

Building Productive Landscapes: Experience from Northern **Ethiopia**

By Agena Anjulo Tanga (PhD)
Ethiopian Environment and Forest Research Institute

Presented to FLR workshop organized by IUFRO and
US Forest Service
San Juan
Puerto Rico, USA, June 6-9/2017



Presentation Outline

1. Introduction to Ethiopia's CRGE and Forestry ambitions
2. Forest Sector Development Initiatives through FLR in Ethiopia
3. Important activities identified for FLR intervention
4. Challenges
5. Conclusions



1. Introduction to Ethiopia's green growth

- **Ethiopia to develop along a green economic path**, outlined a strategy to build climate resilient green economy (CRGE, 2011).
- Limiting net GHG emissions by 2030 to below today's **150 Mt CO₂e** – i.e. around **250 Mt CO₂e** less than estimated for the current (2011) development path (BAU) **400 Mt CO₂e**

The CRGE:

- ✓ BASED ON FOUR PILLARS,
- ✓ follows a sectoral approach with about 60 initiatives

Middle income country in 2025

Agriculture

– Improving crop and livestock practices



Forestry –

Protecting and growing forests for economic benefits and as carbon stocks



7mill ha forestry
target

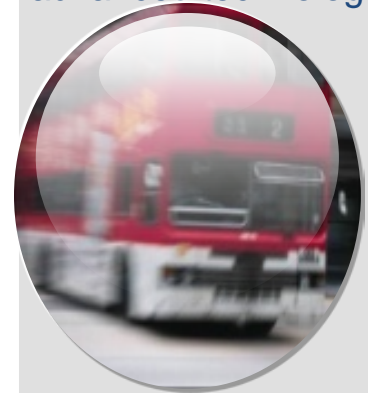
Power –

Deploying renewable and clean power generation



Technology-

Industry, transport and buildings – Using advanced technologies

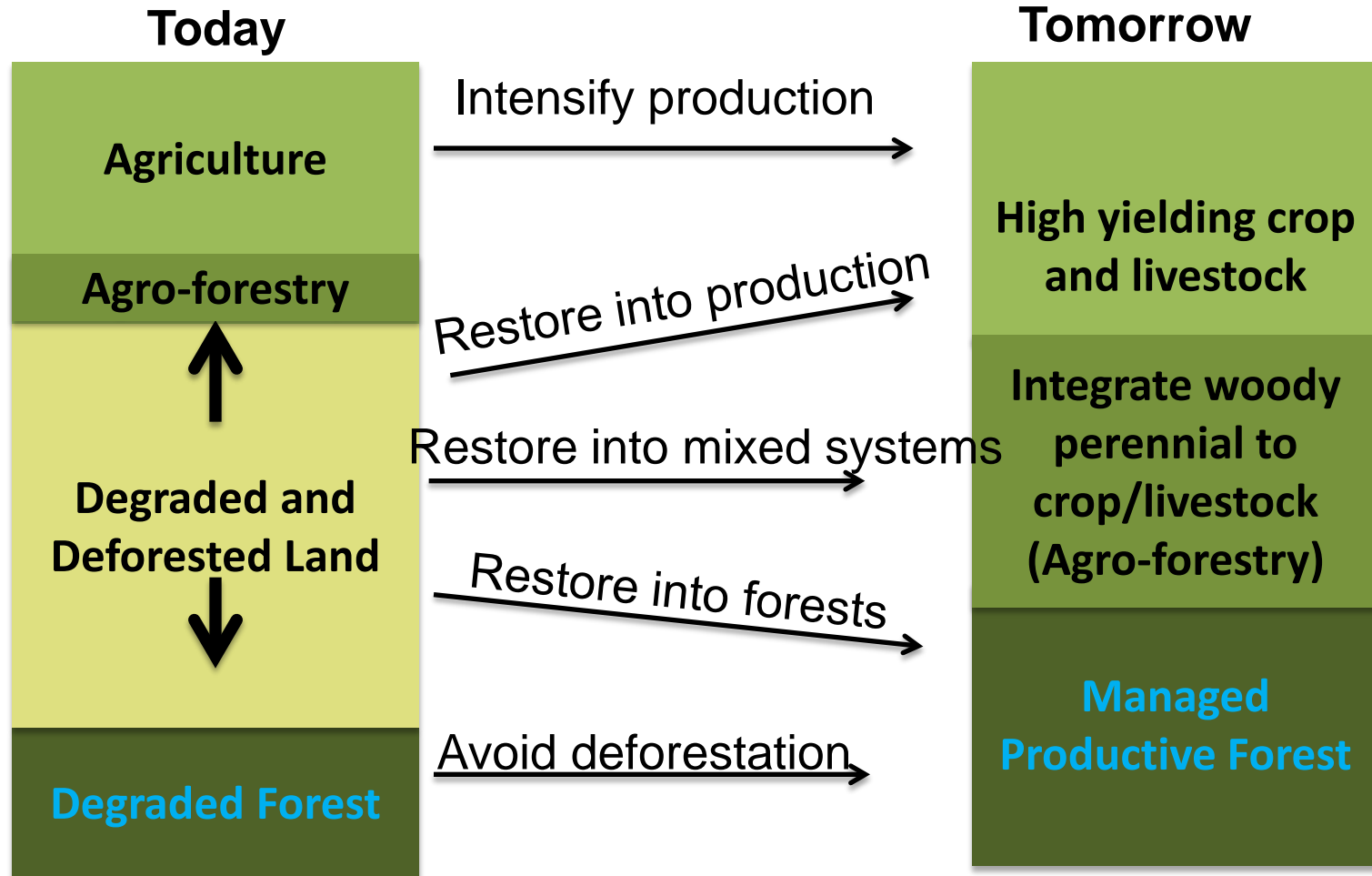


Ethiopian Environment and Forest Research Institute

የኢትዮጵያ የአካባቢና የደን ጸደቃ ስርዓት ስርዓት
Ethiopian Environment and Forest Research Institute

ADDITIONAL 15 million ha restoration target was set as part of the Bonn challenge with various opportunities

RESTORE PRODUCTIVITY



2. Forest sector development initiatives through FLR in Ethiopia

- FLR Project launched in 2016 to reach **150,000 ha** (mainly land rehabilitation through moisture conservation and tree planting) in four regions:
 - ✓ Amhara, Tigray, SNNPR, Benshangul-gumuz regional states
- 9 districts under FLR engaged
- **10,000 ha** new plantation in potential areas

3. Important activities identified for FLR intervention

- Landscapes severely degraded need soil-compost mix in the planting pits to initiate seedling growth
- The planting pits need to be prepared near water harvesting trenches/structures
- Strong safely to seedlings when transported to planting sites (**there was heavy loss in the past**)
- Water harvesting ponds at every possible point near planting sites to harvest rain water
- Labour based roads constructed to access planting sites and for later monitoring of the success



50% forest soil and compost/manure mix to improve survival rate of out planted seedlings

**Experience from Tigray Region,
Endamohony district**



Site preparation

Standard physical water harvesting structure: eye brow plantation pit prepared



Rain water harvesting



Preparation of the planting pit at Hadgibeda plantation site

The native soil was found less capable to supporting tree seedling growth; Soil samples analyzed revealed:

- Low organic carbon,
- poor moisture holding capacity,
- low N content,

✓To improve seedling survival, forest soil mixed with compost and manure is placed in the planting pits



የኢትዮጵያ የአካባቢና የደንብ ምር ሊገኝበት የሚችል
Ethiopian Environment and Forest Research Institute



Nursery
seedlings
stacked for safe
transporting to
nearby planting
site

Track loading
and
transporting
seedlings to
possible road
access



የኢትዮጵያ የአካባቢና የደንቅ ምር ሊገኝበት የሚችል
Ethiopian Environment and Forest Research Institute

Transported seedlings acclimatized and hardened near planting sites



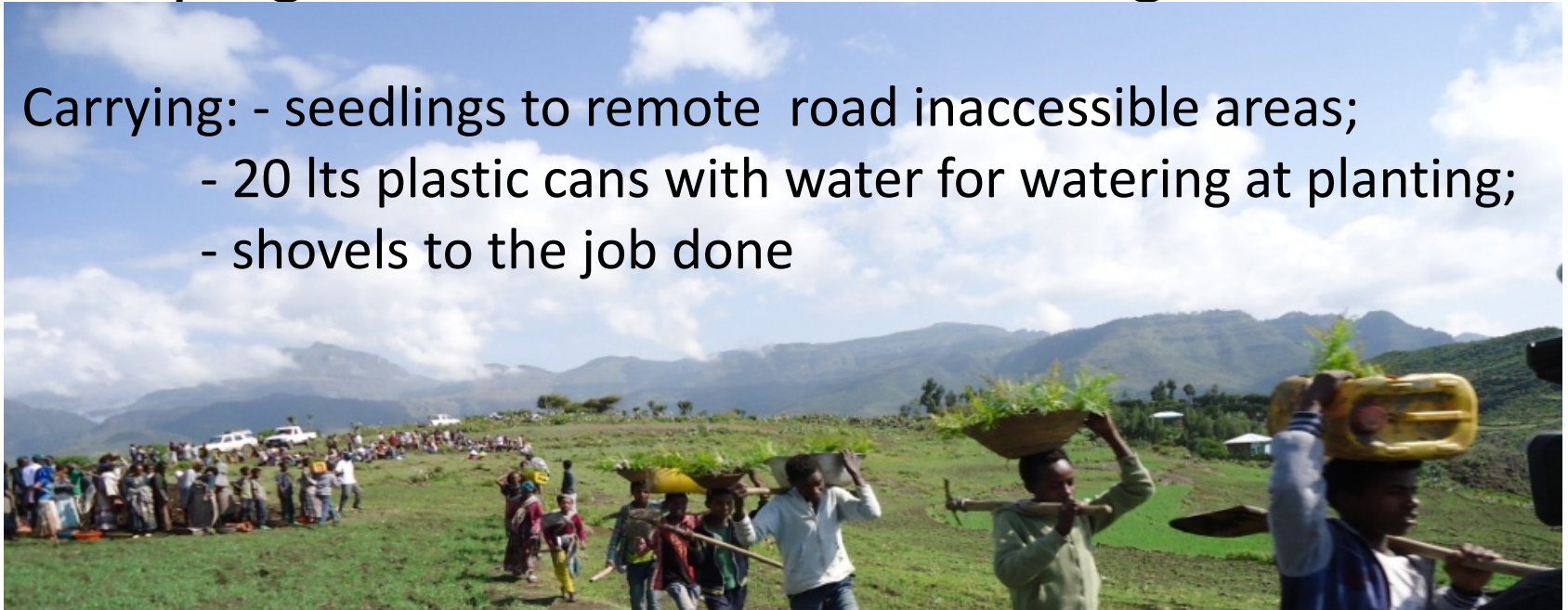
Ethiopian Environment and Forest Research Institute



የኢትዮጵያ የአካባቢና የፍጥነት ስርዓት ስርዓት
Ethiopian Environment and Forest Research Institute

Mass mobilization: men, women, youth – all in campaign to have tree cover at degraded sites

Carrying: - seedlings to remote road inaccessible areas;
- 20 lts plastic cans with water for watering at planting;
- shovels to the job done



Tree seedlings planting operation in pits near moisture harvesting structures at Endamohony



5-Spp. (*E. cam*, *E. gl*, *G.robusta*, *Olea africana*, *Juniperus procera*)



- Irrigation water is unreachable
- Rain water harvesting ponds are dug

Menkere plantation site-

- Rainwater harvested
- Irrigation improved seedling survival rate



Ethiopian Environment and Forest Research
Institute



የኢትዮጵያ የአካባቢና የደንቅ ስርዓት
Ethiopian Environment and Forest Research Institute

Labour based road is part of the FLR Initiative

Rode maintenance Activity



Job done, celebration way back home



Ethiopian Environment and Forest Research
Institute



የኢትዮጵያ የአካባቢና የፍጥነት ምርት ስርዓት
Ethiopian Environment and Forest Research Institute

Post planting mgmt

Weeding and survival count

E. camaldulensis – high survival
at low to mid altitude



G. robusta – with high survival
at mid altitude



4.The Biggest Challenge

Large Ruminants

Large herd of **livestock free grazing** remains the main challenge to FLR efforts

Small Ruminants



5. Conclusions

- Significant change achieved in the landscapes through moisture harvesting and tree planting
- Public participation and mobilization is the centre for FLR success
- Carbon sequestered, microclimate ameliorated
- Degraded areas are brought to grow grass for cut and carry livestock feed
- Wood supply in future; bee forage with beehives
- Lower catchments will have stream flow from groundwater recharging at upper catchments

