Background environment:

How ICTs will have an impact on Poverty Reduction in Rwanda?


This document was fine-tuned and adopted in 2000. ICT was identified as a tool “to transform a subsistence economy into an information-rich, knowledge-based one, and accelerate economic growth.
ICT Household Statistics
The Case of Rwanda

Introduction:
• General overview of Information Society Statistics in Rwanda, focusing on the ICT usage surveys (enterprises and households):
  • Framework (background)
  • Contents (main variables and breakdowns)
  • Methods
  • Strengths and weaknesses

ICT indicators sources:
• 2002 : Rwanda Population & Housing Census 2002 (EU-UNFPA)
• 2003 : ICT usage intensity Survey (OTF)
• 2006 : ScanICT Baseline Survey (ECA)
• 2007 : Comprehensive baseline survey (Comesa)
• 2007 : E-USAGE & Access BASELINE SURVEY (researchICTafrica.net)
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ICT Surveys:
Indicators mainly collected via public sector, private sector and household/individuals surveys conducted by National Institute of Statistics, NGOs and Universities, coordinated by NISR

2003: ICT Usage Intensity Survey (public & private sectors)
• Sampling approach: 163/407 units, national level, urban vs rural
• Indicators: fixed lines, mobiles phones, PC, Internet usage, connectivity, networking, IT staff, etc...
• Data collection: face to face interviews
• Explanatory variables (breakdowns):
  Size class (number of employees):
  5–50 (SME: Small&Medium), More than 50 (L.E :large enterprises).
• Categories:
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2003: ICT Usage Intensity Survey (findings)

Applied Concepts Methodology

<table>
<thead>
<tr>
<th>Non-ICT users</th>
<th>CT Only users</th>
<th>Basic ICT users</th>
<th>Networked ICT users</th>
<th>Intensive ICT users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone penetration less than 10% (Phones divided by Employees)</td>
<td>Phone penetration greater than 10%</td>
<td>PC penetration 25% or greater (PCs divided by Employees)</td>
<td>Internet connection penetration 20% or greater (Internet connections divided by Employees)</td>
<td>Internet connection penetration 50% or greater PLUS 2 Intensive ICT Filters*</td>
</tr>
</tbody>
</table>

*Cutoffs:

ICT Filter 1: Positive response to 6 out of 8 questions related to specialized hardware & software

ICT Filter 2: Greater than 20 out of 25 points on questions related to attitudes towards ICT
2003: ICT Usage Intensity Survey

Situation analysis – Summary of Results

<table>
<thead>
<tr>
<th>Economic Sector</th>
<th>Sector</th>
<th>Non-ICT</th>
<th>CT Only</th>
<th>Basic ICT</th>
<th>Networked ICT</th>
<th>Intensive ICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Sector</td>
<td>Nat. Government</td>
<td>0%</td>
<td>20%</td>
<td>33%</td>
<td>47%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Local Government</td>
<td>58%</td>
<td>36%</td>
<td>5%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Private Sector</td>
<td>Large Businesses</td>
<td>39%</td>
<td>44%</td>
<td>10%</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>SMEs</td>
<td>16%</td>
<td>58%</td>
<td>15%</td>
<td>10%</td>
<td>1%</td>
</tr>
</tbody>
</table>

- Nat. Government reports the highest levels of ICT Access, but 20% still have achieved the level of CT Only
- Local Government falls into the two lowest categories (94%), driven by lack of access to basic ICT infrastructure.
- Large Businesses are concentrated (83%) in the two lowest levels of ICT engagement.
- SMEs are the most evenly distributed across the spectrum, reflecting the varied conditions under which SMEs operate in Rwanda. However, 74% are classified as Non-ICT or CT-Only, indicating that they have not integrated PCs into their operations.
2006: SCANICT Baseline Survey

CORE INDICATORS ON USE OF ICT BY BUSINESSES

• B1 Proportion of businesses using computers
• B2 Proportion of employees using computers
• B3 Proportion of businesses using the Internet
• B4 Proportion of employees using the Internet
• B5 Proportion of businesses with a Web presence
• B6 Proportion of businesses with an intranet
• B7 Proportion of businesses receiving orders over the Internet
• B8 Proportion of businesses placing orders over the Internet
• B9 Proportion of businesses using the Internet by type of access:
• B10 Proportion of businesses with a Local Area Network (LAN)
• B11 Proportion of businesses with an extranet
• B12 Proportion of businesses using the Internet by type of activity
2006: Scan ICT Baseline Survey (phase2)

Sectors covered: Health, Education, Administration, Private Sector, Law regulation,

Sampling approach: national level, urban vs rural
100% big ICT users, 50% medium ICT users & 10% small ICT users.
Phase 1: total enumeration of units (all sectors)
Phase 2: sampling and interviews
Phase 3: measuring impact (Education & Health)

• Indicators: ICT usage by gender, age and education level / all sectors, IT staff by gender and origin, urban vs rural, penetration rate, etc…

• Data collection: face to face interviews secondary data compilation

• Survey period: 1 month, 34 enumerators (40% from National University of Rwanda – Master Program Comp. Science)

• Data Analysis: NISR, NUR (in progress) – Preliminary report (04/2007)
### Estimated level of computers usage by staff

<table>
<thead>
<tr>
<th>Sectors/institutions</th>
<th>0 - 25%</th>
<th>50%</th>
<th>75%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector</td>
<td>30</td>
<td>11</td>
<td>22</td>
<td>37</td>
</tr>
<tr>
<td>Private sector</td>
<td>35</td>
<td>15</td>
<td>23</td>
<td>27</td>
</tr>
<tr>
<td>NGOs</td>
<td>9</td>
<td>23</td>
<td>26</td>
<td>42</td>
</tr>
<tr>
<td>UN system</td>
<td>14</td>
<td>0</td>
<td>14</td>
<td>71</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>29</strong></td>
<td><strong>14</strong></td>
<td><strong>23</strong></td>
<td><strong>34</strong></td>
</tr>
</tbody>
</table>

- The UN System reports the highest levels of ICT intensive usage with 71% staff (of total usage= 100%)
- The private sector (total) has two lowest ICT intensive usage rate with 50%
### Estimated level of Internet usage by staff

<table>
<thead>
<tr>
<th>Sectors/institutions</th>
<th>0 - 25%</th>
<th>50%</th>
<th>75%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector</td>
<td>69</td>
<td>5</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Private sector</td>
<td>71</td>
<td>6</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>NGOs</td>
<td>42</td>
<td>14</td>
<td>19</td>
<td>26</td>
</tr>
<tr>
<td>UN system</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>65</td>
<td>7</td>
<td>12</td>
<td>17</td>
</tr>
</tbody>
</table>

- The UN System reports the highest levels of Internet intensive usage with by 100%
- All other sectors & institutions have two lowest Internet usage rate with an average 25%
2006: Scan ICT Baseline Survey (phase2)
Situation analysis – Summary of Results

% of computers & Internet usage by staff by intensity

- Computers
- Internet

- 0% (none)
- Below 10%
- About 25%
- About 50%
- About 75%
- About 100%
2006: Scan ICT Baseline Survey (phase2)
Situation analysis – Summary of Results

% of institutions with internet access and websites

- Public sector
- Private sector
- NGOs
- UN system

- with internet
- with website
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2006: Scan ICT Baseline Survey (phase2)

Education sector – Summary of Results

- Primary School
- Secondary School
- Secondary Technical School
- Teachers' Training College
- Technical/Commercial/Vocational Institution
- Others

Graph showing the following:
- Percentage of schools with internet, website, and PC at home.
- Percentage of teachers and students using computers.
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2006: Scan ICT Baseline Survey (phase2)

Education sector – Summary of Results

% of institutions with internet, website and staff using PC at home
2006: Scan ICT Baseline Survey (phase2)

Health sector – Summary of Results

Health sector: use of PC, Internet and Website

- **Public Sector**
- **Private Sector**

- **use PC**
- **use Internet**
- **with website**
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The Case of Rwanda

2002: RWANDA POPULATION & HOUSING CENSUS

Sectors covered: Population (dwelling, individual) and Housing,
Sampling approach: national level, urban and rural
100% enumeration
14,000 enumerators and supervisors
• ICT indicators: phone, radio, internet, computer (penetration rates)

• Variables: age, sex, economic activity, level of instruction, etc…
  Housing: roof material, walls, water, cooking energy,…

• Data collection: face to face interviews

Survey period : 4 days (2002)

• Data Analysis : NISR. UNFPA
## Summary of Results

<table>
<thead>
<tr>
<th>Provinces</th>
<th>fixed phones</th>
<th>Mobile phones</th>
<th>fixed and mobile</th>
<th>Total HH with phones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ville de Kigali</td>
<td>1.2</td>
<td>11.3</td>
<td>2.9</td>
<td>15.4</td>
</tr>
<tr>
<td>Southern Prov.</td>
<td>0.3</td>
<td>0.8</td>
<td>0.3</td>
<td>1.4</td>
</tr>
<tr>
<td>Western Prov.</td>
<td>0.3</td>
<td>0.7</td>
<td>0.3</td>
<td>1.2</td>
</tr>
<tr>
<td>Northern Prov.</td>
<td>0.3</td>
<td>0.5</td>
<td>0.1</td>
<td>0.9</td>
</tr>
<tr>
<td>Southern Prov.</td>
<td>0.3</td>
<td>0.6</td>
<td>0.2</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>0.4</td>
<td>1.8</td>
<td>0.5</td>
<td>2.7</td>
</tr>
</tbody>
</table>
ICT Household Statistics
Mobile phones density
## ICT Household Statistics
### The Case of Rwanda

### Rwanda Population & Housing Census 2002
#### Summary of Results

<table>
<thead>
<tr>
<th>Provinces</th>
<th>computers</th>
<th>computers + internet</th>
<th>Total HH</th>
<th>% HH with PC + Internet / Total HH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ville de Kigali</td>
<td>62.8</td>
<td>37.2</td>
<td>100.0</td>
<td>1.05</td>
</tr>
<tr>
<td>Southern Prov.</td>
<td>68.5</td>
<td>31.5</td>
<td>100.0</td>
<td>0.06</td>
</tr>
<tr>
<td>Western Prov.</td>
<td>58.2</td>
<td>41.8</td>
<td>100.0</td>
<td>0.03</td>
</tr>
<tr>
<td>Northern Prov.</td>
<td>67.5</td>
<td>32.5</td>
<td>100.0</td>
<td>0.02</td>
</tr>
<tr>
<td>Southern Prov.</td>
<td>77.4</td>
<td>22.6</td>
<td>100.0</td>
<td>0.02</td>
</tr>
<tr>
<td>Total</td>
<td>63.8</td>
<td>36.2</td>
<td>100.0</td>
<td>0.14</td>
</tr>
</tbody>
</table>
### ICT Household Statistics
#### The Case of Rwanda

**RWANDA POPULATION & HOUSING CENSUS 2002**

**Summary of Results**

<table>
<thead>
<tr>
<th>Provinces</th>
<th>Radios</th>
<th>Televisions</th>
<th>Radio + TV</th>
<th>HH with Rad + TV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ville de Kigali</td>
<td>81.9</td>
<td>0.8</td>
<td>17.2</td>
<td>50.0</td>
</tr>
<tr>
<td>Southern Prov.</td>
<td>98.5</td>
<td>0.1</td>
<td>1.5</td>
<td>44.0</td>
</tr>
<tr>
<td>Western Prov.</td>
<td>98.4</td>
<td>0.1</td>
<td>1.5</td>
<td>35.5</td>
</tr>
<tr>
<td>Northern Prov.</td>
<td>99.3</td>
<td>0.0</td>
<td>0.7</td>
<td>40.2</td>
</tr>
<tr>
<td>Southern Prov.</td>
<td>99.3</td>
<td>0.0</td>
<td>0.7</td>
<td>43.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>96.4</strong></td>
<td><strong>0.2</strong></td>
<td><strong>3.4</strong></td>
<td><strong>41.9</strong></td>
</tr>
</tbody>
</table>
ICT Household Statistics
The Case of Rwanda

RWANDA POPULATION & HOUSING CENSUS 2002

ICT penetration Urban vs Rural

- Radio + TV
  - Urban: 61.4
  - Rural: 39.8

- Fixed phone + Mobile
  - Urban: 14.0
  - Rural: 0.6

- PC and internet
  - Urban: 0.89
  - Rural: 0.01
ICT Household Statistics
The Case of Rwanda

ICT penetration and progress

Subscribers of mobile, fixed and internet

- Mobile
- Fixed
- Internet

Year:
- 1994
- 2002
- 2006
Thank you for your invitation