



Farming practices: current good practices, challenges, extension service experiences, Afar region, Ethiopia



September, 29/2022

Outline of the Presentation

- **Introduction**
- **Current good practices in Afar**
 - **Flood Based Farming**
 - **Crop type selection**
- **Challenges**
- **Extension service experiences**
- **Lesson learned**



Introduction

- Climate change is likely to bring about even more erratic and unpredictable rainfalls and more extreme weather conditions such as longer and more frequent droughts and flood.
- More specifically, degradation of the natural resources, declining production the feed shortage and productivity of livestock (Abdulatif *et al.*, 2016).
- Most of the rangeland areas of Afar region is subjected to continuous treat of genetic erosion due to
 - Overgrazing
 - Invasion and encroachment, and
 - Rangeland degradation
 - Grazing capacity of large area has declined
- If things continue like this, our efforts to have sustained and accelerated **agricultural** development will be a mirage



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- Therefore, the government of Afar region and international developmental partners has been started efforts to intervention options for rehabilitating degraded natural resources through different appropriate technologies, such as PRM, SWC and establishment of enclosure etc
- **Among those** - GIZ-SDR-ASAL initiative- new approaches- Implementing -successfully tested in Sahel
- Construction of Water-Spreading Weirs (WSWs) has been introduced in degraded rangeland in the dry valley since 2012
- Corresponding, GIZ- implemented alongside another projects- an alternative & participatory flood management.



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- The main aim of the projects was to increase the capacity of agro-pastoralists to resist climatic shocks by rehabilitating the productivity of their landscapes
- Hence, ICRISAT was tasked to convert this 'no mans' land' into a productive area using WSW as an entry point.
- ICRISAT agreed with GIZ to develop WSW-specific cropping system that identify, prioritize and integrate best agricultural practices
- With this line, APARI involved as partner institution and **ICRISAT as Project executing Agency** “the project entitled “Rebuilding Livelihoods of (Agro) pastoral communities in Afar Region through Diversifying and Integrating Drought Resistant Food and Feed Crops”,



Current good practices

- **Flood based farming-three projects**

Project one “Rebuilding Livelihoods of (Agro) pastoral communities in Afar Region through Diversifying and Integrating Drought Resistant Food and Feed Crops”

Project duration: (10) months- 1st Jan, 2017 to 31st Oct, 2017

- **Objectives**

- To scale-up the success story of ShekaBoru kebele (Chifra District) to Awra district, Lekura kebele.
- To observe WSWs applicability on the other scenario with APARI at Lekura kebele.

- **The Scenario was:-**

At Lekura kebele, the flood water comes only from its micro catchment, not supplemented by highland flood.



Accomplishment

- Activity-1 Improve the capacity of partners and beneficiaries in implementing and scaling out of forage based resource enhancing development interventions in similar domain sites.

A. Participatory Selection of Potential Lead Pastoralists/Agro-pastoralists or User Group

Consensus of the district administrator, kebele and community level local leaders (*Kedoh Abbobti & Daalah Abbobti*) on the selection criteria

B. Developed Participatory Community By-law Establishment (drafted, verifying and validation)



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C. Off-site and On-site Training and Support Farm Tools

Off-site- theoretical on land preparation: land clearing, ridge preparation, up to planting

On-situ- practical like- half-moon soil bund, ridges and furrow, compartment bund and water harvesting pits



Off-site- theoretical



On-situ- practical



Farm Tools provision
pastoralists/agro-pastoralists



Activity-2- Selecting appropriate crop and forage varieties for integration

- ❖ Type of food and feed crops planted around the WSWs of Lekura kebele

Food: Maize (Melkasa-6Q, -2), (Melkassa 4Q), Local Maize, Sesame (Adi), and Mango

Feed: Mung bean (N-26), Cow pea (9333), Lablab (147 (Black); 6529 (Red), Pigeon pea (ICEAP87091 DURSA), and Napier grass (ILCA-16984)

- ❖ Among two varieties tested crops- maize varieties – Melkassa 6Q 2 performed very well as compare to other
- ❖ As compared to **under & outside the WSW in strow and grain/seed yield (in tons), Straw- 5.27 and 3.92) respectively , grain measurement** but wasn't able to complete the lifecycle due to inadequate
- ❖ The performance of other tried feed crops like cowpea, sesame and elephant grass were showed promising result



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GIZ & APARI staffs visited the area



Second Project-”Restoring resource enhancing forage development in support of livelihoods of the pastoralists in Awra district of Afar Region” 2018-2019

Project objectives

- To restore resource enhancing forage development in support of drought resilient livelihood development of the pastorals in the plain of Lekora plain of Awra district of the Afar region.
- To link the produced forage with market oriented productive animals to ensure income and household nutrition in support of drought resilient livelihood of the pastorals in rainy seasons and breed saving during drought periods.
- Improve the capacity of partners and beneficiaries in implementing and scaling out of forage based resource enhancing development interventions in similar domain sites.



Approaches and procedures

- lessons drawn from-previous pilot project- serve as a demonstration learning model for other similar domain areas of the Afar pastorals.
- Established a research team - four multi-disciplinary researchers as team members
- Identifying moisture gradient of the sites-
- Accordingly three forage interventions types
 - Perennial & annual grasses and legumes-** dry sites, moderately moisture sites, moist sites, highly moist sites
 - Forage trees and shrubs** dry sites, moderately moisture sites, moist sites, highly moist sites _
 - Grasses and legumes mixed with limited fruits**
- Capacity development
- Market linkages
- Multiplication and maintenance of forage planting materials



Accomplishments

❖ Crop type selection

- **Grass:** Panicum antidotale, Cenchrus ciliaris, Sudan Grass, Chloris gayana/Rhodes/ and Native grasses (local grass): Mussa, Dilee, Redoo, and Fia
- **legumes:** Cow pea, Lablab, and Mung bean,
- **Tree & shrub:** Moringa oleifera, cactus, Balanitye egyptica , Leucenia lecocephale, and Sesbania sesbane

▪ Report show that

- **From grass species:** Chloris gayana (Rhodes grass) well performed at moist area and Cenchrus ciliaris at moderately moisture sites, similarly, from Local grass:
- **From tree and shrubs:** *Moringa oleifera* and *Leucenia lecocephale* well performed and adapted



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❖ Capacity budling training

Seed collection and cutting and carrying system

- Seed source collection - local grass species - identified and selected



Conti...

❖ Capacity budling training

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Identification of important local grass legumes species

Grass species: 4 important grasses and their vernacular name was identified and selected namely: Mussa, Dilee, Redoo, and Fia. Mussa is perennial and others three are annual plants.



Vernacular name	Harvested forage in fresh weight/1m ² area in (Kg)
Mussa	3.1
Redoo	3.5
Dilee	2.5

Legumes: 3 important forbs and their vernacular name was identified namely Lekenebo, Abure, & Ouraouda, all are annual



Project: Three

“Restoration of Natural Resources through Forage Development to Re-build the Livelihoods of the (Agro-) Pastoralists in Yallo District of the Afar Regional State”

- **Project Duration: 2020-2021**
- **Objectives-** similar to project two
- Project status: Incomplete due to TPLF war



Challenges

- ✓ Absence of strong working culture in farming practices of pastoral communities lekura kebele
- ✓ Timeliness on WSW maintenances- the spillway height was filled with sediments
- ✓ Some community member were bypassed the bylaw- (most of them are youths)
- ✓ Switch of governmental structural reform had been going at district and kebele level
- ✓ Desert locust
- ✓ TPLF war
- ✓ Lack of appropriate field vehicle –considering project areas
- ✓ Lack of flexibility by finance system



Lesson learned

- ❖ Every cascades (No WSWs) has differences in soil statues, existing vegetation cover, Slope gradient and landscape), need to developed wider range innervation technology
- ❖ Working at WSWs is not a one time rather a continuous planning, implementation and learning until internalize improve farming practice working culture and beyond improved food security
- ❖ Return and integrate existing traditional customer law on NRM, while developing and enforcing bylaws to create sense of ownership and willingness to participate
- ❖ Strong coordination and collaborative linkage and shared responsibility among different development actors are a key to scale-up the technology.



**THANK YOU
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