

Open Terrestrial Fiber Data Standards and Map – PHASE1: AFRICA

PROJECT OVERVIEW

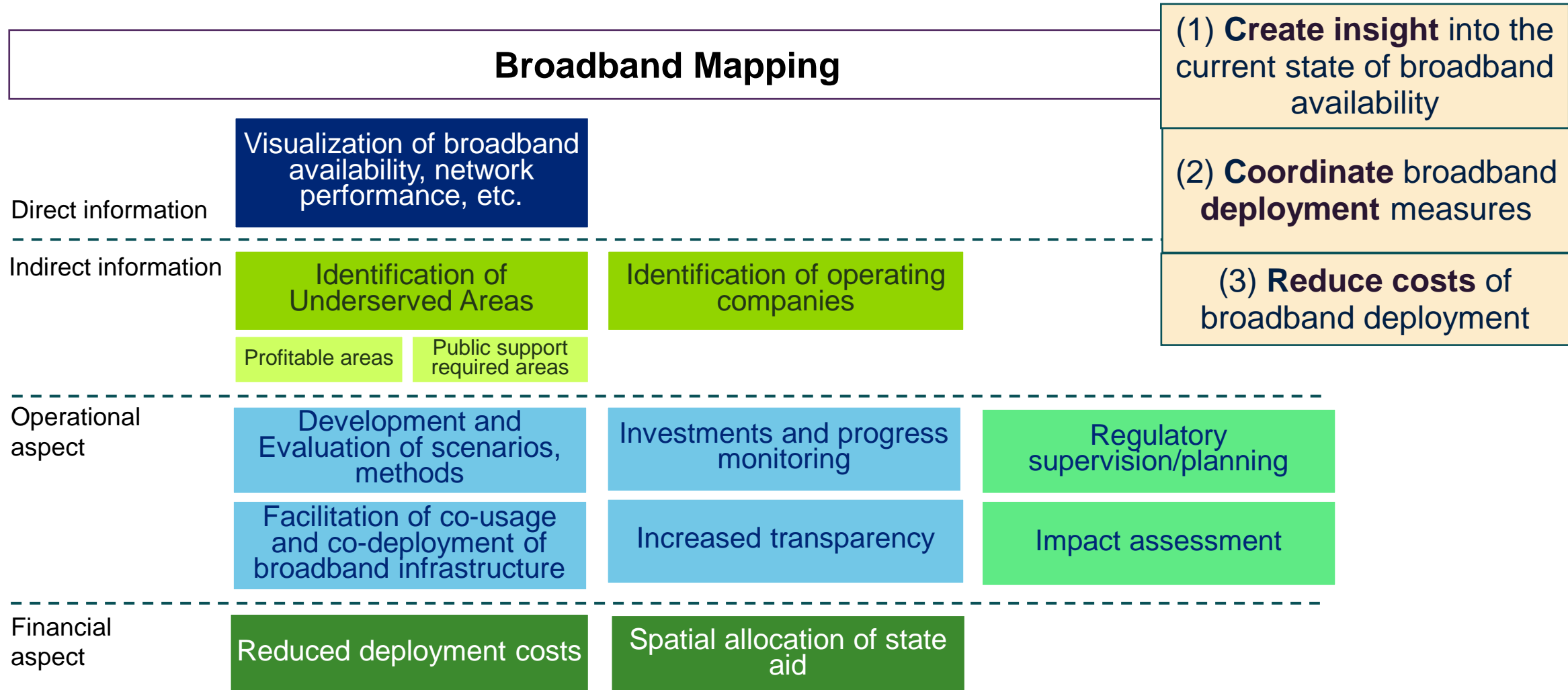
29 April 2021



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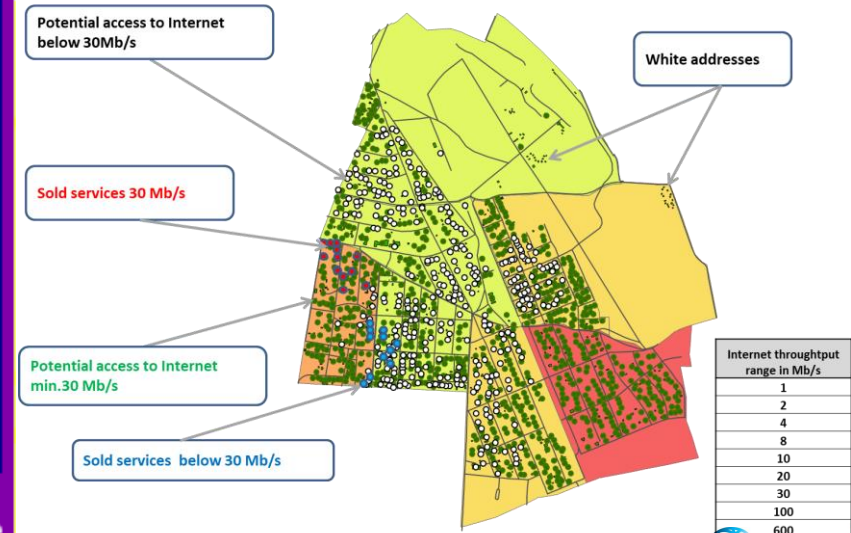
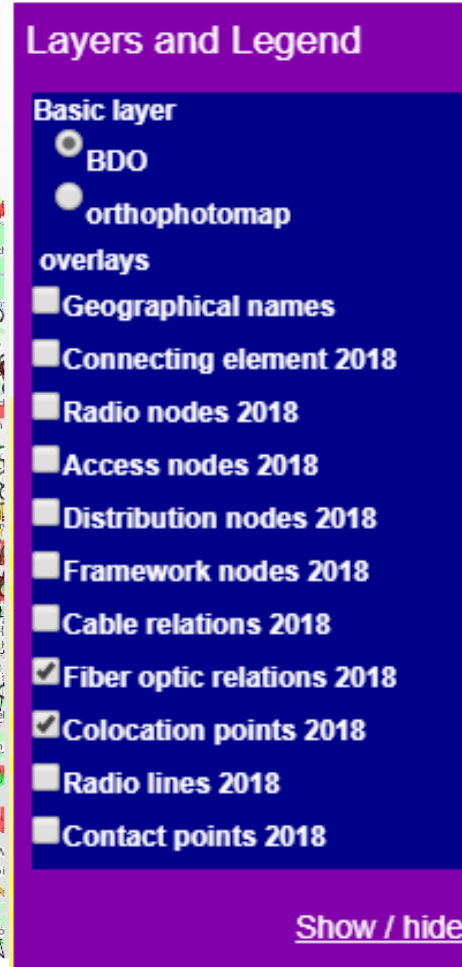
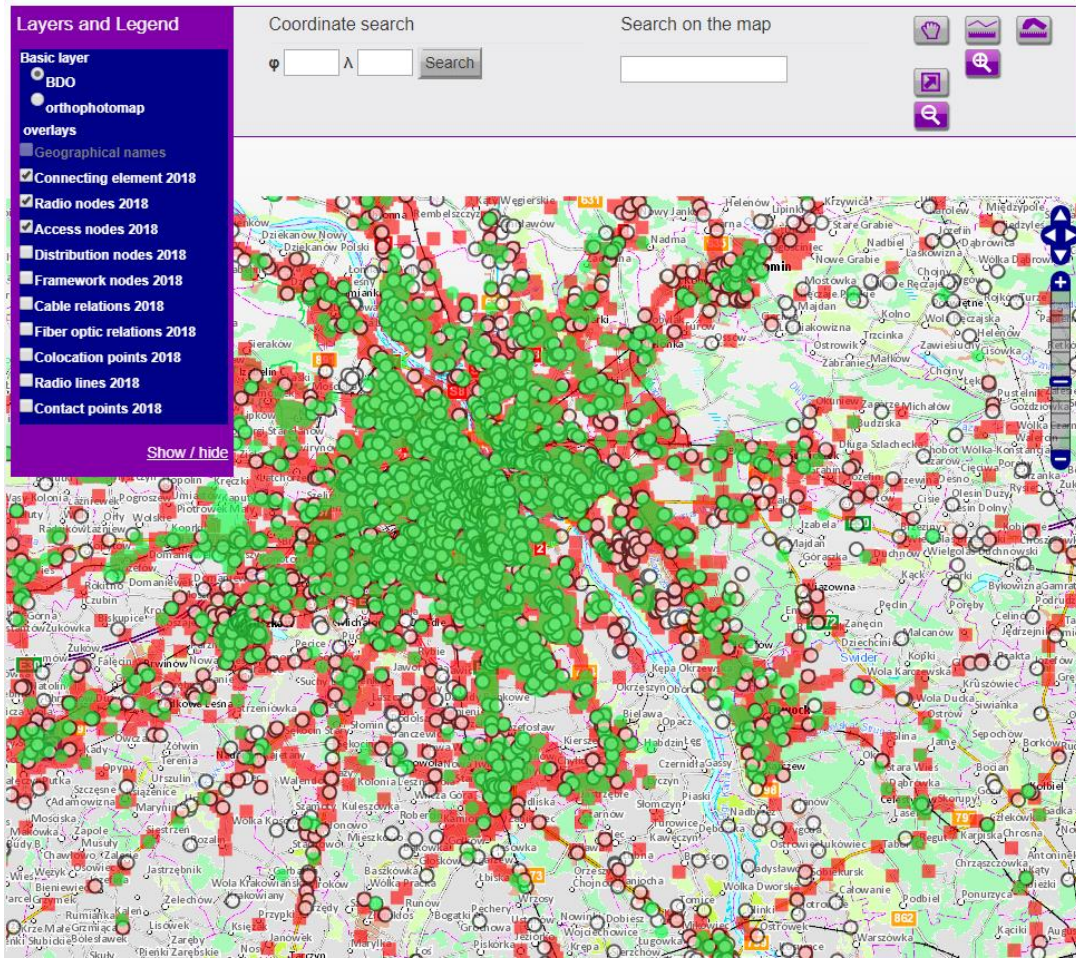


Broadband mapping initiative helps ensure efficient and effective broadband deployment in underserved areas

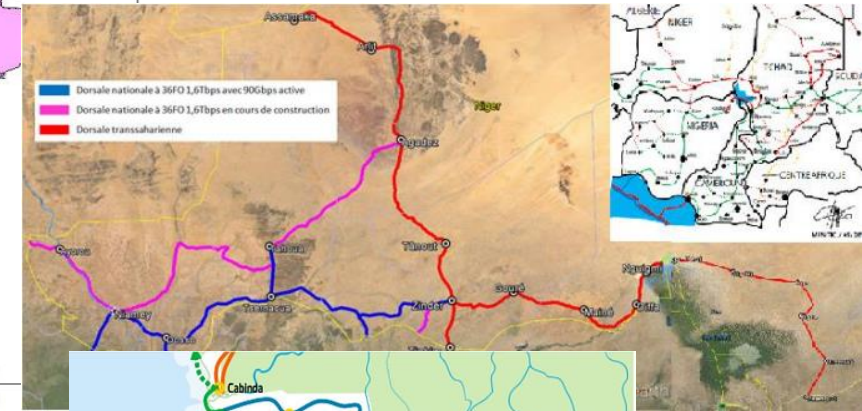
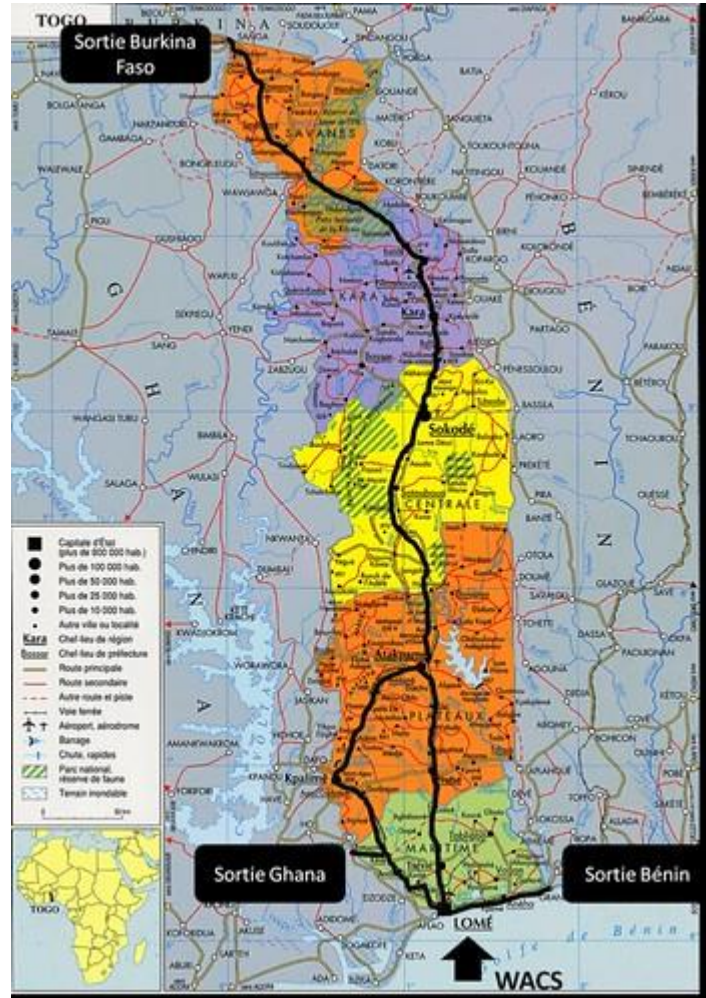


Some European countries have developed well-established mapping systems with a spatial planning tool in order to facilitate business decision regarding investment and to inform policy and regulations

Poland UKE <http://www.polskaszerokopasmowa.pl/mapy/>



However, telecom sector overall lacks publicly available terrestrial fiber infrastructure data with varied data formats, scale, and types



Source:

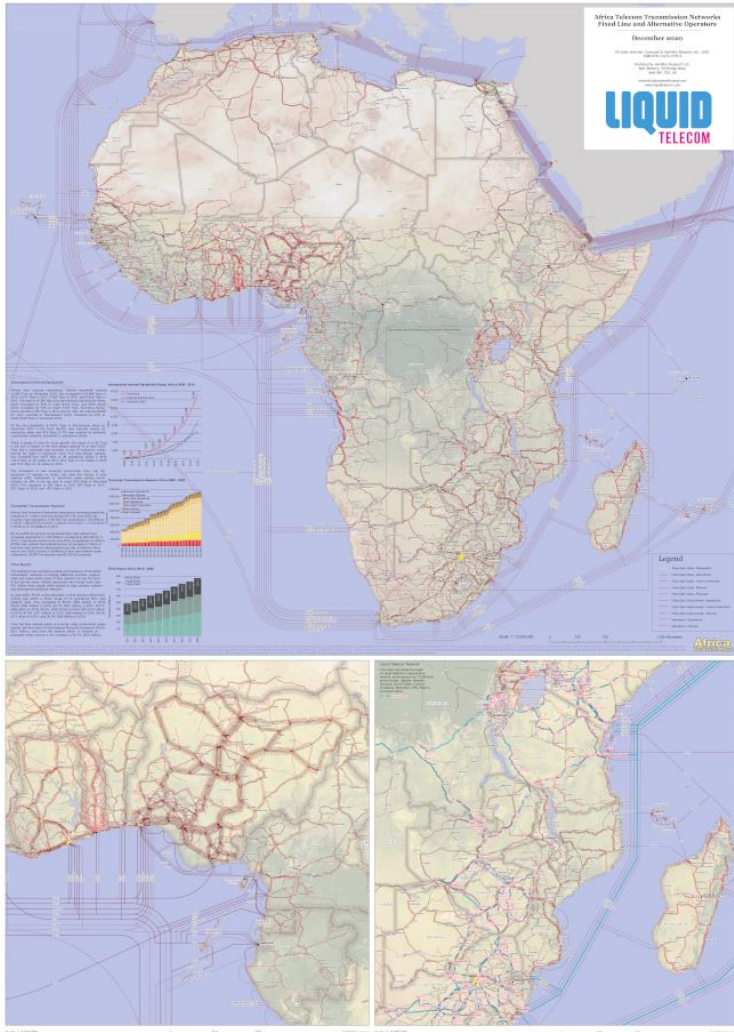
Oafrica <https://www.oafrica.com/broadband/african-terrestrial-fibre-optic-infrastructure-afterfibre-gallery/>

MTN Nigeria Analysts' Presentation (May 2013) https://www.mtn-investor.com/html/pdf/presentations/2013/investor_day_nigeria.pdf

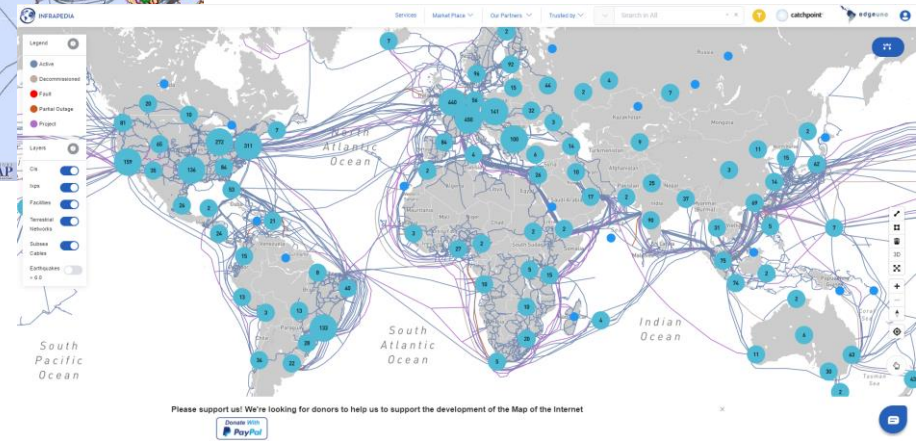
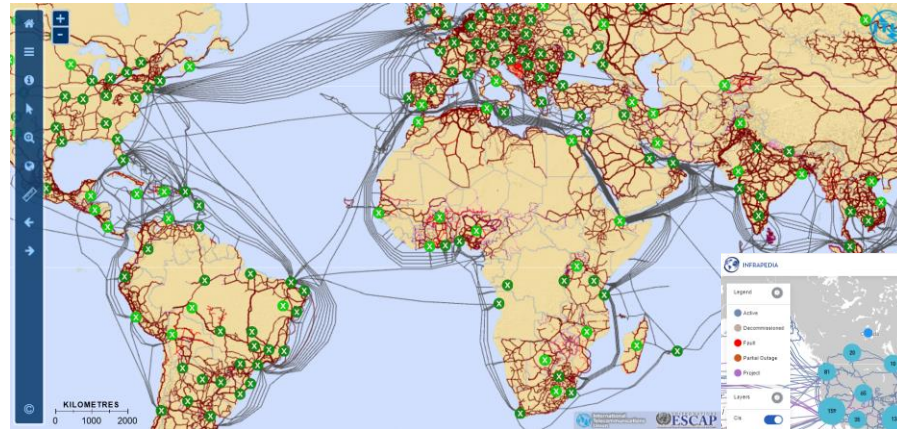
AfDB. [https://www.afdb.org/fileadmin/uploads/afdb/Documents/Environmental-and-Social-Assessments/Multinational Niger Tchad - Projet dorsale transsaharienne %C3%A0 fibre optique.pdf](https://www.afdb.org/fileadmin/uploads/afdb/Documents/Environmental-and-Social-Assessments/Multinational_Niger_Tchad_-_Projet_dorsale_transsaharienne_%C3%A0_fibre_optique.pdf)



Existing initiatives to aggregate and visualize telecommunications infrastructure data has limitations in terms of interoperability and reusability



Source: © Hamilton Research, 2020 www.africabandwidthmaps.com



Limitations:

- ❖ Cannot be downloaded and repurposed for further analysis
- ❖ Non-Disclosure Agreement (NDA) with operators
- ❖ Proprietary product

Source:

Hamilton Research 2020, www.africabandwidthmaps.com ;

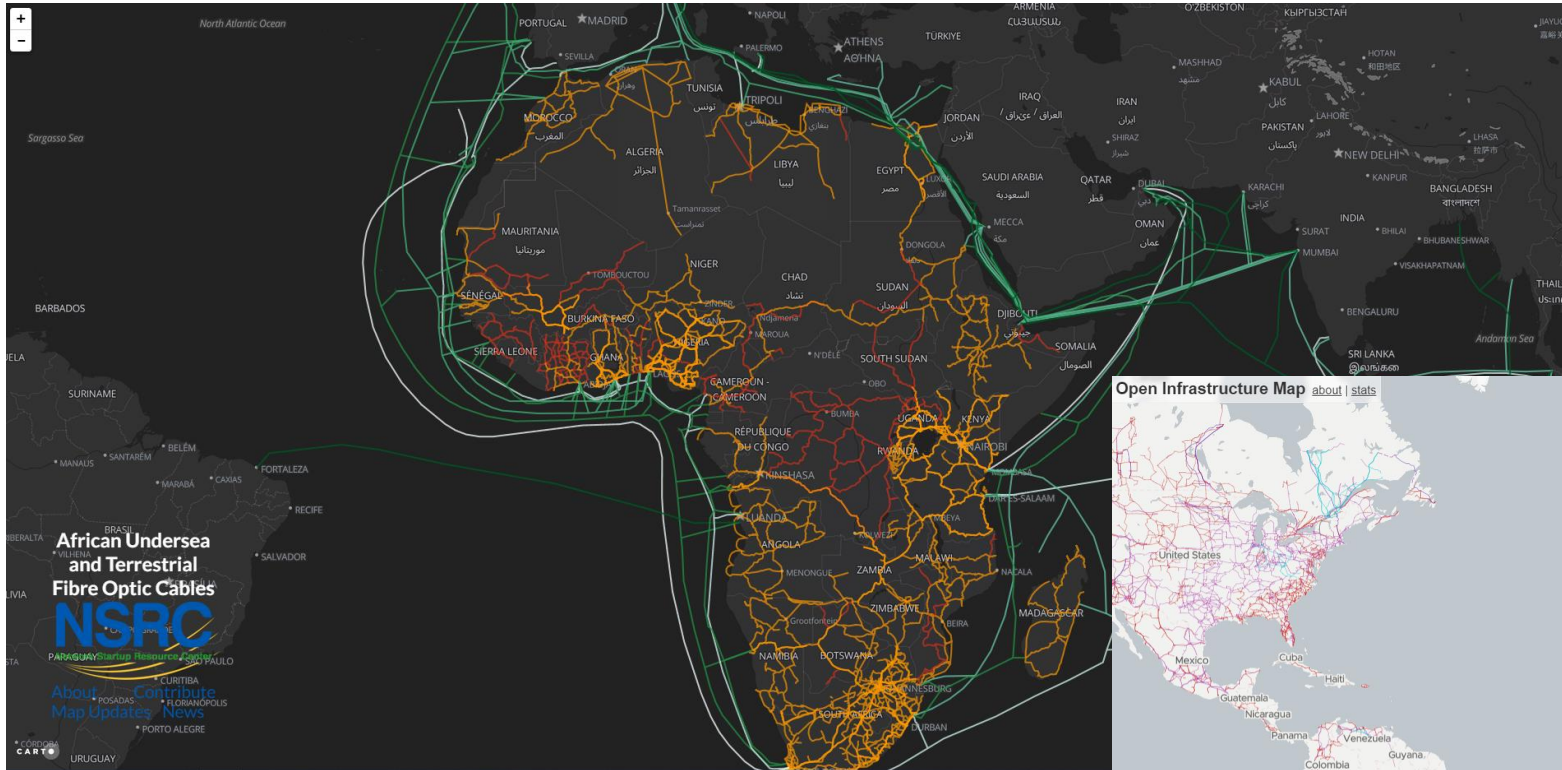
NSRC – African Undersea and Terrestrial Fibre Optic Cables <https://afrifibre.nsrc.org/>;

ITU Interactive Terrestrial Transmission Map https://www.itu.int/itu-d/tnd_map-publi/;

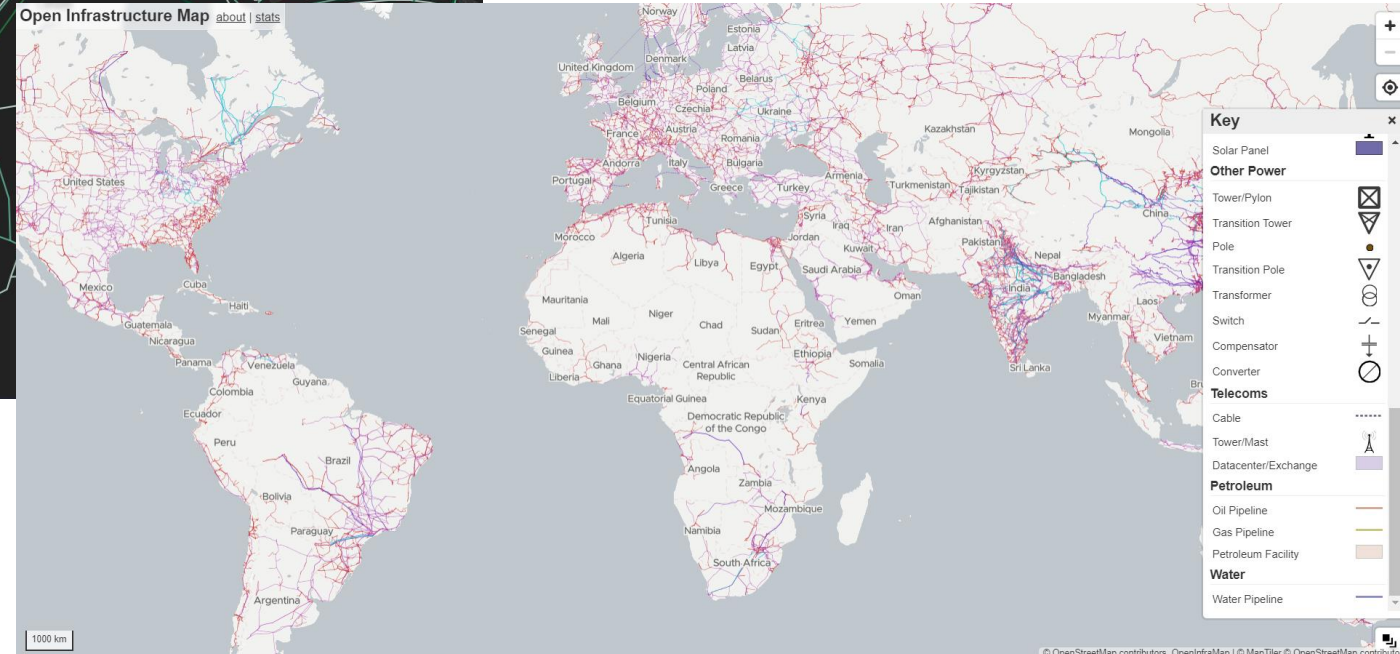
Infrapedia <https://www.infrapedia.com/app>



There are few initiatives taking open data approach for fiber optic infrastructure with limited interoperability due to lack of open data standards



NSRC – AfTerFibre Map



OpenStreetMap – Open Infrastructure Map

WB/ITU are launching a joint initiative to develop an Open Standard for terrestrial Optical Fiber Cable (OFC) infrastructure data and usable maps



Pillar 1: Definition of Open Fiber Data Standard

Alpha Standard Development	<ul style="list-style-type: none"> Prepare, consult, test, and finalize Alpha Open Fiber Data schema 	Oct 2021
Beta Standard Development	<ul style="list-style-type: none"> Prepare and launch Beta Open Fiber Data schema, toolkit, and validation mechanism 	Nov 2021

+ Capacity building and training for OFS and data publication

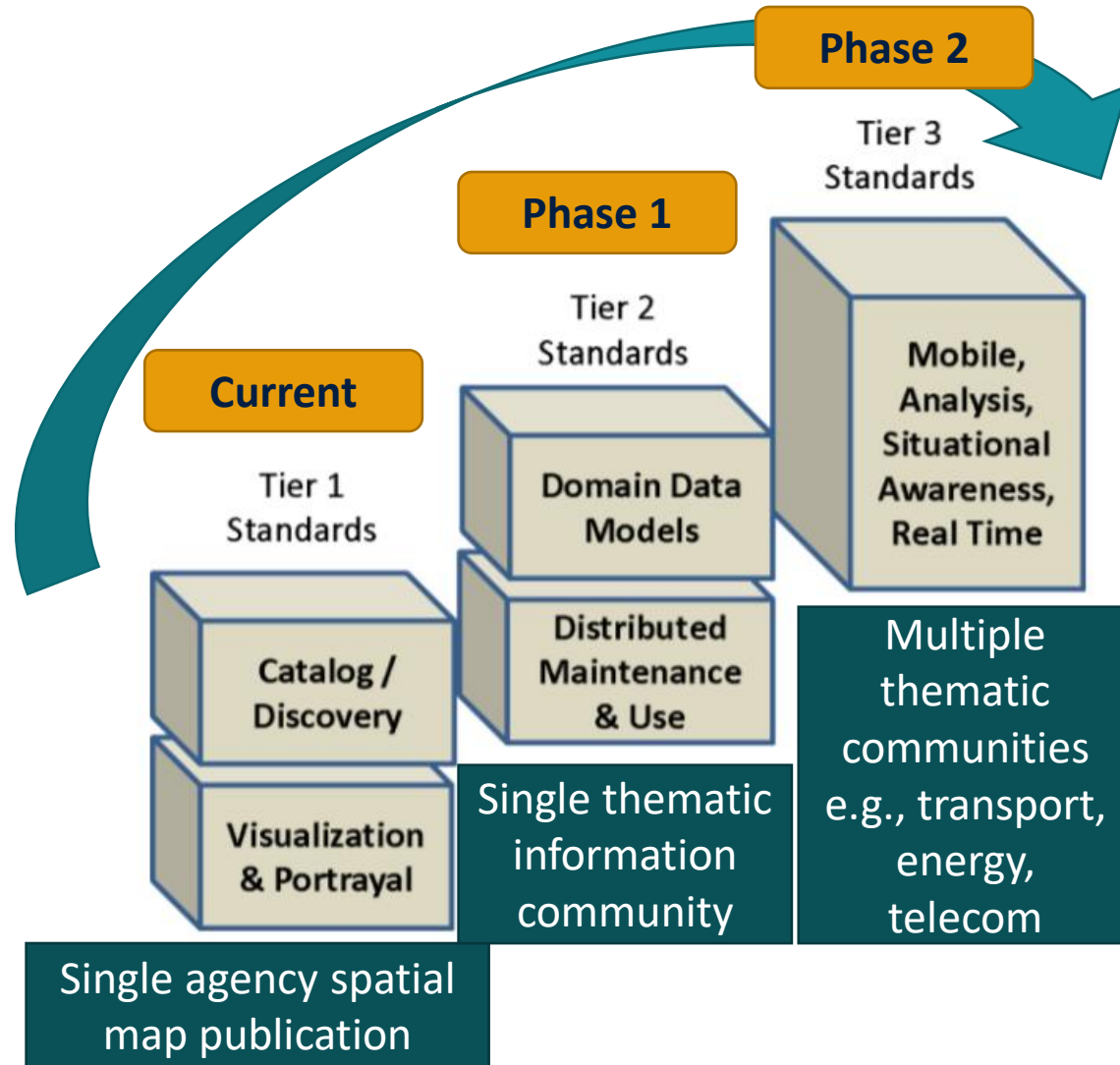
Pillar 2: Development of a Base Map of Terrestrial Fiber Infrastructure

Open-Source Terrestrial Fiber Map	<ul style="list-style-type: none"> Convert existing terrestrial fiber optic infrastructure maps 	Jan-Feb 2022
	<ul style="list-style-type: none"> Prepare a public online code repository for Open-Source tool 	Mar 2022
Global Infrastructure Map	<ul style="list-style-type: none"> Develop an open terrestrial fiber layer integrated into the Global Infrastructure Map 	Mar-Apr 2022

Pillar 3: Advanced Applications Prototypes

Modular framework for analyzing and visualizing telecommunications infrastructure	<ul style="list-style-type: none"> Develop a standardized suite of tools for analyzing telecom infrastructure data 	Apr-Aug 2022
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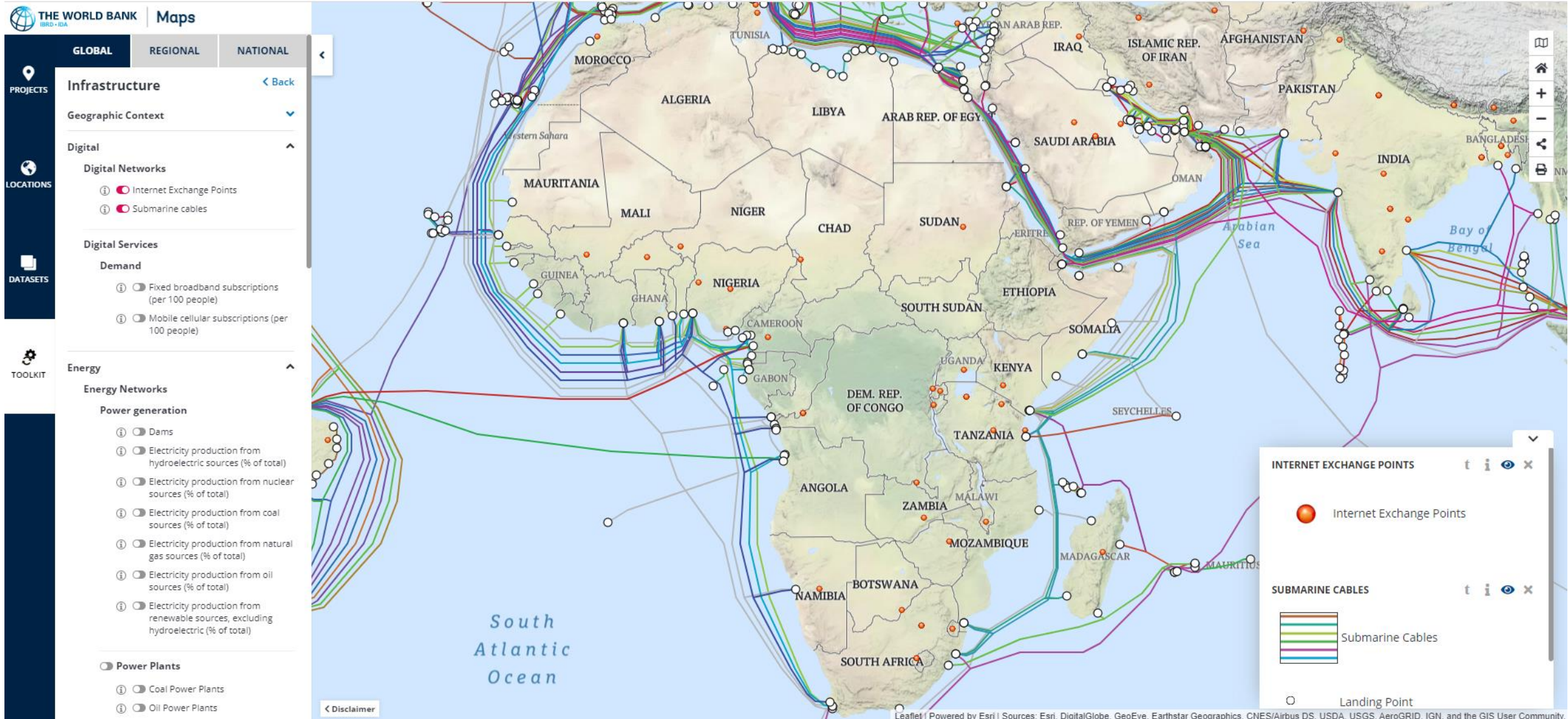
The activity aims to address global infrastructure data gaps to support evidence-based investment programs and policy making



Source:
UN. (2018) A Guide to the Role of Standards in Geospatial Information Management

<https://ggim.un.org/meetings/GGIM-committee/8th-Session/documents/Standards-by-Tier-2018.pdf>

The World Bank Global Infrastructure Map – Digital Development Layer



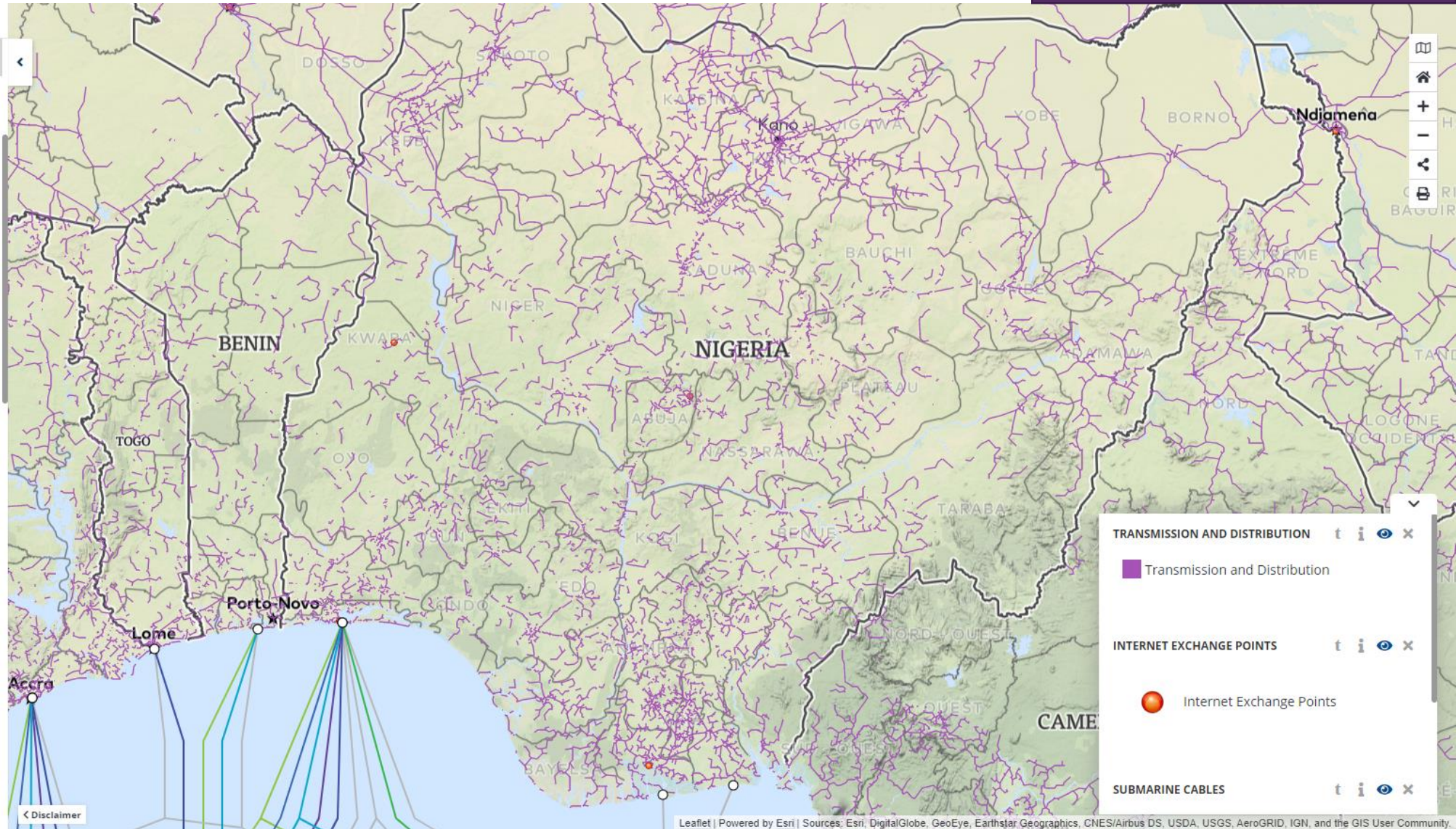
The World Bank Global Infrastructure Map – Energy Layer

Electricity transmission line

- Dams
- Electricity production from hydroelectric sources (% of total)
- Electricity production from nuclear sources (% of total)
- Electricity production from coal sources (% of total)
- Electricity production from natural gas sources (% of total)
- Electricity production from oil sources (% of total)
- Electricity production from renewable sources, excluding hydroelectric (% of total)

- Coal Power Plants
- Oil Power Plants
- Gas Power Plants
- Hydro Power Plants
- Nuclear Power Plants
- Solar Power Plants
- Waste Power Plants
- Wind Power Plants
- Geothermal Power Plants
- Power Plants Biomass

- Transmission and Distribution



The World Bank Global Infrastructure Map – Complementary Datasets for Analysis

Search Datasets

PROJECTS

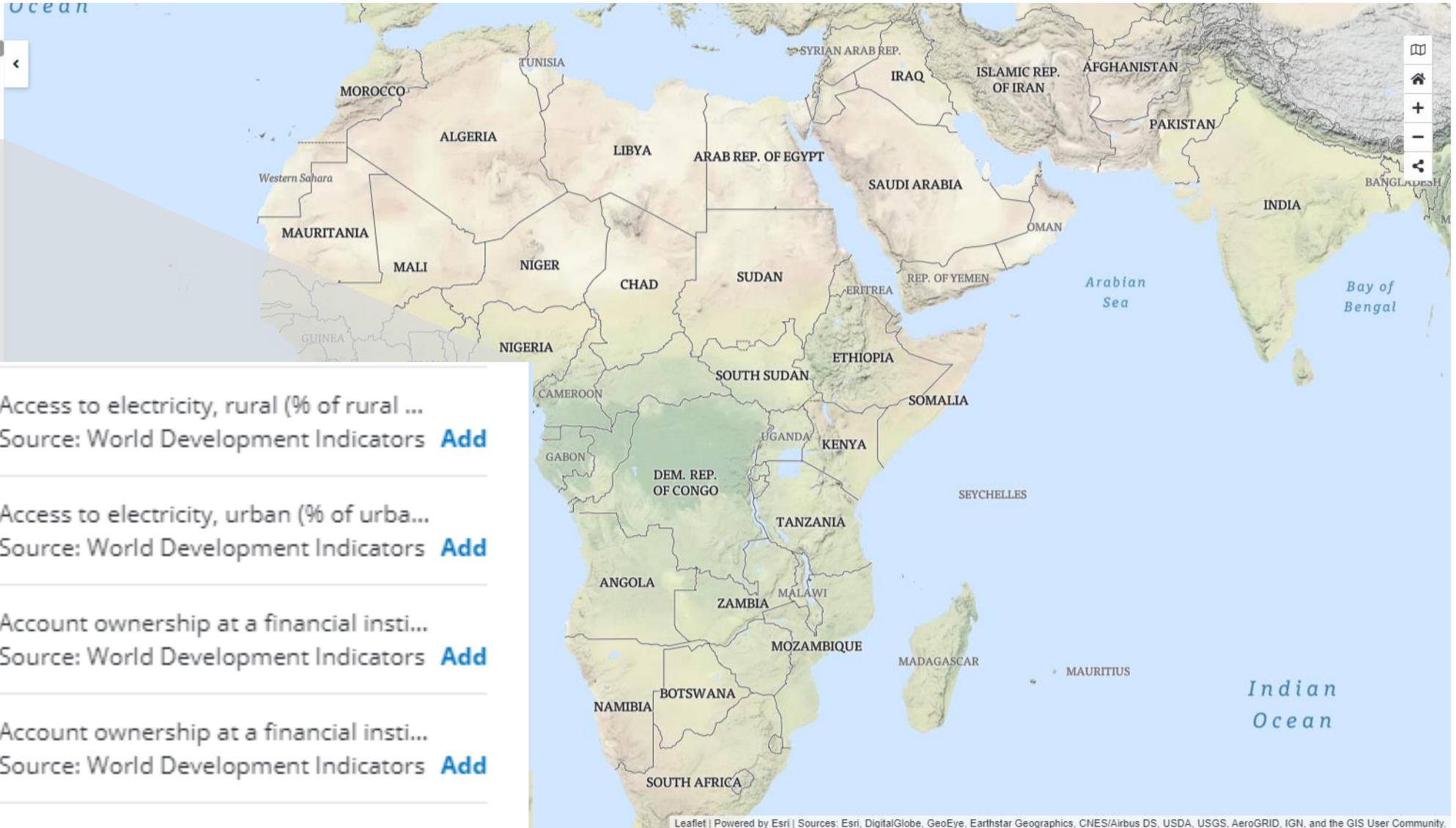
LOCATIONS

DATASETS

TOOLKIT

DATASETS (1442)

- ARI treatment (% of children under 5 ...
Source: World Development Indicators [Add](#)
- Access to clean fuels and technologie...
Source: World Development Indicators [Add](#)
- Access to electricity (% of population)
Source: World Development Indicators [Add](#)
- Access to electricity, rural (% of rural ...
Source: World Development Indicators [Add](#)
- Access to electricity, urban (% of urba...
Source: World Development Indicators [Add](#)
- Account ownership at a financ...
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Leaflet | Powered by Esri | Sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

Next Steps

- ❖ **Establish a Steering Committee with Interested Stakeholders**
- ❖ **Public Tender for Open Data Standard Expert**
- ❖ **Develop Alpha Open Fiber Data Schema**

Thank You

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