

POU Drinking Water Treatment –Pilot Project

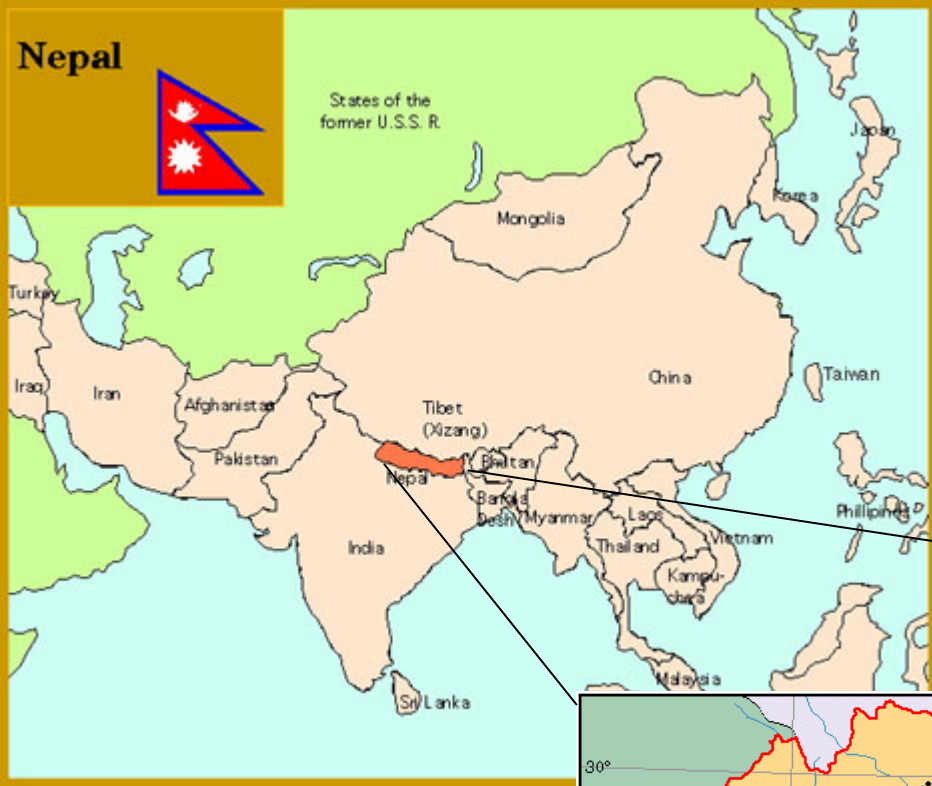
Nepal

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Content

- Introduction
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Nepal is rich in water resources and depends on both surface and ground water for household consumption

However, problems of bacterial contamination in both water sources has led to major waterborne diseases



After years of effort on reduction of diseases, the concentration still is in curative measures rather than preventive ones

13,000 children under five die of diarrhea every year in Nepal

Incidences of diarrhea is still high though the annual death is said to be decreased

Baseline Survey- UNICEF/USAID/HIP (2005)

- To address the supply and demand issues related to POU drinking water treatment options
 - collect data on the awareness and practices of treating drinking water management in households and
 - identify potential treatment options for promotion and distribution.

Study Matrix

Target Audience	Study Instruments	Total Number (equally divided among 4 districts)
Mothers/Caretakers	Household survey – Structured Questionnaires	1,800
Adult males	FGDs	16
School Children	Questionnaire based Interview	120
Women Workers	Individual Interviews	8
Sanitation Motivators	Individual Interviews	20
CMs/Female Volunteers	Individual Interviews	40
FCHVs	FGDs	8
FCHVs	Individual Interviews	120
MCHW/VHW	Individual Interviews	60
Retailers	Questionnaire based Interview	40
Mothers/ Caretakers	Product Trials	80

UNICEF/USAID/HIP project area



Perceived quality of water for drinking

- **Over 3/4th households did not perceive that they have problems with the quality of water for drinking**
- Most cases of problems were:
 - Turbid water
 - Visible impurities like sand/ mud mixed with water
- In some cases problems were:
 - Insects in water
 - Bad smell
 - Arsenic (Dang, Kapilvastu and Parsa)

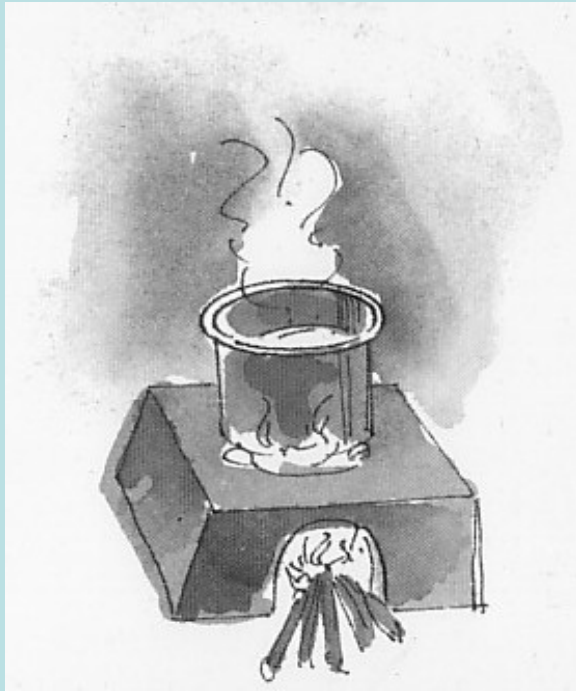
Drinking water treatment

- Around 60% of the households did nothing to improve the quality of water from the source for drinking,
- Most common methods to improve quality of water for drinking are:
 - Keeping water storage vessels covered
 - Sieving water through cloth and,
 - in some cases, letting water settle/ sedimentation

Consumer Preference Survey

- Efficacy of Products (*it works in the “lab”*)
- Market Feasibility
- Consumer Acceptability

Various POU Drinking Water Treatment Methods



Boiling



**Chlorination-
Piyush and Water
Guard**



SODIS

Filtration



**Biosand
filter**



**Colloidal silver
filter**



Overall acceptability, *without considering cost*

- CS Filter the favorite
- Chlorination “second”
- SODIS and boiling both acceptable, but considered lesser options

Common Dislikes

- Methods making water warm
 - Boiling
 - SODIS
 - Chlorination
 - CS Filter



Cost

- Costs considered within ‘easy’ reach for all methods EXCEPT CS filters
 - SODIS and boiling - ‘budget alternative’, esp. poor villagers
 - Chlorine - within reach when considering disinfection of drinking water
 - CS filter – Most underestimated the cost. Preferred with installment payment or financial schemes

POU Drinking Water Treatment Project in Nepal – UNICEF/USAID/HIP

Overall objective:

- Reduce morbidity and mortality among children under five in Nepal through a coordinated communication and social mobilization campaign promoting use of drinking water treatment options in households.
- Ensure availability of the POU options for sustained use of safe water

UNICEF/USAID/HIP project area



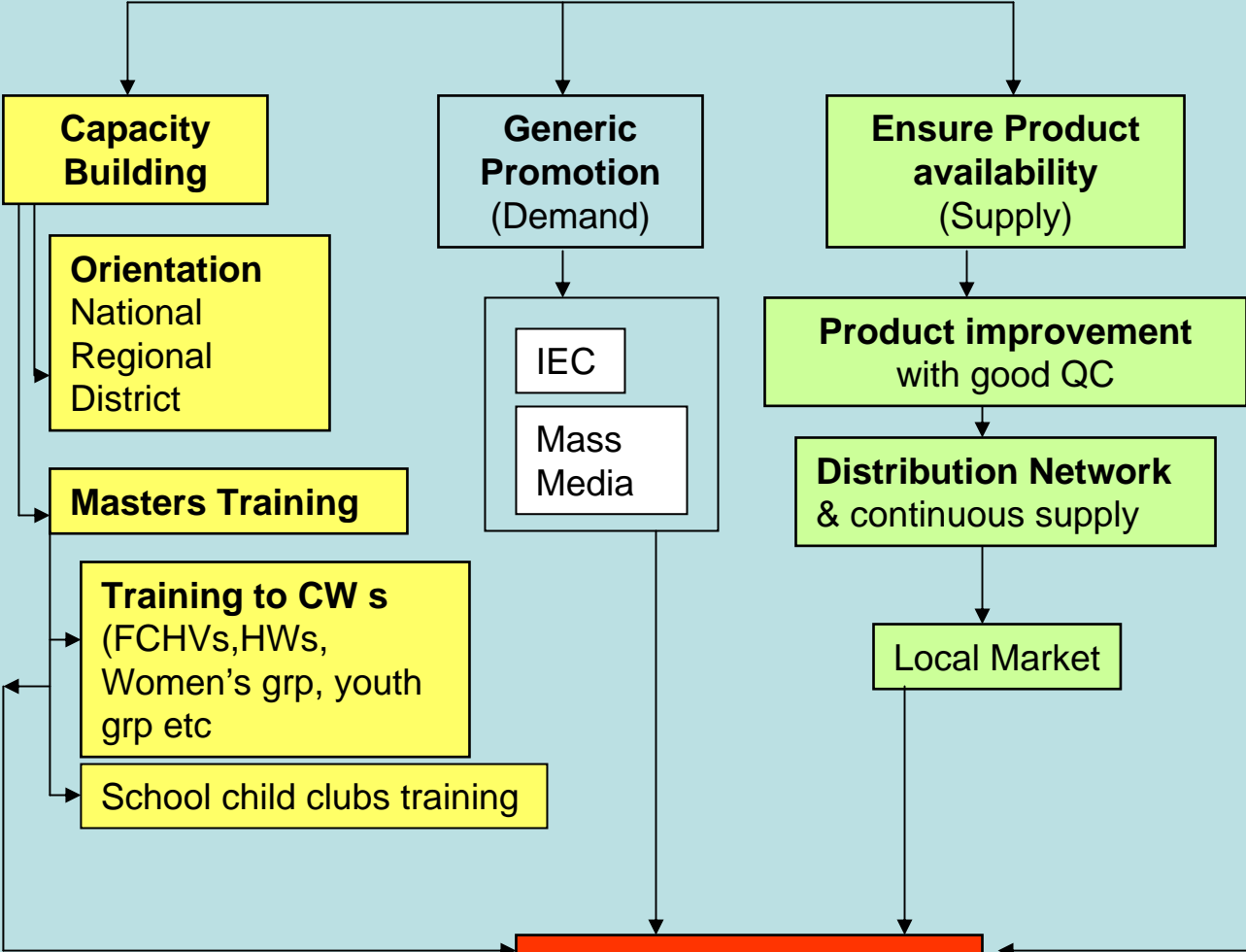
**Piloted in 4 districts - representing 4 regions (about 200,000 HH)
Schools- 200**

Specifics

- Provide adequate information to households that **clean water is not safe water and the need to treat water for drinking**
- Promote reliable and affordable POU options available in Nepal
- Collaborate with various producers of POU options to support the availability of the options in the market (private sector participation)
- Collaborate with various stakeholders of water supply and sanitation to incorporate POU in their regular programs
- Advocate together on POU inclusion in National Water Supply and Sanitation Policy

Activities

Advocacy/ POU integration in regular programs of WATSAN stakeholders



National Strategy/Policy on POU

Households

Formation of Task Force for POU

Department of Water Supply and Sewerage (DWSS)

Nepal Red Cross Society (NRCS)

Nepal Water for Health (NEWAH)

**Rural Water Supply and Sanitation Fund
Development Board/ World Bank (Fund Board)**

Community Water Supply Project/ADB

Small Town Project

WHO

UNICEF

USAID/HIP

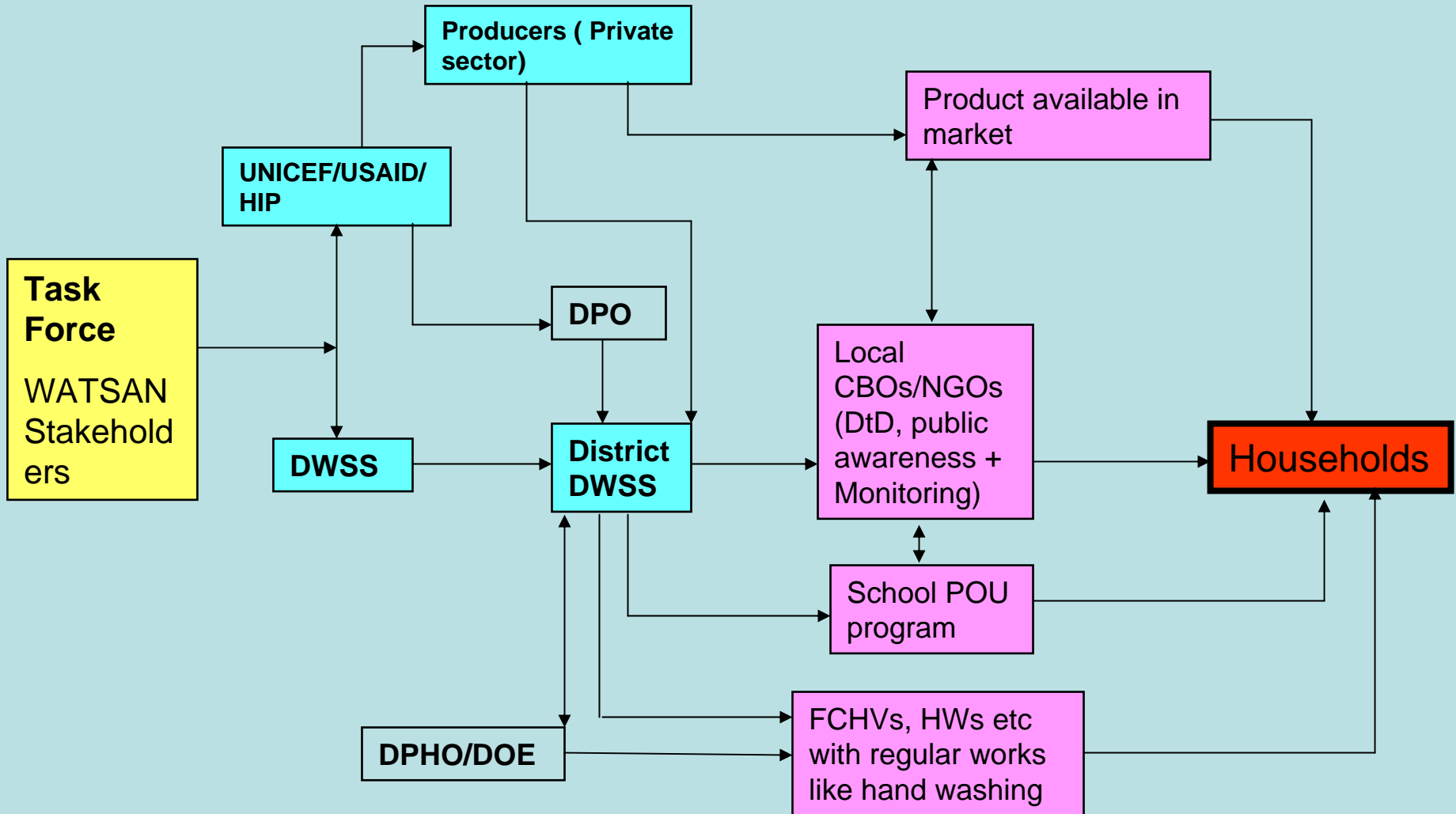
WaterAid

ENPHO- for technical input

Function of the task force

- Advise/feedback to the activities conducted sp. making IEC materials and training package
- Include POU in their individual organization's regular programs
- Support in promotion of POU nationwide
- Advocate for POU inclusion in national water and sanitation policy

Implementation Channels



School POU promotion

- Provision of POU options in schools with school contributing to about 20-30% of the total budget
- Involvement of Child club and teachers for regular operation and maintenance
- Involvement of child clubs in community awareness through programs in schools and activities such as street drama



Demand Generation

Awareness package of POU options (Nepali)

IEC materials-

- Posters
- Brochures
- TV commercials
- Radio spots
- Stickers

Training package

- **Fact sheets**- water supply implementers, policy makers and related stakeholders
- **Technical Manual**- frontline workers such as female community Health Volunteers, Teachers, Village health promoters, community motivators, women's group etc.
- **Flip chart** - frontline workers
- **Game book**- school children
- **Children's notebook**

Posters

सुरक्षित खानेपानी, स्वस्थ जिन्दगानी

घामले पानी शुद्धीकरण गर्ने विधि (सोडिस)

एक देखि दुई लिटरसम्मको पारदर्शी प्लाष्टिकको बोटलमा पानी भरेर घाम लाग्ने ठाउँमा दिनभरि वा बादल लागेको खण्डमा दुई दिन लगातार राखेपछि पानीमा भएका कीटाणुहरू नष्ट भई पानी पिउनयोग्य हुन्छ ।



शुद्धीकरण गर्ने अन्य विधिहरू



उमाल्ने विधि



कलोरेसिएसन विधि



फिल्टर विधि



हामी सबैले बुकिराखौं र अपनाऔं पनि, पानी शुद्धीकरण गर्ने विधिहरू
सुधारौं बानी, पिउने गरौं सुरक्षित पानी

सुरक्षित खानेपानी, स्वस्थ जिन्दगानी

फिल्टर प्रयोग गरेर पानी शुद्धीकरण गर्ने विधि

कोलाइडल सिल्वर फिल्टर प्रयोग गर्दा पानीमा रहेका कीटाणुहरू नष्ट भई पानी पिउनयोग्य हुन्छ । यसको अभावमा बजारमा पाइने अन्य फिल्टरहरू पनि प्रयोग गर्न सकिन्छ ।



शुद्धीकरण गर्ने अन्य विधिहरू



सोडिस वा घामले घामी शुद्धीकरण गर्ने विधि



उमाल्ने विधि



कलोरेसिएसन विधि



हामी सबैले बुकिराखौं र अपनाऔं पनि, पानी शुद्धीकरण गर्ने विधिहरू
सुधारौं बानी, पिउने गरौं सुरक्षित पानी

Flex- mobile poster

खानेपानी शुद्धिकरण घरेलु प्रविधिहरु



उमाल्ने

खानेपानीमा भएका जीवाणु नष्ट गर्ने भरपर्दो र चलनचल्तीको विधि ।

फिल्टर

खानेपानीमा भएको धमिलोपन र जीवाणु हटाउने प्रविधि । बायोस्याण्ड, कोलाइडल सिल्भर र क्याण्डल फिल्टर ।



सोडिस

पारदर्शी १-२ लिटरको प्लाष्टिक बोतलमा खानेपानी भरेर पारिलो घाममा दिनभर राखी जीवाणु नष्ट गर्ने प्रविधि ।

क्लोरिन भोल (पीयूष, वाटर गार्ड)

पानीमा क्लोरिन भोल राखेको ३० मिनेट पछि जीवाणु नष्ट हुने ।



हामी सबैले बुझि राखौं र अपनाऔं पनि, पानी शुद्धिकरण गर्ने विधिहरु

सुधारौं बानी पिउने गरौं सुरक्षित पानी



Children's book



बायोस्लॉज फिल्टर

बायोस्लॉज फिल्टरने सौंठक र जीविक प्रतिक्रिया का कोटाणु हटाउने गर्छ । यसका संचिनो बन्नुका र फिट्टी र पौन प्रयोग गरेको हुन्छ । संचिनो बन्नुकाको संचिक्रमले प्रत्यक्ष संचिक्रम विनाशक बन्दछन्, जसलाई बायोफिल्म भनिन्छ । जीवाणुहरूले कोटाणुहरूलाई खाई दिन्छन् । संचिनो बन्नुकाको फलस्वरूप र अरु सामान्य रोजनक पदार्थहरू संचिन अर्थात् पानीबाट छानिन्छन् । बायोस्लॉज फिल्टर ...

- सान प्रकोप र संचिनो पार्इने पदार्थहरूबाट बनेको छ ।
- छँथलेपन हटाउँछ ।
- रसायनिक पदार्थहरू र कोटाणुहरू धेरै कमजोर हटाउँछ ।

कठोर अम्लीय फिल्टर

कठोर अम्लीय फिल्टरले पानीमा भएको अम्लीयक हटाउन सक्छ । यो बाजे स्लॉज फिल्टर जस्तै हुन्छ जसको संचिक्रमले प्रत्यक्ष प्रयोग फलस्वरूप संचिनो फिल्टरहरू बाहिरका हुन्छन् । यो फिल्टरमा सानो छिद्रमा अम्लीयक अर्थात् जलमा ...

- नेपन जाईका केरी विरुद्धमा जलमाको पानीमा अम्लीयक पदार्थको हुनुले त्यस्ता छिद्रहरूमा यो फिल्टर प्रयोग गर्नु पर्छ ।
- बनावटनु संचिनो छ ।
- अम्लीयक र फलस्वरूप हटाउँछ ।
- विटामिन हटाउँछ ।

आफूलाई सोध

निर्षीय आज विश्वमा कठोर पानी खाँदा यो पानीमा कोटाणु प्रयोग होला कि विषम होला विचार गर ।

सुन्दरको धाराको पानी खएको

बहा छैन ।

सक पुरिको खेलाको पानी खएको

फिटणु छ ।

बहा छैन ।

असलने सिलान सुनबाट पानी लडाउनु भएको छिडे । सँने कठोरपन कोर धाए । कोटाणु छ कि छैन, बाह छैन

सका गरेको फिल्टरबाट निएको

छैन होला ।

Logo



हामी सबैले बुझिराखौं र अपनाऔं पनि, पानी शुद्धीकरण गर्ने विधिहरू
सुधारौं बानी, पिउने गरौं सुरक्षित पानी

All the materials has been approved by the Task force and pre-tested in the field before finalizing

Integration into at Scale Water & Sanitation Activities of Stakeholders

(beyond 4 project districts)

- Rural Water Supply and Sanitation
Fund Development Board/ World
Bank
- Community Water Supply
Project/ADB
- Small Town Project
- NEWAH
- Education Department
- UN-Habitat
- Water Aid

Many more to meet ...



Supply

Collaboration with producers on availability of POU products

Chlorine- Piyush(ENPHO),
Water Guard (PSI)

Filters- CS filters (IDE/SBL)

Biosand (ENPHO)

SODIS- Promoted by ENPHO

Boiling



Field visits at HHs, schools together with producers



Achievement

Joint collaboration of producers to address the demand in districts thru:

District Level Assessments on supply chain and promoters (agents)- UNICEF funding

Individual producers already working on product availability at districts with their own agents

Products Supply

- Piyush and Waterguard- supply through agents at districts
- CS filters- the filter will be made centrally in KTM and assembled at the districts- initially in Dang and Kapilvastu
- Biosand- local entrepreneurs who are capable of installing at location
- SODIS- dependant on PET bottle availability

Challenges

- Some of the producers still very primitive, product availability
(some support to make the products available- UNICEF)
- Involvement of several agencies- a must but challenging
- Project focuses in rural area- creating gap between urban and rural linkage (UN-Habitat is willing to address this side)
- Project period- very short to see the impact
- Needs very strong monitoring- much more complex than hand washing (monitoring of the supply and demand)

...contd

- Addressing Schools- A separate POU research in May,2007 to identify the most appropriate method to treat water at schools
- Education and Health Ministries- funds needed
- Working with Govt. body and its network together with current political situation

Additional Collaboration

UN-Habitat, UNICEF and HIP- working together to make the entire promotion package in English with additional information on monitoring and evaluation for global community

Project launch

The Project has been launched on April 23rd, 2007 by Minister of Physical Planning and Works , Ms. Hisila Yami

Followed by district level operational launch in May, 2007

Thank you !