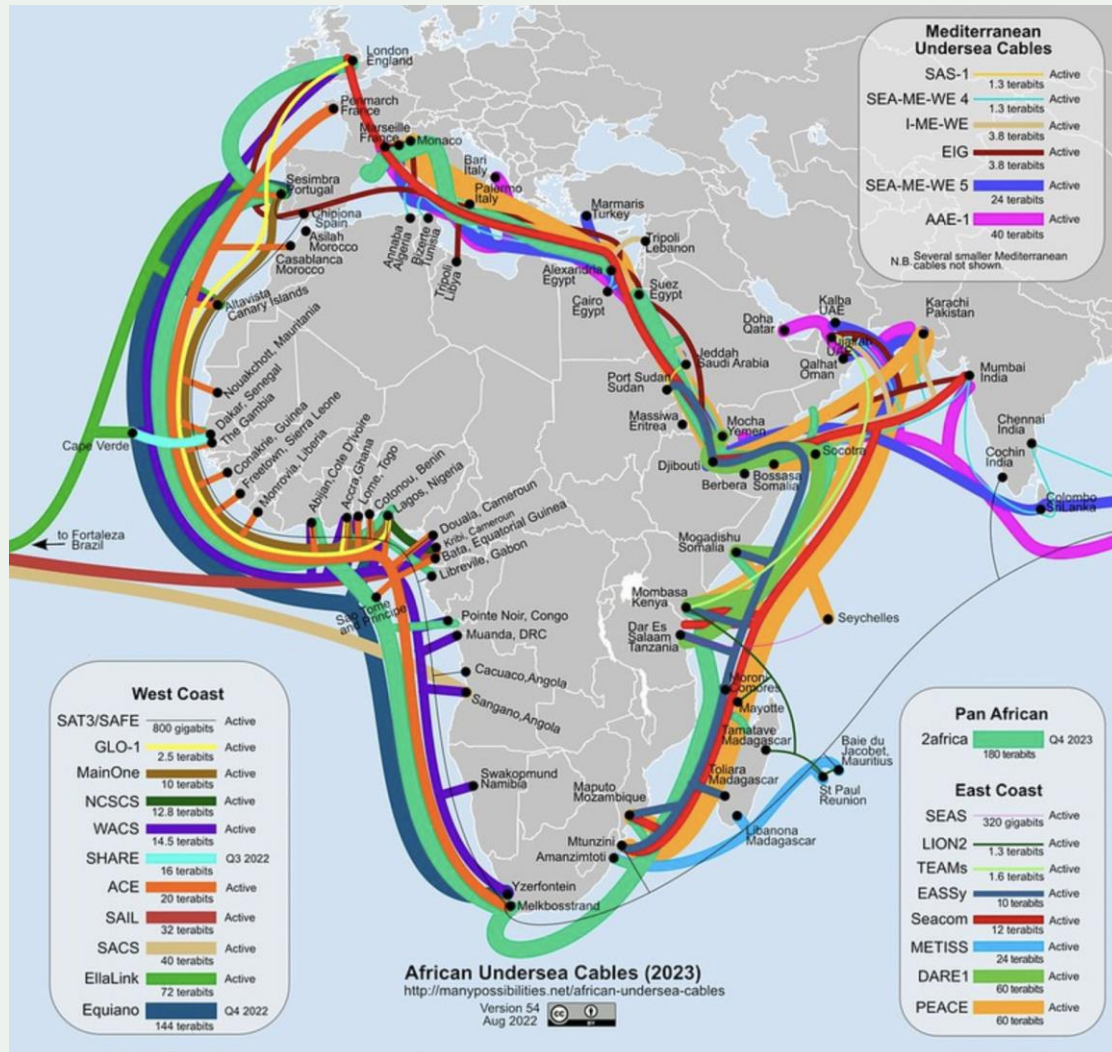


ICANN and ISOC Partnering to Enhance IXP Infrastructure in Africa

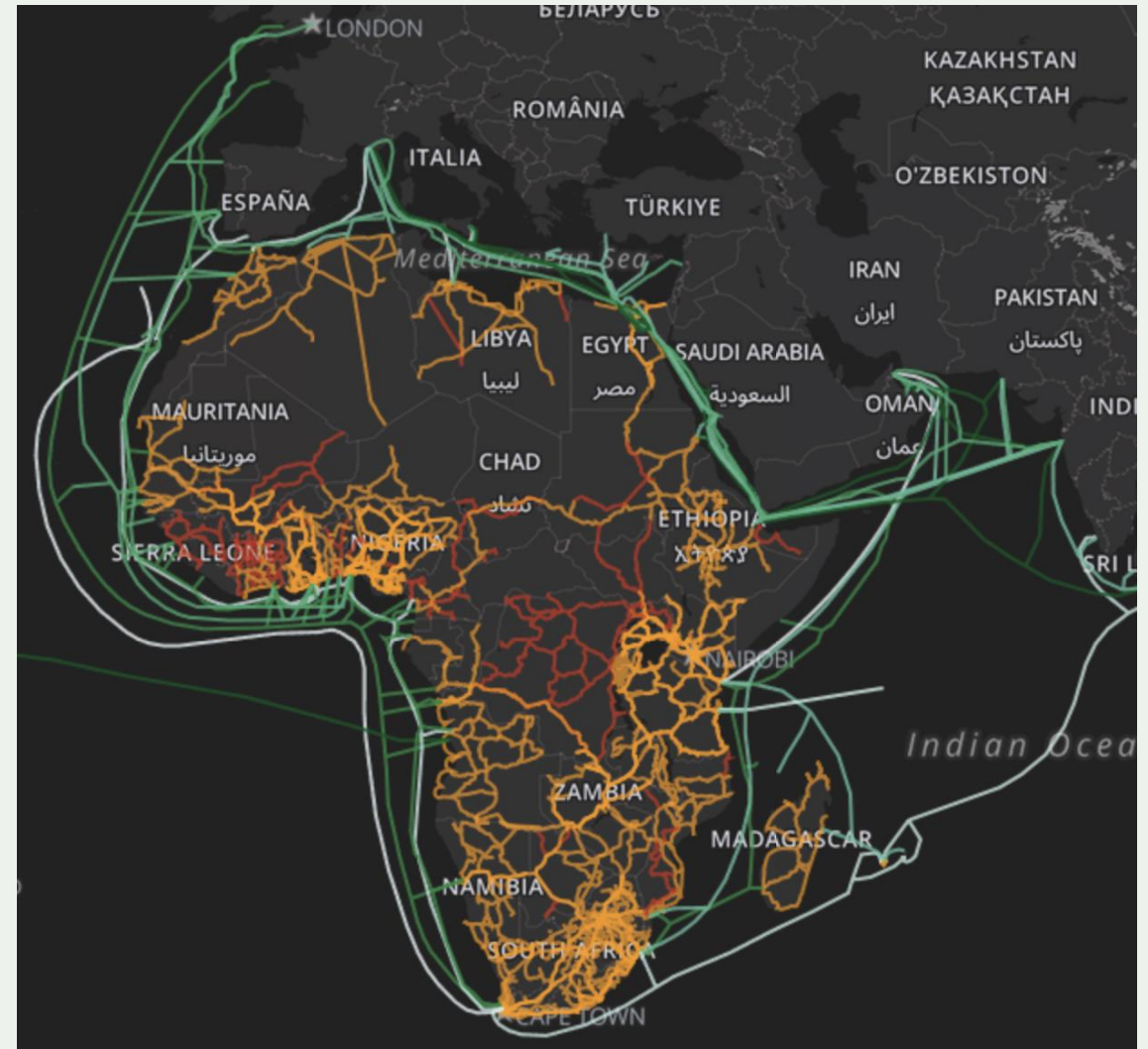


Michuki Mwangi
Distinguished Technologist
Internet Society

State of Internet Infrastructure



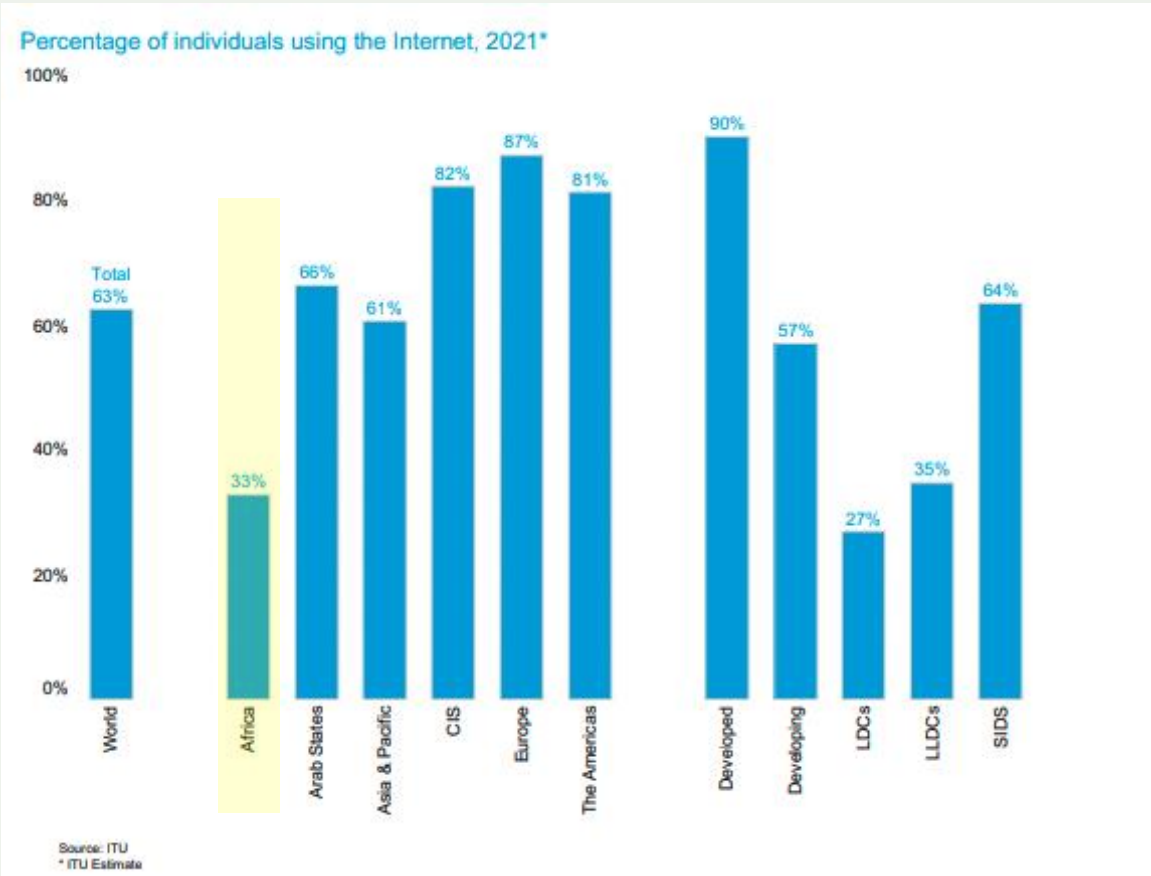
Source: <https://manypossibilities.net>



Source: <https://https://afterfibre.nsrc.org>



Internet Usage

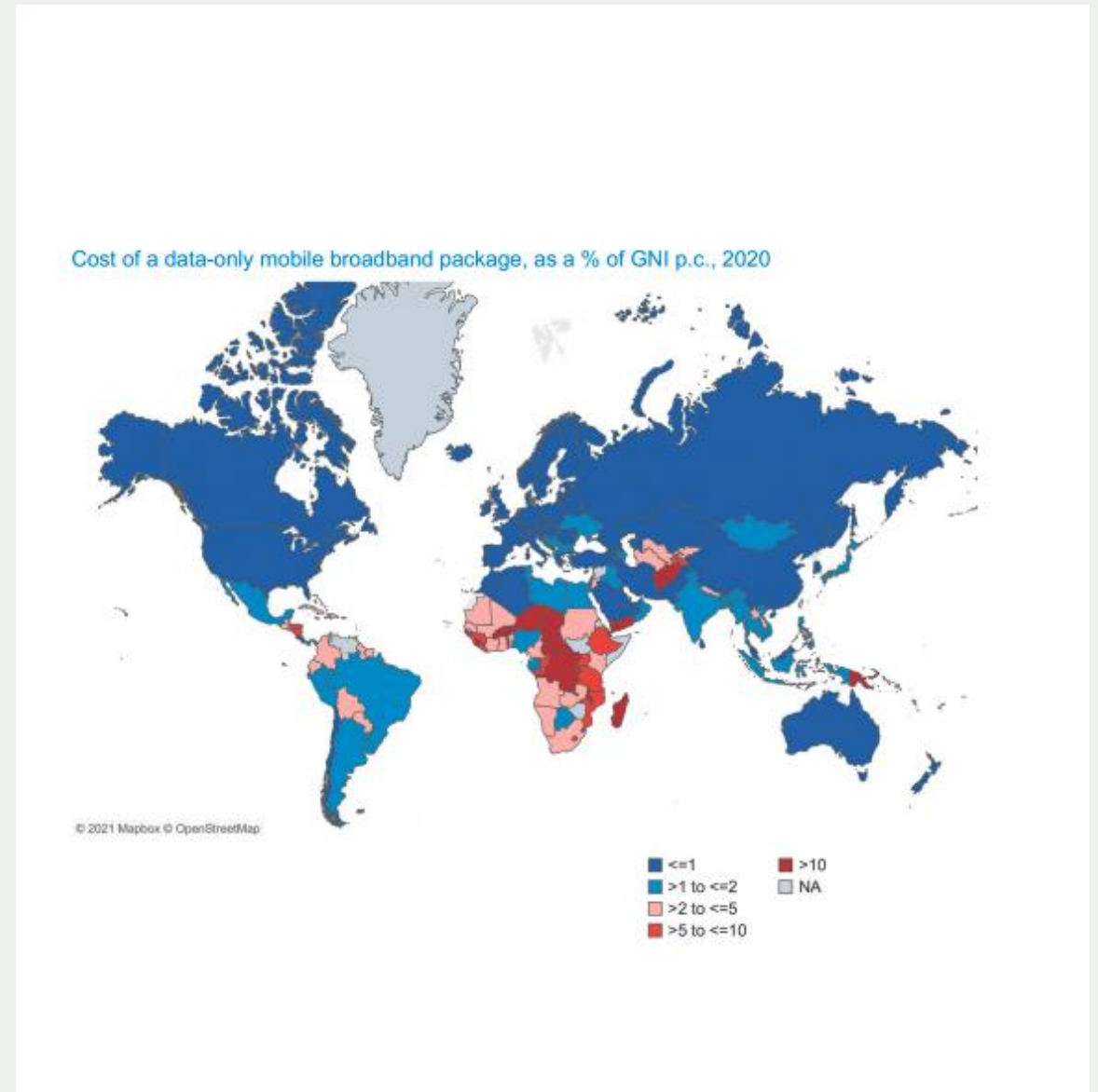


- Improved telecommunication infrastructure and rising mobile device adoption have boosted Internet access in Africa.
- Between 2019 and 2021, Internet use in Africa jumped by 23%.
- However, Internet usage is still significantly below the global average, at 33%.

<https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2021.pdf>

Internet Costs

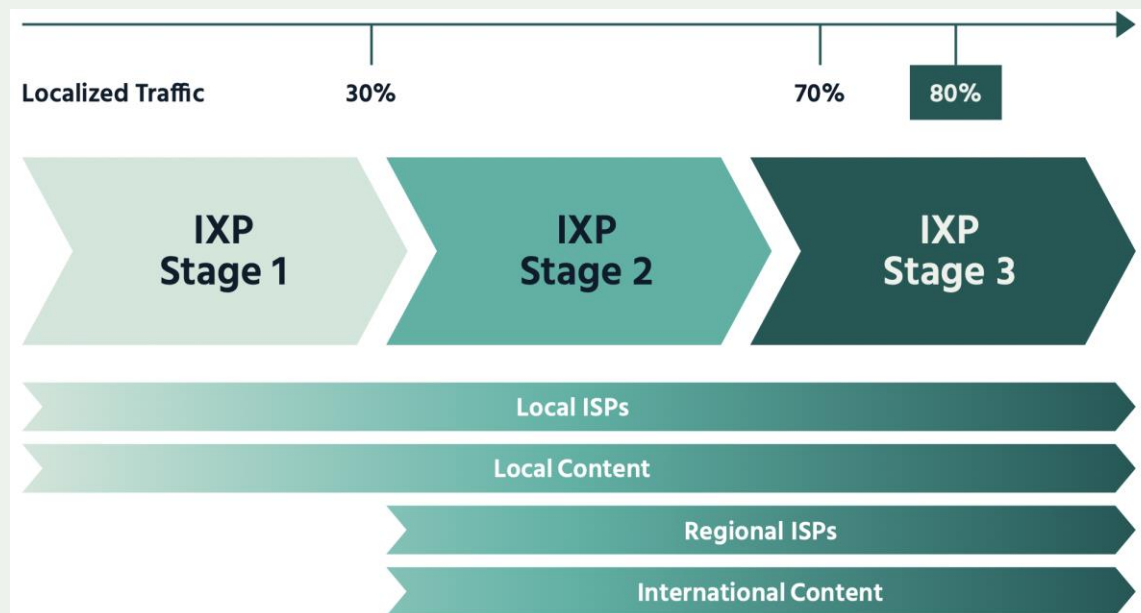
- Internet access is still prohibitively expensive in many parts of Africa.
- The share of income that entry-level fixed and mobile broadband represents for users in low- and middle-income economies is typically five to six times greater than in high-income economies, thus contributing to perpetuating the digital divide.
- Internet Exchange Points - or IXPs - prevent local traffic from traveling over expensive international links. Lowering costs and improving the quality of Internet access.



<https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2021.pdf>

State of Peering in Africa

- According to Af-IX, there are currently **51 active IXPs** located in **47 cities** in **36 countries** in Africa
- Total Domestic Bandwidth Production across IXPs in Africa is 3.21T (Source: PCH – Jan 2023)
- IXPs are at different stages of development.



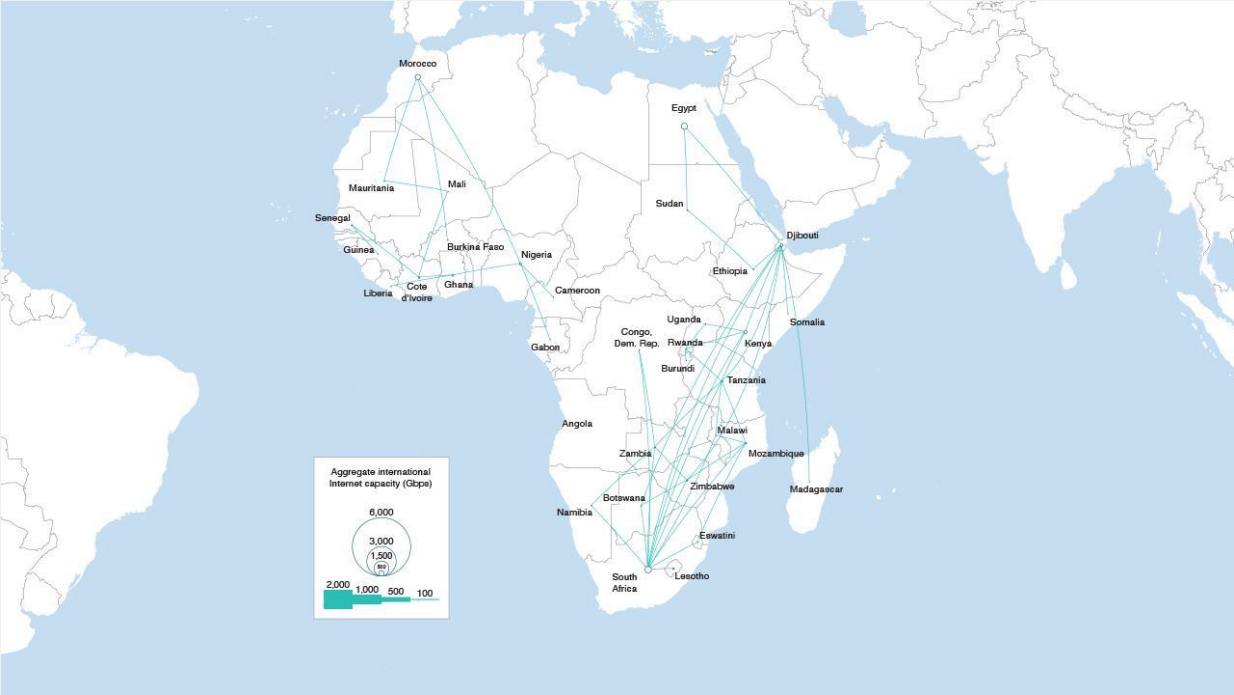
Source: Internet Society – 80/20- by 2020 Report



<https://www.af-ix.net/ixps-map>

Intra-African Routes

Intra-African Routes 2016

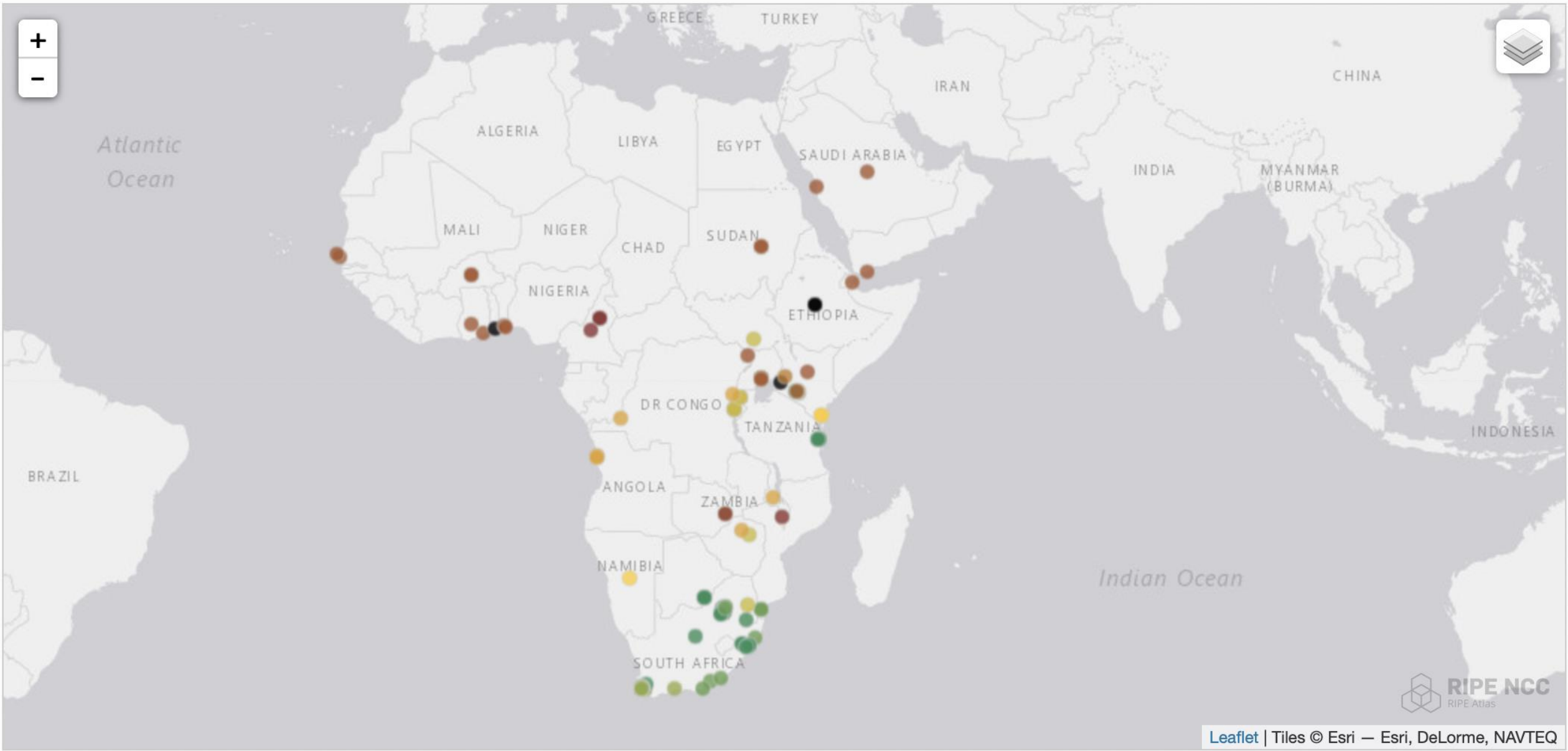


Intra-African Routes 2022



Source: Telegeography.com @ AfPIF-2022

Intra-Africa Routing - AfriNIC Anycast Services



Leaflet | Tiles © Esri — Esri, DeLorme, NAVTEQ

< 10 ms: 48 < 20 ms: 27 < 30 ms: 8 < 40 ms: 11 < 50 ms: 4 < 100 ms: 16 < 200 ms: 5 < 300 ms: 18 > 300 ms: 6 No Data: 1 Unreachable: 6

Source: <https://atlas.ripe.net>

Internet Society's Work

The Internet Society has been developing IXP infrastructure for over a decade by:

- Working with our partners to develop new IXPs
- Helping existing IXPs mature and advance by providing technical, developmental, policy, and/or regulatory support
- Working with and supporting regional IXP associations

This year, we are introducing our new “**50/50 Vision**”—an ambitious plan to keep at least half of all Internet traffic in emerging economies local by 2025.

We will select key economies across the world where IXPs can play a fundamental role in ensuring that the under- and un-connected have faster, cheaper, and more resilient Internet access.



Our Partnership



IXPs enable and encourage local traffic and are essential to engage fully in the global Internet economy.

ISOC is proud to partner with ICANN to further develop the IXP infrastructure in Africa. Together, we will:

- Identify **5 IXPs** over the next three years with the potential to make a high impact on their respective local and sub-regional markets.
- Work with each to create a growth and development plan, tailored to the IXP's needs and the local community's interests
- Work within each IXP's local community to ensure long-term sustainability



Peering Events & Training

Peering Events

- Central Africa Peering Forum: April
- West Africa Peering Forum: TBD
- AfPIF: 22-24 August
- <https://www.internetsociety.org/events/upcoming/>

Online Training

- Fundamentals of Designing & Deploying Computer Networks
- Internet Exchange Points 2.0
- Introduction to Network Operations / Advanced Network Operations
- <https://www.internetsociety.org/learning/>



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