

Trends in government and donor funding for vertical and horizontal community health worker programmes in sub-Saharan Africa

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ABSTRACT

Introduction Community health worker (CHW) programmes are central to primary healthcare (PHC) in sub-Saharan Africa (SSA). Yet who pays for them, how much, and whether funds favour vertical (single-disease) or horizontal (broader-focus) programmes remains unclear. This study examined trends in donor and government financing for CHW programmes across SSA.

Methods We conducted a secondary analysis of publicly available data. Organisation for Economic Co-operation and Development Creditor Reporting System (2002–2022) projects were screened and classified as vertical or horizontal through standard definitions and manual review. Government spending in 37 SSA countries (using WHO Global Health Expenditure Database (2016–2022)) was estimated by applying maturity-based allocation percentages to preventive and outpatient curative functions. We described trends, donor composition, vertical–horizontal shares and the annual financing gap against published cost benchmarks.

Results Between 2002 and 2022, global external assistance for CHW programmes totalled US\$14.4 billion, SSA receiving 76% (US\$11.0 billion). Of donor funds to SSA, 76.4% supported vertical programmes, although these made up fewer than 20% of projects; horizontal programmes received just 14.7%. Annual external assistance rose from ~US\$0.28 billion (2016–2019) to ~US\$1.83 billion (2020–2022), with over 90% directed to vertical or COVID-19-related efforts. Government spending across 37 SSA countries totalled ~US\$1.4 billion (2016–2022). This represented less than 20% of total CHW funding but a greater share directed to horizontal services (54.6%). The annual financing gap remained between US\$4.7 billion and US\$4.3 billion.

Conclusions CHW financing in SSA is donor-dominant and vertically oriented; domestic allocations are limited but relatively more horizontal. Closing the funding gap will require larger, predictable government budgets for CHWs, better-aligned partner support and stronger expenditure tracking to sustain PHC and advance universal health coverage.

WHAT IS ALREADY KNOWN ON THIS TOPIC

- ⇒ Community health worker (CHW) programmes are central to primary healthcare (PHC) in sub-Saharan Africa (SSA) yet remain chronically underfinanced and often excluded from national budgets.
- ⇒ Prior studies have assessed donor support for health, but little is known about the specific volume of CHW financing, how it is distributed between vertical (single-disease) and horizontal (broader-focus) programmes, and the extent of domestic government contributions.

WHAT THIS STUDY ADDS

- ⇒ Between 2002 and 2022, global external assistance for CHWs reached US\$14.4 billion, with ~76% directed to SSA.
- ⇒ In the region, ~76.4% of donor disbursements went to vertical programmes, although these were <20% of projects; horizontal programmes received smaller amounts.
- ⇒ Government spending in 37 countries (2016–2022) totalled ~US\$1.4 billion (~US\$0.20bn annually), less than 20% of total CHW financing, but proportionally more horizontal (~55%).

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

- ⇒ Governments should secure predictable, on-budget funding for CHW programmes—including salaries—to reduce reliance on unpredictable donor flows.
- ⇒ Donor financing should be better aligned with country-led PHC strategies, balancing targeted disease outcomes with investments in broader, horizontal CHW programmes.
- ⇒ Stronger and more routine expenditure tracking systems are needed to generate CHW-specific data and inform resource allocation at national and regional levels.

INTRODUCTION

Community health workers (CHWs) are the backbone of primary healthcare (PHC) in

low-income and middle-income countries (LMICs), particularly in rural areas. Endorsed by the WHO, CHWs deliver essential promotive, preventive and curative services and help address health workforce shortages.¹ In sub-Saharan Africa (SSA), where the average density of professional health workers is just 1.55 per 1000 people—well below the recommended WHO threshold of 4.45—CHWs play a vital role in advancing universal health coverage (UHC).^{1,2}

In practice, they are the frontline delivery platform for PHC, providing maternal and child health (MCH) follow-up, immunisation outreach, family planning and integrated community case management for malaria, pneumonia and diarrhoea, alongside treatment support for HIV and tuberculosis. During health system shocks—such as the Ebola, the COVID-19 pandemic and climate-related events including floods and droughts—CHWs are central to sustaining access and continuity of care, including for outbreak-prone conditions such as cholera.^{1–3}

There are an estimated one million CHWs across Africa today, or roughly 0.6 per 1000 people—roughly half of the African Union's target of two million CHWs by 2030.³ This gap reflects both workforce and financing shortfalls.⁴

These gaps have direct implications for access and equity, particularly in rural areas where CHWs are often the first and only point of contact with the health system.^{3–6} Yet many CHW programmes remain reliant on short-term donor support and are excluded from national budgets.^{4,5,7} CHWs frequently work without pay, adequate training or supervision and are often omitted from national workforce plans.^{1,4–6} These limitations can compromise programme quality, reduce motivation and weaken continuity of care.^{3–5}

Prior studies have examined development assistance for health, but few have disaggregated how much funding specifically supports CHW programmes,⁷ or its distribution between vertical (single-disease) and horizontal (broader-focus) programmes. This distinction matters: while vertical programmes can achieve targeted results, horizontal approaches are often seen as effective in supporting system-wide capacity and long-term resilience.^{8–10}

This study addresses these gaps by analysing long-term trends in CHW programme financing from 2002 to 2022. Using data from the Organisation for Economic Co-operation and Development (OECD) Creditor Reporting System (CRS, 2002–2022),¹¹ we identified CHW-related programmes and classified them by disease focus. To estimate domestic spending across 37 SSA countries, we applied a proxy method using the WHO Global Health Expenditure Database (GHED).¹²

We aimed to answer four key questions: What was the total volume of external assistance for CHW programmes globally? What share was directed to SSA? How much did governments in SSA spend on CHW-related programmes? How was funding distributed between vertical and

horizontal programmes for donor and government spending, respectively?

By answering these questions, this paper contributes new evidence to inform more balanced, aligned and long-term financing strategies for community health.

METHODS

We used publicly available secondary data to estimate external and domestic financing for CHW programmes in SSA to conduct a descriptive financing analysis of public, aggregate datasets.^{11,12}

External assistance

We extracted disbursement data on health projects from the OECD CRS, which tracks Official Development Assistance from bilateral and multilateral donors, including private philanthropic contributions reported through official channels. Our analysis used annual disbursement data (grants and loans) for the period 2002–2022 and covered low-income and LMICs in SSA, based on World Bank income classifications.

Domestic spending

We used available GHED data from 37 SSA countries (2016–2022), focusing on two functional categories aligned with CHW service delivery: preventive care (HC.6) and general outpatient curative care (HC.1.3), based on System of Health Accounts (SHA) 2011 and WHO guidance.¹ Countries with no data in either category were excluded.

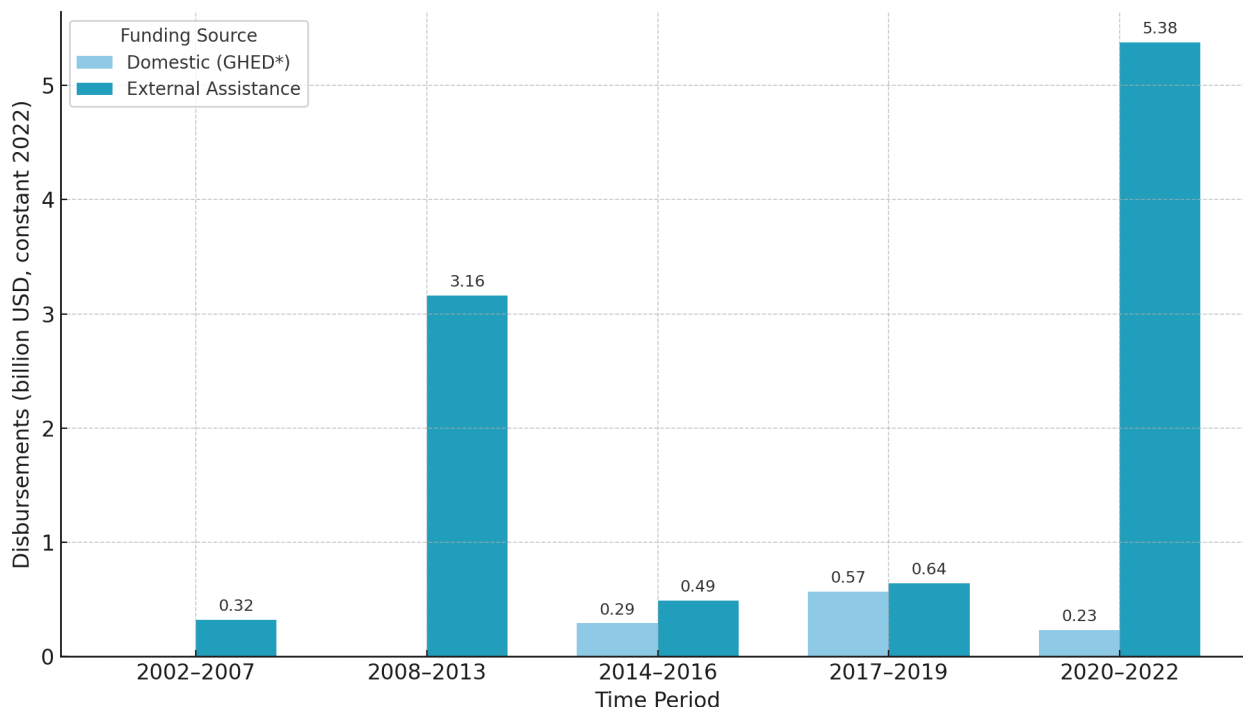
Identification and classification of CHW programmes

CHW-related projects in the CRS database were identified using refined keywords (eg, “CHW,” “midwife”) from Lu *et al* (online supplemental appendix A).⁷ Generic terms like “community participation” were excluded unless directly linked to CHW service delivery. Projects lacking sufficient detail or focused solely on medical research were also excluded.

Programmes were classified based on CRS project descriptions and literature definitions (online supplemental appendix C). Vertical programmes targeted a single disease (eg, HIV, malaria), while horizontal programmes addressed broader areas such as MCH or nutrition.^{9,10} Where descriptions were unclear or covered multiple components, classification was determined through manual review. Some ambiguity remained due to limited project detail in certain records.

Estimating government spending on CHW programmes

GHED does not offer programme-level data. To estimate government spending, we applied proxy percentages to preventive and outpatient curative care spending. Countries were grouped into low, medium and high maturity based on four indicators: policy presence, programme structure, training/payment and scale of deployment (online supplemental appendix B).¹³ Each maturity level was assigned a percentage allocation of preventive



*Domestic spending data from WHO GHED only available from 2016 onwards. Earlier years show no data, not no spending.

Figure 1 Annual government spending on CHW programmes (proxy estimates) and external assistance to CHW programmes in SSA, 2016–2022 (grouped by time periods). Combined bar chart comparing annual government expenditure on CHW programmes (estimated using proxy percentages) with external assistance to SSA from 2016 to 2022. All figures are presented in constant 2022 US dollars, billion. CHW, community health worker; GHED, Global Health Expenditure Database; SSA, sub-Saharan Africa.

and curative care to estimate the share of government spending likely allocated to CHW programmes: low (5%, 2.5%), medium (10%, 5%), and high (20%, 10%), respectively. These thresholds were adapted from WHO guidance and earlier costing studies that found CHW-related activities typically account for 3%–25% of preventive and primary care budgets; our parameters therefore represent conservative midpoints within this range.^{13–16}

To enable consistent proxy estimates of government CHW spending, we applied maturity scores retrospectively across 2016–2022. While some countries advanced during this period (eg, Sierra Leone, Kenya), most programme features often evolved slowly, and a stable framework allowed comparability.

In high-maturity countries like Kenya and Ghana, estimated average CHW per capita spending ranged from US\$0.85 to 1.02. In contrast, countries like Burundi and Malawi spent less than US\$0.05. In our analysis of government-only expenditure, PHC spending ranged from 8 to 24 times higher than CHW spending—highlighting the domestic underinvestment in CHW programmes (figure 1). These estimates aligned with earlier findings that total (government+donor) PHC spending in SSA was, on average, 7.7 times higher than CHW spending.⁴⁵

To estimate vertical and horizontal CHW spending in GHED, we used the HC.6 functional classification (expenditure by disease or condition), grouping areas

such as HIV, TB and malaria as vertical, and reproductive health and nutrition as horizontal. We then applied maturity-based CHW allocation percentages to approximate government spending by programme type. Our estimates depend on GHED functional reporting. Missing disaggregation (eg, Zambia after 2016) resulted in proxy allocations of zero, which should be interpreted as ‘data not available’ rather than true absence of CHW spending.

Data analysis

Data were cleaned and analysed using Microsoft Excel. Funding figures were grouped into five periods: 2002–2007, 2008–2013, 2014–2016, 2017–2019 and 2020–2022, based on observed shifts in funding and global events (eg, COVID-19).¹⁷ Disbursements were disaggregated by donor, recipient country and programme type. For SSA, we identified the top donors and compared external assistance and government spending between 2016 and 2022. To estimate the financing gap, we compared total funding (our analysis) against costs for at-scale CHW programmes outlined by Gichaga *et al.*⁵

RESULTS

External assistance to CHW programmes globally

Between 2002 and 2022, global external assistance for CHW programmes was estimated at US\$14.4 billion. Disbursements rose from US\$0.07 billion in 2002 to

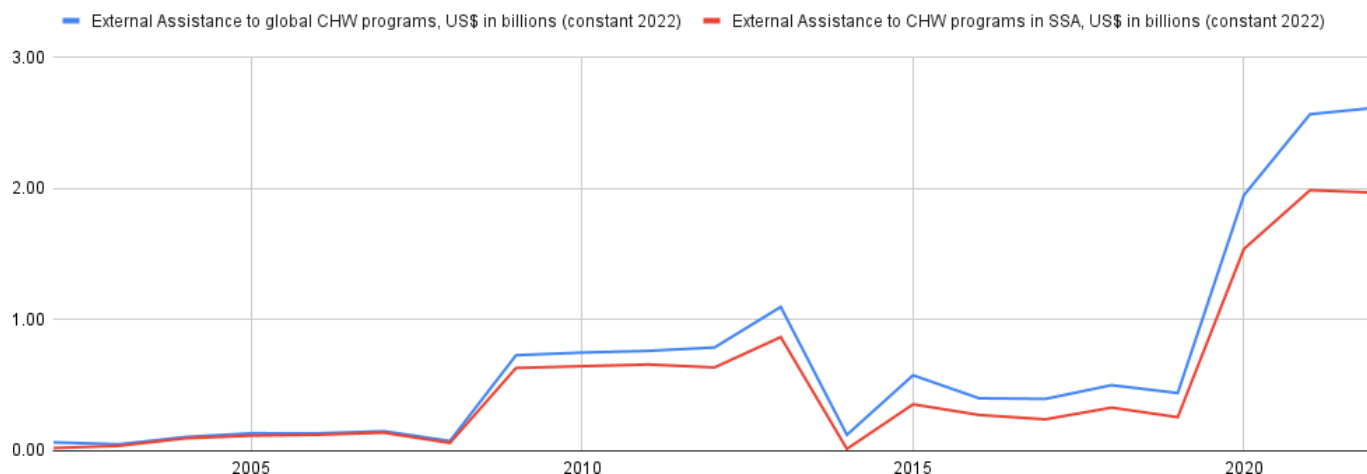


Figure 2 Annual external assistance to CHW programmes globally and in sub-Saharan Africa (SSA), 2002–2022 (constant 2022 US\$ billions). Line chart showing annual disbursements to CHW programmes globally and in low-income and lower-middle-income countries in SSA. Disbursement amounts are drawn from OECD CRS and adjusted to constant 2022 US dollars. CHW, community health worker; CRS, Creditor Reporting System; OECD, Organisation for Economic Co-operation and Development.

US\$2.62 billion in 2022 (figure 2; the underlying data used to generate figure 1 are provided in online supplemental figure 1). A sharp increase occurred between 2008 and 2009, rising from US\$0.08 billion to US\$0.73 billion. In 2014, funding fell by 89%, from US\$1.09 billion in the previous year to just US\$0.12 billion, before recovering to US\$1.54 billion in 2020—a 342% rise from 2019.

External assistance to CHW programmes in SSA

Zooming in on SSA, external assistance to CHW programmes totalled approximately US\$11.0 billion, rising from US\$0.02 billion in 2002 to US\$1.97 billion in 2022. Sharp increases occurred between 2008 and 2009 (from US\$0.06 billion to US\$0.63 billion, +971%) and 2019 to 2020 (from US\$0.26 billion to US\$1.54 billion, +502%). In contrast, 2014 saw a 98% drop, with disbursements falling to US\$0.01 billion. Over the full period, SSA received 76% of global CHW-related aid.

To reflect changes in donor activity and funding volumes, disbursements were grouped into five periods. From 2002 to 2007, funding remained low and was led by the International Development Association. Between 2008 and 2013, disbursements increased sharply, driven by large contributions from the Global Fund. Funding declined to lower levels during 2014–2016 and 2017–2019, supported by bilateral donors such as the USA, Canada and the UK. From 2020 to 2022, support increased largely for COVID-19-related response, with the Global Fund contributing the majority.

Across the full period, the Global Fund was the largest donor, disbursing 67.0% of CHW aid to SSA, followed by Canada (11.4%) and the USA (9.3%). Other contributors included the UK, Sweden, Korea and Norway. Figure 2 presents disbursements from the six largest donors across all five periods. The underlying data used to generate figure 2 are provided in online supplemental figure 2.

Domestic spending on CHW programmes in SSA

Between 2016 and 2022, government CHW spending in SSA totalled ~\$1.4 billion (2022 US\$), averaging US\$0.20 billion annually. This was markedly lower than external assistance, which averaged US\$0.94 billion per year over the same period (figure 1; the underlying data used to generate figure 3 are provided in online supplemental figure 3). (Data from GHED were only available from 2016 and earlier years show no data, not no spending.)

Spending peaked in 2016 at US\$0.30 billion, then declined steadily to US\$0.08 billion by 2022. Meanwhile, external assistance increased sharply, especially between 2020 and 2022, reaching US\$5.5 billion. Government contributions made up 52% of total CHW funding in 2016 but dropped to under 4% by 2022.

Spending levels varied across countries. Between 2016 and 2019, the highest per capita government spending was in Eswatini (US\$16.2) and São Tomé and Príncipe (US\$7.2). In absolute terms, Nigeria (US\$0.22 billion), Kenya (US\$0.16 billion) and Ghana (US\$0.12 billion) allocated the most. From 2020, government spending appeared negligible in many countries, including Kenya and Ethiopia, likely due to reporting gaps.

Spending on horizontal and vertical CHW programmes in SSA

Between 2002 and 2022, external assistance for CHW programmes in SSA totalled nearly US\$11.0 billion across more than 11 000 project records. Of this, US\$8.37 billion (76.4%) supported vertical programmes, despite these accounting for only one in five CHW projects. Horizontal programmes were more common but typically received smaller disbursements, totalling US\$1.61 billion (14.7%) (figure 4). The underlying data used to generate figure 4 are provided in online supplemental figure 4.

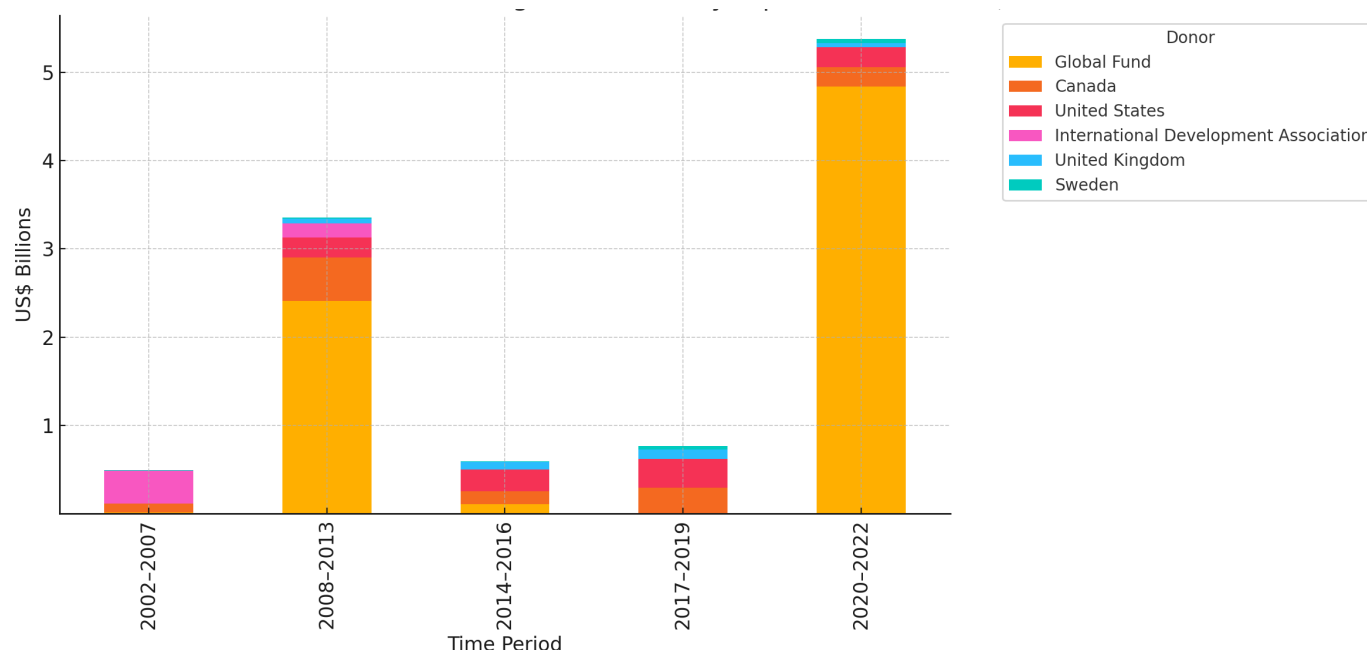


Figure 3 Total external assistance disbursed (in billion US\$) to CHW programmes in SSA by six key donors across five time periods (2002–2022). Stacked bar chart presenting cumulative disbursements from the six largest donors for CHW programmes in SSA across five time periods. Data are derived from the OECD CRS database. CHW, community health worker; CRS, Creditor Reporting System; OECD, Organisation for Economic Co-operation and Development; SSA, sub-Saharan Africa.

Funding patterns shifted over time. From 2002 to 2007, total disbursements were US\$0.51 billion, with two-thirds directed to vertical programmes. Between 2008 and 2013, funding increased to US\$3.50 billion, 77% of which went to vertical efforts. From 2014 to 2016, disbursements fell to US\$0.64 billion, with 40% for horizontal, 38% for vertical and the rest for other programmes. A similar balance was seen in 2017–2019, when disbursements reached US\$0.82 billion and horizontal programmes received the largest share.

However, from 2020 to 2022, external CHW funding rose sharply to US\$5.5 billion, over 90% of which supported vertical programmes (primarily COVID-19).

Funding was concentrated among a few donors. The Global Fund disbursed US\$7.37 billion—over two-thirds of all CHW external funding—with more than 90% directed to vertical programmes aligned with its mandate. Canada (US\$1.25 billion) and the US (US\$1.02 billion) showed more balanced patterns, allocating 55.9% and 46.0% of funding, respectively, to horizontal programmes. Sweden disbursed US\$0.11 billion, with over 85% supporting horizontal programmes. Other contributors, including Ireland and Norway, also made smaller disbursements.

In comparison, government CHW spending between 2016 and 2022 in 37 SSA countries totalled US\$1.4 billion. (US\$0.31 billion (22.1% of total government CHW spending) could not be classified as either horizontal or vertical. This is labelled as ‘other’ and excluded from the estimate.) Among classifiable data, 54.6% supported horizontal programmes—such as Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCH) and nutrition—while 45.4% went to vertical programmes (figure 5; the

underlying data used to generate figure 5 are provided in online supplemental figure 5). From 2016 to 2019, spending was relatively balanced (53.3% horizontal, 46.7% vertical); in 2020–2022, horizontal programmes received a slightly greater share (~60%). Spending patterns varied across countries. Country-level patterns remained highly variable. For instance, Mauritania, Burkina Faso and Ghana allocated over 65% of their CHW-related government spending to horizontal services. By contrast, Guinea-Bissau, Côte d’Ivoire and Guinea allocated over two-thirds to vertical programmes. Many countries lacked disaggregated or reported data between 2016 and 2022, reflecting continued challenges in expenditure tracking. These findings underscore the uneven prioritisation of programme types and the importance of strengthening financial reporting systems to align with national PHC strategies.

DISCUSSION

This study provides long-term trends of financing for CHW programmes in SSA, drawing on both domestic and external sources. By distinguishing between horizontal and vertical programme types, the analysis offers insights into the evolution of funding levels and allocation patterns. While total investment increased, funding remained uneven across countries, heavily supported by donors, and more limited for horizontal programmes. These patterns may affect countries’ ability to scale and sustain CHW programmes as part of their PHC systems.

Understanding variations in external assistance to CHW programmes globally and SSA

Between 2002 and 2022, external assistance for CHW programmes averaged US\$0.68 billion annually, with

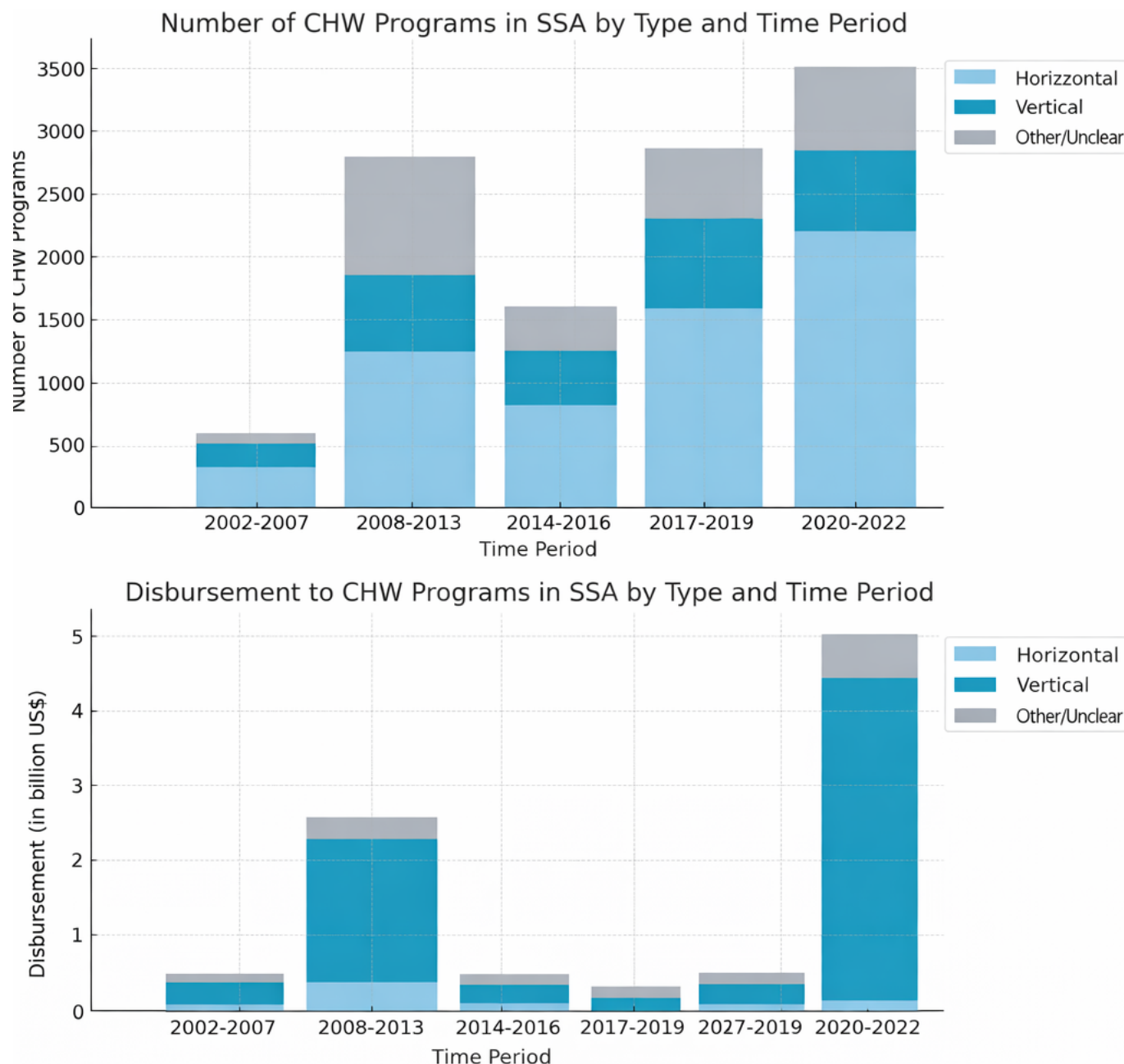


Figure 4 Programme type distribution and external assistance for CHW programmes in SSA, from 2002 to 2022 (grouped by time periods). Top panel: Total external assistance disbursed to CHW programmes in SSA by programme type. Bottom panel: Number of CHW-related programmes in SSA disaggregated by programme type—horizontal, vertical and other. Most funding was directed to vertical programmes, particularly during the COVID-19 response in 2020–2022, despite horizontal programmes representing the majority of total programme counts. CHW, community health worker; SSA, sub-Saharan Africa.

76% of total disbursements directed to SSA. This aligns with earlier estimates, including the 2021 Closing the US\$2 Billion Gap report,¹⁸ and reflects the region's continued dependence on donor financing for community health delivery.¹⁹ Funding increased sharply between 2008 and 2013, coinciding with expanded support from global health initiatives such as the Global Fund and The President's Emergency Plan for AIDS Relief (PEPFAR).^{20 21 22} This was followed by a

significant drop in 2014, potentially reflecting shifts in donor funding cycles and the transition from the Millennium Development Goals to the Sustainable Development Goals.³ Together, these fluctuations mirror broader patterns of volatility in development assistance and indicate that CHW programmes—often financed through time-bound, externally managed projects—are particularly exposed to changes in donor priorities.²³

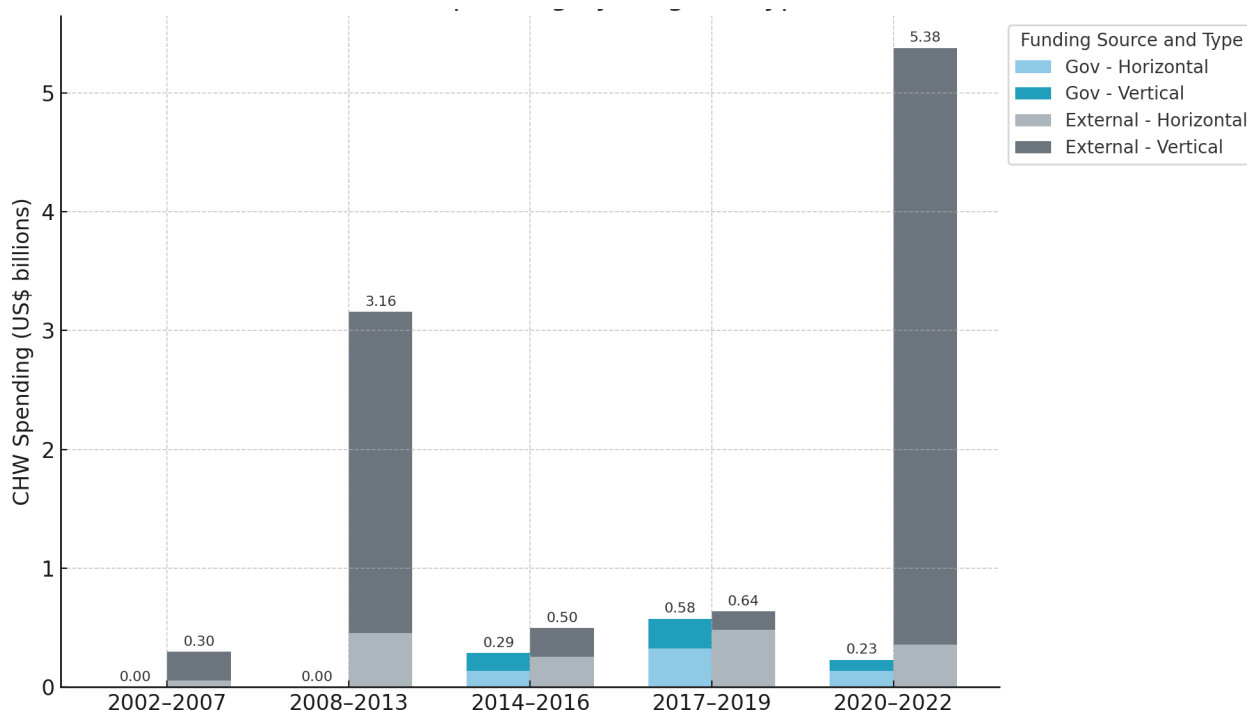


Figure 5 Combined bar chart comparing government expenditure (proxy estimates) and external assistance to CHW programmes split by type in SSA from 2002 to 2022 (grouped by time periods). All figures are presented in constant 2022 US dollars, billion. WHO GHED only reported spending 2016 onward. GHED splits are available 2016 onward and 2002–2015 bars show external assistance only. CHW, community health worker; GHED, Global Health Expenditure Database; SSA, sub-Saharan Africa.

A further rise in disbursements occurred during the COVID-19 period (2020–2022), supported by mechanisms such as the Global Fund’s COVID-19 Response Mechanism.²⁴ While this surge temporarily expanded CHW capacity, the reliance on emergency, time-limited financing underscored the risks of crisis-driven funding models, particularly the absence of mechanisms to ensure continuity of expanded CHW roles and financing beyond the acute phase of the pandemic.²⁵

Although our analysis ends in 2022, subsequent reductions and uncertainty in US foreign assistance since 2024–2025 provide important context for interpreting these findings. Early reporting from multilateral agencies and implementing partners links funding shortfalls to disruptions in essential health services across several SSA countries, including reduced community outreach and interruptions to supply chains.²⁶ Taken together, historical funding volatility and recent developments highlight that financing predictability—at least as much as funding volume—is critical for enabling governments to plan, integrate and maintain continuous CHW service delivery within PHC systems.

Domestic spending on CHW programmes in SSA

Between 2016 and 2022, domestic government spending on CHW programmes in SSA averaged US\$0.20 billion per year—representing about 21% of total CHW financing during the period. This is consistent with earlier findings that, despite increased attention to community

health, CHWs often remain underprioritised in national budgets.^{4 5 7 18}

Spending varied widely across countries. Eswatini and Kenya reported higher per capita investments between 2016 and 2019, while Burundi, Malawi and Guinea-Bissau allocated less than US\$0.10. These differences likely reflect variation in programme scale, payment models and the extent to which CHWs are embedded within national systems.^{5–17 27}

Tracking government investment was challenging. Most countries lack CHW-specific budget lines, and since GHED data are not disaggregated at the programme level, proxy allocations were used to estimate spending.^{1 13 14} This also suggests that domestic funding has remained limited and hard to track, raising concerns about programme stability and long-term government ownership.^{1 3 4 28} Strengthening resource tracking and allocating dedicated funding to CHWs will be important to support the workforce and improve service delivery.

Spending on horizontal and vertical CHW programmes in SSA

External assistance for CHW programmes in SSA showed a strong preference for vertical programmes. Between 2002 and 2022, these programmes received over 76% of total disbursements, despite accounting for fewer than 20% of all CHW-related projects. This aligns with long-standing concerns that external assistance tends to favour narrowly focused interventions over broader, system-wide investments.²⁹

A temporary shift occurred between 2014 and 2019, when funding was far lower and horizontal programmes received a greater share. However, this trend reversed sharply during the COVID-19 pandemic, when more than 90% of external CHW-related funding went to vertical programmes. Similar patterns have been observed during past crises, where aid became increasingly vertical.^{30 31}

Horizontal programmes were more common but received smaller disbursements. While the WHO and others have called for stronger investment in broader-focus, people-centred PHC,^{1 4} our analysis revealed that funding volumes for such initiatives remained significantly lower.

Domestic funding patterns diverged from donors. Between 2016 and 2022, 54.6% of government CHW spending in SSA was directed toward horizontal programmes—possibly reflecting country-level priorities more aligned with broader preventive and promotive roles of CHWs.^{29 31 32} Still, total domestic investment remained limited and insufficient in comparison to external assistance.

Vertical programmes have contributed to important health gains; however, overreliance on them can limit countries' ability to address broader community health needs or respond to emerging priorities.^{14 29 31 32 33} As González and Mills noted, a balanced funding approach is needed—one that aligns both external and domestic financing with national CHW strategies.^{9 10}

Funding gap for CHW programmes in SS

CHW programmes in SSA have previously been estimated to require US\$5.4 billion annually to ensure adequate scale, remuneration and service delivery.⁵ However, from 2016 to 2020 (pre-COVID-19 levels), average annual funding reached just US\$0.72 billion—US\$0.52 billion from external assistance and US\$0.20 billion from government budgets. This resulted in an annual financing gap of US\$4.7 billion, consistent with earlier findings that over 85% of CHWs in the region remained unpaid.^{4-6 18}

Including the COVID surge: using the higher mean for 2016–2022 (because 2020–2022 spiked), the gap narrowed but remains large at ~US\$4.3 billion. Either way, the message was identical: countries cannot sustain CHWs at scale without predictable, on-budget domestic lines and better-aligned partner support.

The gap was further compounded by reliance on a small number of donors, like the Global Fund, who directed high funding volumes to vertical programmes. Despite broad recognition of the role of CHWs in preventive and promotive care, financial commitments fell far short of estimated needs. Bridging this gap will require coordinated, long-term investments from both donors and governments—particularly for broader-focus CHW programmes aligned with national health priorities.^{1 7 29 31 32}

RECOMMENDATIONS

Our analysis of CHW financing trends from 2002 to 2022 points to four priorities for strengthening community health in SSA. First, governments should increase and institutionalise domestic funding for CHW programmes through regular budget cycles, with clearly defined and trackable allocations, supported by stronger public financial management across planning, disbursement and monitoring to improve efficiency and accountability.^{4 5} Second, reducing reliance on a small number of external donors will require diversification of financing sources, including debt-for-health swaps, cross-sectoral public budgets (eg, agriculture or education), climate adaptation funds and public–private partnerships; however, domestic public revenues—through budgets and insurance mechanisms—must remain the backbone for sustaining recurrent CHW costs and programme stability.^{11 17} Third, financing must be rebalanced toward country-led, integrated CHW programmes that reflect CHWs' broader role in PHC, including their inclusion in national workforce registries, sector plans and regular public budgets rather than confinement to time-bound donor projects.^{8 31 34} Finally, fragmented and donor-driven funding arrangements should be addressed through stronger coordination and alignment mechanisms—such as sector-wide approaches used in countries like Rwanda—to reduce duplication, enable more flexible financing and ensure external resources reinforce national priorities and long-term system strengthening.^{35 36}

Limitations

This study has several limitations. First, while the OECD CRS is a comprehensive source of development assistance data, it does not capture all external funding, particularly from non-reporting donors such as China or certain NGOs, which may lead to underestimation of total external assistance. Second, classification of projects as horizontal or vertical relied on keyword screening and manual interpretation of project descriptions; where documentation was limited, some misclassification is possible, although a systematic approach was applied to minimise this risk. Third, estimates of domestic government spending were derived using proxy allocations from functional spending categories, given the absence of CHW-specific data in national health accounts. While this approach may not capture all off-budget expenditures, it follows established guidance, enables cross-country comparability and was triangulated with prior benchmarks and contextual indicators to support the robustness of findings. These limitations should be considered when interpreting the results.

Future research

This analysis ends in 2022 and does not capture how CHW financing is evolving following the COVID-19 surge and recent reductions in development assistance. Future research should examine whether reliance on

single-disease funding persists or whether countries are increasing government-led, on-budget financing to support broader CHW roles. Comparative country studies could assess how different financing models—particularly the balance between vertical and horizontal programmes—affect workforce stability, service continuity and integration within PHC systems. Strengthening routine tracking of CHW spending within national health accounts would be critical to support this work and inform policy decisions.

CONCLUSIONS

CHW programmes are instrumental to the delivery of PHC and progress toward UHC in SSA. This analysis demonstrates that financing for CHW programmes has remained both limited and often misaligned with their role. Between 2016 and 2022, governments contributed an average of US\$0.20 billion annually—approximately one-fifth of total CHW funding—while the majority of external assistance continued to be channelled through vertical programmes rather than supporting CHWs' broader functions within PHC.

These financing patterns have operational consequences. Heavy reliance on externally financed, time-bound vertical funding limits governments' ability to incorporate CHWs into routine budget processes, workforce registries and public financial management systems. As a result, CHW remuneration, supervision, training and deployment often remain fragmented, project-dependent and vulnerable to funding interruptions, constraining continuity of service delivery and integration with facility-based care. Closing the estimated US\$4.7 billion annual financing gap will therefore require sustained increases in domestic funding, stronger alignment between governments and development partners, systematic tracking of CHW expenditures and deliberate integration of CHWs into national budgets and workforce plans. Without a shift toward more predictable and balanced financing, CHW programmes are likely to remain peripheral to health system planning, resulting in fragmented delivery of essential PHC services and increased vulnerability of services including MCH to funding interruptions and system shocks.

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