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Prioritising multi-sector collaborations in the funding of NTD programmes

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This briefing paper summarises the (lack of) empirical evidence for the benefits and risks of promoting multi-sector collaborations, in the funding of programmes against Neglected Tropical Diseases (NTDs). It also proposes a framework, that highlights factors commonly cited as theoretically important to the success or failure of collaboration.

Background

The science: multi-sectoral origins of NTDs

NTDs are a diverse group of communicable diseases that disproportionately affect those living in with poverty.(1) They are ‘tropical’ in being concentrated amongst poor populations in tropical and sub-tropical geographies. They are ‘neglected’ in that much of their disease burden could be addressed using existing tools and approaches, yet they have historically received much less resources and attention than the magnitude of suffering would justify. NTDs affect more than 1 billion people. (1–4)

Both transmission risk and susceptibility are poverty-related. (5) Transmission is highest where there is high exposure to the vectors, vehicles and reservoirs of NTDs – mosquitos and sand-flies, contaminated food, water and soil, and infected animals or humans. The risk of such exposure is associated with poverty. Furthermore, other poverty-related conditions render an individual more susceptible to developing disease after an exposure. For example, the vicious cycle between malnutrition and infectious disease is well established, (6,7) and may be important in soil-transmitted helminthiasis. (8)

These poverty-associated causal pathways often fall directly under the remit of non-health sectors. For example, the influence of water, sanitation and hygiene (WASH) and agricultural sectors on water-borne and vector-borne exposures, (8,9) or the education and housing sectors on direct (person-to-person) exposure. (10) Regardless of causal

Overview

- **Neglected Tropical Diseases are diseases of poverty** that primarily affect populations in (sub-)tropical areas, can be controlled with existing knowledge and technologies, but remain neglected relative to the burden they cause. They are typically infectious diseases.
- **Most guidance and policy-making bodies recommend multi-sectoral collaboration** to control NTDs. They cite the multi-sectoral root causes of NTDs, including their association (by definition) with poverty.
- **However, there is very little evidence** comparing multi-sectoral approaches with alternatives (e.g., single-sectoral). Many case studies exist, but authors are unable to attribute successes to multi-sectoral collaboration (vs other programme features).
- **Comparative evaluation efforts are needed**, in order for multi-sectoral approaches to NTDs to be evidence-based policy rather than dogma.
- **Until the empirical evidence is clearer, funders should prioritise multi-sectoral approaches where the theoretical fit is strongest.** To this end, this paper provides a framework of factors commonly cited as theoretically important to success or failure.
- **This fit is not immutable.** Funders should consider the implementing stakeholders’ capabilities and willingness to modify the status of success and failure factors through appropriately designed efforts.

pathways, other sectors may also possess efficient means of addressing NTDs. For example, the education-sector may assist in mass drug administration targeting school-aged children. (11) Interventions to control NTDs may be of interest to other sectors due to their potential to improve educational outcomes, as well as agricultural and worker productivity. (12,13)

The policy: current approaches to NTD control

A multi-sectoral approach to NTD control has been prominent since the establishment of WHO's NTD-control department in 2005. (14) Three of the five WHO-recommended public health strategies are explicitly multi-sectoral:

- **Vector** control and **pesticide** management;
- Safe drinking-**water**, basic **sanitation** and **hygiene** services, and **education**;
- **Zoonotic** disease management (“veterinary public health”).

This multi-sectoral approach is supported by a “focus on populations and interventions rather than specific diseases”, (15) and reaffirmed in the “social determinants of health” language of the World Health Assembly's 2013 resolution on NTDs, (2) and the strategies in the current WHO roadmap. (16)

The opportunity: proposed/future approaches

NTDs remain a global priority, embedded in Target 3.3 and Indicator 3.3.5 of the UN Sustainable Development Goals. (17) Major donors have also recently renewed their support. (18)

With the development of a new 2030 WHO Roadmap on NTDs underway,(3) it is an opportune time to consider the strength of evidence for multisectoral approaches. Early indications of the strategic direction indicate that NTD control efforts are seen to remain dependent on action in sectors beyond health. (4)



Figure: *Schistosoma mansoni* trematodes, a parasitic flatworm that causes schistosomiasis (CDC/Maddison, Courtesy: Public Health Image Library)

¹ Using PubMed and Google searches, including synonyms (e.g., multi-, inter-, cross-sectoral) and MeSH terms. We reviewed both peer-reviewed academic literature and grey literature. We also searched websites of key actors (e.g., WHO, DFID, USAID).

Issues

Lack of evidence for multi-sectoral collaboration

The multi-sectoral causal pathways involved in NTDs suggest that the involvement of multiple sectors may be required to combat them. Indeed, multi-sectoral approaches are believed to provide synergies in cost-effectiveness, since multiple interventions must be delivered to “neglected populations who nearly always suffer from several overlapping diseases linked to poverty”. (15)

However, there is little evidence of benefit and little acknowledgement of risks.

Collaboration involves a high degree of engagement. It implies that the actors share objectives, understanding of the problem, day-to-day responsibility for addressing these problems/achieving these objectives, and are jointly accountable for outcomes. Collaboration may be distinguished from more arms-length forms of engagement (such as coordination, cooperation, consultation, and communication).

In theory, collaboration risks incurring extra administrative and coordination costs, unclear or overlapping responsibilities and diluted accountability, and the potential for conflict where preferred objectives and means differ between stakeholders (particularly where they compete for similar resources). (19–23) Furthermore, the many statements from NTD organisations advocating for multi-sectoral collaboration suggest that such collaboration is not yet common practice. (15,24) Rather, mass drug administration remains the major focus of NTD programming. (3,8,9)

We conducted rapid evidence reviews of multi-sectoral collaborations in the NTD, WASH, nutrition, education, and maternal & child health sectors.¹

We found no publications directly comparing multi-sectoral with alternative approaches (i.e., what incremental impacts collaboration had, over each sector pursuing objectives independently or with lesser forms of engagement such as consultation):²

² Publications used weak study designs that did not define the counterfactual (comparator), did not control for confounding variables, or did so on a qualitative/expert-opinion basis only.

A framework to predict success or failure of multi-sectoral collaborations

Criteria ³	Success factors	Failure factors
Effective in reducing the disease burden	<ul style="list-style-type: none"> Consensus on priority areas (5,6,20,25) Co-option of wide range of stakeholders and local partners (6,7,26) Effective communication between sector managers (27–29) Coordinated design, planning and monitoring of program (6,8,9,20,24,30) Functional healthcare delivery system (31) 	<ul style="list-style-type: none"> Inadequate resourcing (32–34) Lack of local commitment (6,25) Too many sectors involved (9,35–37) Lack of role clarity (27,38) Lack of tangible “quick win” (34) Irregular supplies (6)
Efficient in resource use ⁴	<ul style="list-style-type: none"> Harmonization or pooling of funds/resources (8,30,35–37,39–48) Ensure complementarity between existing initiatives (20,31) Building new initiatives on existing programmes (49) Integrated initiatives across multiple diseases (3) 	<ul style="list-style-type: none"> Weak coordination among stakeholders(34) Unequal distribution of rewards or recognition to sectors involved (41,42,50) Lack of staff incentives (27) Presence of corruption (50)
Feasible to implement	<ul style="list-style-type: none"> Availability of pre-existing organizations or stakeholders with well-defined roles (6,25,29) A shared sense of identity (51) Existence of influential community leaders/community engagement mechanisms that can encourage acceptance (29,49) 	<ul style="list-style-type: none"> Weak leadership or lack of political commitment (7,35,39,40,47,48,50,52,53) Political divisiveness or instability (6,31,54) Dominance of private sector actors with conflicting agendas (29,38)
Equitable in helping the most vulnerable	<ul style="list-style-type: none"> Sustainable sources of funding (25,28,44,45) Community involvement (46) Intervention targeted to women and children (7,10,55) Appropriate regulation of private healthcare sector (37) 	<ul style="list-style-type: none"> Not prioritizing vulnerable groups when setting targets (7,56) Sectors dominated by for-profit entities (30,41,42)
Sustainable over time and resilient	<ul style="list-style-type: none"> Macroeconomic stability (27,28,39,40,47,48) and consistent funding (26,31,57) Cross-country political engagement and funding commitments (28,50,54,58) Performance-based funding (29) Good governance (30,36,47) and institutional capacity (44,46) Technical assistance from overarching bodies/international agencies (6,26,30,31,35–37,57) Gradual and effective scale-up/expansion of the multi-stakeholder network (49,53) 	<ul style="list-style-type: none"> Neglect of community inclusion in planning and implementation (43,46) Poor communication and coordination (6) Lack of standardised indicators for evaluation (51), fragmented monitoring and accountability (8,24,30,35,43,48)
Transparent to support learning and accountability	<ul style="list-style-type: none"> Preestablished mechanisms for monitoring and evaluation (29) Regular rhythm of reporting, stakeholder meetings, and communication (8,24,44,52,53) Joint information dissemination (24,28,35–37,44) Independent/sector-neutral oversight and evaluation (56) 	<ul style="list-style-type: none"> Presence of corruption (50) Low availability of utilisation data across different sectors (56) Delays in reporting and evaluation (51,53)

- **Grey literature typically cited program logic** based on the multi-sectoral origins of NTDs in order to justify multi-sectoral collaboration, or simply asserted the importance. (15,16,59–61)
- **Academic literature typically reported case studies** of “successful” individual multi-sectoral collaborative efforts, along with author commentary based on expert judgement (which invariably extolled the virtues of collaboration). (43,55,56)

In essence, the available evidence is not able to reliably attribute observed effects specifically to multi-sectoral collaboration, rather than to the

impacts of programmes generally. There was also striking lack of comment on the costs and risks associated with collaboration.⁵

Framework: good fit for multi-sectoral approaches
Without evidence from appropriately designed studies, decisions on when to prioritise multi-sectoral collaborations must currently be made on the basis of expert opinion and (theoretical) programme logic (particularly where non-health sectors hold responsibilities over the mode of transmission, e.g., water-borne, or susceptibility to disease, such as for nutritional status).

³ These criteria are based on commonly used criteria in health services evaluation, and DFID’s stated Responsibilities and Priorities.

⁴ Value for money relative to opportunity cost.

⁵ E.g., the WHO Global Plan to Combat Neglected Tropical Diseases 2008-2015 proposed “intersectoral approaches” as a “strategic area

for action”. However, the plan simply restates the “need for an intersectoral and interprogrammatic approach” as the “main challenges” to achieving this.

We propose a framework of commonly cited factors, to help identify where a multi-sectoral approach is most likely to yield benefits that warrant the risks.

This framework is based on:

- A. **Literature on the use of multi-sectoral collaborations** for NTDs, WASH, education, nutrition, and maternal & child health sectors.
- B. **Case studies** of multi-sectoral collaborations to control the 20 WHO-designated NTDs, using publicly available information.

Opportunities

1. *Informing the design of multi-sectoral collaborations*

Multi-sectoral collaborations should identify the success and failure factors most critical to their context, and **ensure programme plans give due regard to any opportunities to leverage success factors and mitigate failure factors**.

The importance of each success and failure factor identified in the framework is likely to vary depending on both the country-context and the particular NTD(s) targeted. For instance, while macroeconomic stability is likely to be a country-specific factor held in common across NTD programmes within that country, the ability to build new initiatives on existing programmes will depend on the specific disease.

The factors also vary in the ease with which they may be addressed by appropriate programme design and execution. For example, it may be easier to ensure that mechanisms for monitoring and evaluation are established prior to roll-out, while it may be difficult to ensure appropriate regulation of the private healthcare sector.

2. *Informing prioritisation of funds*

Funders should ensure that investment priorities/decisions are informed by appraisal of proposed plans to address success and failure factors.

Stakeholders may vary in the degree to which they hold the attributes and capabilities required to leverage a success factor or mitigate a failure factor. For instance, a collaboration of small NGOs targeting a single NTD may be able to directly

control “community inclusion in planning and implementation”, but may lack the scale and resources necessary to ensure the existence of “functional healthcare delivery system”. This applies to both the implementing stakeholders involved, as well as funders involved (e.g., a large and geopolitically powerful funder may be able and willing to shape “cross-country political engagement and funding commitment”).

3. *Targeting investments in evidence generation*

The proposed framework is intended to be a starting point for further evidence generation. It relies on low-grade evidence, collected by a desk review. In the available literature, the attribution of benefits and risks to multi-sectoral collaboration was typically based on expert opinion and current understanding of the biological causal pathways for NTD transmission and susceptibility.

The framework should be validated with the key stakeholders in multi-sectoral NTD collaboration. Remaining areas of contention and uncertainty should serve as a list of priority areas for further evaluation (and, ideally, experimental research). This research could serve to

- A. **Verify** the causal relevance of identified factors to multi-sectoral collaborations against NTDs.
- B. **Quantify** the relative importance of factors as contributors to programme success/failure.

Conclusions

Multi-sectoral collaborations against NTDs are commonly advocated, but lack a robust evidence-base to identify when benefits outweigh the risks. The framework proposed here highlights commonly cited factors believed to be associated with success or failure. After validation with stakeholders, it could inform priorities for further empirical research, and be refined using the evidence generated. It may also be useful in guiding the planning of collaborations, by identifying what enabling success factors and challenging failure factors may need to be addressed. Funding prioritisation may then be informed by an appraisal of the strength of these plans (and the implementers’ ability to execute them), in relation to the success/failure factors relevant to the context in question.

References

- World Health Organization (WHO) Neglected Tropical Diseases Strategic and Technical Advisory Group (NTD-STAG). Recommendations for the Adoption of Additional Diseases As Neglected Tropical Diseases [Internet]. Geneva; 2016. Available from: http://www.who.int/neglected_diseases/diseases/Adoption_additional_NTDs.pdf.
- World Health Organization. Neglected tropical diseases. In: Sixty-Sixth World Health Assembly [Internet]. 2014. p. v–vii. Available from: https://www.who.int/neglected_diseases/mediacentre/WH_A_66.12_Eng.pdf
- World Health Organization. WHO launches global consultations for a new Roadmap on neglected tropical diseases [Internet]. 2019. Available from: https://www.who.int/neglected_diseases/news/WHO-launches-global-consultations-for-new-NTD-Roadmap/en/
- World Health Organization. WHO NTD Roadmap 2021-2030: proposed goals and milestones [Internet]. 2019. Available from: <http://www.who.int/vector-control/en/><https://www.who.int/vector-control/publications/global-control-response/en/>
- Ault SK. Intersectoral approaches to neglected diseases. *Annals of the New York Academy of Sciences*. 2008.
- Herdiana H, Sari JFK, Whittaker M. Intersectoral collaboration for the prevention and control of vector borne diseases to support the implementation of a global strategy: A systematic review. *PLoS One*. 2018;13(10).
- Haselow NJ, Stormer A, Pries A. Evidence-based evolution of an integrated nutrition-focused agriculture approach to address the underlying determinants of stunting. *Matern Child Nutr*. 2016 May;12:155–68.
- Johnston EA, Teague J, Graham JP. Challenges and opportunities associated with neglected tropical disease and water, sanitation and hygiene intersectoral integration programs Global health. *BMC Public Health* [Internet]. 2015;15(1):1–14. Available from: <http://dx.doi.org/10.1186/s12889-015-1838-7>
- Freeman MC, Ogden S, Jacobson J, Abbott D, Addiss DG, Amnie AG, et al. Integration of Water, Sanitation, and Hygiene for the Prevention and Control of Neglected Tropical Diseases: A Rationale for Inter-Sectoral Collaboration. *PLoS Negl Trop Dis* [Internet]. 2013 Sep 26;7(9):e2439. Available from: <https://doi.org/10.1371/journal.pntd.0002439>
- Olney DK, Leroy JL, Bliznashka L, Ruel MT. A Multisectoral Food-Assisted Maternal and Child Health and Nutrition Program Targeted to Women and Children in the First 1000 Days Increases Attainment of Language and Motor Milestones among Young Burundian Children. *J Nutr*. 2019 Oct;149(10):1833–42.
- Ehrenberg JP, Ault SK. Neglected diseases of neglected populations: Thinking to reshape the determinants of health in Latin America and the Caribbean. *BMC Public Health*. 2005.
- World Health Organization. Report of the first global partners' meeting on neglected tropical diseases: a turning point. 2007.
- Kim A, Tandon A, Ruiz-Tiben E. Cost-benefit analysis of the Global Dracunculiasis Eradication Campaign (GDEC) [Internet]. Washington, DC; 1997. Available from: <http://documents.worldbank.org/curated/en/667061468759552975/Cost-benefit-analysis-of-the-Global-Dracunculiasis-Eradication-Campaign-GDEC>
- World Health Organization. Neglected tropical diseases 2003–2013: A decade of continued progress [Internet]. 2013 [cited 2019 Dec 20]. Available from: https://www.who.int/neglected_diseases/decade_of_continues_progress/en/
- World Health Organization. Global Plan to Combat Neglected Tropical Diseases 2008-2015 [Internet]. 2007. Available from: https://www.who.int/neglected_diseases/resources/who_cds_ntd_2007.3/en/
- World Health Organization. Accelerating Work to Overcome the Global Impact of Neglected Tropical Diseases: A Roadmap for Implementation. 2012;1–42.
- United Nations. General Assembly resolution 71/313. Work of the Statistical Commission pertaining to the 2030 Agenda for Sustainable Development [Internet]. A/RES/71/313 2017 p. 25. Available from: http://ggim.un.org/documents/A_RES_71_313.pdf
- Department for International Development (DFID). New UK aid support to protect 200 million people from debilitating diseases [Internet]. Press release. 2019. Available from: <https://www.gov.uk/government/news/new-uk-aid-support-to-protect-200-million-people-from-debilitating-diseases>
- Coase RH. The Nature of the Firm. *Economica*. 1937;
- Michaud-Létourneau I, Pelletier DL. Perspectives on the coordination of multisectoral nutrition in Mozambique and an emerging framework. *Food Policy*. 2017 Jul;70:84–97.
- Tadelis S, Williamson OE. Transaction cost economics. In: *The Handbook of Organizational Economics*. 2012.
- Varda D, Shoup JA, Miller S. A systematic review of collaboration and network research in the public affairs literature: Implications for public health practice and research. *American Journal of Public Health*. 2012.
- Vangen S, Huxham C. Introducing the theory of collaborative advantage. In: *The New Public Governance?: Emerging Perspectives on the Theory and Practice of Public Governance*. 2009.
- Svay P, Tam M. WASH Multi-sector Partnership between HSBC and World Vision Lanka: Learning from Initial Failures. *Medium*. 2018.
- University of Cambridge Programme for Industry. A Critical Analysis of Cross-Sector Partnerships in Southern Africa – Do they work and are there identifiable patterns of good practice ? 2005.
- Benson T. Cross-sectoral coordination failure: How significant a constraint in national efforts to tackle malnutrition in Africa? Vol. 28, *Food and Nutrition Bulletin*. 2007.
- WHO. WASH in health care facilities: Proceedings of an SNV Sustainable Sanitation and Hygiene for All (SSH4A) learning event [Internet]. Who. Punakha; 2019. Available from: <https://snv.org/cms/sites/default/files/explore/download/2019-ssh4a-washinhcfs-learning-event-proceedings.pdf>
- S. B, D. E, B.A. G, K.O. M, M.P. N, A. M, et al. Water, sanitation and hygiene for accelerating and sustaining progress on neglected tropical diseases: A new Global Strategy 2015-20. *Int Health*. 2015;
- Das JK, Akseer N, Mirzazada S, Peera Z, Noorzada O, Armstrong CE, et al. Scaling up primary health services for improving reproductive, maternal, and child health: A multisectoral collaboration in the conflict setting of Afghanistan. *BMJ*. 2018;
- Soublière J-F, Cloutier C. Coordinating cross-sector partnerships for water provision in Malawi. *Emerald Emerg Mark Case Stud*. 2015;
- Bhutta ZA, Nyaku A, Keylock J, Zaidi S, Das J. Landscape

- analysis of multi-sectoral initiatives for under-nutrition in Pakistan Landscape analysis of multi-sectoral initiatives for under-nutrition in. 2015;
32. Improving Nutrition Through Multisectoral Approaches. 2013.
 33. Chisholm N. Multi-sectoral collaboration for improved nutrition: The problems and prospects of implementation in Ethiopia. *Dev Policy Rev.* 2019 Mar;37(2):274–92.
 34. Reinhardt K, Fanzo J. Addressing Chronic Malnutrition through Multi-Sectoral, Sustainable Approaches: A Review of the Causes and Consequences. *Front Nutr.* 2014 Aug;1.
 35. Dias JCP. Southern Cone Initiative for the elimination of domestic populations of *Triatoma infestans* and the interruption of transfusional Chagas disease. Historical aspects, present situation, and perspectives. In: *Memorias do Instituto Oswaldo Cruz.* 2007.
 36. Salerno R, Salvatella R, Issa J, Anzola MC. A regional fight against Chagas disease: Lessons learned from a successful collaborative partnership. *Rev Panam Salud Publica/Pan Am J Public Heal.* 2015;
 37. de Vlas SJ, Stolk WA, le Rutte EA, Hontelez JAC, Bakker R, Blok DJ, et al. Concerted Efforts to Control or Eliminate Neglected Tropical Diseases: How Much Health Will Be Gained? *PLoS Negl Trop Dis.* 2016;
 38. Howe WJ. Multi-sectoral education and WASH programming in the Lao PDR - a case study of PLAN's ECCD and WASH Programs in Bokeo province funded by Australian Aid. 2014.
 39. Leslie J, Garba A, Boubacar K, Yayé Y, Sebongou H, Barkire A, et al. Neglected tropical diseases: Comparison of the costs of integrated and vertical preventive chemotherapy treatment in Niger. *Int Health.* 2013;
 40. Koukounari A, Touré S, Donnelly CA, Ouedraogo A, Yoda B, Ky C, et al. Integrated monitoring and evaluation and environmental risk factors for urogenital schistosomiasis and active trachoma in Burkina Faso before preventative chemotherapy using sentinel sites. *BMC Infect Dis.* 2011;
 41. Gutiérrez JM, Theakston RDG, Warrell DA. Confronting the neglected problem of snake bite envenoming: The need for a global partnership. *PLoS Medicine.* 2006.
 42. Gutiérrez JM, Burnouf T, Harrison RA, Calvete JJ, Kuch U, Warrell DA, et al. A multicomponent strategy to improve the availability of antivenom for treating snakebite envenoming. *Bull World Health Organ.* 2014;
 43. World Health Organization. Report of the WHO informal working group on cystic and alveolar echinococcosis surveillance, prevention and control, with the participation of the Food and Agriculture Organization of the United Nations and the World Organisation for Animal Health, 22-23. Geneva; 2011.
 44. The World Bank. Public and Private Sector Roles in Water Supply and Sanitation Services. *Int Bank Reconstr Dev.* 2004;
 45. The World Bank, African Development Bank, Water and Sanitation Program. Building Partnerships for Sustainable Water and Sanitation Services in Africa: Lessons from collaborative initiatives by the World Bank, African Development Bank and the Water and Sanitation Program. World Bank 2009.
 46. Madon S, Malecela MN, Mashoto K, Donohue R, Mubyazi G, Michael E. The role of community participation for sustainable integrated neglected tropical diseases and water, sanitation and hygiene intervention programs: A pilot project in Tanzania. *Soc Sci Med.* 2018;
 47. Coulibaly YI, Dicko I, Keita M, Keita MM, Doumbia M, Daou A, et al. A Cluster Randomized Study of The Safety of Integrated Treatment of Trachoma and Lymphatic Filariasis in Children and Adults in Sikasso, Mali. *PLoS Negl Trop Dis.* 2013;
 48. Stocks ME, Ogden S, Haddad D, Addiss DG, McGuire C, Freeman MC. Effect of Water, Sanitation, and Hygiene on the Prevention of Trachoma: A Systematic Review and Meta-Analysis. *PLoS Med.* 2014;
 49. Barnett S, Van Dijk J, Swaray A, Amara T, Young P. Redesigning an education project for child friendly radio: A multisectoral collaboration to promote children's health, education, and human rights after a humanitarian crisis in Sierra Leone. *BMJ.* 2018;
 50. Pusok K. Public-Private Partnerships and Corruption in the Water and Sanitation Sectors in Developing Countries. *Polit Res Q.* 2016;
 51. Kuruvilla S, Hinton R, Boerma T, Bunney R, Casamitjana N, Cortez R, et al. Business not as usual: How multisectoral collaboration can promote transformative change for health and sustainable development. *BMJ.* 2018;
 52. Freeman MC, Ogden S, Jacobson J, Abbott D, Addiss DG, Amnie AG, et al. Integration of Water, Sanitation, and Hygiene for the Prevention and Control of Neglected Tropical Diseases: A Rationale for Inter-Sectoral Collaboration. *PLoS Negl Trop Dis.* 2013;
 53. Blauvelt C, West M, Maxim L, Kasiya A, Dambula I, Kachila U, et al. Scaling up a health and nutrition hotline in Malawi: The benefits of multisectoral collaboration. *BMJ.* 2018;
 54. Cunningham K, Singh A, Pandey Rana P, Brye L, Alayon S, Lapping K, et al. Suaahara in Nepal: An at-scale, multi-sectoral nutrition program influences knowledge and practices while enhancing equity. *Matern Child Nutr.* 2017 Oct;13(4).
 55. Gonzales F, Dearden K, Jimenez W. Do multi-sectoral development programmes affect health? A Bolivian case study. 1999.
 56. Kaba MW, Baesel K, Poch B, Bun S, Cerceau S, Bury L, et al. IDPoor: A poverty identification programme that enables collaboration across sectors for maternal and child health in Cambodia. *BMJ.* 2018;
 57. Okia M, Okui P, Lugelesa M, Govere JM, Katamba V, Rwakimari JB, et al. Consolidating tactical planning and implementation frameworks for integrated vector management in Uganda. *Malar J.* 2016 Apr;15(1).
 58. Kampman H, Zongrone A, Rawat R, Becquey E. How Senegal created an enabling environment for nutrition: A story of change. Vol. 13, *Global Food Security.* Elsevier B.V.; 2017. p. 57–65.
 59. World Health Organization. Fourth WHO report on neglected tropical diseases: Integrating Neglected Tropical Diseases into Global Health and Development. 2017. Fact Sheet March 2017.
 60. World Health Organization. Third WHO report on neglected tropical diseases: Investing to Overcome the Global Impact of Neglected Tropical Diseases. *Cholera.* 2019;1–29.
 61. World Health Organization. Second WHO report on neglected tropical diseases: Sustaining the drive to overcome the global impact of neglected tropical diseases. 2013;153.