Road Water Management for Resilience

Summary of field observation

by

Wild beast group

February 26, 2017

Mekele

Mekele-Adigudom-Hiwane route

- **First visit** - Enderta woreda, Felegeselam Kebele
  - At present around 40,699 ha land under area closure,
  - Barren land before 2011 with severe degradation,
  - As a baseline deep wells constructed in 1997 but low yield of wells observed,
  - After 6 years of treatment, ground water table raised and yield of wells improved,
  - Springs emerged and community began irrigation,
  - Road side plantation observed,
  - Plantation survival rate is 91% in the area enclosure,
  - Vision is to convert the area enclosure to forest land
- **Issues**: is grevillea tree species appropriate for a shallow soil depth?

Mekele-Adigudom-Hiwane route

- **Second site: Didiba kebele:**
  - Visited an irrigated land, and was learned that around 9000 ha of land is under irrigation in the kebele,
  - Also visited a mass-labor mobilization and community working in the field,
  - Community know that every year in February there is a mass labor mobilization,
  - Discussed with community while they are constructing soil-faced stone bunds with trenches,
  - Both men and women are actively working,
- **Issues**:
  - Women were working carrying children on their back – against the principles set out in the CBPWD guideline

Mekele-Adigudom-Hiwane route

- **Third site: Maikeyeh kebele:**
  - Visited a watershed treated less than one year,
  - A culvert draining runoff to downslope, but intercepted by series of check dams and percolation pits,
  - Very well rehabilitated despite short term intervention,
  - Upstream of this area is under treatment with mass labor mobilization during the visit,
  - Trenches constructed deep and wide,
  - Effects down-stream is expected to be great in a short period of time
- **Issues**:
  - Need to plant trees soon to complement the physical structure
  - There are guards assigned to protect cattle entrance to the area – would it be sustainable?

Mekele-Adigudom-Hiwane route

- **Fourth site: Adigudom kebele:**
  - Visited a large pond, dry at the moment,
  - A culvert draining runoff to a series of 3 ponds constructed by the community labor supported by machinery,
  - Ponds were used for supplementary irrigation,
  - A very good example of road water management
- **Issues**:
  - The team observed poor design of the spillway, which has an eroding effect on the community road?
  - No plantation around the pond for better protection and stabilization,
  - Water storage may not last long due to percolation, and requires compaction,

Mekele-Adigudom-Hiwane route

- **Fifth site: Didiba mereb-meity kebele:**
  - Visited a diversion weir,
  - Currently the lined canal after the diversion weir is dry
  - Farmers are pumping water to irrigate their farm from a seepage from the dam upstream of the weir,
  - Youth rented land from the owners and produce cash crops using irrigation

- **Issues**:
  - Water shortage as compared to demand

Mekele-Wukro-Abreha… route

- **First site: mai-weyini watershed in Abreha Weatsbeha kebele:**
  - Abahawi (Kebele Chairperson) provided briefing and guided us throughout the field visit,
  - Upstream watershed well treated,
  - Deep well drilled 130m depth with no yield in the beginning, but after treatment artesian well with 28lit/sec emerged,
  - Observed series of water retaining structures along the originally deep (8m) gully,
  - Upslope we noted sandwich check dams and down slope check dams changed to masonry dams with gabion, spillways provided alternately
  - Down the gully observed water harvested as a result of watershed treatment up stream and used for irrigation ,
- **Issues**:
  - Check dams damage observed, which require routine maintenance,
  - Mulching required for fruit trees planted in the park

Mekele-Wukro-Abreha… route

- **First site: mai-weyini Abreha Weeatsbeha kebele:**
  - Observed irrigated plots with “momona” tree – acacia spp which is used for land fertility,
  - Free grazing is prohibited in the kebele – “even cattle know this”,
  - Climate around the kebele improved as a result - visitors advised to take enough oxygen for a year!
- **Issues**:
  - Noted they are planning to raise the dams which might affect stability – instead, desilt routinely to maintain acceptable water level,
  - Fish farming can be introduced in the ponds,

Mekele-Wukro-Abreha… route

- **Second site: Giraras kebele – in Hawzen woreda:**
  - Shallow hand-dug wells enriched as a result of deep trenches,
  - Deep trenches sustain wells,

- **Issues:**
  - Use of irrigation type (furrow, drip,…) should be considered in view of the water quality and soil characteristics

Mekele-Wukro-Abreha… route

- **Third site: Giraras kebele – in Hawzen kebele:**
  - Pond from roadside run-off followed by hand-dug well to improve water quality,

- **Issues**:
  - under construction, but good to speed up the construction of retaining wall,
  - Protection around the ponds and wells to enhance safety

Mekele-Wukro-Abreha… route

- **Fourth site: around Fireweiny town:**
  - Borrow pit and drainage from town
  - Down slope community protected from flood as a result,
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- **Issues**:
  - Borrow pit too close to the road,
  - Health issues from the drainage from town, - hygiene training to the community, integration with health sector
  - Channel requires maintenance

General observation

- **Strength:**
  - Hard working, committed community,
  - Availability of guidelines,
  - Commitment of the government leadership,
  - Better coordination with different stakeholders,
  - Use of appropriate technology,
  - Availability of local materials
- **weakness**:
  - Poor adherence to the guideline – such as childcare,
  - Inadequate technical training,
  - Poor support from research against crop disease,
  - Program not holistic – health, crop disease

General observation

- **Opportunities:**
  - Appropriate polices and strategies,
  - Scaling up best practices,
  - Tree planning for timber production,
  - Diversification of income generation activities for the community – sand mining, bee keeping…
  - Contribution to Climate Change adaptation/mitigation
  - Job creation,
  - Including road water issues in curriculum
- **Things to improve:**
  - Design of infrastructure – incorporate road-water structures as part of road design,
  - Safety around the structures,
  - Health safety improvement by bringing health sector on board,
  - Do more hydrological studies to match for future water demand

- Thank you,
- Ameseginalehu,
- Asante Sana…