IWA Sanitation Challenge
19 May 2008, Wageningen, The Netherlands

Perception of water, sanitation and health – a case study from the Mekong Delta, Vietnam

Vietnam

- 85 million inhabitants
- 1990 – 2004
  access to improved drinking water increased by 20% (65-85%)
- 1990 – 2004
  access to improved sanitation increased by 25% (36-61%)

Mekong Delta, Vietnam

- 18 million inhabitants
- 14 million live in rural areas
- 5.7 million lack improved drinking water supply
- Two thirds (10 million) lack improved sanitation

Study objectives

- Perception of water, sanitation and health
- Actual sanitation situation
- Water and sanitation-related hygiene behaviour
- Links to cultural and traditional background
Survey setting

- 120 households in An Binh ward housing area 7
- Service area of water supply station (2002)
  - Groundwater (capacity 6,000 L/day)
  - Rapid sand filtration and activated charcoal
- 53% connected to the water supply station
- Standardised questionnaire, focus group discussions, semi-structured interviews
## Household metadata

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex of household head</td>
<td>74% male</td>
</tr>
<tr>
<td>Household size (mean)</td>
<td>5 persons</td>
</tr>
<tr>
<td>Sex of respondent</td>
<td>95% female, 5% male</td>
</tr>
<tr>
<td>Occupation</td>
<td>55% housewife, 10% trader, 8% pupil/student</td>
</tr>
<tr>
<td>Education</td>
<td>87% elementary or junior high school</td>
</tr>
</tbody>
</table>
Drinking water sources

Source: IHPH, 2007

Households [%]

Rainy season
Dry season

Rainwater
Bought purified water
Water supply station
Deep drilled well
River and channel
Others

n = 120
Rain water harvesting

- 67% utilise rainwater
- Harvesting from roof
- Time span between start of raining and collection
  - 28% immediately
  - 14% after 5 minutes
  - 55% after 5-15 minutes
Household drinking water storage

- 98% store water at home
  - Clay jugs (42%)
  - Plastic barrels, tanks, flasks (51%)

- Storage of water from water supply station: 70%
  - Intermittent supply
  - Sedimentation
Respondents’ criteria for drinking water evaluation

- 70% rated their drinking water as “good”
- only one respondent considered it as “bad”

Source: IHPH, 2007
## Drinking water treatment methods

<table>
<thead>
<tr>
<th>Water source</th>
<th>Aluminium sulphate</th>
<th>Cloth filter</th>
<th>Ceramic filter</th>
<th>Boiling</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rainwater</td>
<td>n* 79</td>
<td>% 1</td>
<td>% 67</td>
<td>% 46</td>
<td>% 5</td>
</tr>
<tr>
<td>Water supply station</td>
<td>29</td>
<td>10</td>
<td>3</td>
<td>83</td>
<td>0</td>
</tr>
<tr>
<td>Drilled Well</td>
<td>13</td>
<td>69</td>
<td>15</td>
<td>77</td>
<td>0</td>
</tr>
<tr>
<td>River/ Channel</td>
<td>20</td>
<td>85</td>
<td>0</td>
<td>80</td>
<td>0</td>
</tr>
<tr>
<td>Bought purified water</td>
<td>70</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>

*n* number of households

Source: IHPH, 2007
Drinking water treatment frequency

Treatment of drinking water

Households [%]

- Rainwater
- Bought purified water
- Water supply station
- Deep drilled well
- River and channel

Source: IHPH, 2007
Who cares for the drinking water?

- 44% wives of household heads
- 26% female household heads
- 9% daughters-in-law
- mostly aged between 26 and 55 years

→ Water is the women’s job
Typically sanitary situation

Pond Ao  Livestock Chuong  Fruit garden Vuon

Le Anh Tuan, 2003

Institute for Hygiene and Public Health, University of Bonn, Germany
Sanitation

<table>
<thead>
<tr>
<th>Toilet Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sky toilet</td>
<td>64%</td>
</tr>
<tr>
<td>Pit latrines</td>
<td>17%</td>
</tr>
<tr>
<td>Flush toilets</td>
<td>13%</td>
</tr>
</tbody>
</table>

- 77% of all respondents are satisfied with the situation
- 73% of fish pond toilet users
- 85% of pit latrine users
# Hygiene — hand washing

**Direct questions about hand washing...**

- After defecation: 97%
- Regarded as essential: 90%
- 6-times per day (median)

**When do you wash ... ?**

- After defecation: 51%
- Before eating: 43%
- Before preparing food: 40%
Hygiene — river water utilisation

Taking a bath
- In the river: 44%
- In a bathroom: 86% but also often provided with river water

Untreated river water for household purposes
- Washing dishes 15%
- Laundry 34%
Perception of diseases – assessment

- Water can cause disease: 90%
- Most hazardous water: river/channel (90%)

<table>
<thead>
<tr>
<th>Disease</th>
<th>yes</th>
<th>no</th>
<th>don't know</th>
<th>don't know this disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diarrhoea</td>
<td>76</td>
<td>11</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Cold</td>
<td>48</td>
<td>39</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Worm infection</td>
<td>32</td>
<td>36</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td>Dengue</td>
<td>30</td>
<td>48</td>
<td>19</td>
<td>3</td>
</tr>
<tr>
<td>Malaria</td>
<td>25</td>
<td>48</td>
<td>17</td>
<td>10</td>
</tr>
<tr>
<td>Headache</td>
<td>13</td>
<td>73</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Fatigue</td>
<td>10</td>
<td>78</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Meningitis</td>
<td>4</td>
<td>48</td>
<td>28</td>
<td>20</td>
</tr>
</tbody>
</table>

n = 120
## Perception of diarrhoea

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>33%</td>
<td>Serious disease</td>
</tr>
<tr>
<td>60%</td>
<td>Disturbing belonging to everyday life</td>
</tr>
<tr>
<td>97%</td>
<td>For children dangerous or very dangerous</td>
</tr>
<tr>
<td>75%</td>
<td>Can lead to death in children</td>
</tr>
<tr>
<td>46%</td>
<td>No relation between hand washing and diarrhoea</td>
</tr>
<tr>
<td>44%</td>
<td>Relation between hand washing and diarrhoea</td>
</tr>
</tbody>
</table>

Symptoms for dehydration are hardly known!
Conclusions

- The major share of population has access to unimproved sanitation
- People have a fuzzy idea on the links between water, sanitation and health
- Basic knowledge on preventive hygiene measures exists, however hygiene measures are often put into practice in an untimely manner or are applied in an incorrect way
- Links between water utilization and spirituality could not be detected
Recommendations

- Identification of incentives for the abolishment of sky toilets and subsequently abolishing them
- Promotion of best practice for rain water harvesting and storage
- Promotion of other water, sanitation and health-related hygiene strategies including the discouragement of the population from using untreated chemically and microbiologically highly polluted river water for drinking, personal hygiene and household purposes
The people behind the work