Field Experience with the Ceramic Water Purifier (CWP) in Cambodia
CWP Features

- Porous ceramic filter coated with colloidal silver
- Ceramic material provides physical filtration
- Silver acts as a bactericide
- Filter pot set in a plastic receptacle to store filtered water
CWP Features

• Produces 20-30 liters per day with 2 to 3 fillings (typical)
• Low maintenance, easy to clean, minimal training required
• Lightweight (4.8 kg) and portable. Can break if handled roughly
• Production cost $5.25 Retail cost $7.50 to $8.00
Field Tests

• CWPs placed in 1,000 households in 12 villages
• 900+ water quality samples over one year
• All 1,000 household surveyed at baseline and after third month of use
• Control group comparison survey after one year: 100 users and 100 non-users
Field Tests - Effectiveness

• Under controlled conditions:
  100% of filters removed
  100% of *E. coli* (n=100)

• Under household use:
  99% of CWPs produce water
  meeting or exceeding
  WHO low-risk guidelines
  (<10 *E. coli* /100 ml)
Field Tests - Household Impact

HHs that *boiled* water prior to CWP saved:

- 22 hours per month in time spent collecting firewood and boiling water
Field Tests - Household Impact

HHs that did not boil water prior to CWP experienced:

• Half as many diarrhoea cases per person
• One third of the diarrhoea treatment costs per person
• Four times fewer school/work days missed due to diarrhoea
Local Production

• CWPs are produced in Cambodia in three factories

• Combined capacity of ~4,000 CWPs/month

• Capital cost of each factory is between $15,000 and $20,000
Distribution Strategies

- Subsidized distribution
- Market distribution
Subsidized Distribution

• Subsidized distribution through NGOs with user contribution ranging from zero to $5.00

• 25,000 CWPs distributed over three years

• Donor investment: $30-$40/unit (including subsidy)
Market Distribution

- Current supply chain in 5 provinces: 2 distributors, 71 retailers
- User pays full cost ranging from $7.50 to $13
- Promotional campaign (mass media, market demonstrations, point-of-purchase displays)
- 5,000 CWPs sold in 14-month period
- Donor investment: $20/unit (expected to decrease over time)
Mixing Distribution Methods

Subsidized distribution tends to undermine market distribution in areas where both methods are used:

- Price confusion
- On-selling of subsidized CWPs
- Households delay purchasing in hopes of receiving a hand-out
## Subsidy vs. Market Approach

<table>
<thead>
<tr>
<th></th>
<th>Subsidized Distribution</th>
<th>Unsubsidized Market Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Impact Depth</strong></td>
<td>Can reach the very poor</td>
<td>Can reach the poor, but not the very poor (limited by affordability)</td>
</tr>
<tr>
<td>(Poorest level reached)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Impact Breadth</strong></td>
<td>Limited by donor resources</td>
<td>Potentially much larger (dependent on consumer demand)</td>
</tr>
<tr>
<td>(Number of people reached)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Impact Longevity</strong></td>
<td>Not sustainable (relies on continued donor support)</td>
<td>Potentially sustainable (dependent on supply chain profitability)</td>
</tr>
<tr>
<td>(Sustainability of benefits)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Work with the CWP in Cambodia has been supported by:

- Canadian International Development Agency
- UNICEF
- AusAID
- World Bank

International Development Enterprises
www.ide-international.org