Planning and Implementation of MUS in Nepal - iDE Experience

Poor are often the people hurt the most by water scarcity because poverty and access to water are closely linked: Gregersen et.al (2007)

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Rome, Italy

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Talk of This Session

• iDE MUS in Nepal
• Technology Combination in MUS
• Thinking before Planning MUS
• Planning Criteria for MUS
• MUS Implementation Guideline
• Usefulness of MIG
• Reserch Outcomes
About iDE MUS

- iDE Nepal is Pioneer in applying MUS approach by design in Nepal
- MUS by design was first conceptualized and field tested by iDE Nepal in Palpa district in 2001 (funded by CPWF)
- Linking small-scale water resources development to home yard high-value crops and drinking water
- MUS materializes the idea of “HVC per drop of water for increasing productivity and income”
- Strong partnership with DOA, DOI and VDC. Learning alliance approach proved to be effective to attract other partners in MUS.
- A total of 156 MUS are in operation serving 4418 households (20 under construction)
- Average cost per Scheme: Rs. 2,13,170 (€ 2013) and Cash : Non cash Ratio: 62:38
- Package of interventions - social mobilization, agricultural trainings and technologies.
Technology Combination

Water source- Pipeline- Storage tank- Tap stands- MIT –HVC

Continuous Flow System          Seasonally Controlled System          Year-Round Controlled System
Meet the water requirements for domestic need, while applying the 'excess' water for irrigation with the use of MIT.
Areas where conventional irrigation, general development concept are less effective to irrigate these areas and uplift the targeted population

Potential of small scale water resources development

Delivering water resources to smallholder farmers for reliable and efficient irrigation and domestic use.

Right technology for right farmer and use of water efficient and cost effective technologies

Application of water resources act (drinking water and domestic uses followed by irrigation and other uses)

Willingness of stakeholders to invest in the system

Potential of combining technology with HVC
Basic Planning Criteria for MUS

- Hardship in water collection: At least more than ½ hour for the round trip during two months of the year.
- Commitment for HVC production
- Ownership of the water source
- Location: Rural or peri-urban. At least 2 km from the local town.
- Water Source: Preference will be given to the spring source.
- Water discharge: Enough to meet at least (500-600 ltr + 45 ltr) litres of water per household per day for the projected population of 10 years.
- Water Quality: To be drinkable
- Willingness to Community contribution: Commitment to provide voluntary labour for non-cash components of the construction.
- Level of poverty and food insufficiency
- Access to input and output market potential
- Inclusion of disadvantaged population
Phases of MUS Planning and Implementation

1. **Phase I: Pre-Construction**
   - Project Initiation
   - Feasibility Study
   - Screening / Appraisal
   - User group Formation
   - Detailed Survey
   - Design and Costing
   - Approval / Agreements

2. **Phase II: In-Construction**
   - Material Procurement
   - Construction Works
   - Testing

3. **Phase III: Post-Construction**
   - O&M Training
   - Project Completion

4. **Phase IV: Evaluation**
   - Feedback

5. **Future Projects**

6. Feedback
# IDE MUS Guidelines

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<tbody>
<tr>
<td>Time frame designed</td>
<td>Approx. 60-90 days</td>
<td>Approx. 90-120 days</td>
<td>More than 1 Year</td>
</tr>
<tr>
<td>Provision of scheme screening (scoring system)</td>
<td>Not included</td>
<td>Included, but time frame not sufficient to implement</td>
<td>Practical implementation</td>
</tr>
<tr>
<td>Inclusion of women in UC</td>
<td>Not addressed</td>
<td>Addressed</td>
<td>Demand to change</td>
</tr>
<tr>
<td>Area of focus /WUG formation process</td>
<td>Technical /rules and regulations as stipulated by IDE</td>
<td>Socio-technical/Few ideas of community addressed</td>
<td>Let community to decide</td>
</tr>
<tr>
<td>Methodology used to prepare PIG</td>
<td>Technical staffs and central project team</td>
<td>Wide consultations and field studies</td>
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IDE Nepal नेपाल
Usefulness of MIG

- Experience gained so far has already proved MIG effective. However, practical application is must.

- MIG should include the provision of intensive training and adequate mobilization phase. Emphasis on social mobilization is critical to develop local understanding and institutions before the actual implementation of MUS.

- MUS (by design) for other multiple uses such as agri-processing, fish farming, micro-hydro etc. should be addressed. The existing MIG addresses only for DW and MIT irrigation.

- District and regional MUS workshop reports show that the present problems being faced by the MUS are the result of failure to use it practically.
Research Outcomes – Impact of MUS

Unique Case of 100% dalits, and cultivate marginal lands
Land holding- 0.102 Hectare /HH (40% suitable for HVC)
Annual average gross income - Rs. 56779 (€568)/HH
MUS Construction Cost – Rs. 91880 (€ 919)
Cost Share – Project : Community /68:32
The average yield of the source was 0.35 ltr /sec

Phulbari Village- Case Study Area
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<tr>
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<th>Pre-Project</th>
<th>Post- Project</th>
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<tbody>
<tr>
<td><strong>Income</strong></td>
<td>No income at all from vegetable</td>
<td>An average income increased by 17%</td>
</tr>
<tr>
<td><strong>Cropping type</strong></td>
<td>Crops requiring no irrigation or rain fed irrigation would be sufficient.</td>
<td>Year round irrigation and practice of off-seasonal vegetable.</td>
</tr>
<tr>
<td></td>
<td>Traditional crops</td>
<td>Crop diversification</td>
</tr>
<tr>
<td><strong>Consumption</strong></td>
<td>Very limited production even not sufficient for consumption</td>
<td>Marketing and 12-20% consumption. No body has to buy vegetables</td>
</tr>
<tr>
<td><strong>Availability of safe drinking water</strong></td>
<td>Had to fetch water from river and far sources, and it was not often safe</td>
<td>Safe water available close to home</td>
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- Increased production and income with limited resources (land, water and financial resources)
- The total cost of MUS was recovered in a year MUS was installed. [Cost- Benefit of MUS.pdf](#)
MUS IMPACT

- Improved social cohesion
- Women in the mainstream of decision making
- Awareness through increased knowledge
- Leadership development
- Improved sanitation practices
- Improved social image
- Use of improved seeds, group crop planning, market knowledge and group marketing
- Increased in fresh vegetable consumption and food security
- Time saving
- Changed in intra-household roles
Challenges

- Week functioning of WUGs
- Dependent on donors if the system breakdowns
- Maintaining and mobilizing the cash costs needed for the R&M systems need to be reinforced
- Need involving women in the O&M of system
- Increasing drying up of the spring water sources (in the hills)
Presenting you the real scene of Machapuchre Mountain and Fewa Lake from iDE focused MUS region, Mid-hills of Nepal

Thank You!