Presentation from
2016 World Water Week in Stockholm
www.worldwaterweek.org

© The authors, all rights reserved
ARE WATER CARRIERS WOMEN?

What current data tells us (and doesn’t) about informal and unpaid water provision

Jo Geere (UEA), Moa Cortobius (SIWI), Carlos Carrion-Crespo (ILO)
ANALYSIS OF MULTIPLE INDICATOR CLUSTER (MICS) SURVEYS

Survey sample drawn from all surveys conducted and reported between 2010-2015
ANALYSIS OF MICS SURVEYS
LOCATION OF WATER SOURCE URBAN VERSUS RURAL

- In own dwelling: Urban 54.50%, Rural 26.20%
- In own yard/plot: Urban 24.50%, Rural 15.90%
- Elsewhere: Urban 28.80%, Rural 46.60%
- Missing: Urban 0.80%, Rural 2.60%

Total number of households:
- 152,073 urban
- 219,562 rural
PERSON RESPONSIBLE FOR COLLECTING WATER (%) 
URBAN AND RURAL AREAS

Total number of households:
- 28,263 urban
- 99,008 rural

- Male child (under 15)
- Female child (under 15)
- Adult man (age 15+ years)
- Adult woman (age 15+ years)
PERSON RESPONSIBLE FOR COLLECTING WATER
 NUMBER OF HOUSEHOLDS, URBAN AND RURAL AREAS

Total number of households:
- 28,263 urban
- 99,008 rural
PERSON RESPONSIBLE FOR COLLECTING WATER
MEAN DIFFERENCE IN MINUTES BETWEEN RURAL AND URBAN AREAS TO GET WATER AND COME BACK

- Only surveys with statistically significant difference.
- Negative value indicates more time taken in rural compared to urban area.
In 23 MIC surveys, children between 5-17 years of age were asked if they had worked to collect water or firewood in the previous week; in 22 surveys rural versus urban households could be compared. More children in rural rather than urban areas had spent time collecting firewood or water in the previous week.

In urban areas the proportion of children engaged in this work ranged from 1% in Serbia to 60% in Mongolia Aimag. Mean hours spent collecting water or firewood in the previous week ranged from 1 (St Lucia) to 11.3 hours (Somalia NE).

Significant differences in mean hours spent fetching water or firewood in the previous week between children from urban and rural households in all surveys except Jamaica, Montenegro, Saint Lucia, Serbia, Suriname, Ukraine and Vietnam.

Significant mean differences ranged from 0.4 hours or 20 minutes in Sierra Leone (greater in rural areas) to 4.2 hours in Serbia Roma (greater in urban areas) hours.
WHAT’S MISSING FROM THE AVAILABLE DATA?

1. Usual number of water fetching trips per day or week
2. Measured distance to water source or water fetching time
3. Method of water carriage
4. Health and disability status of individuals in the household and of those who perform water carriage
5. Safety of individuals engaged in water fetching
Household questionnaire:

- Households with private (~50%) vs. public water supply (~50%)
- Fieldwork in 3 countries Ghana, South Africa and Vietnam (n=255+206+198)
SITES OF REPORTED PAIN BY PAST VS NEVER WATER CARRYING

Abdominal pain 1.43 (0.76, 2.69)
Chest/rib pain 1.60 (0.71, 3.60)
Feet 1.70 (0.74, 3.91)
Hands 3.62 (1.34, 9.75)
Head 1.16 (0.67, 2.02)
Hips/pelvis/legs 1.13 (0.74, 1.72)
Lower back 0.86 (0.53, 1.40)
Neck 1.26 (0.74, 2.16)
Shoulders/arms 0.91 (0.52, 1.60)
Upper back 2.27 (1.17, 4.40)

Greater in carrying
SITES OF REPORTED PAIN BY CURRENT VS NEVER WATER CARRYING

Abdominal pain: 1.70 (1.07, 2.69)
Chest/rib pain: 2.13 (1.14, 4.00)
Feet: 1.55 (0.77, 3.13)
Hands: 3.11 (1.34, 7.23)
Head: 1.53 (1.03, 2.27)
Hips/pelvis/legs: 0.85 (0.61, 1.20)
Lower back: 0.96 (0.68, 1.38)
Neck: 0.95 (0.62, 1.45)
Shoulders/arms: 0.59 (0.38, 0.92)
Upper back: 2.16 (1.25, 3.73)
**RELATIONSHIP BETWEEN AREA OF REPORTED PAIN & WATER CARRYING**

Correlated areas of reported pain:
Pattern 1 = head and upper back, hands, chest/ribs, abdomen/stomach, feet

<table>
<thead>
<tr>
<th>Water carrying</th>
<th>N</th>
<th>β</th>
<th>L95 %CI</th>
<th>U95% CI</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>No history</td>
<td>364</td>
<td>0</td>
<td></td>
<td></td>
<td>4.5E-5</td>
</tr>
<tr>
<td>Past history</td>
<td>159</td>
<td>0.21</td>
<td>0.01</td>
<td>0.042</td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>474</td>
<td>0.30</td>
<td>0.17</td>
<td>0.43</td>
<td></td>
</tr>
<tr>
<td>Currently carries water (no head loading)</td>
<td>214</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently carries water (head loading)</td>
<td>260</td>
<td>0.36</td>
<td>0.03</td>
<td>0.70</td>
<td>0.03</td>
</tr>
</tbody>
</table>
HOW TO EXPLAIN THE ASSOCIATION OF WATER CARRIAGE WITH PAIN PATTERN 1?
CONCLUSIONS

• Even with the MDG target on access to safe drinking water met, large populations globally still have to physically bring water to their homes.

• In most countries this responsibility is predominantly carried by women, particularly in rural areas, yet in urban areas men also take on a substantial share of the burden.

• The detrimental health and security implications that arise from this informal water provision work highlight an often overlooked dimension related to the definition of ‘access to safe drinking water.’