Multiple-Use Water Services Training

MUS Group Meeting – Washington, DC

January 20, 2012

Winrock International
Training prepared by:

Training funded by:
Overview

- Why
- How
- When
- What
  - Outline of training
  - Look into selected sessions
Why

Underlying reason:
Lack of knowledge of MUS among implementers, policy makers and funders is a barrier to scaling up MUS.
How: Designed and Tested
**When / Target Audience**

Training for anyone working interested in MUS.
*These are just some ideas, if after seeing the content you have others, please share!*

<table>
<thead>
<tr>
<th></th>
<th>WHEN</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>During professional development or capacity-building sessions.</td>
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<tr>
<td>2</td>
<td>During MUS program development and design.</td>
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<tr>
<td>3</td>
<td>At the start of a MUS project.</td>
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What – Outline of materials

Training is in 1 folder that can be put on CD or flash disk.

1. **Training Overview**

2. **PowerPoint Presentations** for each of the 10 sessions with notes for presenter

3. **Movie Files**
What – Outline of materials

Sessions:
1. The Big Picture
2. Key Concepts in MUS
3. Benefits and Costs of MUS
4. MUS Components and Process
5. Water Overview
6. Water Accounting
7. Water Service Options
8. Livelihoods
9. Health
10. Putting it into Practice
What’s happening in these pictures?
A solution?
How does livestock watering affect this solution?
Session 1 Activity
Uses

Types of uses

- **Domestic**: drinking, cooking, bathing, sanitation, laundry cleaning

- **Productive**: gardening/irrigation, livestock, small-scale enterprises (brick making, food processing, etc.)
Water Service

*emphasis on outputs*

– water –

what people actually receive

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Water System

*emphasis on water infrastructure*

• water supply scheme

• irrigation system
WI MUS Implementation Model

WATER
Domestic and productive use
People Sources Services

MUS definition
Expansion beyond basic definition according to project resources

Learning

Wellnesses
- Support Existing Activities
- Introduce New Activities
increased productive water Services

Health
- Safe drinking water
- Safe water handling
- Hygiene (hand washing)
- Sanitation
- Nutrition

People Sources Services
Sources
Process

Water Accounting
Design of Water Services
Hardware

- Hardware for both using *and* improving water sources
  - Using (wells, gravity schemes)
  - Improving (tube recharge, micro-catchments)
- New systems, upgrades, rehabilitations
- One source for multiple uses *or* multiple sources

![One source for multiple-uses diagram]

- Drinking
- Livestock
- Gardening
- Et cetera

![Multiple sources for multiple-uses diagram]

- Brick Making
- Drinking
- Gardening
- Livestock
Process

- **Planning (Participatory)**
  - Water Accounting
  - Technology Choice

- **Implementation (Participatory)**
  - Installation of water points
  - Training: Management & Maintenance

- **Evaluation (Participatory)**
  - Quantity, Quality, Reliability, Distance
  - User Satisfaction & Mastery

- **Post Project (Sustainable)**
  - O&M of water points
  - Investment in new water points?

Monitoring
Sample Indicators

**Impacts**

**Water**
- Increase in sustainability of water services.
- Reduction in water-related conflicts.

**Outcomes**

**Hardware**
- # of people using an improved drinking water source
- # of people using water for livelihoods activities
- % increase in quantity of water available from source during dry season

**Software**
- % of water users associations collecting fees as agreed after 1 year of operation
- % of water users associations holding meetings as agreed after 1 year of operation

**Outputs**

**Hardware**
- # of water systems constructed
- # of micro-catchments constructed

**Software**
- # of water users associations trained
Example 1: Nepal – Single Source

- **Hardware:**
  - Single source for multiple uses
  - New systems

- **Software:**
  - Community management
Example 2: Niger – Multiple Sources

- **Hardware**
  - Multiple sources for multiple uses
  - Mix of new systems and rehabs

- **Software**
  - Mix of community and private management
## General technology typology:

<table>
<thead>
<tr>
<th>Source Improvement</th>
<th>Surface</th>
<th>Underground</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Micro-catchments</td>
<td>Well recharge</td>
</tr>
<tr>
<td></td>
<td>Tree planting</td>
<td>Tube recharge</td>
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</tbody>
</table>

### Water sources
- **Atmosphere**
  - Rain harvest
  - Fog harvest
- **Surface**
  - Lake
  - Dam
- **Underground**
  - Spring catchment
  - Well

### Water lifting devices
- **Traditional lift:**
  - Rope and bucket
  - Noria
  - Delou/Chadouf
- **Man power lift:**
  - Rope pump
  - India/Vergnet
  - Treadle
- **Power pumps:**
  - Motor pump
  - Solar/submersible pump

### Water storage and moving
- **Moving:**
  - Bucket
  - Wheelbarrow
  - Channel/ditch
  - Pipes
- **Open reservoirs:**
  - Artificial ponds
  - Underground reserve
- **Storage:**
  - Clay pot
  - Iron Drum
  - Plastic reservoir
  - Iron reservoir

### Water treatment
- **Physical:**
  - Sand filtration
  - Tulip filter
  - UV
  - Decantation
- **Chemical:**
  - CL
  - Coagulants

**WHO:** community water technology and costs
Upgrade/rehabilitate a technology:

The limits of upgrading a single technology:
• Quantity
• Original purpose is a constraint (ex: thin PVC borehole)
Technology choices and combinations:
(-inspired by Niger example)

Diversification by improving the scope of sources:
Multiple sources multiple uses + software!
City/workshops

50km

Open wells on poor aquifer
Lot of clay

Pop: 150

100km

Herders with 1000 cows
Conflicts with farmers

Mountain spring, river

1 km

Pop: 1000
Open wells on poor aquifer
Lot of clay

0.5 km
WI MUS Implementation Model

WATER
Domestic and productive use

MUS definition
Expansion beyond basic definition according to project resources

Support Existing Activities
Introduce New Activities

Increased productive water use

Safe drinking water
Safe water handling
Hygiene (hand washing)
Sanitation
Nutrition

Learning
Thank you!