



MaliREN

MALI NATIONAL RESEARCH AND EDUCATION NETWORK

Journey to MaliREN Connectivity 2006 - 2026

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The background is a dark blue gradient with a subtle pattern of white dots. On the left side, there are several overlapping circular elements. A prominent one is a large circle with a scale around its perimeter, marked with numbers from 140 to 260 in increments of 10. Other circles are partially visible, some with dashed lines and arrows, suggesting a technical or scientific theme.

About Mali

The eighth largest country in Africa
with a long heritage of education investment

Mali's story of higher learning is a long one...



Sankoré Madrasah - One of three ancient centers of learning located in Timbuktu, Mali, West Africa. The three mosques of Sankoré, Djinguereber Mosque and Sidi Yahya compose the famous University of Timbuktu.

IMAGE: "Mali, West-Afrika, jan./febr. 2008" by Martha de Jong-Lantink, CC BY-NC-ND 2.0 <<https://flic.kr/p/4Ct2ap>>

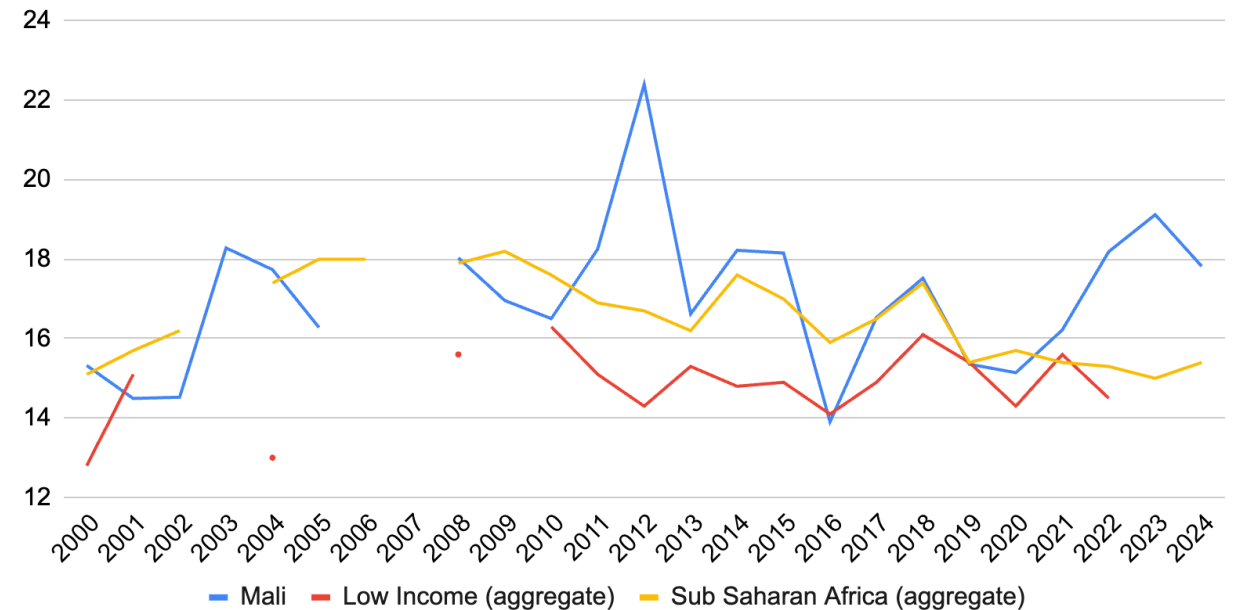
Modern Mali

- Landlocked. Borders 7 countries
- 8th largest in Africa (1,241k Sq Km)
- Population: 25.9M – growing quickly
- Median age: 16; 2/3 population under 24
- Invested in education



Government expenditure on education, total

(% of government expenditure)



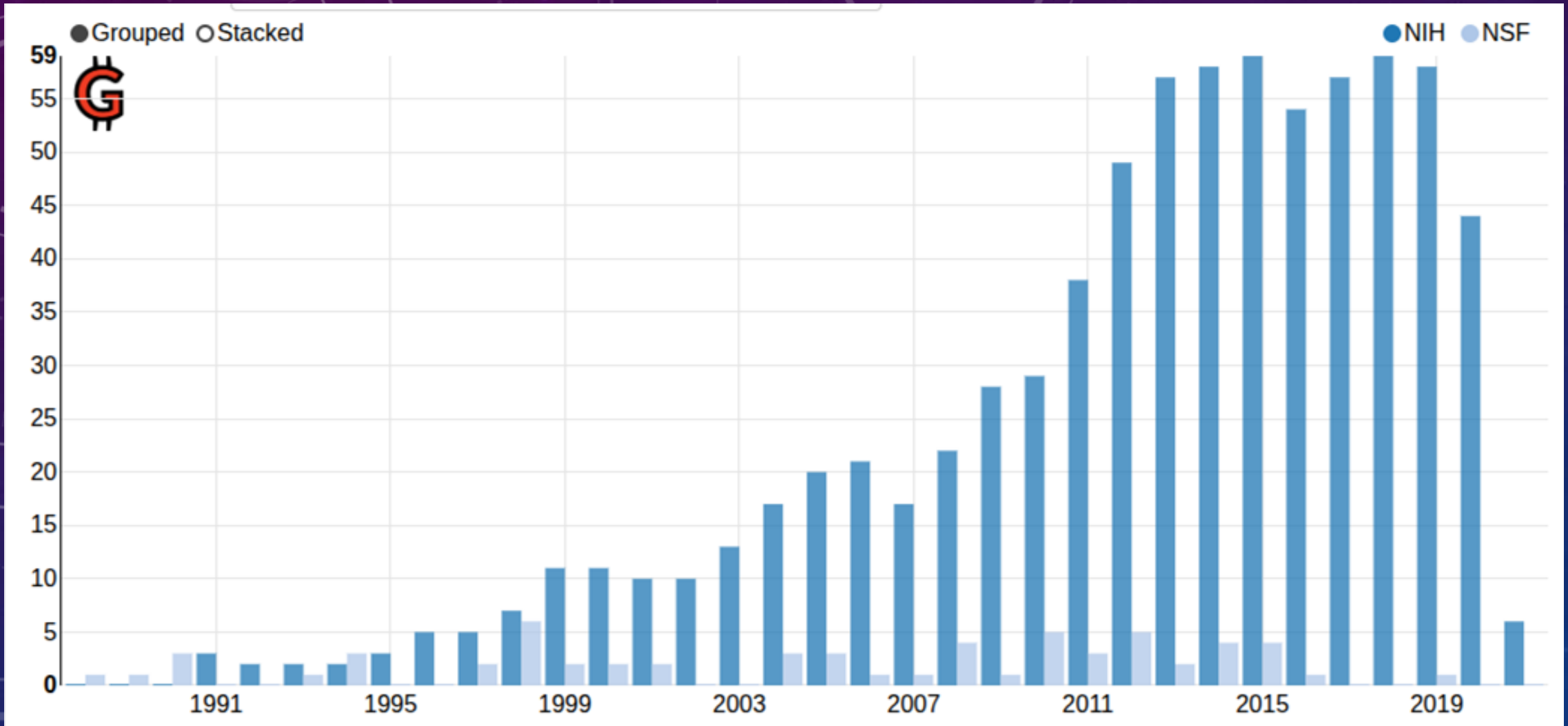
SOURCE: **Government expenditure on education, total (% of government expenditure) - Mali**
Data API, UN Educational, Scientific and Cultural Organization (UNESCO),
uri: databrowser.uis.unesco.org/resources;; at: api.uis.unesco.org/api/public/documentation,
publisher: UNESCO Institute; for Statistics (UIS), date accessed: 2026-03-19, date published:
2026-02; License : CC BY-4.0

The background features a dark blue gradient with several white circular gauges and arrows. One large gauge on the left has numerical markings from 140 to 260. Other gauges are smaller and scattered across the frame, some with arrows indicating clockwise or counter-clockwise rotation. The overall aesthetic is technical and scientific.

The Growing Research Environment

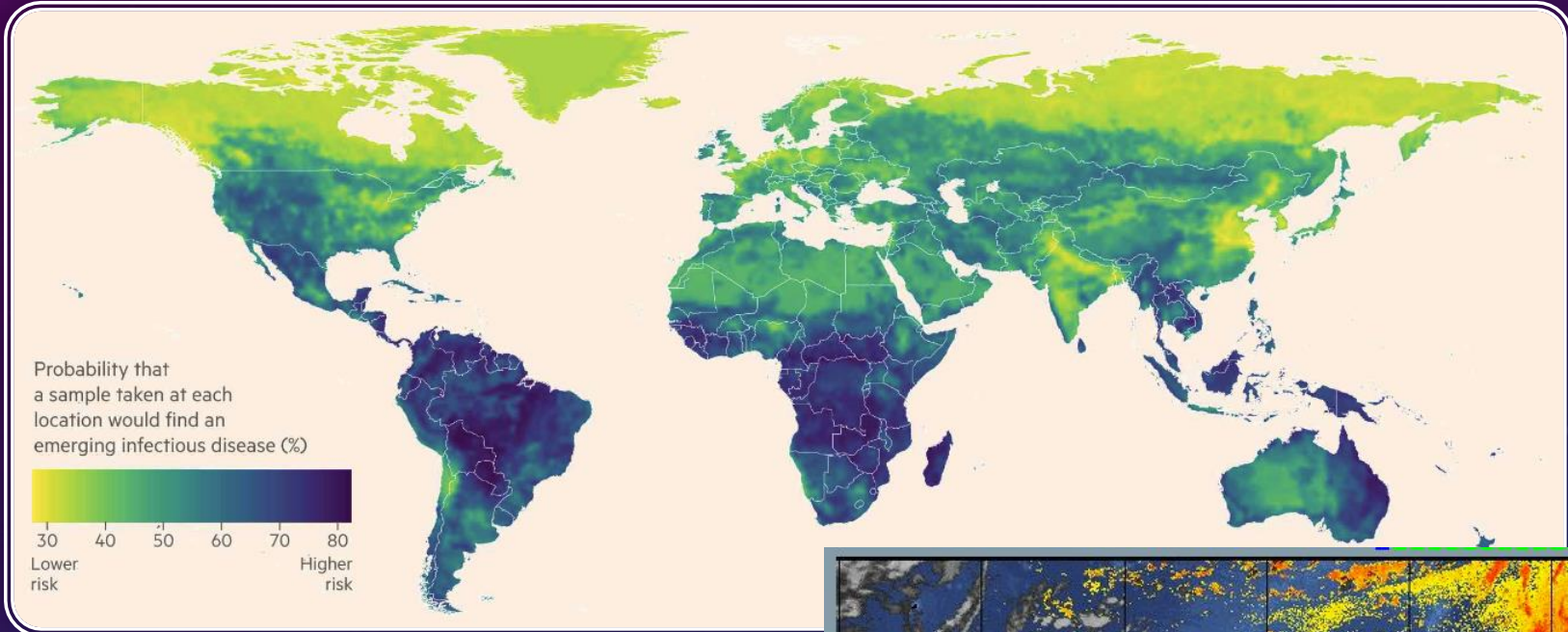
Dramatic research funding over the last 30 years

Count of Grants to Mali Projects by Year and Funder



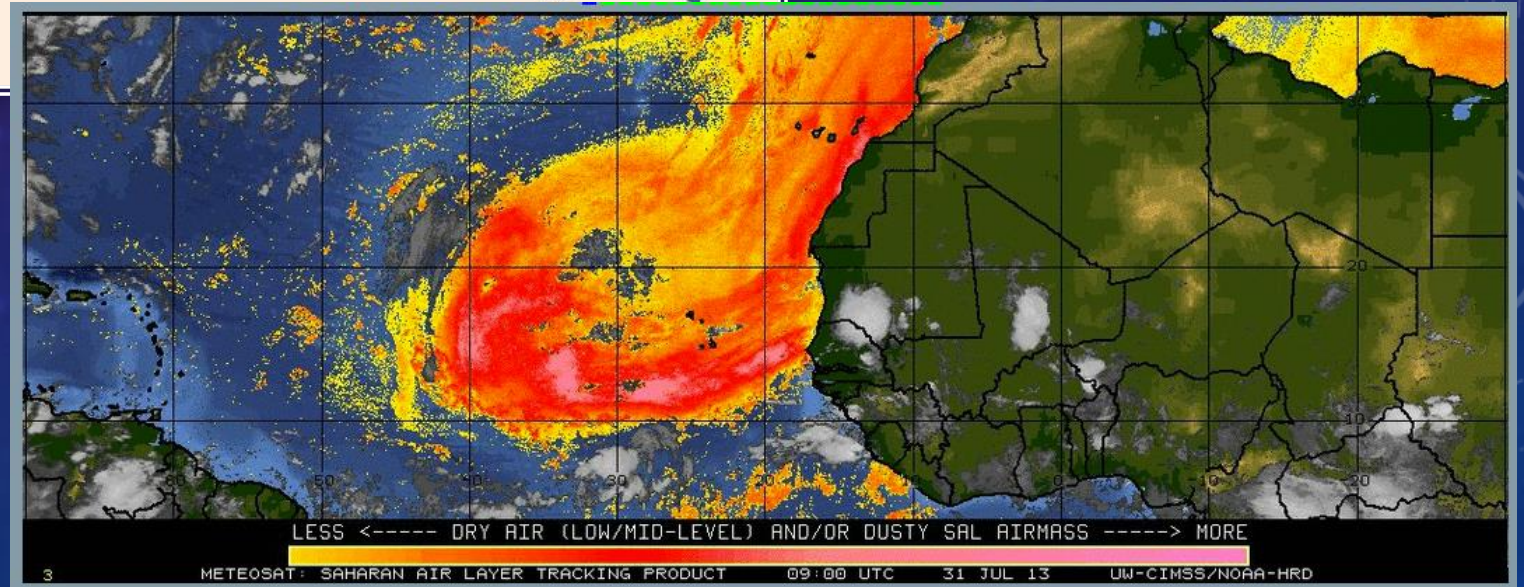
SOURCE: Search of "Mali" in Grantome. <https://grantome.com/search?q=mali>

Where novel infectious diseases are most likely to emerge



SOURCE: Saharan Air Layer Tracking,
31 Jul – 2 Aug 2013

SOURCE: Global hotspots and correlates of emerging zoonotic diseases (2018), Alen et al. © FT



The background is a dark blue gradient with a starry or particle-like texture. On the left side, there are several overlapping circular elements. A prominent one is a large circular scale with tick marks and numbers ranging from 140 to 260. Other circles are partially visible, some with dashed lines and arrows, suggesting a sense of motion or a process. The overall aesthetic is technical and futuristic.

People making impact

The education pipeline and why increased connectivity is needed to support it.

Tertiary Enrollment



2x!

Secondary Enrollment

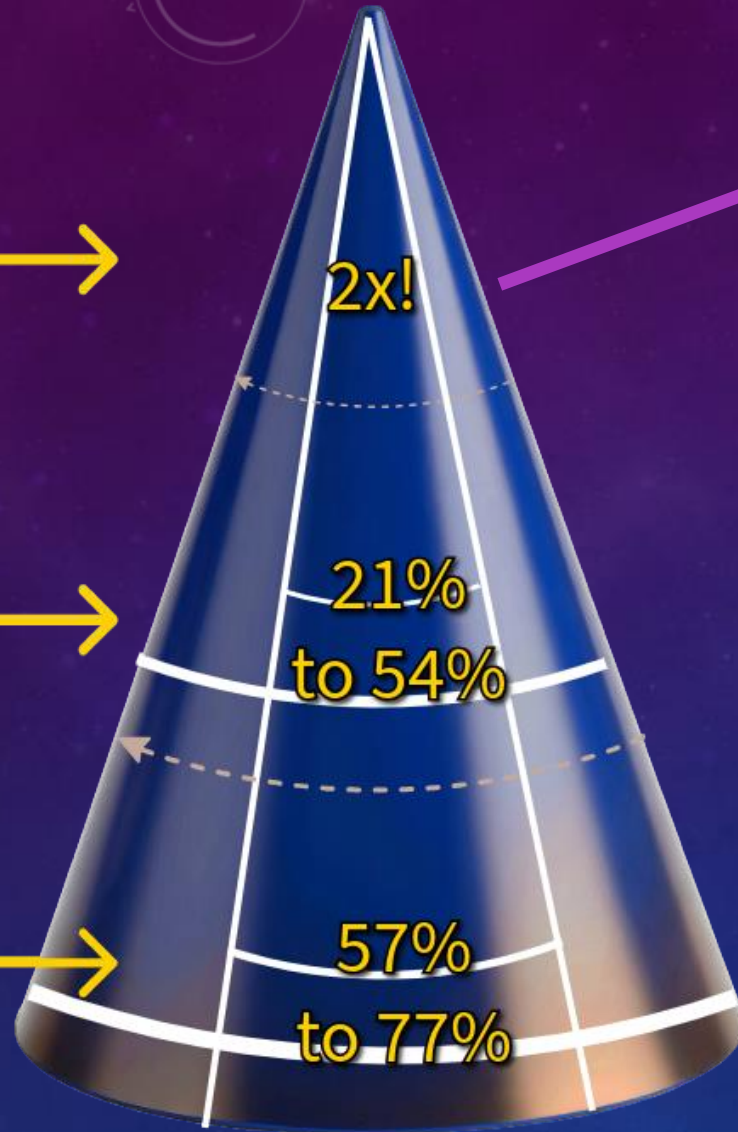


21%
to 54%

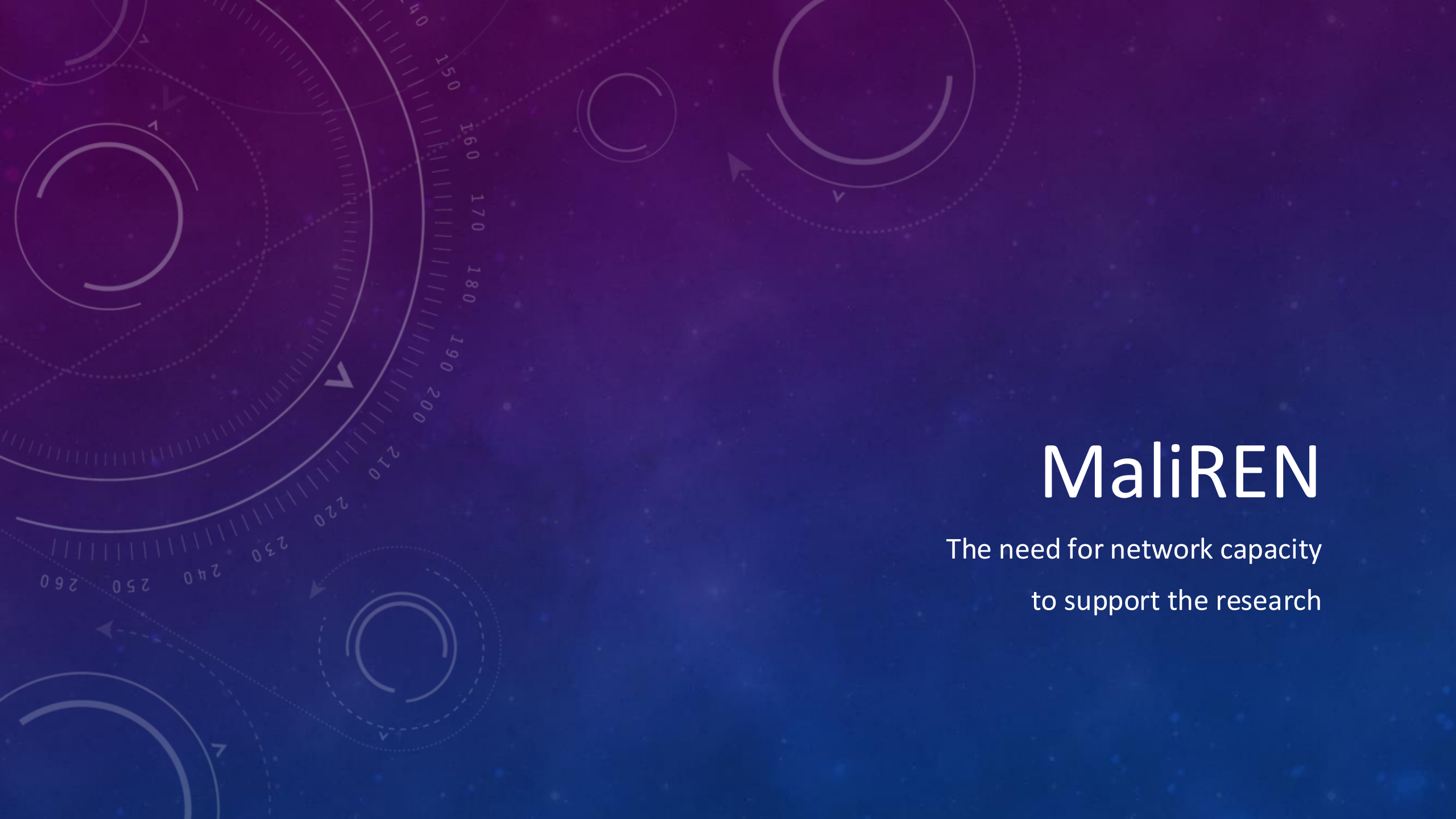
Primary Enrollment



57%
to 77%



The widening education base
Enrollment at all education levels are increasing > increasing needs for infrastructure investment



MaliREN

The need for network capacity
to support the research

MaliREN CONTEXT

The journey to MaliREN connectivity reflects a transformative pursuit to strengthen research and education across member institutions in Mali.

MaliREN —the Mali Research and Education Network— was established to provide universities, research institutions, and innovation hubs with reliable, high-speed, secure and affordable connectivity for scientific collaboration.

However,....

Resilient, connectivity enough for high-stakes, international research collaboration remained elusive.

MaliREN

- Non-profit organization created in June 2012
- 16 Members

- **Universities**

Bamako, Ségou, USTTB, University of Arts and Humanities, University of Legal and Political Sciences, University of Social Sciences and Management, University of Ségou

- **Research institutes**

Institute of Rural Economy, National Institute of Public Health, Central Veterinary Laboratory, Sickle Cell Research and Control Center, Polytechnic Institute at Katibougou, Rural Polytechnic Institute

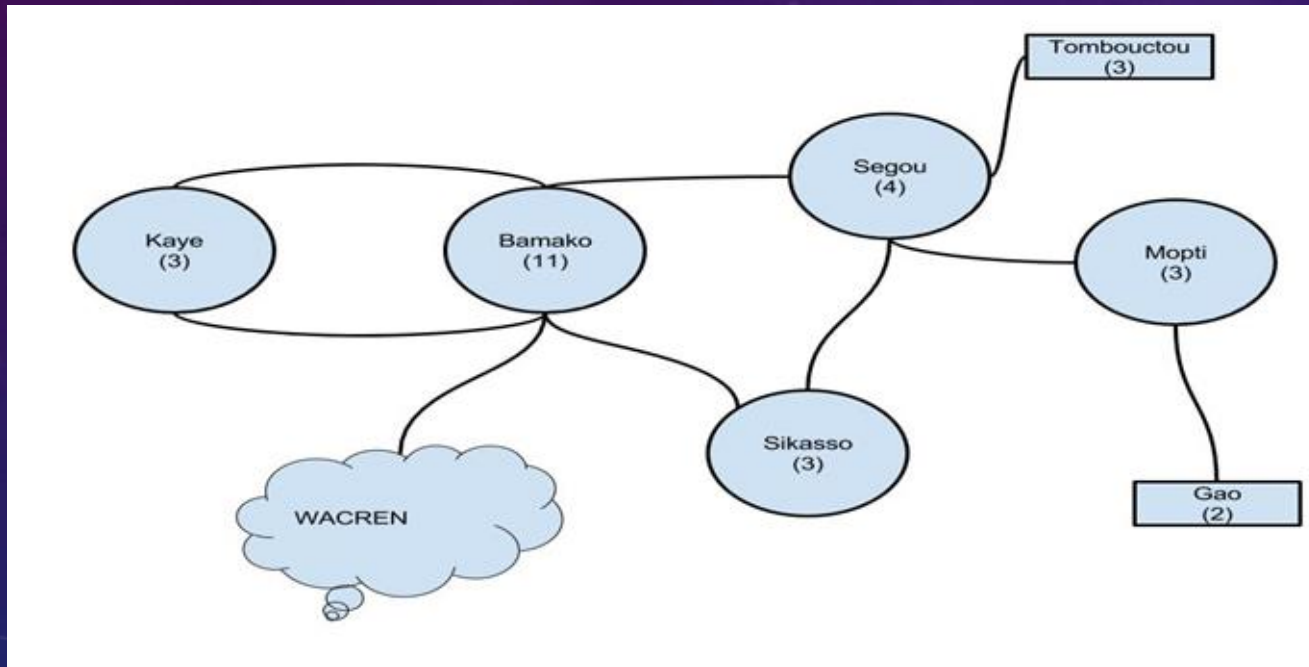
- **Others**

ICER-Mali , National Telemedicine Agency, AGETIC



The 2016 MaliREN Network Vision... and Setback

- Fiber backbone connecting seven regions
- Premise: free/favorable national fiber network



SMTD SETBACK

Government created a commercial firm SMTD to manage all communication infrastructure, including the fiber SMTD profit driven; MaliREN received same fees as telecommunications operators!

MaliREN backbone network was now elusive!

A Window for Hope!

- HPC equipment contributions
- Coordinated efforts
- Regional partnerships (WACREN)
- Support from international organizations:
 - AfricaConnect
 - GÉANT

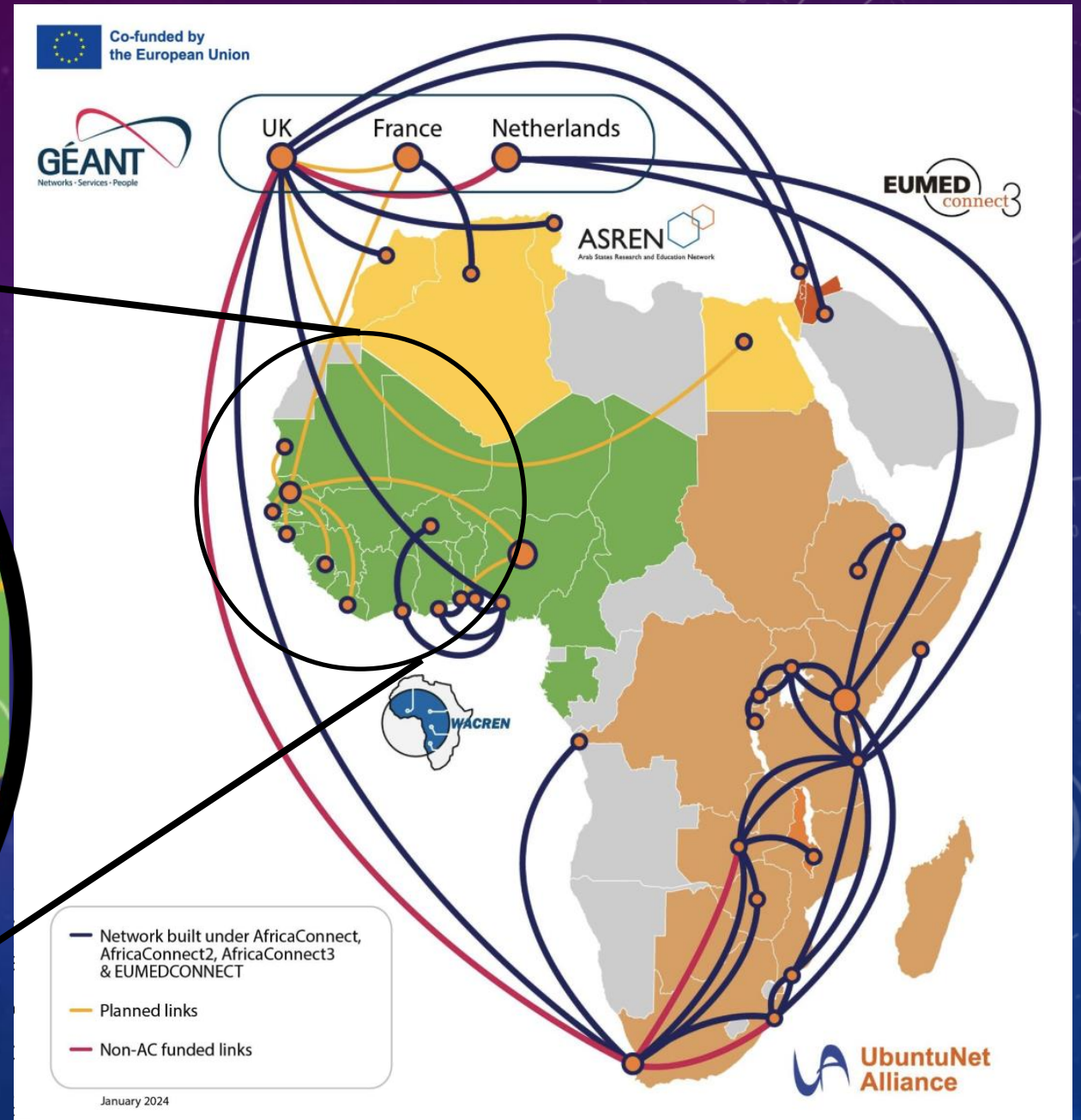
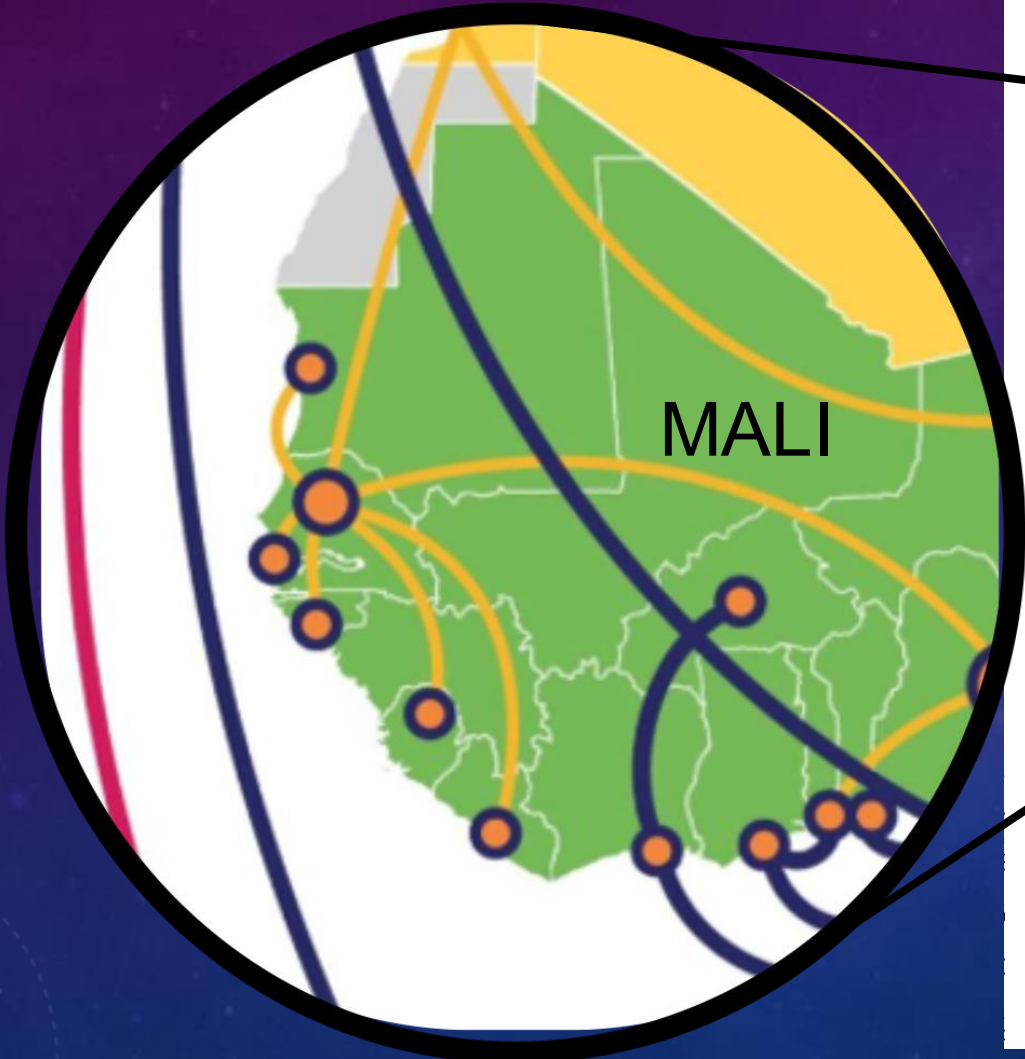
MaliREN is gradually expanding capacity, focusing on network resilience, and digital inclusion for research and education.



TACC Stampede2
flagship supercomputer of the Advanced
Cyberinfrastructure Coordination Ecosystem:
Services & Support (ACCESS)

MaliREN Data Center

AfricaConnect3



MaliREN CHALLENGES

- FINANCIAL
 - Modest dues; not always paid; operating subsidised tierd model is difficult
- TECHNICAL
 - Network in place, but needs upgrades; human and financial resources are challenging
- GOVERNANCE & POLITICAL
 - Need updated constitution, bylaws & org charts
 - Need ministries to commit institutional support
 - Need more engagement from members
- SIZE & ORGANIZATION
 - Need help for a strong & effective MaliREN

(Hopefully) on the horizon

- Inclusion on the WACREN backbone
- Participation in Women-in-WACREN
- A strong, vibrant R&E network to help achieve research & knowledge potential



The future looks bright!

THANK YOU FOR YOUR ATTENTION