Why Land Accounts?

• Land the basis for agriculture: 34% of GDP; 90% of jobs; 80% of rural population

• Land availability already a constraint to agricultural growth

• Rapid urbanization plans requires available land

• Trade-offs between different forms of land use calls upon enforcement of tenure security

• High population density forces land to be a scarce commodity

• Accounts help track land value trends & assess trade-offs
LAND ACCOUNTS: Process and Data Sources

- Land use data from LAIS (RNRA)
- Land cover data from RCMRD and RNRA
- Land value data from LAIS (RNRA)
- Economic & Population Statistics from NISR
- Information on land issues & challenges: EDPRS2, REMA, MINAGRI
- Technical analysis & data inputs through Technical Working Group
- Guidance from National Steering Committee
- Draft Land Accounts Doc shared with TWG, NSC, NISR
• About 70% of land is in agriculture & forestry uses.

• Residential & industrial represent relatively small shares.

• Agricultural dominates in all provinces.

• Eastern: highest agric and livestock land uses.

• Southern & Western: more land allocated to forestry.

• Eastern: more land allocated to livestock.
• Most recorded "changes" not physical shifts but administrative moves from an unclassified state into a classified condition
• Most rapid changes in residential & industrial – but starting from very small base
• Most changes moved land from unclassified to classified status
• Most land use changes recorded in LAIS occurred in Southern Province
• There were important shifts from Unclassified (and some other uses) into residential, particularly in Western province
• Main changes: from agric & forestry into urban and industrial land uses
• Most of changes in Gasabo District; Few changes in Nyarugenge District.
• Gasabo & Kicukiro: some reclassifications from unclassified into known land uses.
• Nationally, average parcel size showed slight decline in most places
• But, only 18 of 30 districts showed this decline in average parcel size
• Note, these are early results, the 2 year period is short for considering “trends”
• Issue deserves more investigation with more years of data, or district case studies

- **Land cover** = based on biophysical properties, from remote sensing
- **Land use** = admin data in LAIS based on location, ownership, value, etc
- Need more harmonization of categories and definitions
- Note different time scale from land use data; results for 2015 in progress
• Decline of woodland and an increase in cropland
• Area of dense forest declined by half over the 20 year period
• Area of sparse forest decreased
• Area of settlements doubled
LAND ACCOUNTS – Transaction Values - 2014

• Initial step toward monetary land accounts
• Transaction values from LAIS 2014
• Need to look further at data quality and consistency, then analyze 2015
• LAIS does not distinguish built up parcels from undeveloped land.

### RWANDA 2014 - Summary of Parcel Transaction Data from LAIS

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>No of Parcels Transacted</th>
<th>% of Total</th>
<th>Total Area of Transactions (Ha)</th>
<th>% of Total</th>
<th>Total Value of Transactions (M Rwf)</th>
<th>% of Total</th>
<th>Province Average Transaction Size (Ha)</th>
<th>Province Ave Value/Ha (M Rwf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIGALI CITY</td>
<td>6,964</td>
<td>45%</td>
<td>677</td>
<td>17%</td>
<td>87,962</td>
<td>62%</td>
<td>0.10</td>
<td>130</td>
</tr>
<tr>
<td>SOUTHERN</td>
<td>2,200</td>
<td>14%</td>
<td>446</td>
<td>11%</td>
<td>6,508</td>
<td>5%</td>
<td>0.20</td>
<td>15</td>
</tr>
<tr>
<td>WESTERN</td>
<td>1,549</td>
<td>10%</td>
<td>259</td>
<td>6%</td>
<td>8,047</td>
<td>6%</td>
<td>0.17</td>
<td>31</td>
</tr>
<tr>
<td>NORTHERN</td>
<td>1,857</td>
<td>12%</td>
<td>216</td>
<td>5%</td>
<td>4,361</td>
<td>3%</td>
<td>0.12</td>
<td>20</td>
</tr>
<tr>
<td>EASTERN</td>
<td>2,950</td>
<td>19%</td>
<td>2,421</td>
<td>60%</td>
<td>34,948</td>
<td>25%</td>
<td>0.82</td>
<td>14</td>
</tr>
<tr>
<td>RWANDA</td>
<td>15,520</td>
<td></td>
<td>4,020</td>
<td></td>
<td>141,825</td>
<td></td>
<td>0.26</td>
<td>35</td>
</tr>
</tbody>
</table>

High variability, highly skewed distribution
Max value/ha ~250 times greater than average
Min value less than 1/10 % of average

- Small number of extreme values skew the averages
- 1% omitted
• Kigali City – average values five times higher than national average
• Urban districts (*) *generally* higher values and transactions than rural
• Eastern Province – lowest average transaction values, but most land transacted
• **Agriculture & Livestock Uses** – Highest area transacted; but low value per ha
• **Residential** – Moderate area transacted, among the highest prices
• **Commercial & Industrial** – High values, but very few transactions
LAND ACCOUNTS: Policy & Planning Issues

• Inform Land Use Planning & Climate Resilience Planning
  • Analyze land uses at finer scale; link with GIS & mapping
  • Compare LUDMP for consistency, direction of change
  • Analyze rural development patterns and process.

• Land Valuation. Check quality and consistency; compare to other sources for use in determining fair prices.

• Land parcel size. Monitor changes through 2016 and 2017. Possible need for in depth analysis or case studies

• Integrated analysis & modeling across all 3 sectors
  • Assess impacts of LU changes on water supply, ag production
  • WCS and SNAPP team have begun with Ecosystem Accounts
LAND ACCOUNTS: Other Issues and Implications

Coordination and Institutional Issues

• Linking data systems across ministries.
• Integration and efficiency of data compilation.
• Institutional mandate and focal point for NCA.

Other Technical Recommendations

• Efficiency & streamlining of data quality & collection
• Improvements to build capacity & upgrade technology
• Dialogue with GoR on translating technical recommendations into budgeted actions
LAND ACCOUNTS: Next Steps

• Complete Land Account Version 1 document, based on feedback from National Workshop

• Follow NISR publication guidelines and data archiving requirements (dialogue initiated)

• Present Rwanda Land Accounts (paper) at 2017 WB Conference on Land & Poverty, March 2017

• Advance outreach with analysts & universities for further research

• Plan for Version 2 in 2018 with 2016/17 data added
Rwanda Natural Capital Accounting

Thank you!