

# Climate Change Adaptation at Local Level by Implementing UDTs & UDDTs: Experiences from Western Nepal



***Guneshwar Mahato***

***Water Supply & Sanitation Specialist***

**Rural Water Supply and Sanitation Project**

**Western Nepal (RWSSP-WN)**

**(Nepal-Finland Cooperation)**

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**4<sup>th</sup> International Dry Toilet Conference 2012**

**Tampere, Finland**

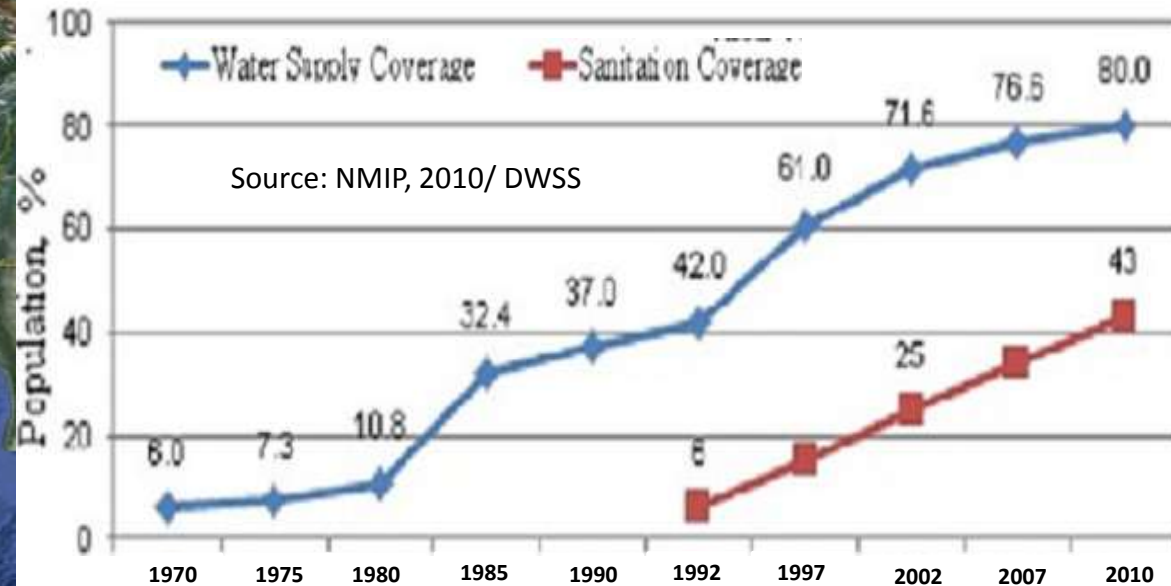


# Presentation Outline

- Introduction
- UDT/UDDTs Promotion in Nepal
- Major Climate Change Threats on Nepal's WASH Sector
- Mahendrakot's WASH Situation Before & After ODF
- RWSSP-WN's Efforts on Climate Change Adaptation/mitigation at Local Level
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# Introduction



**27 million people, 80% water supply coverage, 5.5 million people do not have access to adequate water supply, 43% sanitation coverage, 15 million people lack of adequate sanitation, 10,500 children die of diarrheal diseases every year (Source: NMIP 2010, NDHS 2011)**



# UDT/UDDTs Promotion in Nepal

- Formally began – 2002 in Khokana and Sidhipur Villages of Kathmandu
- Today- many villages, many organizations, several technologies
- Aspects – Livelihood promotion, climate responsive, social, health, environmental

Ms. Chandrani > cleaning her toilet from Gamcha, Kirtipur showing her composting latrine.



WaterAid/Anita Pradhan

Ms. Shova Maharjan from Gamcha, Kirtipur cleaning her composting latrine.



WaterAid/Anita Pradhan

Ms. Astha Devi Sahukhal, at her family's composting latrine



WaterAid/Marco Betti

Ms. Apna from Tigani digging for compost from the composting latrine.



WaterAid/Anita Pradhan

# Major Climate Change Related Threats to Nepal's WASH Sector

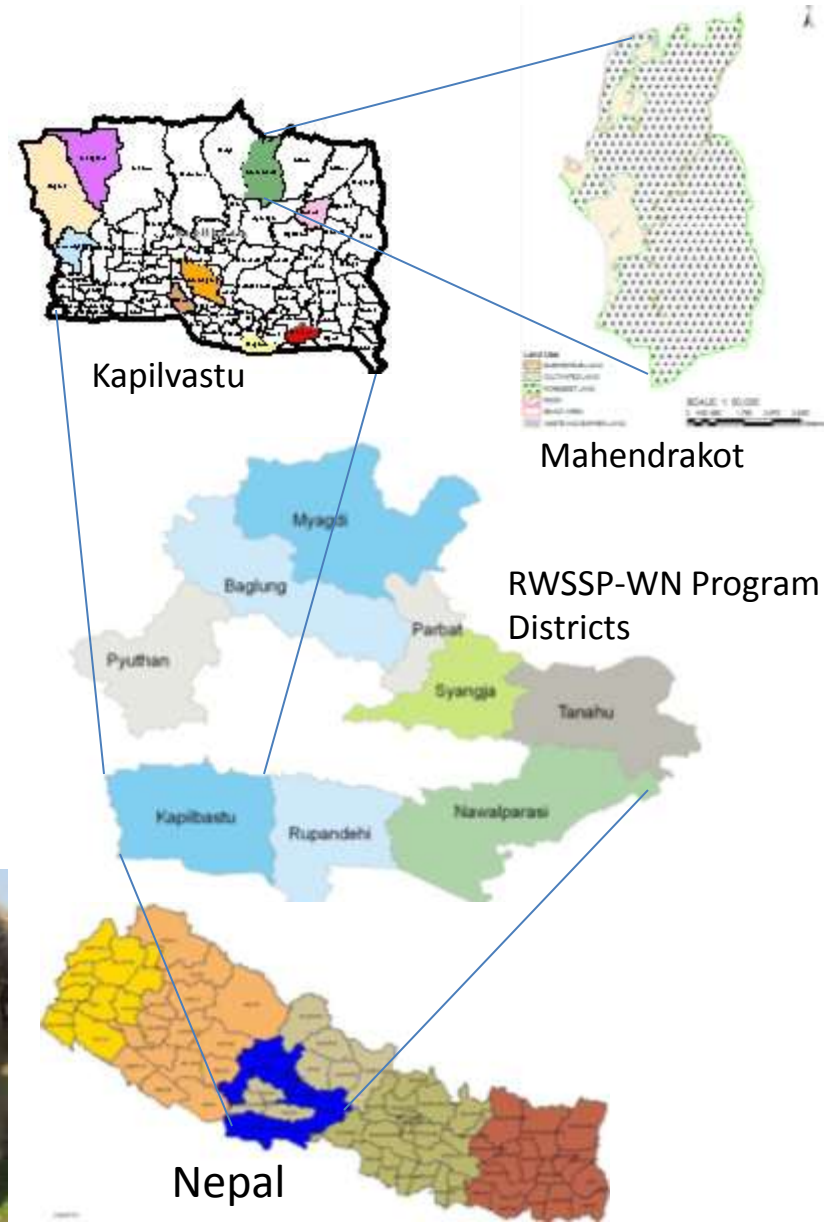
- Increment in extreme rainfalls and droughts causing water availability more than demand or water scarcity
- Increasing floods and landslide frequencies
- Depletion (even extinction) of surface & ground water sources
- Pollution of water quality by floods/erosion and open defecation practices
- Low ground water recharges due to upstream deforestation and unplanned extraction





# Mahendrakot's WASH Situation Before ODF

- Toilet coverage - 54% (719 out of 1580 HHs had no toilets, 206 pit latrines)
- Basic WS coverage – 43%
- Diarrheal disease incidences – 625 nos. (in 2008)
- Arsenic contaminated tube wells – 26.14% above WHO GV (10 ppb) & 19.78% above Nepal Standard (50 ppb) (AIMS, 2008)
- Open Defecation Practices – Water pollution, water borne diseases, social prestige loss





# Mahendrakot's WASH Situation After ODF

- 100% HHs have toilets & in use (ODF declared on 9<sup>th</sup> June 2011)
- 100% population have access to quality water supply services
- 100% hand washing with soap practices
- Diarrheal disease incidences – 136 nos. (in 2011)
- CLTS Approach – successfully applied since 2009



# RWSSP-WN's Efforts on CCA at Local Level



- WASH planning at local level – 343,000 people
- ODF area establishment – 732,000 people
- Ecosan promotion – 5,000 people
- Improved Cooking Stoves promotion – 4,200 people
- Water source conservation – 4,200 people
- Multiple Water Use System promotion – 5,000 people
- Solar Photovoltaic/Wind Power Water Lift System – 2,700 people
- Raised shallow tube/Hand Dug wells/Latrines in Terai – 25,000 people
- Rain Water Harvesting – 2,000 people

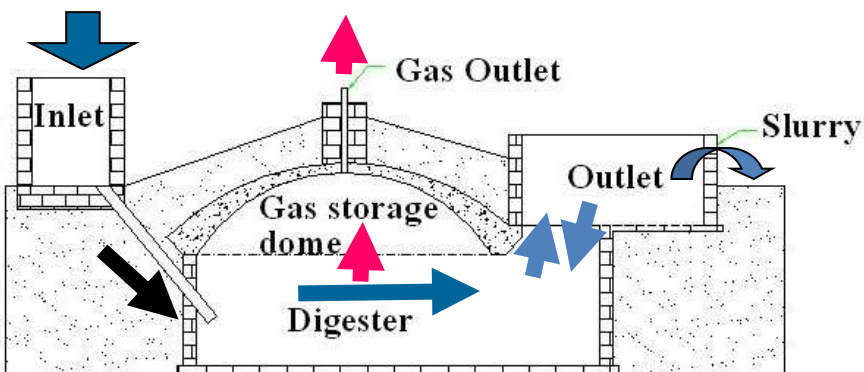






# Case Stories: 3 Farmers

Case Story 1: Farmer 1	Case Story 2: Farmer 2	Case Story 3: Farmer 3
UD Flush Toilet	UDDT	UD Flush Toilet integrated with Biogas
Cost- NRs. 5,000 (EUR 50)	Cost- NRs. 20,000 (EUR 200)	Cost- NRs. 35,000 (EUR 350)
Water Source: Shallow Tube Well (39.6 m deep)	Water Source: Shallow Tube Well (7.5 m deep)	Water Source: Shallow Tube Well (9.15 m deep)
Toilet built year - 2010	Toilet built year – 2002 & upgraded	Toilet built year – 1996 & upgraded
Nutrient use in crops: sanitized Urine	Nutrient use in crops: Urine & treated feces	Nutrient use in crops: Urine & digested slurry
Crop cultivation area- 37 m <sup>2</sup>	Crop cultivation area- 175 m <sup>2</sup>	Crop cultivation area- 175 m <sup>2</sup>



# Benefits of UDT/UDDTs by 3 Farmers



Case Story 1: Farmer 1	Case Story 2: Farmer 2	Case Story 3: Farmer 3
Cash & Off-season crops produce and selling		
Saved time used in income generation		
	Energy saving	Energy saving (Biogas for cooking & lighting)
No risk of ground water pollution		
	Very Low water requirements	Low water requirements
Income Generation/ Nutritional / health benefits		



# UDT/UDDTs' Support to Local Level CCA



Support to Climate Change Adaptation	By
Prevention of surface & ground water pollution	No contact with soil, no effect to the tube well/ spring / surface water source
Soil fertility increase	Increase soil moisture and establishment of organic agriculture
Energy conservation	No need of water treatment (Filter and boiling), use of biogas (less carbon emissions)
Less/No depletion of ground water recharge	Less/no use of firewood, upstream forest preservation (in case of biogas)
Saving of domestic water use	Less/ Very less or no use of water for sanitation
Farming during water scarcity	Water demand fulfillment partly by diluted urine use



# Scaling-up

- Positive perceptions and linkages with economic, health/nutrition, agriculture and social values
- Scaling-up through Small Do-able Actions (SDAs)
- Nos. of UDTs/UDDTs being used by farmers/ households are increasing (>50 )
- People from many corners of the country- excursion visits



# Conclusion

- UDTs/UDDTs promotion- one of the key actions for promoting local level CCA and for livelihood improvements
- Continuous implementation of SDAs – effective approach for scaling-up and for sustaining hygiene and sanitation behavior
- CLTS approach successfully applied
- Improved/ safe sanitation- supports to adapt/ protect from the risks of extreme events (e.g. flooding, water scarcity etc.)

# Thank You for Listening!



# Namaste



# Is this a Climate Change Adaptation?



Ministerial meeting at the base camp of Mt. Everest in Nepal



Ministerial meeting under the sea water in Maldives