

Evaluation of Gavi's contribution to reaching ZD and missed communities

Country Case Study: Cambodia

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Acronyms and abbreviations

CCEOP	Cold-Chain Equipment Optimisation Platform
CHAI	Clinton HIV/AIDS Initiative
CSO	Civil Society Organisations
D&D	Decentralisation and Deconcentration
DPHI	Department for Public Health Information
DTP	Diphtheria, tetanus and pertussis
EAF	Equity Accelerator Funding
EPI	Expanded Programme on Immunisation
FPP	Full Portfolio Planning
Gavi	Global Alliance for Vaccines and Immunisation
GDPR	General Data Protection Regulation
GPF	Grant Performance Framework
HC	Health care
HMIS	Health Management Information System
HPV	Human papillomavirus
HRC	High-risk community
HSS	Health Systems Strengthening
HSSP2	Second Health Sector Support Project
IRC	Independent Review Committee
IRMMA	Identify, reach, monitor, measure, advocate (framework)
MEF	Ministry for Economics and Finance
MRS	Market Research Society
NIP	National Immunisation Programme
NMCHC	National Maternal and Child health centre
OD	Operational district
PHC	Primary health care
PM	Project manager
SCM	Senior country manager
TCA	Targeted Country Assistance
ToC	Theory of change
UHC	Universal health coverage
UNICEF	United Nations Children's Fund
VHSG	Village Health Support Group
WASH	Water, Sanitation and Hygiene
WHO	World Health Organisation
WUENIC	WHO/UNICEF estimates of national immunization coverage
ZD	Zero-dose

1 Context

Health system context

Cambodia is a lower-middle-income country with an estimated population of 16.6 million. It is aiming to reach upper-middle-income status by 2030 and has a gross domestic product of USD 26.96 billion. Its health system has been expanded and strengthened, and access to health services and social health protection scheme coverage have increased, with greater government commitment to financing essential services (WHO, 2023).¹ The government's domestic general health expenditure was 7.43% in 2020, the highest level since 2005. There continues to be a heavy reliance on donor funding for the health system, but with the continuing growth of Cambodia's economy and the approaching transition to middle-income status, many donors are expected to reduce or withdraw their health sector funding support (with Gavi among funders who have requested increased government co-financing) (Asante et al., 2019).² According to Gavi's country categorisation, Cambodia is classified by Gavi as a core (standard) country.

Since 2001, the Cambodian government has been carrying out decentralisation reforms. The National Strategic Development Plan 2019–2023, for example, aims to facilitate the devolution of government services to sub-national administrators, bringing public services closer to its people. In 2020, the government also delegated health management functions and service provision to Cambodia's 25 provincial municipal administrations (Kolesar et al., 2022), marking another important decentralisation milestone. Human resources also present a key barrier to public health service delivery in Cambodia, with the current ratio of skilled healthcare workers sitting at ~ 2.18 healthcare workers per 1,000 of population, well below the recommended WHO threshold of 4.45 per 1,000 required to achieve universal health coverage (UHC). Other barriers include limited investments to expand health infrastructure, poor health seeking behaviours among the population, and increasing numbers of private clinics causing managerial issues for the Ministry of Health.

Gavi support

Cambodia received Health Systems Strengthening (HSS) and Cold-Chain Equipment Optimisation Platform (CCEOP) funding during the Gavi 4.0 period. HSS2 was approved and disbursed in 2015, with two initial phases of reprogramming: Top-up 1 was approved in April 2018 and Top-up 2 was approved and disbursed in August 2019. Top-up 2³ aimed to support ongoing efforts to increase immunisation coverage in 1,750 high-risk communities (HRCs) covering 42,794 under-immunised children, mainly through demand creation, delivery of outreach immunisation services, and supportive supervision. Given delays in implementation due to disbursement and the COVID-19 pandemic, the funding was reprogrammed in 2020, leading to a one-year no-cost extension until December 2021. HSS included performance-based funding between 2018 and 2019. Under the Full Portfolio Planning (FPP) process for Gavi 5.0, HSS, CCEOP, Targeted County Assistance (TCA) and Equity Accelerator Funding (EAF) funding were approved.

Key stakeholders

In Cambodia, the National Maternal and Child health centre (NMCHC) operates the National Immunisation Programme (NIP) and is the responsible agency for financial management. The NIP is

¹ Our Work in Cambodia, WHO, 2023, Available at: <https://www.who.int/cambodia/our-work>

² Who benefits from healthcare spending in Cambodia? Evidence for a universal health coverage policy, Asante et al., 2019, Available at: https://academic.oup.com/heapol/article/34/Supplement_1/i4/5603550

³ Documentation not available for Top Up 1

mandated to manage and coordinate immunisation activities at the national level in Cambodia in collaboration with the relevant departments of the Ministry of Health (MoH); and at the sub-national level with the provincial health departments and operational district (OD) health authorities. For Gavi 4.0 and 5.0 levers, some funds are approved by the Ministry of Economics and Finance, and HSS and EAF are delivered in the form of cash grants to MoH, with a portion going to UNICEF for procurement. In addition, Gavi works with several multilateral and non-state actors. WHO and UNICEF were core partners under 4.0 and continue to work closely with NIP under 5.0/5.1. Under Gavi 5.0, 11% of funds will be allocated to civil society organisations (CSOs) through Requests for Proposal, with the Clinton HIV/AIDS Initiative (CHAI) added as an expanded implementing partner. The Australian Department of Foreign Affairs and Trade (DFAT), United States Agency for International Development (USAID) and the Global Fund to Fight AIDS, Tuberculosis and Malaria all contribute to Gavi's funding pot for Cambodia. Key stakeholders are denoted below in figure 1.2.

Country-level zero-dose (ZD) theory of change (ToC)

Under Gavi 4.0, Cambodia's objectives for HSS2 were to reduce the number of existing HRCs and prevent communities becoming high risk. This was achieved through the five overarching activity workstreams: (1) increasing immunisation coverage in HRCs; (2) strengthening the cold-chain system through improved equipment and management; (3) increasing community awareness of (and demand for) immunisation; (4) strengthening surveillance of vaccine-preventable diseases; and (5) bolstering management capacity to support EPI. In addition, HSS2 funds from 2015 were directed into 'Top-up 1'⁴ and 'Top-up 2'. 'Top-up 2' aimed to support ongoing efforts to increase immunisation coverage in 1,750 high-risk communities (HRCs), primarily through initiatives targeting demand creation, delivery of outreach immunisation services, and supportive supervision. Like many other Gavi-supported countries, the HSS initiatives in Cambodia faced lengthy delays and subsequent reprogramming due to the slowdown caused by the COVID-19 pandemic.

In addition to HSS2, the CCEOP fund was designed to: (1) minimize the breakdown of cold chain equipment; (2) improve the availability of spare parts for maintenance; and, (3) reduce operating costs and improve storage capacity.

For the Gavi 5.0 funding period, Cambodia's NIP's overarching aims relate to: reinforcing governance structures, human resources and financial support; management and coordination mechanisms; and, prioritising immunization. Activities planned under HSS3, EAF and CCEOP2 are also numerous and are designed to feed into and contribute towards eight overall EPI goals and seven additional cross-cutting goals (including ZD). Broadly, however, the Cambodia ZD ToC focuses on five of these EPI goals, and prioritises activities targeting ethnic minorities, migrant populations, and poor rural and urban communities.

Figure 1.1 (below) denotes timeline of Gavi 4.0 and 5.0 grants in Cambodia (excluding Vaccine Introduction Grants), and Figure 1.3 shows the Cambodia ToC for Gavi 5.0.

Data collection timeline

Data collection activities included the following:

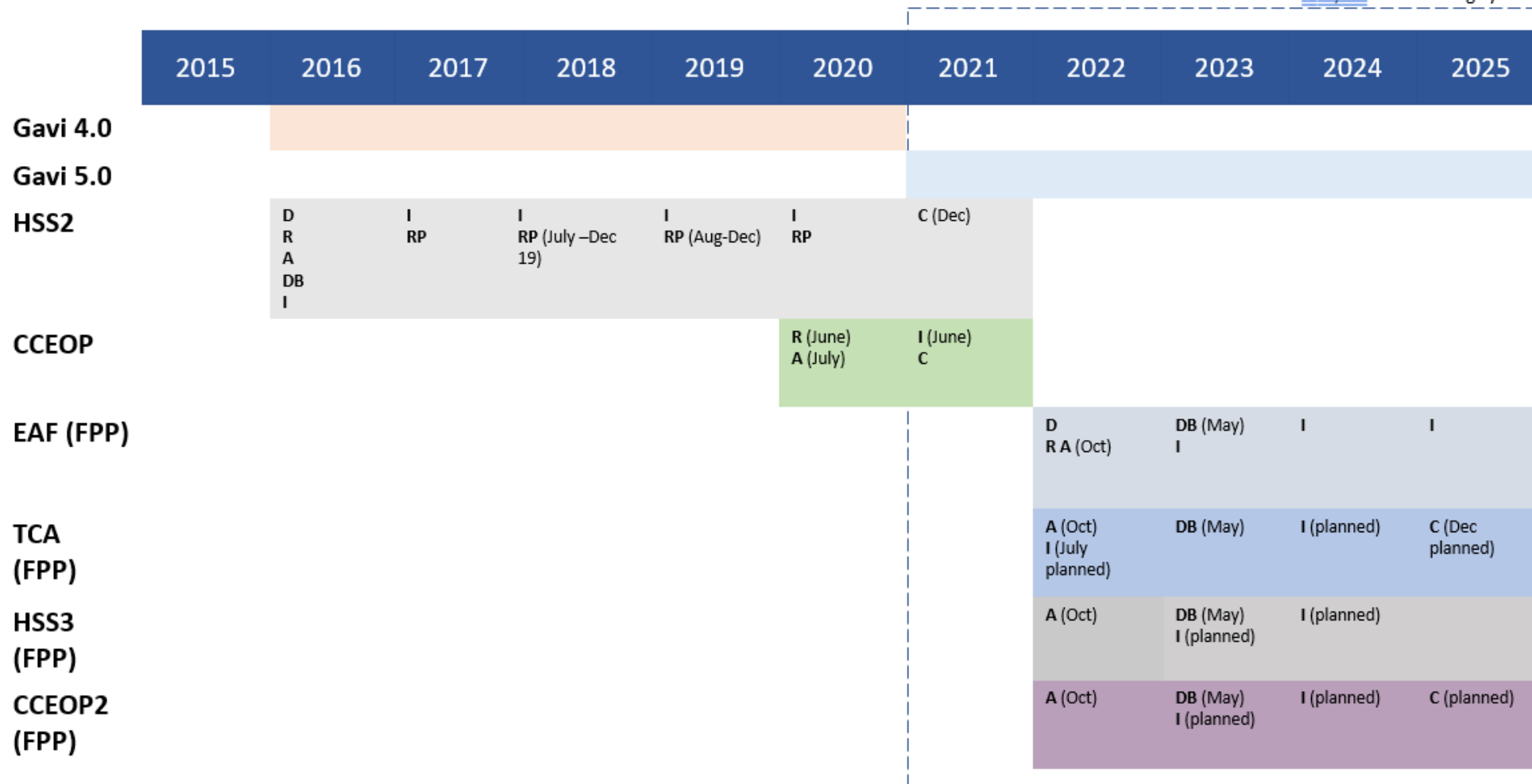
- **Initial introductory call** with the Cambodia senior country manager (SCM) (April 2023)

⁴ Documentation not available for Top Up 1

- **Document review** (May – August 2023)
- **Semi-structured interviews** with key stakeholders (May – September 2023)
- **Validation call** with the Cambodia SCM and project manager (PM) (September 2023).

Figure 1.1: Timeline of Gavi 4.0 and 5.0 grants in Cambodia (excluding Vaccine Introduction Grants)

3-5 year FPP Planning cycle



D: design; R: review; A: approval; DB: disbursement; I: implementation; RP: reprogramming; C: closure;

Figure 1.2: Key actors in Cambodia under Gavi 4.0 and Gavi 5.0

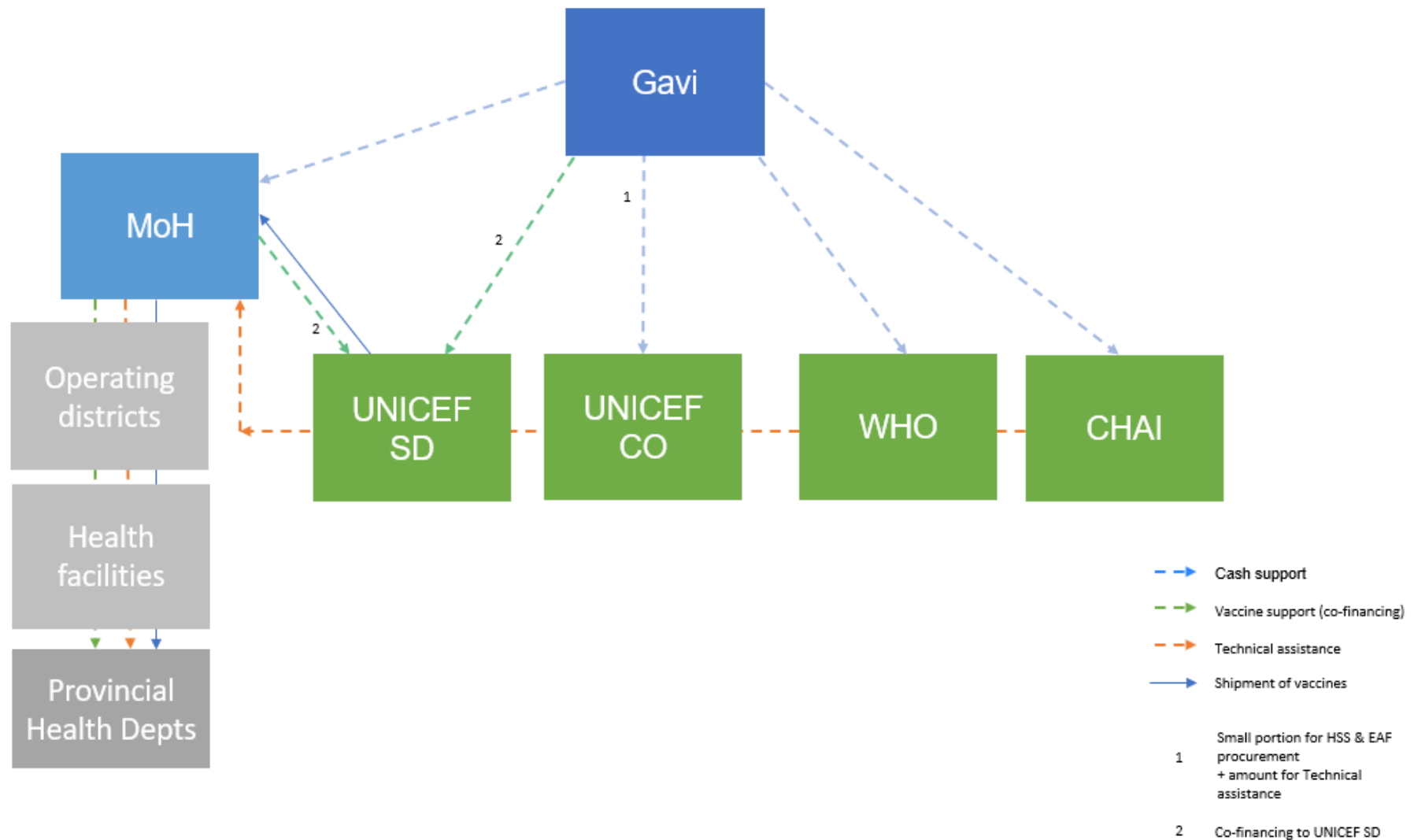
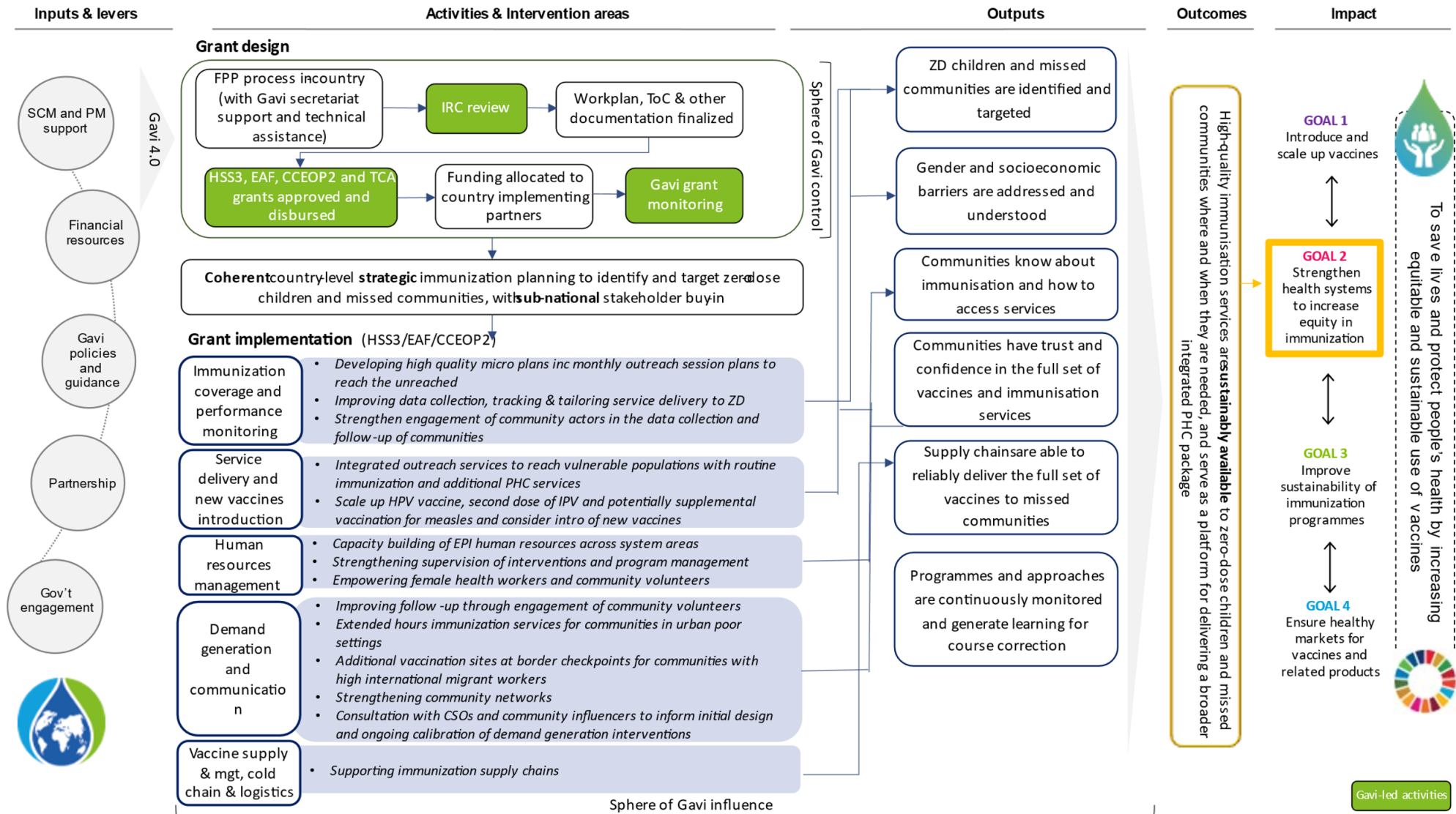


Figure 1.3: Cambodia ToC for Gavi 5.0



2 Findings

Objective 1: Relevance and coherence of Gavi's ZD agenda

EQ1. How relevant is Gavi 5.0/5.1's focus on ZD children and missed communities to countries' needs?

Summary of findings	<ul style="list-style-type: none"> Gavi 5.0/5.1's focus on ZD children and missed communities is highly relevant to Cambodia's objective of reaching full immunisation coverage, including among ZD populations. The ZD agenda remains equally relevant following the COVID-19 pandemic, where despite successful management of the pandemic and catch-up activities, there was persistently low immunisation coverage in hard-to-reach areas. While data quality issues limit understanding of ZD prevalence and location, ZD and missed communities appear to be concentrated in certain geographical areas as well as amongst key sub-populations. EAF activities appear to take a more demographic than geographical focus, running the risk that ZD populations in some geographic areas may be missed. 			
Strength of the evidence	1	2	3	4
Rationale for this judgement	<p>Evidence comprises multiple data sources, including quantitative data, academic studies, country-level and Gavi documentation, and qualitative interviews. There is good triangulation. However, ongoing issues with data quality in Cambodia limit the robustness of conclusions.</p>			

While routine immunisation is high in Cambodia, Gavi 5.0/5.1's focus on ZD children and missed communities is responsive to Cambodia's needs as it supports the objective of full coverage. However, informants identified an additional need for focus on maintaining high coverage, wider primary health care (PHC) outcomes and the introduction of new vaccines in Cambodia.

Gavi's focus on ZD children and missed communities could be seen as relevant to the Cambodian national context (where routine immunisation is relatively high) than in countries where there are higher proportions of ZD children. In Cambodia, prevalence had remained relatively consistent since 2016. However the figure rose slightly from 225,847 in 2019, to 249,958 in 2022 (WUENIC, 2023). Survey data from 2014 indicated that approximately one-quarter (24%) of under-5 deaths are associated with ZD households, well below the 33% average in Gavi-supported countries reported by Gavi in 2023.⁵

In recent decades Cambodia has achieved relative success in improving health outcomes, with life expectancy at birth and maternal, under-five, and infant mortality rates improving significantly between 2000 and 2021 (World Bank, 2023).⁶ However, health outcomes in Cambodia still rank among the poorest in the Southeast Asian region. Significant challenges remain to address comparatively poorer health outcomes and reach universal health coverage, including ensuring equitable distribution of health benefits across population groups and addressing the social, economic and environmental determinants of health. Key determinants include income and location (with lower access to quality health services in rural areas). Other key challenges include improving the quality of care;

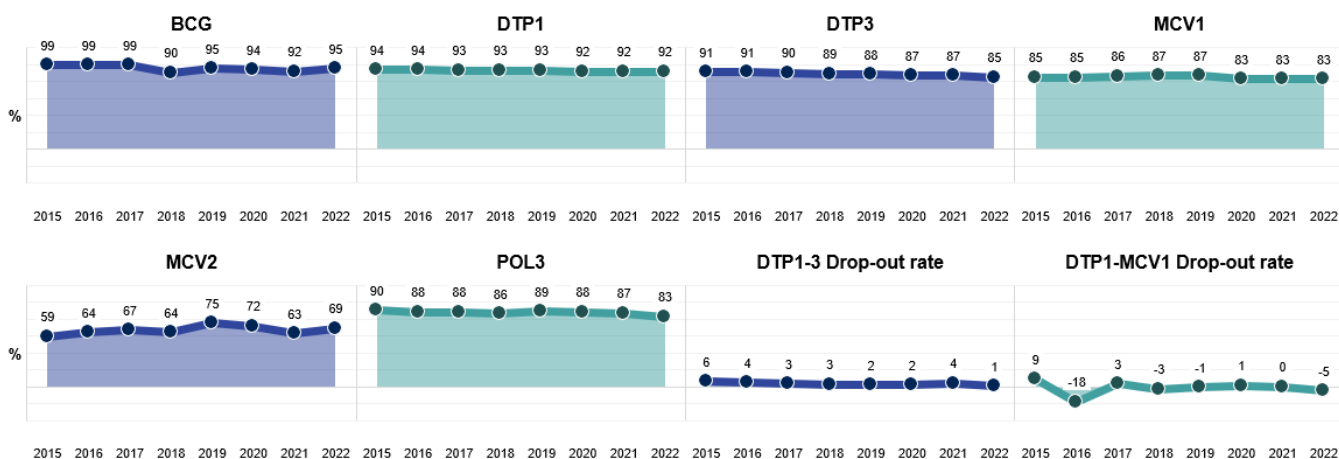
⁵ Cambodia Multi-Stakeholder Dialogue, Gavi, 2020

⁶ The World Bank in Cambodia, World Bank, 2023, Available at: <https://www.worldbank.org/en/country/cambodia/overview>

ensuring health systems can respond to epidemiologic transitions; and ensuring there is sufficient capacity to contribute to global health security (WHO, 2023).⁷

Cambodia's immunisation coverage has remained constant. Diphtheria, tetanus, and pertussis (DTP)1 coverage has stayed constant since 2016, and DTP3 country coverage has also stayed relatively constant, although there has been a slight decline over time (85% in 2022 compared to 91% in 2016) (see below figure 2.1)⁸. Nevertheless, these are in line with the global target of 90%.

Figure 2.1: Select vaccine coverage (WUENIC) and full immunisation schedule⁹ in Cambodia, %, 2015–2022



Despite Cambodia's relatively high routine immunisation rates, several respondents agreed that Gavi 5.0/5.1's focus on ZD children and missed communities is essential to reach the 'last mile', and help progress towards full coverage. While clearly beneficial, participants raised the need to balance high vaccine coverage (including through the ZD agenda) alongside broader PHC outcomes. The introduction of new vaccines, such as human papillomavirus (HPV), rotavirus, typhoid, and malaria, has also been highlighted as a priority, with one frontline stakeholder prioritising new vaccines over ZD. While Gavi's focus on ZD children and missed communities is relevant, attention to the relative prioritisation of different health initiatives in Cambodia is needed to strike the optimal balance.

The focus on ZD is relevant and responsive to the post-COVID-19 context as while successful management and catch-up activities minimised disruption, low coverage in hard-to-reach areas remained. Cambodia's management of the COVID-19 pandemic, specifically its vaccination programme, has been regarded as a success by respondents and documented sources. The 'whole-government' approach, driven by strong political leadership, enabled the rapid vaccination of the entire adult population within two months of vaccine receipt (Gavi, 2021).¹⁰ Despite the significant impact the pandemic had on immunisation activities, the swift response effectively contained the disruption. The NIP, in collaboration with World Health Organization (WHO) and United Nations Children's Fund (UNICEF), developed guidance on immunisation programming during and after the pandemic, conducted regular monitoring in low-performing provinces, and implemented a policy of catch-up vaccination (Gavi,

⁷ Our Work in Cambodia, WHO, 2023, Available at: <https://www.who.int/cambodia/our-work>

⁸ Cambodia Zero Dose Analysis, Gavi, 2023.

⁹ Yibeltal et al. (2022). Trends, projection and inequalities in full immunization coverage in Ethiopia: in the period 2000–2019. *BMC Pediatrics*, 22(193). doi: <https://doi.org/10.1186/s12887-022-03250-0>

¹⁰ Cambodia handover December 2021, Gavi, 2021.

2020).¹¹ These measures helped to increase average immunisation coverage rates across several provinces in 2020.

However, the pandemic did present challenges related to staff resourcing and fear among the population. The rapid response to COVID-19 temporarily hindered wider immunisation activities due to the strain it placed on healthcare workers. Furthermore, lockdowns and fear among the population affected immunisation in the short term, and prevented healthcare staff training and workshops from taking place (Gavi, 2020).¹² Despite catch-up activities, low coverage in some hard-to-reach areas remained persistent, necessitating local-level service delivery assessments to increase coverage and reduce drop-outs (Gavi, 2020).¹³ The Cambodian government tackled these challenges through a targeted communication campaign. Although the COVID-19 pandemic temporarily halted Gavi's progression with the ZD agenda, catch-up activities were planned to minimise disruption. This included the rescheduling of missed meetings and workshops, increasing outreach activities, and training on the newly developed programme management data dashboard.

Despite high levels of routine immunisation, the prevalence of ZD and missed communities is higher in specific areas, with some communities identified as particularly hard to reach. Gavi's EAF activities were informed more by key drivers of ZD than geographic targeting data, with the overarching issue still the quality and reliability of data, which is critical for both identifying ZD populations and shaping Gavi's strategic response. The quality and availability of data is a barrier to identifying ZD children and missed communities accurately at the sub-national level, primarily due to issues related to data collection and validation. Respondents identified that Cambodia lacks a robust denominator, as the data is based on outdated population estimates, often resulting in over 100% coverage statistics for DPT1. This makes pinpointing low coverage areas difficult. The validity of survey data, particularly from health centres, is often also unreliable, with some centres reportedly not accurately recording and reporting immunisations. This issue is compounded by limited coordination between local authorities and health centre staff in identifying high-risk populations' catchment areas. Data visibility at the village level also remains a challenge. These issues, combined with the country's already high routine immunisation, make accurate data crucial to reach 'the last mile' and identify ZD children. One respondent reported that these issues had led to mistrust with data and hindered the promotion of a data-driven approach.

"Typically, the denominators that are used are based on somewhat outdated target population estimates. So, this will often result in coverage statistics or percentages being well over 100% coverage. Which, we know, can't possibly be the case but it does then make it very difficult to isolate where the pockets of missed or ZD children are. It also has, I think, more overarchingly created this, sort of, mistrust with data and, so, has made it quite difficult to create this data-driven culture where routine immunisation data is regularly reviewed and what is really relied on to inform service delivery. Rather than, you know, experts using their anecdotal, qualitative evidence to inform where services should go."

Respondent, interview

In response, the Cambodian Department for Public Health Information (DPHI) in 2020 revised its data-reporting templates to correct some of these gaps, and Gavi documentation also reported that the government was developing a programme management dashboard to identify and visualise immunisation gaps to strengthen data visibility and data use (Gavi, 2020).¹⁴

¹¹ Multi-stakeholder dialogue, Gavi, 2020.

¹² Multi-stakeholder dialogue, Gavi, 2020.

¹³ Multi-stakeholder dialogue, Gavi, 2020.

¹⁴ Multi-Stakeholder dialogue, Gavi, 2020.

Gavi's standardised analysis indicates that most of Cambodia's ZD children reside in rural non-remote areas (67%), with nearly half living in just 47 districts (24%), with prevalence appearing to be higher in the north-east and east, and parts of the south-west of the country (Gavi, 2023).¹⁵ Specifically, the analysis found that most ZD children appear to be located in Tbong Khmum and surrounding provinces (Kratie, Kampong Cham, Prey Veng); in Kampot and surrounding provinces in the south; and around Phnom Penh (Gavi, 2023).¹⁶

Despite these findings on geographic prevalence, the selection of the 17 Operational Districts (OPs) for EAF implementation was informed more by key drivers of ZD than geographic data.

Figure 2.2 below shows that of the provinces listed above, only those around Phnom Penh were included, indicating that some ZD communities may be missed. However, the majority of provinces selected were located in the north-east and east and in the south-west. Nevertheless, this discrepancy between drivers of ZD and geographic analysis of ZD highlights the ongoing limitations of coverage data.¹⁷ A situational analysis was conducted for Cambodia's FPP application, which identified the locations of vulnerable population groups that are regularly missed or under-reached by routine immunisation service delivery. However, the Independent Review Committee (IRC) report for the FPP noted a lack of clarity around how the ZD and under-immunised children in well-performing districts were quantified. A range of tailored and community-based activities were proposed to reach the ZD and missed communities in these districts. These interventions aimed to improve targeted outreach, generate demand, and enhance accurate data collection and use. to improve targeted outreach, generate demand, and enhance accurate data collection and use.

The drivers of ZD are linked closely to four sub-populations with higher levels of zero-dose identified in the situation analysis. These populations were identified as: (1) migrant communities, both cross-border and domestic; (2) ethnic minority Vietnamese and Muslim communities that speak different languages than from the Khmer majority; (3) remote rural poor communities within settled geographically remote regions; and (4) urban poor communities within unofficial settlements that are not recognised nor recorded by local authorities (Gavi, 2023).¹⁸ These groups face unique barriers to immunisation, including gaps in community support networks, vaccine hesitancy, limited transportation, and poverty, among others. ZD prevalence in Cambodia also varies by wealth, maternal education, and religion (Gavi, 2023).¹⁹ In response, 17 ODs were selected for targeted EAF activities focusing on:

- 1. Migrants:** Four ODs along the Thai-Cambodian border were identified as having important official border transits with high rates of population movement and high seasonal migrant populations;
- 2. Ethnic minorities:** Four ODs in three north-east provinces along Vietnam and Laos borders had higher rates of several indigenous ethnic minorities (such as Phnong, Kuy, Tampuan, Radei, Jaray, Laos) with their own languages; conservative traditions; low literacy rate and highly seasonal movements for work;
- 3. Remote rural poor:** Three ODs were selected due to their geographic remoteness, having mountainous and difficult access to health services;

¹⁵ Cambodia Zero Dose Analysis, Gavi, 2023.

¹⁶ Cambodia Zero Dose Analysis, Gavi, 2023.

¹⁷ DTP1 coverage estimates used in much of this analysis (from IHME) were somewhat correlated with the latest available survey data and not correlated with subnational admin data (subnational data was not available from admin JRF). The standardised analysis was described as best suited for planning rather than monitoring progress and there was uncertainty at fine granularity.

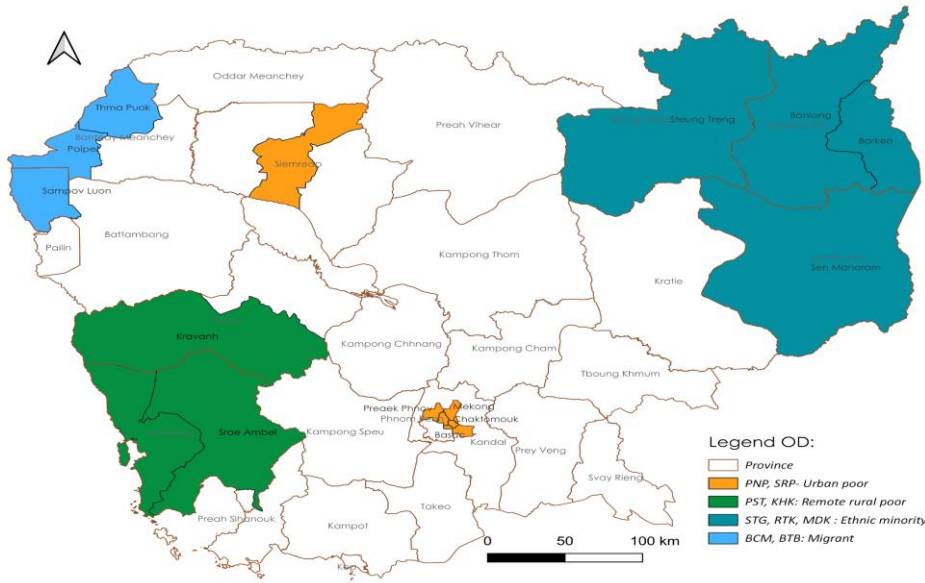
¹⁸ Implementation of the Zero-Dose Agenda: Health Systems and Immunisation Strengthening, BMFG Stock Take, Gavi, 2023.

¹⁹ Cambodia Zero Dose Analysis, Gavi, 2023.

4. Urban poor: Six ODs were selected due to higher numbers of urban poor and peri-urban communities, higher numbers of HRCs with families living in small renting rooms, poor living conditions, struggle for daily income, and ethnic Vietnamese.

Thus, two different approaches to identifying and targeting ZD children were used: the Gavi Standard Analysis, which was geographically based, and the situational analysis of ZD drivers, based on demographic characteristics. The relationship between these approaches is unclear and will be a topic of further exploration in later stages of the evaluation.

Figure 2.2: ODs targeted through EAF implementation.



Gender does not appear to be a significant driver of ZD, thus the Gavi 5.0 focus on gender is less relevant in Cambodia, with almost equal immunisation coverage between males and females. Nevertheless, the FPP application notes that gender roles, decision autonomy, and maternal literacy can create barriers to accessing health and immunisation services, stating that all proposed interventions at community, health facility and household levels will be gender aware, responsive and intend to address the identified and evolving barriers. However, the IRC report highlighted that the proposal was not clear in its approach to addressing barriers related to maternal literacy and decision autonomy.

Box 1. The IRMMA framework

There is limited evidence on the effectiveness of the IRMMA framework in Cambodia. Some respondents described how while the framework offers a structure for ZD response and triggered some conversations that would not have otherwise been had, ultimately IRMMA was an organisational tool imposed by Gavi that enables them to structure their own global-level analysis and had more benefit for Gavi than countries. One respondent stated that the Cambodia NIP knew exactly what was needed to reach ZD, but had to structure their thinking in line with the Gavi framework. This links to a wider point on the amount of time it takes for country teams to familiarise themselves with and complete complex documentation and structures, and the burden this places.

“It becomes a big transaction time for the country to understand and report accordingly, all these things, all new terminology... Most of the national officers, instead of going to the field, they’ll be sitting morning to evening, thinking about framework, how to identify, how to reach... So understand this and putting those things in the proposal... it takes six months of thinking about those things and putting all these things and rather than making things simple, it’s... very, very, complex [to] answer.”

Respondent, interview

EQ3. How coherent is Gavi’s ZD agenda with other international and national actors’ focus?

Summary of findings	<ul style="list-style-type: none"> There is evidence to suggest that ZD has become an increased priority area for the NIP as a result of the Gavi 5.0/5.1 strategy. The NIP previously emphasised completing the full immunisation schedule alongside reaching ‘high-risk communities’. The NIP is reportedly motivated to engage with the ZD agenda and is effective in coordinating stakeholders to deliver this The National Immunisation Strategy for 2021–2025 aligns closely with the ZD strategy. Gavi’s core partners (WHO and UNICEF) and expanded partner (CHAI) are strongly aligned with the ZD agenda. 			
Strength of the evidence	1	2	3	4
Rationale for this judgement	Evidence comprises multiple data sources which are mainly qualitative, but also include government documents, Gavi documents, and partner documentation. There is good triangulation.			

Prior to Gavi 5.0/5.1, Cambodia’s NIP emphasised completing the full immunisation schedule alongside reaching ‘high-risk communities’; the specific focus on ZD increased during the Gavi 5.0/5.1 funding period. Cambodia’s Third National Health Strategic Plan (2016–2020) (HSP3) aims to improve the health outcomes of the population and increase financial risk protection in accessing quality health care services. However, it does not specifically mention reaching under-immunised or hard-to-reach groups. In contrast, the National Immunisation Strategy for 2021–2025 aligns closely with the ZD strategy, prioritising the expansion of immunisation delivery and a focus on reaching all communities. This alignment is further evident in the National Strategy for Primary Health Care, which has an overarching goal of achieving universal health coverage.

Since the 5.0/5.1 period, the NIP has specifically referred to ZD as a key priority. While some respondents believe EAF requirements have driven this focus on ZD, others argued that the concept of targeting hard-to-reach and missed communities was not new despite the shift in terminology to zero-dose.

“I think a focus on what the National Immunisation Programme here calls, ‘The high-risk community’, has been there in the National Immunisation Strategy, previously the Comprehensive Multi-Year Plan, for the last 5–10 years. It’s always been a priority for them. So I think it’s just packaging it in this new, global community language which is zero-dose and missed community but it’s always been very much a priority for the government.”
Respondent, interview

Gavi’s core partners, WHO, UNICEF and CHAI have shown a strong alignment with the ZD Agenda, while also upholding a broader focus on equity. WHO’s strategies such as the Hard-to-Reach Strategy, High-Risk Community Strategy, and Immunisation Agenda 2030 all mirror the ZD objective of inclusivity. Similarly, UNICEF, while prioritising ZD, integrates broader considerations of

equity, addressing interconnected issues such as poverty, education and water, sanitation and hygiene (WASH) in its Immunisation Roadmap. CHAI also aligns well with Gavi’s ZD agenda, focusing on under-immunised children and communities, and prioritising equity, data quality, and addressing population denominator issues in Cambodia.

The NIP is motivated to engage with the ZD agenda and is effective in coordinating stakeholders to deliver it, demonstrating political will at the country level. **Some recent examples of** proactive engagement at the country level include the Cambodian Government’s successful COVID-19 response and commitment to the Health Equity and Quality Improvement Project (H-EQIP), as well as overall stakeholder feedback on their effective coordination and strong motivation. Nevertheless, the IRC report for the FPP proposal noted a lack of clarity in the NIP leadership and management structure and human resources issues affecting immunisation capacity. This suggests that while there is alignment between Gavi’s ZD focus and national strategies, there are still challenges to be addressed to ensure effective implementation.

The Cambodian NIP works closely with key partners to deliver its immunisation agenda. It is responsible for managing and coordinating immunisation activities at national and sub-national levels and operates several committees for technical oversight. It also collaborates closely with various departments and organisations for quality implementation of planned activities. These include the NMCHC, the Department for Digital Health and Health Management Information System (HMIS), the National Centre for Health Promotion, the Department of Hospital Services, CSOs, the Central Medical Store and the private sector. The NIP also seeks to enhance collaboration and advocacy at the sub-national level, with a focus on increasing engagement with provincial health departments, community structures and local leaders.

Gavi’s core partners, WHO, UNICEF and CHAI, play significant roles in supporting the NIP’s objectives and activities. WHO actively assists in the planning and implementation of the NIP’s objectives; UNICEF supports vaccine procurement, supply chain management, and community engagement; and CHAI focuses on strengthening programme performance, data monitoring, and management. All three partners participated fully in the preparation of the FPP application, indicating a coordinated approach to implementing Gavi-funded activities.

EQ2. How relevant are the Gavi funding levers to the needs of countries with regard to reaching ZD children and missed communities?

Summary of findings	<ul style="list-style-type: none"> ▪ There was insufficient evidence to understand whether 5.0 grant ceilings are sufficient. Overall, the levers were described as relevant, with evidence that the EAF supported the development of a targeted ZD strategy. ▪ HSS, TCA and CCEOP were also described as relevant; however, less evidence was available to support this. ▪ Some respondents wanted Gavi 5.0 to have a greater focus on equity and immunisation/ PHC systems strengthening. ▪ Generally, the different levers were seen to support the development of strategies responding to different priority areas; however, there was overlap between the EAF and HSS-funded activities. 			
Strength of the evidence	1	2	3	4
Rationale for this judgement	There was less evidence to support the response to this question. Evidence comprised predominantly of qualitative interviews as well as internal Gavi documents. Triangulation is good given the limitations of the evidence.			

More evidence is required to understand whether the Gavi 5.0 grant ceilings are sufficient in Cambodia. Respondents did not express concerns regarding the grant ceiling and its adequacy to address current ZD needs in Cambodia (aside from one stakeholder who wanted greater funding for

health systems strengthening activities). However, the IRC report for the FPP application concludes that given the issues of data quality, the interventions and allocations seem insufficient. The budgets were within ceilings, except for the human resources component which was planned to be adjusted during budget negotiations. The ceiling for Gavi 5.0 is USD 17.3 million, which equals roughly USD 69 allocated per ZD child over the 5.0 period.

The FPP process and EAF funding lever encouraged a more precise focus on reaching ZD children in Cambodia. EAF supported the development of targeted strategies to address specific barriers faced by the four key sub-populations identified in Cambodia’s FPP application (migrant communities, ethnic minorities, remote rural poor communities, and urban poor communities). These strategies include outreach services; human centred design workshops using a gender lens; community engagement for tracking missed communities; for migrant communities, border vaccination checkpoints; and for urban poor communities, vaccination appointments during evenings and weekends (Gavi, 2023).²⁰

“I think the fact that it had this extensive pot of funding, and this particular focus, I do think it leads, at least in Cambodia, through the full portfolio planning process and the EAF, we have already seen deliberated discussion... We do think it brings, you know, these very deliberated, targeted conversations to say, ‘What are the challenges now and how do we really evolve the strategy to be very targeted in our approach?’ ... People think they know what the problems are and they know what’s going on, but it’s not formally recorded. I think this whole process helped us to do that.”
Respondent, interview

HSS funding has also been critical for overall system strengthening and resolving programme bottlenecks/barriers to vaccination. One stakeholder felt that under 4.0, there was greater focus on equity and immunisation systems strengthening, which was particularly beneficial for countries such as Cambodia where the proportion of ZD is comparatively low. The TCA was also deemed to be valuable and relevant, providing high-quality technical assistance that is integrated throughout grant lifecycles. Additionally, it was reported that the CCEOP has been instrumental in responding to Cambodia’s cold-chain needs, especially during the pandemic, achieving high coverage in a short period. However, there is overlap between the levers: for both HSS and EAF funding, the majority is directed towards human resources (34% HSS and 32% EAF), external professional services (26% HSS and 23% EAF) and infrastructure and non-health equipment (17% HSS and 34% EAF).

Table 2.1: Grant ceilings of Gavi 5.0 funding levers and main aims

Funding lever	Grant ceilings (\$)	Main aims of funds in-country
HSS2	28,528,508 (2015 – May 2022), consisting of: HSS 2 base amount in direct loan 18,058,048 HSS2 top-up #1 3,441,952 HSS2 top-up #2 5,358,508 HSS2 PBF 860,000 for 2016/2017; and 430,000 for 2018	Covers 5 objectives relating to increasing immunisation coverage in high-risk communities; strengthening the cold-chain system; increasing community awareness of, and demand for immunisation; strengthening the surveillance of vaccine-preventable diseases; strengthening management capacity to support Cambodia’s Expanded Programme on Immunisation (EPI)

²⁰ Implementation of the Zero-Dose Agenda: Health Systems and Immunisation Strengthening, BMFG Stock Take, Gavi, 2023.

CCEOP1	2,060,062 (2020–2021), consisting of: Gavi contribution 1,029,792 Country budget 1,036,241	Optimisation of the cold-chain
FPP	17,207,147 (2023–2027), consisting of:	
HSS3	13,223,184 (1,532,908 disbursed)	Identifying, reaching, and reducing the prevalence of ZD, under-immunised and missed communities
EAF	1,906,513 (3,624,144 disbursed 2023)	Reaching ZD communities with specific focus on reaching subgroups of migrant, remote rural, ethnic minorities, and urban poor populations. Covers service delivery and equipment
TCA (2022 and 2023)	1,409,762 (1,190,992 disbursed)	Allotted to WHO, UNICEF and CHAI for technical support
CCEOP2	688,688 (disbursement information unavailable)	Strengthening and extending cold-chain equipment infrastructure

Further evidence is required to assess the effectiveness of the funding mechanism. The Multi-Stakeholder Dialogue 2020 reported that some underspending of the 2020 budget was caused by the timings of agreements signed, as funds were not disbursed by the Ministry of Economics and Finance until an annual operating plan was signed (requiring confirmation from Gavi)²¹. In 2020, this confirmation was not received until late August, leaving 5 months to spend the funds. There were also delays to agreements with UNICEF for cold-chain supply equipment procurement and maintenance. As delivery for these commodities was ongoing, it was not possible to release all account statements. Similarly with maintenance and other activities ongoing, some of the budget had to be retained for 2021 co-financing. One respondent reported that it has been difficult to re-programme Gavi grants, and while flexibility has improved, it remained slow and regularly resulted in delays to funding disbursement and absorption.

Information on the recipients of 5.0 funds is not available in the FPP budget but the investment areas broadly align with Cambodia's priorities. This missing information is a limitation to the case study preventing an assessment of the relevance of these funds and a clear understanding of funding channel processes. The investment areas receiving the highest proportion of FPP funding are governance, policy, strategic planning, and programme management (22%), service delivery (19%), supply chain (18%) and demand generation and community engagement (15%). While these broadly align with the challenges faced by NIP highlighted in the FPP supporting narrative, data quality was consistently highlighted as a key barrier in Cambodia, and health information systems and monitoring and learning was only allocated 9% of funding. Weaknesses in surveillance were also identified but only received 6% of funding. The degree to which these 'investment areas' address Cambodia's ZD vaccination needs will be explored in subsequent years of the evaluation. The NIP has been engaging CSOs and local partners extensively in HSS3 programming. This engagement includes the appointment of local vendors and service providers for the development of digital interventions. Furthermore, UNICEF will collaborate with national/sub-national CSOs to promote demand as part of EAF activities.

From the FPP ceiling, a total of 11% budget allocation has been designated to CSOs and local partners. These CSOs will be recruited at national and provincial levels to facilitate the implementation

²¹ Multi-Stakeholder dialogue, Gavi, 2020.

of activities, focusing on areas such as coordination, demand generation, registration, and monitoring. They will play a crucial role in mobilising and identifying missed children among migrant, ethnic, urban poor and remote rural poor communities. However, the FPP supporting narrative only goes as far as identifying a list of potential partners which could be contracted to provide services. The CSO context in Cambodia has been described as challenging by some respondent, with few CSOs reported as having worked with the NIP or aware of the ZD strategy. Another respondent was unclear about why the requirement had been introduced, and questioned the timing, reporting that they had learnt about the allocation at the last minute and did not have time to identify the right partners.

Objective 2: Operationalisation of the ZD agenda

EQ4. To what extent have Gavi 5.0/5.1 funding levers, processes and guidance enabled countries to focus their Gavi support towards reaching ZD children and missed communities?

Summary of findings	<ul style="list-style-type: none"> ▪ The FPP application has evidence of a good Identify strategy, although it is limited by persistent data quality issues. There is good evidence of Reach strategies although there is more detail on demand than supply-side barriers. ▪ The application was criticised for its Monitor and Measure and learning activities but has strong Advocacy strategies to prioritise government ownership and capacity including at the sub-national level. More information on CSO engagement was required. ▪ The FPP process was described as successful, but it was complex and time consuming for the key stakeholders. Some of these issues should be easier in future rounds although there continues to be issues with disbursement. ▪ The NIP successfully coordinated the FPP process, effectively drawing on partners. ▪ While the IRC review process was described as time consuming, no wider issues were reported by respondents. 			
Strength of the evidence	1	2	3	4
Rationale for this judgement	<p>Since implementation has only now begun, evidence is currently only available on the extent to which shifts are appearing in grant design. More evidence will be available in phase 2 of the evaluation. Where evidence is available, it triangulates data from Gavi documentation and qualitative interviews.</p>			

Summary of the application process

The Cambodia FPP was submitted in August 2021, covering all 5.0/5.1 grants: HSS3, EAF, TCA and CCEOP2. The IRC approval was granted on 31 October 2022. These clarifications had to be responded by the country by December 2022. Funds for EAF started to be disbursed from April 2023.

Gavi’s monitoring and performance management (MPM) data shows the time taken from FPP kick-off to IRC decision was eight months, and the time taken from IRC approval to disbursement was three months for HSS and 10 months for the EAF. The extent to which ZD intended shifts are happening in Cambodia varies. Since implementation has only just begun, in phase 1 of the evaluation this is judged by the extent to which shifts are appearing in grant design. Findings that correspond to the IRMMA approach are as follows:

- **Identify:** The FPP application process in Cambodia has significantly improved the availability and quality of data regarding ZD children, through a comprehensive situational analysis, field assessments and focus group discussions. This has facilitated the identification and reach towards

ZD and neglected communities, marking a shift towards a more data-driven approach in the allocation of Gavi funding, with 17 ODs selected for EAF activities with a clear rationale. However, persistent data quality issues, specifically relating to the population denominator, risk leaving some children systematically unquantified and further marginalised. The country has taken steps to address these issues, including the development of a Digital Health Strategy to foster a robust data culture across the Ministry of Health's programming. The strategy outlines plans to enhance data recording, quality and accountability, although it remains unclear if these interventions were in response to the IRC's request or were pre-planned.

- **Reach:** The FPP application included evidence of a well-strategised approach to reach ZD children by outlining demand-side barriers in relation to measures of inequality and creating four main population categories to identify vulnerable or missed communities. These barriers were partially addressed through HSS2 but routine service delivery was disrupted by COVID-19. The FPP barriers matrix annex also includes demand and some supply-side barriers, although there is less of a focus on the supply side. The matrix also proposes interventions that align with these gender and other equity barriers, demonstrating how they will seek to address barriers. However, the IRC report highlighted that the proposal was not clear in its approach to addressing gender barriers related to maternal literacy and decision autonomy.
- **Monitor and measure:** The IRC criticised the FPP grant application for inadequate strategies for real-time monitoring, outcome measurement, and learning activities. This was an ongoing issue that was discussed in the 2016 Joint Appraisal. Additionally, concerns exist around data integrity, including a lack of clear validation mechanisms for reported data, sub-par data quality checks in the HMIS, and limited capacity for managing and supervising data quality within the NIP. It reports minimal effort at lower levels to understand actual immunisation coverage. This issue, compounded by limited HMIS access by EPI staff at the health centre/OD level and knowledge gaps on adverse events following immunisation at the sub-national level, further impedes effective data analysis and usage.
- **Advocate:** With Cambodia's impending transition, the NIP seeks to prioritise government ownership of technical capacity and systems strengthening as well as advocacy capacity to ensure adequate and sustainable domestic financing of routine immunisation. The proposed Gavi funding is aimed at bolstering EPI HR and facilitating financially viable digital innovations. The NIP's vision emphasises advocating for increased prioritisation of immunisation within the Ministry of Health and at the local level, particularly in light of the newly decentralised government structure.

[Extent to which Gavi 5.0/5.1 funding levers, processes and guidance enabled countries to focus the support to ZD and missed communities](#)

Despite the successes of the FPP process, the application was still complex and sometimes time consuming, with disbursement an ongoing challenge. Respondents described the process as complicated due to various reasons, including the number of guidance documents, some of which were inconsistent or changed midway through the process. One respondent also reported that there was sometimes inconsistency between SCM guidance and the documentation, with a need for standardisation. For example, one respondent reported that they had learnt about the CSO allocation at the last minute and didn't have time to identify the right partners. Linking to this, new SCMs and PMs were appointed during the application process, as well as HSIS focal points which added to the complexity (Gavi, 2023).²² This could be seen to impact understanding of the Cambodian context within the Gavi country team, with one respondent arguing that Gavi stakeholders needed to spend more time

²² Implementation of the Zero-Dose Agenda: Health Systems and Immunisation Strengthening, BMFG Stock Take, Gavi, 2023.

in-country to understand the context and that the FPP process had not been tailored to the local context. Another barrier to preparing the FPP was the COVID-19 pandemic which reduced capacity. Finally, the additional available Gavi funds which were outside the FPP process was also described as adding to complexity. However, an enabler to efficiency was the use of a consolidated budget for all grants, allowing for greater transparency and easier monitoring by Gavi.

Disbursement of grants under FPP was sometimes delayed, creating challenges to implementation. The length of the disbursement and allocation processes had caused delays and sometimes meant NIP were reliant on other government funding or temporary funding from donors such as UNICEF and WHO to cover gaps. One respondent described disbursement delays as being caused by the Gavi Country Finance Team moving to the Corporate and Programme Finance Team, resulting in the Gavi Country Finance Team not knowing the country context and being more likely to query disbursements and cause delays. Delays with absorption were also highlighted as a barrier to implementation with analysis conducted for Gavi citing it as a risk which could impede Cambodia from delivering on its ZD agenda (Gavi, 2023).²³ More widely, the Gavi co-financing process was not aligned with the country planning cycle, causing yearly issues when Cambodia required figures from Gavi in Q1, but received them in Q2 when they were already sending the budget and workplan to the Ministry for Economics and Finance (MEF) for approval.

The FPP application process was effectively led by NIP who drew on the capabilities of key partners. The process was owned by NIP who had capacity to support, were open to feedback and sought advice where they had issues. One respondent stated that the overall effectiveness of the process was because of NIP's strong leadership and in spite of Gavi processes causing delays. Linking to this, regular communications and strong engagement between NIP, Gavi and implementing partners (e.g. regular calls and two in-person missions from the Gavi SCM and PM) made the process more efficient and collaborative, despite the challenges of coordinating a range of different partners. Effective collaboration between NIP, WHO, UNICEF and CHAI brought in valuable expertise to the application process. This was particularly valuable given some staff capacity issues within the NIP team.

The review process including IRC was described as time consuming but no wider issues with the process were raised. Some respondents described a need for more flexibility in Gavi funding levers through improved review processes. They felt that grants could not easily respond to new needs due to extensive review and approval processes requiring time consuming inputs from different departments. They reported that while flexibility during the annual operational planning process had improved, it still remained slow and regularly resulted in delays to funding disbursement and absorption. However, an enabler to efficiency was the pre-screening process which was described as helpful for giving NIP time to address any issues before the IRC review.

“Yes, the processes are long, transaction is very heavy, both for Gavi, both for country. Undue, unnecessary delay and multiple check points.”
Respondent, interview

²³ Implementation of the Zero-Dose Agenda: Health Systems and Immunisation Strengthening, BMFG Stock Take, Gavi, 2023.

Objective 3: Contribution of Gavi 4.0 pro-equity grants

EQ5. How have Gavi grants initiated under Gavi 4.0 with continued implementation in 5.0/5.1 contributed to the delivery of the ZD agenda at the country level?

Summary of findings	<ul style="list-style-type: none"> ▪ The objectives for the HSS2 grants programmed under Gavi 4.0 aligned with pro-equity and ZD objectives, with CCEOP less strongly aligned. ▪ There is evidence of partial contribution of Gavi grants programmed under Gavi 4.0 with continued implementation into 5.0./5.1 to strengthening the NIP system and supporting supply chains, however, the strength of the causal pathway is limited by a lack of programme financial and monitoring information. ▪ There is insufficient evidence to assess Gavi’s contribution to communities knowing about immunisation and how to access services and preventing communities becoming high risk. 			
Strength of the evidence	1	2	3	4
Rationale for this judgement	Insufficient programme financial and monitoring documents available for analysis. Triangulation is based on limited Gavi documentation including monitoring documents and qualitative stakeholder findings.			

Cambodia’s objectives under the 4.0 period with continued implementation into 5.0./5.1 through HSS2 contained elements of pro-equity and ZD interventions, aiming to reduce the number of existing HRCs and prevent communities becoming high risk through five key objectives: increase immunisation coverage in HRCs; strengthen the cold-chain system through improved equipment and management; increase community awareness of and demand for immunisation; strengthen the surveillance of vaccine-preventable diseases; and strengthen management capacity to support EPI. While the CCEOP fund was focused on optimising the cold chain, it was reportedly in line with country strategic and operational plans to ensure access to basic health services, in particular for vulnerable populations. The IRC reported that the application missed the opportunity to demonstrate how the cold-chain equipment would contribute to improve access, coverage and equity for HRCs.

There is evidence of partial contribution of Gavi grants to strengthening the NIP system, although the strength of the causal pathway is limited by a lack of programme financial and monitoring information. HSS2 grants demonstrated a plausible partial contribution to strengthening the NIP system in Cambodia, as evidenced by the improvement in routine immunisation coverage to over 80% for most antigens, including in HRCs. In particular, service delivery has been enhanced due to planned outreach strategies involving the Village Health Support Groups (VHSG) and supportive supervision and cross-cutting training activities aimed at improving the management capacity of EPI staff. However, COVID-19 caused disruption, and inadequate staff capacity and poor data quality remained key challenges under 4.0. Outreach activities have been highlighted as increasing access to and immunisation of HRCs, although the co-funding of immunisation programming by NIP makes contribution assessments challenging.

The HSS and CCEOP grants demonstrated a plausible partial contribution to supporting supply chains to deliver vaccines to missed communities. Despite underperformance in certain areas, the grants contributed to improved cold-chain storage systems and provided necessary equipment to support immunisation activities. However, challenges persisted, including inadequate staff capacity and coordination at sub-national levels, supply chain and procurement issues, and resource needs such as vaccines storage, increased incentives for frontline workers, and transportation.

There was insufficient evidence to assess Gavi contribution to communities knowing about immunisation and how to access services. This was due to a lack of information on the effectiveness of these activities in increasing knowledge or shifting attitudes.

Table 2.2: Mapping ZD-related outputs to pro-equity interventions implemented under Gavi 4.0

ZD-related outputs	Indicators	Pro-equity interventions programmed/ implemented	Plausible contribution of Gavi (insufficient evidence, partial, full)
Strengthened NIP system to increase immunisation coverage and monitor vaccine-preventable diseases	<p>DTP drop-out: +1% (WUENIC)</p> <p>Percentage of districts or equivalent administrative area with Penta3 coverage greater than 80% 2016–2020: -4% (JRF 2020)</p> <p>Number of provincial supervision plans prepared targeting HRCs 2016–2019: +3 (NIP 2021)</p> <p>Number of villages where outreach activities promoting awareness of immunisation have been held (2016–2019): -1,135 (NIP 2021)</p> <p>Percentage of health facilities providing immunisation service have communication materials laid visibly for providing one-to-one or group counselling as part of the immunisation service (2016–2021): +100% (Rapid assessment report, 2021)</p> <p>Numbers of VHSGs (one from each high-risk village) having the minimum skills in interpersonal communication required for conducting mother education session on</p>	<p>1. Measles-Rubella follow-up campaign targeting people who live in remote locations, unregistered villages, hard-to-reach households, and ethnic minority groups. This also includes people who do not speak/understand Khmer. Full funding support from Gavi, no documentation of implementation but documentation of results: 27,221 children immunised for measles-rubella 1 dose</p> <p>2. Targeting children living in high-risk communities (HRCs) where immunisation rates are low using a variety of intervention strategies. HRCs include urban poor (people living in slums), rural hard-to-reach, ethnic minorities, and mobile populations. Through intervention, HRCs will be reached out to 3–4 times per year. Intervention strategies include micro-planning, outreach teams. Combination of Gavi and country co-financing, documentation of implementation and results: Grant Performance Framework (GPF): ‘Quarterly outreach activities in HRCs’: 92.1 in 2018; 92 in 2019; 100 in 2019; 100 in 2020</p> <p>The FPP application and stakeholder evidence identified that HSS has supported</p>	<p>Evidence of partial Gavi contribution during this period through HSS grants. According to the GPF indicators, Cambodia was underperforming on indicators relating to Penta3 coverage, preparation of provincial supervision plans, the number of villages where outreach activities promoting awareness of immunisation were held but over-performed on health facilities providing immunisation services having visible communications and VHSGs having the skills to conduct mother education session on immunisation. Quarterly outreach activities in HRCs also increased between 2018 and 2020.</p> <p>The FPP application links Gavi’s HSS2 support (alongside implementation of the cMYP 2016–2020) to the steady yearly increase in routine immunisation coverage to over 80% for most antigens including for most of the 1,718 identified HRCs. In particular, it cites improved service delivery due to planned outreach service delivery strategies, involving the VHSG, and through supportive supervision and cross-cutting training activities to improve management capacity of EPI staff. However, in-person training was delayed by COVID-19 and</p>

ZD-related outputs	Indicators	Pro-equity interventions programmed/ implemented	Plausible contribution of Gavi (insufficient evidence, partial, full)
	immunisation (2016–2019): +1,365 (NIP, 2021)	<p>improved service delivery in high-risk communities through outreach service delivery strategies, with participation of community health volunteers known as VHSG in Cambodia, through supportive supervision and cross-cutting training activities to improve management capacity of EPI staff under the Gavi HSS2 grant although COVID-19 was a barrier. Implementing partners and frontline stakeholders referenced increased training opportunities.</p> <p>Stakeholders also reported:</p> <ul style="list-style-type: none"> ▪ Opportunities for healthcare staff to study for a Master’s degree; ▪ Hiring of managers at facility and district-level healthcare centres were provided with materials to distribute information about immunisation; ▪ Improved immunisation coverage data and building an evidence-based decision-making culture. 	<p>training gaps remained. Evidence from EQ4 also demonstrates that inadequate staff capacity at peripheral levels was an ongoing challenge under 4.0.</p> <p>Documentation and stakeholder evidence also highlighted outreach activities as increasing access to and immunisation of HRCs. To note, NIP’s co-funding of immunisation programming including outreach activities makes contribution challenging to assess.</p> <p>Improved data on immunisation coverage and progress on building a ‘data culture’ was reported by stakeholders; however, stakeholders and wider documentation highlighted that poor quality data continued to be a significant barrier to 4.0 implementation.</p>
Communities know about immunisation and how to	NA		There was insufficient evidence to assess Gavi contribution, due to limited quantitative and qualitative data on improved community knowledge of immunisation and how to access services. One NIP stakeholder reported that community awareness and

ZD-related outputs	Indicators	Pro-equity interventions programmed/ implemented	Plausible contribution of Gavi (insufficient evidence, partial, full)
access services			demand needed greater resources, with government and Gavi funding insufficient to address the needs, and greater work needed to engage local governors and community leaders.
Supply chains are able to reliably deliver the full set of vaccines to missed communities	<p>Numbers of aged/ broken refrigerators/ freezers replaced (2016–2019): +24 (NIP 2021)</p> <p>Percent of health facility with vaccine storage have two staff trained in standard operating procedure for immunisation supply chain and logistics management and have skills for supply chain management (2016–2019): +8% (NIP 2021)</p> <p>Training at OD level for healthcare staff for immunisation awareness / IPC skills (2016–2019): 0 (NIP, 2021)</p>	<p>Stakeholders reported:</p> <ul style="list-style-type: none"> ▪ CCEOP and HSS improved the cold-chain storage system, meaning Cambodia was in a stronger position during the COVID-19 pandemic e.g. storage of vaccines ▪ The Cold-Chain Inventory moved to a web-based system, supporting the management of equipment ▪ Provision of equipment to use vaccines ▪ Distribution of motorbikes enabled vaccinators to go further afield and reach harder to reach communities ▪ Capacity development to manage CCE ▪ More refrigerators were supplied to health centres 	<p>Evidence of some partial Gavi contribution during this period through HSS and CCEOP grants. While the GPF data shows underperformance in the replacement of refrigerators and freezers; in the training of staff from health facilities with vaccine storage in standard operating procedure for immunisation supply chain and logistics management, with skills for supply chain management; and in training at the OD level for healthcare staff for immunisation awareness/IPC skills, the qualitative evidence indicates that the HSS and CCEOP grants contributed to improved cold-chain storage systems and provided equipment to support immunisation activities.</p> <p>However, programme documentation identified resourcing issues: inadequate staff capacity at peripheral levels and inadequate coordination between central NIP and sub-national staff proving challenges to implementation (Gavi,</p>

ZD-related outputs	Indicators	Pro-equity interventions programmed/ implemented	Plausible contribution of Gavi (insufficient evidence, partial, full)
			<p>2016).²⁴ An NIP stakeholder reported that there was a specific need for additional healthcare workers as the introduction of COVID-19 as a routine vaccine necessitated more staff and additional motorbikes to deliver immunisation activities to remote communities.</p> <p>One frontline stakeholder reported ongoing needs in terms of vaccines storage, staff uniforms, petrol costs, increased incentives for frontline workers and the need for a motorbike for transportation, indicating that supply chain needs remained. Supply chain and procurement issues including stockouts and outdated cold-chain equipment and maintenance were also highlighted as a barrier to 4.0 implementation under EQ4.</p>
Prevent communities becoming high risk	Percent of surveillance units reporting surveillance data to the national level (completeness) (2016–2019): +100% (VPD surveillance reports from provincial 2021)		<p>There was insufficient evidence relating to the improvement of quality of routine immunisation under 4.0, but GPF data shows that in 2020, 100% of surveillance units reported surveillance data to the national level.</p> <p>As discussed under EQ1 and EQ4, COVID-19 was a competing priority that reduced capacity for routine immunisation. As noted</p>

²⁴ Cambodia Joint Appraisal 2016, Gavi, 2016.

ZD-related outputs	Indicators	Pro-equity interventions programmed/ implemented	Plausible contribution of Gavi (insufficient evidence, partial, full)
			under EQ1, immunisation disruption was reduced through effective government management and catch-up activities. However, coverage in some hard-to-reach areas remained consistently low.

3 Annex

Table 3.1: List of documents reviewed

Source	Document title	Year
Cambodia MoH	Cambodia National Immunization Program Strategic Plan 2016-2020	2016
Cambodia MoH	Supporting Narrative for Theory of Change for Gavi Support Request	2021
CHAI	CHAI - Where We Work	2023
CHAI	CHAI Annual Report 2021	2021
Gavi	Health Systems Strengthening Cash Support Application	2015
Gavi	Independent Review Committee (IRC) Country Report	2015
Gavi	Cambodia Joint Appraisal 2016	2016
Gavi	Cambodia key issues February 2016	2016
Gavi	Country metrics summary for Cambodia	2019
Gavi	Joint Appraisal report 2019	2019
Gavi	Country metrics summary for Cambodia	2020
Gavi	Gavi 2020 multi-stakeholder dialogue: Immunisation planning in the context of COVID-19	2020
Gavi	Multi-stakeholder dialogue	2020
Gavi	Cambodia handover - December 2021	2021
Gavi	Leaving No One Behind with Immunisation: Resources and Modalities to Implement Gavi's 2021-2025 Strategy (Finalised 21 Oct 2021)	2021
Gavi	Cambodia Full Portfolio Planning (FPP) Summary of Findings from Field Assessments	2022
Gavi	Independent Review Committee (IRC) Country Report Cambodia FPP review (11 – 21 October)	2022
Gavi	Cambodia Zero Dose Analysis	2023
Gavi, BMFG Stock Take	Implementation of the Zero-Dose Agenda: Health Systems and Immunisation Strengthening	2023
WHO, UNICEF	RWG meeting 2020, Siem Reap, Cambodia	2020
WHO	Our Work in Cambodia. [online] www.who.int . Available at: https://www.who.int/cambodia/our-work .	2023
World Bank	Cambodia Overview. [online] World Bank. Available at: https://www.worldbank.org/en/country/cambodia/overview .	2023

Table 3.2: List of academic sources

Source	Document title	Year
Asante et al.	Erratum: Who Benefits from Healthcare Spending in Cambodia? Evidence for a Universal Health Coverage Policy. <i>Health Policy and Planning</i> , 35(7), pp.888–888 doi: https://doi.org/10.1093/heapol/czaa037	2020
Yibeltal et al.	Trends, projection and inequalities in full immunization coverage in Ethiopia: in the period 2000-2019. <i>BMC Pediatrics</i> , [online] 22(193). doi: https://doi.org/10.1186/s12887-022-03250-0 .	2022

Table 3.3: List of stakeholders

ID	Position	Organisation	Categorisation	Remote vs in-person
1	NIP Manager	MoH	Strategic	Remote
2	Senior Country Manager	Gavi	Operational	Remote
3	Programme Manager	Gavi	Operational	Remote
4	Technical Officer, Vaccine Preventable Diseases and Immunization	WHO	Operational	Remote
5	Technical Officer, Vaccine Preventable Diseases and Immunization	WHO	Operational	Remote
6	Health Specialist - Immunization	UNICEF	Operational	Remote
7	Health Officer	UNICEF	Operational	Remote
8	Senior Program Manager	CHAI	Operational	Remote
9	Programme Manager	CHAI	Operational	Remote
10	Technical Advisor, Vaccines Team	CHAI	Operational	Remote
11	Covid-19 Vaccination and Integration	CHAI	Operational	Remote

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