COUNTRY ANALYSES AND PLANS

Niger

giga

NIGER

$104M of CapEx funding and $96M of annual OpEx funding will enable Niger to connect over 19,000 schools

This investment will bring **3.5 million students and teachers online** and bring connectivity to **7.2 million community members** who live locally, potentially enabling over 525 million USD of GDP growth, a 1.8% increase.

Source: Dalberg Analysis based on Giga mapping and modelling data, 2020

giga

NIGER

“The Giga initiative is a great project for us because it comes to complement the already existing efforts we had of last mile connectivity to different essential services like schools.”

IBRAHIMA GUIMBA-SAÏDOU
Director, ANSI & Minister | Special Advisor

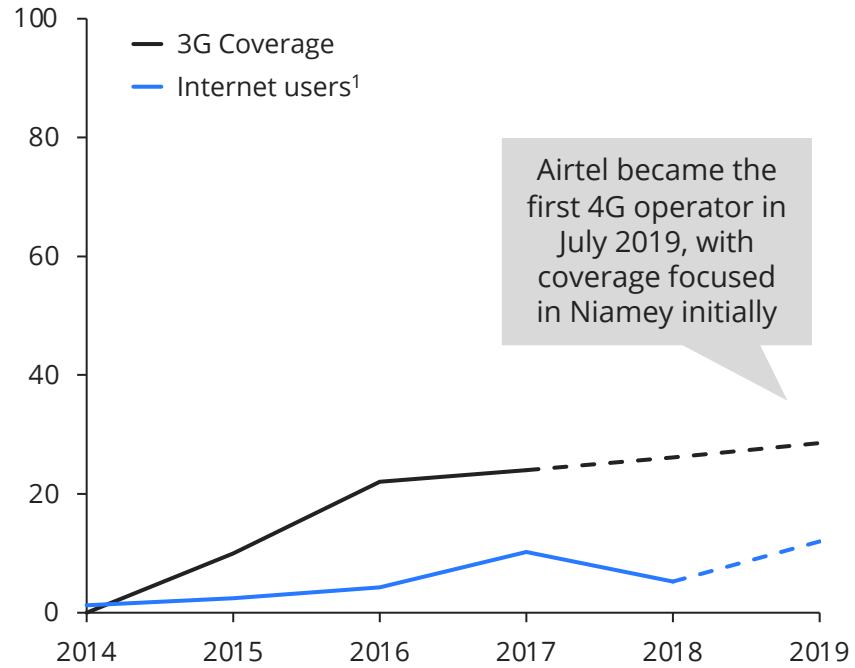
giga

NIGER

Mobile coverage has steadily increased over the last 5 years, further connectivity is required to achieve rural development plans

In the last 5 years mobile broadband coverage has grown but internet use has lagged behind

Broadband coverage and internet penetration, % of population. (ITU, 2020)



The Government of Niger is aiming to drive economic growth through digitization with universal access to connectivity

Niger hopes to achieve this target through the following internet connectivity and education policies:

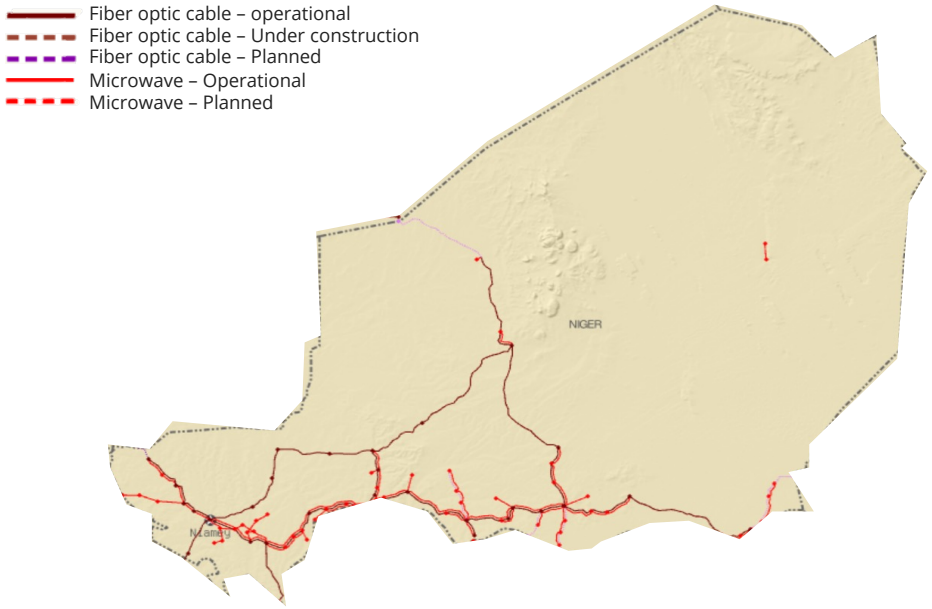
- Renaissance Act II Program: The President's 2016 reform program envisages an improvement in the quality of public services by improving digital communication within society. This led to the creation of National Agency for Information Systems (ANSI) and the strategic vision "NIGER 2.0"
- Niger 2.0 Strategic Plan: Under the supervision of the Presidency, ANSI 's work is anchored in four strategic areas: e-government, digital skills promotion, a smart villages program and creating an innovation and technology city
- Niger 2.0 Smart Villages: Launched in August 2018 by the Government of Niger and its partners (ITU, FAO, UNESCO, WHO, WB) the program aims to expand internet access to digitally enabled services in education and other sectors (health, agriculture, commerce etc.)
- Education Sector Plans: The Programme Sectoriel de l'Education et de la Formation 2014-24 (PSEF) & Transition Plan (2020-22) have limited reference to digital learning but EMIS has been identified as a strategic activity to improve school management and teacher training

Note: 1) ITU estimates that total internet users were approximately 5.2% of the population in 2018, this share has increased, varying by demographic/location and the government records level up to 52% in certain areas
Source: ITU (2020) World Telecommunication/ICT Indicators Database; ANSI (2019 Website; République du Niger (2013) Programme Sectoriel de l'Education et de la Formation (2014-2024); République du Niger (2019) Plan de Transition du secteur de l'education et de la formation; PTSEF (2020-2022) ; Republique Du Niger (2012) Ministere De La Communication Et Des Nouvelles Technologies De L'information (2012) Document De Politique Sectorielle Des Telecommunications Et Des Technologies De L'information Et De La Communication

giga

NIGER

Fiber networks and 4G coverage



	Mobile	Fixed
Subscriptions per 100 inhabitants	52**	<1
5-year CAGR	+95%	+4%

The Goal: National Coverage and Connectivity

Fiber networks are concentrated in populous southern areas, mobile internet coverage of 3G and over is limited throughout country, and the first 4G licensees became operational last year

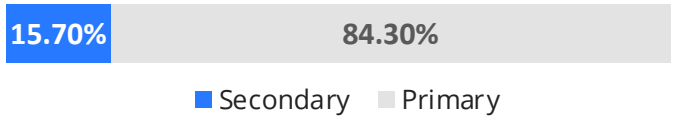
Source: Map – ITU Broadband Map; Table – IITU (2020) World Telecommunication/ICT Indicators Database *latest data from 2017, Mobile penetration rate was 4 in 2017 according to ITU records, government recently confirmed penetration is 52% of adults

giga

NIGER

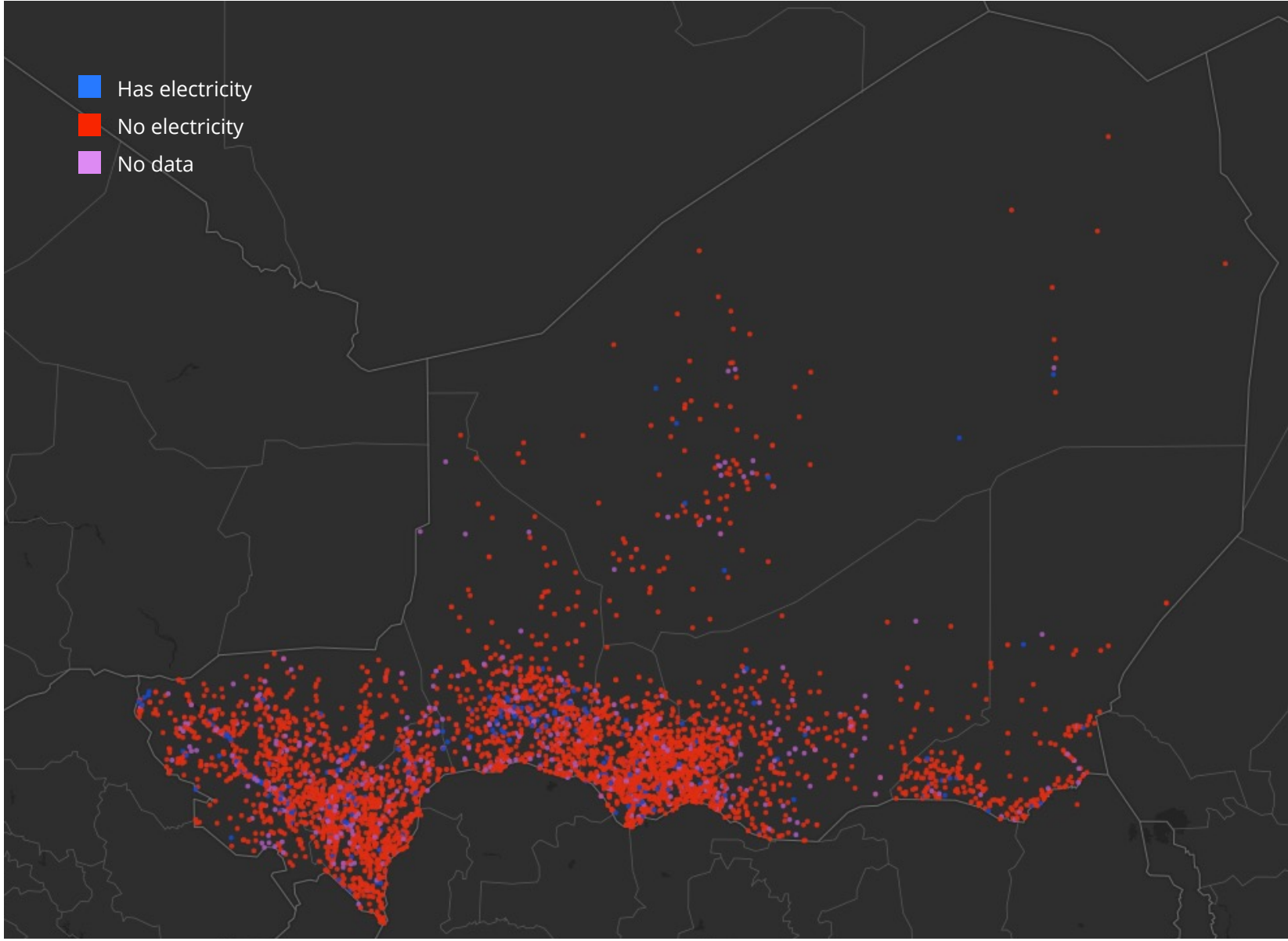
School Coverage and Connectivity

Total schools: 19,435



89% of Primary schools are rural
92% of Primary schools have no electricity

Few Nigerien schools (80) are connected to the internet. There is limited information on both school location and internet coverage status. Estimates suggest over 8,500 schools are within 10km of 3G, 4G or fixed broadband.



Giga is currently working with the Government of Niger on collecting data on school location and connectivity status given the limited availability of this information. This map uses population density and village geolocation as proxies for school location and maps the availability of electricity for these locations.

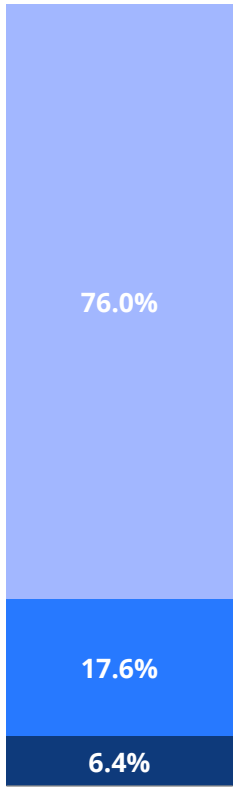
Source: Ministry of Education (2019) School data; ITU (2019) Transmission and population density coverage data; République du Niger (2019) Plan de Transition du secteur de l'education et de la formation PTSEF (2020-2022);

giga

NIGER

76% of Nigeriens lack coverage and 17% face affordability, electrification and other challenges

THE MOBILE INTERNET COVERAGE AND USAGE GAP



CONNECTIVITY ACCESS		NEEDS	GOALS
76.0%	COVERAGE GAP **No mobile internet**	Increase coverage	+17.7 million Nigeriens
17.6%	USAGE GAP **Covered by 3G/4G but not connected**	Increase affordability Increase digital literacy Increase electrification	-$4.17/GB (-87%) Transform learning to build digital skills Power 19 million off-grid users
6.4%	CONNECTED **Active mobile internet use**	Achieve digitally enabled growth for all	8.6M digital financial service users (+300%)

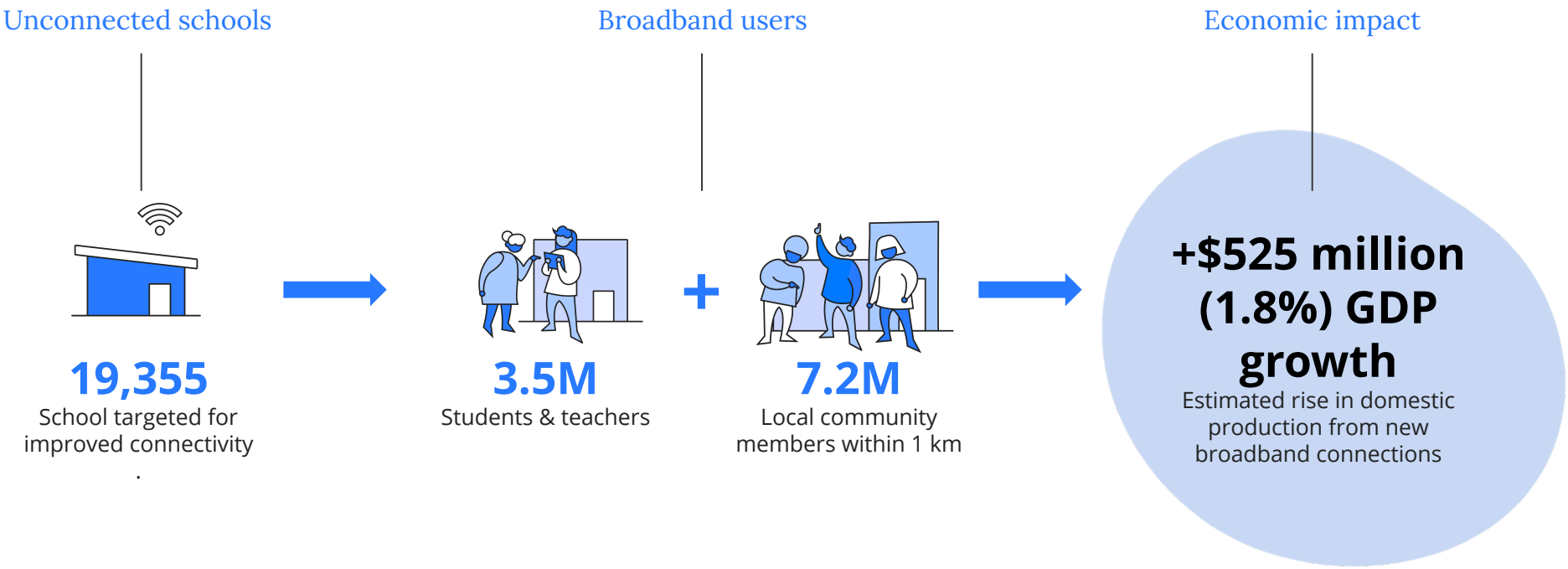
Notes: Notes: Prices based on ITU Data-only mobile broadband basket 1.5GB, pro-rated down to 1GB for comparison against the Broadband Commissions 2% target. Note that Individuals in remote locations will likely spend a higher proportion due to lower income levels. Source: ITU (2020) World Telecommunication/ICT Indicators Database; UNESCO (2019) Institute for Statistics

giga

NIGER

Targeted financing for connecting 19,355 schools can create GDP growth of over $525 million

Universal expansion to all schools provides a gateway to community connectivity



Note: Economic impact calculation assumes that school connectivity is comparable to gaining access to a fixed line connection in a middle/lower income country in terms of reliability, bandwidth, use etc. Assumes middle income fixed broadband which is a conservative assumption when compared to low income mobile broadband
Source: Dalberg Analysis;; ITU (2020) World Telecommunication/ICT Indicators database; UNESCO UIS.Stat, 2018; World Bank (2020) World Development Indicators (WDI); ITU (2018) The Economic Contribution of Broadband

giga

NIGER

School connectivity will require an estimated $104M of upfront capital expenditure and up to $96M of ongoing annual funding

Giga will help to mobilize investment and financing to bridge initial infrastructure gaps and provide mechanisms to supply longer-term financing to boost geographic reach and affordability through smart subsidies

(Schools to be connected: 19,355)

UPFRONT LAST-MILE INFRASTRUCTURE CAPITAL

Based on an initial technology assessment (15% Fiber, 13% WISP, 17% 4G and 55% Satellite):

$104M Estimated total investment needed to reach 19,355 schools*

*This does not factor in potential volume discounts or other sources of funding

ONGOING ANNUAL FUNDING FOR REGULAR SERVICE FEES

Estimates based on an all-in service FEE (64%) and a maintenance and technical support fee (36%):

$96M[a] Potential service fees for 19,355 schools (Current estimate)*

*This does not factor in potential volume discounts or other sources of funding

The Universal Service Fund could potentially provide $13M for connecting schools, while the World Bank Smart Villages funding could contribute up to $5M.[b]

Notes: All investment costs are high level estimates only at a concept level stage. Further feasibility and technical studies will be required to refine budget needs prior to project/initiative/procurement stages.
A) Estimate of potential annual service fees is based on existing current school service fees pricing from Niger Telecoms (Per/Mbps) for either dedicated radio loop or fiber optic last mile connectivity
B)USF contribution based on US$ 147 million total tax burden for the ICT sector in 2015, 9% of which was USF. Assuming 25% is available to school's connectivity and aggregated over 4 years ($13M). Assumes that WB Smart Villages connects schools in its 2,111 villages (estimated at 1,000 schools by population size, average connection cost $5,347, Total = $5.5M).
Source: Giga and Dalberg Analysis (2020) based on Giga ACTUAL mapping and modelling input data; Niger Telecoms Data.

giga

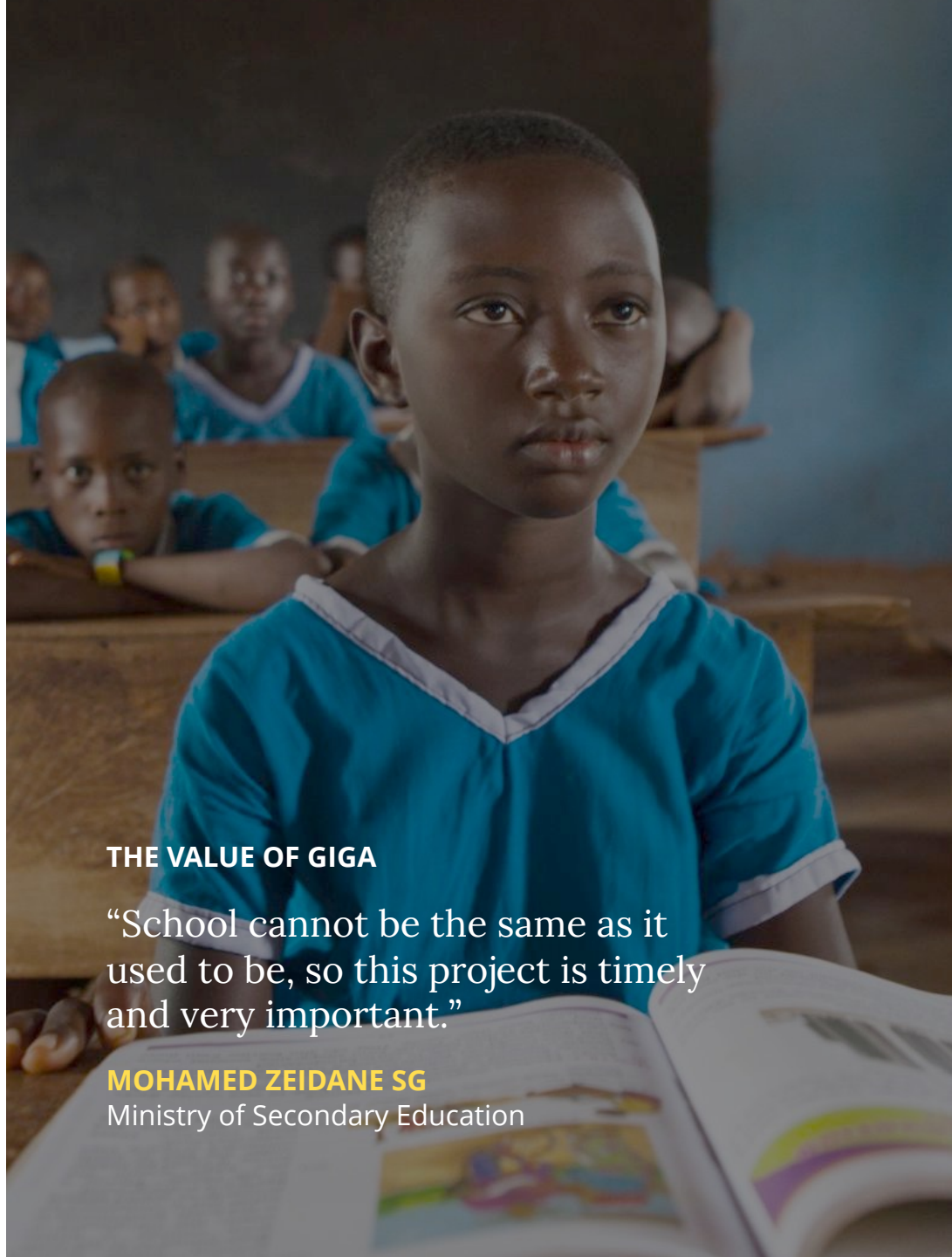
NIGER

Giga has engaged significantly with the Government of Niger (GoN)

Key Stakeholders: National Agency for the Information Society (ANSI), Six Ministries of Education, Ministry of Planning, Regulatory Authority for Electronic Communications and Post (ARCEP)

Giga engagement to date

- High level buy-in from Minister Ibrahima Guimba-Saïdou and established a focal point at National Agency for the Information Society (ANSI)
- Data sharing agreements and subsequent mapping analysis through project connect
- Completion of an upfront joint assessment to align on opportunities and constraint
- Co-creation workshop to identify priorities and next steps (see next page)



THE VALUE OF GIGA

"School cannot be the same as it used to be, so this project is timely and very important."

MOHAMED ZEIDANE SG
Ministry of Secondary Education

NIGER

In partnership with the GoN, Giga has identified several activities to support the cost-effective connection of 19,355 schools

Use mapping technology to more accurately deploy connectivity to create efficiencies in the roll out of Smart Villages

Build real-time monitoring platform for accountability of providers

Start a connectivity working group (alongside ANSI, the World Bank and Ministry of ICT) to share knowledge and coordinate school connectivity deployment across actors

Showcase GoN leadership on global stage through Smart Villages as global example, e.g. learning from Niger's bandwidth needs, financial models, etc.

Targeted investment in addition to the World Bank package – e.g. schools first opportunities; immediate opportunities for small scale pilots for different last-mile technologies

Develop innovative financing methods, e.g. digital bond in Honduras with the IDB – framework to aggregate demand across villages to bring down prices from satellite and telco ISPs

Onboard Niger as a Digital Public Goods Alliance Pathfinder, identify areas of public services that need open source solutions and mobilize resources together to build/scale chosen applications

Explore opportunities for local providers to engage in Smart Villages and support the local entrepreneurial ecosystem by scaling existing programs e.g. Code Local

giga

NIGER

Rapid Regulatory Scan

Policies

Sector strategies:[1]	
Digital transformation/broadband strategy	Yes
Planned e-government roll out	Yes
Digital education in strategy	Yes
Child Online Protection:[2]	
National strategy/policy?	No
Responsible agency?	No
Non-discriminatory inclusive use policy?	No
Data Sharing:[2]	
Data protection policy?	Yes
Privacy and data protection laws	Yes

ICT Regulatory Tracker[3]

Sector strategies:	
Generation of ICT Regulation	G3
Overall	74/100
C1: Regulatory Authority	15/20
C2: Regulatory Mandate	20/22
C3: Regulatory Regime	20/30
C4: Competition Framework	19/28

Regulation

Regulatory structure[1]	
Public/private sector consultation	No
Regulatory autonomy from the government	Partial
Clear planning and licensing process?	Yes
Procurement or competition agency?	No

Competition

Regulatory structure[1]	
SMP in national anti-trust/competition law	Yes
Spectrum technology neutrality in place	No
No foreign investment restrictions?	Yes
Infrastructure sharing?	Yes
Wireless Operators Market HHI[4]	-
Fixed Broadband Operators Market HHI[4]	-

Taxation

Services	
VAT[5]	19%
Sector specific tax on internet services[5]	0%
ITA Participant[6]	No
ICT Equipment import duties[7]	10%
Ongoing regulatory/license fees[1]	Yes

Universal Access

Services[8]	
Is school broadband a universal service?	No
Operational Universal Service Fund (USF)?	Yes
Total amount allocated/disbursed so far	$87.5M
Contributions as % of revenue	2-4%
Other public financing mechanisms?	Yes
Fully utilized currently?	Yes
Fully active in the last 5 years?	No

Strength
Neutral
Limitation

Notes: HHI – Hirschman Herfindahl Index (HHI) Score, > 4,000 Highly concentrated. Import duties based on a review of several Telecommunications, Electrical and Radio Transmission Equipment HS codes
Sources: 1) Latest ITU World Telecommunication/ICT Regulatory Survey 2019 2) ITU (2019) Global Cyber Security Index 3) ITU (2018) ICT Regulatory Tracker 4) EIU (2020) The Inclusive Internet Index 5) ITU (2019) Taxation Survey Country
6) World Trade Organization (2020) Information Technology Agreement Website 7) WITS (2020) World Integrated Trade Solution – Tariff Database 8) Latest ITU Global Report (2020) and, where available, the country's Universal Service Fund website

giga