Climate Change and Its Impact on Rural and Urban Areas and Ethiopia's CRGE/NDC

The major climate change-related hazards for Ethiopia

Flooding

- **Flash and river flooding** threaten some urban areas and villages
- **Extreme flooding events** have caused severe problems in the past decades and might require resettlement of vulnerable communities
- **Roads, bridges and other infrastructure** have to withstand floods

Droughts

- **Droughts have severely impacted** Ethiopia in the past
- **Agriculture** (~50% of GDP) is **particularly vulnerable**, with estimates of crop productivity loss up to 30%, requiring adaptive R&D
- **Power generation capacity** is largely dependent on hydro-power and thus vulnerable to drought; minimization of impact and diversification of renewable energy harnessing needed

Diseases

- **Increasing temperature** will increase **human diseases** (e.g. increased mosquito population, water-borne and heat related diseases); previously low-risk areas will be affected
- **Animal and crop diseases** will be similarly impacted
- **Adaptive R&D and risk management capacities** are needed

Impacts evident in some sectors

Sector	Impacts
Agriculture	• Shortening of maturity period • Expanding crop diseases • Crop failure
Livestock	• Change in livestock feed availability and quality • Effects on animal health, growth and reproduction • Impacts on forage crops quality and quantity • Change in distribution of diseases • Change in income and prices • Contracting pastoral zones in many parts of the country
Forests	• Expansion of tropical dry forests • Loss of indigenous species/expansion of toxic weeds • Desertification
Water Resources	• Decrease in river run-off • Decrease in energy production • Flood and drought impacts

What is the CRGE Strategy?

The Climate Resilient Green Economy Strategy (CRGE) is a blueprint for pursuing our ambitious aspiration to build a carbon-neutral and resilient economy by **2025**

Launched in 2011, the strategy aspires to attain the **triple goals** of economic growth, net-zero emission, and climate resilience.

There are two aspects: Green Economy (GE) and Climate Resilient (CR).

Mitigation component

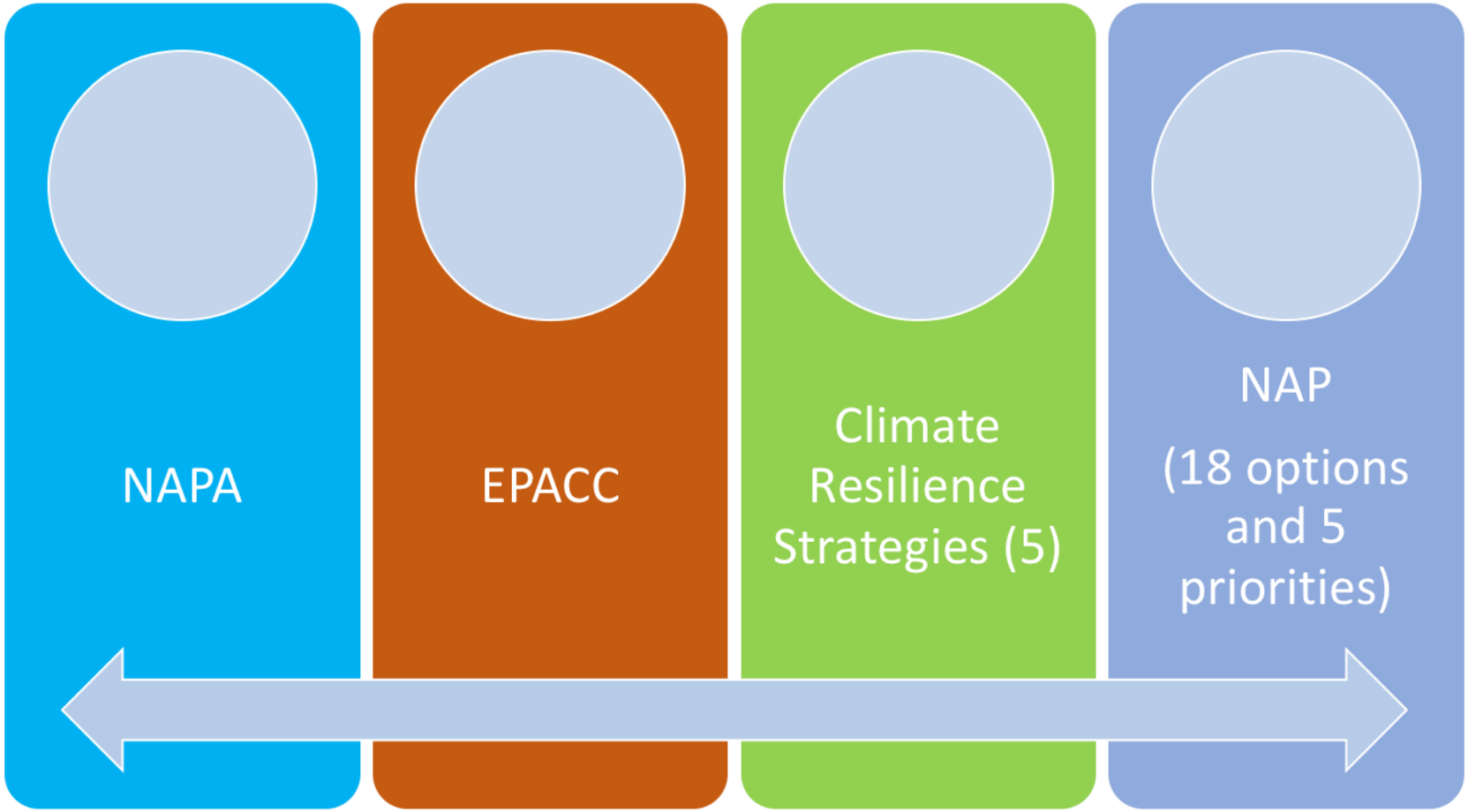
GE has 4 pillars

- Modernize the Agriculture sector and concomitantly reduce emissions
- Promote protection and re-establishment of forests
- Expansion of Renewable energy sources
- Leapfrogging to modern and energy efficient technologies in transport, building and industry sectors

continued

Sector	Baseline (2010) (MtCO2)	BAU in 2030 MtCO2	Abatement potential MtCO2	Emission Reduction in percent
Agriculture	75	185	90	49%
Forestry	55	90	130	144%
Power	5	5	na	na
Transport	5	40	10	25%
Industry	5	70	20	29%
Buildings	5	10	5	50%
Total	150	400	255	64%

Adaptation Component



Adaptation options

1. Enhancing **food security** by improving agricultural productivity in a climate-smart manner.
2. Improving access to **potable water**.
3. Strengthening **sustainable natural resource management** through safeguarding landscapes and watersheds.
4. Improving **soil and water** harvesting and water retention mechanisms.
5. Improving **human health systems** through the implementation of changes based on an integrated health and environmental surveillance protocol.
6. Improving ecosystem resilience through conserving **biodiversity**.
7. Enhancing **sustainable forest management**.
8. Building **social protection and livelihood options** of vulnerable people.
9. Enhancing **alternative and renewable power generatio**n and management.
10. Increasing **resilience of urban systems**.
11. Building **sustainable transport systems**.
12. Developing **adaptive industry systems**.
13. Mainstreaming **endogenous adaptation practices**.
14. Developing **efficient value chain and marketing systems**.
15. Strengthening **drought and crop insurance mechanisms**.
16. Improving **early warning systems**.
17. Developing and using **adaptation technologies**.
18. Reinforcing adaptation **research and development**.

UPDATE OF THE NATIONALLY DETERMINED CONTRIBUTION

GOVERNMENT OF THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

April, 2021

Objectives

- Paris Agreement (Art 4)
- Alignment (10YDP, NAP-ETH…etc and IPCC 2006 guideline)

Mitigation:

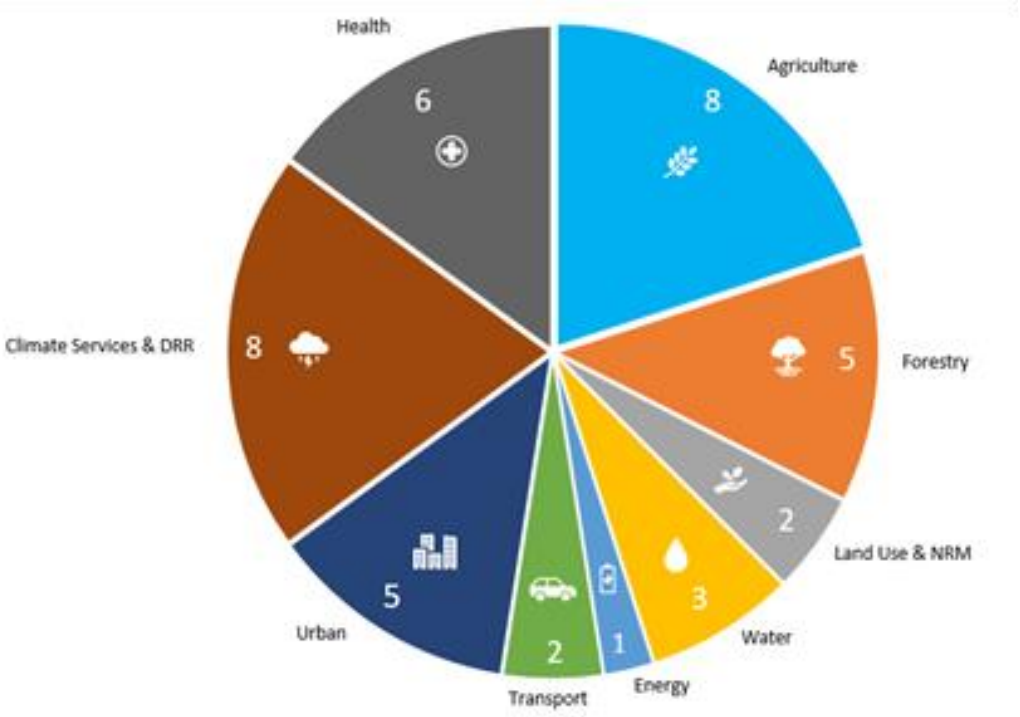
- Update Ethiopia's GHG BAU scenario and develop GHG emission pathways for 2030;
- Disaggregate the 64% GHG emissions reduction target between "conditional" and "unconditional";
- Establish intermediate mitigation indicators

- Adaptation: to set quantifiable targets, and identify a suitable set of intermediate indicators to measure progress;
- Transparency: MRV & M&E ;
- Better engagement in the global carbon market under Art 6 of PA;
- Climate finance

The updated NDC represents a clear progression in ambition for the following reasons:

Higher robustness of GHG emissions pathways and targets through improvements in methodology.
Ethiopia proposes an emission reduction target of 68.8% which is more ambitious compared to its first NDC (64%).
Inclusion of a detailed adaptation baseline and 2030 target.
Clear demarcation between unconditional and conditional mitigation and adaptation interventions.
Commitment to explore further ambition increases during the NDC commitment period.
Inclusion of additional adaptation interventions per sector.
Better adaptability and flexibility of the methodology to potential future changes of policies and external shocks.
An enhanced ability to track progress on mitigation and adaptation actions with improved MRV/M&E.

Number of adaptation interventions per sector



Climate Finance

Mitigation US$ 275.5 billion

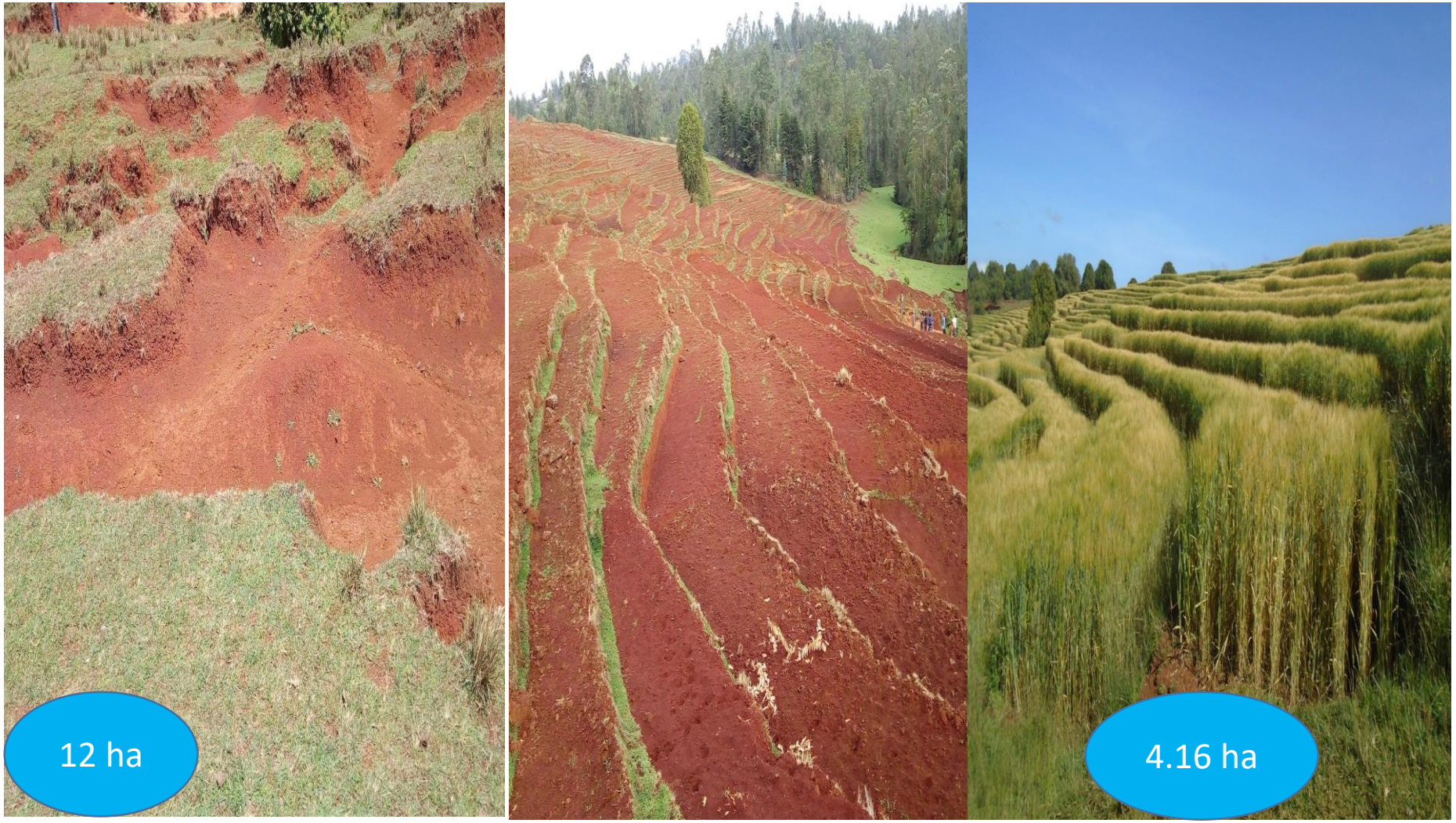
Adaptation US$ 40.5 billion

Mitigation + Adaptation=US $ 316 Billion

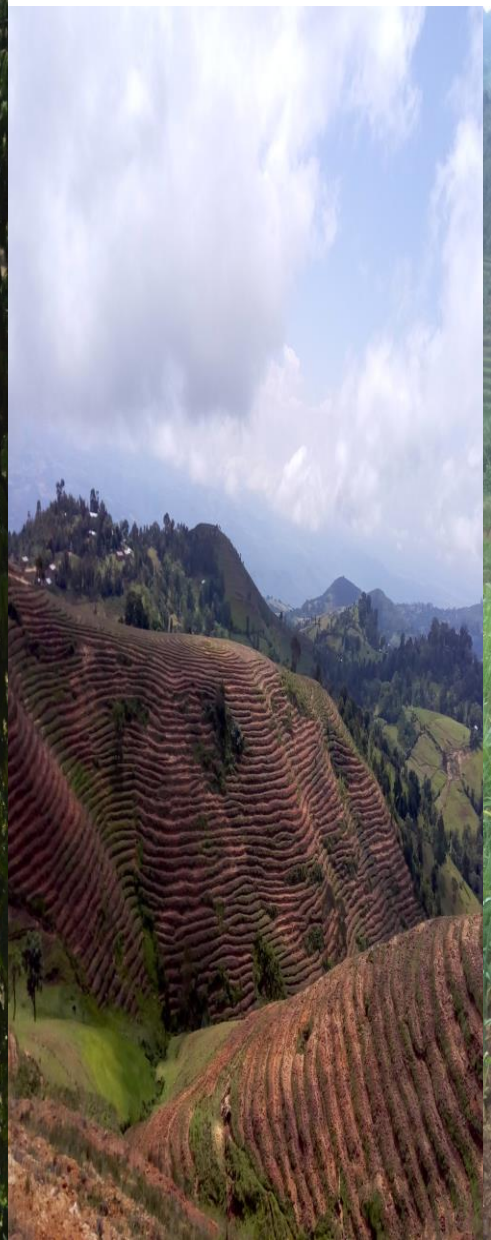
Of the total financing needs is Unconditional=$63.2Billion Raised Domestically	Of the total Financing needs is Conditional=$252.8Billion. Depending on International Climate Finance

Images for Major Achievements

Gurage zone Gumer woreda: Fusirbad Micro watershed bench terrace technology



Yem special woreda: Bench Terrace construction



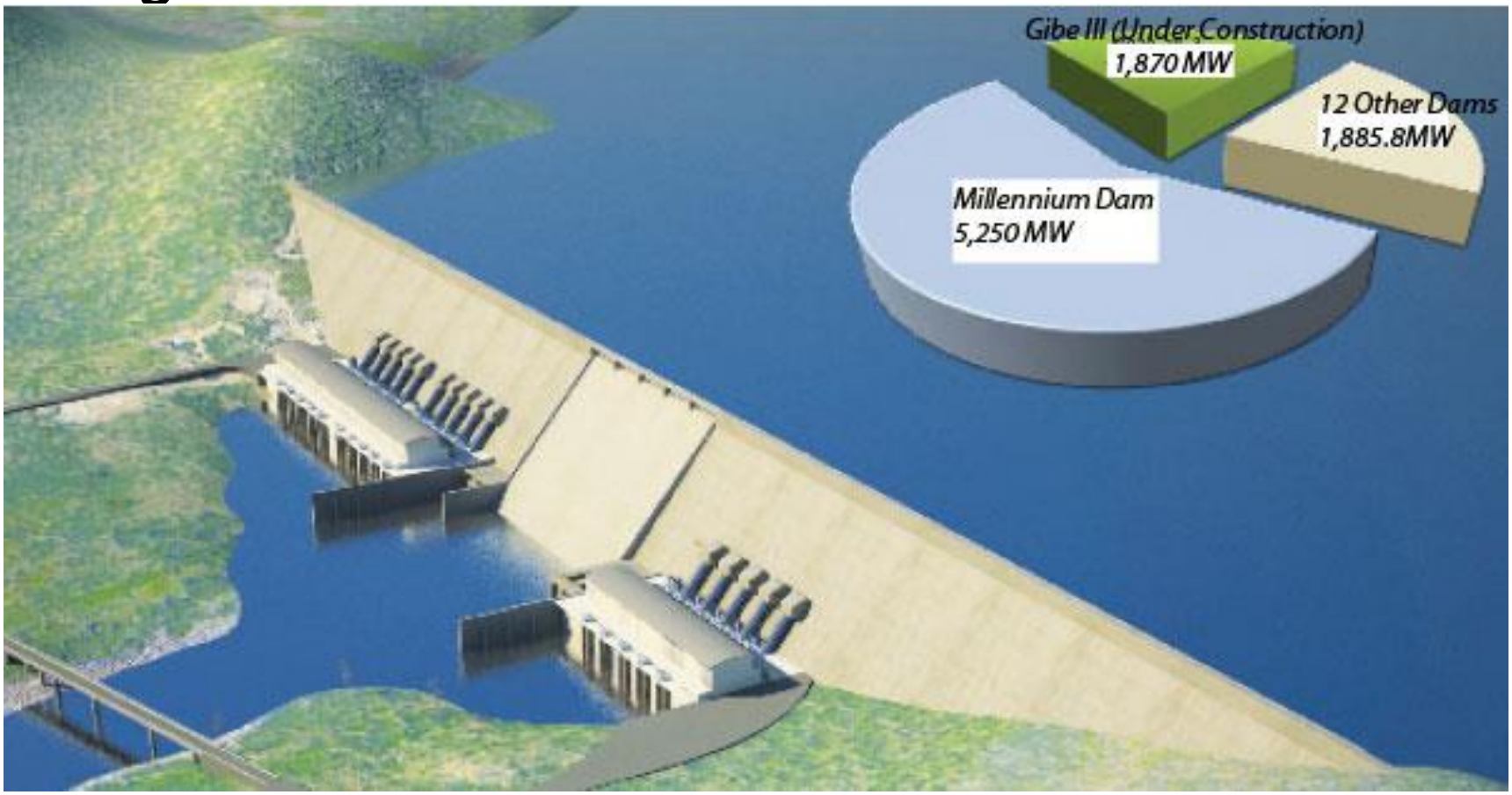
Arebegona woreda chalalaka micro watershed: Bench terrace



Tigray;
Agamat Micro Watershed:
Gully rehabilitation

Grand Renaissance Dam

Design of the Renaissance Dam



Wind Farm

Addis Ababa Light Rail

Baking with Improved Ovens

- Sebeta – Dewelle Railway

Hawassa Industrial Park

THANK YOU!