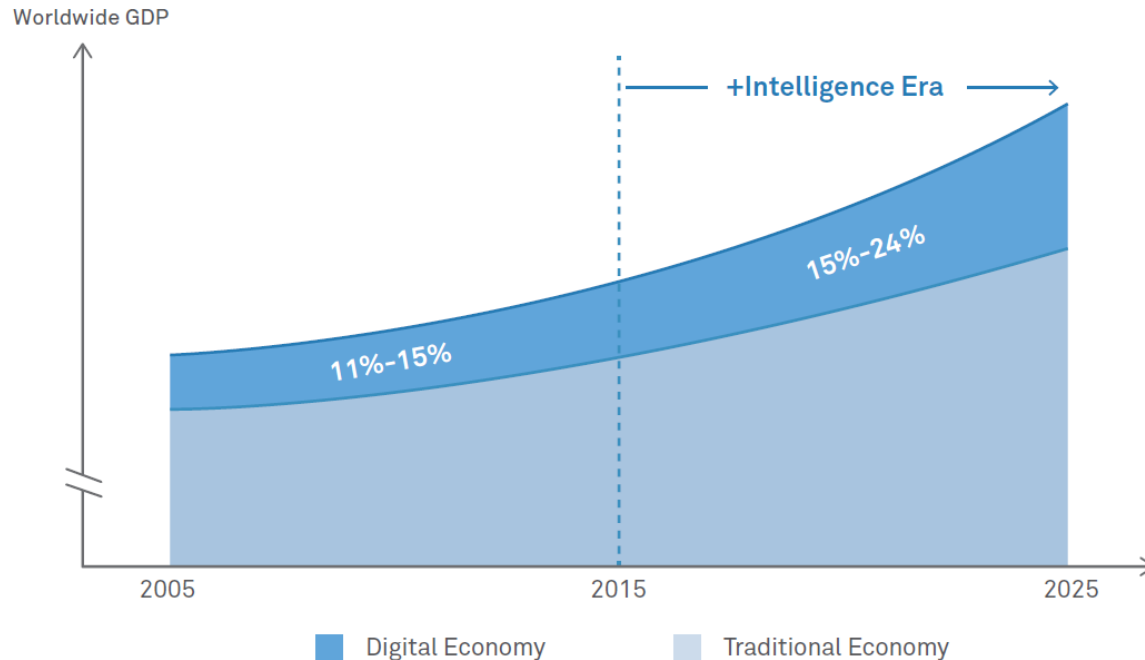


Scaling Up Digitization (focus on Eastern and Southern Africa)

October 30, 2023

Digital technologies are essential for economic growth, jobs, poverty reduction, and climate actions

The digital economy grows faster than the traditional economy and has **generated considerable benefits**



Accelerated Growth and Productivity

- 10% increase in internet adoption leads to 0.5-1.2% income growth
- A 1% increase in adoption of digital technologies is associated with labor productivity growth of 1-2%

Increased Numbers of Skilled Jobs

- Total employment per firm increases up to 22% when fast internet becomes available
- 230 million jobs in SSA will require digital skills by 2030

Poverty Reduction and Shared Prosperity

- 3G coverage has been linked to a 4-10% reduction in extreme poverty
- 10 percentage-point expansion of 3G and 4G connections per capita has been found to reduce the Gini coefficient by 1.35 points)

Reducing Emissions and Building Climate Resilience

- Digital solutions and data enable **better planning** for vulnerable areas (drought, sea level rise, flooding, cyclone), adoption of **early warning systems** and **climate responsive practices across sectors**
- Digital tech **could reduce GHG emissions by 20% by 2050** in the three highest-emitting sectors: energy, materials, and mobility (WEF 2022)
- Enables **continuity of communications and operations** for firms and governments and **remote access to services** for affected populations in the wake of a climate or other shock (conflict, pandemic, etc.)

African countries have committed to meeting the universal access target in the Dakar Call to Action and IDA20 Policy Package

IDA for Africa Summit, Dakar Call to Action *Strong demand by clients*

In July 2022, African leaders endorsed the Dakar Call to Action to reaffirm their strong leadership and political commitment to IDA.

One objective: To scale-up efforts and strive for universal access to broadband connectivity by 2030

Key undertakings they committed to include **to increase investments in broadband connectivity, data infrastructure, and reforms that enhance competition to improve digital services' access, quality, and affordability.**

IDA20 Policy Package *Clear commitment from the Bank*

The ambitious IDA20 policy package is built around 41 Policy Commitments (PCs), corresponding to 1,000+ country-level actions.

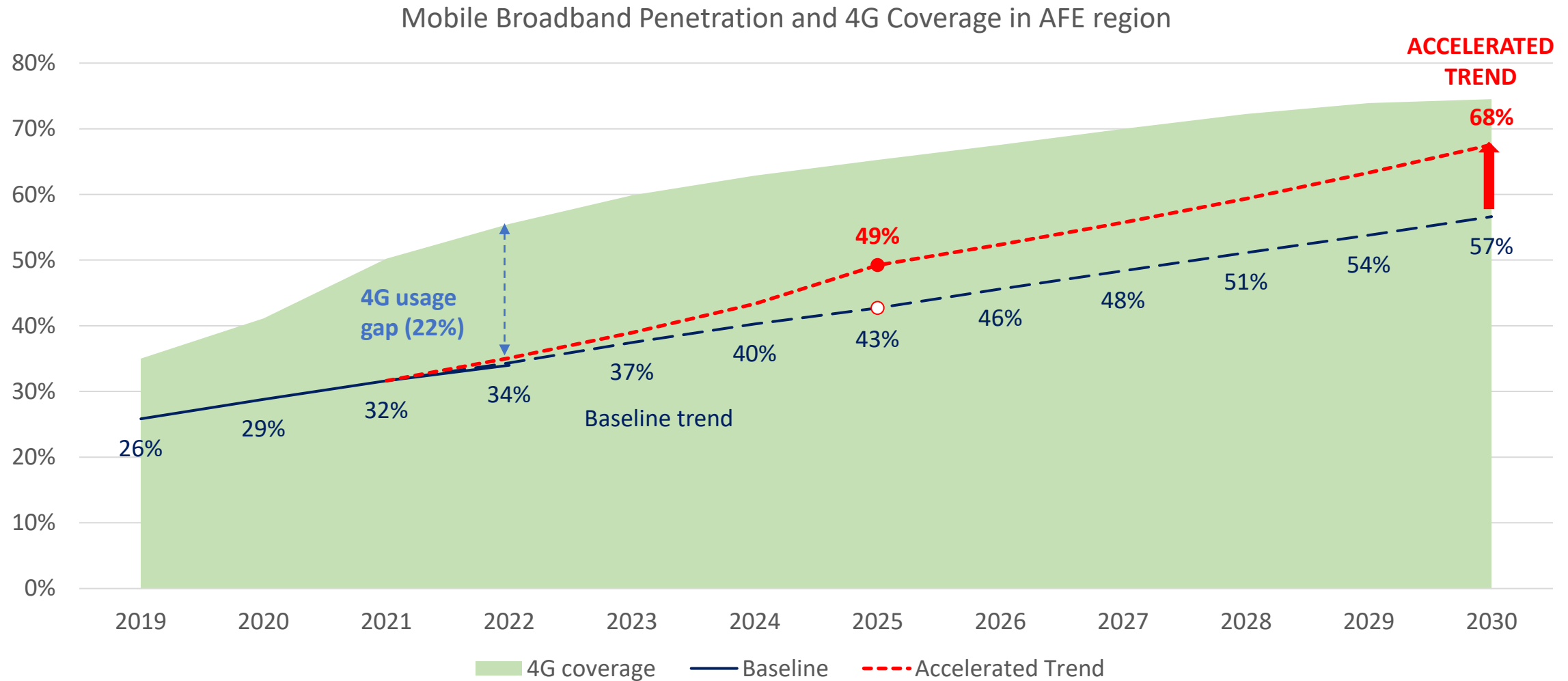
Technology is a Cross-Cutting theme contributing to six PCs in the area of:

broadband access, private sector recovery, social protection systems, core services for persons with disabilities, women's access to and usage of digital technology and digital government services.

Huge potential for Private Capital Mobilization/enabling in Digital

Aligned with the Africa Union goal of digitally enabling every individual, business and government by 2030 as spelled out in its Digital Transformation Strategy

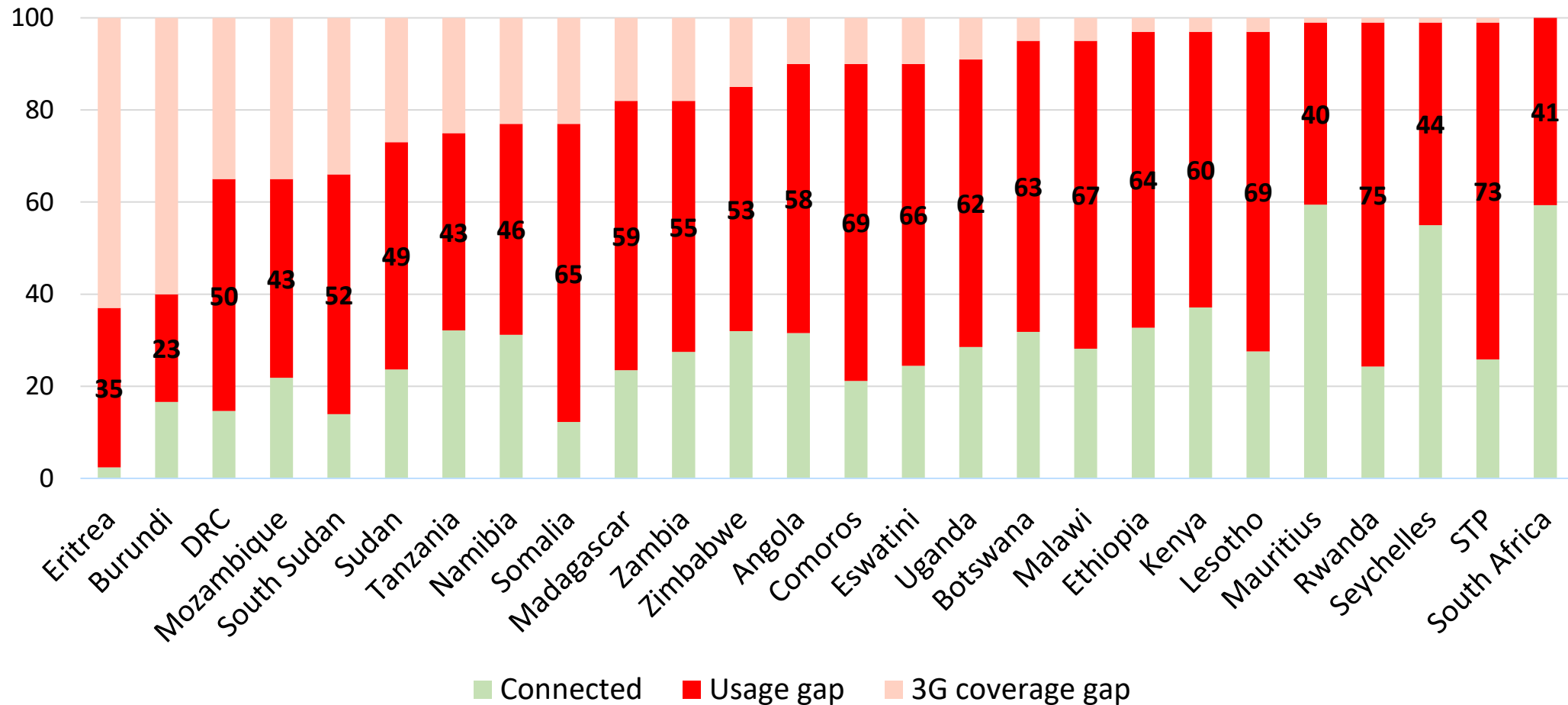
Although AFE has increasingly become more connected over the last five years; universal connectivity requires **'digital acceleration'**



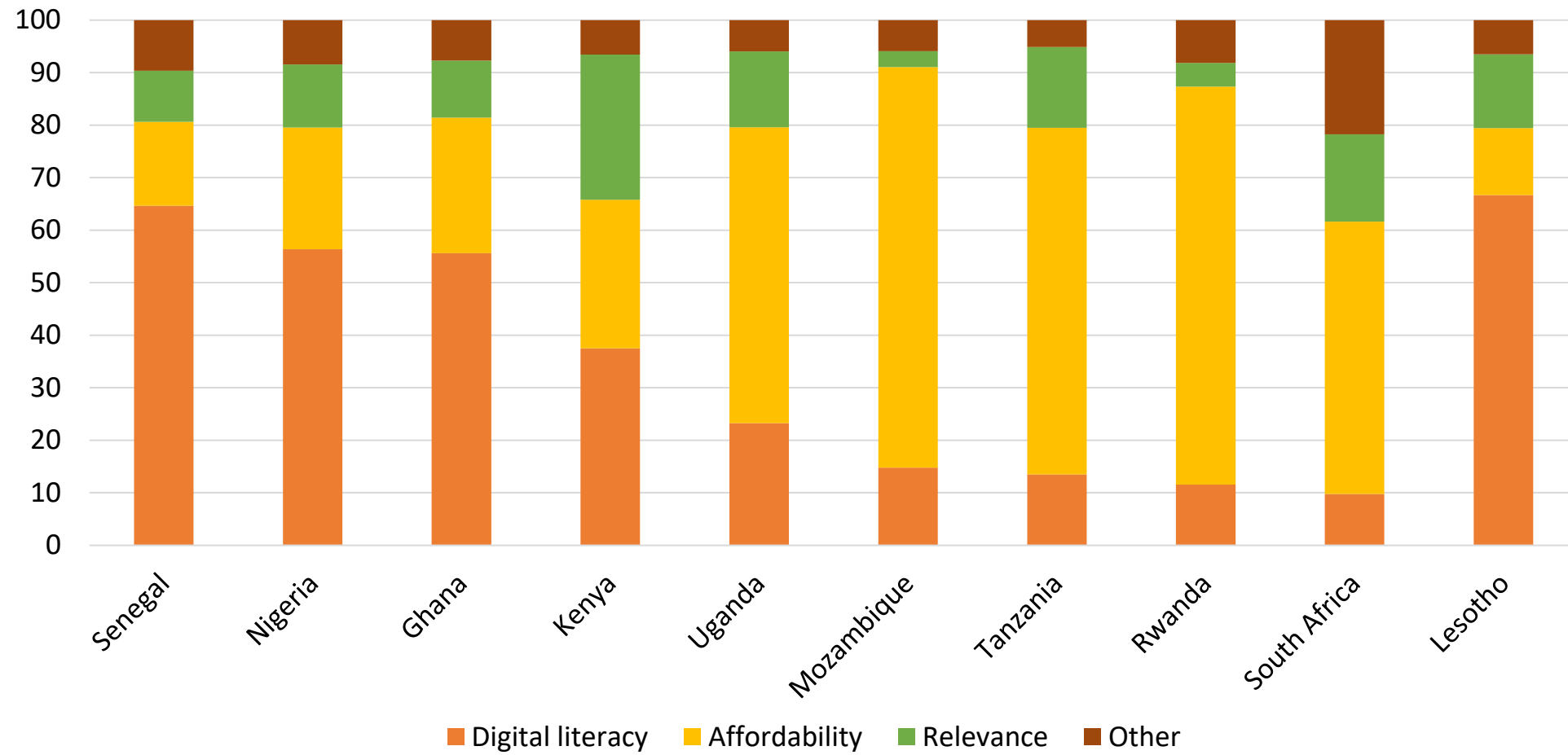
AFE will support achieving the 'accelerated trend' through investments in digital infrastructure, skills, platforms, and regulatory regimes to increase the penetration of broadband connectivity from 34% in 2022 to 68% by 2030.

Universal connectivity is limited by a **usage gap**, driven by affordability of devices and data, lack of digital skills and relevance of content.

55% of the AFE population does not use broadband in 2021 despite having access to a 3G network, while 17% of the population does not have coverage from a 3G network



Driving adoption: why are people not using the internet?

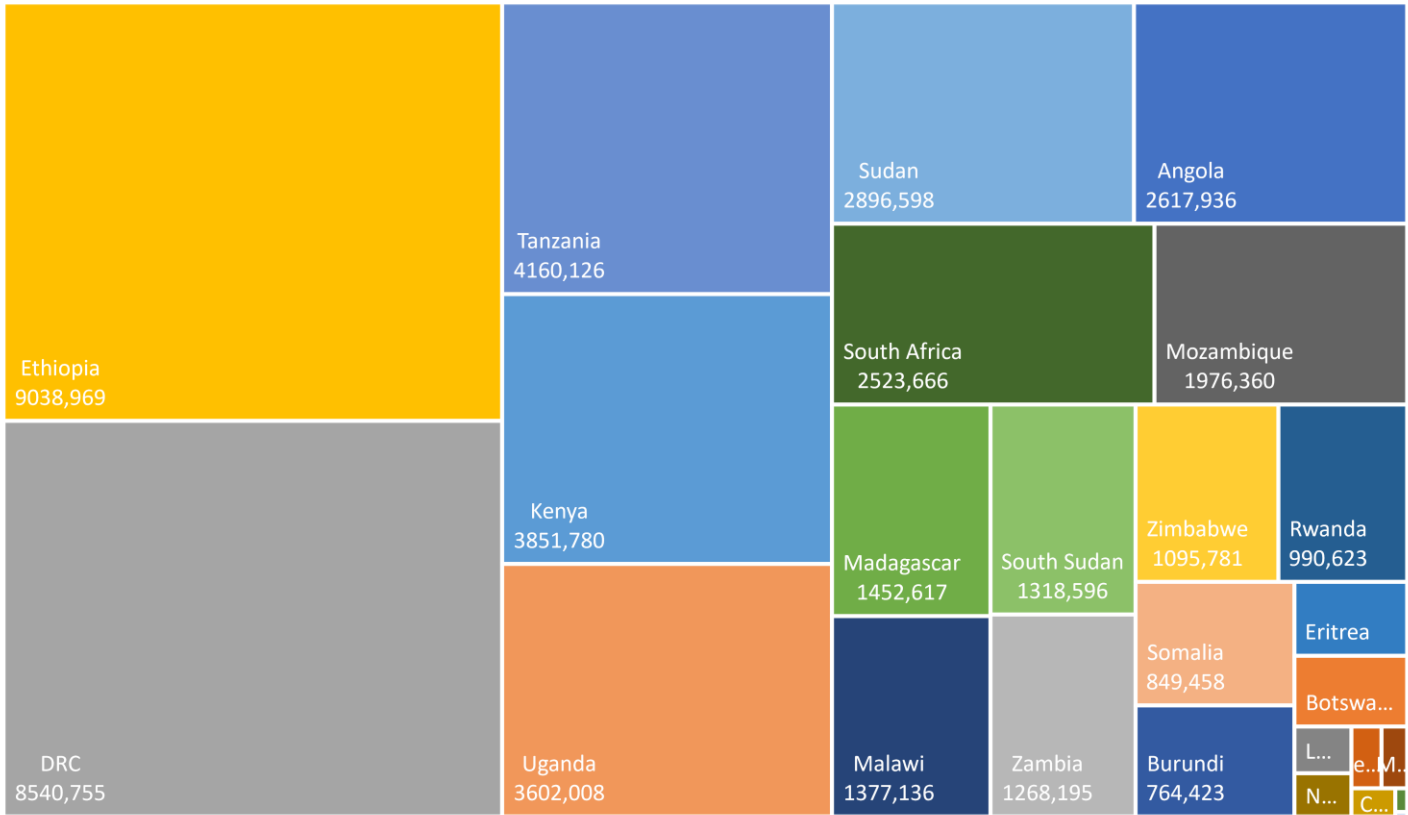


Source: World Development Report, 2021

Investment needs amount to \$49.5 billion, both public and private, to scale up digitization and reach universal access by 2030 in AFE

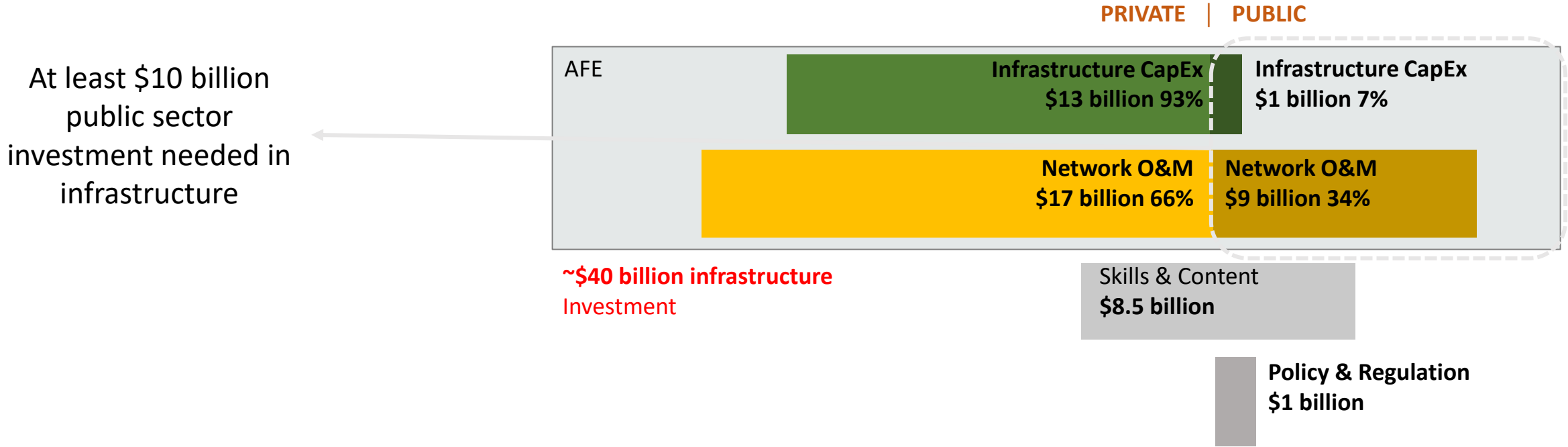
Investment needs estimated:

- \$40 billion in infrastructure
- \$8.5 billion in skills & content development
- \$1 billion in policy & regulation



Investment levels required (\$m as of 2019) to reach universal access targets in each country

Significant public investment and reform is needed to achieve universal access to broadband connectivity by 2030



Consider reforms needed to mobilize private capital and achieve **impact at scale**:

Licensing & ex ante regulation of dominance

Spectrum management

SOE, state assets & PPP

Effective & transparent regulation

Access & infra sharing

Universal access/service

Climate adaptation & resilience

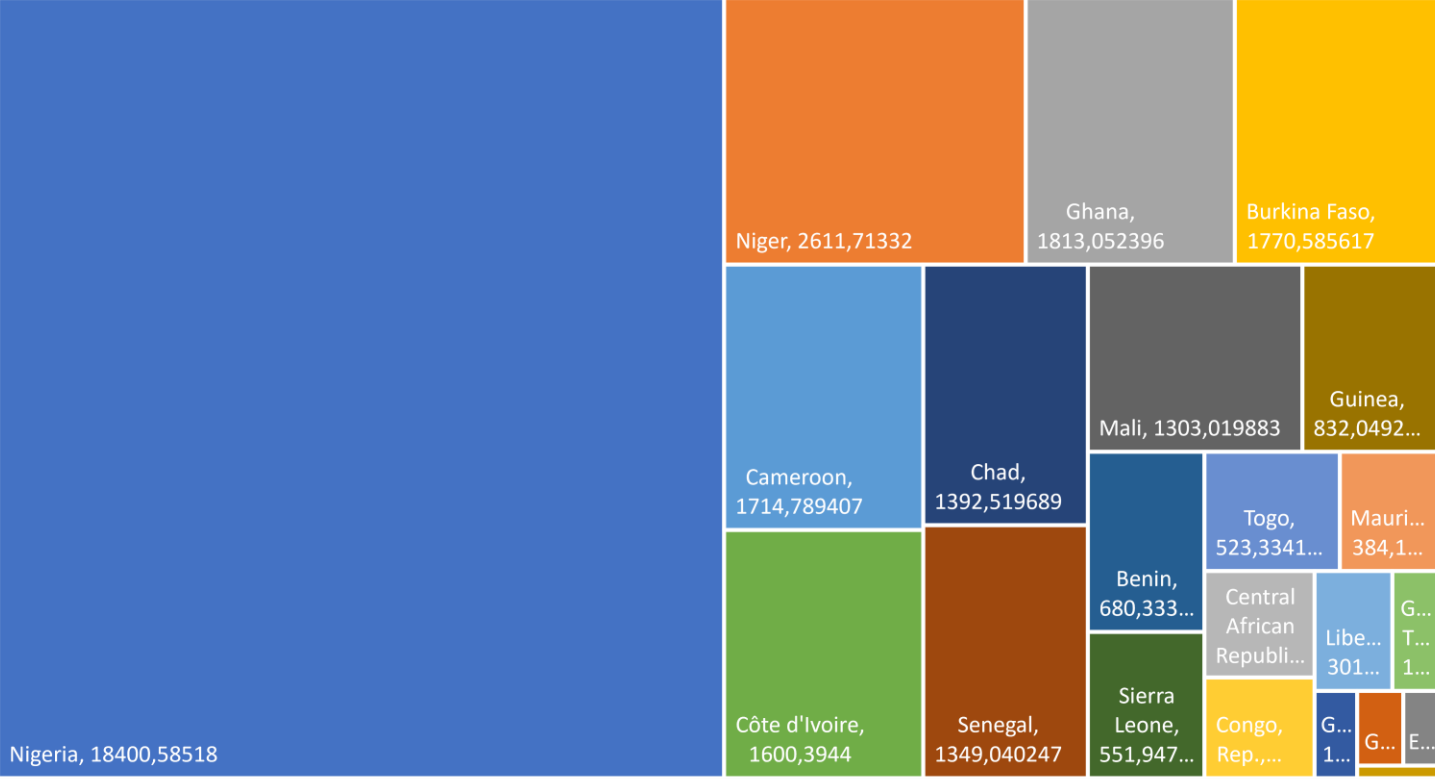
Sectoral taxes & contributions

Investment needs amount to \$36.5 billion, both public and private, to scale up digitization and reach universal broadband access by 2030 in AFW

Countries needing the most investment for the universal access target are: Nigeria, Niger, Ghana, Burkina Faso, Cameroon, Côte d'Ivoire, Chad and Senegal.

Other countries lagging the regional target (shown on previous slide) are: Benin, **Guinea**, **The Gambia**, Niger, **Chad**, **CAR**, **Equatorial Guinea**.

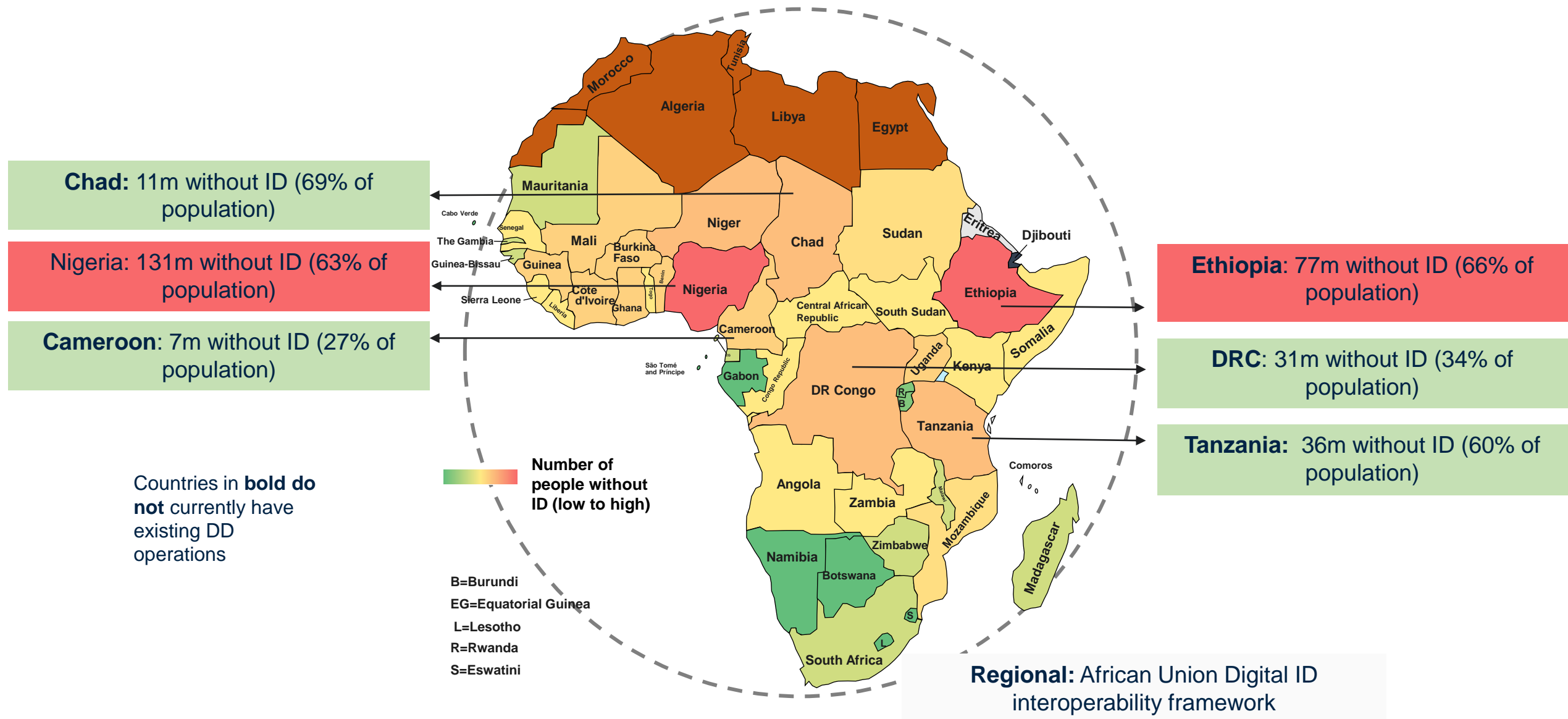
- Investment needs estimated:
- \$ 30 billion in infrastructure
 - \$ 6.3 billion in skills & content development
 - \$ 0.8 billion in policy & regulation



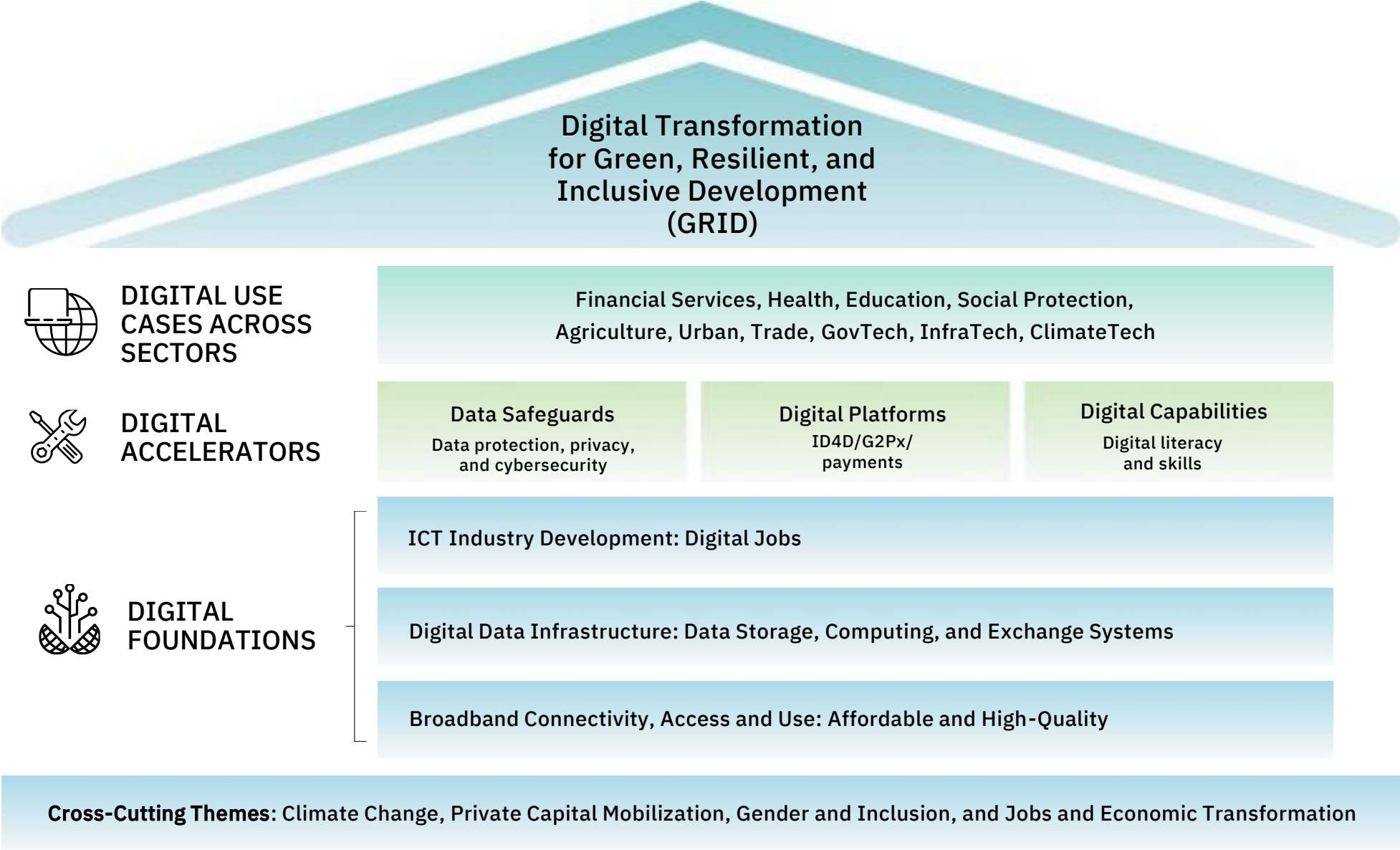
Investment levels required (\$m as of 2019) to reach universal access targets in each country

Countries in **bold do not** currently have existing DD operations

480m people live without identification in SSA; need to close this gap, improve quality of ID systems, and support cross-border ID interoperability



Who we are and what we work on: The Digital Development GP is supporting meeting universal connectivity through establishing ‘foundations’, ‘accelerators’ and ‘use-cases’



Core Business Lines – Our Role within the Digital Transformation Agenda



Broadband Connectivity, Access, and Use

Promoting universal access to inclusive, affordable, safe, and resilient connectivity and usage through effective telecommunications policy and regulation, stimulating broadband infrastructure investment, and boosting digital literacy and access to internet-connected devices.



Digital Data Infrastructure

Maximizing the social and economic value of data by encouraging investment in data infrastructure and services, strengthening data governance, and development of integrated data management infrastructure, platforms, and analytical capabilities.



Digital for Climate

Reducing the environmental footprint and strengthening the climate resilience of digital infrastructure and systems, and deployment of digital technologies, business models and data to mitigate greenhouse gas emissions and support climate resilience and across key sectors



ICT Industry and Digital Jobs

Boosting economic growth and creating jobs by encouraging investment in ICT and ICT enabled services industries and facilitating industry-academia partnerships to develop digital skills and job placement programs tailored to market demand.



Digital Safeguards

Building and strengthening trust in usage of digital platforms and services among people, governments, and businesses by strengthening data privacy protections, raising cyber awareness, and building capacity to protect critical infrastructure and systems from cyber threats.



Accelerating Digital Use Across Sectors

Building upon our primary business lines, we support our partner GPs to accelerate the deployment of digital technologies and utilization of data to drive innovation, increase operational efficiency, and develop more accessible, user-friendly, and productive digital products, services, and other use cases.

What we do in practice: a possible menu of components

(1) Closing the broadband infrastructure gap

Investing to expand coverage in unprofitable areas and connect public institutions

Improving spectrum availability and affordability

Promoting competition and infrastructure sharing

Improving affordability of devices with innovative financing models

Supporting policy and regulatory reforms

(2) Investing in safe and inclusive digital public infrastructure (DPI)

Investing in digital stacks for service delivery (including digital ID and data sharing)

Investing in data infrastructure (data centers and cloud)

Strengthening trust and resilience (data protection, cybersecurity)

MFD/PCE

Climate-Informed

(3) Accelerating Digital Skills for jobs

Addressing digital illiteracy and lack of IT skills

Facilitate high-volume high-impact/productive use cases

Strengthening local IT industry, content and support services

DE4A ecosystem approach

What we do in practice: target results for 2030 Vision

Universal Access by All: 300 million additional people become broadband subscribers



Entry-level broadband service cost under 3% of average monthly GNI



Additional 400m people obtaining first or improved official ID *to improve their access to services*



20m digital jobs

Complementary Measures

50-70 digital policy and regulatory reforms supported
US\$30-40 billion in World Bank lending and \$5b Private capital mobilization/enabling for Digitalization
40-60 countries applied digital tools and data for climate actions with measurable results

Example: Rwanda DIGITAL ACCELERATION PROJECT (P173373)

Amt: US\$100m (IDA SUW), US\$100m (AIIB) – Board: 30-Nov-2021 - Closing Date: 31-Dec-2026

PDO: To increase access to broadband and selected digital public services, and strengthen the digital innovation ecosystem

Component 1: Digital Access and Inclusion (\$30.25m IDA + \$30.25m AIIB)

SUB-COMPONENTS

- Access to affordable smart devices.
- Digital literacy for all.
- Last mile connectivity access.
- Legal, regulatory, and institutional capacity for broadband market development.

SUPPORTED ACTIVITIES

- Financing support to facilitate wider device access, featuring the establishment of a smart device access scheme and dedicated fund.
- Development of a new national digital skills architecture and M&E framework, and the development and operationalization of the new DAP 2.0. model.
- Expand access to high-speed broadband among select public institutions and spaces.
- Regulatory support and capacity building to stimulate broadband market development.

OUTPUTS

- Financial support provided to households for mobile devices (esp. to female headed households, rural areas).
- Delivered nationwide digital skills training.
- Connected gov. institution, marketplaces to high-speed internet.
- Support to telecom reg. and policies, quality of service, etc.

Component 2: Digital public service delivery. (\$50m IDA + \$50m AIIB)

SUB-COMPONENTS

- Digital identification and authentication.
- Government data management, sharing and analytics.
- E-services in key sectors.
- Cybersecurity resilience and data protection.

SUPPORTED ACTIVITIES

- Strengthen Rwanda’s ID ecosystem in support of improved online and offline service delivery and access
- Development of national and big data governance and management frameworks; operationalization of the Government Data Hub; upgrading of the Government Enterprise Service Bus (GESB); and implementation of strategically selected big data use cases.
- Expand the availability of high-quality transactional e-services in key sectors.
- Strengthen GoR’s cybersecurity capacity.

OUTPUTS

- Digital authentication and verification services provided; digitalization of paper based civil records.
- Established data governance framework/government data hub.
- Established/upgraded e-services in key sectors.
- Strengthened cybersecurity.

Component 3: Digital Innovation and Entrepreneurship (\$14.75m IDA + \$14.75 AIIB)

SUB-COMPONENTS

- Regional digital entrepreneurship hub.
- Next generation capabilities for the digital economy.

SUPPORTED ACTIVITIES

- Support for enabling strategies, policies, and institutions for digital innovation.
- Performance-based grants for ESOs that serve digital startups.
- Launch of an international accelerator program that serves digital startups.
- Early-stage finance mobilization for digital innovation.
- Further development of the Rwanda Coding Academy.
- Performance-based grants for technology bootcamps.
- PhD scholarships for highly specialized digital training.

OUTPUTS

- Startups supported through the project.
- Facilitated greater access to early-stage finance for startups.
- Support provided to advanced digital skills providers.
- PhD scholarships provided for STEM.

Component 4: Project Management (\$5.0m IDA + \$5m AIIB)

SUB-COMPONENTS

- Project implementation support.

OUTPUTS

- Established and operations new SPIU at RISA.
- Established and operational PIU at BRD.
- Grievances effectively responded to within 90 days

Example: Ethiopia - DIGITAL ID FOR INCLUSION AND SERVICES (P179040)

Amt: \$300m (IDA) – Board: December-2023 -- Closing Date: TBD

PDO: Implement an inclusive and trusted foundational ID system to improve access to and delivery of benefits and services to the people of Ethiopia.



Component 1: Building institutions and trust (\$25m)

- SUB-COMPONENTS**
- 1.1. Operationalization of the Ethiopian Digital ID agency.
 - 1.2. Establishing and strengthening of key institutions in the ID ecosystem.
 - 1.3. Stakeholder engagement, communications and awareness building, and support for grievance redress management systems.

- SUPPORTED ACTIVITIES**
- Establishing a strong permanent agency (or strengthen an existing agency) to house Fayda operations, including with a presence in all regions, as well as the development of the related legal and regulatory instruments, policies, guidelines, and other documentation.
 - Strengthening the capacity of key actors in the ID ecosystem to support registration and to integrate public and private services with Fayda.
 - Channels of engagement and a grievance redress mechanism will be introduced to ensure that timely feedback can be integrated into Fayda’s design and implementation.

Component 2: Establishing Fayda ID (\$60m)

- SUB-COMPONENTS**
- 2.1. Digital Infrastructure in support of Fayda ID.
 - 2.2. Establishing cybersecurity and data protection capabilities.

- SUPPORTED ACTIVITIES**
- Systems integration and procurement of software, hardware, and licenses to build the underlying ICT infrastructure for front- and back-end Fayda operations.
 - Support for the development of capacities and procurement of respective hardware and software solutions to prevent loss of data and potential misuse of personal information.

Component 3: Operations and Use Cases (\$200m)

- SUB-COMPONENTS**
- 3.1. Registration operations, credential production and distribution (DLIs).
 - 3.2. Expanding and transforming service delivery in key sectors (financial inclusion, social protection, health, education).
 - 3.3. Laying the foundation for the “Ethiopia Digital Stack”.

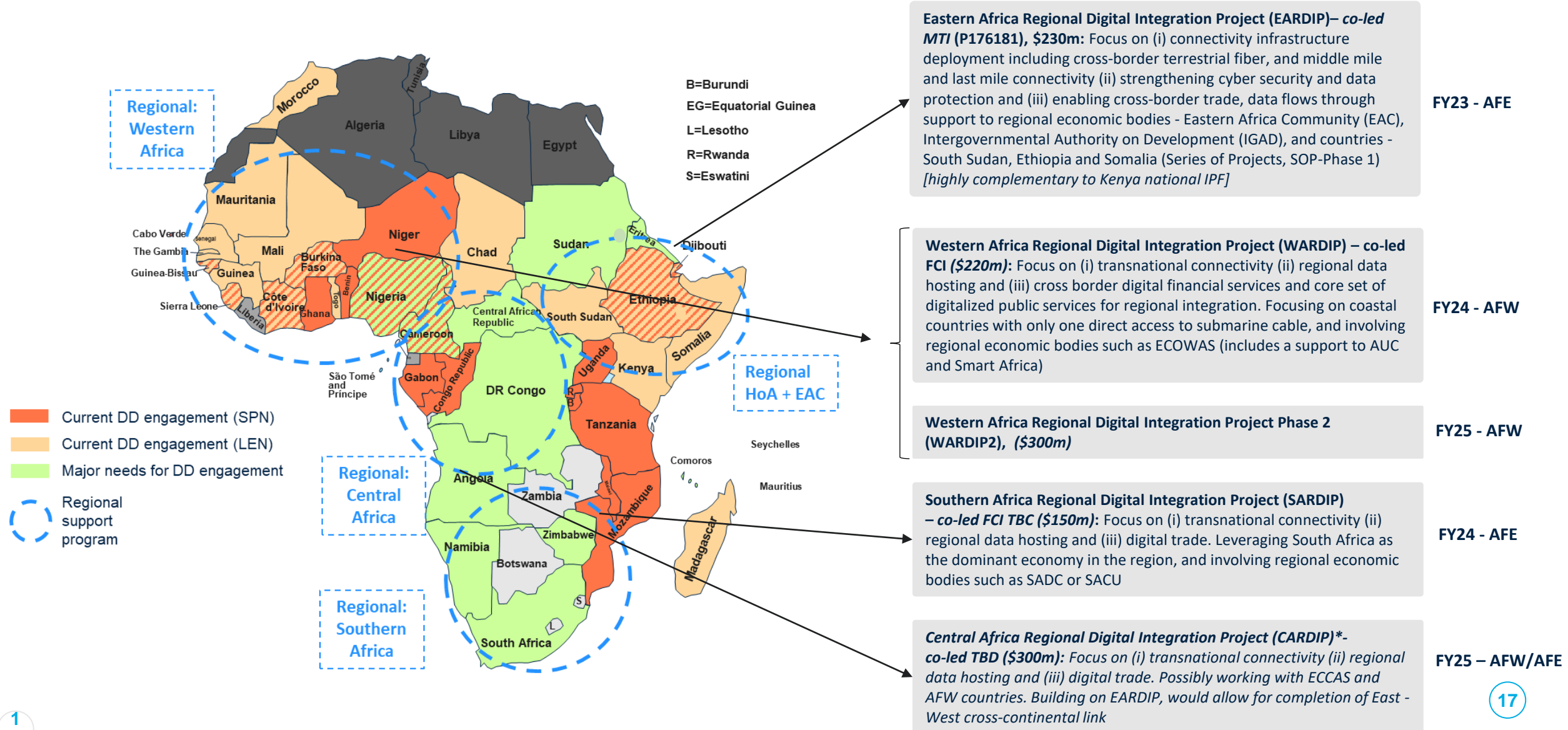
- SUPPORTED ACTIVITIES**
- DLIs will be defined to link the disbursement of funds to the number of Fayda IDs received by various registrants, leveraging the omni-channel registration strategy envisaged by the GoE.
 - Providing software, hardware, and change management and business process re-engineering services for key sectors to seize the benefits offered by Fayda to simplify, streamline, and expand service delivery, including in a fully digital format.
 - Linkages will be developed between Fayda and key other Digital Public Infrastructure (DPIs) to support innovation and longer-term digital transformation of service delivery.

Component 4: Project Management (\$15m)

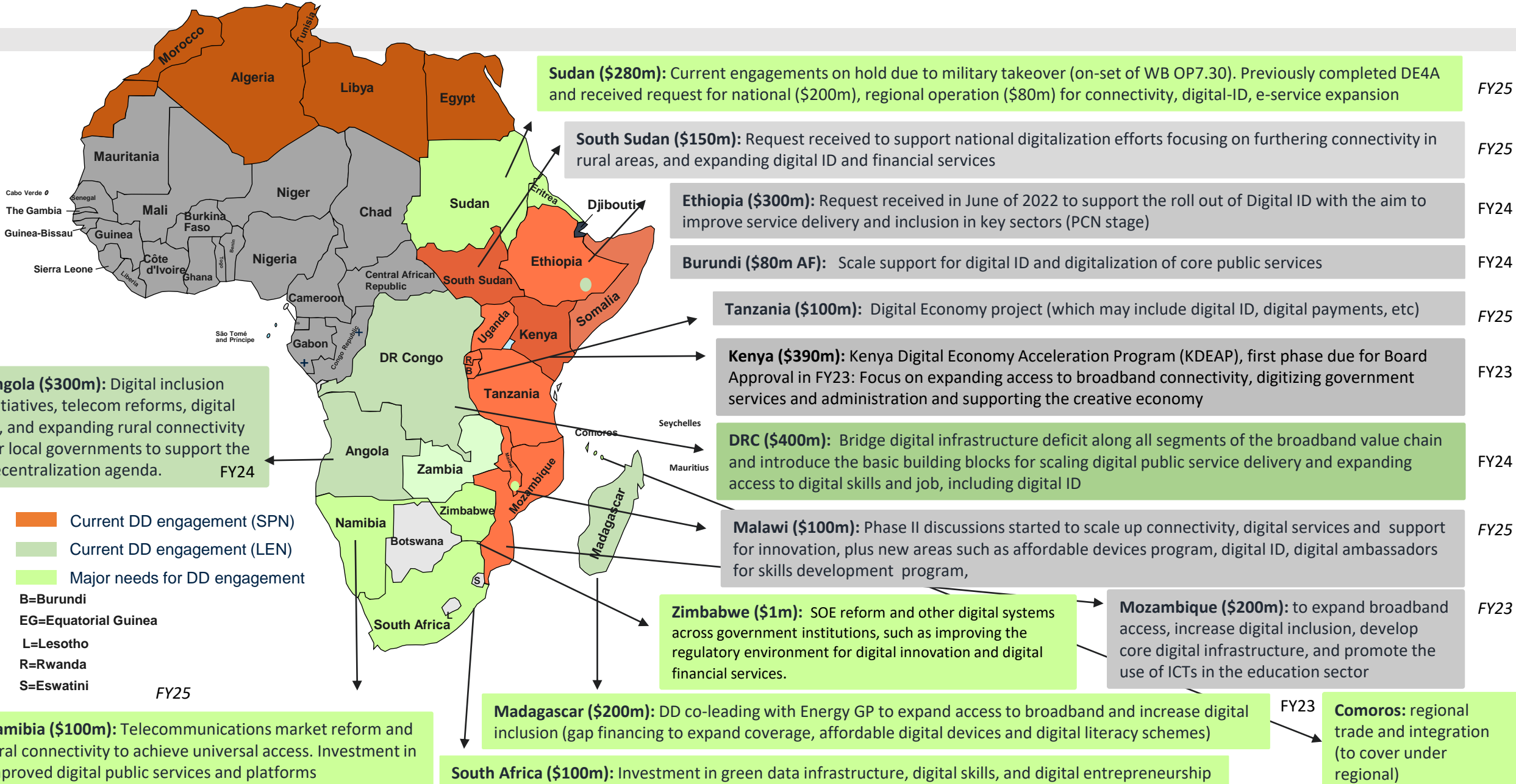
- SUPPORTED ACTIVITIES**
- Finance project management and other activities to ensure successful implementation of the Project. This including maintaining a project implementation unit (PIU), core functions related to financial management (FM), procurement, M&E, Environmental and Social Framework (ESF) compliance, as well as project communications and coordination.

- OUTPUTS**
- Number of people in Ethiopia, aged 14 or older, provided with a Fayda ID (+ % of women/girls).
 - Number of refugees registered with [UNHCR or Refugee and Returnee Service (RRS)], aged 14 or older, provided with a Fayda ID (+ % of women/girls).
 - Number of public and private sector services using digital identity verification for improved service delivery in key sectors.
 - Number of successful digital ID authentications by Fayda ID holders to access public and private sector services.

~\$1.2b of regional investments in SSA over FY23-25/26



~\$2.7bn of national investments in AFE over FY23-25



Most recently: the World Bank evolution roadmap

- Environment of poly crises deepens challenges – **there is urgency to act and accelerate**
- The WB Board of Governors approved ‘**Accelerating Digitalization**’ as one of 6 a Global Challenge Programs on during the Annual meetings in Marrakesh, October 2023
- How to accelerate, through **partnerships** and **global approaches**?



Spare slides

World Bank Group Collaboration between World Bank, IFC and MIGA

Strategic Pillars

Pillar 1: Closing the digital connectivity gap

Pillar 2: Investing in open and safe digital stacks and digital data infrastructure

Pillar 3: Facilitating increased use and enhanced benefits of digital services

IFC IS (equity/debt)

- Investments in foundational DI service providers that improve coverage and quality of services, increasing competition and contestability in the market
- Selective investments in companies with viable rural connectivity solutions

- Investments in providers that are offering improved or new services in markets, such as data center hosting

- Investments in and partnerships with companies across sectors that are supporting the emergence of a digital economy

IFC Upstream & Advisory

- Upstream efforts to de-bottleneck rollout of foundational DI solutions and support move toward next-gen DI

- Supporting the development of IFC's investment thesis in new sectors, sector mappings, and BD plans; risk-sharing may be needed to ensure initial viability

- Cross-IFC coordination to deliver tech solutions to traditional sectors
- Upstream efforts that remove bottlenecks and address market failures

World Bank Policy Support (DPOs, ASA)

- Strengthen foundational DI regulation, promote infra. sharing, spectrum availability, market liberalization, competition
- Support demand stimulus for private sector to lower affordability barriers, increase adoption

- Development of government strategy and policy on digital stacks and data hosting infrastructure, including digital ID
- Support to strengthen digital safeguards and improve cybersecurity capacity

- TA/advice to governments to strengthen collaboration with private sector in supporting emergence of a digital economy
- Strengthen government strategy, legislation and regulation of the digital economy

World Bank Investment and MIGA (IPFs, PRI)

- Public investment in DI if private sector investment not possible or economically feasible, such as rural connectivity

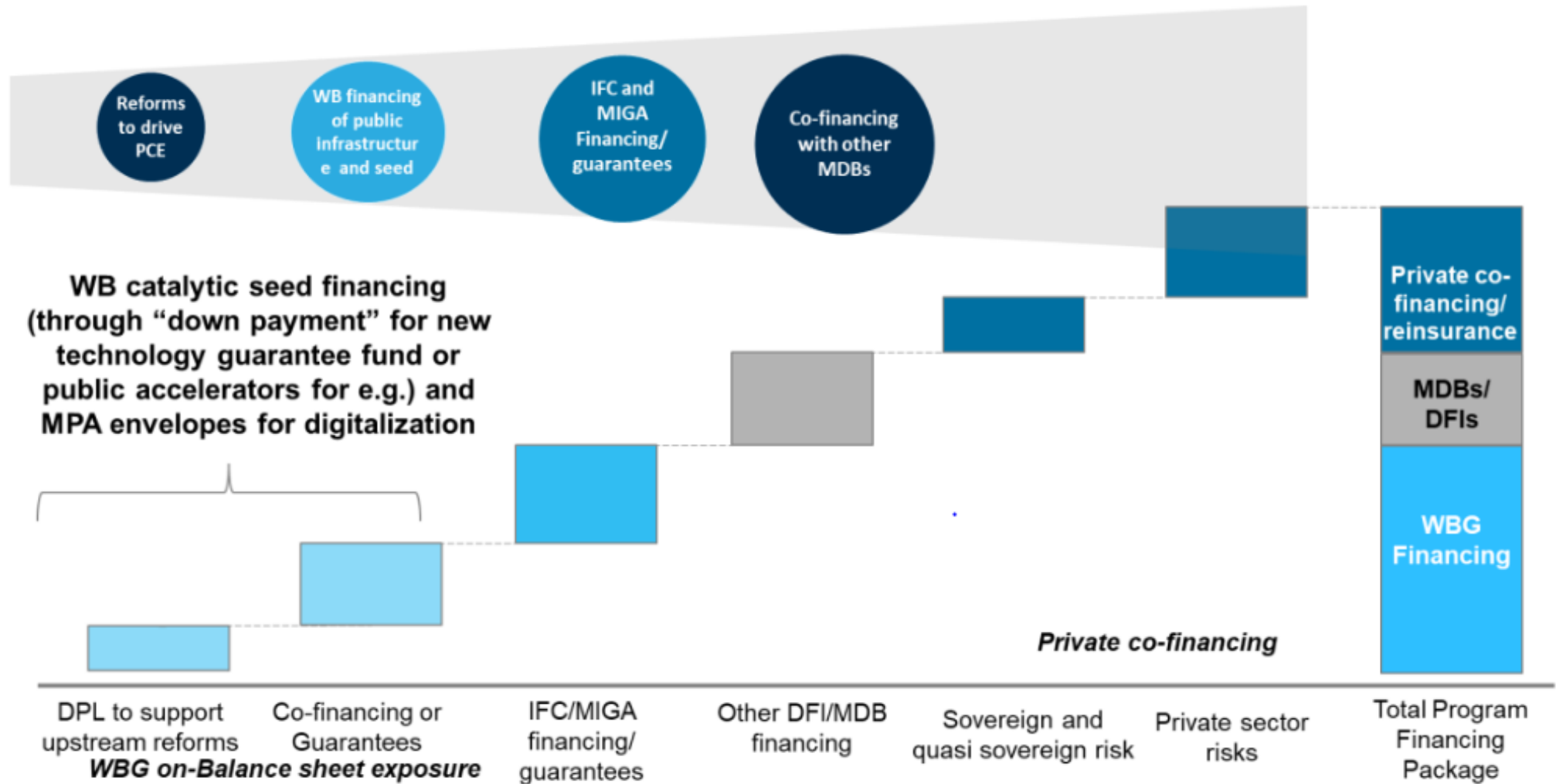
- Support to government investment in resilient, secure data hosting infrastructure
- Green data infrastructure investment

- Public investment in thin or poor markets without realistic private viability
- Support for government investment in improved public digital services

Interventions build on each other as countries move toward more sophisticated solutions.

The overarching goal of this approach is to ensure that markets are **commercially sustainable, safe, green as well as inclusive and resilient.**

Scaling up digitalization requires public and private capital



<https://www.worldbank.org/en/programs/all-africa-digital-transformation/country-diagnostics>

- **41 Diagnostics** have been completed.
11 separate Country Economic Updates have also been published (Kenya, Uganda, Rwanda, Tanzania, Ghana, Egypt, Malawi, CIV, Cape Verde, Congo Rep., Congo Dem, Rep.).

- **1 Diagnostics in progress:** *Equatorial Guinea*

- **Reports pending publication for:** *Somalia, Chad, Djibouti*
**For internal use only: Mauritius, STP, and Togo.*



* Completed assessment means DM conducted.

+ Country Economic Updates has a special focus on digital economy.

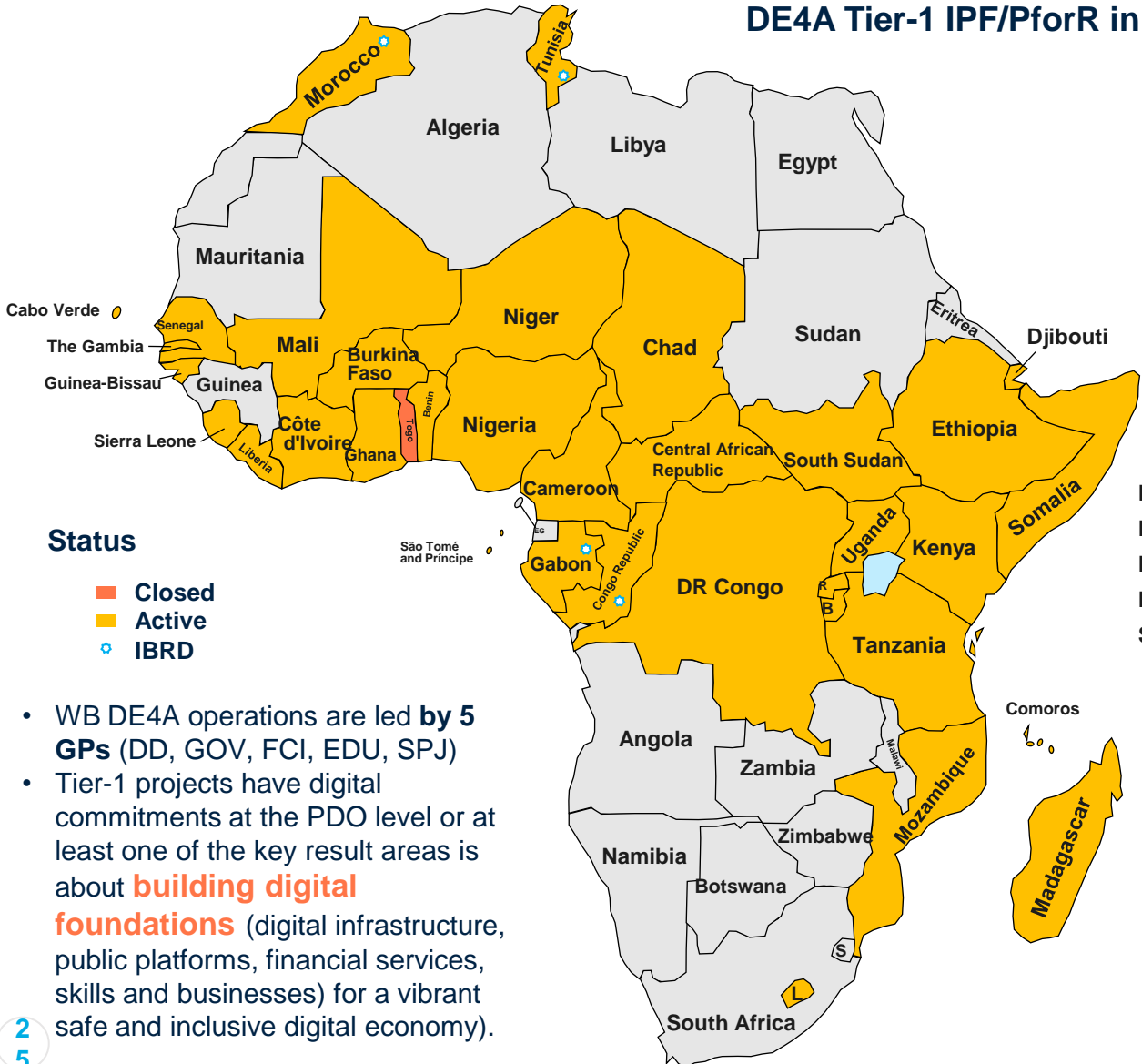
++ Full DE4A assessment was conducted with additional economic updates with DE focus.

During FY19-23, WB delivered 72 digitalization projects for a total amount of \$9 billion in 37 countries under the DE4A cross GP approach

DE4A Tier-1 IPF/PforR in Africa during FY19-23

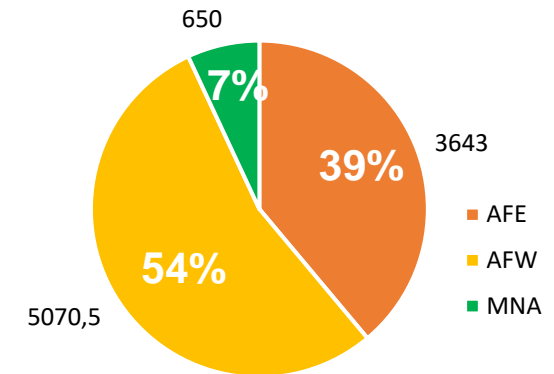
Project Status	Country #	Project #	Total Commitments (US\$)
Active	34	68	9,298
Closed	3	4	66
Grand Total	37	72	9,364

*Includes five IBRD operations.



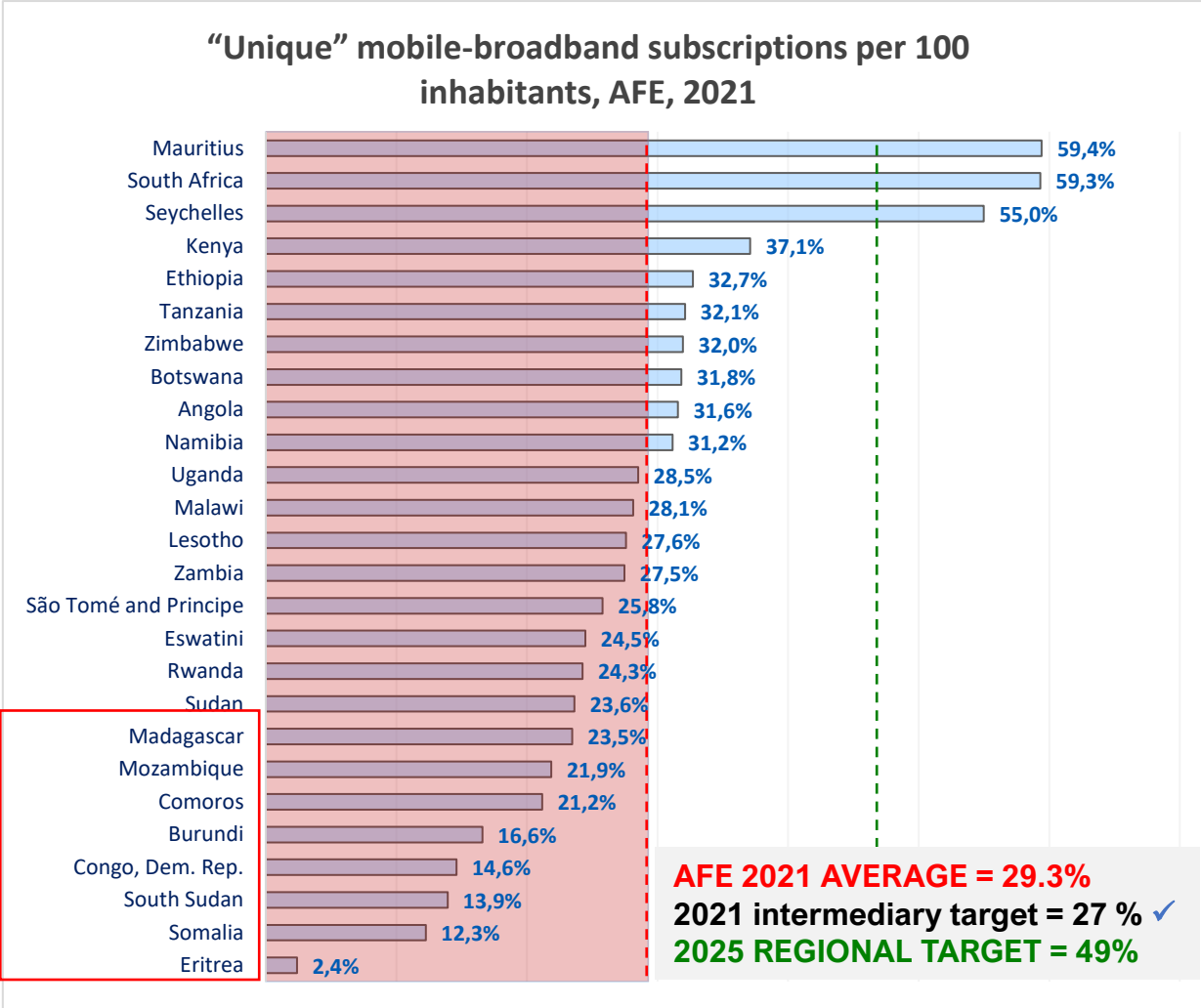
- WB DE4A operations are led by **5 GPs** (DD, GOV, FCI, EDU, SPJ)
- Tier-1 projects have digital commitments at the PDO level or at least one of the key result areas is about **building digital foundations** (digital infrastructure, public platforms, financial services, skills and businesses) for a vibrant safe and inclusive digital economy).

Geographic Distribution of FY19-23 Commitments (US\$m)

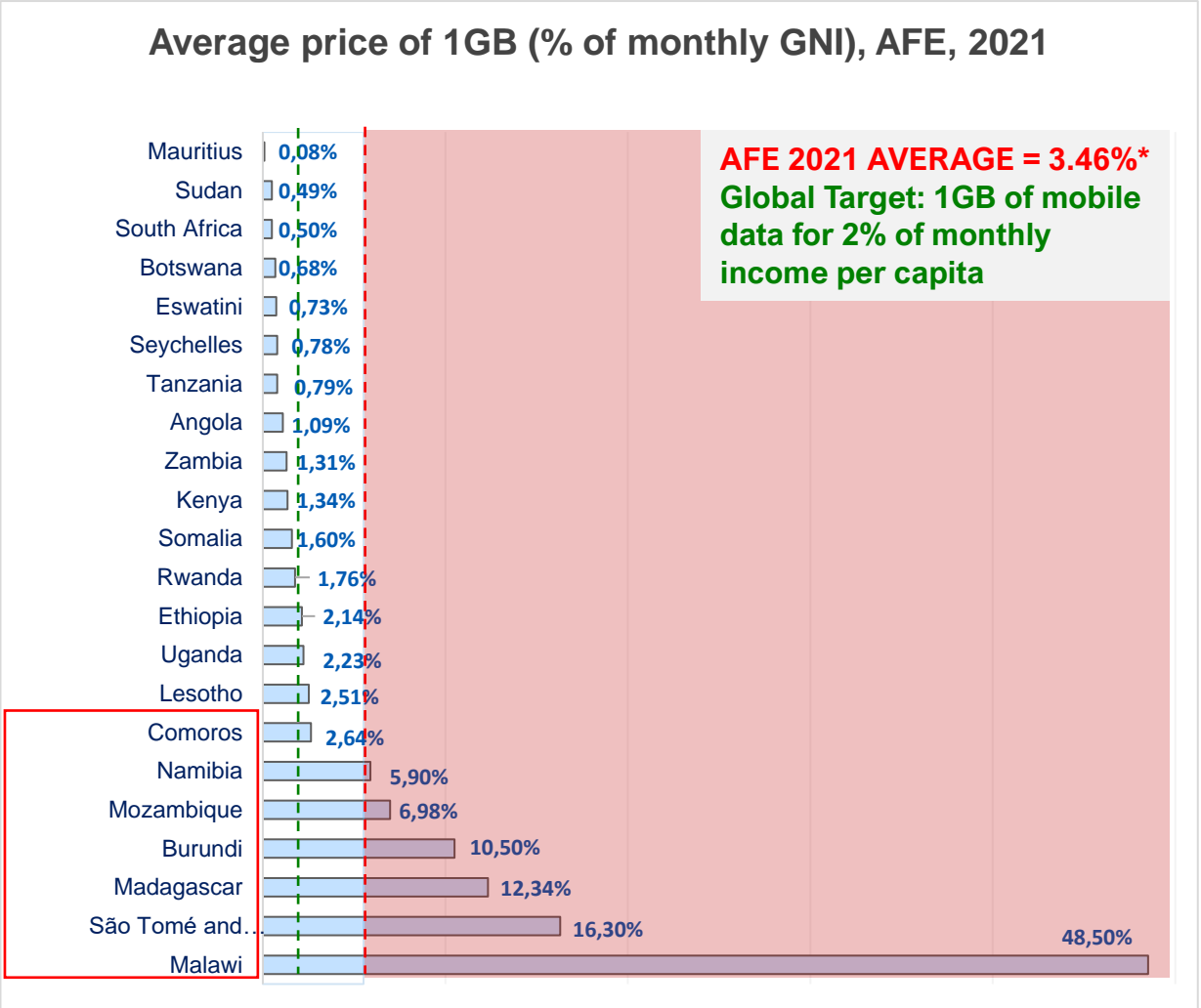


- ❖ FY19-FY23 Tier-1 Operations consist of **72 projects** with a total amount of **\$9 billion** in **37 countries** in Africa, including IBRD. These were complemented by DPF PAs (digital connectivity-related PAs in 78 projects in 36 countries)
- ❖ As of February 2023, IFC has 78 active portfolio projects with a digital component, totaling US\$1.26B in investments.

Large variation in countries, and those at the bottom require targeted interventions to improve internet usage and affordability in AFE



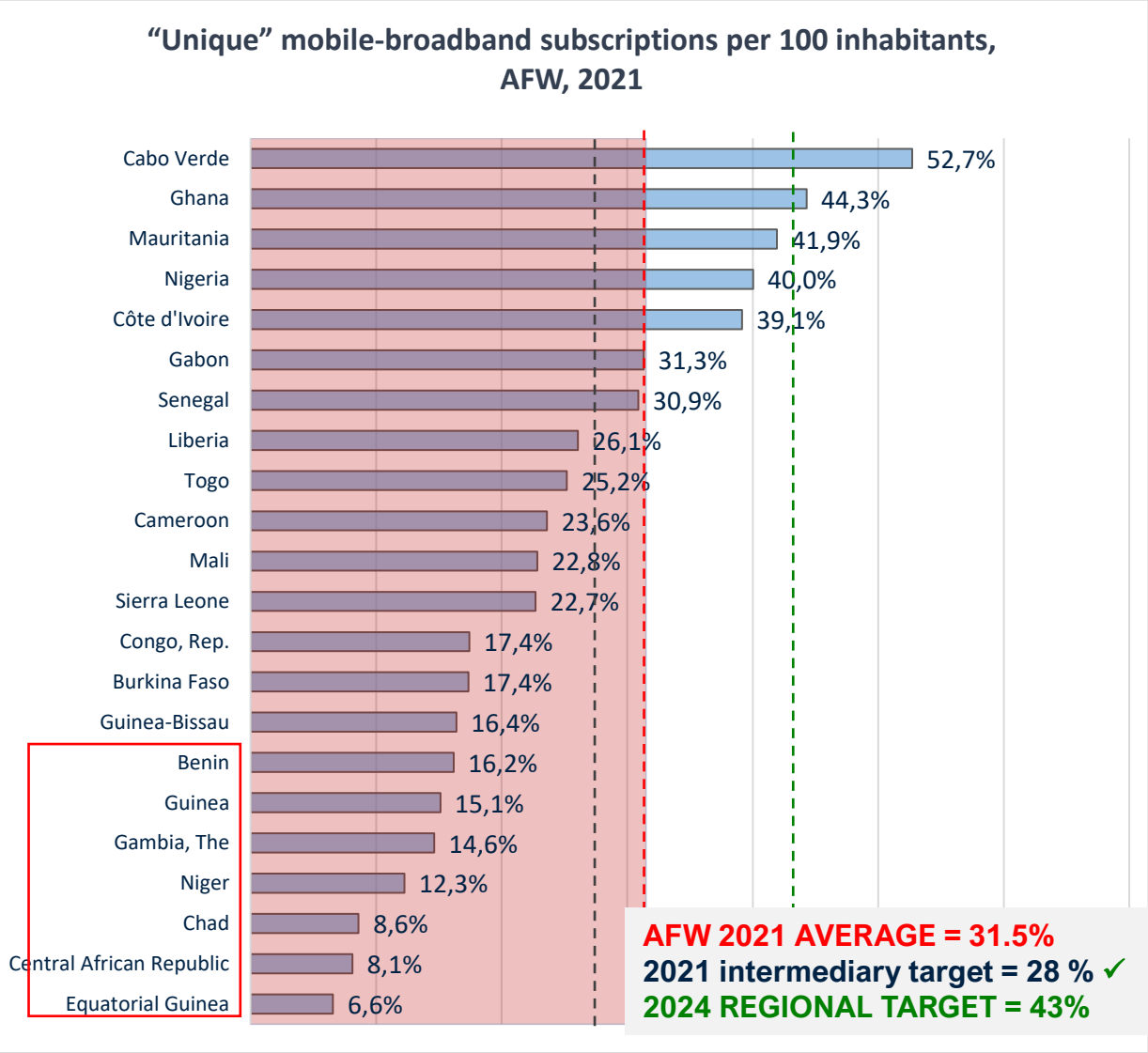
Source: number of **unique** mobile broadband capable subscribers (GSMA definition) divided by the total population (UN definition). Last updated: October 18, 2022



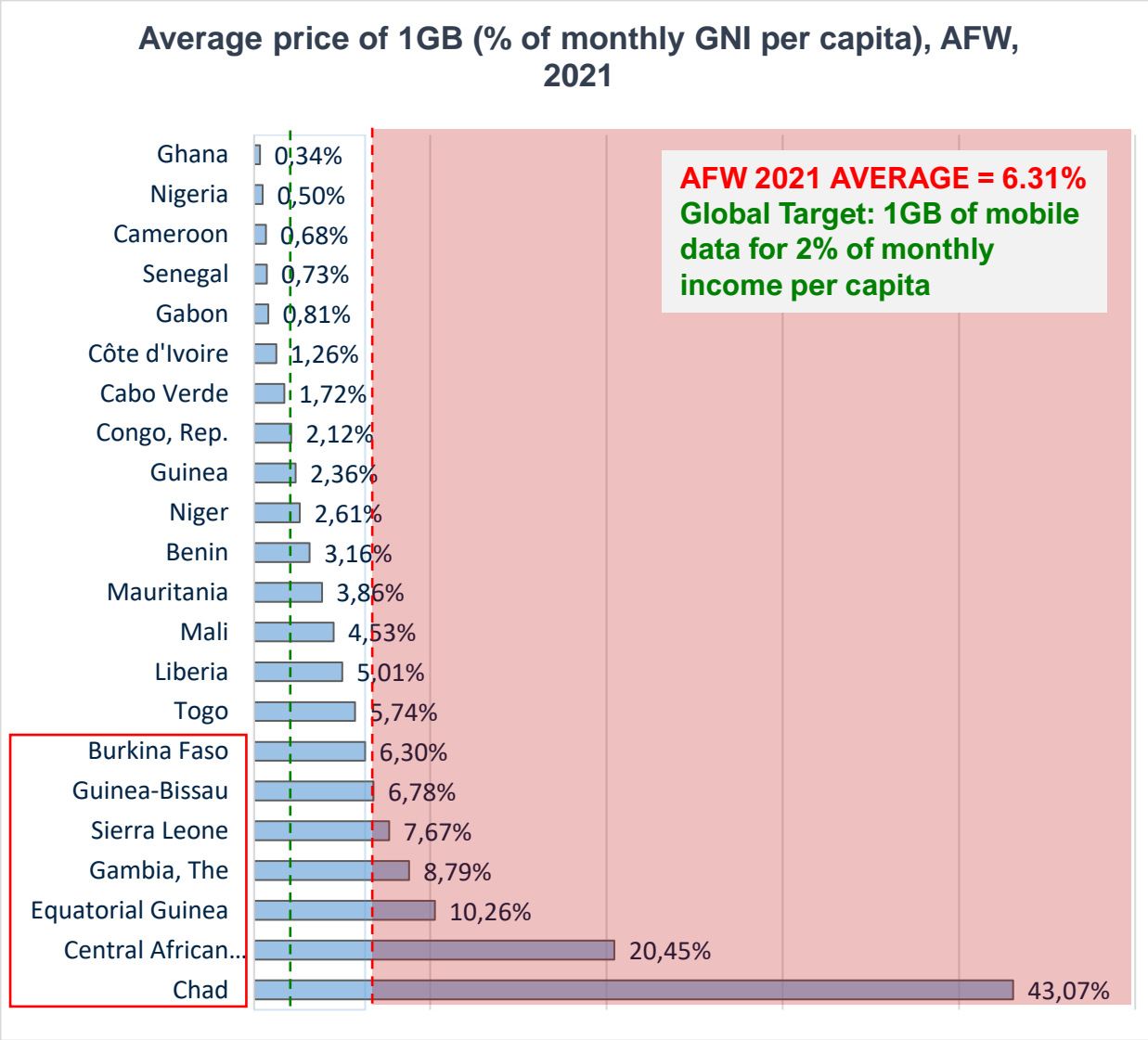
Source: Cable.co.uk (<https://www.cable.co.uk/mobiles/worldwide-data-pricing/>). Last updated: October 18, 2022

Notes*: (1) Malawi data is based on post-paid plans which are not comparable with other countries, and the data has been excluded when calculating the average. This is corrected in 2022 and still shows Malawi as having low affordability when compared to its peers.. (2) Zimbabwe data is missing from the 2021 dataset, but 2022 data shows it as a priority country for addressing affordability. (3) DRC is missing from both the 2021 and 2022 datasets but based on other datasets has low affordability compared to its peers.

Large variation in countries, and those at the bottom require targeted interventions to improve internet usage and affordability in AFW



Source: number of **unique** mobile broadband capable subscribers (GSMA definition) divided by the total population (UN definition). Last updated: October 18, 2022



Source: Cable.co.uk (<https://www.cable.co.uk/mobiles/worldwide-data-pricing/>). Last updated: October 18, 2022