Costing and Financing of Land Administration Services (CoFLAS) in Developing Countries

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Topics

• Objective for CoFLAS
• Implementing CoFLAS
  – Comprehensive LAS
  – Running LAS
  – Possible Revenue from LAS services
• Financing LAS reform and services
• Next steps
CoFLAS: Objectives

- Focussed on developing countries:
  - Developing comprehensive LAS
  - Operating and maintaining LAS
- Underpinned by “Fit-for-Purpose” LA
- Intended tool for:
  - Land sector staff preparing proposals for LAS reform
  - Policy-makers assessing proposals for LAS reform
  - Key agencies (e.g. MoF), development partners in reviewing proposals, assessing ‘value-for-money’
- The key decisions that have major cost implications for LAS reform

CoFLAS: Comprehensive LAS

Fit-For-Purpose LA is based on four principles:

- General boundaries rather than fixed boundaries
- Aerial imagery rather than field survey
- Accuracy relates to purpose rather than technical standards
- Opportunities for updating, upgrading and improvement can be implemented over time
CoFLAS: Objectives

CoFLAS does not seek to:

• Identify problems or prioritize LAS reform activity:
  – USAID LTPT Situation Assessment and Intervention Planning Tool
  – World Bank LGAF

• Decide on how to undertake LAS reform:
  – Toulmin & Quan (2000) – experience in Africa
  – Byamugisha Securing Africa’s Land for Shared Prosperity (2013) – modernising infrastructure, appropriate technology, scaling-up

CoFLAS: Implementation Stages

There are four stages in the application of CoFLAS:

• **STAGE 1**, the initial investigation of:
  – the policy, legal and institutional context,
  – estimation of the scope of any LAS reform initiative and
  – demonstration of knowledge of key issues

• **STAGE 2**, estimating the resources/cost in establishing a comprehensive LAS

• **STAGE 3**, estimating the likely costs in running a LAS

• **STAGE 4**, estimating the possible LAS revenue
CoFLAS: Implementation Stages

- Existing System:
  - Key issues (LGAF, other analysis)
  - Plans for LAS reform
    - Piloting of efficient processes
    - Requirements for legislative changes
    - Stakeholder consultation
  - ICT strategy
  - Sector capacity development plan (TNA, HR Strategy)
  - Planning, M&E
  - Government/DP activity and interest
CoFLAS: Implementation Stages

The first stage of CoFLAS gathers the following information:

- Key policy issues that impact on establishing a LAS in the country
- Information to estimate the number of properties
- Analysis of existing records of rights in land
- Preparation of a tenure typology
- Preparation of an Institutional Matrix
- Demonstration of knowledge of:
  - the key issues,
  - the status of stakeholder consultation,
  - other government initiatives and
  - existing development partner support.

CoFLAS: Comprehensive LAS

Establishing a comprehensive LAS typically involves:

- Completing first registration
- Establishing a spatial framework for LA
- Establishing physical infrastructure to support LAS
- Adopting a service delivery philosophy & BPR
- Implementing ICT to support LAS
- Capacity development
- Project management
CoFLAS: Comprehensive LAS

<table>
<thead>
<tr>
<th>Country</th>
<th>Cost/parcel (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>1</td>
</tr>
<tr>
<td>Rwanda – rural</td>
<td>9-11</td>
</tr>
<tr>
<td>Rwanda – urban</td>
<td>9-10</td>
</tr>
<tr>
<td>Namibia</td>
<td>11</td>
</tr>
<tr>
<td>Madagascar</td>
<td>7-28</td>
</tr>
<tr>
<td>Tanzania</td>
<td>45</td>
</tr>
<tr>
<td>Uganda</td>
<td>40</td>
</tr>
<tr>
<td>Ghana</td>
<td>45</td>
</tr>
<tr>
<td>Cote d’Ivoire</td>
<td>7-10</td>
</tr>
</tbody>
</table>

(Byamugisha, 2013)
CoFLAS: Comprehensive LAS

<table>
<thead>
<tr>
<th>Country</th>
<th>Costs (US$/parcel)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Survey Costs (incl. GRN)</td>
<td>Non-Survey Costs</td>
</tr>
<tr>
<td>Armenia</td>
<td>6.11</td>
<td>7.24</td>
</tr>
<tr>
<td>Kyrgyzstan</td>
<td>3.22</td>
<td>7.33</td>
</tr>
<tr>
<td>Moldova</td>
<td>27.66</td>
<td>18.75</td>
</tr>
<tr>
<td>Indonesia</td>
<td></td>
<td>16.30</td>
</tr>
<tr>
<td>Thailand</td>
<td>~10</td>
<td>~14.21</td>
</tr>
<tr>
<td>El Salvador</td>
<td>19.46</td>
<td>10.28</td>
</tr>
<tr>
<td>Peru (urban)</td>
<td>4.61</td>
<td>8.07</td>
</tr>
<tr>
<td>Peru (rural)</td>
<td>23.44</td>
<td>32.25</td>
</tr>
</tbody>
</table>

(Burns, 2007)

CoFLAS: Comprehensive LAS

- Likely unit costs for systematic registration:
  - Adjudication with substantial work by local volunteers and with no spatial framework for $1/parcel
  - Systematic registration can be undertaken for:
    - about $9-10/parcel with little investment in mapping/GRN
    - about $15-20/parcel with investment in mapping/GRN
  - Ground survey methodology is likely to be +$50/parcel
- SR also involves HR - ~50 parcels/person month
- Conversion - ₪ > $/parcel – needs to be cost effective
CoFLAS: Comprehensive LAS

Spatial framework:

• Few countries have invested in new GRN
  (Tanzania - $6.1 M 70 primary/600 secondary, gravity)

• CORS
  – Typical unit cost $30-40,000
  – Additional costs if infrastructure required
  – Various accuracies
    ▪ 0.5m – 1 CORS/500 km²
    ▪ 1-2cm – 1 CORS/70 km²
  – Operating costs can be significant ($500-1000/month)
  – Additional effort to make available to users

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CoFLAS: Comprehensive LAS

<table>
<thead>
<tr>
<th>Source of Large-Scale Maps</th>
<th>Image Scale and Resolution</th>
<th>Unit Costs ($/km²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satellite imagery, ortho-rectified (new, at least 30km²)</td>
<td>GeoEye (0.5m)</td>
<td>Europe</td>
</tr>
<tr>
<td>Aerial photography (250km²)</td>
<td>1/45,000 (0.5 pixels)</td>
<td>31.5</td>
</tr>
<tr>
<td>Line mapping (analogue method)</td>
<td>1/2,000</td>
<td>1,643</td>
</tr>
</tbody>
</table>

(Byamugisha, 2013)
CoFLAS: Comprehensive LAS

The staff requirements for LAS service delivery will depend on:

• How LAS services are to be delivered and roles and responsibilities
• The nature and complexity of the LAS processes and procedures
• The tasks that are expected of staff assigned to LAS service delivery
• The completeness and comprehensiveness of the LAS records
• The level of land market activity, user demands (may be seasonal)

Implementing service delivery requires:

• A careful review of all procedures to update land records and BPR and the rationalisation of forms/data
• A careful review of the fee schedule to ensure land services are affordable to all sectors of society
• The implementation of service delivery in offices providing LAS services
  – Clear promise on quality, cost, time
  – Comfortable customer service areas
  – Help desks
  – Information on procedures, requirements
  – Standards for service delivery > M&E
  – Effective handling of complaints
• The development and implementation of a comprehensive public awareness campaign.
CoFLAS: Comprehensive LAS

Different approaches in developing ICT systems include:

- Project-based LAS ICT software development
- The specification of comprehensive LAS ICT software:
  - to be developed and implemented by a government ICT organisation;
  - implemented by a large private ICT company under contract;
- The development of open-source LAS ICT software
- A combination of the above approaches

CoFLAS: Comprehensive LAS

Key lessons from LAS ICT investment in ECA:

- Start with the development of an ICT strategy
- Plan a small 6-8 month project for BPR
- Hardware should be separate from software development
- TA for project & contract mgmt., QA and capacity building in design
- Clear links to senior managers
- International and national standards should be adopted
- Data quality improvement is a long process > start prior to or in parallel to ICT development
- The period for using two parallel IT systems should be planned well and kept as short as possible
- Sustainability should be a top priority in the design and implementation of the IT system
CoFLAS: Comprehensive LAS

<table>
<thead>
<tr>
<th>Project</th>
<th>Turkey</th>
<th>Kenya</th>
<th>DRC</th>
<th>Vietnam</th>
<th>Pakistan</th>
<th>Guatemala</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Registry and Cadastre Modernization Project</td>
<td>Land Settlement Improvement Project</td>
<td>Urban Development Project</td>
<td>Land Administration Project</td>
<td>Punjab Land Records Management and Information Systems Project</td>
<td>Land Administration II Project</td>
<td></td>
</tr>
<tr>
<td>Project cost</td>
<td>$210.1 M</td>
<td>$100 M</td>
<td>$100 M</td>
<td>$100 M</td>
<td>$127.9 M (original plus additional)</td>
<td>$62.3 M</td>
</tr>
</tbody>
</table>

Capacity Development

Component 3 all CD includes NRD strategic, strategic planning, training and study visits. Component 4 includes capacity building. Total about $6.5 M.

Approx. % budget for CD

| 1.0% | 2.0M | M | 0.7% | 12% |

Approx. % PM and M&E

| 1.0% | 0.0% | 2.0% | 2.2% | 7.8% | 5.4% | 13.8% |
CoFLAS: Running a LAS

<table>
<thead>
<tr>
<th>Management (Adm/Other)</th>
<th>Registration</th>
<th>Cadastre</th>
<th>Other Costs (US$ PPP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.05</td>
<td>0.15</td>
<td>0.75</td>
<td>6.07</td>
</tr>
<tr>
<td>Netherlands</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.10</td>
<td>4.09</td>
<td>4.64</td>
<td>15.81</td>
</tr>
<tr>
<td>Single agency, with 6 regional offices. Significant investment in computer systems.</td>
<td>Computerised system. Rationalising offices. Strong unions.</td>
<td>Cadastral surveys undertaken by Kadaster.</td>
<td>ICT is undertaken in-house; other responsibilities such as land consolidation, reference system, GIS products, other registers, Kadaster International.</td>
</tr>
<tr>
<td>New Zealand</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.97</td>
<td>1.10</td>
<td>1.08</td>
<td>1.59</td>
</tr>
<tr>
<td>LINZ single agency, regulatory role; HQ plus two data centres. Significant investment in cadastral, computer systems.</td>
<td>All dealings registered online by private lawyers. LINZ maintains database.</td>
<td>All surveys lodged online by private surveyors. LINZ maintains data base.</td>
<td>Substantial work outsourced – conveyancing, genetic surveys, cadastral surveys, valuation. Supported with a strong online IT system.</td>
</tr>
<tr>
<td>Sweden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.28</td>
<td>6.42</td>
<td>10.70</td>
<td>8.97</td>
</tr>
<tr>
<td>LAS provided through 7 registration offices and 70 cadastral offices operated by Lantmäteriet and cadastral services in 38 of the 290 municipalities.</td>
<td>Registry information is digital and is available online. Registration information is available in 77 offices nationally.</td>
<td>Cadastral data is digital and available in the offices. Cadastral surveys undertaken by Lantmäteriet and 38 of the 290 municipalities.</td>
<td>Major non-salary expenditure is on consumables and materials with some development costs as well.</td>
</tr>
</tbody>
</table>
### CoFLAS: Running a LAS

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

### CoFLAS: Revenue from a LAS

The information from the questionnaires:

- The property turnover ranged from 3.0% in the Netherlands to 6.1% in Sweden.
- The revenue from registered transfer as a percentage of total revenue ranged from 52.2 to 67.6% of revenue (67.6% in the Netherlands, 52.2% in Peru and 54.0% in Sweden).
- The revenue from registered mortgages as a percentage of total revenue was:
  - 30.9% in the Netherlands (excluding survey and other revenue),
  - 32.9% in Peru
  - 37.4% in Sweden (excluding capital gain/stamp duty and other revenue).
CoFLAS: Financing LAS

- Possible sources of revenue to government:
  - Annual property taxes
    - Effective identification of properties and assessment of taxes
    - Efficient collection of taxes
  - Transaction taxes, fees and charges
    - Need to balance affordability with cost
  - Sale/licensing of data/information
    - Can limit use of LAS data for NSDI and SEG

- Governments with development partner support can fund the development of LAS – but the maintenance/operations need to be sustainable

- Possible strategies for financing LAS:
  - Full funding by government as a public service
  - Setting fees and charges to fully or partially recover the cost of providing LAS services
  - Transferring core parts of LAS delivery to others such as local government or private sector service providers
  - Separating the regulatory and service provision LAS functions > PPP
CoFLAS: Financing LAS

Factors to be considered prior to PPP:

- The feasibility of including systematic registration in any public-private partnership
- Appropriate allocation of risk - alignment of the estimated cost of the investment to the projected revenue from providing LAS services
- Clear measurable indicators for service, cost and access to be:
  - agreed up-front
  - regularly monitored during implementation
- Government must be able to manage and monitor the performance of the private operator
- The private party to be very familiar with the social and political sensitivities in providing LAS services
- The need to ensure that any contracting for a public-private partnership is conducted in an open, transparent manner

CoFLAS: Next Steps

- Need complete the internal review
- Pilot CoFLAS in 2-3 countries
- Refine tool in light of experience
- Broaden tool, perhaps in:
  - Broader range of tenure types (crowdsourcing, STDM, etc)
  - Include planning
  - Broaden and elaborate the financing options