Carbon measurement and NDCS

BY
Kibebework Getachew

Forest Ecosystem Service Valuation & Carbon Measurement Directorate
Director (EFCCC)

April 8/2021

Outline of the presentation

- Role of my Directorate
- Ethiopia's NDC
- Sectors in focus
- Carbon stocks
- Woodland resources (extent, location, types, etc.)
- Dry land restoration initiatives by the Commission
- Challenges
- Recommendations

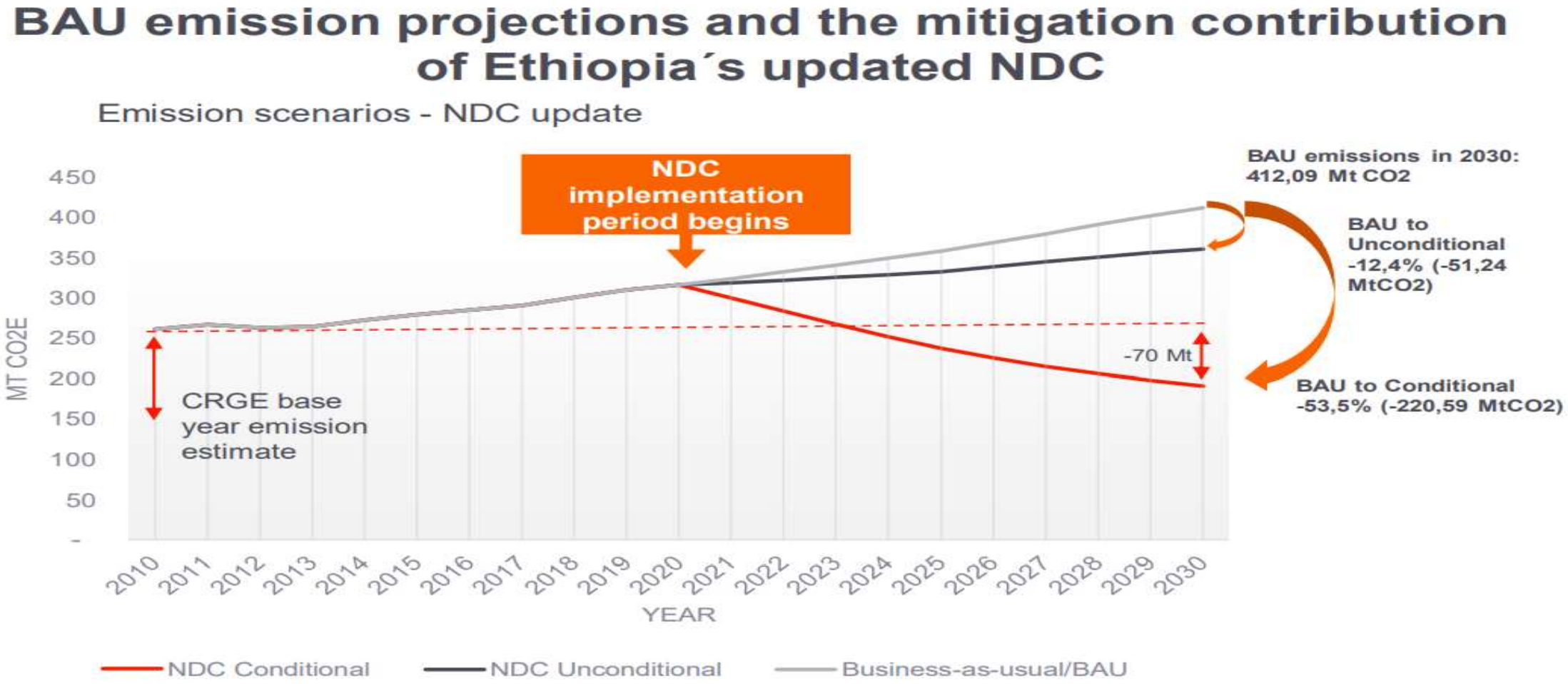
The Directorate’s major responsibilities

- Assessment of the forest ecosystem services
- Develop indicators that ensure forest ecosystem services are utilized sustainably
- Identify and organize tools and methods that support valuation of forest ecosystem services
- Provide capacity development
- Develop a system that support in identifying the contribution of forest ecosystem service for the country
- Develop methodology to measure forest carbon emission level

Back ground of Ethiopia's NDC

- In line with the global call for increasing ambition and narrowing the mitigation gap, Ethiopia has updated its NDC.
- Updated NDC more closely into alignment with the goals of the Paris Agreement, CRGE Strategy, NAP-ETH and sectoral plans
- Reflects Ethiopia's highest possible ambition that considers its capabilities and national circumstances
- The updated NDC will provide a wide range of opportunities for economic development and other co-benefits
- Ethiopia has moved from projectized approach and now the NDC has been **integrated** both in the 10-yrs strategy which runs up to 2030

Cond



Source: Ethiopia’s NDC updated summary submitted to UNFCCC

Sectors in focus

Sectoral overview: BAU reference emissions and mitigation potential

Sector	Baseline/NDC Reference emission projection (Mt CO2)		Unconditional mitigation potential (Mt CO2)		Conditional mitigation potential (Mt CO2)	
	2025	2030	2025	2030	2025	2030
Industry	9,16	14,71	-0,15	-0,72	1,53	-0,59
Energy	163,55	183,60	20,37	44,37	88,05	161,37
Land	-1,02	-0,27	3,34	3,61	12,59	20,72
Livestock	168,79	193,01	0,87	1,99	13,91	30,40
Managed Soils	7,46	9,68	0,02	0,05	0,08	0,20
Waste	10,29	11,37	0,89	1,94	4,28	8,48
TOTAL (Mt CO2)	**358,22**	**412,09**	**25,34**	**51,24**	**120,44**	**220,59**

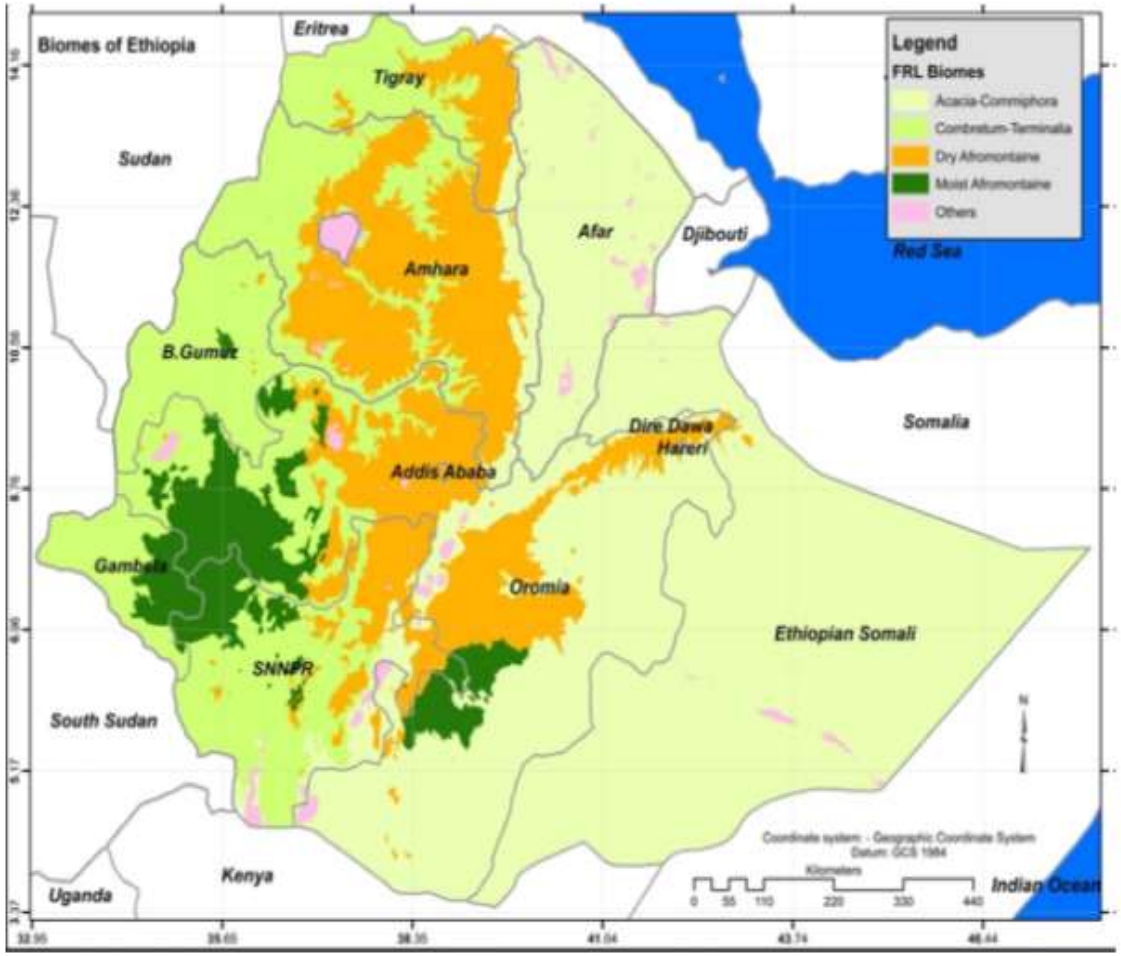
Source: Ethiopia's NDC updated summary submitted to UNFCCC

Key facts: updated BAU and GHG emission reduction scenarios

- Significant increase in 2010 base year emissions (difference to first NDC 112 Mt CO_{2e}) as a result of methodological improvements
- complete consideration of all GHG emission sources as per GHG inventory
  - IPCC AR5 GWPs
  - country specific parameters for livestock („Tier2“) and biomass)
  - Overall mitigation contributions of 53.5% (-220.6 Mt CO_{2e}) compared to 2030 BAU pathway
  - unconditional mitigation contribution 12.4% (-51.24 Mt CO_{2e})
  - conditional mitigation contribution 41.1% (-169.37 Mt CO_{2e})
- Clear demarcation of **unconditional** and **conditional** elements
- Openness to exploring additional ambition increases for future NDC updates

Woodland resources (extent, location, types, etc.)

- Forests in Ethiopia show a variety of structure and composition
  - *Dry evergreen afromontane forest*
  - *Moist evergreen afromontane forest*
  - *Transitional rainforest*
  - *Lowland, dry evergreen forest*
  - *Combertium-Terminallia broadleaved woodland,and*
  - *Acacia-Commiphora small leaved woodlands*



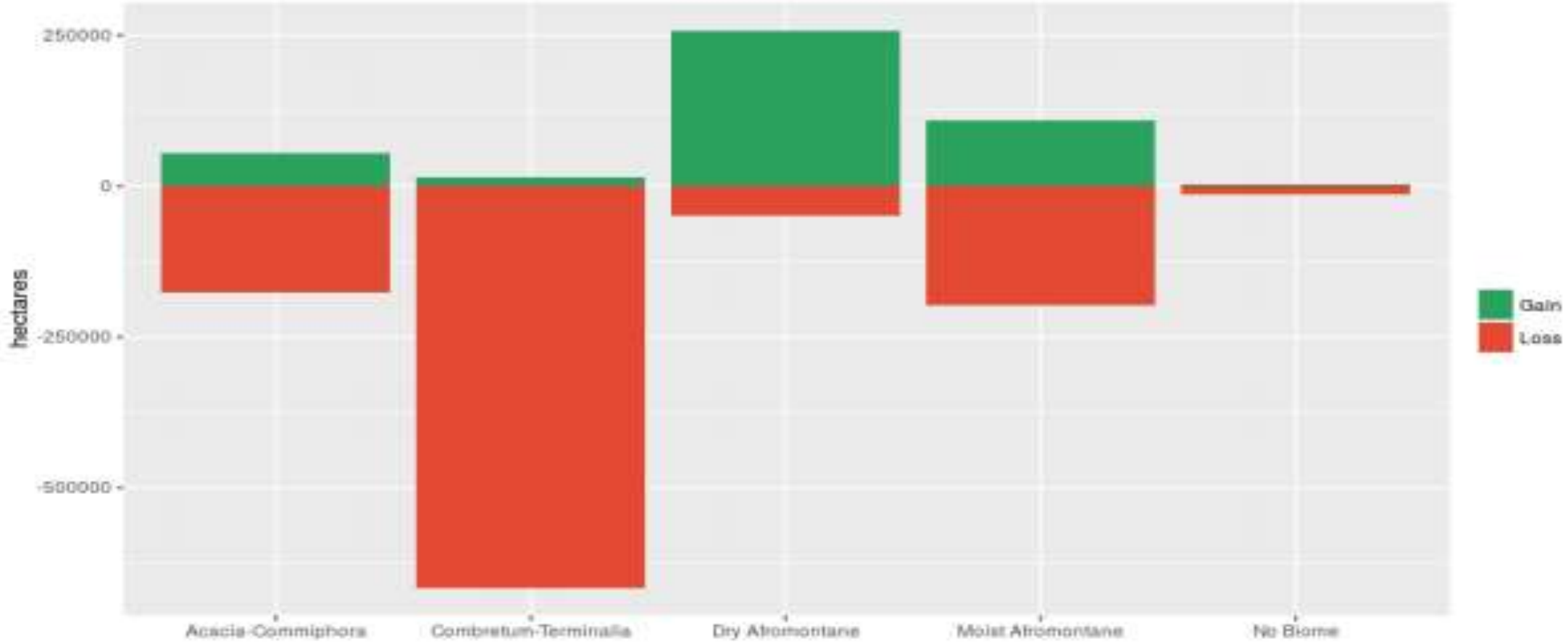
Woodland resources… cont'd

- Recent classification identified 4 major biomes, of which 3 biomes are dryforests
- The two prominent biomes dominating the drylands of Ethiopia are
  - ✓Combretum-Terminalia biome
  - ✓Acacia-Commiphora biome
- The Combretum-Terminalia biome mainly distributed in The Northwestern parts of the country (Tigray, Amhara, BG and partly in Gambela
- The Acacia-Commiphora biome stretches from Afar-through Somali to Oromia and Omo zone (SNNP), including Rift Valley

Biome	Vegetation types (Friis and Sebsebe 2009)
Acacia-Commiphora	*Acacia-Commiphora* woodland and bushland (ACB); Acacia wooded grassland (ACB/RV); Desert and semi-desert scrubland (DSS)
Combretum-Terminalia	*Combretum-Terminalia* woodland and wooded grassland (CTW); Wooded grassland of the Western Gambela region (WGG)
Dry Afromontane	Dry evergreen Afro-Montane Forest and Grassland complex (DAF); Afro-Alpine vegetation (AA); Ericaceous Belt (EB);
Moist Afromontane	Moist Evergreen Afro-Montane Forest (MAF); Transitional Rain Forest (TRF);

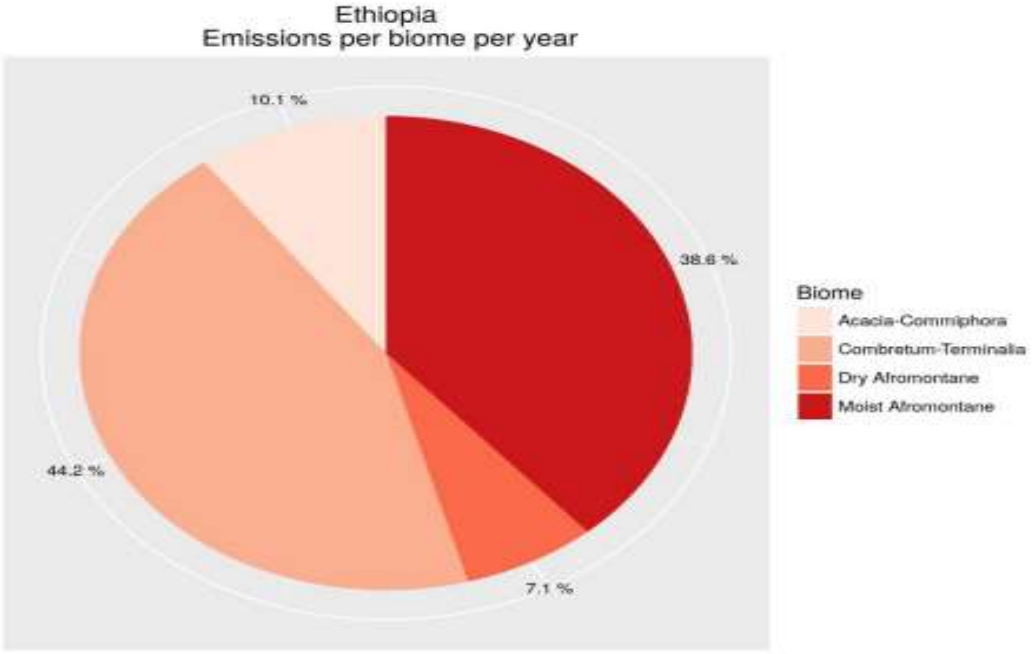
Carbon stocks

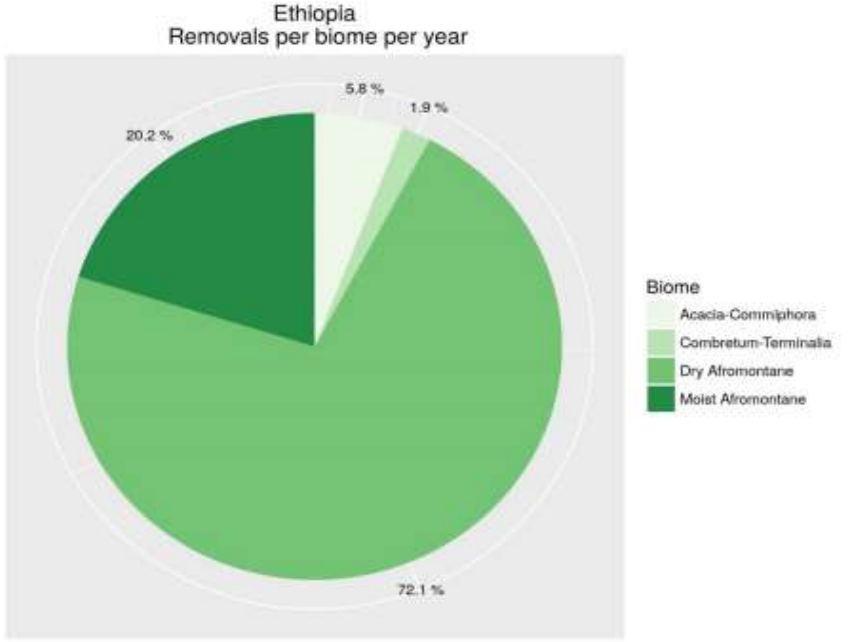
National forest area change detection 2000-2013 by biome



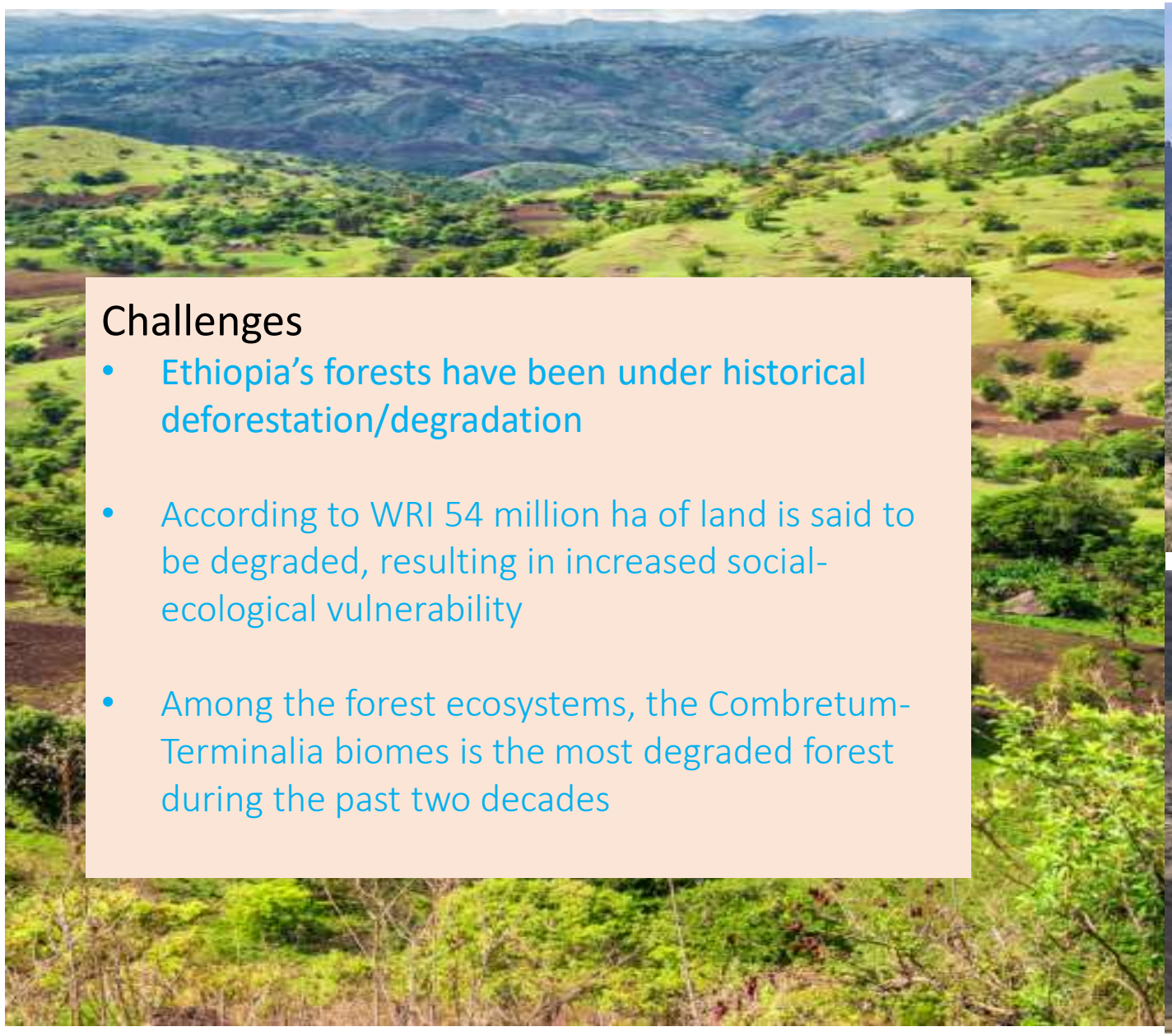
Emissions and removals

- The carbon pools included in the FRL include: above ground biomass (AGB), below ground biomass (BGB), and deadwood.
- The average annual loss of 92,000 ha/year over the period 2000-2013
- The emission from deforestation in the FRL are assessed at 17.9 million tons co2 e/yr while the removals from afforestation are assessed at 4.8 million tons co2 e/year





Dry land restoration initiatives by the Commission



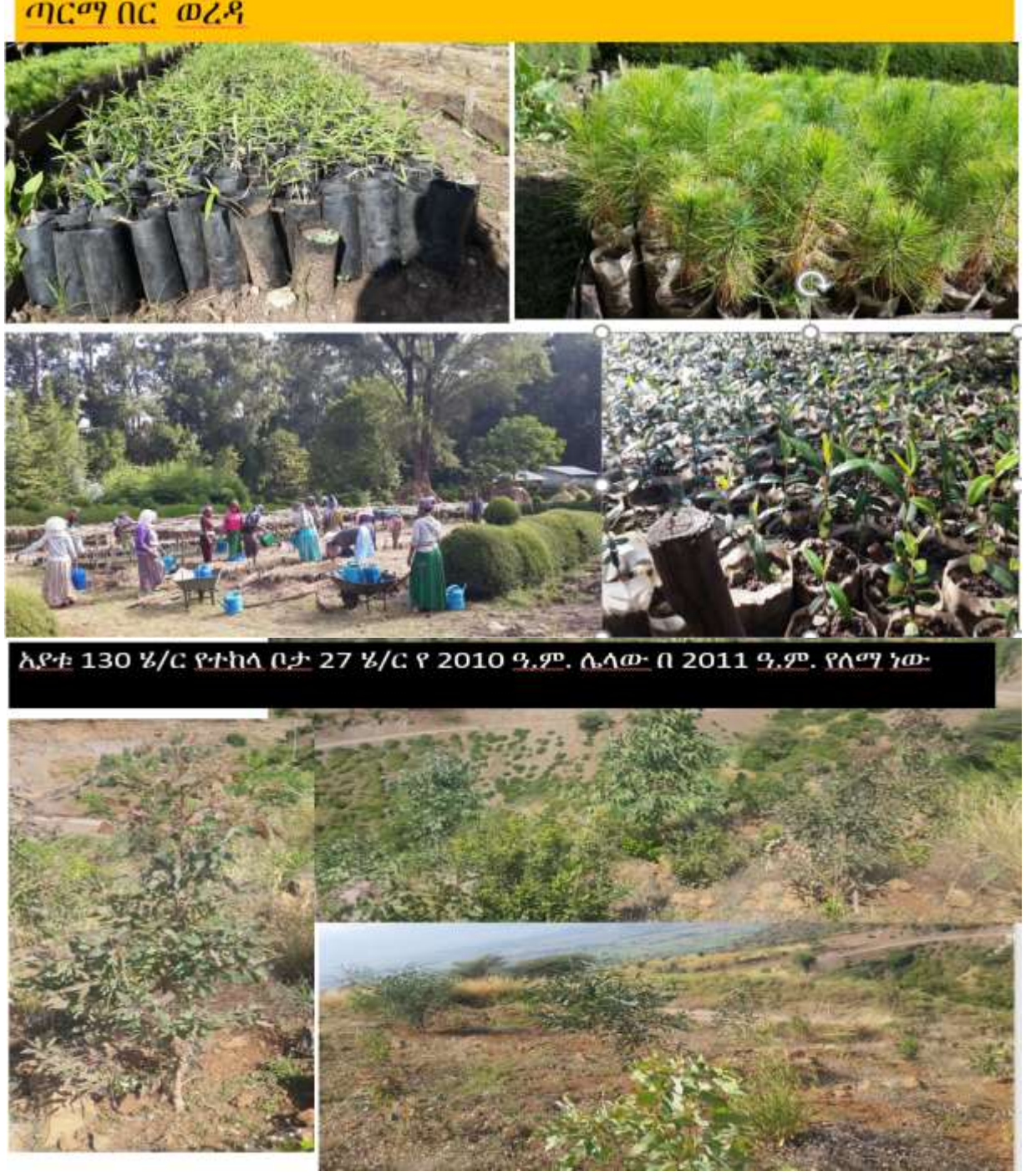
Challenges

- Ethiopia's forests have been under historical deforestation/degradation
- According to WRI 54 million ha of land is said to be degraded, resulting in increased social-ecological vulnerability
- Among the forest ecosystems, the Combretum-Terminalia biomes is the most degraded forest during the past two decades

Efforts to restore forests in Ethiopia – key actors

- Forest management is done/ supported by different actors – government, NGOs, private sector, communities
- The 2018 forest proclamation No. 1065/2018 recognizes 4 types of forest ownership (encourages a wide range of actors)
  - state forest
  - private forest
  - community forest
  - association forest
- Major interventions ongoing to manage existing forests and to restore degraded lands include
  - AR and ANR
  - PFM
  - GGW

Examples of Forest management efforts by EFCCC



Present days Forest management efforts

Partial view of visited nursery& plantation sites at Wadla Woreda, IS-FSDP

Partial view of visited nursery& plantation sites at Meket Woreda, IS-FSDP

Partial view of visited nursery& plantation sites at Delanta Woreda, IS-FSDP

Gully rehabilitation: Before and After scenario – Raya Azebo Woreda –Tigray Region

Counting hectares covered with forests and not number of seedlings raised or planted

Action against desertification by (GGW) restoration activity in Raya Azebo

.

Challenges

- Continued ecosystem degradation
- Increasing population pressure
- Lack of synergies and coordination between various actions
- The lack of proper enforcement of existing governance tools;
- Absence of land use plan and conversion of forest/woodlands into agriculture;
- Lack of forests/woodlands recognized as reserve;
- Vulnerability of livelihoods in drylands

Recommendations

- Integrated multi-sectoral approach ;
- Building resilience of communities and natural resources;
- Sustainable development through integrated natural resource management (INRM) ;
- Social development and gender sensibility ;
- The need to strengthen community participation to ensure good governance of natural resources;
- Strengthening food security through improved agro-silvo-pastoral production systems
- Enhancing research and knowledge management

Thank you!