Integrating MUS in WASH as a Domestic+: An initiation *(In the context of WAN)*

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Presentation Outline

1. WaterAid in Nepal: A brief info
2. MUS in WASH: A Context
3. Concept of MUS application: An Approach
4. Implementation Framework
5. Intervention of MUS in WASH Projects
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WaterAid in Nepal: A brief Info

Start: 1987 in response to UN Water & Sanitation Decade to support provision of water & sanitation services in rural Nepal

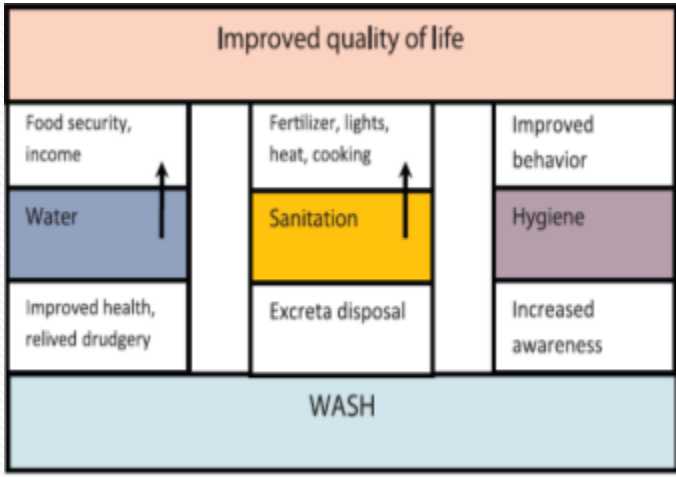
Contribution: 4 - 5% on an average annually in WASH Sector

- WAN works with 7 partners to:
  - In 4 out of 5 regions of the country
  - To deliver WASH facilities in such a way that they are: **informed, appropriate, integrated, transferable & sustainable**
  - To advocate for policy influence through evidenced based demonstration

MUS in WASH: A context

WAN in MUS

- Intervened since 2009/10 as a pilot initiative through **NEWAH** in 6 districts in a VDC level with gradual scaling - up.
- Demonstrate a **spirit of IWRM, but not yet** institutionalized.



Why MUS in WASH ? (Suitability of MUS)

- **Increased efficiency** when traditional experiences continue with current technologies and approaches
- **Integrate Domestic WS facilities with productive uses** for local livelihood in a participatory way satisfying domestic needs *(E.g. with Micro-irrigation for off season high value agro-products etc.)*
- **Ensure sustained WASH facilities** linking with livelihood & functional O&M
- **Access of poor** with marginalized landholding **to water not only for domestic use**

Concept of MUS Application: An Approach

Initiated with Unstructured MUS in WASH on Ad-hoc basis:

- **Utilization of wastewater:** Design of water points with appropriate:
  - Drainage systems for the promotion of optimum use of wasted water collected from daily use
  - Freshwater overflowing from RTs constructed for DW purposes.

- **Increased design capacity:** Designing schemes with surplus water than required from actual need:
  - Extraction of 20% more than required for drinking purposes depending upon the permission of sources

Concept of MUS Application: An Approach

MUS as a part of WRM approach in WASH: *with a concept of D^+*

- Minimize water depletion and competing demand with optimum use of available sources for drinking and productive use.
- Manage water sources at appropriate and optimum level acknowledging rights of other users/uses

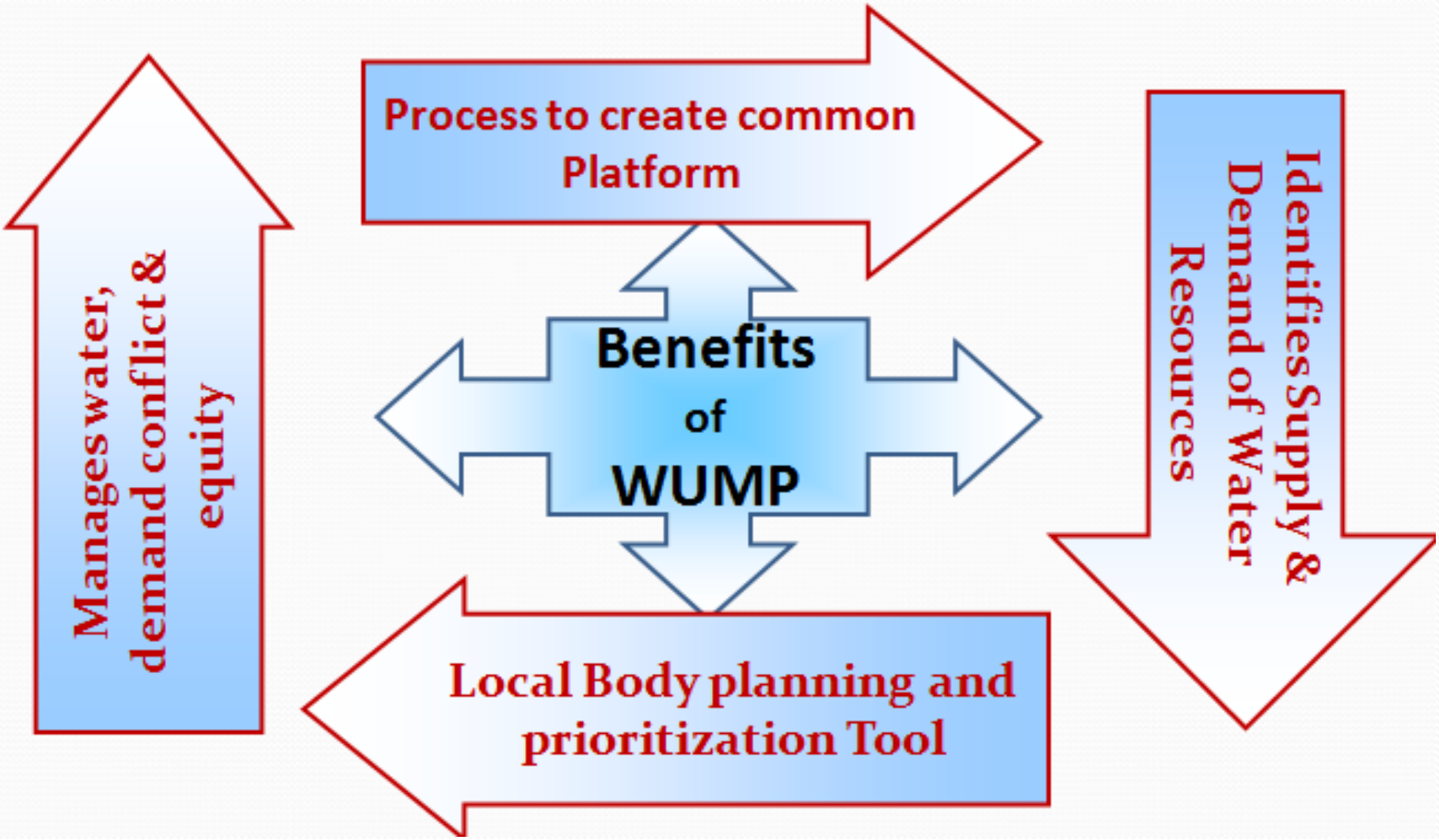
- Initiated MUS in WASH with a concept of **Domestic$^+$** in an integrated approach under broad theme of WRM/WSM

Major difference *(MUS & Domestic+):*

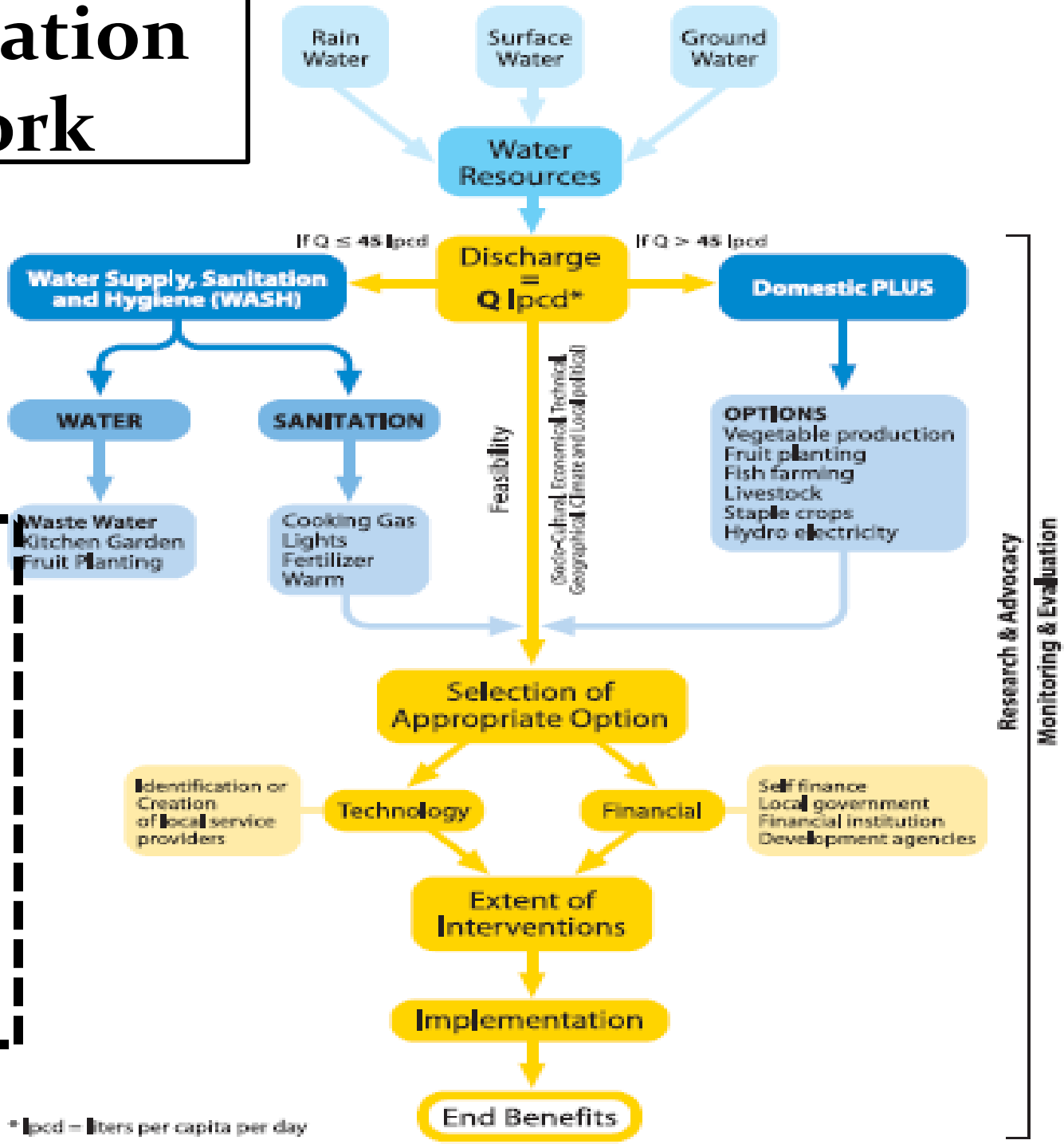
- **Starting point** – where **MUS** considers all water uses **whereas Domestic$^+$** ensures available water meets domestic needs of the community at first

Concept of MUS Application: An Approach

WASH with a concept of Holistic Plan - WUMP:



Implementation Framework



Criteria to integrate MUS:

If **Q <= 45 lpcd**

Limit to WASH and systematize installing *add-ons*

If **Q > 45 lpcd**

Implement MUS in WASH as a **D^+**

Intervention of MUS in WASH Projects

Steps in intervention

- **PLAN** beyond basic domestic needs assessing all sources with priorities of communities and ***pros & cons*** in place
- Analyze water using trend to manage water sources meeting diff. needs and acknowledging water rights of the people through water budgeting
- Identify feasible & appropriate technological options offering livelihood/IG
- Explore potential opportunities while managing sanitation – *value chain*

Implementing Approach

- **Increasing Abstraction Capacity:** Tapping extra water if source permits
- **Installing Add-Ons:** Adding productive infrastructures on WASH projects (Vice Versa)
- **Phased Extension:** Comprehensive plan **Vs** availability of resources
- **Linking Sanitation to livelihood chain:** By product of Sanitation in agriculture as fertilizer/manure

Intervention of MUS in WASH Projects

Basic Technology Adopted:

- Technologies - not new & special; resemble the components in different ways.
- Surface water sources (springs) – conveyed to DW collection/storage tanks with GF system.
- Excess water from one tank overflows to another for domestic and productive use
  - Micro Irrigation: kitchen gardening; sprinklers/drip irrigation from Over Flow from Water Storage Tank.
  - Energy: Peltric sets, water mills etc.
  - RWH, water recharging, **etc.**

Drinking Water Tap

MUS off take drip irrigation system

System Design: By Use

- **Single Use System (SUS):** Designed for domestic consumption only
- **De-Facto MUS (D-MUS):** Using water/wastewater for KG
- **MUS by Design (MUS-D):** Designed to meet both domestic and productive water demands simultaneously from:

System Design: By Use

Single Water Source:	Different Water Sources:
• For single use with single/multiple infrastructures • For multiple use with single/multiple infrastructures	• For multiple use with single/multiple infrastructures

System Design (by Use) is further guided by:

(a) Continuous Flow	(b) Year Round Controlled	(c) Seasonally Controlled
System: 1 Tank System Source with sufficient flow throughout year	**System:** 2 Tanks System Source just enough to meet design demand	**System:** 1 Tank controlled system Moderate source to meet yearly demand

Source: IDE

Intervention of MUS in WASH Projects

Implemented MUS in WASH with D^+ in:

In unstructured way, very early (may be more than 7 yrs ago) **BUT in structured way, intervened since 2009/10** as a pilot initiative through **NEWAH** in 6 districts in a VDC level with gradual scaling - up.

6 districts (*Udayapur, Siraha, Dailekh, Jajarkot, Doti* & *Surkhet*) **at VDC level**

Achievements:

- Contributed VDCs in achieving universal WASH coverage and ODF with 200 WPs facilitating DW in place for 925 HHs benefitting 1300 HHs more
- IG opportunity & linkage with S/C (MF) groups gradually led to economic return and informed locals about nutritional value of fresh vegetables
- Mobilized resources from LGs for installation of:
  - *Micro irrigation with excess water for producing cash crops through kitchen gardening, nursery irrigation, sprinkler/drip irrigation*
  - *Peltric Sets, Water Mills etc. integrating with DW systems & Biogas with toilets*
  - *Recharging shallow GW aquifer from the excess water and Rainwater*
  - *Cattle troughs and fish Ponds const. for cattle raising and fish farming*

Lessons Learned

- WASH integrated with **D^+ or MUS** ensures functional of the facilities with likely to sustain when analyzed from FITS criteria;

  May be due to:

  - *Engages people in livelihood and system management*
  - *Reduces No. of UGs by MUS in WASH as D^+*
  - *Understood Value of WATER* ***(e.g. add-ons to WASH)***

- Practiced in Hilly regions *(GF system)* – But relatively expensive in mixed *(Pumping–OHT–GF Distribution)*

  Not so popular in Tarai

- WASH access with integration of MUS might be expensive to reach poor & vulnerable *(marginalized /no land holding)* when not linked with market

- Provision of seeds & technical advice to promote kitchen gardening using extra water (incl. wastewater) needs linkages with DADO for more efficacy

Lessons Learned

- Transfer of management skills to locals is essential for sustenance of WASH with MUS/D^{+} and sanitation by-products
- High community participation with a return of economic benefits from IG / livelihood **with Pay back period of 13-14 Months & FIRR of 58%**
- Roughly 10% of total cost is added - *Nominal when looked at benefits it offers*
- **Financing:** Pay back period of financing (loan/benefits) for WASH with MUS is less when compared to WASH without MUS
- Market promotion, linkage and networking is essential to go beyond domestic consumption to ensure economic benefits and return.
- **Financing mechanism:** Only 45% of total sector financing could be mobilized incorporating MUS in WASH, though ensure economic return

Going Forward

- **Incorporate MUS approach** in WAN's WRM/WSM policy **as Domestic+** and institutionalize / mainstream it among the partners – **rural to start**
- **Promote WUMP as a holistic coordinated plan to:**
  - Initiate MUS as a starting action for cross linkages and synergy
  - Develop linkage/collaborations & advocate within sector & beyond:
    - Govt. bodies, MDPs, Donors, sector agencies & expert actors
    - Organizations particularly focusing on energy, and agriculture
- **Promote MUS initiatives** in WASH sector and beyond for:
  - Endorsement & financing for wider replication of concept/approach
  - Profitable investment and social reform,
  - Marketing products (*both WAT & SAN*) with a value chain concept
  - Harmonizing sector development to achieve WASH targets

Some Glimpses

THANK YOU