

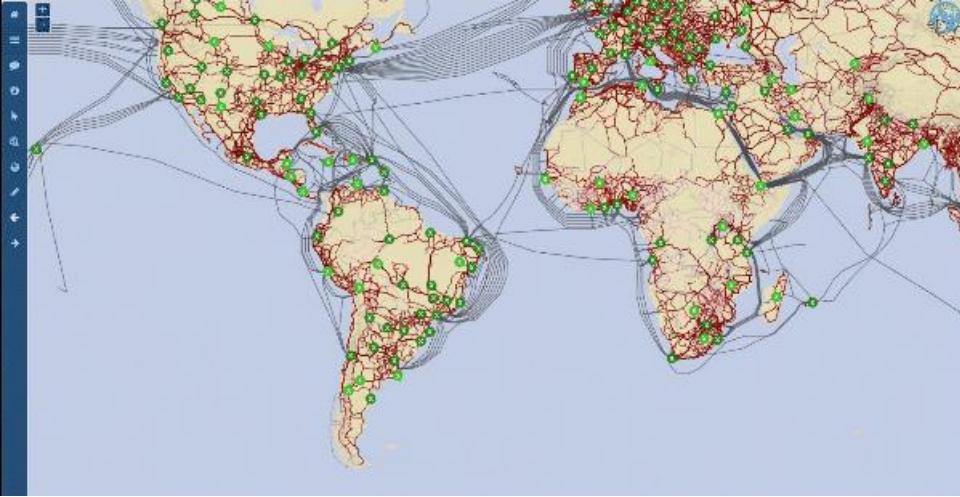
Mapping Infrastructure for investment opportunities

Network x Covid -> BBmaps -> Collaboration -> ITU next dev.

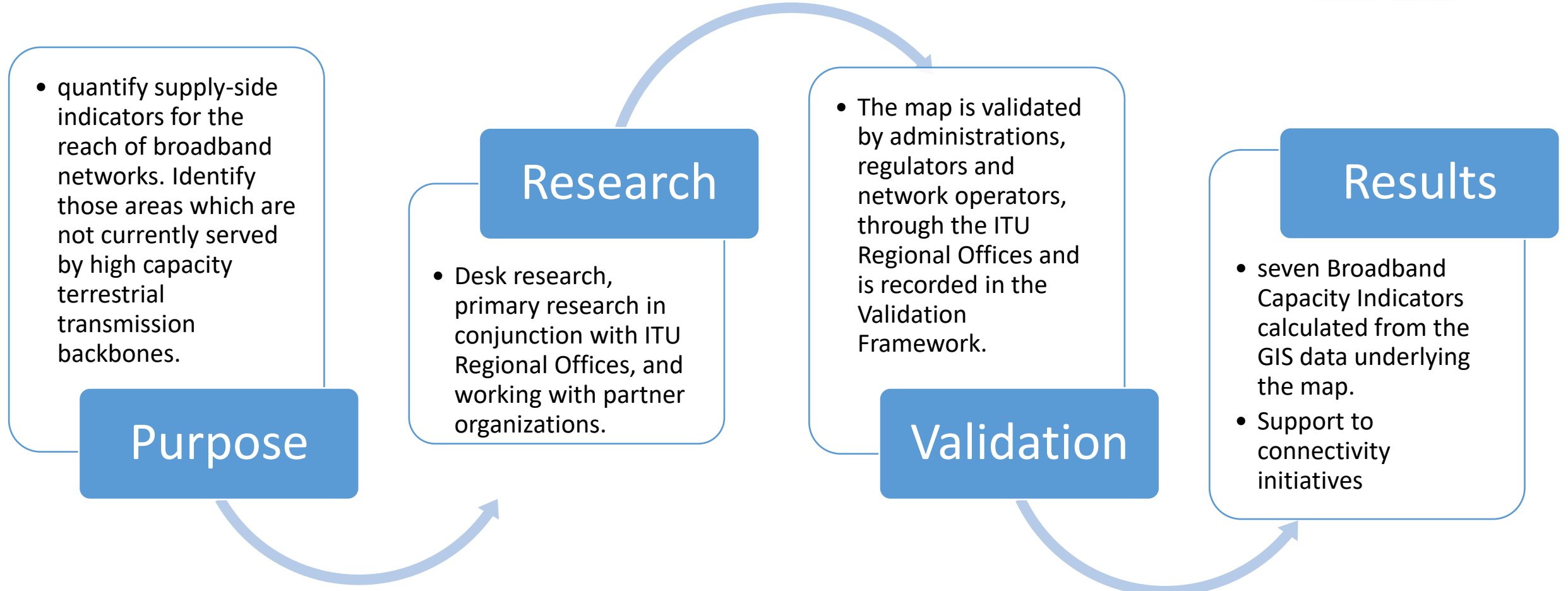
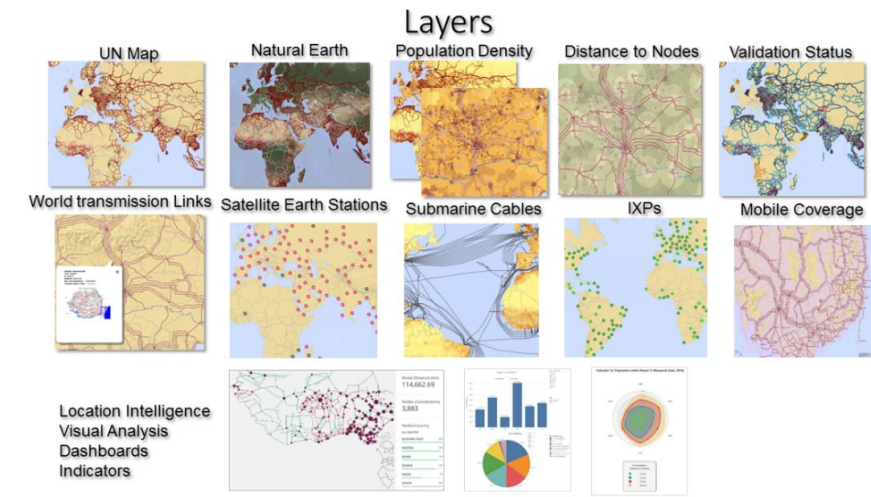
Covid → ICT presence → key for effective response



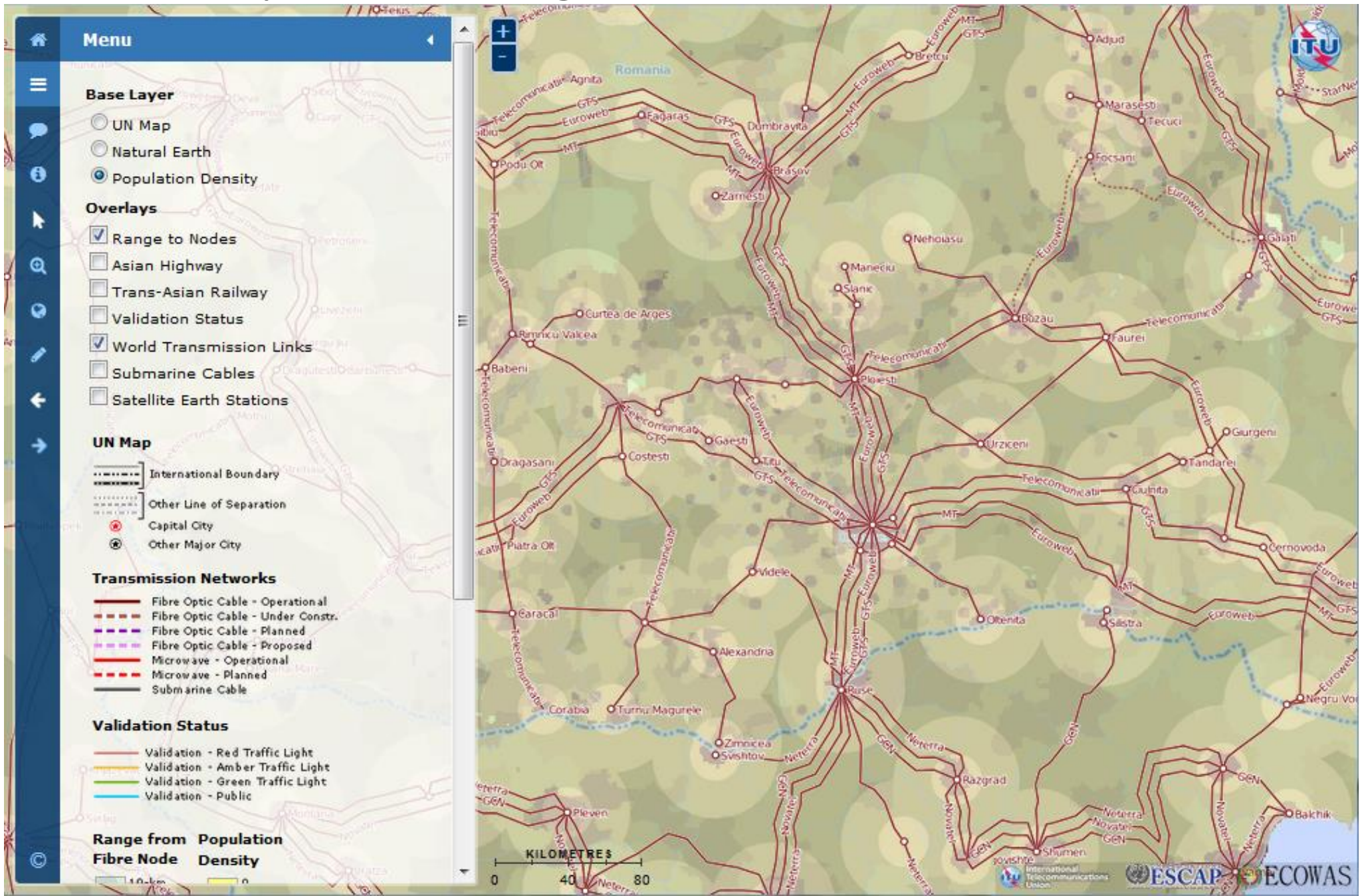
- Mapping of backbone and backhaul has been a big part of attention of regulators due to the COVID 19
- Issues:
 - Status of info-highways allow identification of connectivity gaps
 - Data → investment opportunities → ICT infrastructure
 - Quality/Accuracy
 - Open/Sharable/Accessible
 - Harmonized ICT infrastructure metrics/systems



BBmaps



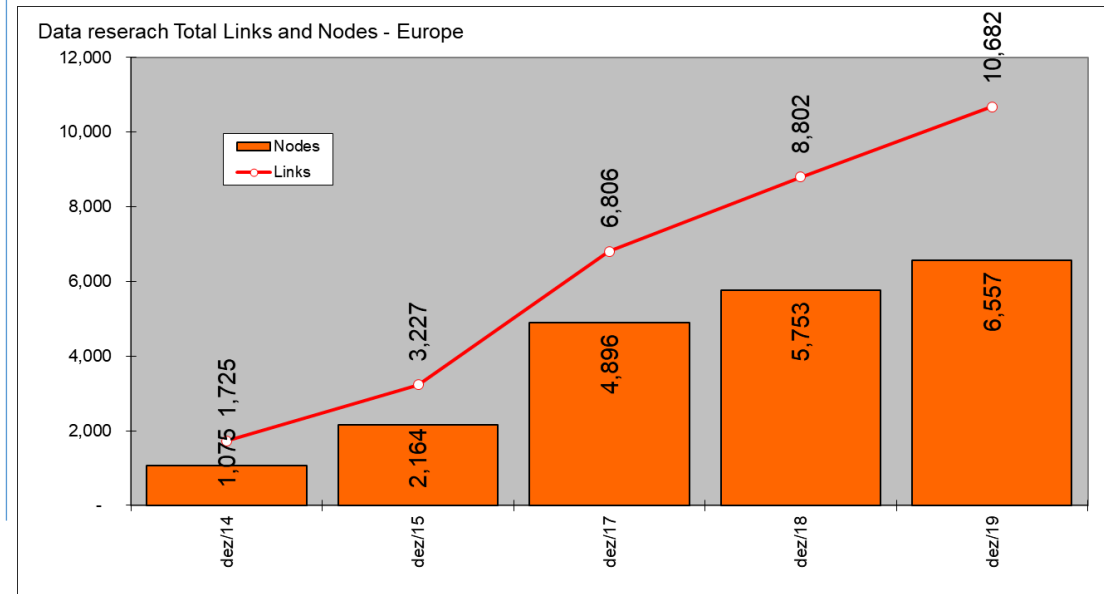
Population – Range to Terrestrial Backbone Nodes



BB mapping in Europe

- Assistance on mapping the capacity of networks to ensure the market provides enough capacity and ensure the resiliency of the networks
- unlock investments in broadband networks in Europe. The focus is on data-driven approaches
- ITU finalized agreements with Poland, Bosnia and Herzegovina, Serbia, Andorra and Montenegro (signature for Montenegro should happen at the Forum) and advanced negotiation with Moldova, Ukraine and negotiation with other countries.

Region	EUR	Global
Route Kilometres drawn	666,324	3,885,787
Route Kilometres total	3,707,971	15,307,365
Transmission links	10,682	40,524
Nodes	6,557	25,284
Network operators	141	539
Popn within 10km	404,440,838	2,141,321,277
Popn within 50km	666,244,504	5,831,466,179





Next...

- Fast - Network estimation – ITU Regional Initiative model
- Connectivity estimation – Quality of Service
- New enhanced graphical interface
- Support to global, regional and national Infrastructure development initiatives: GIGA, Financial Inclusion, Emergency Comms.
- Data collection
 - Terrestrial Transmission -Collaboration with National GIS offices
 - New Layers – Satellite Coverage (BR-GIMS)
 - Improving data collection
 - Central America
 - Africa continent -> PRIDA
- ITU Assistances
 - Mapping systems
 - Data Structure harmonization

Thank you

Video:



<https://itu.int/go/Maps>





• Lack of reliable ICT infrastructure is one of the reasons $\frac{1}{2}$ of population is unconnected

- ✓ • HN_School Location_4G
- ✓ • HN_School Location_3G
- ✓ • HN_School Location_2G
- ✓ • HN_School Location
- ✓ — HN_DistanceNodes

Data Research

Terrestrial Backbones

- Countries covered: 88
- Total of Km drawn: 3,885,787
- Number of Nodes: 23,807
- Number of Transmission lines: 40,524

<https://itu.int/go/Maps>

Operators:

Region	Terrestrial
Africa	93
Arab States	40
Asia & Pacific	94
CIS	26
Europe	141
The Americas	108
Total	512

Layers

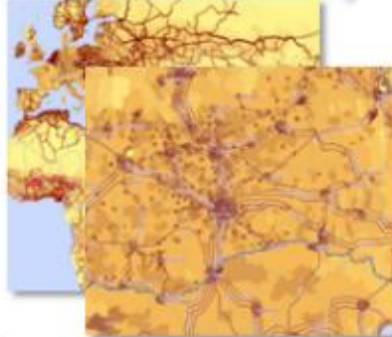
UN Map



Natural Earth



Population Density



Distance to Nodes



Validation Status



World transmission Links



Satellite Earth Stations



Submarine Cables



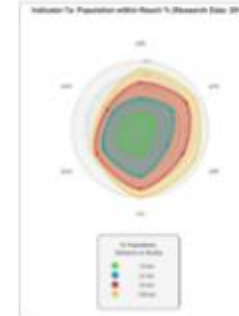
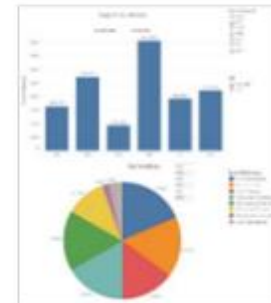
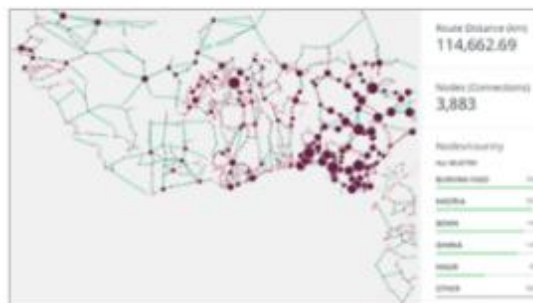
IXPs



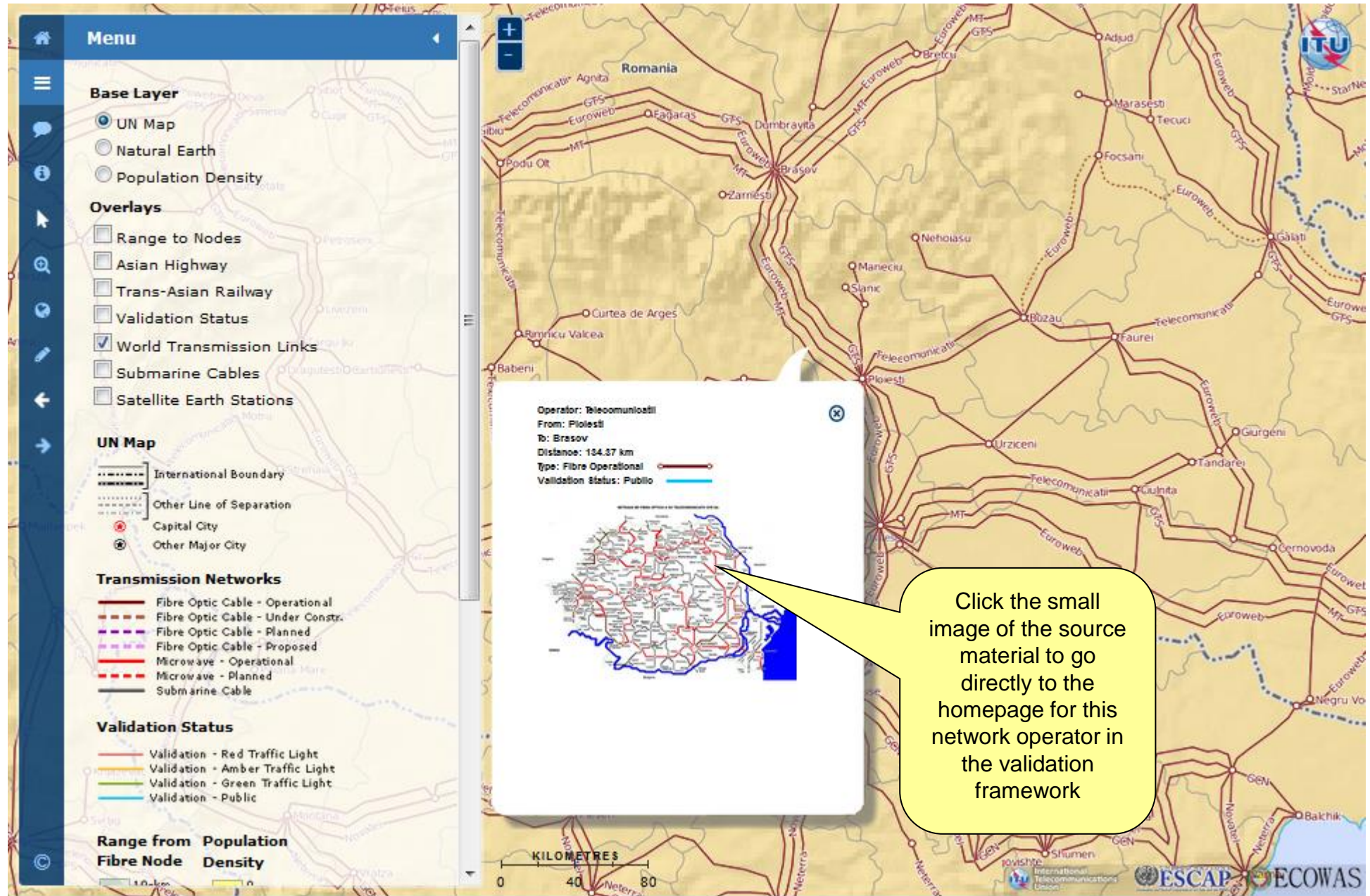
Mobile Coverage



Location Intelligence
Visual Analysis
Dashboards
Indicators



Data Validation Framework & Data source



Broadband Transmission Capacity Indicators



Indicator 1: **Transmission network length (Route kilometres)**

Indicator 2: **Node locations**

Indicator 3: **Equipment type of terrestrial transmission network**

Indicator 4: **Network capacity (bit rate)**

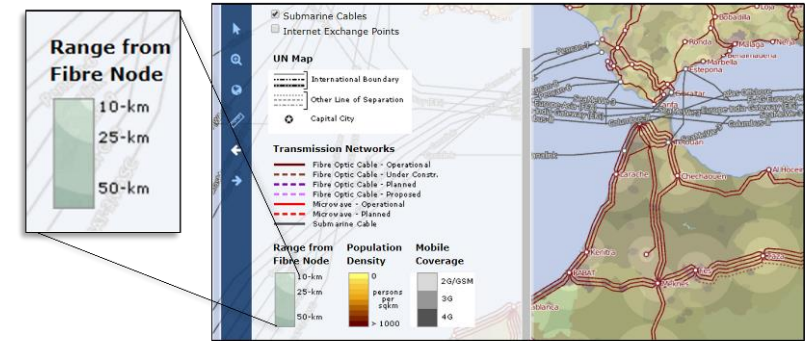
Indicator 5: **Number of optical fibres within the cable**

Indicator 6: **Operational status of the transmission network**

Indicator 7: **population within reach of transmission networks**

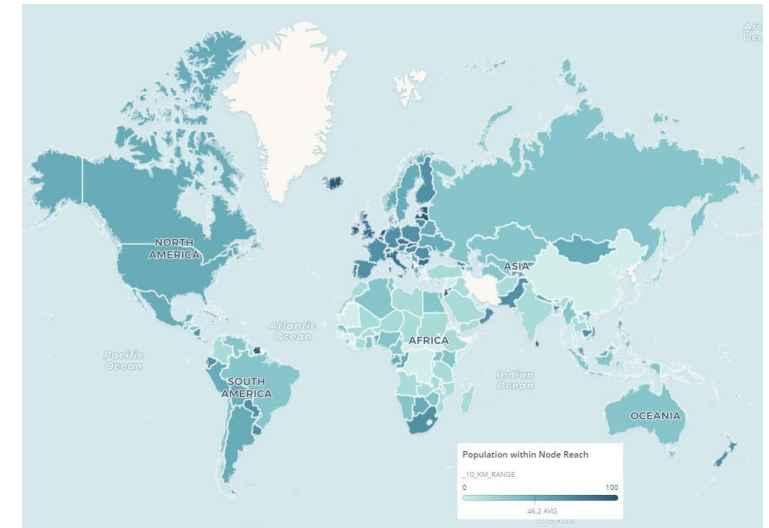
Data Analysis

Distance to Internet high-speed pathways (Access Points)



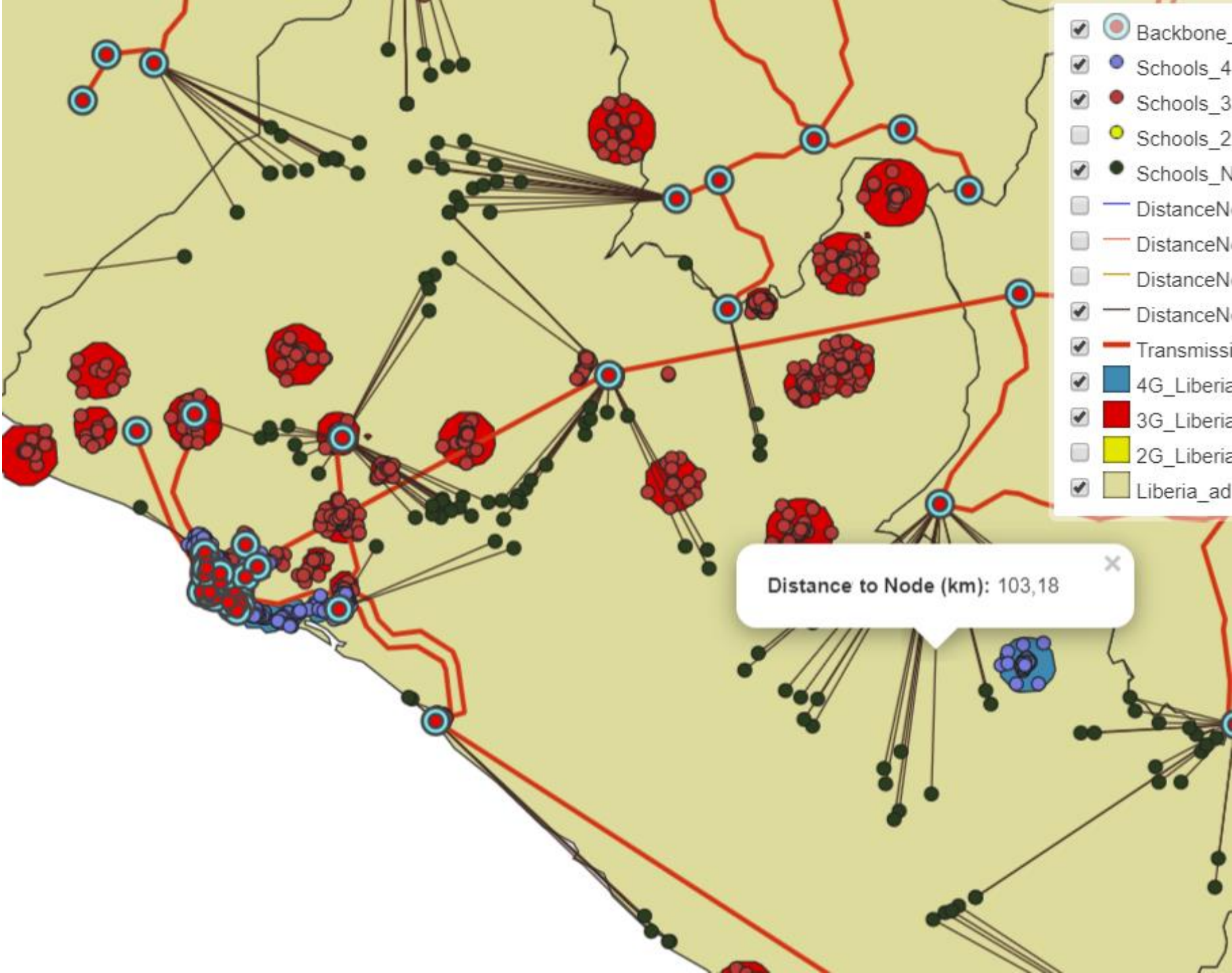
- **Distance to Internet high-speed pathways (Access Points)**

- Broadband indicators can help with the questions raised, for instance the “Broadband indicator population within 10 Km reach”. This indicator informs about the percentage of people that are within physical reach of an access point (nodes)
- The population living within reach of transmission networks is calculated from network nodes because nodes are access points to the network. This is a useful indicator of the catchment area of a core transmission network or networks, and how many people it potentially serves.



GIGA – Connect every school

- Map
- Connect
- Finance
- Empower





Connecting schools - Increased Data Value (Country case study)

- **Case: school connectivity bid (UNDP)**
 - GIS backbone data as a source of reference to check the level of connectivity of existing and potential candidate sites for free Public Wi-Fi.
 - Ensure that free Wi-Fi sites are in areas that are underserved by service providers.
 - The backbone fiber data was used to determine if there are other significant sources of connectivity options in the sites identified.
- **Lessons**
 - Making existing data available
 - Focused actions -> increased data quality / update
 - Supplement with additional sources to build a robust view of existing infrastructure
 - Consider local terrestrial middle mile providers

Financial Connectivity Index

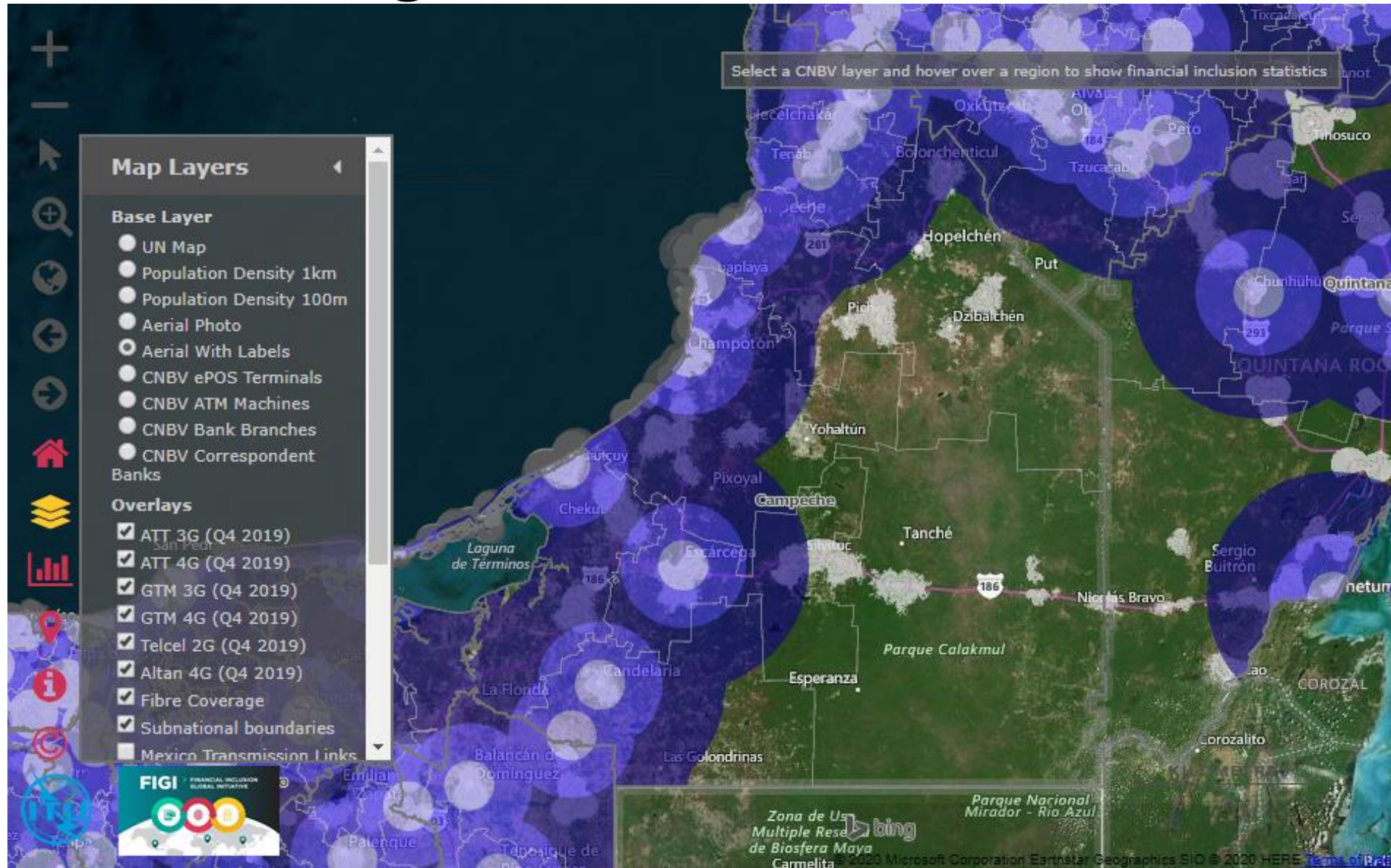
- A way to visualise further possible barriers to entry for uptake of FinServ
- Weighted Sum method combines multiple layers:
 - Crime rate per municipality
 - ePOS Terminals
 - ATM Machines
 - Bank Branches
 - Correspondent Banks
- Weighting (adjustable) set to 20%
- To be made available as Web Map Services (WMS) layer, for inclusion into Desktop GIS

-see the story:

<https://www.itu.int/en/myitu/News/2020/10/06/07/37/Mapping-financial-inclusion-Mexico-FIGI>



Financial inclusion Comparison of fibre and mobile coverage





+ Info

- Collaboration
 - [GIGA](#)
 - [ESCAP](#)
 - [FIGI](#) – Financial Inclusion - Mexico
 - [Investment Opportunities in Europe](#)
- Data Analysis
 - [Indicators](#)
 - [Hub Analysis](#)
- More Information
 - [Video](#)
 - [Prezi](#) presentation
 - <https://itu.int/go/Maps>