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Finance for science impact

Innovative financial tools can unlock capital for science infrastructure

Raúl C. Rosales
Senior Executive Fellow, Imperial College Business School

Francis Malige
Managing Director and Head of Financial Institutions Business Group, European Bank for Reconstruction and Development

Attiya Waris
Professor of Fiscal Law, University of Nairobi and UN Independent Expert in Foreign Debt

The Challenge

— Science infrastructure can drive development and offer a good return on investment, but it requires a solid business case for investors to deploy capital.

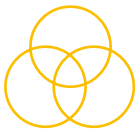
— Donors and foreign governments have historically funded science and research in low – and middle-income countries (LMICs). However major international development funders, such as the US, UK and European countries, have cut their foreign aid.[1]

— Innovative financial mechanisms can unlock capital market investment for science infrastructure in LMICs, namely using blended finance, multilateral development banks (MDBs), and government guarantees to de-risk investments.

— The capital market offers more sustainable finance for LMIC science infrastructure than donor – or aid-linked funding and allows countries to set their development agenda.

"The development of a thriving innovation finance system comes on top of a strong foundation of financial markets."

Francis Malige, Managing Director and Head of Financial Institutions Business Group, European Bank for Reconstruction and Development



The Context

Science has long been relegated to the periphery of development. But science infrastructure – the physical and digital systems needed to generate, scale, and translate scientific knowledge into tangible impact – can drive development and offer a good return on investment.

For example, the UK's early-stage investment in mRNA vaccine R&D, funded through government research and supported by local infrastructure, saved millions of lives during the COVID-19 pandemic and injected trillions into the global economy.[2,3]

Science infrastructure investments have amplified results: the United Nations Development Programme estimates that LMICs can use public digital infrastructure to speed up their economic growth by a third.[4]

However, in LMICs, research and science infrastructure sit low on the list of government priorities. In most cases, the percentage of GDP spent on research and development (R&D) sits at less than 0.5%[5] – whereas OECD countries spent 2.7%[6] of their much larger GDPs on R&D in 2023. This underinvestment not only limits innovation capacity and growth, but misses the opportunity to leverage public science spending to crowd in private capital.

Donors and foreign governments have historically funded science and research in LMICs, resulting in critical breakthroughs in vaccines, drought-resistant crops and climate adaptation and resilience. But the landscape has changed.

Major international development funders, such as the US, UK and European countries, have cut their foreign aid, with catastrophic consequences for, among other things, research and public health programmes.[7]

But science infrastructure – from laboratories and data centres to the human capital needed to support the research and innovation system – is a vital investment-worthy asset that should not be reliant on the goodwill and aid of foreign nations.

Imperial researchers are developing ways to unlock capital for science infrastructure in LMICs to drive development and returns, working with LMIC and high-income countries (HIC) partners to ensure context-specific solutions.

"The way to reduce risk is to have financing from a local bank. Close monitoring enables larger outside financial institutions to measure and control their risk."

Francis Malige, Managing Director and Head of Financial Institutions Business Group, European Bank for Reconstruction and Development

The Method

At the fourth International Conference on Financing for Development, Imperial Dr. Raúl C. Rosales co-chaired a roundtable[7] on sustainable financial infrastructure for investment in science. The participants examined how capital markets, institutional investors, and development finance institutions can mobilize long-term funding to scale science, technology and innovation infrastructure in LMICs. The following proposals resulted from that roundtable and discussions with collaborators:

— **Blended finance:** In 2024, blended finance mobilised $18.3 billion across 123 deals, according to the 2025 State of Blended Finance report.[8] Guarantees and risk-sharing structures could de-risk early-stage infrastructure investments in LMICs. But that needs both government and policymaker buy-in, and the implementation of blended market-based policy mechanisms coupled with innovative capital-market instruments.

— **Multilateral development banks:** MDBs are key to securing blended finance, but they currently rarely support science infrastructure projects. According to the G20 Independent Capital Review[9], MDBs could access $1.2 trillion without losing their AAA ratings and up to $2.4 trillion if they moved to AA. Despite holding £891 billion in callable capital, they remain conservative.

— **Local know-how:** To unlock this capital and deploy it effectively, global banks with local presence, private equity and asset managers, and leading academic innovation hubs must play a central role. Their on-the-ground insights and risk management are critical to identifying viable science and innovation projects and structuring bankable opportunities for MDBs and institutional investors.

— **Venture capital:** Innovation needs a strong venture-capital market, which is currently lacking in LMICs. Science-linked ventures in these countries need an enabling environment similar to those found in HICs with streamlined rules, institutional co-investors and life-cycle financing strategies. For example, when public-private pre-seed funds are matched with university incubators, this can crowd in early venture capital.

— **Private credit:** Private investors outpaced development finance institutions and multilateral development banks (MDBs), with $6.9 billion in investments in 2024, according to the 2025 State of Blended Finance report. Private credit can unlock long-term financing for science when credit data is reliable and structured, for example, through guaranteed or performance-linked facilities that align returns with verified research or innovation outcomes.

"In the developing world, there hasn't been regular financing of science."

Attiya Waris, Professor of Fiscal Law, University of Nairobi and UN Independent Expert in Foreign Debt

"Relying on donor-funded research means people in LMICs do research on other people's priorities and it is killing independence."

Attiya Waris, Professor of Fiscal Law, University of Nairobi and UN Independent Expert in Foreign Debt

Benefits

— **Investment-worthy:** De-risking science infrastructure investment can make the category attractive to financiers.

— **Knock-on effect:** Science infrastructure has a magnified impact across a range of Sustainable Development Goals.

— **Sustainable:** Capital market financing or science infrastructure is more sustainable than donor-funding and aid, which rely on the political climate of other nations.

— **Agenda setting:** Separating the science agenda from donor priorities allows LMICs to set their own R&D and innovation agenda, which responds to local needs.

— **Co-creation:** Partnerships with local and foreign stakeholders from academics to financiers allow for the sharing of knowledge and best-practice.

— **Capacity building:** Partnerships between local institutions and leading international academic universities can embed world-class standards for rigorous data and reporting systems. They also empower local scientists to drive their own innovation agendas.

"We need to build a sustainable financial architecture for science and technology investment that doesn't depend on geopolitical generosity."

Raúl C. Rosales, Senior Executive Fellow, Imperial College Business School

Impact

For LMIC residents: Increased science infrastructure has knock-on effects for local communities, driven by economic growth and job creation.

For investors: Science infrastructure in LMICs offers a currently under-tapped asset, which can offer good returns on investment.

For governments: A more diverse economy offers greater resilience against global shocks. Moreover, a sustainable and independent innovation system releases governments from reliance on other countries' patronage.

Call to action

We call on MDBs, DFIs, governments, and institutional investors to launch pilot science infrastructure finance platforms in LMICs within the next 12 months, using blended finance structures and university-anchored pipelines to mobilise private capital at scale.

"Science and technology infrastructure should not be treated as a development afterthought. It is a strategic asset that drives productivity, resilience, and global competitiveness."

Raúl C. Rosales, Senior Executive Fellow, Imperial College Business School

Notes:

1. Clarke, R. A. et al. 'The potential impact of reductions in international donor funding on tuberculosis in low-income and middle-income countries: a modelling study', The Lancet Global Health, Vol. 13 (2025). www.thelancet.com/journals/langlo/article/PIIS2214-109X(25)00232-3/fulltext

2. Sevilla J. P. et al. 'The global health and economic value of COVID-19 vaccination', BMJ Global Health, Vol. 9 (2024). https://gh.bmj.com/content/9/9/e015031

3. UKRI. 'Impact evaluation of UKRI's R&I funding response to COVID-19' (2023). www.ukri.org/wp-content/uploads/2023/09/UKRI-140923-ImpactEvaluationResearchInnovationFundingResponseCOVID19-FinalReportAnnex.pdf

4. UNDP. 'The Human and Economic Impact of Digital Public Infrastructure' (2023). www.undp.org/sites/g/files/zskgke326/files/2023-07/undp-the-human-and-economic-impact-of-digital-public-infrastructure-final.pdf

5. The UK Department for International Development. 'Research Capacity Strengthening in LMICs' (2019). https://assets.publishing.service.gov.uk/media/5d42be4eed915d09d8945db9/SRIA_-_REA_final__Dec_2019_Heart___003_.pdf

6. OECD. 'Gross domestic spending on R&D' (2023). www.oecd.org/en/data/indicators/gross-domestic-spending-on-r-d.html

7. Science Summit NYC. 'Capital Markets for Innovation: Unlocking Science and Technology Investment in Developing Countries' (2025) https://sciencesummitnyc.org/events/capital-markets/

8. Convergence. 'State of Blended Finance 2025' (2025) www.convergence.finance/resource/state-of-blended-finance-2025/view/relevant-deals

9. G20. 'G20 Roadmap towards Better, Bigger, and More Effective MDBs' (2024) www.bu.edu/gdp/files/2024/12/G20_MDB_Roadmap.pdf

For more information:

Science and funding for development impact
https://tinyurl.com/3h7hw8jx

Raúl C. Rosales
https://profiles.imperial.ac.uk/r.rosales

STEMB Impact Memos offer policymakers and stakeholders insight into projects in Imperial College London's Global Development Lab and their real-world impact.

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