

NIHR Global Health Research Unit

Tackling Infections to Benefit Africa (TIBA)

at the University of Edinburgh

16 February 2022

Introduction

NIRAS-LTS conducted an evaluation of the National Institute for Health Research (NIHR) Tackling Infections to Benefit Africa (TIBA) at the University of Edinburgh (UoE) programme from September 2017 – August 2021. This extended summary synthesises the key findings and lessons learned from the Midterm Review (January 2020) and the End of Programme Review (December 2021).

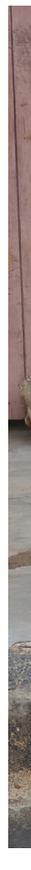
TIBA (which means "to cure an infection" in Swahili) was an Africa-led, multi-disciplinary research programme that explored and drew lessons from the ways that different African health systems tackle infectious diseases. Funded by the NIHR, it was a four and a half year, £6.9 million investment designed to shift the centre of gravity of health research for Africa to institutions in Africa. African leadership and the creation of equitable partnerships were central to this goal, as was the intention to strengthen the capacity of African health research scientists and the health research 'ecosystem' in which they work.

Throughout the entirety of the programme, TIBA sought to achieve four specific aims:

1. To improve the diagnosis & surveillance of infectious diseases in resource-poor settings.
2. To improve the deployment of existing drug treatments & enhance local capacity to develop new ones.
3. To improve the deployment of existing vaccines & enhance local capacity to develop new ones.
4. To improve the management of both endemic & emerging infections by:
   - → strengthening health systems, with special attention to ethics and governance;
   - → improving policy development and implementation (e.g. drug procurement, local licensing, regulatory harmonization); and
   - → enhancing capacity to respond to infectious diseases emergencies, while protecting capacity to manage endemic diseases concurrently.

To achieve these aims, the programme mobilised the technical expertise within the UoE and their African partner research institutes, to reduce the incidence and impact of infectious diseases in Africa. Africa bears a disproportionate burden of infectious diseases, and TIBA's approach emphasised the need to empower African scientists to effectively address and reduce the burden and threat of Neglected Tropical Diseases (NTDs), such as schistosomiasis, malaria, trypanosomiasis and lymphatic filariasis, and improve preparedness for epidemics (such as Ebola and Covid-19). Through TIBA, the UoE worked in partnership with leading scientists from Botswana, Ghana, Kenya, Rwanda, South Africa, Sudan, Tanzania, Uganda and Zimbabwe to generate new knowledge and inform and influence health policy and strengthen health systems in partner countries.

In addition, TIBA worked on all aspects of infectious diseases management – from basic research to uptake by local communities – in a single, unified framework. This met an often articulated but rarely addressed need to view infectious disease management not in isolation but in the context of local health systems and wider societal issues.



TIBA delivered its work through six Work Packages (WPs), listed below. Projects in **bold** are featured in this summary as part of the reviewed WPs from the MTR and EPR.

- **WP1: Rapid Impact (RI) projects (2017-2018)**
- **WP2: Making a Difference (MaD) (2018-2020)**
- WP3: Toolkit projects (2019-2021)
- **WP4: Capacity Building (Out of Africa Fellowship)**
- WP5: Dissemination for Action
- **WP6: Emergency Response**

TIBA was forward-thinking and proactive in its planning around impact, monitoring, and evaluation; certainly compared with peer grantees in the call 1 cohort of NIHR's Global Health Research portfolio. However, whilst the programme collected a large quantity of data, in the first two years of the programme it was not doing so in a way that was consistent enough to enable programme-level aggregation at the time of the MTR.

A revised M&E framework, Theory of Change, and indicator list was developed for the MTR to better connect M&E to TIBA delivery and enhance consistency & data quality across TIBA's portfolio of project work to enable aggregation. This revised M&E framework, Theory of Change and indicator list informed the analysis conducted for the EPR.

The EPR utilised a theory-based approach to the evaluation and explored a range of evaluation questions that cover the OECD-DAC criteria of relevance, coherence, effectiveness, efficiency, impact and sustainability. This approach is synthesised here, along with the key findings from the MTR, and focuses on the **relevance, efficiency, effectiveness and impact** of the TIBA programme. The evaluation team reviewed four TIBA Work Packages (WPs) as part of their primary source data: WP1: Rapid Impact (RI); WP2: Making a Difference (MaD); WP4: Out of Africa Fellowship (OAF); WP6: Data Science; and WP6: Emergency Response, Covid-19. Other data came from interviews with TIBA programme and project staff, a TIBA-wide survey, and a targeted case study that included observations and interviews with the TIBA Ghana at the University of Ghana.



Key Findings

RELEVANCE

One of the ways in which TIBA achieved its impact was by increasing the knowledge, skills, technology and networks of African researchers (Outcome 2 of TIBA's Theory of Change). The activities from the reviewed WPs show outputs that are relevant to the objective of increasing knowledge.

Overall, the TIBA portfolio of work reviewed across the MTR and EPR represents a relevant body of work, where each WP and the projects within it actively seeks to identify and address problems and needs, driven by localised assessments of health issues and priorities. The projects within the OAFs sought to strengthen local research capabilities, based on identified needs and driven by an understanding of the local context. At the individual level (i.e. for each Fellow), the OAF enabled researchers to identify and address their "individual and common needs" and tailor their training to strengthen their individual capacity to operate in the health system and meet broader institutional and TIBA goals.[1]

In addition, TIBA leadership ensured a robust approach to project selection, as evident in the Calls for Proposals for the RI, MaD and DS projects. These three projects presented calls that encouraged PIs and their teams to create interventions that were based on addressing local and/or national needs. Similarly, the DS projects were implemented in response to the perceived need to strengthen data science knowledge and skills within the TIBA cohort. This need was identified in the learning from the RIs and provides further evidence of the TIBA directorate appropriately addressing and responding to identified needs and problems.

In the RIP interviews, one organisational weakness identified by all interviewees was in data reporting and monitoring and evaluation (M&E) training. In response, the TIBA directorate offered a three-day M&E workshop hosted by NIRAS LTS to OAF Fellows, which shows TIBA leadership correctly addressing and responding to the TIBA cohort's needs.

In addition, TIBA leadership was well prepared to respond to the pandemic and put WP6 into action effectively. This was due to the design of WP6 and the vision the TIBA directorate had for it when it was created before the pandemic.

The TIBA programme demonstrated great foresight and understanding of global and national healthcare needs by incorporating a WP on emergency response. TIBA recognised that health issues were treated in isolation and, in times of crisis, a government's Ministry of Health were typically left to respond to the crisis.

TIBA offered training, supported the OAFs, and provided support to TIBA researchers and scientists who were responding to the Covid-19 pandemic in situ. As a result, several TIBA partners countries have done their first ever genome sequencing. The TIBA Principle Investigators (PIs) within these partner countries have now become appointees on Covid-19 task forces to advise governments.[2] The success of TIBA in the Emergency Response work is strong evidence that the activities chosen were relevant for the TIBA objectives. Also of note was TIBA's ability to quickly and efficiently disseminate the Covid-19 Emergency Response work results online and through publications.

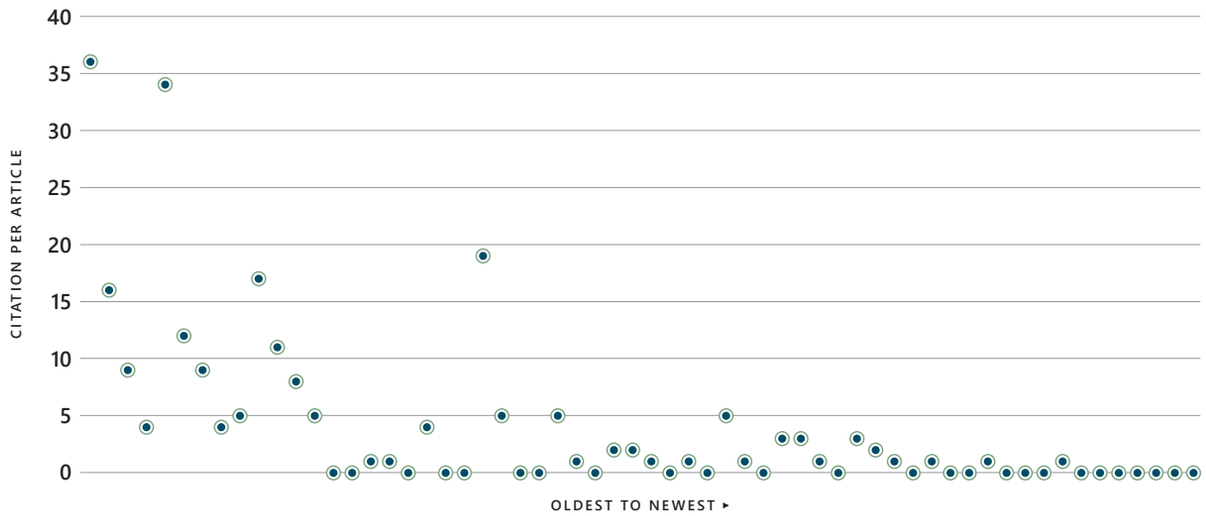
EFFICIENCY

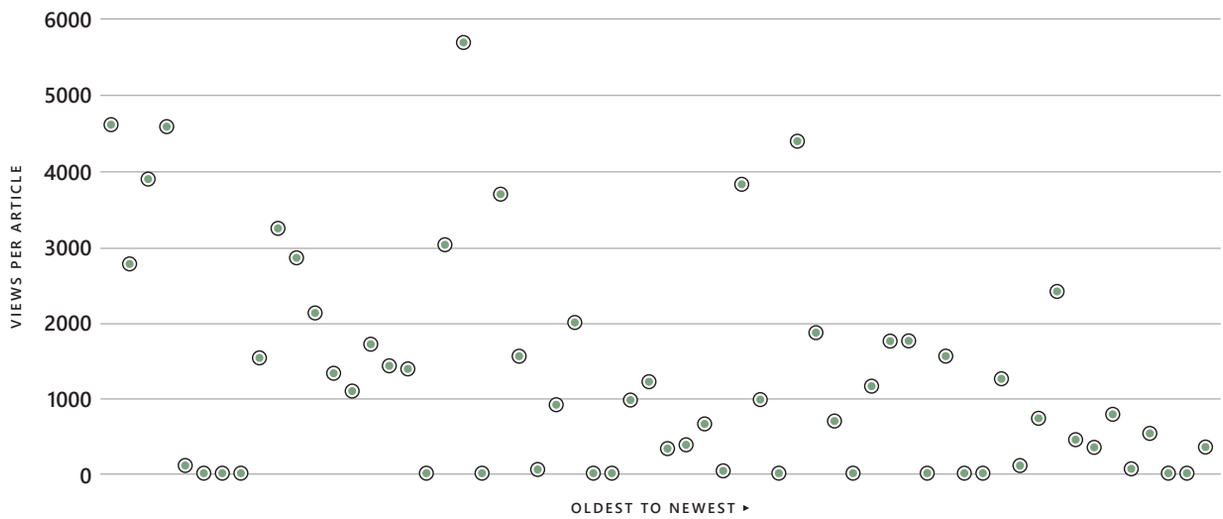
When asked about challenges, 100% of TIBA colleague respondents said "Covid-19" either had a "significant" or "very significant" impact on their projects. "Time related pressures" were also significant and very significant to 33% and 11% of the respondents, respectively. Many OAF Fellows reported that the one-year timeframe was not sufficient to complete their research projects. While the OAF projects were designed to be completed within a year, most of the OAFs were unable to meet this goal. Similarly, the RI projects reported that the one-year timeframe was not sufficient for the PIs to achieve their research goals.

Encouragingly, 100% of EPR survey respondents agreed **that working with TIBA programme staff was efficient**. One project-level interviewee stated that working with TIBA programme staff was "wonderful" due to its "coordination, transparency and promotion of local leadership…Professor Mark gave a lot of authority to the leadership within the country and that has worked wonderfully."[3]

1. TIBA, "Out of Africa Fellowship Projects Synthesis Report," November 2020, page 7. TIBA supplied document.
2. Interviewee C.
3. Interviewee D.

When considering the entirety of the TIBA programme and research produced, the first graph charts the number of views per article, from oldest to most recent. In general, older articles have been viewed more than recent articles, in line with expectations. Outliers at the more recent end of the data are typically articles relating to Covid-19 where engagement has been significantly higher (see orange markers representing articles on Covid-19 published in Q4 2020). For article citations, the results follow a largely similar trend. On average, the sampled articles had 4.68 citations each, but around 30% of the articles sampled with available metrics had no citations listed. In addition, there appears to be limited correlation between the number of views and the number of citations. In general, articles which promoted, explored or described new tools for analysing or combatting infectious diseases were cited more frequently than those which presented the results of specific case studies. This analysis shows the reach of TIBA via its published outputs, with some papers being viewed thousands of times. From a knowledge and communications perspective, publishing open-access papers provides a highly efficient approach for disseminating key research findings to a wide and interested audience.



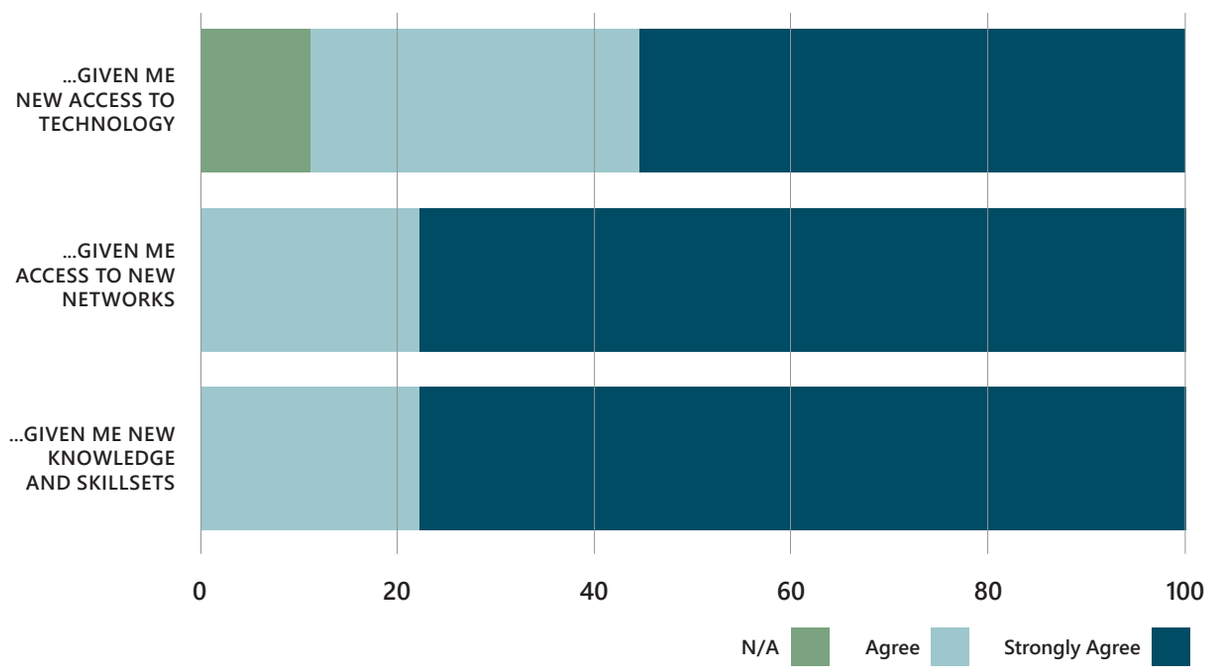


EFFECTIVENESS

The Covid-19 work exemplifies TIBA's ability to translate, synthesise and influence decision-makers at all levels. This work developed and enabled genome sequencing capacity in Ghana, Kenya, Rwanda, Sudan and Zimbabwe, and produced academic literature and policy-oriented outputs. Ghana, Kenya[4] and Zimbabwe[5] developed policy briefs from their work that have influenced TIBA partner countries national policies on Covid-19 response.[6] Uptake by governments can be seen in Ghana, where the government gave additional funding to the University of Ghana to continue viral sequencing.[7]

Critically, the Covid-19 response work also gave TIBA the opportunity to translate their research into accessible formats to facilitate uptake and influence decision makers. Throughout the pandemic in 2020 and into 2021, TIBA published comprehensive research, including an open-access paper in the BMJ Global Health journal on the provision of oxygen in Sub-Saharan Africa to fight Covid-19.[8] Additionally, the TIBA Covid-19 Pandemic Response Unit published a comparative analysis of Covid-19 mitigation measures in TIBA countries and data sources for national Covid-19 responses in the WHO African Region. TIBA provided epidemiological and data support to the Directorate of the WHO Africa Regional office and produced numerous weekly updated Situation Reports, a Testing Report, two Mitigation Reports, and three Covid-19 genome reports.

My involvement in TIBA has...



There is plausible evidence that all four WPs reviewed **have enhanced the capacity of African researchers and institutions through their interventions**, to varying degrees. In terms of their career, 89% of TIBA colleague respondents stated that they "strongly agreed" or "agreed" that the programme impacted their career in a positive way. A majority of survey respondents also felt that their involvement with TIBA gave them new access to technology, networks, knowledge and skillsets:

The OAF projects show a significant contribution in terms of enriching local capacity to conduct research. All eleven Fellows were provided with funds to advance their research and they were mentored by senior researchers from Africa and Edinburgh, who gave hands-on training and individual career development. Encouragingly, 100% of OAF Fellows were retained at their respective institutions following the close of their projects.

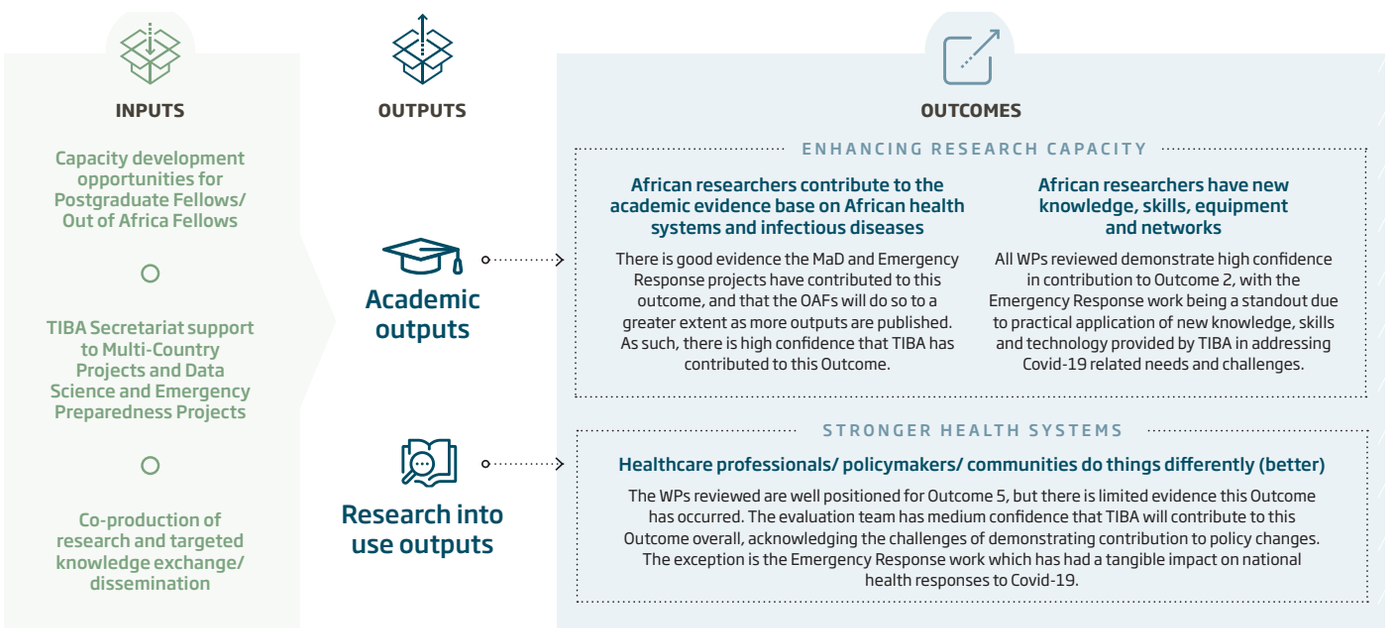
4. NIHR, "GHR Impact Case Study."
5. TIBA, 2020. Policy Brief: Strengthening the COVID-19 Response in Zimbabwe: COVID-19 diagnosis in Frontline Health Workers. [online] Available at: https://tiba-partnership.org/tiba/sites/sbsweb2.bio.ed.ac.uk.tiba/files/pdf/TIBA%20%20Zimbabwe%20Policy%20Brief.pdf and also at Kemri Wellcome Trust. 2021. Policy Briefs: COVID-19. [online] Available at: <https://covid.kemri-wellcome.org/policy-briefs/
6. NIHR, "GHR Impact Case Study."
7. Interviewee B.
8. Stein F, Perry M, Banda G, et al, "Oxygen provision to fight COVID-19 in sub-Saharan Africa." https://gh.bmj.com/content/5/6/e002786.

The DS projects actively enhanced and built-up capacity through its body of work. DS projects strengthened and improved health systems in targeted countries and increased partner countries' abilities to work with big data, either through buying hardware for computation and storage or computer programmes, or by helping switch to eHealth platforms for field collection.

The RI and MaD projects were found to further demonstrate TIBA's ability to enhance the capacity of African research institutions and researchers. In addition, both the RI and MaD projects also exemplify good practice in community and stakeholder engagement, which all projects cited as a factor in achieving results or being able to conduct their research.

IMPACT

The evaluation team selected two outcome pathways of the TIBA theory of change to be tested to evaluate impact: one from the **enhanced research capacity**, and one from the **research into use** pathway. Looking across the portfolio of projects, the evidence provided gives high confidence that the TIBA programme as a whole contributed to Outcome 1, "**African researchers contribute to the academic evidence base on African health systems and infectious disease**," and Outcome 2, "**African researchers have new knowledge, skills, technology, and networks.**" For Outcome 5, "**Healthcare professionals/ policymakers/ communities do things differently (better)**," there is medium confidence in contribution. This is due to the fact that outside of the Covid-19 emergency response work, there is limited evidence of actual policy or practice change stemming from TIBA activities within the reporting period. However, there is good evidence that several TIBA projects have fulfilled necessary criteria to inspire such change and it is anticipated that confidence in contribution to this outcome may increase over time as new policy decisions are made and TIBA data is incorporated within national approaches and policies.





CONCLUSIONS AND LESSONS LEARNED

TIBA's ambitious aim to shift the centre of gravity of health research remained central to TIBA activities and there is strong evidence that TIBA has achieved this. TIBA's governance and management processes enabled African partner institutions to define the agenda and direction of their research, whilst enabling African-led peer review to ensure academic excellence and rigor. African leadership was a very real and valued part of TIBA. The programme made very positive and tangible impact in relation to capacity building of African scientists and health researchers and to contributing to the academic evidence base on African health systems and infectious disease. All TIBA partners have benefitted from access to training and capacity-building opportunities, with all TIBA training events held in Africa, in Edinburgh or online to build local capacity to deliver training.

A strong sustainability achievement of TIBA is the related grant funding generated in support of TIBA-connected research and other capacity building projects.

> ***TIBA collaborators in Botswana, Ghana and Kenya leveraged £9,912,772.96 in additional funding up to 2024 from the Rockerfeller Foundation, FCDO, the Wellcome Trust, the World Bank, and the Bill and Melinda Gates Foundation, to support their global health research, training capacity and COVID-19 research.[9]***

As one TIBA programme-level interviewee stated, sustainability is broader than receiving monetary funding:

> ***"TIBA spent 80% of funds in Africa. We need to shift from post-colonial thinking to allow local teams to identify the needs and the funding, and then empowering them to do that, which TIBA has done. TIBA is a step towards decolonising the mind and research."***

TIBA has invested in not only resources but also in people by building South-South collaborations and acting as a catalyst for training and enhancing capacity on the ground.[10] In doing so, TIBA has ensured a measure of sustainability by virtue of the collaborations, relationships and knowledge built and which remain within TIBA partner countries and institutions. Of note, 100% of OAF Fellows were retained at their respective institutions following the completion of their projects.

The evaluation team has identified **lessons learned** from the MTR and EPR, either through review of the Work Packages or identified by the TIBA cohort through reporting, interviews and the EPR survey.



9. TIBA supplied document, Related Funding (Cumulitive), accessed 18 January 2022.
10. Interviewee B.

LESSONS LEARNED

- Community engagement and the need and benefit of health research being driven by local needs was highlighted throughout RI, OAF, MaD and DS project reporting as being essential to the project being able to achieve its aims. Both the MaD and DS projects reported on empowering and engaging with local stakeholders, community members and/or local health workers as essential components of "*transferring ownership*" to local communities or local health officials, and building capacity at the local level. Many projects found that involvement of the community "*plays an essential role in bridging the gap between science, its output, and the final consumer*" and that community-oriented research is more successful. Also noted by members of the TIBA cohort was the need to be sensitive about delivering on what the project team communicated to communities. The importance of community engagement was recognised by TIBA leadership, which can be seen through their activities such as the Community Engagement and Impact workshop.
- Through the TIBA model, equitable partnerships within the nine TIBA partner countries were created which enabled African leadership and increased capacity of the TIBA cohort and the health research 'ecosystem' in which they work. Central to this success were the strong relationships TIBA developed with key stakeholders, including WHO-AFRO, African Academy of Sciences, and AUDA-NEPAD.
- Partnerships with government departments within a project are a likely mechanism to potentially influence policy change.
- Internal communication among the TIBA cohort was found to be another mechanism for success across the portfolio of projects, or when it was not strong, a hinderance to a few projects. As one interviewee stated, "*if the project is to be successful, the communication backbone has to be very strong*."





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