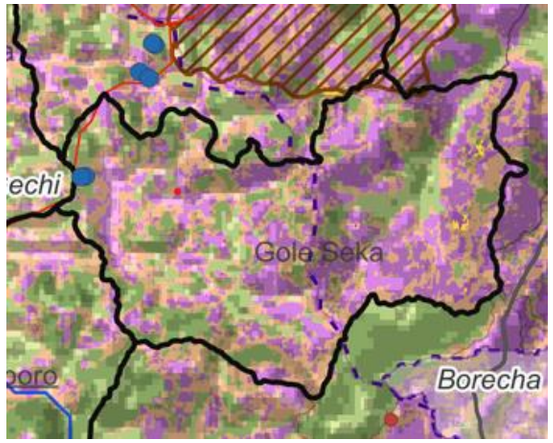
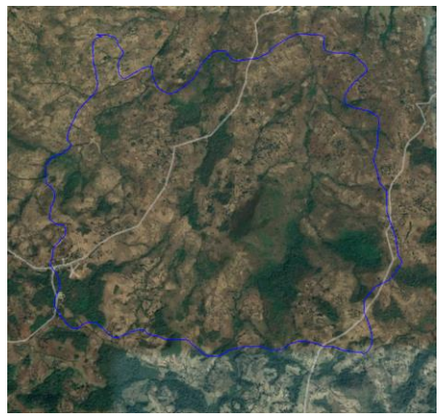
# Case study 2 : A catchment approach for the high lands ( Bedele target area)

## Location and problem description

Gole Seka Kebele, Bedele | >900 mm/y | < 5% - 30% | Land degradation and overgrazing | Flooding and erosion



Crop land is the most widespread form of landscapes in Bedele Zone which has developed under the prevailing dry climate: flat to gently sloping hills and high rainfall are common for most of Bedele areas. Due to its erratic rainfalls, stream flow is ephemeral and where erosion, landslides and land loss are commonplace and soil water conservation measures are of high importance. In addition, water is only availably during short time spans, for which reason in- and off stream measures can be applied to conserve water for later moments. The degraded lands can be recognized by rills (small channels) and deeply incising gullies (deeper channels)at locations where runoff concentrates. The landscape is dominated by dry grass- and shrublands with locally steep slopes. The grasslands are mainly used for the grazing of livestock, leading to serious overgrazing and land degradation.

*Figure 1: The 3R potential map of the case study area. The red hatch indicate the erosion hotspots (left). An example how land degradation looks like with a deep gully (middle)*

## Recommended interventions

The table on the right, lists all recommended interventions for the major 3R potential zones found in the case study area. The interventions are divided into four sub-categories. The first category refers to the soil water conservation and land cultivation measures. The second category consists of in-stream recharge interventions and the third category encompasses income generating activities and fourth restoration interventions . In-stream and off-stream measures are particularly important in areas where perennial and intermittent streams are found and are best combined with SWC measures to maximize the benefits of land preservation and base flow. Depending on the local situation, land and stream basin restoration may be required.

| ZONE | CHARACTERIZATION | | | Recommended measurements | | |
|---|---|---|---|---|---|---|
| | Landcover | Climate zone | SWC and land cultivation measures | Water harvesting/recharge interventions | Income generating activities | Restoration (environment) |
| | Crop land and mixed farming | moist (> 900 mm/y) | Field bunds, grass strips, Fanya juu, stone/soil bunds | - Sand dams ( On-stream)<br>-Harvesting surface run off<br>-Roof top water harvesting | - Fish farm, crop rotation, improved seedlings, agroforestry, cow fattening and poultry farm | -Agro-forestry practice<br>-Seedlings<br>- Nursery sites |
| | Open forest | | Micro basin,grass trips, check dams, stone/soil bunds | - | Plantation of fruits, nursery sites | - Forest protection, nursery sites |
| | Erosion hotspot areas | | Check dams and area closure,terraces | - | Honeybee farm | - Afforestation, controlled grazing |

## Expected benefits

- Higher crop yields and fodder
- Decreased soil erosion and land loss
- Gain of productive land
- Stream restoration

**Gully reshaping, refilling and revegetating** in rangelands, shrublands and rainfed agriculture

**Gabions/check dams (Erosion hotspots on medium slopes)**

AND /OR

**Zai pits/ micro basins (Erosion hotspots on low slopes)**

Combining water **conservation** and **drainage measures**

**On –stream gabions check dam**

AND /OR

**Stone bunds (Dry rainfed agriculture on low slopes)**

## Priorities

1. The restoration of severely eroded lands and the prevention of further degradation by gully reshaping and revegetating.
2. Promote sustainable agricultural management, plantation of income generating trees of fruit, agroforestry and beehives
3. mass Planting of trees

**NB.**Priority is subjective, In total all interventions has own contribution.