

Grand Ethiopian Renaissance Dam (GERD)

Sovereignty and Economic Transformation

Arkebe Oqubay (PhD)

Former Senior Minister and Special Adviser to the Prime Minister of
Ethiopia

British Academy Global Professor, SOAS University of London



Story of GERD

- Africa's largest hydropower project
- Capacity 6,500 MW (16,153 GWh/year),
- Blue Nile (86 % source), 1450 km, Lake Tana
- GERD 14 km east of Sudan border, Khartoum junction
- Ethiopia's ambition for self-reliance and economic development
- Reservoir: 74 million cubic meters, surface area 1,875 km²
- >1,100 km double-circuit high-voltage transmission line (500 kV)
- Electricity access to 60 million people
- National pride: from the 1960s, and initiated in April 2011
- Ethiopian Electric Power (EEP),
- METEC (electromechanical work), Salini Impregilo (civil work)



Project milestones

- 2008:** Ethiopia announced its plans to build a large dam on the Blue Nile.
- 2010:** Ethiopia secures funding for the project, primarily through domestic sources.
- 2011:** Construction began on the dam's foundation.
- 2013:** The dam reached its maximum height.
- 2015:** The first turbine was installed, and electricity began to be generated.
- 2018:** The second construction phase increased the dam's generating capacity.
- 2020:** The dam reached its full capacity of 6,450 megawatts.
- 2022:** The GERD was officially completed.
- 2022-2025:** Filling the dam.





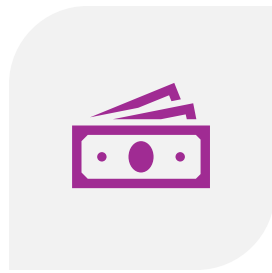




Managing mega projects and engineering challenges

- African ambition and state capacity
- Hydro-electric marvel (3X of the Hoover Dam)
- Ethiopia's right to develop and use Blue Nile.
- National pride and ending legacy of colonial treaties 1929, 1952.
- Experience in building and operating mega projects (EELPA 1956, EEPCO 1996, EEP & EEU 2015).
- Domestic firms: cement supply, electromechanical, sub-contractors
- Over 1.5 million tons of cement
- Complex multi-faceted challenges: diplomacy, engineering, financing, resource mobilisation

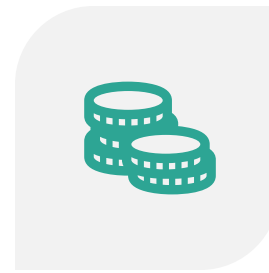
Financing energy: total \$25 billion



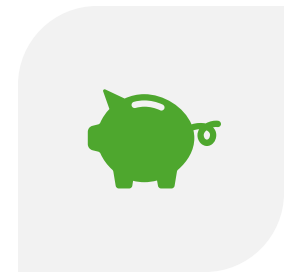
\$ 6-7 BILLION



**DOMESTIC: BONDS,
TREASURY, LOCAL BANKS,
SAVINGS**

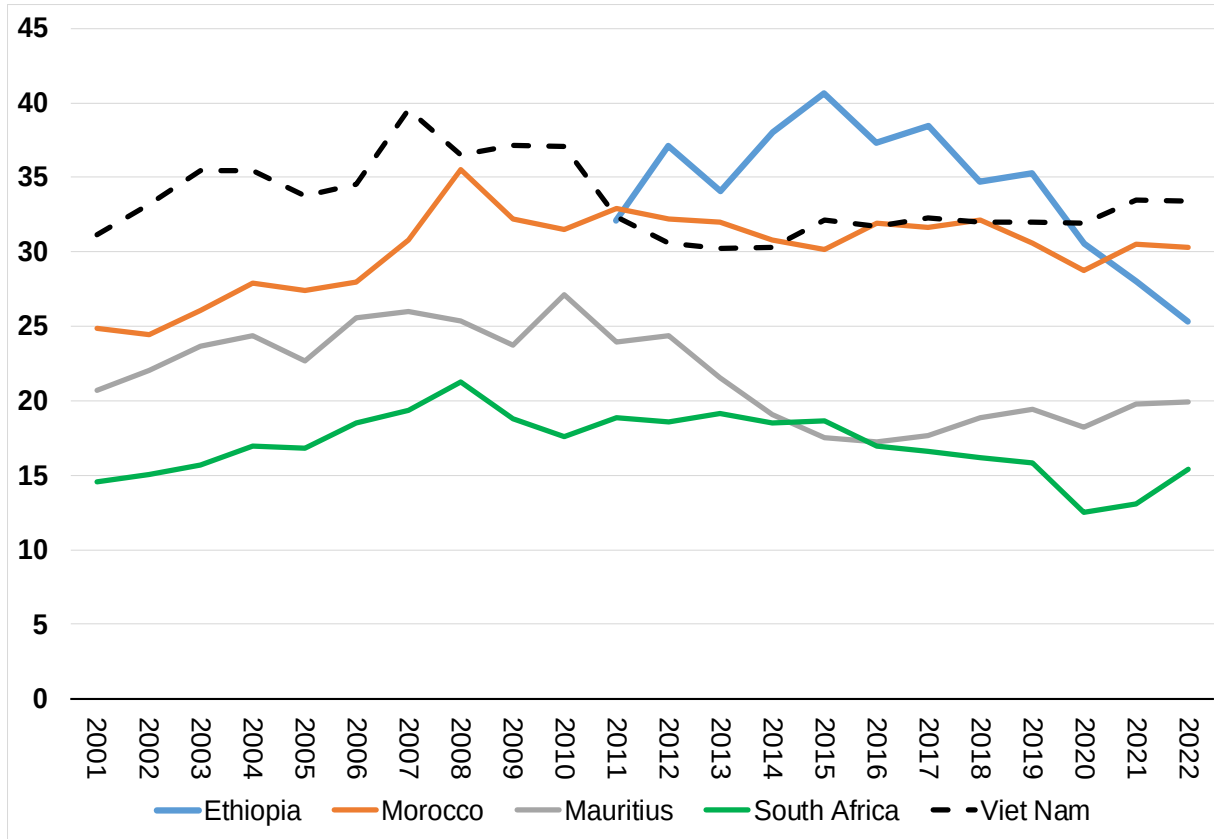


**NO EXTERNAL
FINANCING**



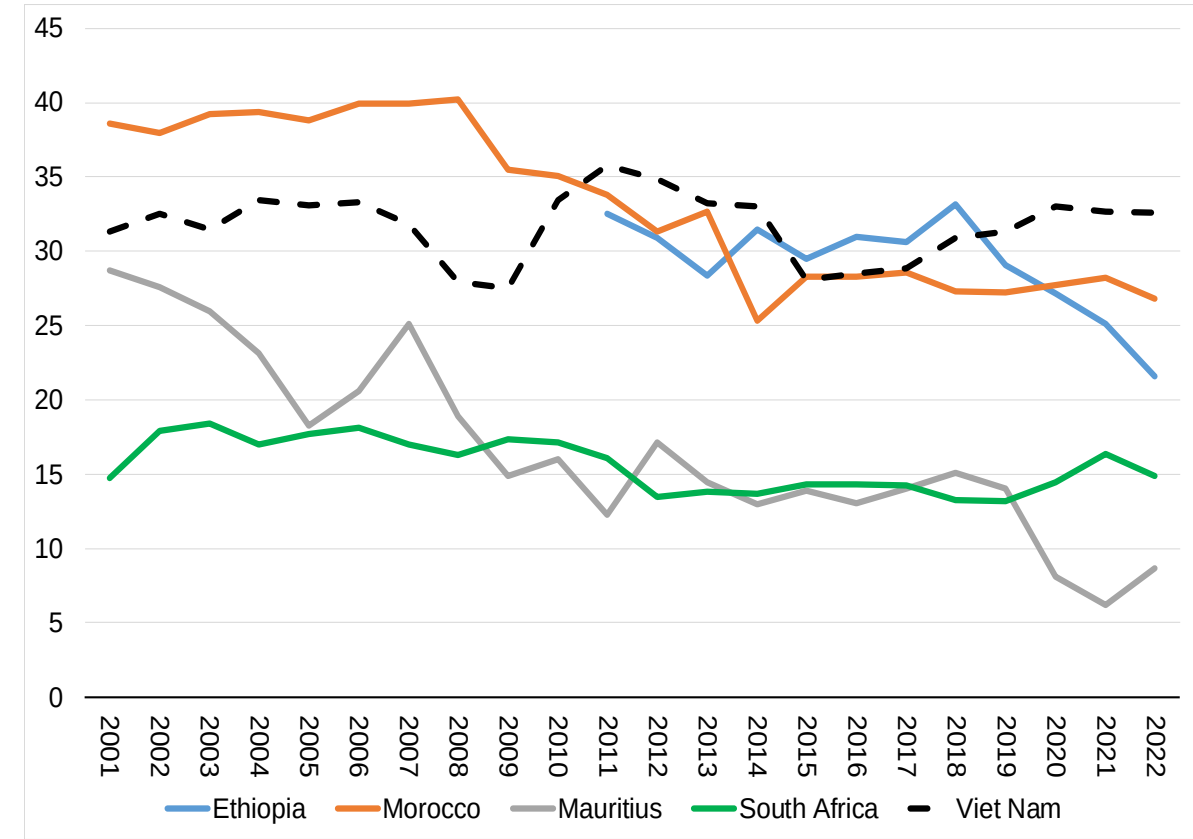
**INVESTMENT &
SAVING
MOBILISATION**

Gross capital formation (% of GDP)



	2001 - 2010	2011 - 2022
Ethiopia		34.3
Morocco	28.9	31.2
Mauritius	24.1	19.8
South Africa	17.5	16.7
Viet Nam	35.4	31.9

Gross savings (% of GDP)



	2001 -2010	2011-2022
Ethiopia		29.2
Morocco	38.5	28.8
Mauritius	21.9	12.5
South Africa	17.2	14.3
Viet Nam	31.6	31.9

Source of data: World Bank WDI

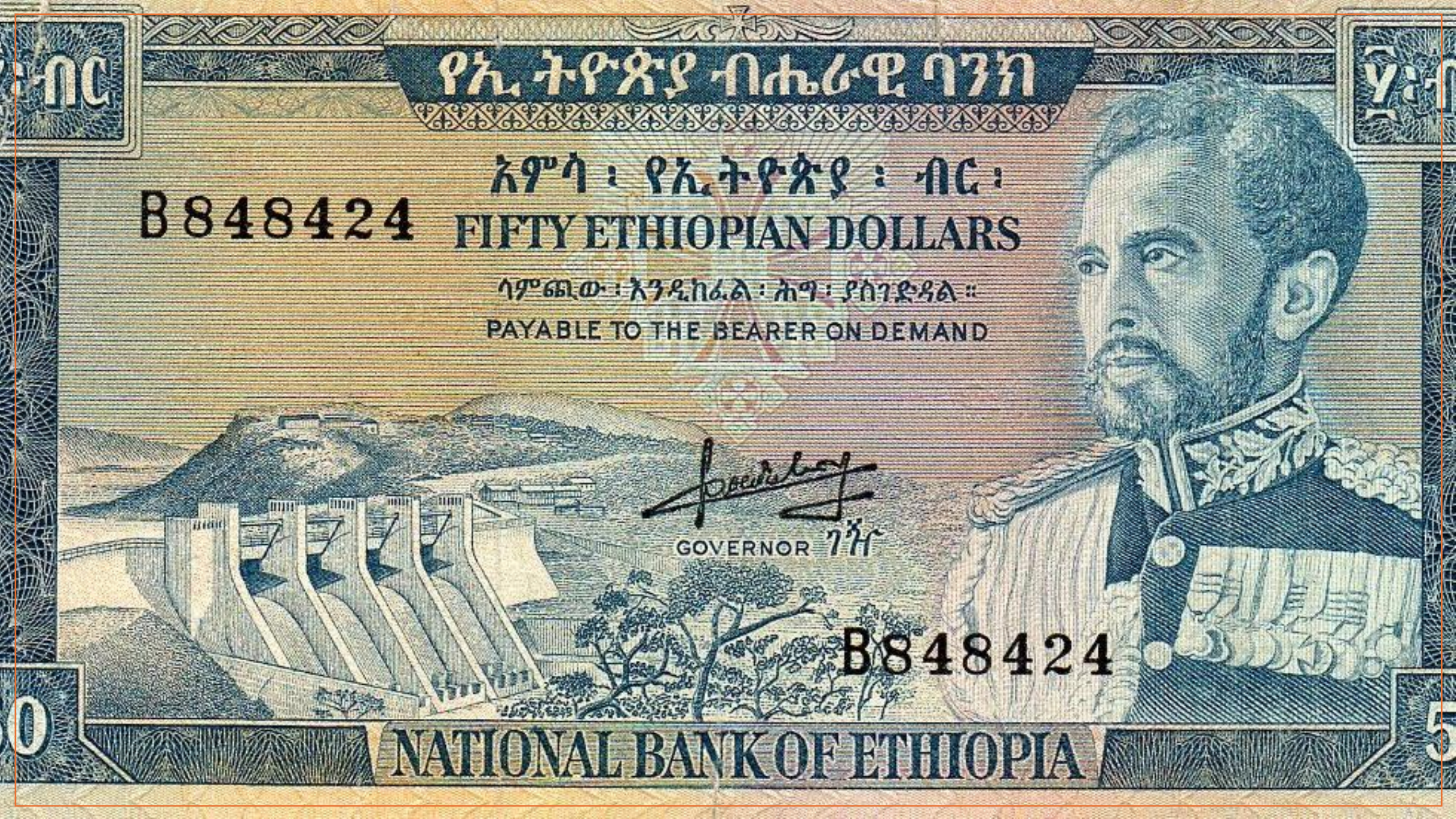
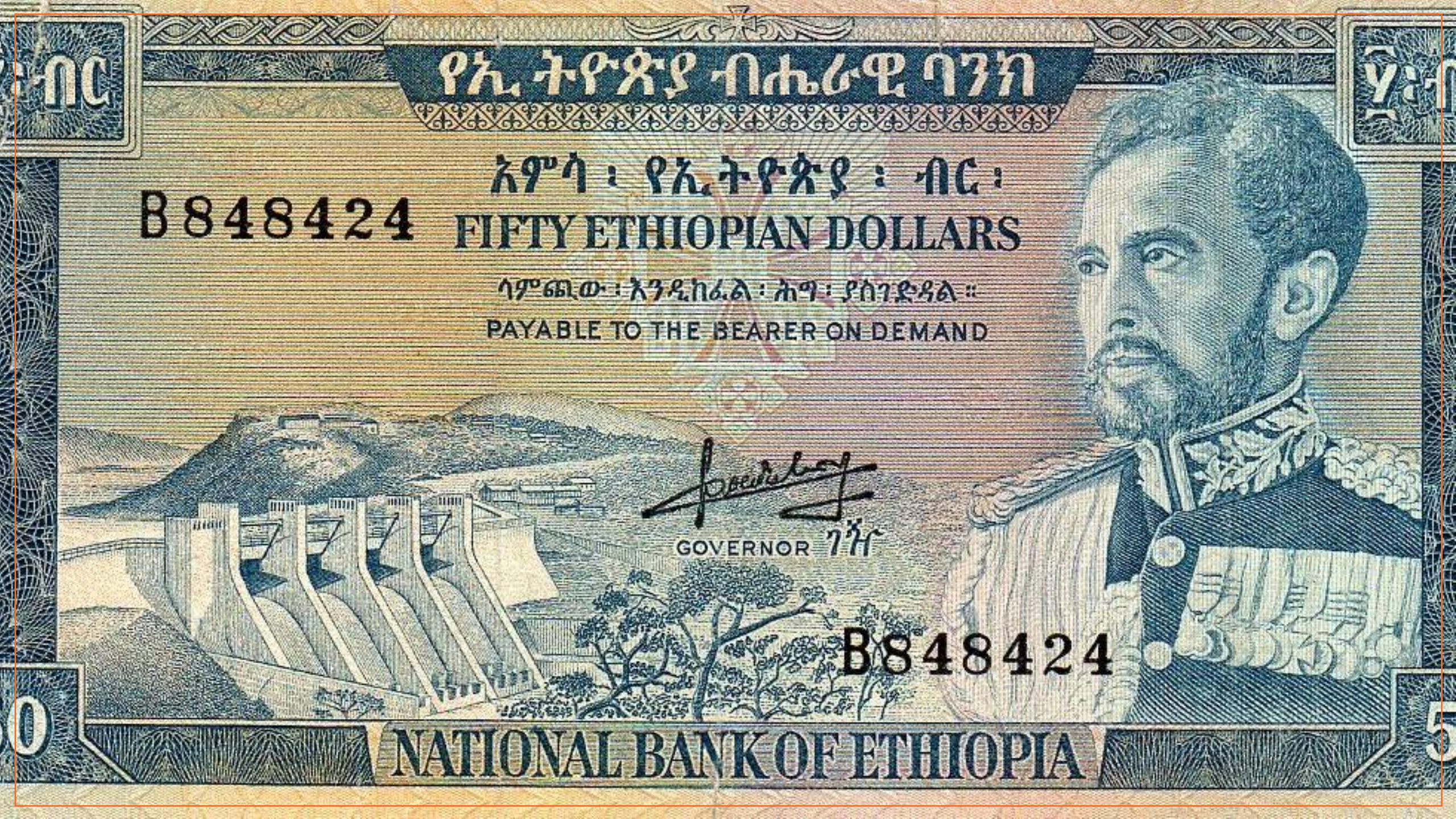
Economic transformation and industrial policy

- Role of the State- Shared political ambition, commitment, capability
- Investment and saving mobilisation
- Fundamental transformation
- Industrialisation and technology capability (digital)
- Instrument of investment promotion (0.3 US cents/KWh)
- 100% reliance on renewable energy
- Agricultural linkages and urbanisation
- Regional integration and exports
- Challenge and potential: energy diversification



ኣባይን የደፈረ መሪ





የኢትዮጵያ ብሔራዊ ባንክ

B848424

አምሳ : የኢትዮጵያ : ብር :
FIFTY ETHIOPIAN DOLLARS

ላምጪው : እንዲከፈል : ሕግ : ያስገድዳል ::
PAYABLE TO THE BEARER ON DEMAND


GOVERNOR ገዢ

B848424

NATIONAL BANK OF ETHIOPIA







Gibe III 1870 MW

Lighting Africa and Greenest Project: *Lessons*

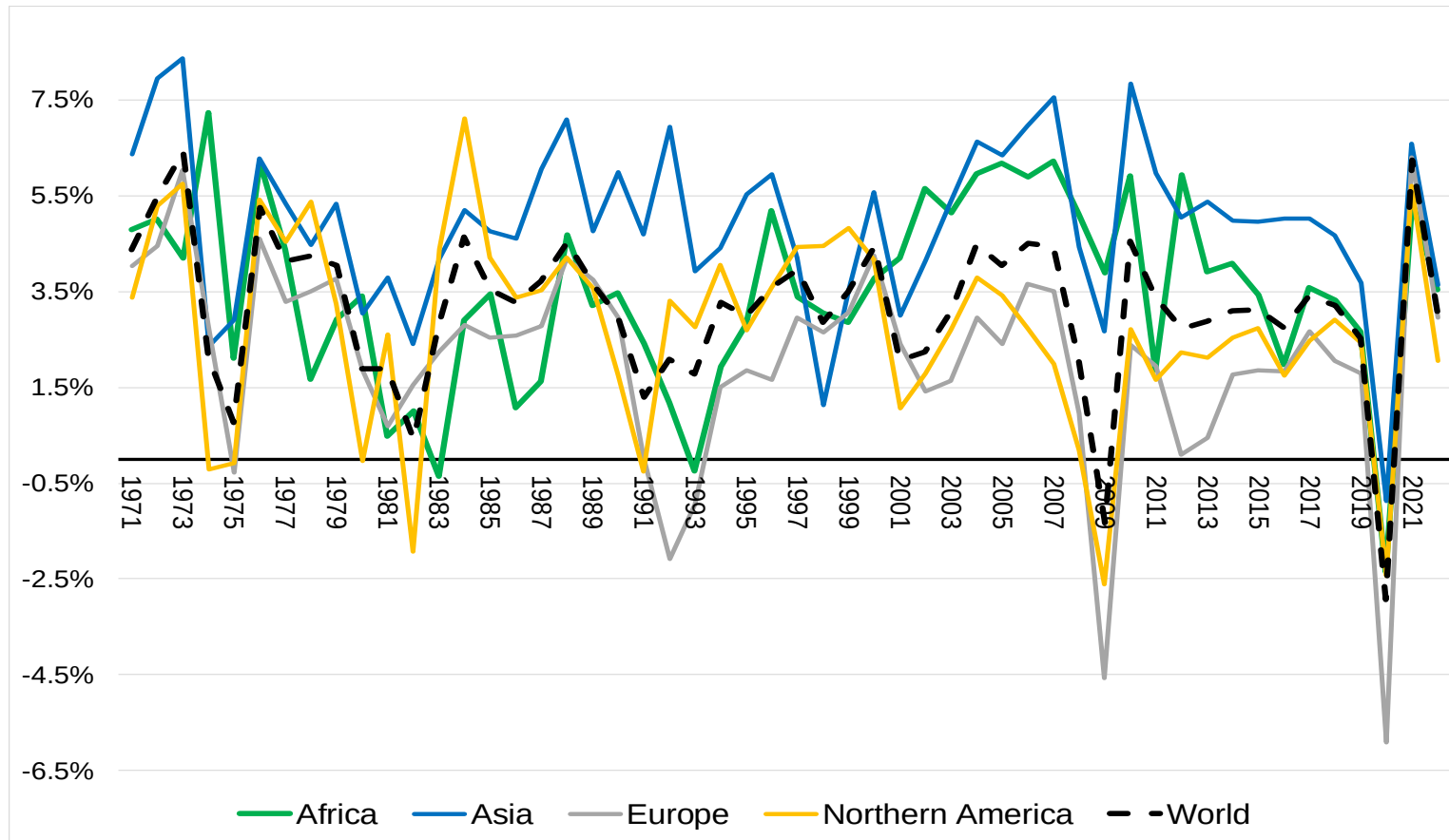
- 100% renewable energy is possible!
- Both scale and affordability can be achieved.
- The state should play a leading role!
- African countries should rely on domestic sources.
- Energy has the strongest linkages: urbanisation, industrialisation, food security, energy security, and regional integration.
- Regional integration: Electricity exports to East Africa, Addis-Djibouti Railway, agricultural transformation in Sudan
- Industrial capacity and technological expertise







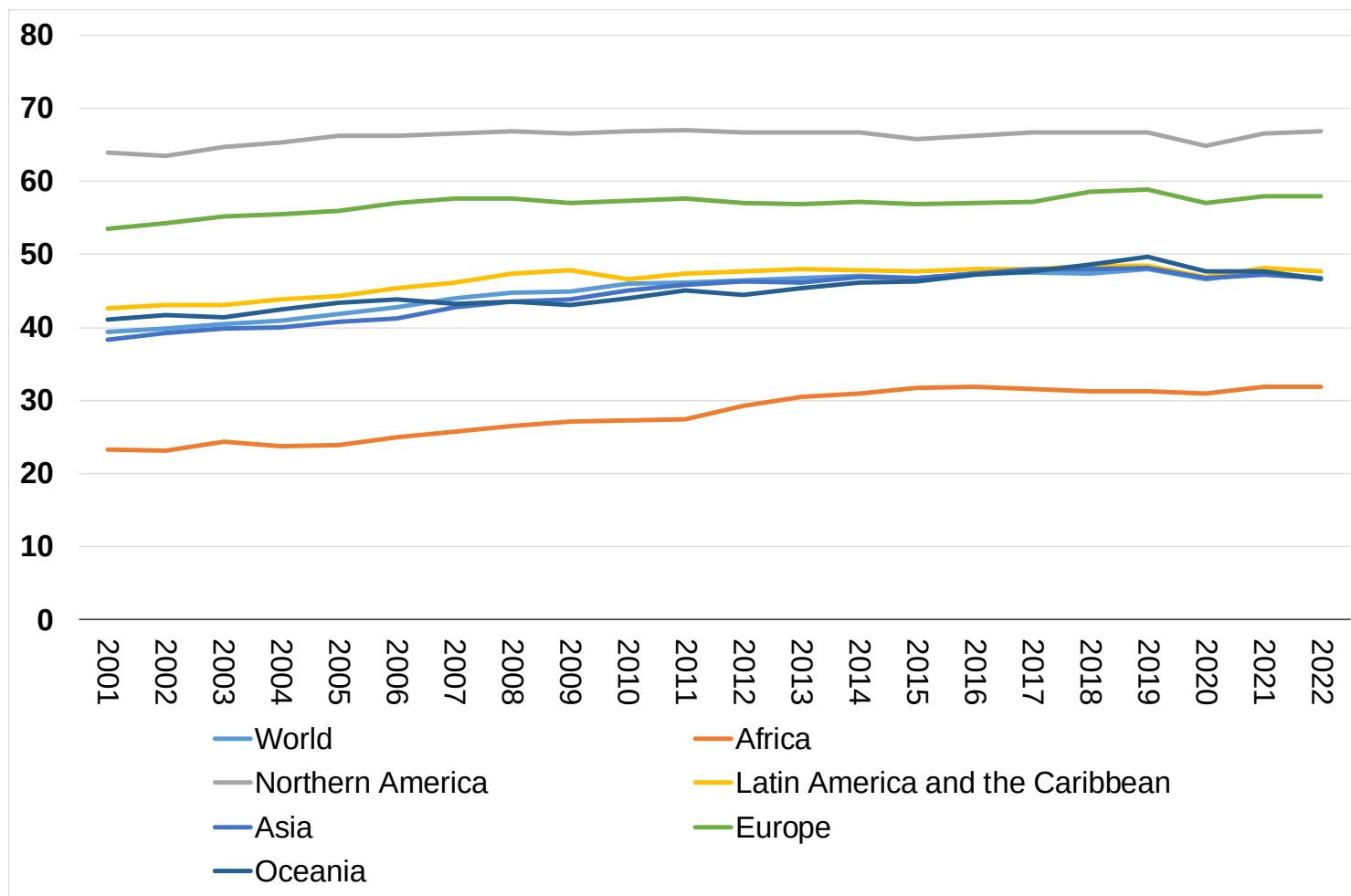
GDP growth rate (Africa, world, regions)



	1971-1980	1981-1990	1991-2000	2001-2010	2011-2022	1971-2022
Africa	4.2%	2.2%	2.6%	5.4%	3.1%	3.5%
Asia	5.2%	4.9%	4.6%	5.5%	4.5%	4.9%
Europe	3.4%	2.6%	1.5%	1.7%	1.5%	2.1%
Northern America	3.3%	3.3%	3.4%	1.8%	2.2%	2.8%
Oceania	2.8%	2.8%	3.5%	3.1%	2.6%	2.9%
World	3.9%	3.1%	3.0%	3.0%	2.8%	3.1%

Data: UNCTAD

Productive capacity index by region (2001 – 2022)



Source of data: UNCTAD

	Average (2001 - 2022)
World	44.97
Africa	28.21
Northern America	66.09
Latin America and the Caribbean	46.56
Asia	44.49
Europe	56.89
Oceania	45.01

NB: UNCTAD defines productive capacities as “the productive resources, entrepreneurial capabilities and production linkages, which together determine the capacity of a country to produce goods and services and enable it to grow and develop.”

