Water, Sanitation & Hygiene in Nepal

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ENPHO – Introduction

- Established in 1990 as a Non-Profit Organization
- 73 Members, 42 Staff in central & >75 field staff in project area

Mission
Develop and Promote Appropriate Technologies to Enable Communities become eco-friendly
ENPHO Research Laboratory

Research

Education

Advocacy
Water, Sanitation & Hygiene in Nepal

- About 80 percent have access to water supply
  - Water quality is a major concern
    - Microbial contamination is the main problem
    - Arsenic contamination in some areas
- About 40 percent have access to toilets
  - Waste from toilets is not well managed
  - Pollution of water bodies is a problem in urban areas
- About 10500 children die each year due to water-borne diseases
- Some innovative technologies & practices have been introduced
Water is Life...

But only if it is clean
Perceived Problem with Water Quality

Source: UNCEF/AED, 2006
1800 Samples from 4 districts (Dang, Kapilbastu, Parsa, Panchthar)
Water Quality in Gravity Flow Schemes in Nepal

- Most schemes do not have any treatment system
- Chemical parameters are normally within WHO guideline values
- Fecal coliform problem in majority of the schemes.

### Fecal Coliform in Gravity Flow Water Supply Schemes in Nepal

<table>
<thead>
<tr>
<th>Contamination level</th>
<th>% of Samples</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>12</td>
</tr>
<tr>
<td>B</td>
<td>23</td>
</tr>
<tr>
<td>C</td>
<td>26</td>
</tr>
<tr>
<td>D</td>
<td>38</td>
</tr>
</tbody>
</table>

A: No Risk (FC count: 0/100 ml)
B: Low Risk (FC: 1-10 / ml)
C: High Risk (FC: 11-100 / ml)
D: Very High Risk (FC: 101-1000/ml)

Source: RWSSFDB, 2007
Water Quality & Health

- 10500 children under 5 die each year in Nepal due to diarrhea
- Safe drinking water can reduce diarrheal diseases by 30-40%
- Safe storage of water can reduce it by 20%
- Hand washing – reduce by 40%
- Hygienic toilets - reduce by 30%
Innovation HWT Options in Nepal

- Household water treatment options
  - PIYUSH chlorine solution
  - SODIS
  - Kanchan Arsenic filter
  - Colloidal silver filters
HWT Promotion in Nepal

Filteration
- Candle Filter
- CS Filter
- Biosand Filter
- Kanchan Arsenic Filter

Chlorination
- PIYUSH
- WaterGuard

Boiling

SODIS
Kanchan Arsenic Filter

- Partnership with MIT, CAWST and other organizations
- Effective in removing arsenic, iron, smell, and microbial contamination
- Over 5000 filters installed so far
- Efforts underway to scale up the application of KAF throughout Nepal
Biosand Filter

- Slow Sand Filtration
- Applicable for high volume use
- 50 – 1000 litre volume
- Treatment of turbidity, iron, odour, and microbial contaminants
- Installed >100 + units in Kathmandu
Innovation in Environment Sanitation

- Ecological Sanitation
  - Protection of water resources
  - Increased agricultural productivity
  - Improved sanitation & hygiene

- Pilot project in 2002. Now more than 2000 ecosan toilets in Nepal

- User satisfaction level is high
The Concept of Ecosan

- An ecosystem approach that defines human excreta as a resource that needs to be used rather than waste that needs to be safely disposed.
- Faeces and urine collected separately and recycled.
- Close the loop between...
  - Agriculture & sanitation
  - Waste & nutrients
ECOSAN - Triple Win

- **Water**: Protection of water resources through reduced consumption & less contamination
- **Agriculture**: Higher agricultural yields through the reutilization of nutrients
- **Hygiene**: Minimization of water-based infections
Eco-san toilet promotion trend

Decentralized Wastewater Management

- 1997: ENPHO introduced constructed wetlands for wastewater management in Dhulikhel hospital
- 2006: Community-based wastewater treatment plant in Thimi
- Various applications: domestic & institutional wastewater treatment, grey water recycling, faecal sludge management
- More than 20 plants constructed
- Being introduced in 8 cities by ADB funded UEIP.
ENPHO in Solid & Hazardous Waste Management

- Study of Solid Waste Management in 58 Municipalities
- Survey and EIA of Medical Waste Management in KTM
- Medical Waste Management Guidelines for KMC
- Community-Based Waste collection & recycling
- 6-month training for technicians from 20 municipalities
- Promotion of Composting and Recycling
Household, Institutional & Community Composting Systems
Integrated Community based WASH

- Poor urban and peri urban communities
  - Siddhipur, Hetauda,…
- Strengthening of community groups
- Focus on water quality, waste management, total sanitation
Empowerment

“Biosand Filter” Construction by women

Total Sanitation Campaign led by SHE Team

Destroying the “Khichamooga”
Partnerships & relationships
History of the Sanitation Initiation in Nepal, Guiding Principles and Way Forward
History of the Sanitation Initiation in Nepal

- 1980 – UN Declared WASH decade and initiated Sanitation
- 1989/90 – Involved female participation and hired Women Workers for software activities
- 1994 – Developed Sanitation Policy
- 1998 – Established of Steering Committee for National Sanitation Action
- 1999 – Developed and used Basic Sanitation Package
- 2000/2001 - Initiated School Sanitation and Hygiene Education programme and National Sanitation Action Week
- 2003 – Developed and piloted Participatory Hygiene and Sanitation Transformation (PHAST) approach in few districts.
- 2004 - Developed Rural Water Supply and Sanitation Policy/Strategy and hand washing with soap campaign
- 2006 – Developed and Implemented School Led Total Sanitation and scale up throughout the country
- 2007/8 – Developed and implemented Child, Gender and Differently-abled toilet facility in schools
- 2008 – Initiated International Year of Sanitation/Global Hand Washing Day
- 2009 – Developed Urban Water Supply and Sanitation Policy
- 2010/2011 – Initiated Aligning for Action in two regions with commitments
  - Finalized/approved and launched Sanitation & Hygiene Master Plan
  - Established SEIU, Organized first Joint Sector Review and Prepared sector assessment report
Sanitation and Hygiene Master Plan
Launching Program

SHMP was launched in the gracious presence of Hon’ble President of Nepal Dr. Ram Baran Yadav
Guiding Principles of SHMP-2011

- ODF as the Bottom Line
- Universal Access to Toilet in Water Supply Project
- Technology of Households Toilets- Informed choice
- Leadership of Local Bodies
- VDC or Municipality, the minimum program area for Intervention
- Locally managed financial support mechanisms
- User’s Friendly Sanitation Facilities in Institutions
- Mandatory Provision of Toilets in New Built up
- Hand Washing with soap and other behaviour built up
Target as per the SHMP-2011

- Milestone 1: 60% toilet coverage by 2012/13
- Milestone 2: 80% toilet coverage by 2014/15
- Milestone 3: 100% toilet coverage by 2016/17
Way Forward

- Establishment of SACOSAN-V Secretariat at DWSS with full equipped resources (HR/Fund) by Feb 2012
- Organize 2 SACOSAN meetings (Pre and Post) in Kathmandu to review and follow up the Conference
- Establish the country focal person/points for the smooth communication
- Discuss and agree on the program structure/agenda and country wise inputs/paper including other management aspects for the SACOSAN-V
- Organize National Sanitation Conference in Nepal as a preparatory work for SACOSAN-V
- Confirm the date (Oct/Nov.) and country representation based on the criteria
Way Forward Contd..

- Develop/manage all SACOSAN-V related documents, materials, invitation related aspects for smooth communication, coordination and cooperation in a collaborative ways.

- Undertake preparatory work for effective field visits/learning visits of delegates during SACOSAN –V conference.

- Compile country specific national action plans/road map/commitment responding to the Colombo declaration.


- Communicate and coordinate with SAARC to bring Sanitation under the environmental portfolio.
Way Forward Contd..

- Propose /initiate innovative/creative activities for SACOSAN V event
- Organize NSHSC, NSHCC/TWG meetings to do the preparatory work/follow up and further actions including committee formation.
- Select committees, facilitators, reporters and other support HRs to plan, prepare, conduct the event smoothly and timely action.
- Select right persons/participant and local champions/communities and to recognize them base on set criteria
- Communicate and coordinate with ICWG country focal persons and take action and follow up base on ToR.

Thank You