost/Station Other [specify]	
		USD 1,200	USD 2,400	USD 6,000	[specify]	
7	CORS software with portal and ePayment	Specify if needed – could be up to USD 100,000				
8	Area covered by HRSI	Square kilometres (km^2)				
9	Cost of HRSI (0.5m, geo-referenced, ortho-rectified) (row 8 x approp. cost/km^2)	Competitive Price/km^2	High Price/km^2	Other/km^2 [specify]		
		USD 15	USD 30	[specify]		
10	**Total investment cost**	**= row 4 + row 5 + row 7 + row 9**				

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[3] Note that the unit cost of USD 30,000 for a CORS station is based on the developing country experience quoted by Byamugisha (2013). The experience in developed countries is that the cost of GNSS receivers with choke-ring antennae can be bought in bulk for USD 10,000/CORS.

Table 2.7 Spatial Framework – Questions to justify costs

Question	Response
If investment in the spatial framework beyond CORS and HRSI is proposed, is there a cost-benefit analysis? If so, provide details.	
Can the proposed estimated annual cost to operate the CORS (row 6 in Table 2.6) be funded? If so, how?	
What capacity development is planned to support the introduction of CORS?	
Is there a proposal to phase the acquisition of HRSI? If so, provide details?	A phased acquisition may be preferable depending on the necessary timeframes for first registration. Ideally HRSI should be used within 5 years of capture.

Step 11: Establishing a physical infrastructure for LAS

The physical infrastructure required for LAS includes furniture, vehicles, non-major information technology equipment (i.e. office computers and associated printers, but not the technical equipment to support the main ICT functions, such as servers etc.).

Table 2.8 provides the basis for estimating the total staff requirements, based on policy decisions. Low-level staffing for LAS service offices will obviously result in less costly physical infrastructure set-up and cheaper ongoing operational costs, but will likely require significant investment in first registration and computerization of records. A cost benefit analysis of the different policy options is required to select the appropriate option.

Table 2.9 provides a framework for estimating the costs of physical infrastructure in setting up individual land offices to provide LAS services. Naturally, such costs are largely driven by policy decisions on where LAS services are to be provided.

Using information from Table 1.3 on the estimated number of properties, and Table 2.10, which estimates the space needs within LAS office workspaces, Table 2.11 can be completed. Table 2.11 has the following fields:

- Proposed LAS office: May correspond directly with administrative area, but there may also be many offices per administration area, or several administration areas per LAS office

Table 2.8: Basis for estimating the total staff requirements under CoFLAS

Number of staff in the office	**High-level of Staffing/Office**	**Medium-level of Staffing per Office**	**Low-level of staffing per office**	
Number of management/ administration/other non-technical staff relative to total registration and survey/cadastre staff	About the same as the number of registration and survey/cadastre staff	About half the number of registration and survey/cadastre staff	About 10% of the number of registration and survey/cadastre staff	
Registration staff per 100,000 properties covered by the office	Manual records, complicated registration process, limited role for private sector	Efficient registration process, possibly computerized, limited role for private sector	Computerized records, efficient registration process, substantial role for private sector	
	10	5	3	
Survey/cadastre per 100,000 properties covered by the office	Survey/cadastre not automated, limited role for private sector	Survey/cadastre automated, limited role for private sector	Survey/cadastre automated, limited role by government	LAS services provided without cadastre
	10	5	3	0

Table 2.9: LAS office typologies

Detail		**Office Type 1** [specify]	**Office Type 2** [specify]	**Office Type 3** [specify]
Role of Office (if different)				
Approximate number of properties				
Staff/100,000 properties	Manag./admin./ other			
	Registration			
	Survey			
Nominal useable space (m²)				

- Estimated properties – can be estimated using Table 1.3
- Office type – is as specified in Table 2.8
- Staff – numbers in management/registration/cadastral roles are determined based on table 2.8 and the number of properties the proposed LAS office will cater to
- Proposed area – calculated from Table 2.10, using the total number of staff per office and the number of property records per office
- Existing area – of existing office space where available (0 if no information available)
- Construction cost – estimate of average cost to construct a new office (0 if office is leased
- Annual lease – estimate for the annual cost of renting office premises.

The total cost of physical infrastructure is the cost of constructing or leasing additional premises plus the total cost of vehicles, furniture, equipment, etc. as identified in Table 2.8.

Table 2.12 then seeks a justification of decisions made in the preceding tables for this step. Again, key stakeholders should be brought together to discuss these questions and issues. Discussions can also be held via email, if shared with all relevant stakeholders, to conserve time and costs.

Table 2.10: Specification of office workspace standards

Office Use	**Specification of Requirements**				
General working space	Standard		Other [specify]		
	10 m^2/person		[specify] m^2/person		
Front office for visitors/clients	20 m^2				
Record archive (properties/m^2)	Single file/property	Thick file/property	Two files/property	Multiple files/property	Other [specify]
	10,000	5,000	1,000	500	[specify]

Item	**Unit Cost**	**Office Type 1**		**Office Type 2**		**Office Type 3**	
		Number	**Cost**	**Number**	**Cost**	**Number**	**Cost**
Vehicles							
Sedans							
Microbus							
4WD							
Motorbike							
[other]							
Furniture							
Customer counter							
Meeting table/chairs							
Desk/chair							
Filing cabinet							
Map cabinet							
Shelves							
[other]							
Equipment							
Generator (large)							
Generator (small)							
Split system air-con.							
Window air-con.							
Photo-copier (large)							

Item	Unit Cost	Office Type 1		Office Type 2		Office Type 3	
		Number	**Cost**	**Number**	**Cost**	**Number**	**Cost**
Photo-copier (small)							
Projector							
Screen							
Electronic tracking system set (incl. equip)							
GPS set (incl. equip)							
Tablet							
Office computer							
Laptop							
Office printer (large)							
Office printer (small)							
Scanner A3							
Scanner A4							
[other]							
Total cost/office type							

Table 2.11: Estimated cost of physical infrastructure

Proposed LAS Office	Estimated Properties	Office Type	Staff				Proposed (m2)	Existing (m2)	Construction		Annual Lease	
			Mgt.	Reg.	Cad.	Total			Cost/m^2	Cost	Cost/m^2	Cost
Total												

Table 2.12: Decisions on physical infrastructure

Question	Comment
What is the justification for the purchase of any vehicles? Can approvals be obtained for the procurement of proposed vehicles? Can the operating costs of the vehicles be covered by available funds?	
What decision has been made for the establishment of the LAS offices? Is it related to the number of properties and expected land market or is it purely related to administrative areas? Justify this decision.	
How was the provision for archive space decided?	
Was an investigation made of available office space?	
Is leasing office space a better option that constructing new buildings?	

Step 12: Establishing information communications technology for LAS

Many countries have adopted a phased approach to the development and/or adoption of software and information communication technology (ICT) for LAS. Table 2.13 provides an overview of options for the development of LAS software.

Typically, open source software will have the cheapest up-front cost, but will require in-house capability to customize and provide longer-term support. International procurement for the development of customized software is likely to be the most expensive upfront option, but will specifically address the local needs; however this option may be difficult and expensive to maintain in the longer term.

ICT infrastructure is typically implemented with regional offices providing (larger, less frequent) centralized support functions such as database development and maintenance, data distribution, GIS and digital mapping, storage and archive, etc. to support local offices. Such ICT offices may or may not be collocated with LAS offices.

Table 2.14 allows the costing of up to three ICT office typologies (where more than three types of ICT office are proposed, or already exist, additional tables should be completed). For each typology, identify the role of the ICT office, relationship to LAS offices, typical staffing across four or more roles, nominal useable space required, estimated annual cost of internet connections, estimated annual cost of network and hardware as well as estimated cost of construction or rental of office space. The necessary equipment for each office *type* should also be calculated and costed.

Table 2.13: Development of LAS software

Approach to Software Development	Project based software developed in-house or with support from local IT companies or technical advisers	Open source software, such as FAO SOLA, with development partner support	Design, development and testing by central government IT agency	International procurement using in-house or contracted specialists to prepare the specifications, assist in bid evaluation and assist in contract management.	[other]
Estimated cost of software development/customisation (USD)	USD 200,000	USD 100,000 to USD 200,000,000 (for software configuration, customization and, where required, extension)	USD 200,000 to USD 500,000	USD 1 m to USD 10m	[specify cost]
Estimated annual cost of software maintenance to start in 20__	Project or open-source software	Contractual arrangement with local software house	Contractual arrangement with large international company	[other]	
	10% of the cost of software development[4]	20% of the cost of software development	30% of the cost of software development	[specify % of cost of software or $/year]	

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[3] The most expensive experience with SOLA has been in Lesotho where the annual cost of software support is about USD 50,000 with an initial investment of USD 300,000. In Tonga, the annual maintenance cost is about USD 12,000 for a USD 150,000 customization effort. In Samoa, the annual maintenance is now about USD 5,000 for a USD 250,000 pilot effort.

A training session for land administrators from Turkana County on the use of the STDM based land Information Management System. Photo ©Rhea Lyn Dealca

Table 2.14: LAS ICT office typologies (a)

Detail		ICT Office Type 1 [specify]	ICT Office Type 2 [specify]	ICT Office Type 3 [specify]
Role of ICT office (if different)				
Relationship to LAS Offices				
Typical Staffing	System support			
	System development			
	Desktop support			
	Other [specify]			
Nominal useable space (m2)				
Estimated annual cost of internet connection (USD)				
Estimated annual cost of network, hardware and desktop support (USD)				
Estimated cost of office construction (USD____/m2) if applicable				
Estimated annual cost of office rental (USD____/m2) if applicable				

Table 2.14: LAS ICT office typologies (b)

Item	Unit Cost	ICT Office Type 1		ICT Office Type 2		ICT Office Type 3	
		Number	Cost	Number	Cost	Number	Cost
Equipment							
Generator (large)							
Generator (small)							
Split system air-con.							
Window air-con.							
Photo-copier (large)							
Photo-copier (small)							
Projector							

Item	Unit Cost	ICT Office Type 1		ICT Office Type 2		ICT Office Type 3	
		Number	**Cost**	**Number**	**Cost**	**Number**	**Cost**
Screen							
Server (large)							
Server (local office)							
Network							
Desktop computer							
Laptop							
Tablet							
Office printer A4 (large)							
Office printer A4 (small)							
Plotter/Printer A0							
Plotter/Printer A3							
Scanner A0							
Scanner A3							
Scanner A4							
[other]							
Total cost/office type							

Table 2.15 then allows for the calculation of the total cost of all proposed ICT offices. That is, using the number of LAS offices, identify the number of ICT LAS offices (recalling the types identified in Table 2.14) needed to provide support to the LAS offices. Multiply the number of offices by the costs identified in Table 2.14.

Table 2.15: Estimated cost of ICT infrastructure

Proposed ICT LAS Office	Covering LAS Offices	Cost
Total		

Table 2.16: Accompanies the proposal for ICT-related costs of LAS reform and should again be discussed with key stakeholders

Question	Response
Is there an ICT strategy? If so, provide a key summary.	The ICT strategy should identify the role of ICT staff and offices in supporting LAS delivery. The strategy justifies the number of ICT offices – and costs – required.
What senior manager is responsible for the implementation of the ICT strategy and what are the arrangements for the senior management oversight of the ICT strategy?	Identify who is responsible and what risk management strategies are in place.
Is there a clear strategy to develop the LAS software? Is this process linked to any proposal for business process re-engineering?	Identify why business process re-engineering is/is not needed, and why the selected software option was chosen.
What resources are available to support the development, testing and maintenance of the LAS software.	
What resources are available to support the specification, procurement and contract management of the software and hardware suppliers?	

Step 13: Reviewing and establishing capacity development structures and investment

Whilst CoFLAS only broadly expresses the requirements for capacity development - as a percentage of the overall cost of the LAS reform – capacity development is an important component of establishing and reforming LAS. The costs of capacity development are estimated using Table 2.17, as a percentage of overarching cost of LAS reform. The percentage of costs are roughly proportional to the availability of qualified staff; they should be considered in the context of academic programmes that will support the supply of skilled staff, alongside the scale of the reform intended and the number of staff expected to be employed in the provision of LAS.

Step 14: Project management and monitoring and evaluation

Again, CoFLAS only addresses the requirements for project management, monitoring and evaluation as a percentage of the overall cost of the LAS reform. This in no way diminishes the importance of investing in project management and M&E – such an investment will support and ensure the overall success of reform.

Step 15: Summarize Stage 2 costs

The final step to Stage 2 is summarizing the total estimated costs of establishing LAS with broad geographic cover, using Table 2.21 and drawing data from Tables 2.2, 2.4, 2.6, 2.11, 2.13, 2.14, 2.15, 2.17, 2.19.

Table 2.17: Investment in capacity development

Requirements for Capacity Development	LAS reform is scaling up proven processes and there is no shortage of qualified staff.	The LAS processes being scaled up need to be tested, but there is no shortage of qualified staff.	The LAS processes being scaled up need to be tested, there is some shortage of qualified staff, but the academic sector is sound.	The LAS processes being scaled up need to be tested, there is a shortage of qualified staff and limited capacity in the academic sector.	[other]
Estimated investment in capacity development as % of cost of LAS reform	3%	5%	10%	15%	[specify cost]

Table 2.18: Decisions on capacity development

Question	Response
Is there a HRD/M strategy? If so, provide a key summary	If not, consider the key components of a HRD/M strategy and necessary steps to put such a strategy in place.
Is a training needs assessment of the land sector available?	If yes, detail the elements. If no, consider again what would be required to establish such an assessment.

Table 2.19: Investment in project management and monitoring and evaluation

Requirements for Project Management and M&E	The LAS processes being scaled up are well proven and the agency has strong project management capacity and good M&E skills.	The LAS process being scaled up need to be tested, but the agency has strong project management capacity and M&E skills.	The LAS process being scaled up need to be tested and the agency has limited experience with project management and M&E.	The LAS process being scaled up need to be tested and the agency responsible for LAS needs external assistance with project management and M&E.	[other]
Estimated investment in project management and M&E as % of cost of LAS reform	1%	3%	5%	7% +	[specify cost]

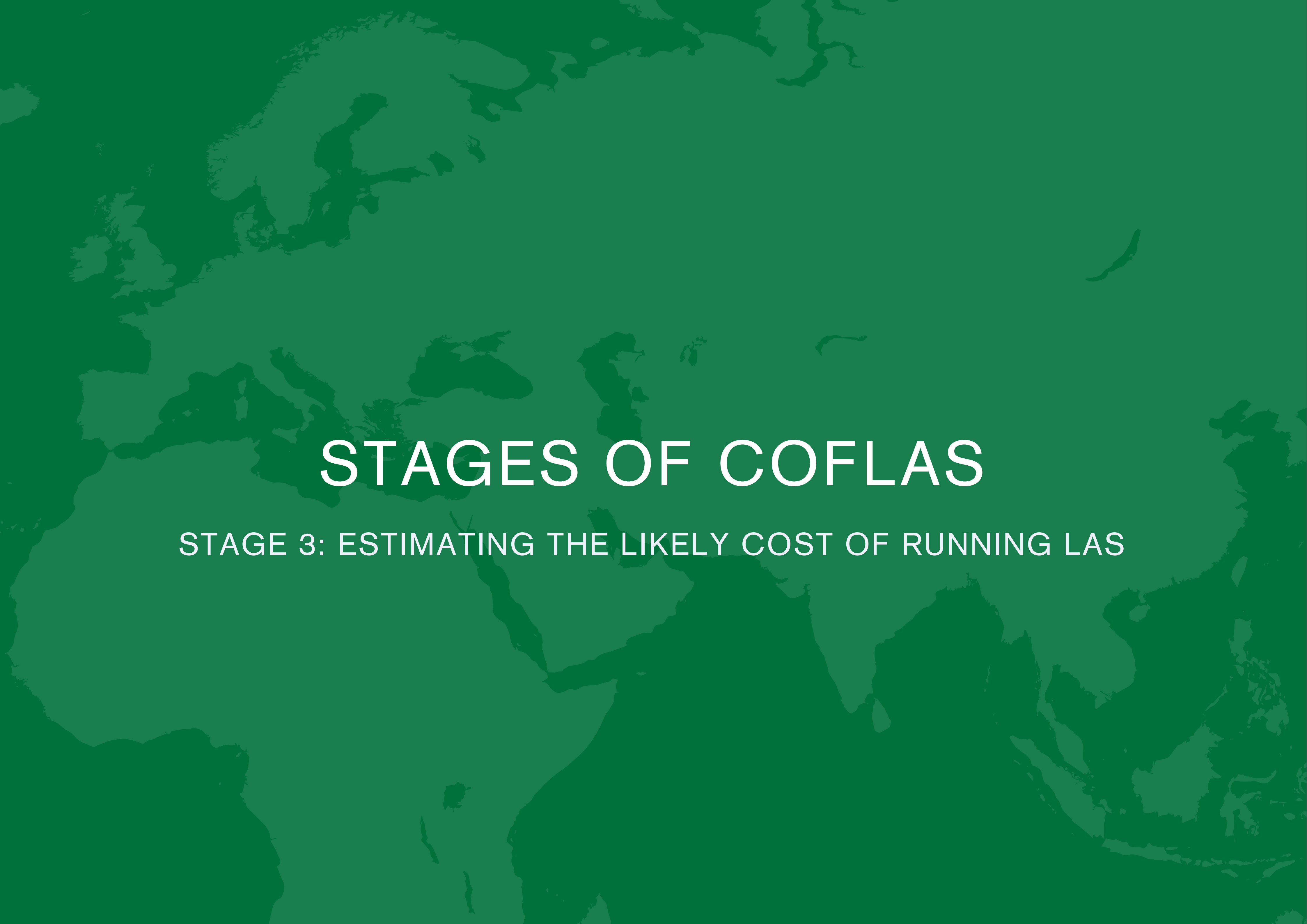
Table 2.20: Decisions on project management and M&E

Question	**Response**
Is there a clear strategy and plan for managing the LAS reform?	*If not, this should be developed before proceeding. If yes, the key components should be documented here and discussed with key stakeholders.*
Is there a results framework or log frame for the LAS reform that clearly sets out a time-based schedule of key outputs and outcomes for the LAS reform?	

Table 2.21: **Summary of Costs to Establish LAS with Broad Geographic Cover**

Activity	Reference	Cost
Conversion of existing records	Total in Table 2.2	
Systematic registration	Total in Table 2.4	
Spatial framework for LAS	Total in Table 2.6	
Physical infrastructure for LAS	Total in Table 2.11	
ICT (software, hardware, infrastructure)	Total in Tables 2.13, 2.14 and 2.15	
Capacity Development	Applied as a % as selected in Table 2.17	
Project Management and M&E	Applied as a % as selected in Table 2.19	
Total		

A section of Medellin town in Colombia. Photo ©Julius Mwelu/UN-Habitat



STAGES OF COFLAS

STAGE 3: ESTIMATING THE LIKELY COST OF RUNNING LAS

STAGE 3: ESTIMATING THE LIKELY COST OF RUNNING LAS

The overarching policy context, and costs of first registration and set-up have been established in Stages 1 and 2. Stage 3 now provides the framework for estimating the annual cost of providing LAS services.

Annual costs are dependent on the estimated number of properties to be registered in the country (estimated in Table 1.4) and an assessment of the ways in which LAS services will be delivered, including:

- The way services are managed
- The way rights are measured
- The spatial framework for the rights
- Other responsibilities of the agency providing LAS services

Step 16: Estimate the annual cost per property of running LAS

Table 3.1 provides a basis for estimating the cost per property of running LAS by identifying the variety of policy choices across the four categories above. For example, ongoing management costs are likely to be higher if there are multiple agencies in a hierarchical structure that are responsible for the provision of LAS

Table 3.1: Table of annual cost/property for LAS

USD (PPP)/ Property	Management	Registration	Cadastre	Other
1	Single agency, central back-office. Flat organization structure. Significant investment in IT system with on-line registration capability.	Central back office. Agency adopts regulatory role with data entry/update by private parties.	All cadastre digitized. Surveys undertaken by private surveyors. Survey plans lodged electronically.	Agency solely focussed on LAS. Valuation, tax collection, planning undertaken by LGAs or private sector.
2	Single agency with limited branch offices (<10). Flat organisation structure. Significant investment in IT.	Central back office. Registration updates undertaken by the agency.	Cadastral surveys undertaken by private surveyors. Survey plans lodged manually.	Agency focused on LAS and providing most LAS services in-house.
5	Multiple agencies, and/or significant regional network (~50 offices). Limited attempt to flatten organizational hierarchy.	Multiple offices, traditional processing of registration without optimizing resources (no back office/front office). IT used for processing (no B2B or C2B interface).	Cadastral surveys undertaken by government surveyors. Significant investment on support of reference frame, NDSI, etc.	Agency largely provides LAS in-house. Agency also responsible for other tasks not directly associated with LAS.
10	Multiple agencies, regional network (~100 offices). Traditional bureaucratic structure.	Multiple offices, traditional processing of registration without optimizing resources, emphasis on paper lodgement and processing.	Cadastral surveys undertaken by government surveyors. High survey standards, requirement for extensive mapping (buildings, land use, etc.) Significant mapping program.	Agency responsible for a broad range of tasks.

services, than if a single agency responsible for services is established and a flatter organizational structure adopted. Similarly, the investment in IT systems with online registration capacity – whilst increasing the costs of Stage 2 – may reduce ongoing costs estimated in Stage 3.

To estimate total costs, a unit cost should be estimated for each of the four categories using the framework of Table 3.1, based on policy decisions in practice or decisions made as part of reform. These four unit costs are added together (as a total cost per property) and then multiplied by the estimated number of properties (from Table 1.4) to find the total annual cost. This total cost is in USD PPP and can be converted to local currency by applying the conversion factor published by the World Bank (http://wdi.worldbank.org/table/4.16).

Because the estimated annual cost calculated above is based on the total estimated number of properties in the country, it will naturally be higher than real costs in a country that is still developing its LAS with broad geographic coverage. Decisions made at Stage 2 will impact the timeframe of costing in this Stage 3. In this, some judgment will be needed on the phasing in of the development of LAS – and this time required to develop LAS with full geographic cover will determine the timeframe across which capacity and resources will be built up to provide the full LAS services (and full cost of doing so).

Step 17: Summarize all annual major costs

Table 3.2 captures a summary of the annual major costs to maintain and/or upgrade LAS, including:

- Cost of office rent (captured in Tables 2.11 and 2.14)
- CORS operating costs (Item 6 at Table 2.6)
- Cost of HRSI (annual program based on cost/km^2 shown in Table 2.6)
- Software maintenance and upgrades (Table 2.13)
- Survey equipment and maintenance (Table 2.9 with estimates for maintenance gained from prior experience and/or conversations with retailers. Decisions under Table 1.1 regarding the role of the public vs. private sector will also impact ongoing equipment and maintenance needs.)
- Internet connection (Table 2.14)
- ICT equipment maintenance, desktop support (Table 2.14)
- Staffing (Based on staffing requirements decisions at 2.8 and ongoing capacity development at 2.17)
- Other (could include upgrading GRN, or other elements determined to be necessary from policy decisions or previous experience)

Table 3.2: Summary of annual major costs to maintain/upgrade LAS

Activity	**Reference**	**Cost/Year**
Cost of office rent (if applicable)	From Tables 2.11 and 2.14 in Annex 2.	
CORS operating costs	Item 6 in Table 2.6 in Annex 2	
Cost of HRSI	Annual program based on cost/km2 in Table 2.6 in Annex 2	
Software maintenance/upgrades	From Table 2.13 in Annex 2	
Survey equipment maintenance	Estimation based on Table 2.9 and decisions in Table 1.1	
Internet connection	From Table 2.14 in Annex 2	
ICT equipment maintenance, desktop support	From Table 2.14 in Annex 2	
Other		
Total		

STAGES OF COFLAS

STAGE 4: LIKELY REVENUE FROM LAS

STAGE 4: LIKELY REVENUE FROM LAS

The two main potential sources of revenue from LAS are:

a) annual land and property taxes and
b) the taxes, fees and charges levied on transactions or LAS services.

A third, developing opportunity for revenue is presented by the collection and sale of geographic and property information collected by an agency. Whilst, at present, Stage 4 addresses only points (a) and (b), this third opportunity should also be evaluated by stakeholders.

Step 18: Estimate annual tax by administrative area

The first step to estimating revenue is to estimate the potential revenue that might be obtained from an annual property tax. This will be based on estimates for the number of properties (estimated in Table 4.1), information on the rate of the tax, and how such a tax will be determined (i.e. this might be property area, property value, etc.). The agency responsible for LAS in the country will have some basis for estimating what this tax might be and will be able to produce a table setting out the potential tax that might be collected.

The framework for this table is set out below, with the total potential tax based on the three types of properties – urban, rural and condominiums. The actual tax

Table 4.1: Estimated annual tax by administrative area

Administrative Area	Land Properties						Condominiums			Total Estimated Annual Tax
	Urban			Rural						
	No.	Ave.	Tax Rate	No.	Ave.	Tax Rate	No.	Ave.	Tax Rate	
Total										

that might be collected will be less than this amount due to inefficiencies in the compilation of the tax roll and the assessment and collection of the taxes. The actual taxes that might be collected may also differ from the initial assessment due to discrepancies and errors in the assumptions for tax rates and the basis for assessing tax. The estimate in the table below therefore needs to be reduced by factors that reflect difficulties in identifying properties and preparing the tax roll, and assessing and collecting taxes. It is not unreasonable to assume that these factors will improve over time so there may be several stages in the implementation of any programme to collect taxes.

Step 19: Estimate annual turnover rate and tax rate for property transfers

The estimated annual taxes, fees and charges from land and property transactions were demonstrated in the CoFLAS methodology development to be a major part of the revenue for service providers. An estimate therefore needs to be made for the expected annual property turn-over or the percentage of properties that are sold each year.

It should be noted that the turnover can change in response to flux in the general economic conditions and land market activity, but can also be impacted adversely if there is a high rate of tax on the registration of the transfer (that is a rate higher than 5-7 per cent). Table 4.2 provides the basis for estimating property turnover and the applicable average cost to register the transfer (either as an average fixed fee or as a percentage of the property value).

Where transfers are permitted, the following table is used to estimate the potential breakdown of the expected revenue from providing LAS registration services. This table is based on the experience of the country case studies.

Where transfers are not permitted, or where there is expected to be substantial revenue from services other than registration (services such as survey services or the sale of map products) then the following table provides the basis for estimating the revenue (add columns for the services that might be provided).

The information in Tables 4.2 to 4.4 are used to prepare Tables 4.5 to 4.7 that set out the expected annual revenue for urban land properties, rural land properties and condominiums respectively.

To be able to determine the expected revenue, some estimate of the average value of the properties is required. *The Economist* magazine publishes information annually on house prices in 23 well-developed economies.[5] Information on prices in a broader range of countries is available on the Global Property Guide,[6] but this information focuses on the expatriate market and not the general domestic market. There is generally information available in most economies on property prices. Although in many cases the sale prices recorded in land offices are understated, most senior land officials have a good idea of market prices. Information is also available from real estate agents and brokers. CoFLAS is based on having this information available for the three property categories: land properties in urban and rural areas and condominiums. This information is added to Tables 4.5 to 4.7.

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[5] http://www.economist.com/blogs/dailychart/2011/11/global-house-prices

[6] http://www.globalpropertyguide.com/

Table 4.2: Estimated turnover rate and tax rate for transfers

	Low market activity with a high transfer fee	Moderate market activity, with average transfer fee	High market activity with average transfer fee	Transfers are not permitted	Other [specify]
Expected annual turn-over (as percentage of properties	3%	6%	10%	0	[specify]
Either, expected fee per transfer as % of value, or	8%	5%	5%	0	[specify]
Expected fixed fee per transfer	0	0	0	0	[specify]

Table 4.3: Expected breakdown of registration revenue

	Active mortgage market	Limited mortgage market	No mortgage market	[specify]
Expected % registration revenue from transfers	50%	50%	60%	[specify]
Expected % registration revenue from mortgages	30%	10%	0%	[specify]
Expected % registration revenue from other services	20%	40%	40%	[specify]

Table 4.4: Expected level of additional services

Service 1 [specify]		Service 2 [specify]		Service 3 [specify]	
Expected % of property holders requesting service each year	Average cost of service (fixed fee or % of property value)	Expected % of property holders requesting service each year	Average cost of service (fixed fee or % of property value)	Expected % of property holders requesting service each year	Average cost of service (fixed fee or % of property value)

Table 4.5: Estimated annual tax by administrative area for urban land properties

Administrative Area	No. (from Table 1.4)	Expected Transfers	Average value	Expected Registration Revenue			Service 1		Service 2		Service 3		Total Revenue
				Transfers	Mortgages	Other	Number	Revenue	Number	Revenue	Number	Revenue	
Total													

Table 4.6: Estimated annual tax by administrative area for rural land properties

Administrative Area	No. (from Table 1.4)	Expected Transfers	Average value	Expected Registration Revenue			Service 1		Service 2		Service 3		Total Revenue
				Transfers	Mortgages	Other	Number	Revenue	Number	Revenue	Number	Revenue	
Total													

The total expected revenue is then the sum of the three totals in Tables 4.5, 4.6 and 4.7. This is the total expected revenue from a complete LAS with broad geographic cover. In a country that is developing LAS, the progression to this final expected revenue from providing LAS services needs to be phased. This phasing will be directly linked to the phasing in the completion of the LAS. This phasing may be by administrative area or by property type, or both. This phasing may result in a series of Tables 4.5 to 4.7 that apply at specified phases in the development of the LAS.

Step 20: Summarize information

Compile information in a suitable format to communicate with key stakeholders, including briefings for key ministers. The information from Table 1.1, alongside the discursive questions for each stage, can be used to formulate an "elevator pitch" to justify the costings on the basis of the key issues and demands in-country. Emphasis should be on the "fit-for-purpose" approach.

Table 4.7: Estimated annual tax by administrative area for condominiums

Administrative Area	No. (from Table 1.4)	Expected Transfers	Average value	Expected Registration Revenue			Service 1		Service 2		Service 3		Total Revenue
				Transfers	Mortgages	Other	Number	Revenue	Number	Revenue	Number	Revenue	
Total													

UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME (UN-HABITAT)

UN-Habitat helps the urban poor by transforming cities into safer, healthier, greener places with better opportunities where everyone can live in dignity. UN-Habitat works with organizations at every level, including all spheres of government, civil society and the private sector to help build, manage, plan and finance sustainable urban development. Our mission is to promote socially and environmentally sustainable human settlements development and the achievement of adequate shelter for all.

THE GLOBAL LAND TOOL NETWORK (GLTN)

GLTN is an alliance of international partners committed to increasing access to land and tenure security for all, with special focus on the poor and women. The Network has an established global land partnership, drawn from international civil society organizations, international finance institutions, international research and training institutions, donors and professional bodies. GLTN develops, disseminates and implements pro-poor and gender-responsive land tools. These tools and approaches contribute to land reform, good land governance, inclusive land administration, sustainable land management, and functional land sector coordination. For more information, visit the GLTN web site at www.gltn.net.

INTERNATIONAL FEDERATION OF SURVEYORS – FIG

FIG was founded in 1878 and is a United Nations and World Bank recognized non-governmental organization of national member associations cadastral and mapping agencies and ministries, universities and corporates from over 120 countries, and covers the whole range of professional fields within the global surveying community, hereunder surveying, cadastre, valuation, mapping, geodesy, geospatial, and quantity surveyors. FIG represents the interests of surveyors worldwide and provides an international forum for discussion and development aiming to promote professional practice and standards.

About this publication:

The Global Land Tool Network identified 'Modernizing the Budgetary Approach of Land Agencies' as a key area for tool development having observed the reliance of land sector reform on international development funds, and the competition for funding with other development sectors. Countries seeking to modernize Land Administration Systems (LAS) often face large and immediate costs to first achieve broad geographic coverage, and then to establish the supporting records, procedures and personnel capacity. Competition for funding and budget is high, hence a strong understanding of 'fit-for-purpose' technologies and likely costs, is essential.

Costing and Financing of Land Administration Services (CoFLAS) is thus a decision-support tool for the costing and project design of land administration services. It prompts discussion on a country's readiness for land reform and provides a series of templates to assist public agencies to identify the core needs and necessary investment for the process. The outcome of a CoFLAS assessment is a series of reports that guide decision making related to land reform, helps to identify the cost-implications of decisions and support fit-for-purpose approaches. It also promotes an understanding of why land reform is needed, provides a framework for identifying core land administration issues and prioritizing actions to address them in addition to helping to determine the methods to be used in undertaking land administration reform.

This document provides a practical implementation guidance for implementing LAS reform within the overarching Framework for Costing and Financing Land Administration Services.

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