IMPLEMENTATION OF HOUSEHOLD WATER TREATMENT IN NEPAL

Dr. Roshan Raj Shrestha
Water Supply and Sanitation Coverage in Nepal and MDG Target

<table>
<thead>
<tr>
<th>Year</th>
<th>Improved Water Supply (%)</th>
<th>Improved Sanitation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>46</td>
<td>6</td>
</tr>
<tr>
<td>2005</td>
<td>81</td>
<td>39</td>
</tr>
<tr>
<td>MDG Target</td>
<td>73</td>
<td>53</td>
</tr>
</tbody>
</table>

- Blue: Access to Improved Water Supply (%)
- Purple: Access to Improved Sanitation (%)
Household Water Treatment in Nepal

- None, 34.4%
- Clean Water Source, 20.3%
- Boiling, 5.9%
- Filter, 4.5%
- Chemicals, 0.6%
- Cover Vessel, 60.2%
Implementation of different HWT Techniques

1992/93

2002

2003
PIUSH Chlorine Solution

- 0.5 % Chlorine solution
- Simple to use - Add 3 drops for 1 litre and wait 30 min.
- Rs. 17 (US$ 0.24) per bottle (60 ml)
- Developed in 1992/93 and marketing by ENPHO since 1994
- Distributed during epidemics
- Used by Army, Nepal Red Cross, Unicef & others for emergency
Introduction of Water Guard

- ENPHO provides all information about Piyush to PSI
- MOU with PSI Nepal
  - ENPHO to assist in quality control for WaterGuard
  - PSI to assist in preparing marketing strategy and promotion
- Water Guard Introduced in 2005 with extensive marketing
- This year Piyush sales have dropped in spite of extra promotion
- PSI did not really show its partnership commitment
Water Guard’s Media Campaign
Annual PIYUSH Sales

Halo Effect ???

July to Feb
PIYUSH Promotion Strategy

- New Marketing Strategy Developed
- Product
  - Branding – Easy, Reliable, Inexpensive
  - Targeted Market Segment – households, tourists, disaster relief
- Price
  - Wholesaler – 12; Retailer – 14.5, Consumer - 17
- Place
  - Strengthen distribution mechanism
  - Previously only in drugstores
  - Also go through groceries and expand distribution beyond Kathmandu
- Promotion
  - Multiple channels – Radio, TV, Hoarding Board, Posters, stickers, etc.
  - Point of Purchase display
  - Sales Promotion
Implementation of SODIS

1. Research
2. Pilot Demonstration Project
3. Scale up through advocacy
4. Institutionalization of SODIS
Kanchan™ Arsenic Filter
**Kanchan™ Arsenic Filter**

- Lid
- Container
- Pipe
- Brick chips
- Iron Nails
- Water
- Fine Sand
- Coarse Sand
- Gravel
"Kanchan™ Arsenic Filter"

- Based on 5-years of collaborative research between MIT, ENPHO, and local partners

- Local cost (US$20), innovative household-level filter considering the socio-economic conditions of rural Nepali communities

- Use of natural processes to removal arsenic, pathogen, iron, turbidity, and odour

- Highly accepted by users because of the simple O&M and the use of locally available materials and labour
Project Timeline


1. Background research
2. Technology development
3. Initial Implementation
4. Scale-up
Implementation Model

International

Donors (WB, UN-agencies, SIMAVI)

National

Advisor (CAWST)

Coordinator (ENPHO, MIT)

Regional

Awareness (Red cross, motivators)

Filter Supply (Entrepreneurs)

Village

Users

Financing (Savings groups, government)
Recognitions and Awards

Nepal National Arsenic Steering Committee, MDG report, UNICEF, and prominent NGOs consider KAF as one of the best safe water options.

KAF won prestigious awards such as:

- MIT IDEAS Design Competition 2003
- World Bank Development Marketplace Global Competition 2003
- World Bank Nepal Marketplace Competition 2005
- Wall Street Journal 2005 Technology Innovation - Environmental Category
- USEPA P3 Design Competition 2005
Recognition in MDG Report
BOX 7.3: INNOVATIONS TO ENHANCE LIVELIHOODS

The Environment Public Health Organisation (ENPHO) has adopted and promoted the Solar Disinfection System (SODIS) to purify water through exposure and aeration of drinking water in sunlight for 48 hours in plastic bottles. The technology is cost-free, the only need is sunlight and clean plastic bottles. In communities where people are poor and vulnerable to water-borne disease, safe and clean water is a great need. The NGO Lumantii has promoted this technology in slum and squatter communities of the Kathmandu Valley. A recent survey of Kathmandu Valley water supply conducted by CBS showed that about 1% of the Kathmandu population, around 10,000 people, use this technology (CBS 2005). ENPHO has also developed and promoted bio-sand filters, which is a low-cost technology that has had a positive impact on mitigating arsenic in arsenic-prone areas. Piyush, produced and promoted by ENPHO, is another innovative technology affordable even by poor people to clean water and make it potable.
 Scaling Up at National and Regional Level

- UNICEF/USAID is developing a programme to scale up Household Water Treatment System at National level.
- UN HABITAT has recently established a cooperation agreement with CAWST for promotion of Household water treatment in Mekong Region where Nepalese implementation model will also be utilized.
Issues & Challenges

- Still not reached at rural communities and need more awareness on water quality
- Promotion of only one brand may create confusion at user’s level
- Not adequately integrated with water supply and sanitation programmes
- Intellectuals like Medical professionals, Engineers and others working in WATSAN sector are not fully aware about these technologies

Certification & Regulation

Lack of Responsible agency for Coordination and Monitoring

Sustainability of International Brand ??
Good For Turbid water including chemical contaminants like turbidity, iron and arsenic may require further treatment for microbiological safety

Good for supply water without chlorination and traditional water resources having less organic pollution.

Good for supply water without chlorination and traditional water sources which are not chemically contaminated

Let the people Choose !!!