

Closing The Know-Do Gap for Child Health: UNICEF's Experiences From Embedding Implementation Research in Child Health and Nutrition Programming

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Abstract

UNICEF operates in 190 countries and territories where it advocates for the protection of children's rights, help meet children's basic needs and reach their full potential. Embedded Implementation Research (IR) is an approach to health systems strengthening in which: a) generation and use of research is led by decision makers and implementers, b) local context, priorities, and system complexity are taken into account, and c) research is an integrated and systematic part of decision-making and implementation. By addressing research questions of direct relevance to programs, embedded IR increases the likelihood of evidence-informed policies and programs, with the ultimate goal of improving child health and nutrition.

This paper presents UNICEF's embedded IR approach, describes its application, to challenges and lessons learned, and considers implications for future work.

From 2015, UNICEF has collaborated with global development partners (e.g. WHO, USAID), governments and research institutions to conduct embedded IR studies in over 25 high burden countries. These studies focused on a variety of programs, including immunization, prevention of mother-to-child transmission of HIV, birth registration, nutrition, and newborn and child health services in emergency settings. The studies also used a variety of methods, including quantitative, qualitative and mixed-methods.

UNICEF has found that this systematically embedding research in programs to identify implementation barriers can address concerns of implementers in country programs and support action to improve implementation. In addition, it can be used to test innovations, in particular applicability of approaches for introduction and scaling of programs across different contexts (e.g., geographic, political, physical environment, social, economic, etc.). UNICEF aims to generate evidence as to what implementation strategies will lead to more effective programs and better outcomes for children, accounting for local context and complexity, and as prioritized by local service providers. The adaptation of implementation research theory and practice within a large, multi-sectoral program has shown positive results in UNICEF supported programmes for children and taking them to scale.

Contribution To The Literature

1. Embedded Implementation Research (IR) is an approach to support health systems strengthening in which research is made integral to decision-making for programme improvement.
2. Since 2015, UNICEF has worked in collaboration with global development partners, governments and research partners to conduct embedded IR studies in over 25 high burden countries.
3. UNICEF's mandate is to protect, promote and fulfil children's rights. The adaptation of implementation research theory and practice within UNICEF, a large, multi-sectoral organisation, has shown positive results for improving programs for children.
4. The systematic identification of implementation bottlenecks and embedding research into programs can address concerns of implementers (including UNICEF country programs and government, implementing and research partners) and support action to improve implementation at scale.

Introduction

Need for actionable knowledge to improve programs for children

Leroy et.al.,⁶ noted that research on development of new interventions in child health and nutrition could potentially reduce under-five child mortality by 22%, whereas if existing proven interventions were fully implemented, these programs could reduce under-five mortality by 63%. They note the paradox that the majority of research funding focuses on new interventions (97%), rather than addressing implementation challenges (3%). This paradox demonstrates the urgent need to focus on implementation research (IR) to identify barriers and effective strategies to implementation of existing proven interventions. Evidence of long-term consistent investments in embedded IR on improved service coverage and efficient use of routine health system resources has recently emerged from Ghana⁷ and Latin America and the Caribbean.⁸

This paper presents UNICEF's embedded IR approach, its application to maternal, child and nutrition programs, present experiences to date, describes challenges and lessons learned, and considers implications for future work.

Embedded Implementation Research And Unicef's Approach

Working in 190 countries and territories, UNICEF advocates for the protection of children's rights, meet children's basic needs, and expand their opportunities to reach their full potential. UNICEF's comparative advantage is to work across sectors and across the life-cycle to protect these rights, focusing particularly on protecting the most disadvantaged and vulnerable children. UNICEF's strategic plan 2018-2021⁹ describes research as a 'how' strategy to achieve targets. UNICEF notes that in some situations while substantial evidence exists on what needs to be done, there are evidence gaps when it comes to identifying viable approaches for sustainable implementation and scale-up of responses to improve programs for children.

Peters, Tran and Adams¹⁰ note that "The basic intent of implementation research is to understand not only what is and isn't working, but how and why implementation is going right or wrong, and testing approaches to improve it." This form of research addresses implementation bottlenecks, identifies optimal approaches for a particular setting, and promotes the uptake of research findings. Ghaffar and colleagues,¹¹ argued that IR should be 'embedded' in programming in partnership with policymakers and implementers, integrated in different settings and take into account context-specific factors to ensure relevance in policy priority-setting and decision-making. This view is further supported by Langlois and colleagues.⁸

UNICEF further defines embedded IR as “the integration of research within existing program implementation and policymaking to improve outcomes and overcome implementation bottlenecks.” UNICEF is adapting this as an innovative approach for health systems strengthening in which research is made integral to decision-making. It includes: a) positioning research within existing programs and systems, building a new evidence ecosystem, and drawing siloed sectors together b) meaningful engagement and leadership roles for decision-makers and implementers within the research team, and, c) when possible, aligning research activities with program implementation cycles. Embedding increases the likelihood of evidence-informed policies and programs. Embedding IR into the policymaking and systems strengthening process amplifies ownership of evidence, recognizes decisions are not made on evidence alone and also takes societal context and values into account.

Varying definitions of operational, implementation and systems research often cause confusion for both researchers and program managers. For example, the distinction between operations research and IR has been debated¹² as the two types of research are often similar in intent and scope. UNICEF uses definitions outlined by Remme et al.,¹³ where operational research is a subset of IR, which is a subset of broader health systems research. These definitions are progressive without clear delineations, so many times operational, implementation and health system research overlap. Similar issues exist across other terms, such as formative research, process evaluation, translational research. UNICEF has primarily adapted taxonomy as described by Peters et.al and others.^{10,11,13}

Research on innovations encompasses basic science through translation to sustainable implementation of new or existing evidence-based programs.¹⁰ IR in UNICEF focuses on issues ranging from how a program works in real-world settings to systems integration and scale-up, including decision-making, policy development, and creating an enabling environment for implementation.

IR to support UNICEF programs is generally located within monitoring, evaluation and learning, as a basis for program innovation, systems strengthening and implementation. IR does not take the place of routine data collection, monitoring and evaluation, but is a complement to it. Figure 1 provides a conceptual model for how IR fits into the overall evidence cycle for program management. As shown, if a problem is identified and the solution to the problem or an effective implementation strategy to address the problem is known, it is a management issue which can be resolved without the need for IR. However, if a problem is identified and the solution is unknown, or reason for the problem is unknown, IR can be used to inform program adjustments.

IR questions address a wide range of issues pertinent to implementation including acceptability, adoption, appropriateness, feasibility, fidelity, implementation cost, coverage and sustainability.¹⁰ These questions generally flow along the continuum of the implementation process: exploration, installation or planning, initial implementation, and full or sustained implementation.¹⁴

Embedded Implementation Research at UNICEF: Experiences 2015-2019

UNICEF, in partnership with the Alliance for Health Policy and Systems Research (The Alliance) and the Special Program for Research and Training in Tropical Diseases (TDR), has adapted an embedded IR approach for systems strengthening for country-based programs for children. As part of the UNICEF Health Systems Strengthening Approach,¹⁵ the research seeks to catalyze a shift in the way evidence is generated and used within countries to inform policy and decision-making. By bringing together a) in-country decision makers at national, sub-national and local level, b) country-based researchers, and c) global development partners, it puts local decision-makers and implementers in the driving seat in the research process, while identifying clear roles for different stakeholders.

The UNICEF approach aims to enhance ownership of the research among local implementers. Although it may influence local or higher-level policy, it is primarily designed to prioritize research on questions of local relevance, build capacity to conduct local IR to generate feasible recommendations in ‘real-time’ and underwrite policy and system strengthening. IR can also be considered during program initiation to answer questions on the acceptability, appropriateness and feasibility of alternative delivery strategies, as well as blending with evaluation, using “effectiveness-implementation hybrid designs”,¹⁶ to address program effectiveness.

UNICEF works with both global and local partners to identify priorities on implementation barriers needing resolution through systematic and inclusive IR processes. Programs, through IR, can learn why implementation barriers and contextual variances mean that interventions work well in one context, but not in another. In addition, it can be used to test new approaches or innovations from pilot through scale-up across different contexts (e.g. geographic, political, physical environment, social, economic). Implementation research can also document failures, where an intervention success couldn’t be replicated given local context, which is equally valuable to prevent wastage of funds before investing in scale-up.

UNICEF’s embedded IR approach generally starts with sensitization of national stakeholders including Ministry of Health and policymakers to what IR is and what the potential benefits are. Implementation barriers, often previously identified through national, sub-national or local programme reviews, or monitoring and evaluation, are reviewed, summarized and prioritized. In collaboration with national stakeholders and policymakers, implementation barriers are then transformed into priority research questions and potential related IR studies are identified. A research team comprising a partnership between national policy-makers, local decision-makers and implementers (e.g. program managers, district managers, front-line health workers), and in-country researchers is convened. Through this process, UNICEF staff, in partnership with implementation researchers or research institutions (global or local), provide technical support and training to develop protocols, ensure ethical research standards are maintained, conduct studies, and support communication of results, recommendations, and use of the findings for policy and program changes. Figure 2 provides an example of the UNICEF embedded IR process.

Figure 3 shows countries where UNICEF has worked with partners to embed IR within existing programming activities. In collaboration with in-country researchers, policy-makers and program implementers, UNICEF has been supporting IR projects globally since 2015. The research has varied from formative early stages of programming, through initial implementation, to full implementation. Methodological approaches varied by study and included quantitative,

qualitative and mixed-methods. Study questions have addressed a wide variety of multi-sectoral topics (e.g. immunization, child health days, birth registration, newborn and child health in humanitarian settings, prevention of mother-to-child transmission of HIV) and health system challenges (e.g. information systems, human resources, supply chain, demand for services, community engagement, integration).

Measuring Embedded Implementation Research Success

UNICEF's selected measure of success for embedded IR is that the research findings are used for policy and/or program changes. This near-real-time use of findings is key. Dissemination and publication of the results alone does not count as 'use', policy or program changes should be documented, no matter how small or local. Selected examples include:

- Nigeria: Integration of participatory action research approach into existing **social mobilization structures in areas with pockets of unimmunized children**. The research team developed policy and supporting documents to guide policy makers in this effort.¹⁷
- Ethiopia: Improvement of data quality and use within the existing health information system through community engagement. The team used their research findings to develop guidance on the use of **community health data for shared accountability**.¹⁷
- India: Examined how to **counter anti-vaccine propaganda** leading to a revised communication strategy, **including a mobile social media app** to target the primary platform for anti-vaccine messaging.¹⁷
- Malawi: Examined needs of HIV-positive adolescents within a **mentoring support program**. Based on study results the mentor program hired and trained **Adolescent Champions (same age peers)** within three months of study completion to provide special services for adolescents in the program.¹⁸

In addition to monitoring program results, we have also documented government implementers' and local research partners'¹⁹ experiences in the program. Results suggest positive responses to participation in the process. Text box 2 cites two quotes from a project in Pakistan, one from before the IR and one after, which exemplify the common responses seen from participants.

Funding Embedded Implementation Research at UNICEF

To date, UNICEF supported IR studies have been funded almost exclusively through projects, as part of the program monitoring or learning agenda. Studies are typically short-term and require limited funding. For example, five HIV-related IR studies in 2017 cost US\$15-35,000 each for data collection and analysis, and were completed within five-months. Projects to date range from \$10,000 to \$70,000 (usually \$20,000-\$40,000) and 5 to 18 months (usually 12 months). This near real-time aspect of embedded IR is recognized as one of the advantages as research results can be available within planning cycles for decision making and program adaptation. While the research projects themselves generally require limited funding, building local capacity to run the studies, both for the implementers and local researchers, often requires additional resources beyond the actual research costs for training and technical assistance during the studies.

Key challenges and considerations in developing UNICEF's embedded IR approach

IR has been recognized as critical to strengthen health systems.^{11,20,21} However, the concept of embedding research into real-world policy, practice and implementation is somewhat new in the field of global children's programming, and uptake of the approach has challenges. For example, we have found that in-country partners, including local and national-level government counterparts, and some donors, need to be convinced about the value of IR. By engaging stakeholders in this approach, we have seen a recognition of the use of IR for programme planning and enthusiasm for continuation of the implementer-researcher partnerships after completion of the initial IR project. Also, for IR to be truly country driven, donors and partners have to trust that countries can identify the most relevant implementation barriers, transforming them into questions to investigate. This will require adaptations for review of research proposals, which may be more undefined regarding objectives and methods, given that these will be defined as a first step of the research process. Greater emphasis on domestic resource mobilisation for embedding IR into the decision-making process and into routine program funding is needed. This problem can be overcome by advocacy, showcasing the value IR brings, building the capacity of partners on IR, and engaging them early and throughout the research activities so as to address their stated priorities, gaps in knowledge, and improve policy and ownership. Weighing opportunity costs between investing in service delivery and/or implementation research requires continued focus, as turnover of leadership and staff can reverse gains made in many contexts.

Another challenge is that in some cases our partner implementers and researchers have been overly ambitious or wanted to pursue larger scale research. However, our experiences show that time-limited, small-scale and relatively inexpensive IR studies can lead to important learnings that have translated into changes in policies or approaches. We saw that the IR brought these two communities closer together with the benefits of greater relevance of research to programming, introduction of new methods, and faster implementations of specific solutions. To build incentives for researchers to do IR, showing how their research led to policy and practice change and not just traditional peer reviewed publications could be valued by universities as a component for promotion or research funding.

Assessment of research quality and how the results are contributing to the existing evidence base also needs to be addressed. Many IR studies while being used locally for in country program improvements may not be published in peer-review literature, but nevertheless could contribute to expanding the evidence base on implementation strategies. Therefore publishing in on-line platforms, such as the TDR Gateway (<https://www.who.int/tdr/publications/tdr-gateway/en/>) or similar sites, will allow for quality-assurance and rapid wider dissemination.

Conclusion

UNICEF has built on the work of The Alliance, TDR and others, to adopt an innovative embedded IR approach to meet country program needs to assure the right to health and well-being 'For Every Child'. Embedding research into government systems and service delivery can address concerns of implementers and support selection of effective implementation strategies, taking into account local context and systems complexity to address implementation barriers. UNICEF embedded IR seeks to understand how to overcome these barriers within maternal, newborn, child and adolescent programs – in and beyond the health sector. In addition, it can be used to test applicability of approaches in different contexts (e.g., geographic, political, physical environment, social, economic). Ultimately, the aim of these activities is to build embedded IR capacity and accelerate large-scale adoption, effective implementation and dissemination of successful approaches that generate results for women and children.

Declarations

Ethics approval and consent to participate: All research discussed in this manuscript underwent ethical approval by local accredited ethical review committees in each country. There are no specific ethical considerations for this methodologic manuscript.

Consent for publication: Not applicable

Availability of data and materials: Not applicable

Competing interests: The authors declare that they have no competing interests

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Text Box

Text Box 1: Key Characteristics of UNICEF's Embedded Implementation Research Approach*

- Context specific – community, district, national
- Culturally sensitive, taking into account religious and cultural norms
- Relevant policy- and agenda-setting purpose – addresses the foundations of policy and challenges to implementation
- Methods fit for purpose - range of designs
- Demand driven – needs identified by policymakers, implementers or consumers (e.g. adolescents)
- Multi-stakeholder and multi-disciplinary - not just health
- Real world – usually under implementation rather than controlled trial or study conditions
- Real time – aligned with policy and program cycles and in time for real time improvements and adaptation
- Focuses on processes and outcomes – documents what is feasible and how
- Tacit knowledge is used and acknowledged and lesson-learning is embedded within the intervention - **cannot do Implementation Research without the Implementers, preferably IR is embedded in programs and lead by implementers.**

*Adapted from Peters, D. H., Tran, N. T. and Adam, T. (2013) 'Implementation Research in Health: A Practical Guide', Alliance for Health Policy and Systems Research. doi: ISBN 978 92 4 150621 2.

Text Box 2: Quotes from participants in embedded implementation research in Pakistan (Khalid, 2018)

Before:

"Researchers don't help us at all. The research they produce is irrelevant to us. It never helps solve our problems. They never talk to us. And we never see the results of research. All they want to do is publish their paper." *Pakistan District EPI manager*

After:

"Every year, three to five thick reports with a long list of recommendations are brought on my table, I seldom get a chance to skim through them, but this time, I am co-producing the required knowledge...." *Pakistan District EPI manager*

Figures

Where Implementation Research Fits within the Programme Cycle

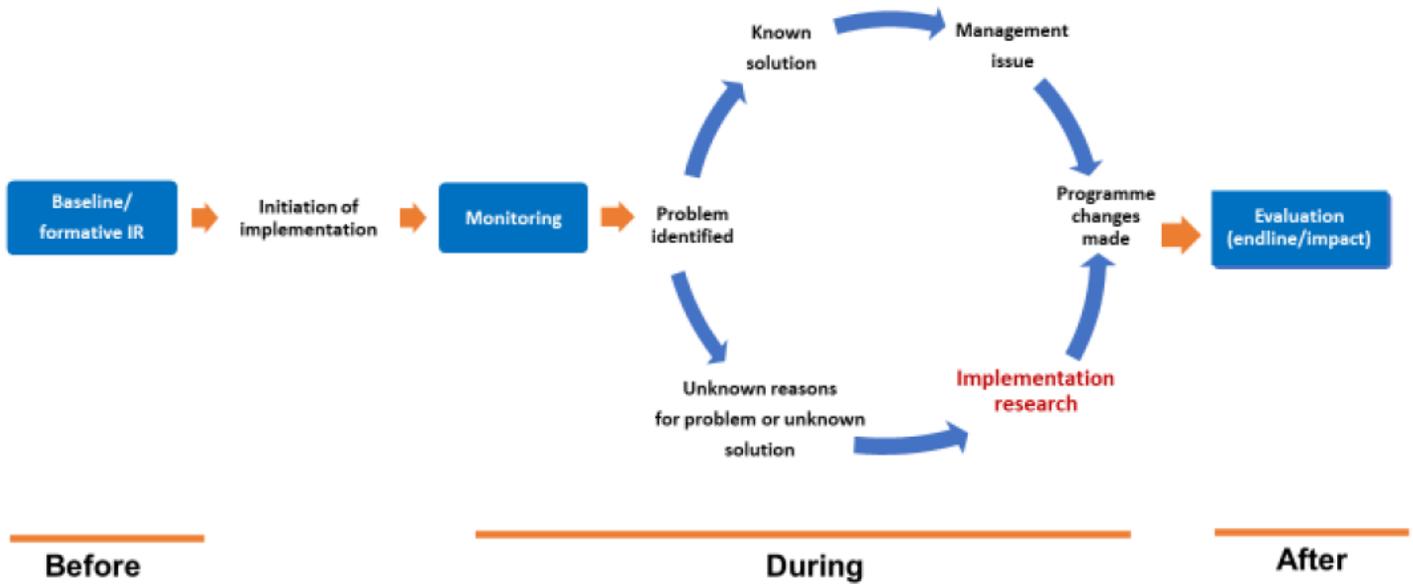


Figure 1

Where Implementation Research fits in programme monitoring and evaluation cycle

Where Implementation Research Fits within the Programme Cycle

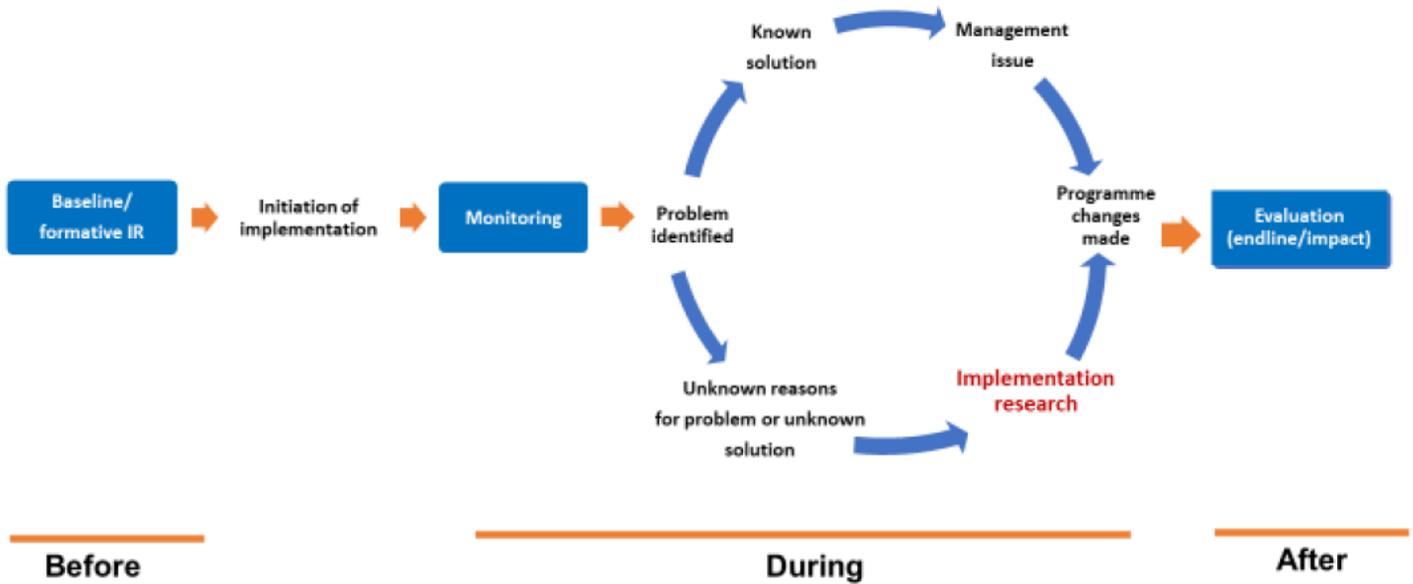


Figure 1

Where Implementation Research fits in programme monitoring and evaluation cycle



Figure 2

UNICEF Embedded Implementation Research Process

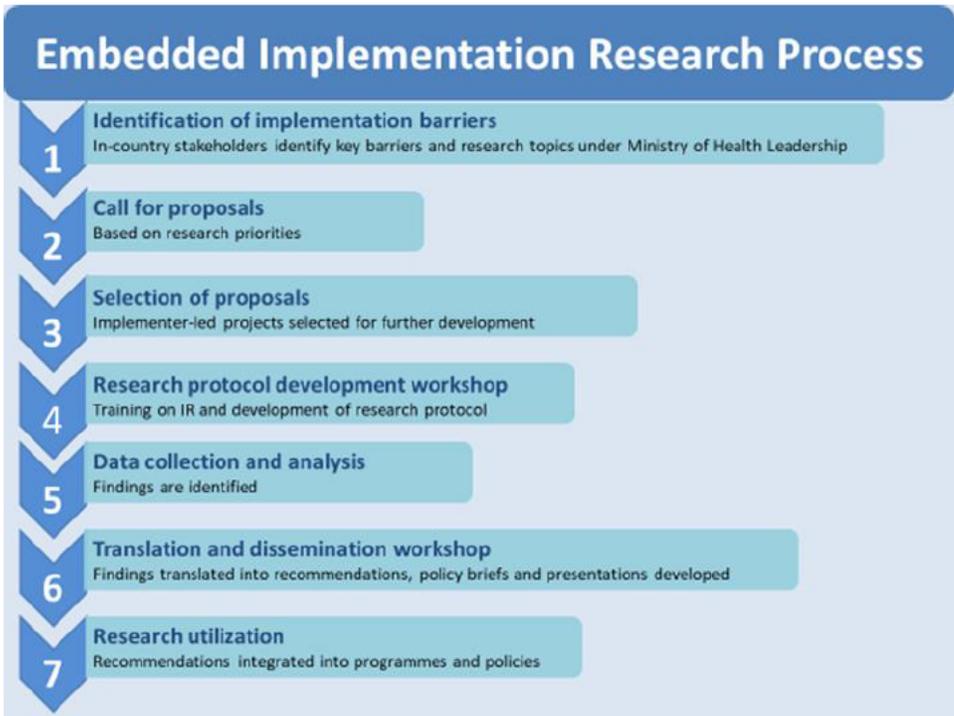


Figure 2

UNICEF Embedded Implementation Research Process



Figure 3
 Countries participating in UNICEF Supported Embedded Implementation Research since 2015. Note: The designations employed and the presentation of the material on this map do not imply the expression of any opinion whatsoever on the part of Research Square concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. This map has been provided by the authors.

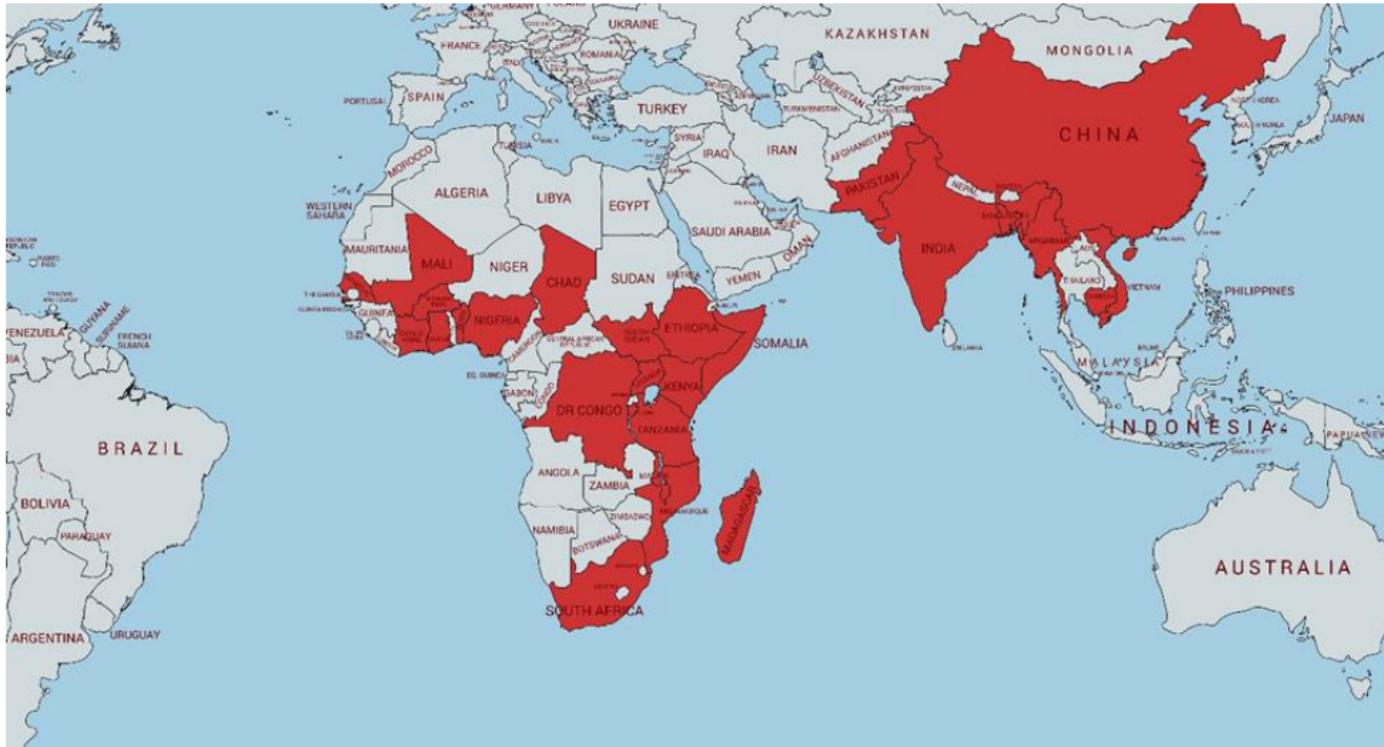


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