The Status of Dry-land Forest Resources and Management Practices in Afar Regional State, Northeastern Ethiopia

By
Mohammed Shumbahri

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Introduction

- Drylands in Ethiopia, covers 80/65%, especially Afar and Somali are endowed with desert and semi-desert scrub intermixed with patches of Commiphora and Boswellia species. Despite their importance in socio-economy and ecology, dryland are poorly managed.

- Agricultural land expansion, grazing, drought, invasive species and fuel wood harvest are some of the threats in these ecosystems.

- The impact of invasive species in dryland ecosystems is devastating. As a result, drylands are highly fragmented, poor in regeneration and degraded in species composition and productivity.

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- Before the last decade, Afar rangelands were in excellent potential. But now a day the resources have become degraded. This caused poor accesses of animal feed and loss of huge number of wild animals.

- This is evidenced by studies of floristic composition of woody species in different districts and reported that the areas are less in species composition and diversity.

- Thus, forest resource management, conservation and rehabilitation strategies are vital in these areas.

Background information About the Region

- The Afar people inhabit in the Afar Region, Ethiopia. The region is endowed with considerable amount of natural resources.

- It has a total area of 96, 707 km^2 lies between 8°40'13" to 42°23'03"E longitude in the Rift Valley with 1.603 million population with 1.2 annual growth rate.

- The majority of the people are pastoralists. Over 90 % of a population lives in rural areas leading a nomadic and semi-nomadic life style.

- The topography of the region varies from hilly escarpments of 1, 000 – 1, 500 m to lowland plains (0 – 100 m above sea level) and around 100 m below sea level.

USE AND ACCESS TO NATURAL RESOURCES

Forest Resources

- Dryland forests have been depleted while invasive plants have expanded, stifling native species. But still forests provide important food and household supplies for Afar pastoralists.

- Several trees have multiple purposes. Among woody species *Dobera glabra* is valuable in food security. Both humans and livestock eat many fruits.

- Fruits of *Wangeyo* tree are used as feed for goats. The dry wood is used for fuel and green branches for construction. The wild date palm (*Hyphaene ethebaica*) is also used for different purposes.

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- There are also medicinal plants that are used to treat snakebites, diseases and skin problems. For example, species of Acacia known as *Kesselto* (*Acacia abyssinica*) is grounded and boiled to treat gastric complaints and applied to the skin of livestock.

- In addition *Salvadora persica (Adayeto)* and *Balanites rotundifolia (Alayto)* species are important in healing malaria.

- Medicinal plants not only used within the household, but also sold, thus being important sources of income. Pastoralists still greatly rely on them for everyday use and particularly in times of drought and dry seasons.

Dryland Forests Change

- Forests that had existed twenty years ago are rapidly disappearing. For example, indigenous woody species like *Garsa*, *Adedo, Eeab* and *Keselto* are declined.

- This shift in vegetation composition has serious consequences for pastoralists and their livestock.

- Plants with insignificant forage value such as Aburi (*Amaranthus dubis)* and Ashara (*Spergula arvensis)* have replaced.

- Multi-purpose trees such as Uddaito (*Balanites aegyptica*), Mederto (*Cordia sinensis*) and Kusraito (*Zizyphus spina-christi)* are declining.

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- The dense grazing areas before the downfall of the Derg regime in 1991 are now covered by *Prosopis juliflora* (*woyane cara*) and a toxic liana called *Halimero* (*Cryptostegia grandiflora*) that kill livestock.

- *Welahauel* is also an invasive weed brought with commercial fertilizers. This also invade large areas.

- Though attempts have been made to control *Prosopis* invasion in the rangelands. A youth group was started to turn the *Prosopis* into charcoal but it was not successful due different reasons.

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- However, some changes can be directly linked to the changed needs and practices of the pastoralists themselves. Resource utilization patterns differ from season to season.

- But there are also some communities whom had started protecting their resources more closely by 'privatizing' areas (particularly the neighboring Kerreyu).

- Thus, such good experience should also implement in other pastoral areas (particularly in Afar areas).

Changes on pasture and soil

- Increased animal and human population density, increased cultivation, droughts, encroachment of pasture lands by weeds, especially *Prosopis*, and a general shrinking in surface of grazing lands leads to reduction of pasture.

- Excessive grazing reduces vegetation cover and increases exposure of soil to erosion. This contributes to prolonged dry seasons and further decreases in rangeland. The expansion of irrigation also increases vulnerability of lowlands to flooding and salinity.

- In the Awash valley, flooding coupled with salinity has affected vegetation and soil. *Prosopis juliflora* was introduced to reduce the problem but it worsened the situation.

Pastoralist Challenges due to resource decrement

- Pastoralists are facing many threats to their livelihoods. These include loss of livestock, shrinking rangelands and recurrent drought.

- Pastoralists have been using arid and semi-arid rangelands. However, changes in land use and associated impacts on biodiversity and livelihood contributed to crisis of pastoralists.

- The Region is vulnerable to climatic variability as a result it increase frequency and magnitude of disasters and extreme weather events such as diseases, water scarcity, shortage of feed, flooding, range degradation.

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- Current evidence in the region strongly addresses that rural development, economic and social transformations are adversely affected by climate change.

- Overall, Afar areas are noted for their variable and uncertain rainfall and are prone to climate change, drought and food shortages.

- So studies are needed to come up with certain solution to overcome the hazards and safe the people, their animals and their livelihood in general.

Dry-land forest management practices

Afar National Regional State Pastoral, Agriculture, and Rural Development Bureau (APARDB)

- The bureau drafted a regulation in consultation with stakeholders which will guide *Prosopis* management.
- The regulation outlined possible strategies to prevent further spread of *Prosopis* invasion and how to rehabilitate invaded areas.
- The regulation also identified institutions responsible to lead *Prosopis* management at different levels.
- But still the regulation is awaiting approval from the regional council to be ratified.

Samara University

- Samara University research and Community Service Vice President Office has been working on Dry-land Forest Resource Management, Conservation and Rehabilitation around Koneba District.

- The University selected two kebelle named by Uruh/Dekhanu and Wahdes in 2005 E.C./2013. The rehabilitation activities have been employed at Garraf site.

- Formerly local people around Koneba were started the conservation practices around Garraf due to different reasons such as severe flooding, drought, reduction of plants species and wild animals in the area.

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- **Major Activities done by Samara University**

- The Garraf is the site selected for Dry-land forest rehabilitation. The area covers 2km* 3km and 8km*5km.

- The area is free from human and animal contact. The district administrator, elders and local people participated in this regard. To protect the site 15 (fifteen) guards were recruited by Samara University.

- Nursery site was also established in the area. Experts from different departments were participated.

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- **The Current Status of the Site**

- Following the rehabilitation work the site is now found in good situation.

- The Dry-land plants such as Acacia species, Boswellia species, different grass species and etc are regenerated and recovered.

- Different wild animals that were migrated due to resource depletion are now back to the site.

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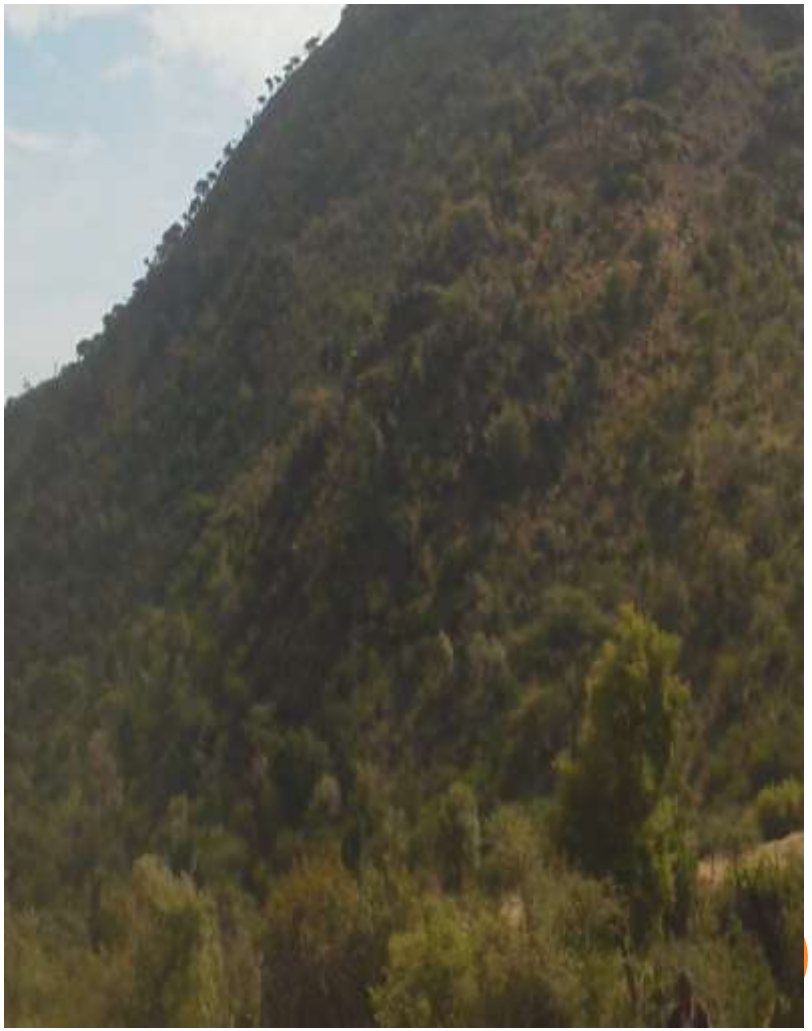
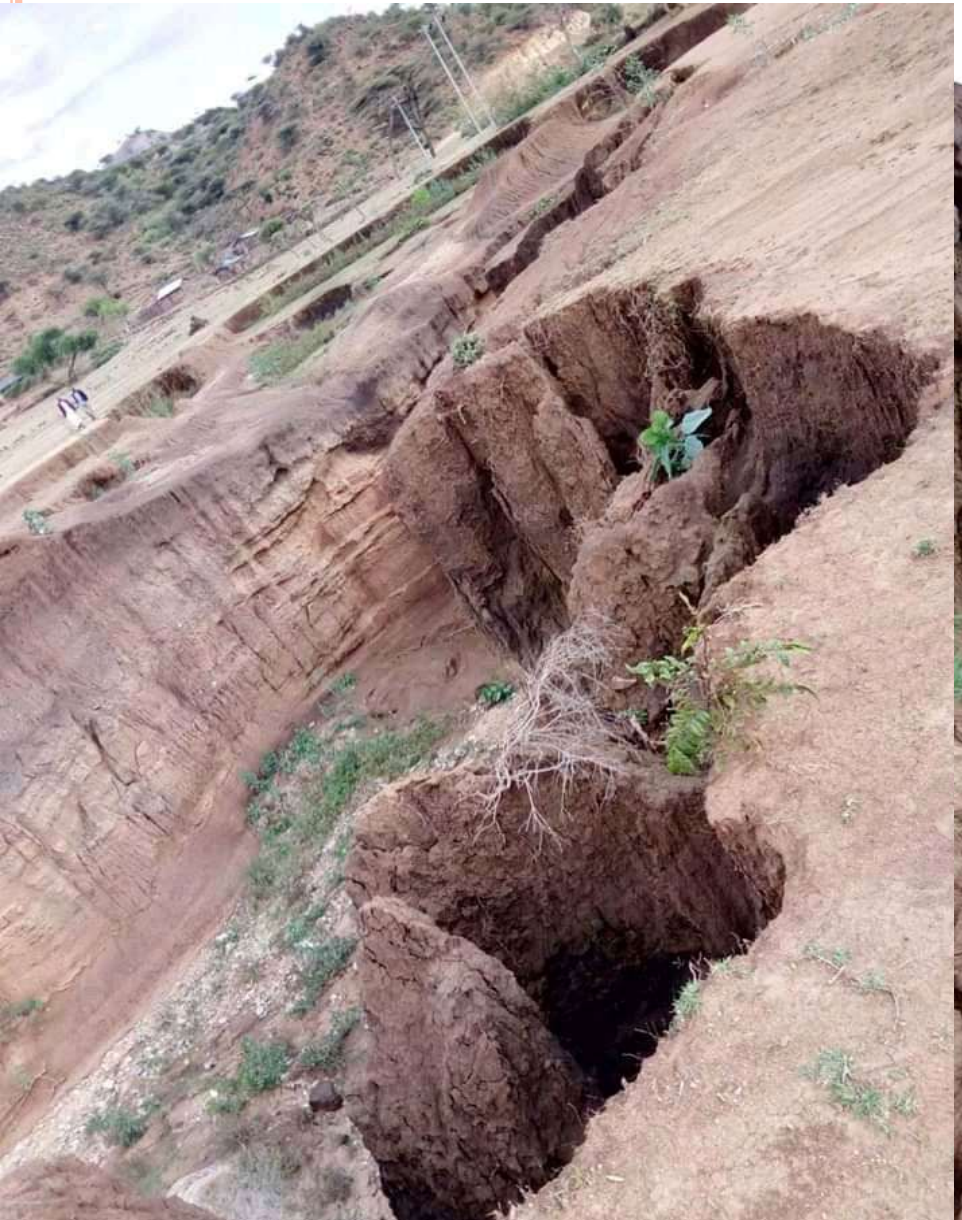
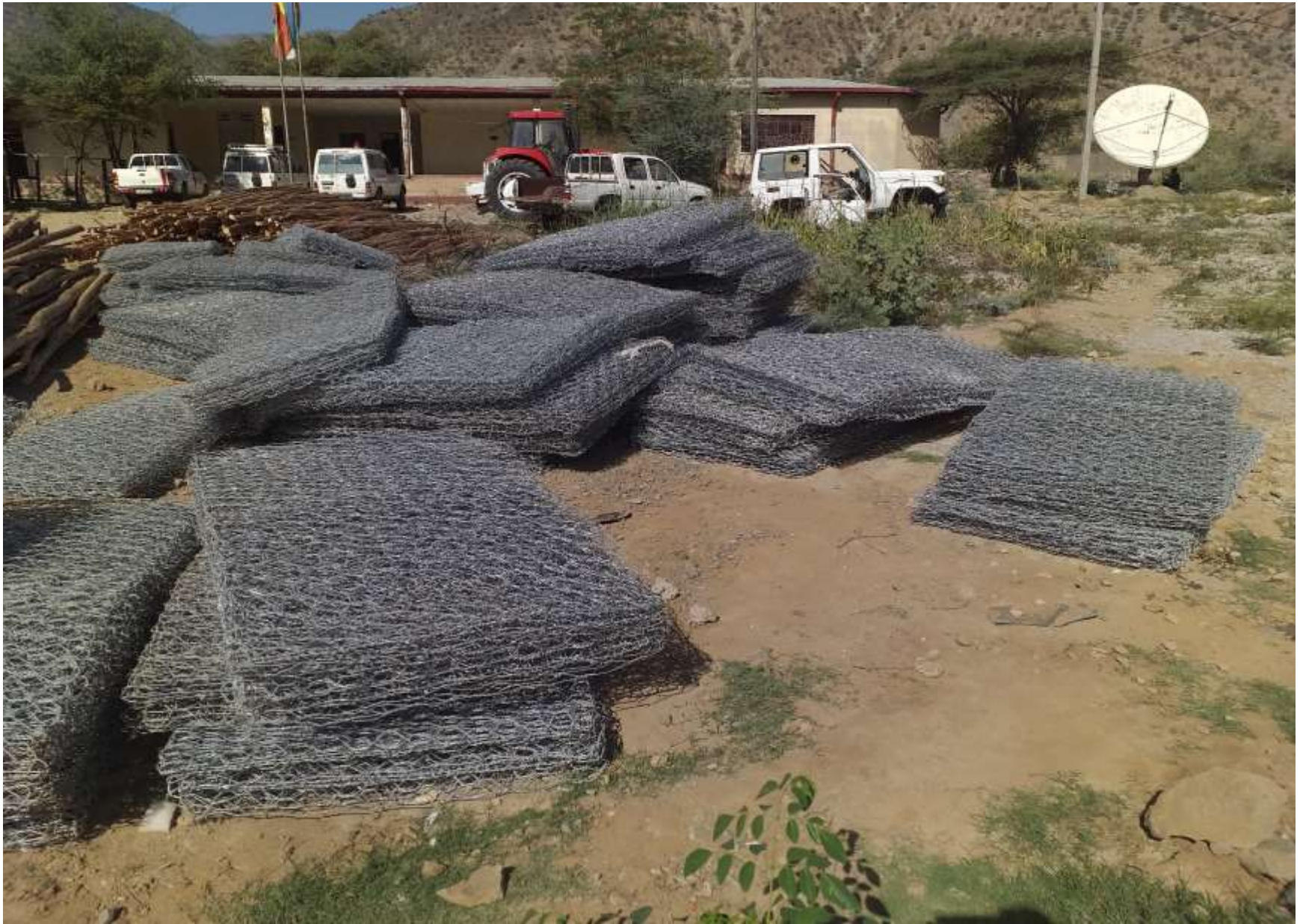


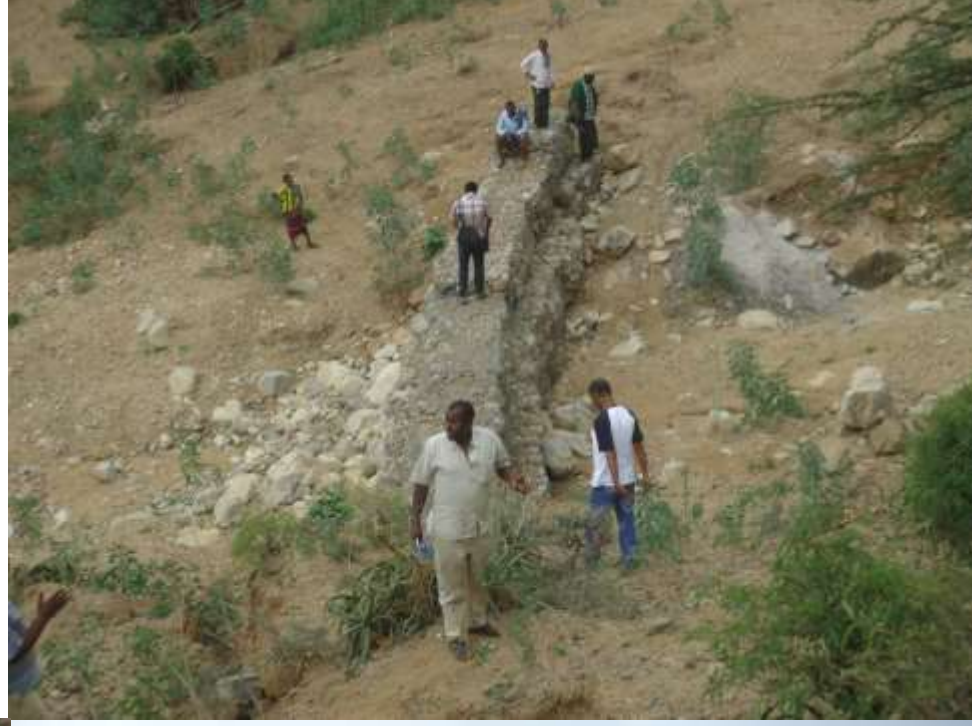
Soil Erosion

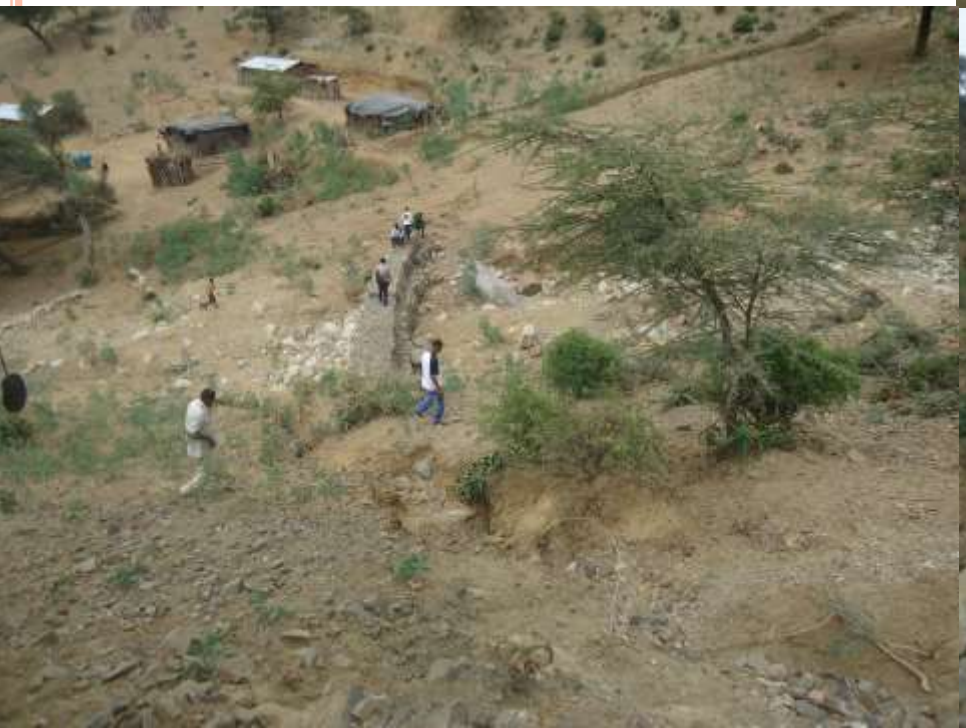


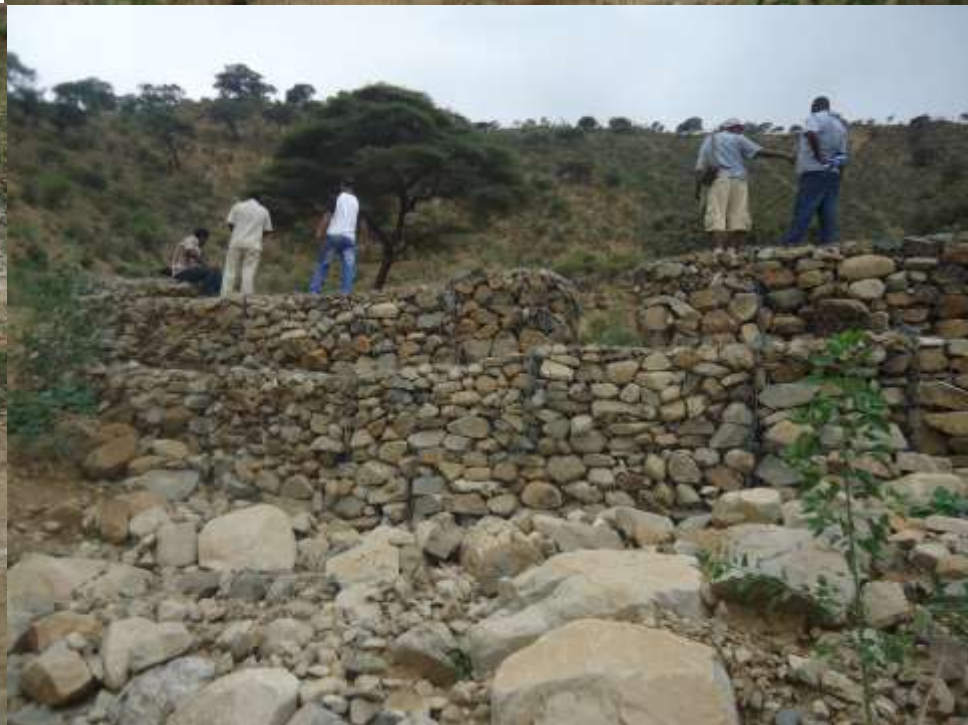
RESOURCES MOBILIZATION



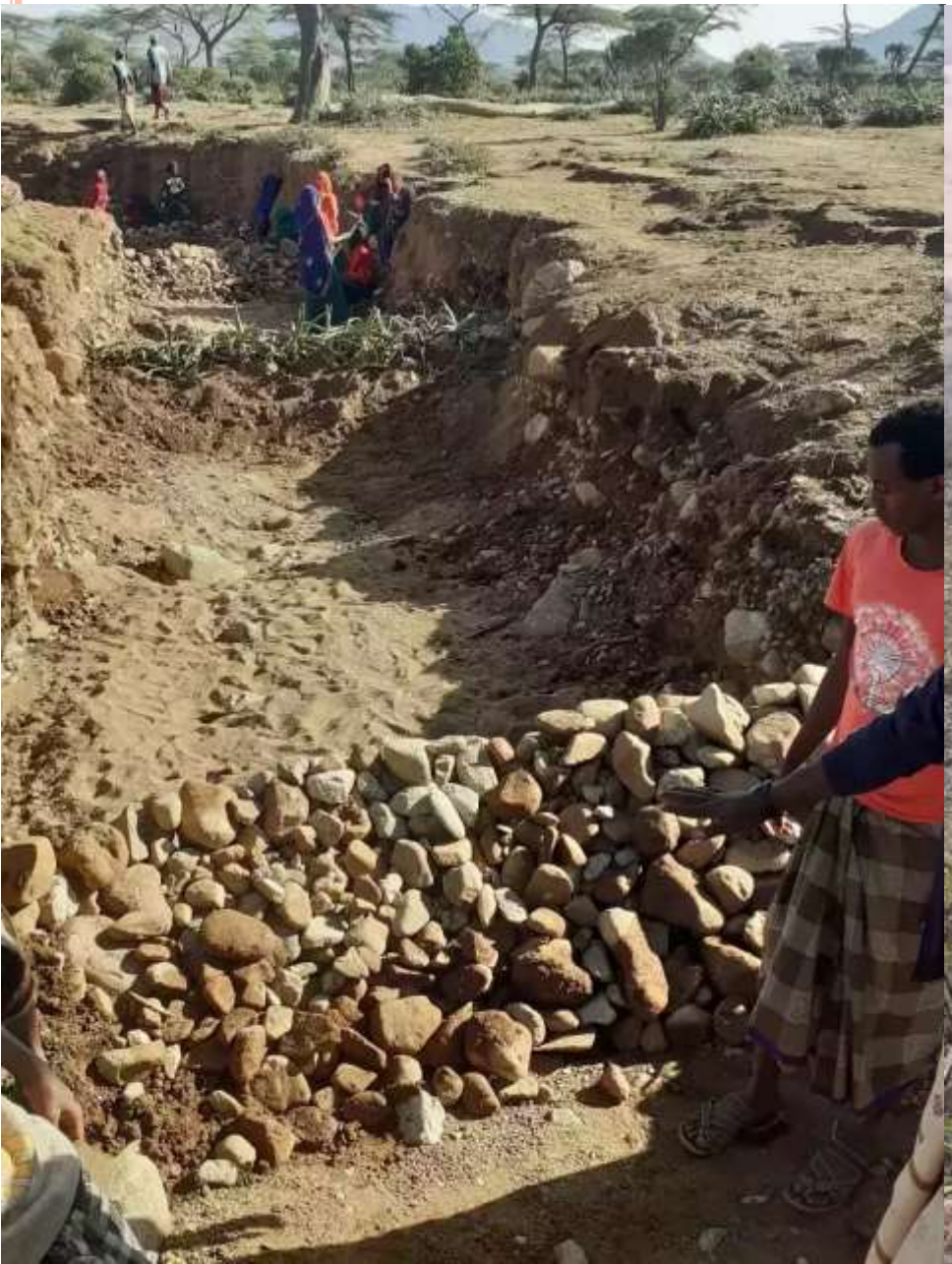
Structures Constructed by the Community

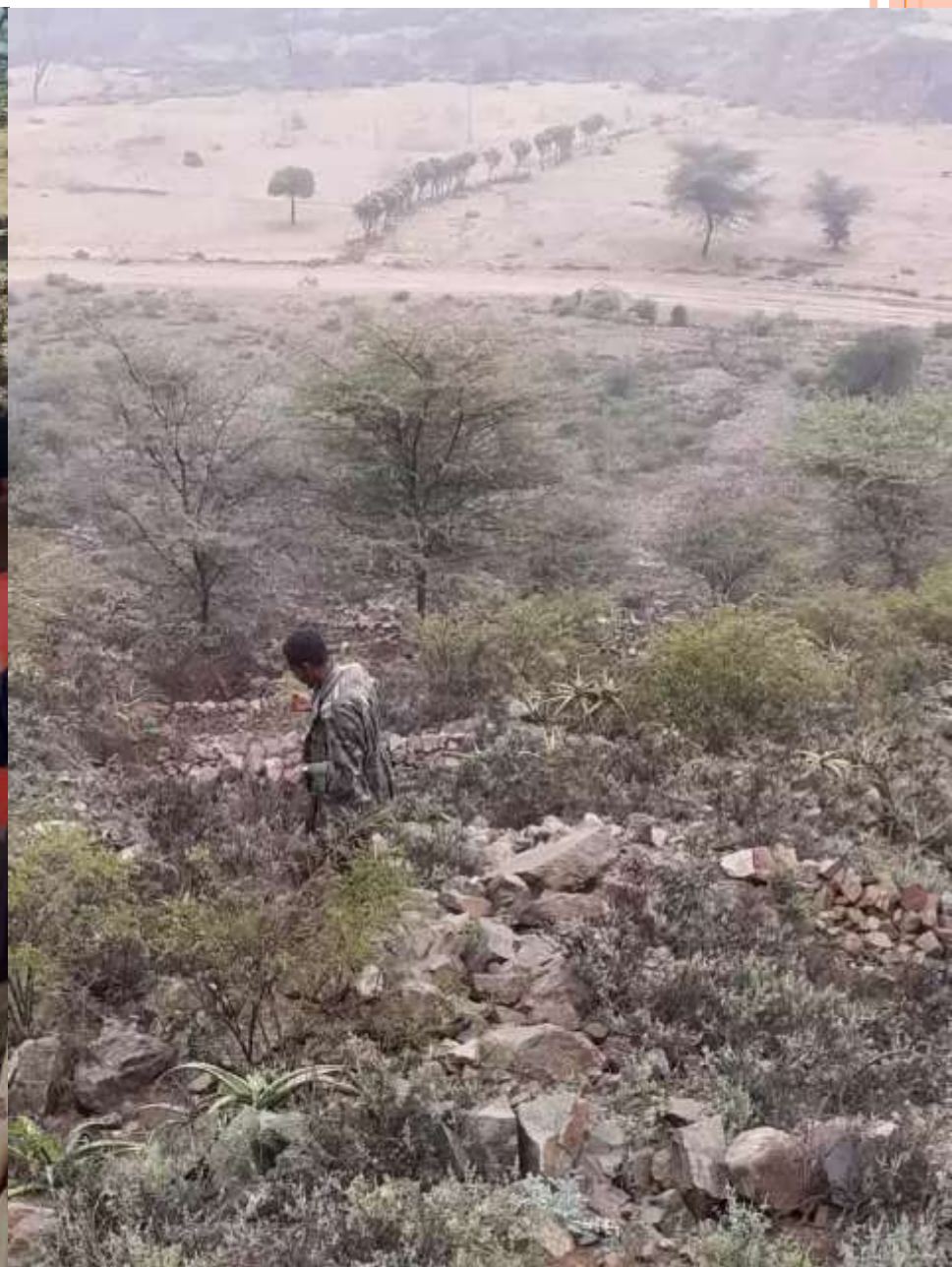


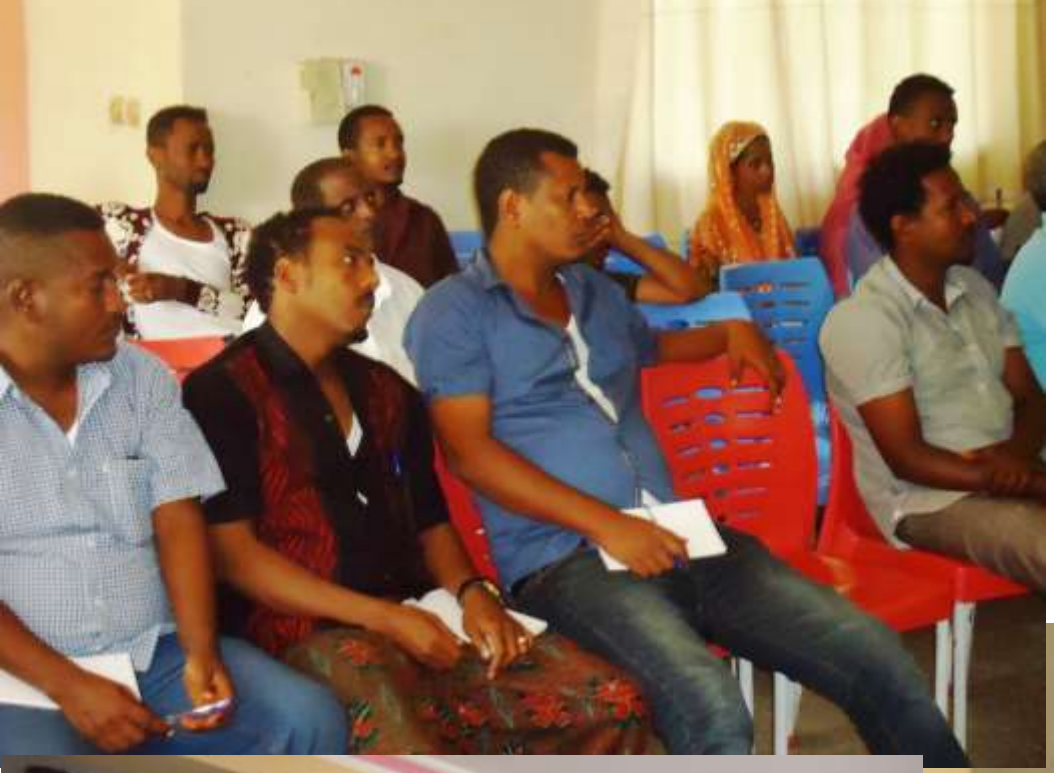




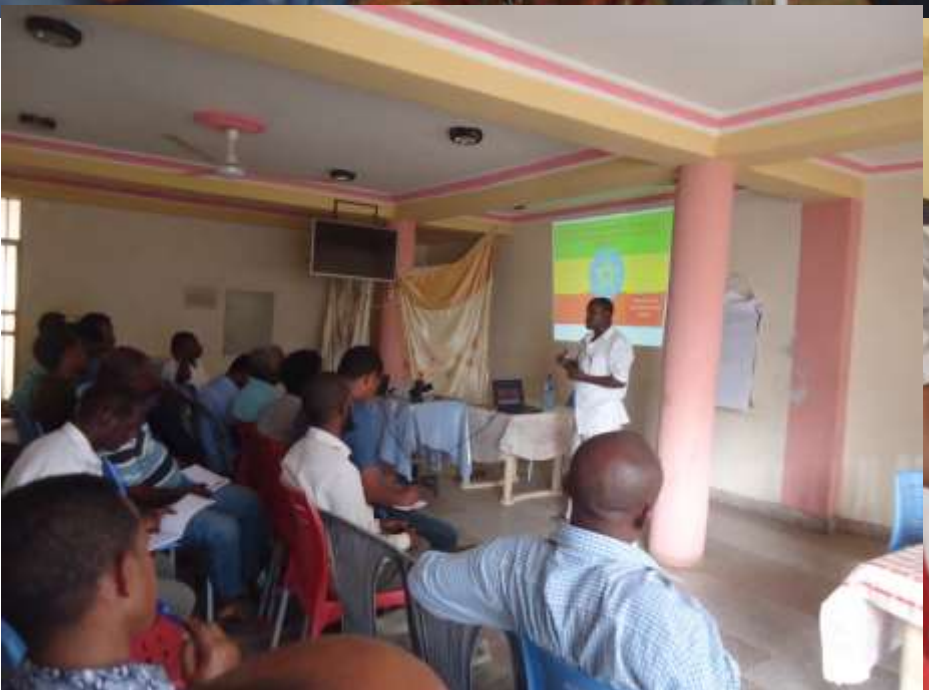
Community Participation



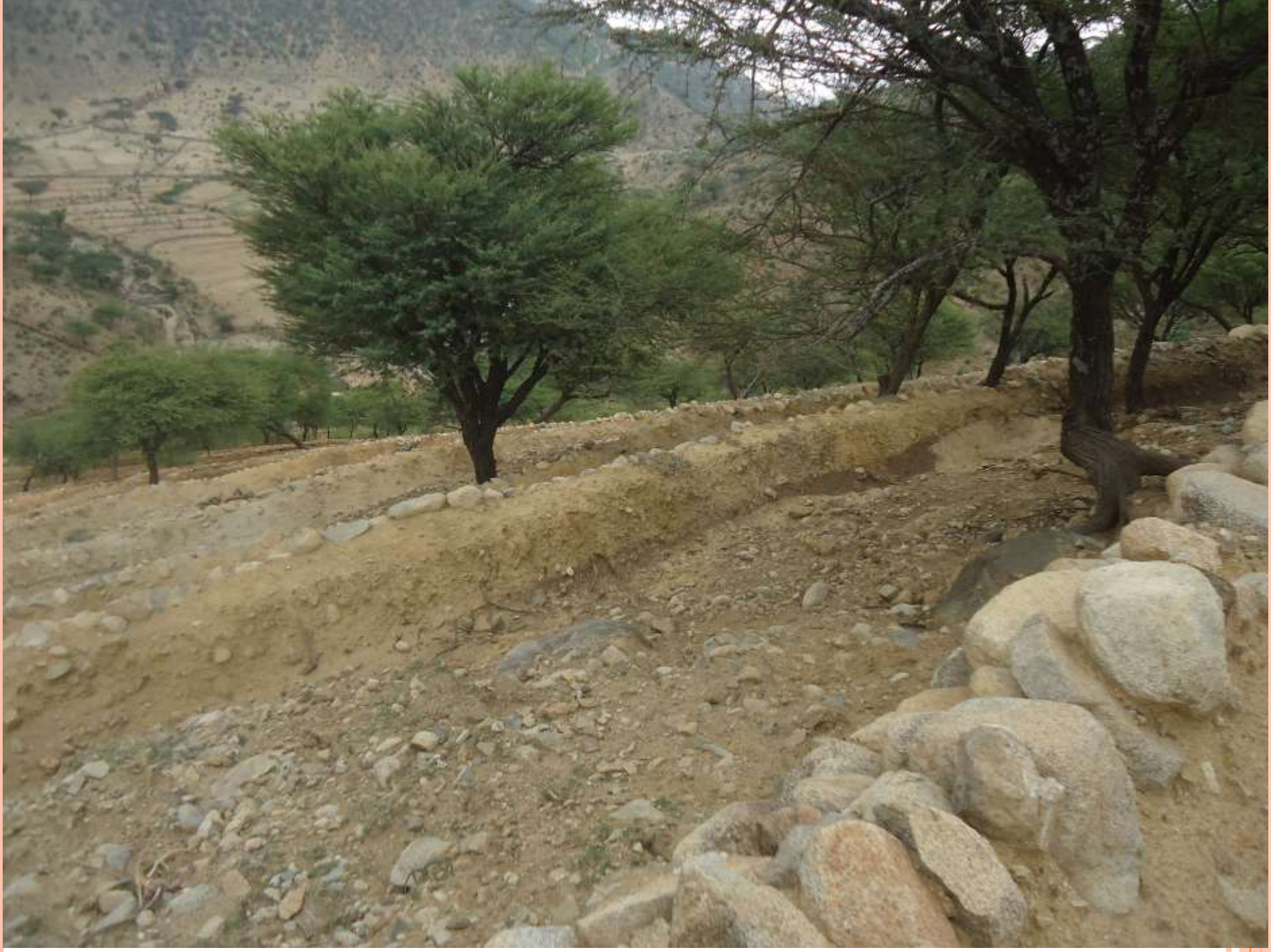




CAPACITY BUILDING AND AWARENESS CREATION TRAINING



Change of Physical Environment



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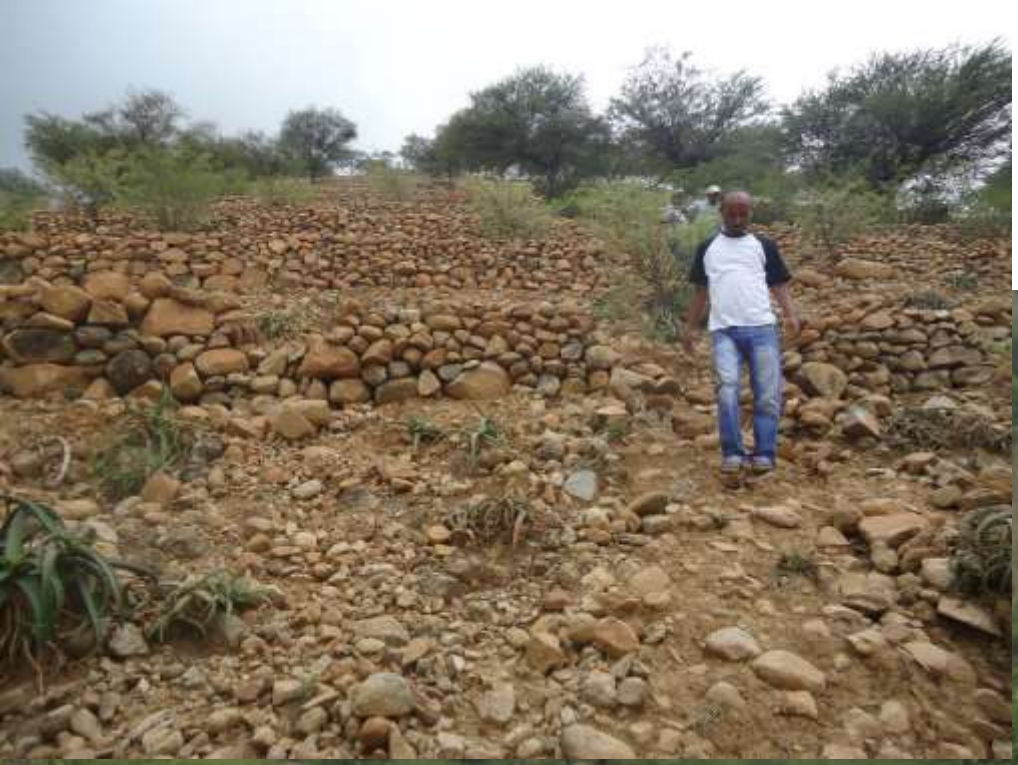

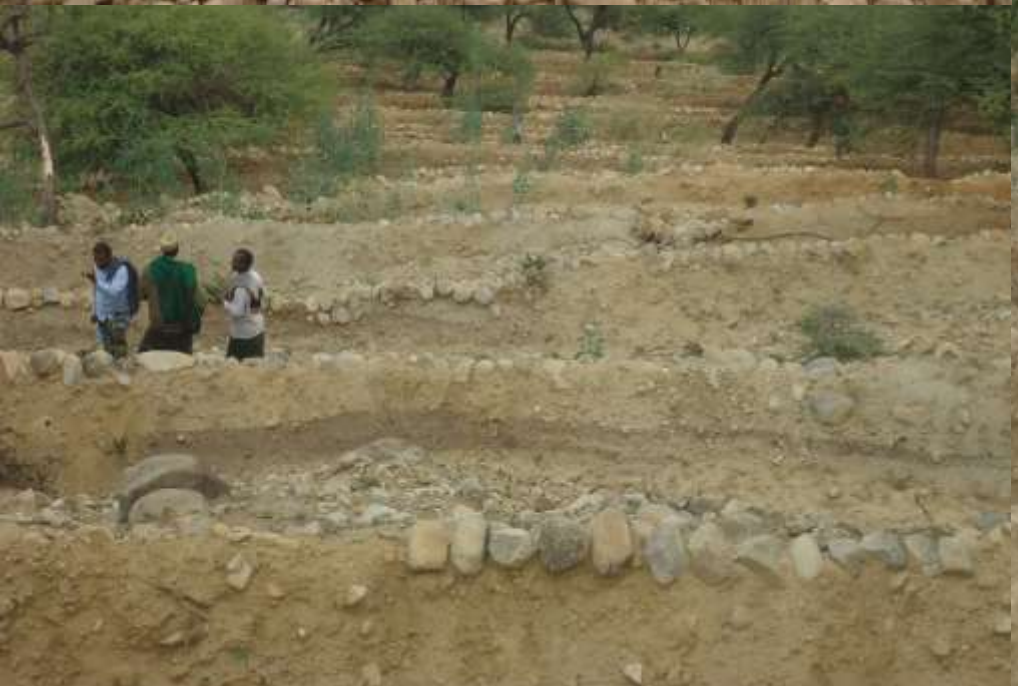

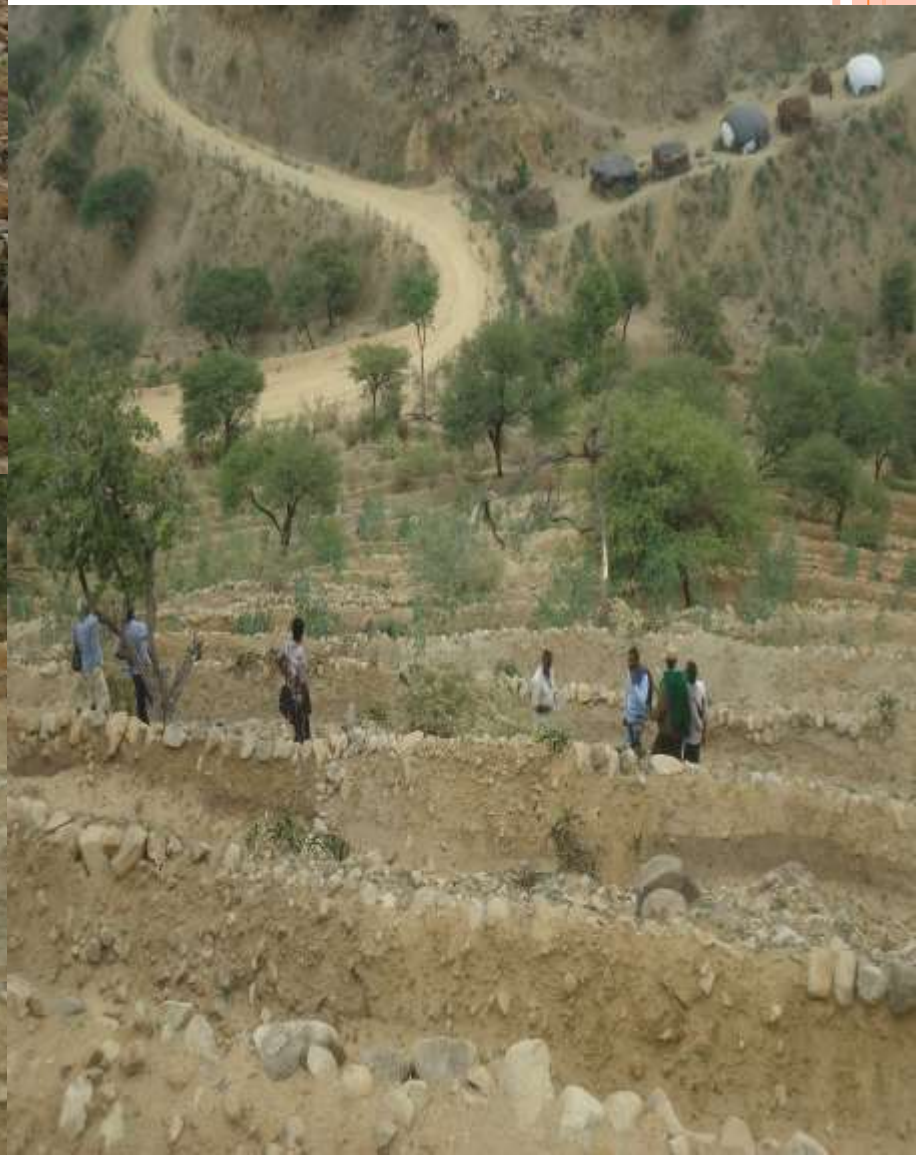

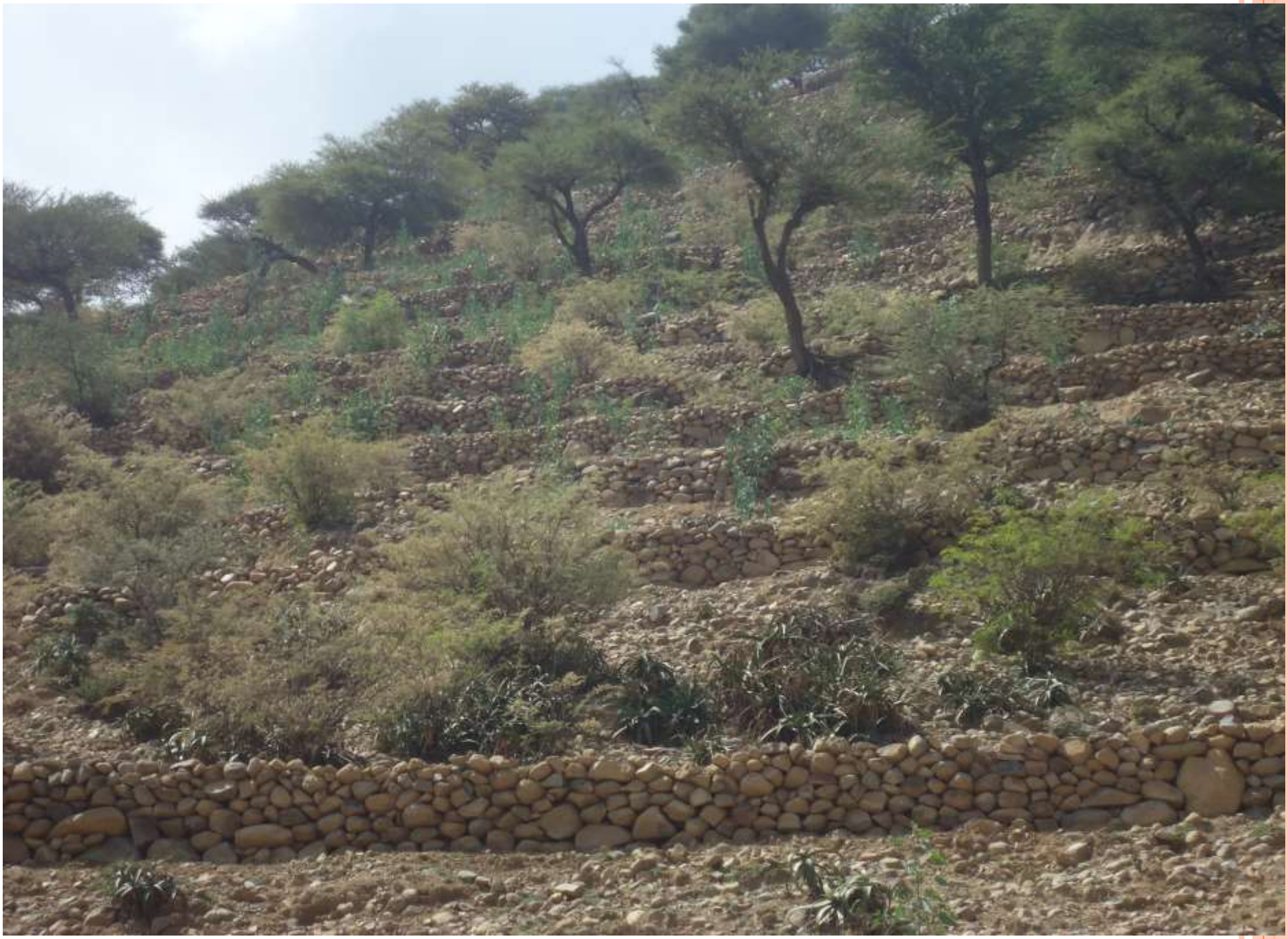

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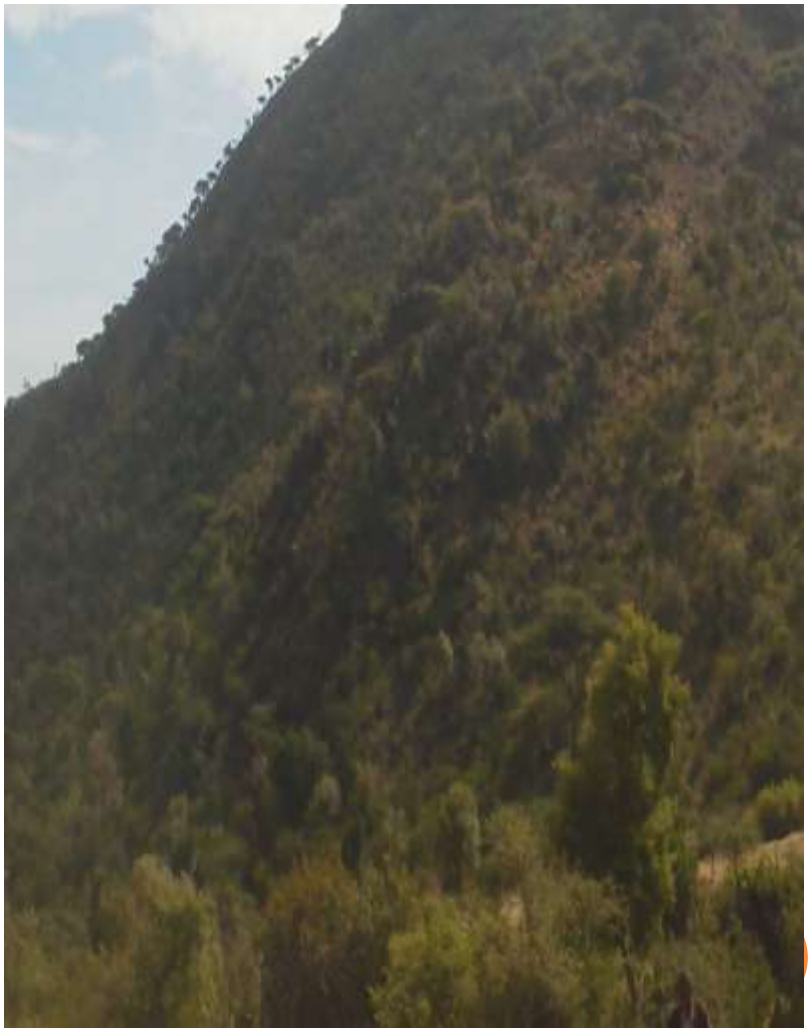

Main Challenges in dry forest management

- Knowledge gap in importance, conservation and management of dry forest resources,
- Lack of documented data on status of dry forest in these areas,
- Lack of collaboration of different sectors working on these issues,
- The agro-ecological nature of the area and way of life of the communities.

Conclusions

- There are a little effort in managing and rehabilitating dry-land forest resources in the region. But still dryland forest resource in the region found in critical condition.
- In dry-land areas pastoral have a close relationship with natural environment. Therefore Effective resource utilization should endured.
- Pastoralists have created innovations and ways of doing things that are suitable for their areas. These are useful if they are shared.
- In general wise drylands and rangeland management allows pastoralists to maintain their sustainability.

The way forward

- Many impacts, such as increased land degradation and soil erosion, biodiversity loss as well as disasters need to be addressed across sectors.
- The grazing prevention is important means of rehabilitating and renovating dry-lands. As a result to sustain the resources such approach is important.
- The traditional customary institutions of pastoral community can play a great role in managing resources. So that there is a need to identify and document these institutions.
- Government, NGOs and the local people itself should be involved in the management, conservation and rehabilitation of forest resources in the area.

Thank you !!!