KERSA HEALTH AND DEMOGRAPHIC SURVEILLANCE SYSTEM (KERSA HDSS)

Capacity Strengthening and Training (CST)
Strategic Group Workshop
Accra, August 2015
Lake Adele in Adele Key Key Kebele. It is one of the beauties of the site.

The highland majesty around Gola Belinakebele

Sorghum, the dominant crop for food production at the mid and low lands

Wheat, barely, major crop for food around High lands (Tolla)
STUDY AREA-KERSA HDSS
2007-2014 - It constituted 12 kebeles - 13,500 households - 62,000 population
2015 - IT ADDED 12 MORE KELBELES
24 KEBLES - 24,500 HOUSEHOLDS - 120,000 POPULATION
### Key Indicators-1

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midyear population</td>
<td>51398</td>
<td>52969</td>
<td>54378</td>
<td>58633</td>
<td>59459</td>
<td>60694</td>
</tr>
<tr>
<td>Total houses</td>
<td>10,863</td>
<td>11,046</td>
<td>11,984</td>
<td>12,496</td>
<td>12,783</td>
<td>13,544</td>
</tr>
<tr>
<td>Persons per household</td>
<td>4.7</td>
<td>4.8</td>
<td>4.5</td>
<td>4.7</td>
<td>4.7</td>
<td>4.5</td>
</tr>
<tr>
<td>Sex ratio per 100 (male to female)</td>
<td>1.02</td>
<td>1.02</td>
<td>1.02</td>
<td>1.02</td>
<td>1.02</td>
<td>1.02</td>
</tr>
<tr>
<td>Sex ratio at birth (male to female)</td>
<td>1.08</td>
<td>1.07</td>
<td>1.04</td>
<td>1.00</td>
<td>1.20</td>
<td>1.12</td>
</tr>
<tr>
<td>Life expectancy at birth for Males</td>
<td>66.0</td>
<td>60.7</td>
<td>59.9</td>
<td>59.8</td>
<td>67.1</td>
<td>62.7</td>
</tr>
<tr>
<td>Life expectancy at birth for Females</td>
<td>57.8</td>
<td>59.9</td>
<td>57.5</td>
<td>54.4</td>
<td>57.36</td>
<td>60.1</td>
</tr>
<tr>
<td>Dependency ratio</td>
<td>1.00</td>
<td>0.98</td>
<td>0.97</td>
<td>0.91</td>
<td>0.91</td>
<td>0.89</td>
</tr>
<tr>
<td>Young dependency ratio</td>
<td>0.96</td>
<td>0.95</td>
<td>0.94</td>
<td>0.88</td>
<td>0.88</td>
<td>0.83</td>
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<tr>
<td>Old dependency ratio</td>
<td>0.04</td>
<td>0.04</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
<td>0.06</td>
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<tr>
<td>Women of reproductive age (15-49 years) %</td>
<td>21.2</td>
<td>20.9</td>
<td>22.1</td>
<td>21.3</td>
<td>21.5</td>
<td>22.3</td>
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</table>
## Key Indicators-2

<table>
<thead>
<tr>
<th></th>
<th>1616</th>
<th>1756</th>
<th>1983</th>
<th>1549</th>
<th>1770</th>
<th>2260</th>
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<tbody>
<tr>
<td>Total number of live births</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crude birth rate per 1000</td>
<td>31.4</td>
<td>33.2</td>
<td>36.5</td>
<td>26.4</td>
<td>29.8</td>
<td>37.2</td>
</tr>
<tr>
<td>Crude death rate per 1000</td>
<td>9.7</td>
<td>8.4</td>
<td>9.4</td>
<td>10.1</td>
<td>8.8</td>
<td>7.8</td>
</tr>
<tr>
<td>Crude in-migration rate per 1000</td>
<td>3.6</td>
<td>3.0</td>
<td>4.5</td>
<td>4.3</td>
<td>5.0</td>
<td>7.4</td>
</tr>
<tr>
<td>Crude out-migration rate per 1000</td>
<td>15.0</td>
<td>11.7</td>
<td>19.3</td>
<td>21.9</td>
<td>20.6</td>
<td>20.5</td>
</tr>
<tr>
<td>Crude population growth rate per 100</td>
<td>2.17</td>
<td>2.48</td>
<td>2.71</td>
<td>1.63</td>
<td>2.10</td>
<td>2.94</td>
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<tr>
<td>Net population growth rate per 100</td>
<td>1.0</td>
<td>1.6</td>
<td>1.2</td>
<td>-0.1</td>
<td>0.5</td>
<td>1.6</td>
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<tr>
<td>Total Fertility Rate (TFR)</td>
<td>4.5</td>
<td>4.6</td>
<td>5.1</td>
<td>4.0</td>
<td>4.2</td>
<td>5.3</td>
</tr>
<tr>
<td>Neonatal mortality per 1000 live births</td>
<td>37.7</td>
<td>37.6</td>
<td>40.8</td>
<td>38.1</td>
<td>35.6</td>
<td>32.7</td>
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<tr>
<td>Infant mortality rate per 1000 live births</td>
<td>60.7</td>
<td>55.2</td>
<td>64.6</td>
<td>66.3</td>
<td>58.3</td>
<td>53.9</td>
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<tr>
<td>Child mortality rate per 1000</td>
<td>37.7</td>
<td>37.6</td>
<td>40.8</td>
<td>38.1</td>
<td>35.6</td>
<td>32.7</td>
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<tr>
<td>Under-five mortality per 1000 live births</td>
<td>132.4</td>
<td>90.5</td>
<td>106.4</td>
<td>158.2</td>
<td>107.3</td>
<td>77.9</td>
</tr>
</tbody>
</table>
ACHIEVEMENTS
TRAINING AND CAPACITY STRENGTHENING

1. In 2007 sensitization workshop for more than 50 participants selected from the district and the University in the presence of University officials.
2. Preparation of the study material and training field workers

   - mapping and numbering, data collection formats prepared and translated.
4. Repeat Census
   • October 2008 (used for reconciling the base data using census)

5. Continues tracking of vital events

Villagers were supportive of our activities.
The left: A typical school day in one of our follow-up kebele were singing on our visit day.

The right: Mothers and children were eager to answer our questions
6. Mortality surveillance
   • Continuous Data collection and verification
     ○ VA format used
     ○ Physicians for interpretation

7. Morbidity, pregnancy outcome, immunization surveillance: started as of September 2010

Left: Mede Oda kebele, near water town: Newborn baby being inspected for vital records in our follow up.

Right: quality check, the data collectors are measuring themselves before measuring other. It is a test of confirming doing it appropriately.
8. Data storage and Entry
- After three sequential review
- Entry to HRS-2 program
- The hard copies are put in respective folders

Above: KDS-HRC data entry personnel at work, in the main office located at Harar Campus.

Above: The Hard copies are put properly for future references. Each household has a separate folder.
9. Data flow and Base data cleaning continuously being done

10. GPS labeling of houses

Data Flow Chart
11. Use of site for academic purpose
   - 4 Ph.D students used the site, 2 currently using
   - 2 M.Sc. Students used the site
   - 5 undergraduate students used data from the site for research purpose

12. Use of part of data for graduate teaching, for MPH students.

13. Availing sample frame for researchers: 8 researchers used sample frame
14. Established urban HDSS (Harar HDSS)

- Located in Harar on Six sub-districts with a total population of 32,000 at the start
- Now it constitutes 12 Sub-districts and the population becomes 60 thousand
- Mapping, number platting and census done

Now we have two HDSS
1. Kersa HDSS-Rural-24 Kebles-120,000 population
2. Harar HDSS-Urban-12 Kebeles-60,000 population
15. Collaborative statistics training with other HDSS in Ethiopia and EPHA

16. With in Ethiopia Joint Network Health and demographic data analysis and write up

17. Support from Other HDSS in Ethiopia in customizing HRS-2 to fit into our data collection system

18. By the support of CDC, EPHA, and INDEPTH HRS-2 training

19. By the support of INDEPTH-ishare-2 (cib) and open HDS training
CHALLENGES

1. Trained field workers turn-over is high - main reason is low salary pay
2. Paper work is too much - the possibility of changing data collection system to electronic system (PDA) is needed yet constraints to start:
   - Budget to buy the device
   - Training on how to use
   - Maintenance issues
3. The training we get on Open HDS was not enough to help us kick of the program
5. Collaborative effort to generate more funds, more research and joint works are not adequate

6. Longitudinal and panel data analysis is at its lowest level of use, it needs much effort to produce information that match the surveillance activities; most analysis are descriptive

7. An organized laboratory and health facility linked surveillance is lacking
FUTURE PLAN

1. Generate more information based on available data
2. Improving the usability of data by Masters and PhD students, and other researchers
3. Changing data collection system to electronic (PDA)
4. Application of Open HDS
5. Link studies with existing laboratory services and improving reporting facilities to match with HDSS
6. Be center of excellence in statistical trainings; longitudinal, panel data, economic analysis,
7. Collaborate on every aspect of the work with potential collaborators/researchers
   - Initiation of new studies
   - Use of existing data

8. Encouraging students from abroad and in-country universities to use existing data to generate more information

9. Availing important indicators and policy briefs for FMOH/RHBs based on the existing data
Our website:

http://www.haramaya.edu.et/research/projects/kds-hrc/