

# RAIN Foundation and its Partners in Ethiopia and MUS Integration

24-25 August 2009

## **RAIN** Foundation

- Key player in implementing rain water option
- Operational in two region remote wereda with limited option for domestic water
- Work with locally well experienced and established Partners ERHA, AFD, HCS

## Partners

- Action for Development (AFD)
- Ethiopian Rain Water Harvesting Association (ERHA)
- Hararghe Catholic Secretariat
- Community
- Government at different level

## MUS Group Internal Technical Visit

- Excellent opportunity to learn internally and share experience
- Insure that there are learning or scalable practices with in members
- Cost effective way of communicating lessons

## Methodology

- Visit target was RAIN and its partners in Southern Ethiopia
- Team compassed of ERHA, AFD, RIPPLE, HCS and community Led by HCS
- Site observation, discussion with the community, local government and partners
- Guidance from RAIN foundation and MUS Group

# RAIN Objective for Seeking the technical Visit

- To match water supply with water needs and the viability of introducing MUS towards improved livelihoods
- To get guidance in alternative institutional and financial structures that would support a more needs and demand-responsive approach,
- Assessing water needs of users, examining available water sources, matching water supplies to needs based on quantity, quality, reliability, and the active involvement and capacity strengthening of users on MUS and water management,

## **Background Visited Project Area**

- Borana (visit project area) is a semi-arid region in southern Ethiopia
- In dry period people walk between 6-8 hours to fetch water.
- Inhabitants depend largely on open water sources, with unreliable water quality and availability.
- A numerous constructed wells and boreholes are not functional due to drop in groundwater levels
- RAIN's work in southern Ethiopia began in 2007 with the key aim to improve access to safe drinking water
- RAIN also started working with HCS in the Eastern Ethiopia

## Map of the Operational Areas



#### Summary report on inventory of Zonal Schemes

| Water Schemes                                     | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|------|------|------|------|------|------|------|------|
| N <u>o</u> of Deep wells                          | 78   | 81   | 82   | 109  | 114  | 140  | 159  | 161  |
| N <u>o</u> of shallow wells                       | 75   | 79   | 94   | 117  | 121  | 148  | 156  | 158  |
| N <u>o</u> of Large scale spring<br>(motorized)   | 1    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| N <u>o</u> of Hand dug well fitted with hand pump | 26   | 26   | 28   | 36   | 38   | 42   | 44   | 51   |
| Protected gravity spring                          | -    | -    | -    | -    | -    | -    | -    | -    |
| No of Spring on spot                              | 17   | 17   | 17   | 23   | 40   | 43   | 47   | 56   |
| N <u>o</u> of Open dug wells (family based)       | -    | -    | 1175 | 2087 | 2105 | 2124 | 2173 | 2283 |
| N <u>o</u> of Open dug wells<br>(community)       | -    | -    | 83   | 124  | 131  | 135  | 137  | 147  |
| Non developed spring<br>(community)               | -    | -    | 15   | 91   | 101  | 176  | 176  | 182  |

Source:-Zonal water office 2009

Day to day life of women carrying water 7 to 15 km 20litre container in the arid hot environment Zone 46% coverage, 11% non functionality rate looks far beyond reality Sanitation coverage is below 3% In dry season animal travel up to 28kms in some cases



## **Overview of the Project**

- The short visit revealed
  - Effectiveness of the project in reaching the remote area with available option
  - Impacted the community through continues access of water and local implementers for considering rain water as a viable option for scaling up
  - Multiple contribution which include the environmental
  - Community management consideration for sustainability

## Overview...

- The ongoing rain water harvesting activities has been fully recognized by the government partners and the community as potential
- Community management of the system was part of their existing well established clan tradition
- The training provided on water harvesting technology have contributed to create the awareness by various institutions
- Similarly most of the systems are functional and used as an evidence to demonstrate the rain water harvesting options

## Project Design and Purpose

- Purpose of the project was to reduce suffering of the people with domestic water supply from rain water
- Sand dams and cisterns (below ground tanks) exclusively designed and constructed for domestic use
- Technical situation and traditional pastoralist route considered in the site selection
- The intervention options found to have a multiple contributions



## Water Needs of Users and Seasonality

- Livestock (productive use)
- households (Domestic)
- Supplemental irrigation
- Sanitation
- Cross Cutting
  - Water quality
  - Water management
  - Natural resource management

## Water Use for Livestock



## Level of Flood and Sand dam water



## Viability of Introducing MUS

- Originally the project was meant for domestic use as per the existing priority
- However as the water stored and people started to use it, competition for livestock and sanitation (other livelihood) emerged
- In order to meet their livestock water demand the pastoralist use the existing system
  - observable potential for upgrading to MUS from existing local practice
  - Upgrading to MUS will enable to meet additional the priority need of the pastoralist
  - The MUS consideration will reduce the implication on the quality of the water for domestic use and management of the structures
- The MUS visit revealed there is increasing use for livestock, so the existing and new project need to explore options to adapt MUS

## Viability (Cont...)

- The pastoralist dug a pond on the sand dam harvesting catchment areas and feeding their animal with traditional earthen cattle trough
- The consideration of the livestock water encourage the pastoralists to give more management attention for the system
  - Reduce evaporation loss, maintain water quality for drinking and sustain the structures
  - Labor of digging of pond and earthen cattle trough after each flood will reduce for other purposes
- Access to sanitation and water will contribute to reduce the women work load

There was no water of this level before the sand dam

Level of water stored in the Sand dam and under use for livestock

### Earthen Cattle Trough

Level of water stored in the Sand dam

### Discussion on the site

## **Proposed MUS Options**

- A hardware and soft ware solutions has been discussed on the site
- software component
  - creating the better level of awareness on water quality, maintenance and use
  - Thoroughly discuss with the community on meeting their priority needs

## Proposed MUS Options...

- Hard ware solution requires
  - A proper design to make water drain in to the sides of the dam and stored for use
  - A proper calculation of the water holding capacity, catchment areas, water drainage, catchment and soil characteristics
  - Low cost cattle trough could be constructed following their traditional system in areas which is not exposed to the flood
  - The community can manually fill cattle trough, use treadle pump, rope and washer pump, hand pump and other possible technologies

## Cont...

- Depending the soil, catchment, rainfall characteristics the different users may not be targeted at the same time
- Option to scale up on annual basis can be considered after harvesting adequate amount of water
- A detail strategy need to be developed on consideration of these alternative options
- Multi-year project is required



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## Cisterns

- Mostly reserved for dry season domestic use
- Women owned and are highly engaged in the construction, water use planning and management
- It is found to be sustainable and effective option
- The MUS consideration depends on scaling up
- Community commitment for contribution
- Consideration of sanitation and hygiene





## Sanitation and Hygiene

- Very low sanitation coverage
- it is missing from the components yet critically needed
- No access to latrine at household level
  - Awareness creating using various approaches and
  - Hard ware component (washing basin and household latrine)
  - Women bring close to around the dam and wash using plastics (locally called Bafu)
- Assessment and scaling up of best practices for wider sustainable coverage

## Summary

- Scaling up and out MUS in sand dams in coverage
- MUS consideration in the new systems and existing once
  - Livestock and other productive uses
  - Sanitation and hygiene (awareness, washing, and low cost household latrine)
  - Action research, documentation and sharing

## Summary...

- Work with the local, regional and national government and other partners towards wider acceptance
- Advice and linkage to other sectors
  - Integrated water resource management (PSNP)
  - Rangeland development vs water for livestock
  - Health, income diversification and reducing women workload
- Technical and institutional capacity building
- Policy and strategy support

## Summary...

Institutional Structure

- Government policy attention is growing as evidenced in the UAP, and important to continue engagement at all level
  - Water harvesting, MUS
  - Scaling up of best practices
- Institutionalization requires close follow up
- RAIN and partners need to continue scaling up and out the Rain water harvesting model incorporating possible MUS

## Summary...

Financial

- Financing such a project is addressing the livelihood of the most need and need to scaled up on multi-annual basis
- The experience community contribution need to continue
- Experience on fee collection on monthly basis after the construction need to maintained in more systematic way
- The water committee require more support

#### **River diversion at Belewa**



#### Subsurface Dam at Biyo Gurgur



## Than you