FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

Potentials for and benefits from irrigated fodder: highlights from the ILSSI research

M. Bezabih, A. Adie, M. Abdella, F. Tessema, T. German, A. Duncan, M. Blummel, C. Jones

ILSSI knowledge sharing workshop, 25 May 2023, ILRI, Addis Ababa, Ethiopia

USAID FROM THE AMERICAN PEOPLE · The Borlaug Institute · Texas A&M AgriLife Research · The Texas A&M University System · IFPRI International Food Policy Research Institute · IWMI International Water Management Institute · ILRI · World Vegetable Center · UF IFAS University of Florida

CONTENTS

- Objective
- Approaches
- Key research outcomes and lessons
- Ways forward

OBJECTIVE

- Explore irrigated fodder cultivation as entry point to diversification, intensification and sustainability
- Improve on-farm milk and meat production through filling feed quality gaps in dry season
- Evaluate forage production as cash crop, livelihood, and employment strategy
- Capacitate value chain actors

APPROACHES: R4D

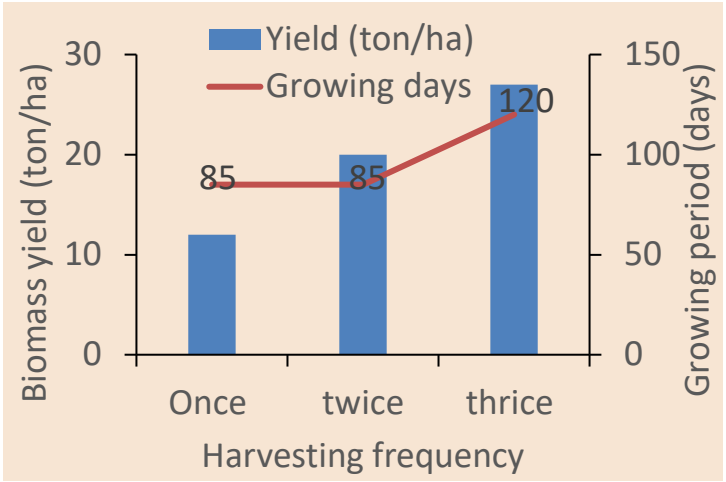
- Community engagements
- Prioritize areas for action research
- **Participatory** on-farm trials and demos
  - Forage varieties
  - Water lifting technologies
  - Utilization practices (dairy; fattening)
- Socio-economic assessments

EVIDENCE FROM ON-FARM TRIALS

Irrigated fodder agronomic trials

Annual grass-legume mixes
Oats-vetch

- Multi-cut approaches for oat-vetch under irrigation, doubling yield



- Perennial forages under irrigation proving green feed year- round, with soil fertility and fodder quality benefits

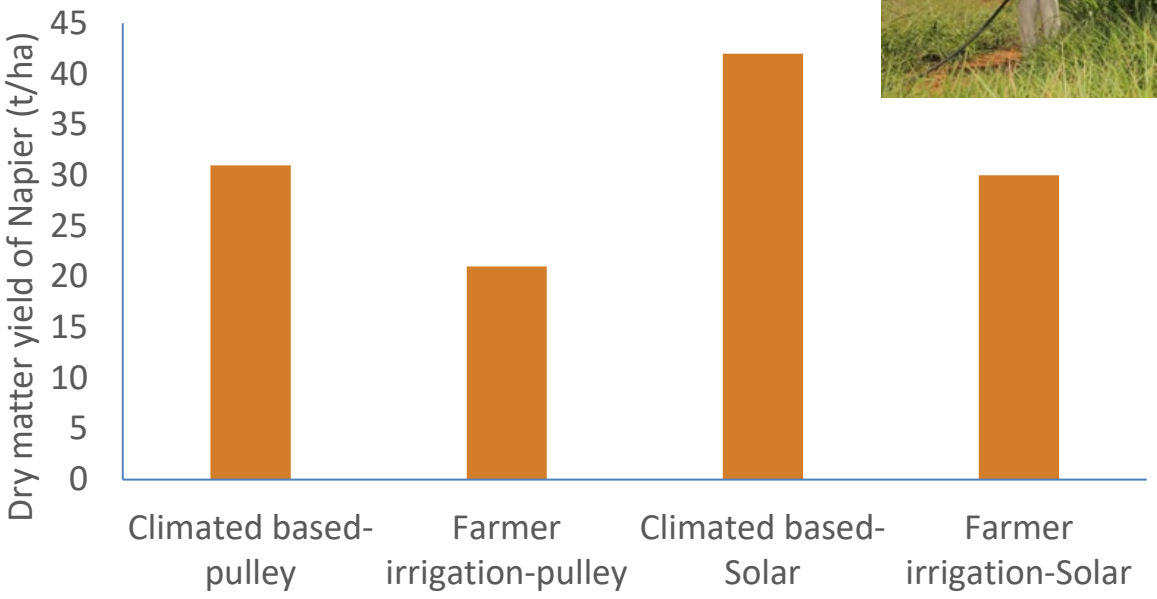
Perennial grass-legume mixes

Napier-Desmodium

Napier-pigeon pea

EVIDENCE FROM ON-FARM TRIALS

Water lifting technologies and irrigation practices

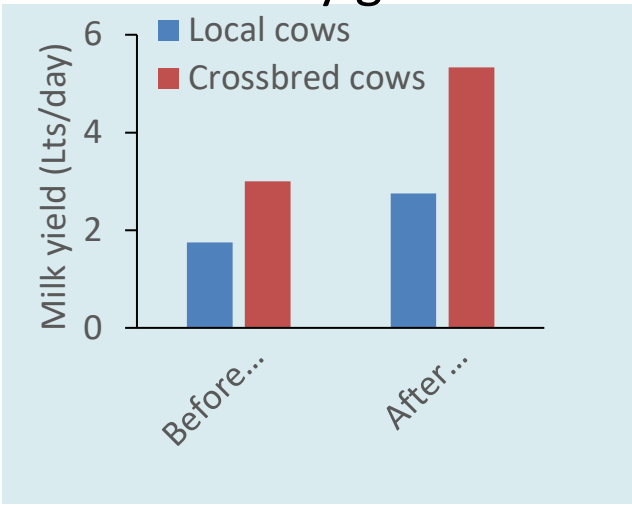


Misba et al 2023

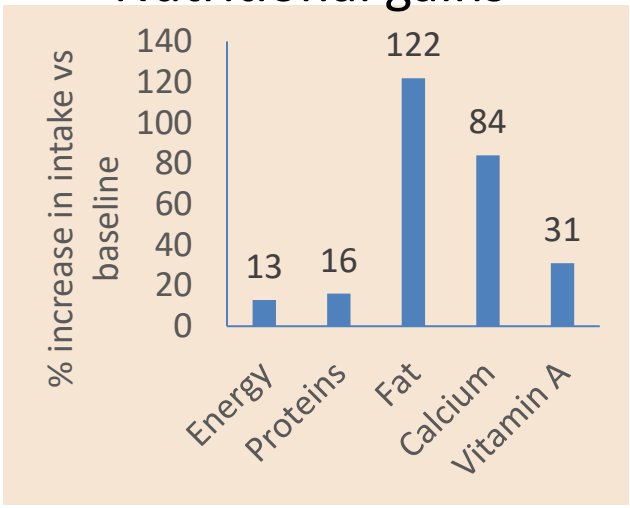
FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

EVIDENCE FROM ON-FARM TRIALS

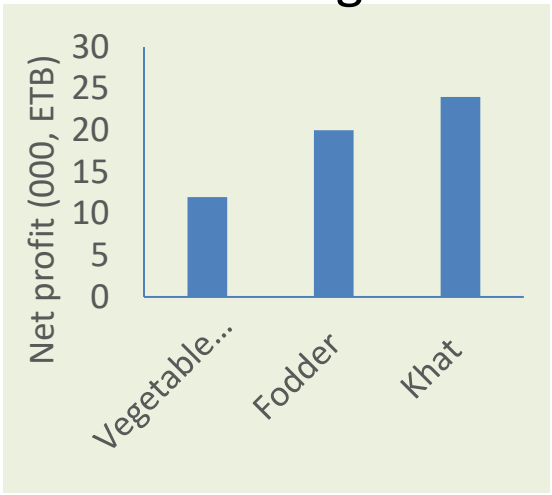
Productivity gains



Nutritional gains



Income gains



Improved fodder as a substitute to commercial conc.

Type of supplement	Sheep Weight gain (g/day)	Net income/head
100% concentration mix	**130**	329
67% Conc.+33% Oat-vetch mix	110	**418**
33% Conc.+67% Oat-vetch mix	109	379
100% Oat-vetch mix	**86**	**328**

USAID FROM THE AMERICAN PEOPLE · The Borlaug Institute · Texas A&M AgriLife Research · The Texas A&M University System · IFPRI International Food Policy Research Institute · IWMI International Water Management Institute · ILRI · World Vegetable Center · HWISE-RCN

CONTEXT ON THE USE OF IRRIGATED FODDER

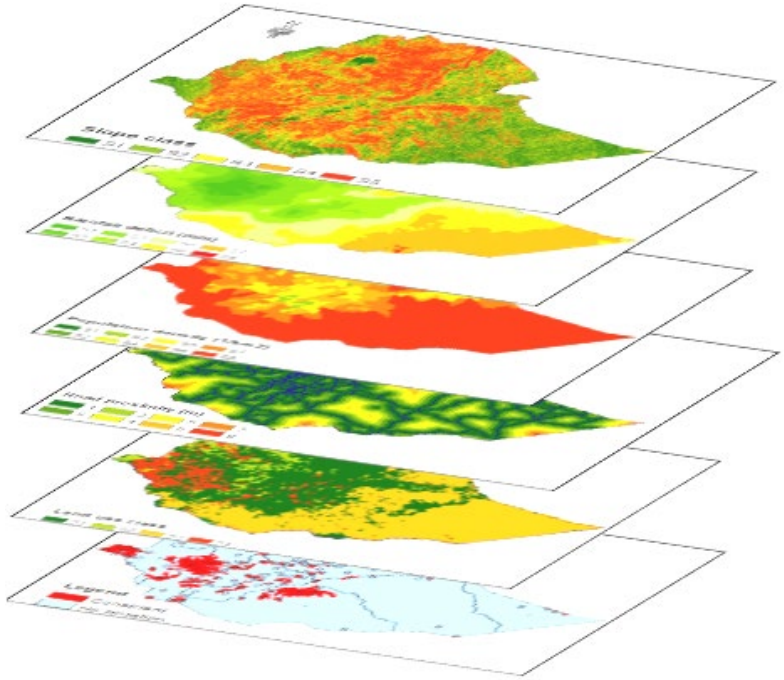
- On-farm use vs as cash crop
  - Profits maximized with improved cows for dairying
  - Fodder markets offer opportunities to increase income

SUITABLE LAND FOR IRRIGATED FODDER PRODUCTION

Bio-physical data used

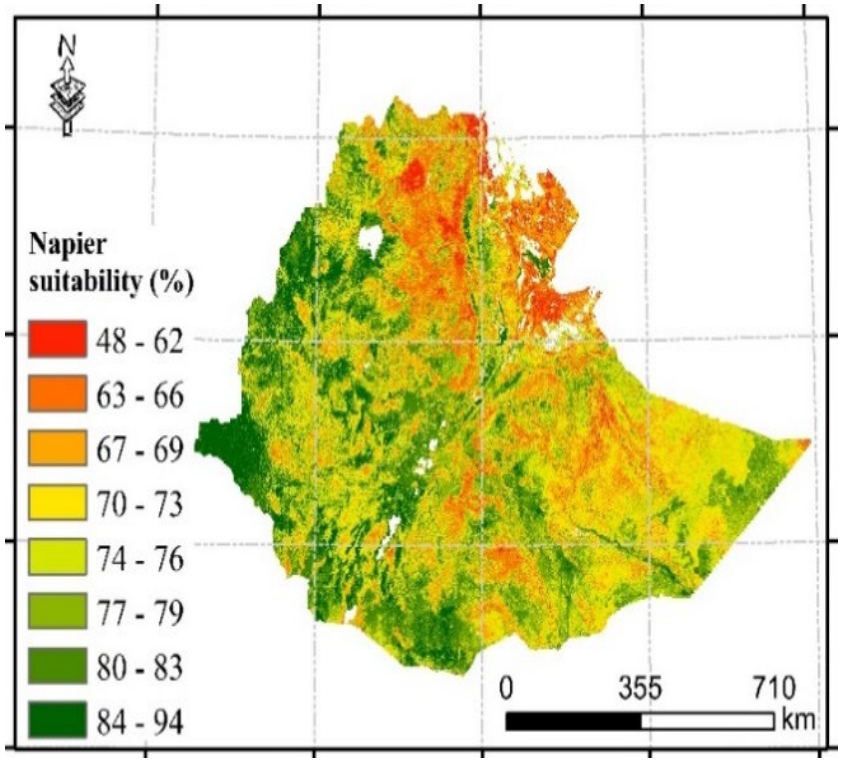
- Soil properties,
- Rainfall,
- Potential evapo-transpiration,
- Road networks,
- Livestock densities,
- Land use,
- Ground water depth,
- Potential borehole yield,
- Fodder characteristics

➢ Factors reclassified, weighted and overlayed



SUITABLE LAND FOR IRRIGATED FODDER PRODUCTION

- Nearly 20% of the land is suitable for irrigated fodder production (80% threshold)



River basin	Basin area (km²)	Potential suitable area (km²)
Abbay	198,891	**60,700**
Awash	110,439	29,300
Baro-Akobo	76,203	35,500
Genale-Dawa	172,133	**77,400**
Ogaden	80,009	21,800
Omo-Ghibe	78,189	26,000
Rift Valley	51,989	26,100
Tekeze	86,455	19,800
Wabi-Shebelle	202,219	**49,800**

CONCLUSION

- Evidences clearly indicate that irrigated fodder can considerably contribute to diversification and intensification
- Awareness and interest created among farmers in project sites further demonstrates its potential
- The practice can support climate change adaptation and mitigation efforts

WHERE TO GO FROM HERE

- Build on national strategic plans to move forward scaling the good practices
- Enabling environments and incentives for private sector investment in commercial production and marketing
- Explore options to use irrigated fodder to build national fodder banks in strategic areas:
  - ➢ Enhance drought preparedness and mitigation

FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

Thank you!