



**DIGITAL AND
CLIMATE CHANGE**
Digital Development



WORLD BANK GROUP
Digital Development

Green Digital Development



Digital gaps are significant

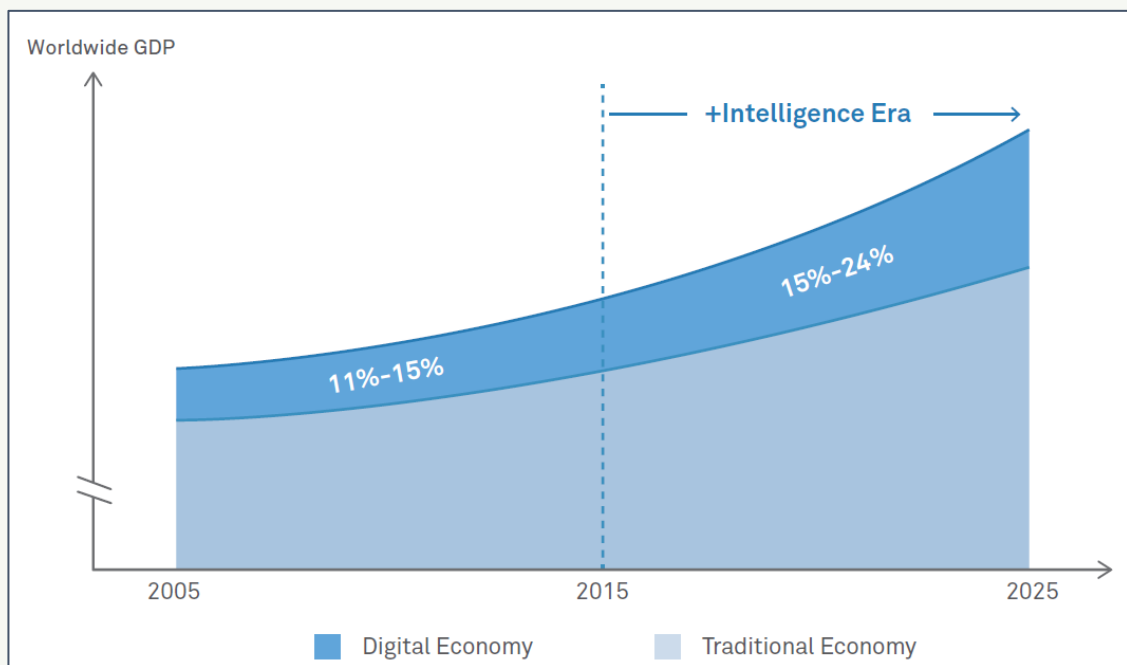
The pandemic sped up digitalization around the world

>3 times

During the pandemic, countries that used digital databases and data sharing platforms reached more than 3 times the beneficiaries than countries that had to collect new information.

>800 Million

The one-time jump in internet users during COVID-19, motivated by desire for access to digital communications, commerce, employment and services



Tackling the digital divide is key to unlock the opportunities of digital transformation and to ensure that the most vulnerable are not left behind

2.7 billion

1/3 of the world's population remain unconnected to the internet in 2022.

230 million

of jobs in Sub-Saharan Africa that will require digital skills by 2030.

Large financing gaps exacerbate the digital divide

<20%

Of low- and middle-income countries have modern data infrastructure, such as co-location data centers and access to cloud computing

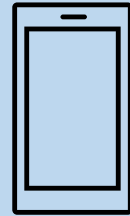
US\$1 trillion

Global digital infrastructure financing gap by 2040, with more than 50% in Asia (AIIB 2020).

Digital contributes to 1.5-4% of global GHG emissions

Digital Sector Carbon Footprint Breakdown

Consumer devices: 24-40%



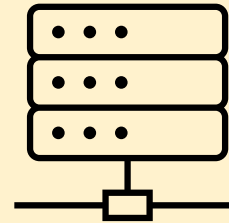
Smartphones



Computers

Others

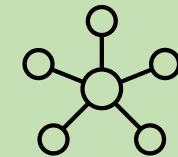
Data centers: 20-48%



Connectivity networks: 16-40%



Mobile network operation

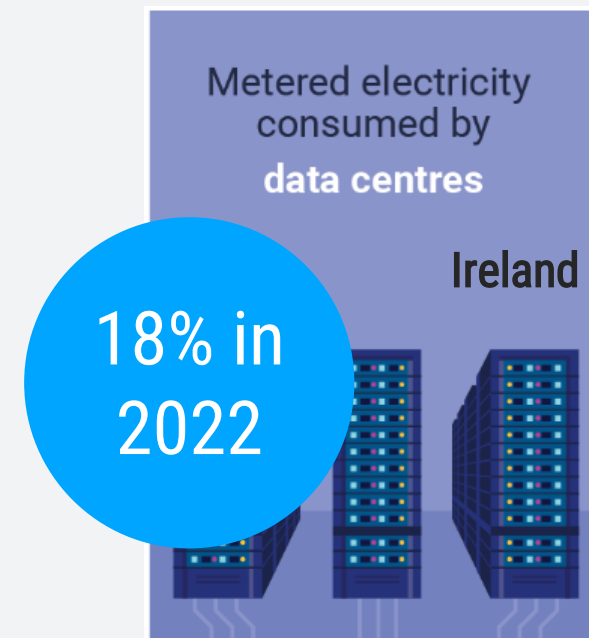
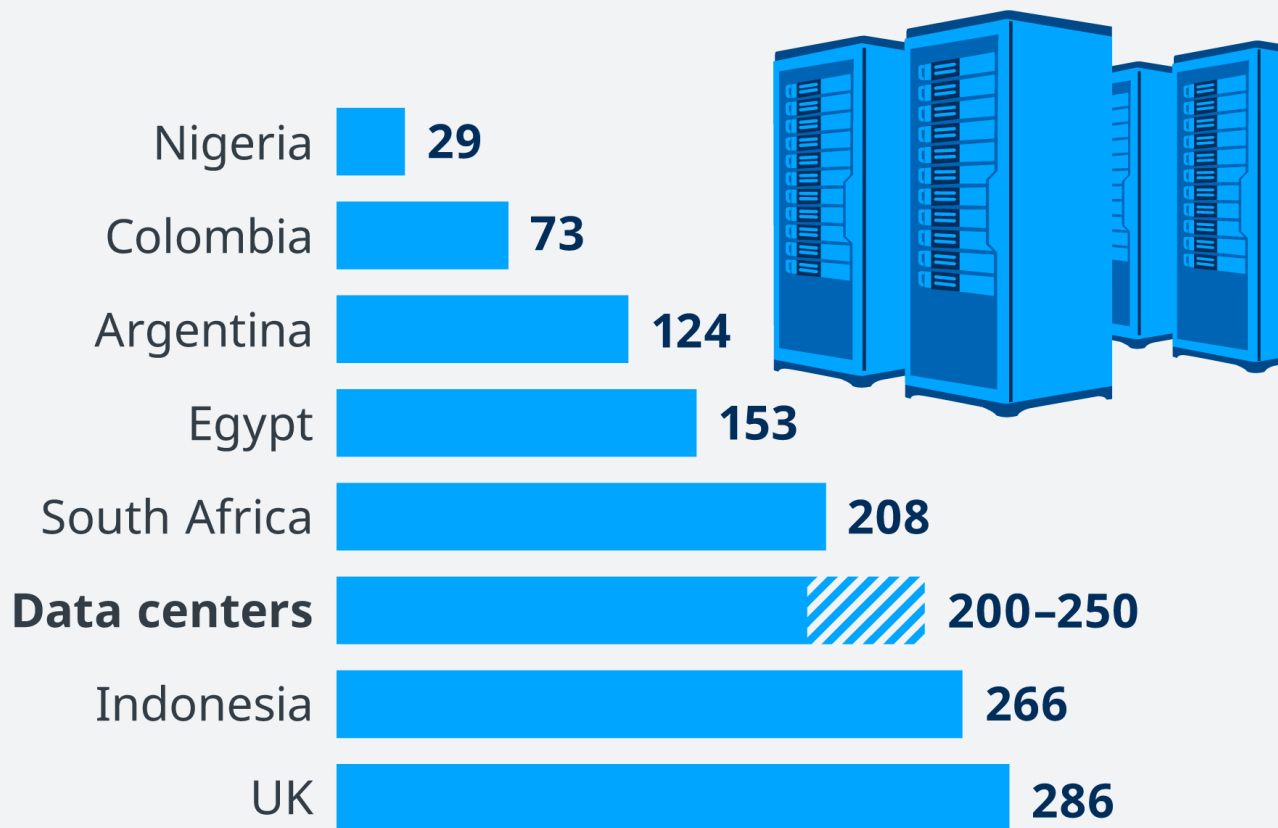


Fixed network operation

Depl/Dec (*)

Note: Mid point of ranges presented in figure. TVs (including smart TVs) are excluded from the sector breakdown. 'Depl/Dec' stands for deployment and decommissioning

Data Centers use as much energy as some countries

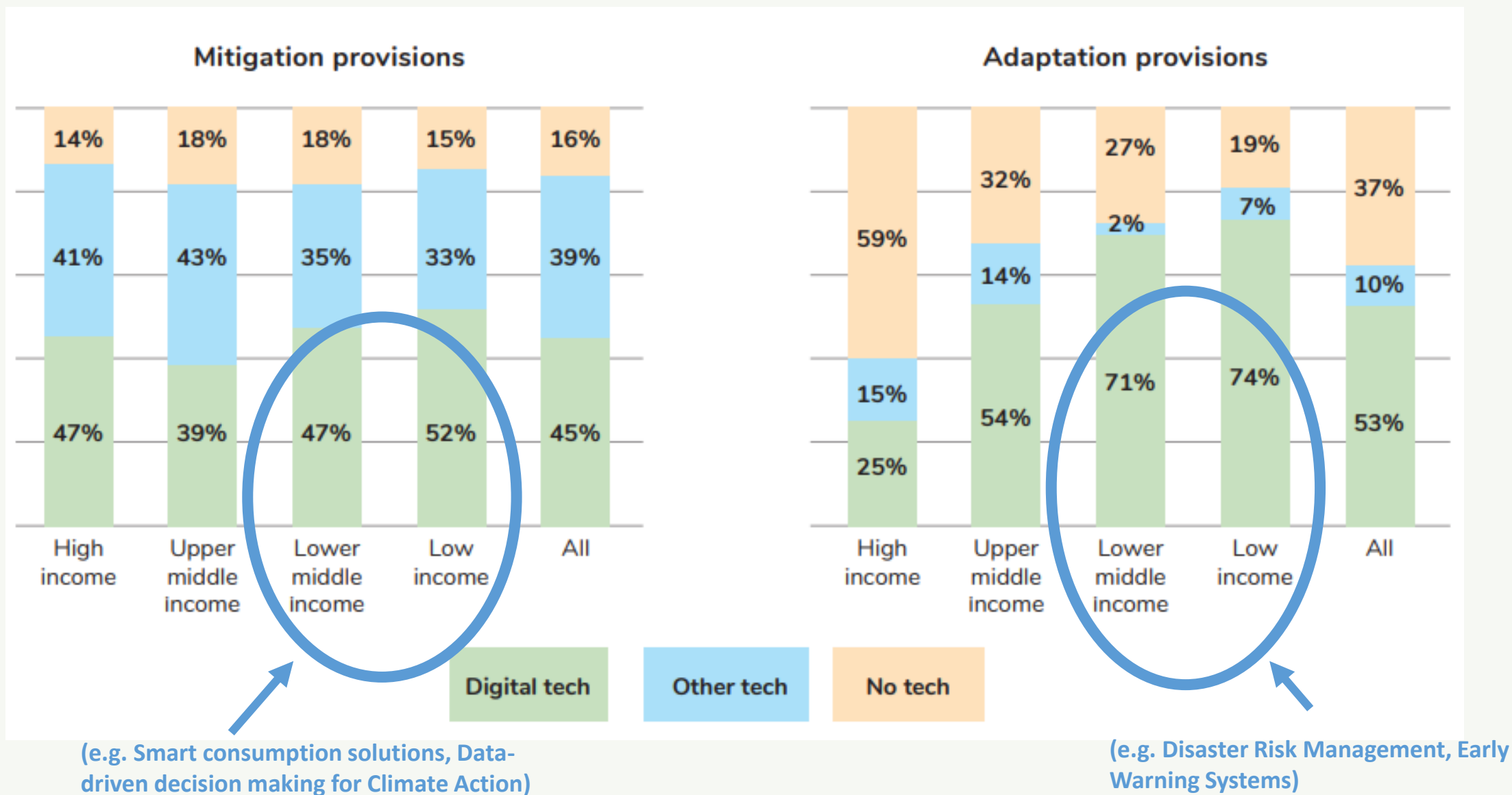


Source: Central Statistics Office, Ireland

National electricity consumption vs. selected countries in 2022 in TWh Source: Enerdata & IEA)

Developing countries recognize the power of digital

Assessment of Nationally Determined Contributions (NDCs)



Greening Digital

ADAPTATION



Greening the digital sector
by climate proofing digital
infrastructure

MITIGATION



Greening the digital sector
through e.g., energy efficiency
measures and use of
renewable energy

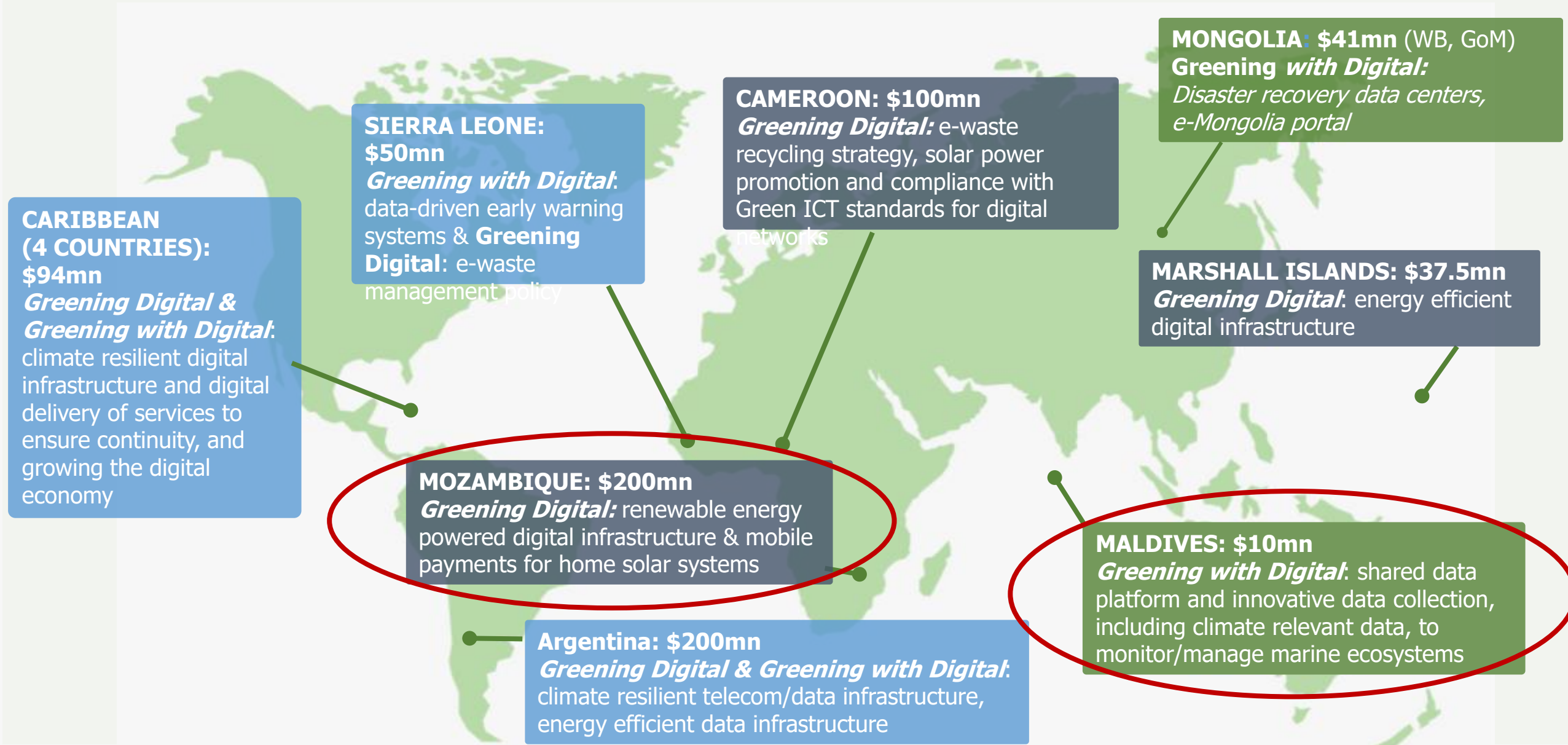
Greening *with* Digital

Leveraging digital technologies to
enhance resilience of economies,
populations and sectors

Leveraging digital technologies to
decarbonize other sectors such as
energy, transport and cities

Mainstreaming 'green' in digital investments

Examples of recent digital investments with green digital components (funding size is for the full project, incl. the green digital components)



Impacting investments in other key sectors

Agriculture



Challenge: Agriculture, forestry, and land use change produce almost 25% of global GHG emissions

Opportunity: Digital technologies can potentially reduce GHG emissions by 1-4% from agriculture sector by 2030

Transport



Challenge: Transport accounts for 20% of the world's greenhouse gas emissions

Opportunity: Optimizing traffic flow; contributing to the establishment of digitally-enabled modern logistic systems that improve freight management; and transitioning to electric vehicles.

Energy



Challenge: It is estimated that energy accounts for more than two-thirds of total GHG emissions globally.

Opportunity: Enhancing energy efficiency, and by enabling demand-side flexibility and mobile money enables new business models for delivering affordable home solar systems.

Urban



Challenge: Cities consume 2/3 of the energy used worldwide and account for about 70% of carbon emissions.

Opportunity: Digital technologies can help reduce total energy demand in the building sector by about 10% through operational efficiency compared to IEA's reference scenario, from 2017-2040.

“Call for Action” under discussion and may include the following components:

- 1. Call on all ICT companies to set science-based targets for emissions reduction and reduce scope 1, 2 and 3 emissions*
- 2. Create and maintain an ICT sector database on Emission Factors*
- 3. Establish a collaborative framework for ICT industry and ministries of energy, ICT and environment on the integration of renewable energy sources into operations*

Green Digital Action at COP28. **Join us.**



How do we bridge the digital divide in sustainable way *and* leverage digital technologies effectively for climate action?



~3 billion

people remain offline and the vast majority are concentrated in developing countries



1.5 - 4%

of global GHG emissions is estimated for the digital sector (and growing)



64%

of NDCs mention using technology for adaptation and/or mitigation



Countries are lagging behind on climate commitments