

Improving Livestock Feeds in Poverty Alleviation for Small holder farmers in Dryland areas



Development Policy for more effective Management for Water Resources For Community based Irrigation in Ethiopia

Outline



- Introduction
- Key Problems
- Opportunities for Feed Improvement under Rainfed
- Opportunities for Feed Improvement under Irrigation
- Research Work
- Loss of Biodiversity
- Future Outlook

I. Introduction



❖ **Livestock production is key production system in the dryland areas**

- ❖ **Rangelands are sources of feed and water**
- ❖ **Rangelands cover about 60% of the land mass**
- ❖ **Most these areas are currently highly degraded and production is limited and have become concentration of food insecurity, poverty and poor health**

Introduction...

❖ the key issues to address are:

- ❖ Population growth resulting an increase of cultivable areas
- ❖ agriculture and livestock into marginal land, deforestation
- ❖ land & water degradation
- ❖ poor productivity, food insecurity, poverty
poor health, malnutrition

Introduction⁽²⁾

The key problems

- ❑ **Water Stress**
- ❑ **Land degradation, Low soil fertility**
- ❑ **Lack of improved varieties**
- ❑ **investment in irrigation may increase land productivity**



Potential rainfed feed improvement

- Huge feed resource potential
- A number of of forage spp. available with multipurpose
- Examples include
- Forage: Acacia, Alysicarpus, Cassia, Stylosanthes, S. fruticosa etc.



Potential rainfed feed improvement...

- **Grasses: Aristida, Cenchrus, Chloris, Eragrostis, Panicum**
- **Trees and shrubs: Acacia senegal, A. tortilli, Blannites aegyptica etc. The leaves, pods and seeds are important feed sources**
- **They can solve the shortage of energy and protein especially during the dry season**



Potential for Irrigated pasture

- Huge water resources: Rivers; Awash, Wabi-shebele, Genale, etc
- Ground water
- High potential for water harvesting

Potential in Irrigation





The need for developing irrigated pasture

- Shortage of rainfall as water source
- Shortage of water for livestock in rangelands
- Development of dryland grazing
- Minimize conflict over dry season feed



TRADITIONAL IRRIGATION

- Irrigation: various types are used ranging from large, river schemes to small plots watered by hand and pump irrigation
- Flood recession agriculture
- Water harvesting: ditches, bunds etc



Research Approach and Activities

- Past research activities
- Previous research development and research organization including NERDU, IAR, ILCA have conducted screening trials
- Screened appropriate grasses and legumes recommended, but without much impact
- ILRI screened accessions of herbaceous and fodder trees species from the trust collections



Research Approach...

- Screened those accession which show good adaptation in different AEZ for further research and development
- ILRI established seed unit for supply of improved forage seeds. Selected forage species with appropriate management practices particularly for the highlands



Current Research Activities

- **Several research activities initiated in both rainfed and irrigated areas**
- **In somali region under rainfed in Jijiga, and irrigated areas at Gode**
- **In Afar at Argoba and several other sites under rainfed and Werer for irrigated areas**
- **The activities include screening, rangeland management and agroforestry**



Current Research Activities ...

- Cactus (*Opuntia ficus*) research in the Somali and Afar regions deserves a special mention
- Source of water, ash, and some vitamins, minerals, protein and CH
- The varieties include Mosobo, Mekelle, Golaa, Adikey etc.

















Loss of Biodiversity

- Genetic erosion of indigenous forage and livestock species is increasing
- Due to population increase and associated problems, changes in climate
- Tendency to introduce exotic germ-plasm
- Change ecosystem etc







Conservation of biodiversity

- This a very pressing and urgent need
- Conservation through utilization
- The UNEP conference agenda 21 emphasizes conservation should take account the people whose livelihood depends upon them
- The resource should be characterized, conserved and utilize to avoid irreversible loss of biodiversity for the future



Future Outlook

- Water is the central production factor affecting production in dryland areas
- Research has to be conducted with water as a nucleus
- Low soil fertility has also to be addressed
- Integrated NRM and diversification to reduce risk and give more production and income stability for land users



Future Outlook...

- **Solve the land property issue in the rangelands, otherwise technical solutions will not be adopted**
- **Biotechnology use for development of drought tolerant species and improvement of livestock productivity**
- **Characterization of available forage resources is the basis for continuing use of germplasm**
- **New technologies such as molecular genetics and GIS could be used to assess the extent of variation in collections and identify gaps in further collections**