Australia-China-Papua New Guinea Trilateral Collaboration on Malaria and Health Security

Final Evaluation Report Submitted 30 June 2024

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Abbreviations

Abbreviation	Full Text
ADB	Asian Development Bank
AES	Australian Evaluation Society
AHC	Australian High Commission (Port Moresby)
APLMA	Asia Pacific Leaders in Malaria Alliance
AUD	Australian Dollar
CPHL	Central Public Health Laboratory [PNG]
DBS	Dried Blood Spot
DFAT	Department of Foreign Affairs and Trade [Australia]
DFAIT	Department of Foreign Affairs and International Trade [PNG]
DNPM	Department of National Planning and Monitoring [PNG]
DSP	PNG Development Strategic Plan
ECAMM	External Competency Assessment for Malaria Microscopists
EOIO	End of Investment Outcome
EWG	Evaluation Working Group
FGD	Focus Group Discussion
GEDSI	Gender Equality, Disability, and Social Inclusion
GoA	Government of Australia
GoPNG	Government of Papua New Guinea
GoPRC	Government of the People's Republic of China
HMM	Home Management of Malaria
HPP	GoA Health Portfolio Plan for PNG
HSSDP	Health Services Sector Development Program
HSSIP	Heath Sector Services Improvement Program
IMR	Institute of Medical Research [PNG]
IVCC	Innovative Vector Control Consortium
JPWG	Joint Project Working Group
KEQ	Key Evaluation Question
KII	Key Informant Interview
LIMS	Laboratory Information Management System
MEL	Monitoring, Evaluation and Learning
MIS	Malaria Indicator Survey
MoFCOM	Ministry of Commerce [China]
MoU	Memorandum of Understanding
MSB	Malaria Slide Bank
MTDP	Medium Term Development Plan [PNG]

Abbreviation	Full Text
NATNAT	Newly Adapted Tools Network Against Mosquito-Borne Disease Transmission
NDCPA	National Disease Control and Prevention Administration [China]
NDoH	National Department of Health [PNG]
NHP	PNG National Health Plan
NIPD	National Institute of Parasitic Diseases [China]
NHMRC	National Health and Medical Research Council [Australia]
NMCP	National Malaria Control Program [PNG]
NMSP	National Malaria Strategic Plan [PNG]
NMTWG	National Malaria Technical Working Group [PNG]
OECD DAC	Organisation for Economic Cooperation and Development: Development Assistance Committee
PAS	Performance Adaptive Systems [PATH]
PATH	PNG Australia Transition to Health
PBA	Partnership Brokers Association
PCR	Polymerase Chain Reaction
PDAP	Diagnostics for Integrated Case Management, Actionable Surveillance and Accelerated Elimination of Malaria and Neglected Tropical Diseases in the Asia Pacific
PHA	Provincial Health Authority [PNG]
PNG	Papua New Guinea
RAM	Rotarians Against Malaria
RDT	Rapid Diagnostic Test
SDG	Sustainable Development Goals
SPM	Senior Program Manager
STRIVE	Stronger Surveillance and Systems Support for Rapid Identification and Containment of Resurgent or Resistant Vector-Borne Pathogens in Papua New Guinea Program
TMP	Australia-China-Papua New Guinea Trilateral Collaboration on Malaria and Health Security
TMP PMU	TMP Project Management Unit
UPNG SMHS	University of Papua New Guinea School of Medical and Health Sciences
WPR	Western Pacific Region
WSP	West Sepik Province
WSPHA	West Sepik Provincial Health Authority

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The Trilateral Malaria Program (TMP) evaluation team wishes to thank all those who contributed their time and insights to this Phase 2 TMP evaluation. This includes the current and former representatives and officials of the Government of Papua New Guinea (GoPNG), the Government of Australia (GoA) and the Government of the People's Republic of China (GoPRC), as well as staff of the Institute of Medical Research (IMR), University of Papua New Guinea School of Medical and Health Sciences (UPNG SMHS), Rotarians Against Malaria (RAM), Burnett Institute, and Crysan Technologies. We would also like to acknowledge the significant time and work that members of the PNG Australia Transition to Health (PATH) and TMP team provided to support the logistical arrangements of the evaluation and ensure that the review team received accurate and timely data. We would particularly like to acknowledge the support provided, at short notice, by Ms Francesca Basse in Vanimo and Dr Moses Laman in Madang. This report was developed by Dr Bu Wilson, Dr Abel Yamba, and Dr Jun (Joe) Cao.

Executive Summary

This is the final report of the evaluation of the Australia-China-Papua New Guinea Trilateral Collaboration on Malaria and Health Security (TMP or 'the Project'). The Government of Australia (GoA) Department of Foreign Affairs and Trade (DFAT), through Abt Associates and on behalf of the Joint Project Working Group (JPWG)[1], has engaged the services of a team to conduct an independent final evaluation of the Project. The team commenced work in March 2024 and undertook fieldwork in Papua New Guinea (PNG) over three weeks in April—May 2024. The Team comprised Dr Bu Wilson (Team Leader), Dr Abel Yamba (Health System and Partnerships Specialist) and Dr Jun (Joe) Cao (Malaria Technical Adviser).

Following the successful implementation of a pilot TMP from 2016—2019 (Phase 1), Phase 2 commenced with an initial design of four years (January 2020—December 2023) and a total budget of AUD6 million (AUD1.5 million per year) from the GoA and in-kind contributions from Government of the People's Republic of China (GoPRC), Government of PNG (GoPNG), and GoA. In 2023 there was a no-cost one-year extension agreed to the end of 2024. TMP's goal is to '*strengthen the public health system in PNG to contribute to malaria elimination through enhanced trilateral cooperation'.* This aligns with PNG policy objectives and contributes to the achievement of Sustainable Development Goals (SDG) 3 and 17[2]. The project focuses on system strengthening for malaria diagnosis and operational research to inform malaria programming. The goal statement is supported by two objectives: 1) Health system has improved capacity to reduce the malaria burden in PNG, and 2) Transformative partnership between the three countries is addressing health security challenges through mutual learning and enhanced cooperation. The two objectives are supported by six End of Investment Outcomes (EOIO); EOIOs 1-3 support Objective 1, whilst EOIOs 4-6 support Objective 2:

- EOIO 1: Improved diagnosis and real-time surveillance of malaria at the national, provincial and district levels;
- EOIO 2: National Department of Health (NDoH) malaria policies and practice are based on quality data analysis and interpretation that are disaggregated by gender, including evidence informed by local research;
- EOIO 3: Selected pilot provinces demonstrate improved capability to prevent, detect and respond equitably to malaria;
- EOIO 4: An effective and efficient trilateral project governance and management model that can be replicated;
- EOIO 5: A practical understanding of respective countries' health policies and practices; and
- EOIO 6: Dialogue on health policy to strengthen health security.

The context to which the Program design for Phase 2 responded was a major resurgence of malaria in PNG, the positive findings of the Mid-term Review of Phase 1 of the Project, the commitment of GoPNG to the elimination of malaria, that all three countries have a robust commitment to health security in the region, including malaria elimination, and that PNG has been partnering with Australia and China on bilateral programs in the health sector for a number of decades. By the commencement of the project China was on the verge of eliminating malaria, something since achieved, and this was seen as offering valuable lessons for PNG. At this time China was increasing its aid in the Pacific and elsewhere and Australia sought to work with China to ensure that approaches were aligned and that both countries could share lessons to inform future partnerships (DFAT, 2019a). TMP is supported by a Project Management Unit (PMU), and has nine governance partners representing GoPNG, GoA, and GoPRC and is led by nine Technical Directors, who are experts in malaria control or related fields from PNG, China, and Australia.

The purpose of this evaluation is to assess TMP's progress and provide recommendations to the JPWG on the remaining project period and possible future interventions and investments based on lessons learned. The

[1] The JPWG provides strategic oversight for the project and comprises representatives from National Department of Health, PNG; Department of National Planning and Monitoring (DNPM), PNG; Department of Foreign Affairs and International Trade (DFAIT), PNG; Ministry of Commerce, China; National Health Commission, China; National Disease Control and Prevention Administration, China ; Department of Foreign Affairs and Trade, Australia (POM); Department of Foreign Affairs and Trade, Australia (Beijing).

[2] SDG 3: Ensure healthy lives and promote well-being for all at all ages; SDG 17 Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development (https://sdgs.un.org/goals)

evaluation team notes that the effects of COVID-19, notably in 2020 and 2021[3], were significant and affected the ability of partners and staff to travel, implement activities, attend training, communicate from home during lockdowns, and gain access during a time when many people were, understandably, distracted by responding to COVID-19. The evaluation developed a credible evidence base to respond to the Key Evaluation Questions (KEQ) as outlined in the Final Evaluation Plan. The evaluation drew on data collected through document review and in-country fieldwork comprising key informant interviews (KII), site visits and Focus Group Discussions (FGD) from 15 April—3 May 2024. The evaluation undertook 74 consultations in Port Moresby, West Sepik Province (WSP) and Madang Province, and remotely in Australia and China.

Findings:

Relevance/Coherence: Addressing malaria prevention and mitigation in PNG remains highly relevant as the malaria burden is increasing, with a further potential increase due to the effects of climate change. The project has aligned with other malaria initiatives in PNG by working closely with the National Malaria Control Program (NMCP), but the scope and footprint of its activities is limited programmatically and geographically. As this was a project designed with strong diplomatic objectives, which have largely not been achieved in Phase 2, it is likely that any future programming could revisit the most effective contribution that can be made to reducing the malaria burden in PNG, taking into account changes in the donor landscape. TMP Objective 1 remains relevant to the priorities of the GoA, GoPNG and the GoPRC. TMP Objective 2 has become less relevant as the trilateral partnership aspects of the project have diminished over time although future collaboration on technical expertise with GoPRC is not precluded.

Effectiveness: TMP has contributed to improving capacity for malaria diagnosis in PNG at individual, organisational and systemic level. More than 95% of cases are now diagnosed parasitologically, rather than clinically, although principally through Rapid Diagnostic Tests (RDT) rather than microscopy. The capacity of Provincial Health Authorities (PHA) to utilise the real-time surveillance data for planning, response and resource allocation appears to be limited. Both M&E systems and research supported by TMP were used to generate evidence to support policy dialogue, but with limited effectiveness. TMP made a modest contribution to the many malaria related research activities whilst much research was supported through other partners. It is not clear if and how approaches and learnings from TMP activities in the pilot province of West Sepik have been applied elsewhere. There are early positive indications from interviews and the IMR preliminary evaluation report on the Home Management of Malaria (HMM) program in East Sepik Province and West Sepik Province (WSP) providing effective health service delivery to communities. The number of cases correctly diagnosed in WSP has increased due to improved microscopy skills, the surveillance work supported jointly through TMP and the *Stronger Surveillance and Systems Support for Rapid Identification and Containment of Resurgent or Resistant Vector-Borne Pathogens in Papua New Guinea Program* (STRIVE) project, as well as the widespread uptake of RDTs. Monitoring and Evaluation (M&E) support was provided to WSP by TMP and subsequently by PATH, however there is a lack of demonstration at the WSPHA level of knowledge and use of malaria data generated through either TMP, or the separate eNHIS and Tupaia platforms. There is no evidence of utilisation of the sex disaggregated data.

In Phase 1 there was explicit recognition of what each of the three country partners wanted from the partnership with the 2018 Mid-Term Review (MTR) finding that the model was successful. The Phase 2 design was explicit that part of the rationale for the project was for the partnership model introduced by TMP to be taken up by others. This was actively chosen as the basis for the STRIVE program where it is considered by PNG partners to be functioning well and partners provide full credit to TMP for this outcome. While many partners still value the partnership model, the way that TMP project governance and management has evolved in TMP Phase 2, often in response to very challenging circumstances, means that few are happy with how it is currently implemented. Meetings are often delayed and many find the processes burdensome. Getting traction on the intent of EOIO 5, like other components of Objective 2, proved challenging in Phase 2. Despite challenges, a range of information-sharing and learning opportunities continued to be facilitated by TMP both internationally and domestically. Despite many efforts of TMP to get EOIO 6 back on track it was not possible to achieve the hoped for outcomes.

Efficiency: The overall budget for Phase 2 TMP was underspent every year from 2020—2023. At the end of

[3] TMP reports that normal activities were resumed in the first half of 2022 although PNG experienced a fourth wave of COVID-19 in March-April 2022, and a planned JPWG meeting scheduled for March 2022 had to be rescheduled due to a severe COVID-19 outbreak in China (TMP, 2022b).

2023, the budget was underspent against every EOIO (ranging from 24.2% to 95.5%), and there was still a total of 43.4% of the budget remaining (TMP, 2024c). This level of underspend would not normally be considered efficient. The underspend is attributed to pandemic disruption, changes in key personnel and staff shortages, changes in ways of working, the uncertain future for TMP, and cumbersome governance processes and diplomacy. However, Phase 2 of TMP demonstrated some efficiencies and value for money, including utilising in-kind contributions from PNG, Australia and China in addition to financial contributions from Australia, and sharing of resources across partners. The *anticipated* outcomes of TMP Objective 1, including improved diagnosis and real-time surveillance of malaria at the national, provincial and district levels; and research and analysis informing national policy and practice, were only partially achieved. It is some of the *unanticipated* outcomes of TMP that possibly demonstrate some of the best value for money of the project. These are largely attributable to Phase 1 but continued to be supported to a lesser extent in Phase 2. The attenuation of the activities of TMP over time, combined with few possible achievements against Objective 2 means that the complex governance mechanisms aimed at an effective trilateral partnership, and a comparatively high level of staffing for the activities that are maintained can no longer be considered efficient.

Impact: TMP is able to demonstrate a range of largely positive and often unanticipated impacts of TMP beyond the EOIOs. Many were commenced in Phase 1 and supported further in Phase 2 and can often be attributed jointly to TMP and STRIVE[4]. These include the uptake of the partnership model, the development of a successful domestic trilateral partnership, preparedness for COVID-19, improved relationships between PNG partners and GoPNG, and the development of the molecular hub. Support for the molecular hub from TMP, together with STRIVE, has improved partner organisations' capacity to carry out molecular diagnosis and strengthen surveillance work beyond malaria to include other parasites and viruses. This capacity for molecular diagnosis of disease will be vital for responding to future epidemics and pandemics.

Gender Equality, Disability, and Social Inclusion (GEDSI): Attention to both the gender and disability aspects of GEDSI in TMP Phase 2 appear to have been inadequate. This may in part be explained by the increasingly attenuated and fragmented nature of the project, the focus on laboratory work, as well as by restrictions resulting from COVID-19. The project reports the percentage of women receiving TMP supported training for 2020 (52%), 2022(30%) and 2023 (43%), which is commendable[5]. The percentage of Papua New Guinean positions supported by TMP was 66% female for both 2022 and 2023 (TMP, 2021a; TMP 2022a; TMP, 2023a; TMP 2024). Once again, this is commendable[6]. TMP has not completed a GEDSI strategy during Phase 2, despite it being a requirement of the design, and there is no evidence that the overarching PATH gender strategy (PATH, 2021) has been utilised by the project[7]. TMP carried out consultations with the Assembly for Disabled Persons (ADP) on malaria communication materials and budgeted for actioning of recommendations but this did not eventuate. Of the research supported by TMP that was available to the evaluation team at the time of writing, there appears to be some collection of gender disaggregated data, and a minor focus on disability.

Sustainability: Factors that will contribute to the sustainability of project interventions include that the key priority activities of TMP were determined and co-developed with NDoH, the three domestic organisations are continuing to work together in partnership through the molecular hub, IMR has access to alternative funding, and the localisation of External Competency Assessment for Malaria Microscopists (ECAMM) training and accreditation is underway. The sentinel site activities are now primarily supported by STRIVE with a focus on a broader range of vector borne diseases (VBD). Factors that could inhibit the sustainability of project interventions include insufficiency of GoPNG funding or attention, insufficient capacity within PHAs, and focus on a single disease when system strengthening does not optimally occur in silos. Effort would be required to reinvolve Chinese technical expertise, despite their willingness to be involved. The remaining Project time available is very limited. The focus should be on transitioning remaining activities to STRIVE or another appropriate donor project and/or PNG entities, and identifying what support is required in the future. PATH PAS team has already taken on some of the data utilisation work with WSPHA from 2023, and there is still time for

[4] Differentiating the impact of TMP and STRIVE in some cases proved difficult due to the complex nature of co-funding, in particular of surveillance activities. TMP Progress reports consistently report STRIVE outcomes as well as TMP outcomes.

[5] This data was not published for 2021.

[6] This data was not published for 2020 or 2021.

[7] The PMU did not initially have a copy of the PATH GEDSI strategy readily available when requested, and it is not mentioned in any TMP progress reporting

that team to work with the pilot PHA on this important initiative until the end of 2024. One of the advantages of this work being taken on by the PAS team is it can work across PATH health initiatives, rather than using a siloed approach to one disease

Many of TMP's activities now supplement more substantial work being carried out by the STRIVE program. There is a case that can be made that in the future greater efficiency could be achieved by rolling remaining TMP activities into the STRIVE program, including if any support for continued microscopy training and accreditation is required. While STRIVE is bilateral and TMP is trilateral there is nothing to prevent an expanded STRIVE program from harnessing the technical expertise of relevant Chinese or other international partners.

Conclusion: It is clear that Phase 1 of TMP was a much loved project with significant outcomes and accompanying esprit de corps. Some of these outcomes developed further through continued support during Phase 2. Many of the unintended outcomes of the combined duration of TMP are notable and positive. Due to a variety of challenging circumstances, and despite some consistent effort on the part of champions of the project, Phase 2 did not achieve to the extent that it was hoped. The project ended up being seriously hampered by: COVID-19, the loss of understanding of the intended partnership approach that accompanied turnover of staff in the AHC, PATH, and TMP, and eventual frustration and disengagement on the part of many. Malaria continues to be a serious problem for PNG and there is considerable scope for development partners, in close collaboration with PNG partners, to review the most relevant contributions that can continue to be made in this area. The evaluation team concludes that TMP in its current form has run its course.

Recommendations

Recommendation 1. The JPWG should not plan on a further phase of the TMP in its current form.

For the remainder of the current phase:

Recommendation 2. PATH and TMP should work with partners to carry out a mapping and planning exercise to ascertain which of their current activities can be transitioned to Papua New Guinean or other donor entities.

Recommendation 3. PATH and TMP should consider opportunities for improving the sustainability of existing initiatives including through programs and approaches in PATH that address themselves to transition, strengthening PHAs, GEDSI, and broader health security issues.

For the future:

Recommendation 4. The TMP country and implementing partners should consider the benefit of rolling any remaining relevant activities requiring donor support into a broadened STRIVE or other similar program. This should be with a multi-disease focus, utilising a gender and disability lens, and include the option for partnering with relevant Chinese or other technical expertise.

Recommendation 5. Any planning by donors for future contributions to reducing the malaria burden in PNG should take adequate account of the changed donor landscape to reassess the most useful contributions that can be made, without the encumbrance of demonstrating a trilateral model.

1. Introduction

This is the final report of the evaluation of the Australia-China-Papua New Guinea Trilateral Collaboration on Malaria and Health Security, often referred to as the Trilateral Malaria Project Phase 2 (TMP or 'the Project').

The GoA Department of Foreign Affairs and Trade (DFAT), through Abt Associates and on behalf of the Joint Project Working Group (JPWG)[8], has engaged the services of a team to conduct an independent evaluation of TMP Phase 2. The independent evaluation team commenced work in March 2024, undertook fieldwork in Papua New Guinea (PNG) over three weeks in April and May 2024, and will present this final report in June 2024.

This section presents the background, context and overview of TMP; the purpose and intended uses of this evaluation, the key evaluation questions (KEQ), and limitations of the evaluation process. The following sections will address the methodology, findings, future focus and conclusion. Annexes include the evaluation Terms of Reference (Annex 1), the bibliography (Annex 2), TMP Governance Structure (Annex 3) and the evidence matrix (Annex 4).

1.1 Background and context

In 2013, the GoPNG National Department of Health (NDoH) requested the GoA and the GoPRC to undertake work to improve PNG's efforts to tackle malaria. This was to occur under the Memorandum of Understanding (MoU) for a trilateral Development Cooperation Partnership between the governments of the three countries. This committed both Australia and China to strengthen cooperation on international development to address the major challenges in the Asia Pacific Region.

Following successful implementation of a pilot TMP from 2016—2019 (Phase 1), there was in principle agreement between partners that Phase 2 should work towards a long-term 10-year project, with an initial design of four years (January 2020—December 2023). For this period, the project had a total budget of AUD6 million (AUD1.5 million per year) from the GoA and in-kind contributions from GoPRC, GoPNG, and GoA. The partners agreed to a no-cost extension to the Project to the end of 2024 through an amendment to the Subsidiary Agreement between the three governments signed in December 2023.

1.2 Overview of the Project

The TMP is a unique trilateral partnership. Phase 2 of the Project commenced in January 2020 with a goal to *'strengthen the public health system in PNG to contribute to malaria elimination through enhanced trilateral cooperation'*. The TMP goal is based on the PNG National Health Plan (NHP), supports the National Malaria Control Program (NMCP), and contributes to the achievement of Sustainable Development Goals (SDG) 3 and 17.[9] The project focuses on system strengthening for malaria diagnosis, and operational research to inform malaria programming.

The goal statement is supported by two objectives:

- Health system has improved capacity to reduce the malaria burden in PNG.
- Transformative partnership between the three countries is addressing health security challenges through mutual learning and enhanced cooperation.

The two objectives are supported by six End of Investment Outcomes (EOIO); EOIOs 1-3 support objective 1,

[8] The JPWG provides strategic oversight for the project and comprises representatives from National Department of Health (NDoH), PNG; Department of National Planning and Monitoring (DNPM), PNG; Department of Foreign Affairs and International Trade (DFAT), PNG; Ministry of Commerce, China; National Health Commission, China; National Disease Control and Prevention Administration, China; Department of Foreign Affairs and Trade, Australia (POM); Department of Foreign Affairs and Trade, Australia (Beijing).

[9] SDG 3: Ensure healthy lives and promote well-being for all at all ages; SDG 17 Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development (https://sdgs.un.org/goals)

whilst EOIOs 4-6 support objective 2:

EOIO 1: Improved diagnosis and real-time surveillance of malaria at the national, provincial and district levels;

- EOIO 2: NDoH malaria policies and practice are based on quality data analysis and interpretation that are disaggregated by gender, including evidence informed by local research;
- EOIO 3: Selected pilot provinces demonstrate improved capability to prevent, detect and respond equitably to malaria;
- EOIO 4: An effective and efficient trilateral project governance and management model that can be replicated;
- EOIO 5: A practical understanding of respective countries' health policies and practices; and
- EOIO 6: Dialogue on health policy to strengthen health security.

The overall performance target for the Project is a marked reduction in the incidence of malaria, and partnerships are strengthened to facilitate long-term change in policy and institutional frameworks for malaria and health security within the GoPNG. TMP does not directly influence the incidence of malaria but contributes to strengthening the surveillance and diagnosis systems, which ultimately should impact incidence rates.

The context to which the Project design responded was a major resurgence of malaria in Papua New Guinea, with the national prevalence increasing from 0.9% in 2013—14 to 7.1% in 2016—17. The design also responded to the positive findings of the Mid-term Review of Phase 1 of the Project, the commitment of GoPNG to the elimination of malaria, that all three partner countries have a robust commitment to health security in the region, including malaria elimination; and that PNG has been partnering with Australia and China on bilateral programs in the health sector for a number of decades. By the commencement of Phase 2 China was on the verge of eliminating malaria, something since achieved, and this was seen as offering valuable lessons for PNG. Additionally, at this time China was increasing its aid in the Pacific and elsewhere and Australia sought to work with China to ensure that approaches were aligned and that both countries could share lessons to inform future partnerships (DFAT, 2019a). The Project design aligned with the health sector goal of the PNG Development Strategic Plan (DSP) 2010—2030 to '*Achieve an efficient health system which can deliver an internationally acceptable standard of health services'*, with the specific indicator *to reduce malaria incidence by more than 60% between 2008 and 2030*. The Project design also aligns with the Medium-Term Development Plan (MTDP) IV 2023—2027 (DNPM, 2023) and the National Health Plan (NHP) 2021—2030, which also contains an Objective and strategy to reduce the health burden of diseases such as malaria. The design also aligned with the previous MTDP III (2018—2022) (DNPM, 2018) and the previous NHP (2014—2018), which were in operation at the time that Phase 2 commenced.

The TMP is a complex project with a unique governance structure and technical components. The Project has nine Governance partners representing GoPNG, GoA, and GoPRC. The TMP is also led by nine Technical Directors, who are experts in malaria control or related fields from PNG, China, and Australia. The Project Management Unit (PMU), when at full capacity, includes a Senior Project Manager (SPM), a Project Manager and a Project Coordinator located in Port Moresby (all sitting within the PATH program). The PMU notes this full staffing complement was not achieved till the first quarter of 2024. The GoPRC also provide a Project Coordinator located in Shanghai within the National Institute of Parasitic Diseases (NIPD), to coordinate activities and support the PMU part-time. The governance of the Project is illustrated in Annex 3.

1.3 Evaluation purpose, objectives and scope

The purpose of this evaluation is to assess the project's progress and provide recommendations to the JPWG on the remaining project period and possible future interventions and investments based on lessons learned. The evaluation considered the project's relevance, coherence, effectiveness, efficiency, impact, and sustainability. It also considered the extent to which Gender Equality, Disability and Social Inclusion (GEDSI) principles have been implemented and reflected in the project's outcomes. Particular consideration was given to the impact of COVID-19 on the Project and its component relationships. The evaluation team notes that the effects of COVID-19, notably in 2020 and 2021, were significant and affected the ability of partners and staff to travel, implement activities, attend training, communicate from home during lockdowns, and gain access during a time when many people were, understandably, distracted by responding to COVID-19. The

primary audience for the evaluation is the members of the JPWG[10]. The evaluation will cover the period from 1 January 2020 - 31 December 2023, together with additional observations from 2024.

Scope

The TMP evaluation team notes that while Phase 1 has previously been evaluated, and the scope for this evaluation is Phase 2, it has not been possible to discuss Phase 2 without reference to Phase 1. The great majority of respondents were keen to compare their experience of Phase 1 with Phase 2, as well as discuss where there were continuities between Phase 1 and Phase 2. This forms a critical basis for understanding the outcomes, successes and shortcomings of Phase 2 and is a deliberate choice by the independent evaluation team.

The evaluation team also notes that while the STRIVE program was not the subject of this evaluation, TMP and STRIVE co-funded a range of activities (in a complex arrangement), particularly in the area of surveillance. TMP regularly reported on STRIVE outcomes in their progress reports, sometimes inadequately differentiating them from TMP outcomes. We also note that partners, unbidden, were very keen to highlight the different way that the STRIVE program and the TMP program operated, as a way of providing feedback for the evaluation of TMP, and this is reflected in this report.

The key deliverables of the evaluation are:

- A Draft Evaluation Plan (delivered 11 March 2024)
- A Final Evaluation Plan (delivered 22 March 2024)
- Aide Memoire and Stakeholder Workshop with the Evaluation Working Group (EWG) (delivered 16 April 2024)
- First draft of the Evaluation Report (delivered 29 May 2024)
- Final Evaluation Report with Summary of Findings and Summary of Recommendations

1.4 Key Evaluation Questions (KEQ)

The evaluation developed a credible evidence base to respond to the KEQs as outlined in the Final Evaluation Plan and reproduced in Table 1 below. The KEQs are mapped against the Organisation for Economic Cooperation and Development (OECD) Development Assistance Committee (DAC) evaluation criteria, sub-questions, and factors for consideration. These KEQs have been revised to enable a more streamlined approach to reporting and to reduce duplication without changing the content of the original questions. An evidence matrix was developed to identify the sources and data required to provide data-based responses to the KEQs (See Annex 4). These KEQs were used as the basis for developing indicative interview schedules for different groups of stakeholders, which were modified as required throughout the evaluation process.

Key Evaluation Questions

OECD DAC Criteria - Relevance & Coherence

1. To what extent does the Project remain relevant in addressing malaria prevention and mitigation in PNG?

1.1. Have there been any contextual changes that have affected the Project's relevance?

1.2. To what extent has the project aligned with other malaria initiatives in PNG?

2. To what extent does the Project remain relevant to the priorities of the Government of Australia (GoA), Government of PNG (GoPNG) and Government of People's Republic of China (GoPRC)?

2.1. To what extent does the project remain relevant to the individual partner governments?

Factors for consideration

- Continuities and changes in the priorities of the partner governments
- Continuities and changes in relationships between partner governments

OECD DAC Criteria – Effectiveness

[10] TMP reports that normal activities were resumed in the first half of 2022 although PNG experienced a fourth wave of COVID-19 in March-April 2022, and a planned JPWG meeting scheduled for March 2022 had to be rescheduled due to a severe COVID-19 outbreak in China (TMP, 2022b).

3. To what extent has the Project been effective in progressing towards its six EOIOs and two objectives?
3.1. To what extent has the Project contributed to improved individual and institutional capacity in PNG to prevent, detect and respond to malaria?
3.2. To what extent has the Project contributed to improved sharing, utilisation, and application of real time surveillance data at national and provincial levels?
3.3. To what extent has the trilateral partnership model and arrangements been effective?

Factors for Consideration

- Refer to Objectives 1&2
- Refer to EOIOs 1-6
- Consider supporting and inhibiting factors
- Equity of response
- Effectiveness and appropriateness of the trilateral partnership model for implementation, learning, and coherence, and dialogue on health policy/security

OECD DAC Criteria – Efficiency

4. To what extent is the Project being delivered efficiently?

Factors for Consideration

- VfM
- Consider supporting and inhibiting factors
- Timeliness and economy
- Leveraging financial and in-kind support

OECD DAC Criteria – Impact

5. To what extent has the Project contributed to PNG's health system more broadly?
5.1. Are there impacts beyond the project's EOIOs?
5.2. Are there any examples of a broader health impact of the project beyond malaria response?

Factors for Consideration

NB: Impact on incidence and treatment of malaria can be covered in Effectiveness above.

A critical outcome of the project is the partnership developed between malaria stakeholders in PNG.

OECD DAC Criteria - GEDSI

6. To what extent have GEDSI considerations and strategies been effectively implemented in the Project?
6.1. How effective has implementation of GEDSI strategies been for reducing the malaria burden for women and marginalised groups?
6.2. What are the opportunities for improvement?

Factors for Consideration

Examples required

OECD DAC Criteria - Sustainability

7. To what extent are the Projects interventions likely to be sustained?

7.1. What are the supporting and inhibiting factors that will contribute to sustainability of specific Project interventions?

7.2. What strategies can be employed to improve sustainability in the remaining Project time available?

Factors for Consideration

- Diagnosis
- Surveillance
- Treatment
- Policy Development
- Evidence utilization
- Partnership

2. Methodology

2.1 Method and approach

The evaluation drew on data collected through a review of relevant documents related to the project and context, as well as primary data collected during fieldwork, which took place from 15 April—3 May 2024 and remotely. The fieldwork included field visits, Key Informant Interviews (KII) and Focus Group Discussions (FGD) at the national and sub-national levels. The evaluation undertook 74 consultations (56 KII and three FGD with a total of 18 participants), prioritised based on their potential to contribute data with respect to the KEQ. The TMP Project Management Unit (PMU) provided an initial list of 49 stakeholders and the views of the Technical Directors and the EWG were sought on the suitability of the listIn selecting key informants, the evaluation team worked with the TMP PMU and the EWG. The team prepared indicative interview schedules for each group (e.g., government/governance, technical directors, technical partners, implementing partners, project support) of informants from a bank of interview questions.

As well as meetings in Port Moresby, the in-country mission included two provincial visits to West Sepik Province (WSP) and Madang Province. These sites were shortlisted due to the presence of a Sentinel Surveillance Site, where laboratory technicians have attended TMP-supported training or External Competency Assessment for Malaria Microscopists (ECAMM), and as sites with a high malaria prevalence. Further considerations included safety, flight timetable/availability, available accommodation, and permission from the relevant Provincial Health Authority (PHA).

These visits were undertaken to conduct FGDs and meetings with key stakeholders at PHA locations (Vanimo and Madang), Baro community health post (WSP), IMR Facility at Yagaum (Madang), Alexishafen Health Centre (Madang), Gum Nat Nat insectary and laboratory (Madang), and the new IMR facility under construction in Madang.

The approach facilitated an understanding of the context, relationships and conditions that influenced the process and outcomes of TMP. In line with this, the team heavily emphasised qualitative data, used to enrich and validate secondary quantitative data available through project documents, and to generate a clear sense of the contextual factors relevant for TMP and its partners. Evidence gathered through multiple sources enabled the review team to answer the KEQs. The data sources for this evidence included interviews and FGDs, and Document Review (See Annex 2 Bibliography).

In developing data collection tools and in interactions with review participants, the review team leveraged gender-inclusive approaches and a localisation lens. This helped facilitate respectful and effective engagement with stakeholders. The team prioritised gathering locally informed perspectives on the best ways for TMP to meet the needs of people in PNG, limiting the size of the interviewer cohort. The Team Leader is a member of the Australian Evaluation Society (AES) and therefore bound by AES guidelines for the ethical conduct of evaluations and their Code of Conduct.

2.2 Team composition

The Team comprised Dr Bu Wilson (Team Leader), Dr Abel Yamba (Health System and Partnerships Specialist) and Dr Jun (Joe) Cao (Malaria Technical Adviser)**.** Malagatawi Korodoga (Australian High Commission (AHC) Assistant Program Manager-Health Sector) joined consultations in Vanimo and provided contextual input. Dr Stella Jimmy (PATH Team Lead Health Security) accompanied the team to Vanimo, and, together with Jermelyn Okie (TMP Project Coordinator) supported the team with logistics and scheduling. Issac Amet (TMP Project Manager) assisted with organising the Aide Memoire presentation.

An EWG was established to oversee and guide the evaluation process, and review and provide feedback on deliverables. The EWG comprises Dr Moses Laman (PNG IMR), Barbara Tiki (DNPM), Jason Court (DFAT), Lyn Bae (DFAT), Junyi He (National Disease Control and Prevention Administration - NDCPA), Ji Yongcai (NDCPA),and Ty Morrissey (TMP).

2.3 Challenges and limitations

The review was able to manage challenges to deliver a thorough analysis and evaluation report, with the active engagement of the majority of stakeholders. Challenges, their impact and mitigation strategies are

summarised in the below table.

Evaluation limitations and management

- ***Challenge/Limitation:*** Some stakeholders were unavailable for interview.

  Mitigation and adaptive strategies: The team was unable to meet with several key stakeholders despite concerted attempts to follow up at other times, including remotely. By extending the number of people interviewed the evaluation team sought to still consider a wide range of views and experience with TMP.

- ***Challenge/Limitation:*** Potential loss of support and institutional knowledge from PMU when SPM left on 18 March 2024

  Mitigation and adaptive strategies: The team consulted extensively with the former SPM prior to her leaving the PMU and were able to draw on ongoing support from the remaining TMP team, together with the PATH team. The team consulted widely with a large number of people holding current and former positions either in TMP or with close association with TMP.

- ***Challenge/Limitation:*** One evaluation team member was only able to participate in ten days of the in-country consultations.

  Mitigation and adaptive strategies: The Chinese team member continued to set up and participate in interviews after returning to China, and was provided with written notes from other interviews, participated in ongoing online team discissions and communication via email and WeChat, and reviewed and provided feedback on draft material as it was written.

3. Findings

3.1 Relevance and coherence in addressing malaria prevention and mitigation

This section addresses relevance and coherence by answering **KEQ1: To what extent does the Project remain relevant in addressing malaria prevention and mitigation in PNG?** This is addressed through attention to the following sub-questions:

KEQ 1.1 Have there been any changes that have affected the Project's relevance?

KEQ 1.2 To what extent has the

project aligned with other malaria initiatives in PNG? Findings:

Finding: Addressing malaria prevention and mitigation in PNG remains highly relevant as the malaria burden is increasing. It is possible that this will be accentuated by the effects of climate change (See e.g. DFAT, 2019b, 2023a, 2023b).

Finding: The project has aligned with other malaria initiatives in PNG by working closely with the NMCP, but the scope and footprint of its activities is limited programmatically and geographically.

Finding: There are also a range of recent programs that have entered the malaria field in PNG at a similar time or subsequent to the design of Phase 2 TMP, providing an opportunity for a revised assessment of what is the most useful contribution to malaria eradication that can be made moving forward.

Finding: TMP was a project designed with strong diplomatic objectives, which have largely not been achieved in Phase 2. Coupled with a GoA preference to no longer focus on single diseases it is likely that any future programming should revisit the most effective contribution that can be made to reducing the malaria burden in PNG.

Addressing malaria prevention and mitigation in PNG remains highly relevant. The malaria burden for PNG is increasing. The World Malaria Report 2023 (WHO, 2023) notes the following

- Between 2000 and 2022 there was a 32% increase in malaria cases in PNG.
- PNG is one of five countries contributing most to global increase in malaria.
- PNG accounts for nearly 90% of cases in the Western Pacific Region (WPR).
- Between 2021 and 2022, there was a 29% increase in deaths in the WPR, mainly due to increases in PNG.

Preliminary results from the most recent Malaria Indicator Survey (MIS), supported by TMP, show that malaria prevalence by Rapid Diagnostic Test (RDT) has increased from 2020 to 2023 in both below 1600m and above 1600m altitude zones, while household mosquito net use and access have been decreasing since 2014. There is also a downward trend in net use for vulnerable populations, such as children under five and pregnant women (TMP, 2024a). The rise in malaria is also attributed to faltering funding, insecticide resistance and, significantly, changes in the formulation of the coating used in mosquito nets (Edney A. and Cortez, M.F., 2024).

It is possible that addressing the malaria burden will become increasingly relevant due to the effects of climate change. Anecdotally this is already occurring.

Changing temperatures and rainfall patterns are expected to alter the frequency, seasonality and geographic distribution of vector-borne diseases such as malaria, dengue and Japanese encephalitis (See, e.g., DFAT, 2023a). DFAT's Climate Change Action Strategy (2019) recommends incorporating climate change at all stages of the aid program management cycle, including planning and design, implementation, monitoring, performance reporting and evaluation. DFAT's Partnerships for a Healthy Region Climate Guidance Note (2023b) suggests that in relation to climate change, there is the opportunity for strengthening vector and waterborne disease surveillance to improve early warning systems for climate sensitive diseases such as malaria, and to support climate informed disease mapping.

The project has aligned with other malaria initiatives in PNG by working closely with the NMCP. TMP has contributed support that complements other organisations programming. This includes:

- funding an evaluation of the RAM-supported Home Management of Malaria (HMM) program;[11]
- supporting an evaluation of the sensitivity and specificity of RDT kits used nationally, which enabled NMCP to use the evaluation findings to regulate the kits (TMP, 2024a);
- supporting IMR's research on acceptability and efficacy of dispersible Artemisinin-based Combination Therapy (ACT) for children (report requested from PMU by evaluation team but not available);
- supporting IMR's research on Chinese Mass Drug Administration trials in Kiriwina;
- supporting an increase in the number of IMR sentinel surveillance sites from four sites to eight in partnership with the DFAT-funded Centre for Health Security's *Stronger Surveillance and Systems Support for Rapid Identification and Containment of Resurgent or Resistant Vector-Borne Pathogens in Papua New Guinea* (STRIVE) program;[121] and
- coordination support for NMCP.

In addition to considering the expanding work of the STRIVE program, any future contributions toward reducing the malaria burden will need to consider the programming of the following two projects: a) Diagnostics for Integrated Case Management, Actionable Surveillance and Accelerated Elimination of Malaria and Neglected Tropical Diseases in the Asia Pacific (PDAP), and b) Newly Adapted Tools Network Against Mosquito-Borne Disease Transmission (NATNAT) which is being implemented by a consortium.

As this was a project designed with strong diplomatic objectives, which have largely not been achieved in Phase 2, it is likely that any future programming could revisit the most relevant contribution that can be made to reducing the malaria burden in PNG.

It is the view of the evaluation team that the option to include valuable Chinese technical expertise in many

[11] The report of this research was still not available at the time of this evaluation, despite significant efforts on the part of PMU to obtain from the partner.

[12] While the co-funding arrangements between TMP and STRIVE of sentinel surveillance and for the molecular hub are confusing and unnecessarily complex there is no evidence of any specific overlap.

facets of malaria eradication as an option in future bilateral programming should not be discounted.

There is now an opportunity, in changed circumstances and an evolving donor landscape to revisit whether the current activities are making the most relevant contribution to reducing the malaria burden in PNG. It is possible that the remaining activities could be rolled into an expanded STRIVE or another appropriate program.

3.2 Relevance to the three partner Governments

This section addresses relevance and coherence by answering **KEQ2: To what extent does the Project remain relevant to the priorities of the Government of Australia (GoA), Government of Papua New Guinea (GoPNG) and Government of People's Republic of China (GoPRC)?**

Findings:

Finding: TMP Objective 1 remains relevant to the priorities of the GoA, GoPNG and the GoPRC.

Finding: The project has aligned with other malaria initiatives in PNG by working closely with the NMCP, but the scope and footprint of its activities is limited programmatically and geographically.

GoPNG Development priorities

TMP Objective 1: Health system has improved capacity to reduce the malaria burden in PNG continues to strongly align with GoPNG development priorities. As noted above the malaria burden for PNG is increasing and malaria remains a priority for the GoPNG. This is evident in the MTDP Plan IV 2023—2027 and its predecessor MTDP III 2018—2022; the NHP 2021–2030 and its predecessor NHP 2011–2020, and the National Malaria Strategic Plan (NMSP) 2021—2025 and its predecessor NMSP 2014—2020. This view was confirmed by interviews with GoPNG officials at the national and PHA level.

The goals expressed in the NMSP 2021—2025 (NDOH, 2020a) are as follows:

- Reduce malaria morbidity by 63 % by 2025 (i.e. from 66.3 per 1,000 in 2019 to ≤ 25.8 per 1,000 in 2025);
- Reduce malaria mortality by 90 % by 2025 (i.e. from 1.697 per 100,000 [146 deaths] in 2019 to ≤ 0.165 per 100,000 [16 deaths] in 2025); and
- Eliminate malaria in selected areas by the end of 2025 and prevent reestablishment of transmission in these areas once malaria-free (a multisectoral initiative).

Responding to the continuing relevance to the GoPNG of TMP Objective 2: Transformative partnership between the three countries is addressing health security challenges through mutual learning and enhanced cooperation, is a more complex matter. While GoPNG partners were very appreciative of the trilateral mutual learning and enhanced cooperation opportunities across Phase 1, including visits to China and Chinese technical experts visiting PNG, in practical terms this proved challenging in Phase 2, and contact between Chinese partners and TMP was minimal.

GoA Development priorities

TMP Objective 1: Health system has improved capacity to reduce the malaria burden in PNG continues to strongly align with GoA development priorities. The GoA *2017 Foreign Policy White Paper* (GoA, 2017), in place at the commencement of TMP Phase 2, highlighted Australia's focus on cost-effective interventions to prevent communicable diseases such as malaria. In *Partnerships for Recovery: Australia's COVID-19 Development Response* (DFAT, 2020a*)* and the attendant *Papua New Guinea COVID-19 Development Response Plan* (DFAT, 2020b*)* there was a recognition that health systems in the region could become stretched or overwhelmed, and it would be important to continue to support prevention and treatments for diseases like malaria. This commitment to supporting efforts to prevent and manage the spread of malaria is also present in the new GoA international development policy released in August 2023 (GoA, 2023).

The 2022 Review of the GoA Health Portfolio Plan (HPP) notes that the malaria program [sic] does not align with the HPP Objective, which specifically refers to TB, family planning, sexual and reproductive health, HIV, and

maternal and child health only (HDMES, 2023).[1313] The GoA, like the GoPNG, also recognises the significant influence of climate change on health systems, as well as on the emergence and resurgence of disease, and the transmission dynamics and geographical distribution of vector-borne diseases such as malaria (See e.g. DFAT, 2019b, 2023a; 2023b).

Some GoA respondents were of the view that while malaria remained important, they noted there was a move away from addressing single diseases in isolation, both as a matter of good development practice and at the request of NDoH. The 2022 Review of the GoA HPP also noted that:

> *The lack of an overarching strategy for health security system strengthening often results in investments focusing on a single disease, working to resolve issues in silos, and working without an explicit assessment and prioritisation of needs across the system (HDMES, 2023).*

It is certainly the case that the requirements to strengthen e.g. PHA capacity to deal with malaria are very closely related to the requirements to strengthen PHA capacity to deal with TB.

Responding to the continuing relevance to the GoA of TMP Objective 2: Transformative partnership between the three countries is addressing health security challenges through mutual learning and enhanced cooperation, is a more complex matter. While health security in the region clearly remains a priority for the GoA, it is less clear whether there is an appetite to address this through this particular model of trilateral cooperation, with a range of views apparent in interviews with GoA respondents.

GoPRC Development priorities

The development priorities of GoPRC are not as well documented as GoA and GoPNG, in part due to China not reporting its foreign development assistance activities to established aid transparency initiatives (Odhiambo, et al., 2023). However, it is understood that work is currently underway to document these development priorities. China was declared malaria-free by the WHO in 2021, is increasingly playing a role in combatting malaria globally, and is keen to share this experience. In interviews with Chinese respondents, the team was made aware of a continuing high degree of enthusiasm for the trilateral malaria partnership model and disappointment that Phase 2 of the project had provided few opportunities for input into the project for reasons outlined elsewhere in this document. One key Chinese respondent noted that 'despite the political issues and impacts mentioned in the report, our implementation agency NIPD is committed to supporting future project implementation and providing technical support, and open to exploring potential collaborations'.

3.3 Effectiveness

This section covers Effectiveness through answering **KEQ 3: To what extent has the project been effective in progressing towards its six EOIOs and two objectives?**

It is addressed through considering three sub-questions

KEQ 3.1 To what extent has the Project contributed to the improved individual and institutional capacity in PNG to prevent, detect and respond to malaria?

KEQ 3.2 To what extent has the project contributed to improved sharing, utilisation, and application of real time surveillance data at national and provincial levels?

KEQ 3.3 To what extent has the trilateral partnership model and arrangements been effective?

This section considers each EOIO in turn.

EOIO 1: Improved diagnosis and real-time surveillance of malaria at the national, provincial and district levels

Indicators for EOIO 1: *% of cases diagnosed in-line with PNG diagnosis algorithm*

Findings:

Finding: TMP has contributed to improving capacity for malaria diagnosis in PNG at individual, organisational and systemic levels. More than 95% of cases are now diagnosed parasitologically, rather than clinically. The great majority of these cases are diagnosed through RDTs.

[13] It is believed that the successor GoA HPP for PNG is currently in preparation.

Finding: The capacity of PHAs to utilise the real-time surveillance data for planning, response and resource allocation appears to be limited in the two provinces visited by the evaluation team.

Correct diagnosis of malaria is a pre-requisite for effective malaria treatment and management. More than 95% of cases are now diagnosed parasitologically rather than clinically. This shows a significant improvement in the quality of diagnosis from less than 70% of suspected cases receiving a parasitological test in 2015. Healthcare practitioners and clinicians the evaluation team consulted in Port Moresby and two provinces refer to malaria microscopy as the gold standard for malaria diagnosis. The TMP, with the ambitious goal of contributing to malaria elimination, focused on the ECAMM, as a way of improving competency levels of malaria microscopists in the country. TMP has also supported an evaluation of the sensitivity and specificity of RDT used nationally. The NMCP has used these evaluation findings to regulate the RDT kits (TMP, 2024b).

The MTR of Phase 1 in 2018 found that TMP had contributed to improving capacity for malaria diagnosis in PNG at individual, organisational and systemic level; and had made considerable progress in modelling effective trilateral cooperation (Hombhanje, 2018). This improved capacity for diagnosis has continued as a result of efforts in Phase 2, with careful selection of microscopists, and a strong demand for continued support from partners. As of June 2023, there are 14 Level 1 and 11 Level 2 microscopists in PNG. Since 2016, Phase 1 and Phase 2 of the project have supported 147 PNG microscopists (67 female and 80 male) to undertake an ECAMM.

The ECAMM course is now successfully delivered in partnership through a consultant, and CPHL (a success on its own). CPHL is now independently running the ECAMM refresher trainings - this is a huge gain. The challenge with ECAMMs is that the training cycle needs to be repeated every three years, and a sustainable model needs to be adopted. There is a possibility of CPHL and IMR providing ECAMM facilitators, and with the malaria slide bank at CPHL and the Molecular Hub at UPNG, a pathway for ECAMM sustainability can be forged.

It should be noted, however, that in 2021 only three percent of confirmations occurred through microscopy and the remainder were through RDT. Both the review of the GoA HPP and some respondents raised concerns that the number of facilities using microscopy has decreased over time, indicating that national capacity is diminishing (Ayres et al, 2023). This raises questions of sustainability for consideration moving forward. The phenomenon of decreasing diagnosis through microscopy is well illustrated in the presentation of Abdur (2022).

The Malaria Slide Bank (MSB) at CPHL has played a pivotal role in quality assurance of malaria diagnosis using microscopy, as well as serving as a foundation for the National Reference Laboratory (NRL). An MSB provides sets of known replicate slides that can be used for training, the assessment of microscopists, and for proficiency testing schemes. With support from TMP and Chinese partners, PNG established its first national MSB in 2016. The MSB, which now comprises over 5,000 validated blood slides and includes all four varieties of malaria, is used to train healthcare workers and for assessing provincial and district laboratory staff during supervisory visits. The MSB allows for comparison of slide readings between national and provincial laboratories. The project has also supported CPHL to develop a National Core Group of Level 1 and 2 microscopists to support quality assurance activities. The MSB will also serve as a key pillar of ECAMM sustainability.

There were very mixed views among stakeholders on whether the focus on microscopy in TMP was the most important thing to focus on, although it is recognised as a general public good and through the Malaria Slide Bank (MSB) contributes to accreditation requirements for a National Reference Laboratory (NRL). As part of choosing activities to support in future a call needs to be made on what priority to give this microscopy work and how it can be best integrated with other PHA strengthening and vector borne disease work.

PHA using existing systems for surveillance, policy and planning

Malaria surveillance has historically been done on a paper-based reporting platform. It takes a lot of time for the reports to move from the facilities to the provincial headquarters, and onto NDoH. The forms were reported on a monthly basis, with much of the malaria reporting happening as aggregate data and with no

case based reporting. Challenges with this type of reporting persisted: delayed reporting, missing reports, incomplete reports, etc. Some of these challenges were removed with the introduction of e-NHIS, where provinces are now able to report using a tablet. But even with this, there is no case base reporting, and real time availability of malaria specific data is limited.

The introduction of the Tupaia electronic platform through the STRIVE program provides dynamic and interactive dashboards that are autogenerated and *potentially* user friendly across the eight sentinel sites. As soon as data is entered in the field onto the platform, it is then automatically analysed and dashboards are created, giving interesting insights into malaria epidemiology. This rich data is then available for action in real time, thus eliminating the delayed feedback that was previously observed. A staff member in Baro clinic, for example, mentioned the following:

> *"Before there was no results/feedback received on a timely basis but now, we have access to Tupaia, that makes things easier."*

The Tupaia platform also captures the different types of malaria species that are being reported. This data is very rich and can be used for targeting a range of environmental and behaviour change communication and intensified testing and treatment regimes. However, the challenge is, it is only available in the surveillance provinces, and PHAs in these provinces have limited capacity to use this data. Notably, PHAs have reported to both TMP and the evaluation team that the Tupaia platform was difficult to use, and that information was not presented in a way that was easy to use for decision making. When the issue was raised with STRIVE, they responded they were aware of the challenges and were continuing to meet with PHAs to resolve the issue but were currently hampered by the very different requirements, as expressed by each PHA. This remains an important issue to resolve.

TMP has provided capacity support through the TMP MEL Adviser to West Sepik Provincial Health Authority (WS PHA) which had sought support to utilise available research and data to inform malaria programming in the province. This support included foundational M&E training and development of an overarching theory of change for the PHA, and development of a results framework for malaria. At the end of 2022, it was decided that the PATH Performance Adaptive Systems (PAS) team would provide the majority of ongoing MEL support to WS PHA. In 2023, the TMP MEL Advisor made an online presentation to WS PHA during a workshop on data analysis and interpretation organised by the PAS team; and the TMP team supported a 2-day PAS-led 'data analytic symposium'. Three Data Analytics projects were established as an immediate output of the workshop, and WS PHA was planning to analyse data for three key emerging health issues/concerns (TMP, 2024a). However, it is clear that the available data is not currently being used for WSPHA policy and planning processes. The evaluation team's consultation with Madang PHA also showed that usage of available data was minimal. This can be attributed to broader capacity issues at PHA level and the difficulty that PHA personnel experienced in accessing Tupaia. Support for this work remains important within the context of broader PHA strengthening.

EOIO 2: NDoH malaria policies and practice are based on quality data analysis and interpretation that are disaggregated by gender, as well as evidence informed by local research

Indicators for EOIO 2: # of research and guidance papers prepared to support policy dialogue.

Findings:

Finding: Both M&E systems and research supported by TMP were used to generate evidence to support policy dialogue, but with limited effectiveness.

Finding: TMP made a modest contribution to the many malaria related research activities current in PNG, whilst much other malaria related research was supported through other partners. By way of example IMR malaria research is supported by Global Fund, STRIVE PNG, WHO Special Programme for Research and Training in Tropical Diseases (TDR), Asia Pacific Leaders in Malaria Alliance (APLMA), Gates Foundation, National Health and Medical Research Council (NHMRC), Innovative Vector Control Consortium (IVCC), and UNITAID, as well as by TMP.

This EOIO focused on data for impact and generating evidence to influence policy. Resources were put into supporting health systems research and capacity building for malaria research work in PNG.

The evaluation team examined two channels through which evidence was generated to influence action

interventions and policy change/shift. First, we assessed whether the TMPs own **M&E systems** were used appropriately to generate data that is critical for ongoing project management and improvement. TMP facilitated M&E trainings in WSP. However, in general, the M&E tools and processes *were* ***utilised but in a passive manner*** *(data was collected but there was no evidence of TMP reports being shared and utilised for project improvement or interventions at PHA and implementing partner level)*. Data collection using the M&E tools happened, but with less visibility at the provinces, and there was no evidence at the PHA level in WSP and Madang of any feedback coming from PMU or PATH in relation to malaria work[14], or from implementing partners. In a meeting with one of the PHA leadership team, they noted that they needed to have access to the sentinel surveillance data, but they lacked human resources and skills to access the Tupaia platform. Data generated through the MEL system is not actively utilised. In a program or project, MEL tools and systems remain the backbone for continuous improvement and utilising it actively could have benefited or augmented performance. Notably the PATH staff located in WSP had very little knowledge or awareness of the TMP program.

TMP majority funded malaria surveillance across the country between 2020-2023 (and in Phase 1 since 2016), although in 2024 this is now largely managed by STRIVE. TMP contributed the salary of two IMR scientists who were involved in various research projects, including the MIS, and supported several students and scientists through research work in malaria related health systems research (much of these research activities are supported by other partners as well). There were also two PhD candidates supported through the Molecular Hub. TMP also supported the Laboratory Information Management System (LIMS) that it is hoped will be used for all laboratory related data in the future. The progress report (TMP, June 2023) noted that over the past few years, the portfolio of research projects under NMCP have generated critical data on various areas of malaria control and prevention. Research completed under TMP since 2020 includes *Research into the acceptability and efficacy of dispersible Artemisinin-based combination treatment (ACT) for children – completed November 2021(report unavailable to evaluation team)*; and *Monitoring for the outcomes of the Mass Drug Administration in Kiriwina*; and *Evaluation of the Home Management of Malaria Program in West and East Sepik (only preliminary report available).* PMU is said to have supported NMCP to use information generated from research, but there is no evidence detailing what has been done to promote the use of data generated from this research; PMU has been facilitating discussions with NMCP and research partners, but there is no evidence of value added. This raises questions about TMP's value-add to research being carried out.

An examination of IMR's 2022 annual report (IMR, 2022) shows that support for their malaria based research is also carried out by other organisations including Global Fund, STRIVE PNG, WHO TDR, APLMA, Gates Foundation, NHMRC, IVCC, and UNITAID. It is noted that TMP was never intended to cover all malaria based research in PNG, and was principally designed to encourage trilateral cooperation, albeit in the area of malaria.

EOIO 3: Selected pilot provinces demonstrate improved capability to prevent, detect, and respond equitably to malaria.

Indicators for EOIO 3:

The indicators in the TMP MELF Plan v 5 are:

- # cases identified, detected and treated on an annual basis in WSP
- % change in awareness and application of new practices by health care workers (disaggregated by gender)

The indicators in the TMP Results Framework are:

- Increased % of cases correctly diagnosed and treated on an annual basis in WSP
- Acceptability of HMM by community and health care workers
- Improved quality and timeliness of data entering the e-NHIS from WSP

Findings:

Finding: It is not clear if and how approaches and learnings from TMP activities in the pilot province of West Sepik have been applied elsewhere.

[14] It is noted that PATH PAS team has taken over all work in WSP from TMP related to data collection, tools and training as part of their national program

Finding: There are early positive indications from interviews and the IMR preliminary evaluation report (Ome-Kaius et al., 2023) on the HMM program in East and West Sepik provinces providing effective health service delivery to communities, alleviating geographical, financial and contextual constraints to malaria treatment and case management.

Finding: The number of cases correctly diagnosed in WSP has increased due to improved microscopy skills and the surveillance work jointly supported through TMP and STRIVE.

Finding: Despite the M&E support from TMP being appreciated, there remains a lack of demonstration at the WSPHA level of a sound knowledge and use of malaria data generated through TMP, or from other more comprehensive resources such as eNHIS or Tupaia. While sex disaggregated data is being collected in WSP there is no evidence that it is used.

It is not clear if and how approaches and learnings from TMP activities in the pilot province of West Sepik have been applied elsewhere. The Phase 2 design refers variously to single and multiple pilot provinces (DFAT, 2019a). Although project documents suggest that WSP would be the initial province and that others may be added in, WSP has remained the only pilot.

There are early positive indications from interviews and the IMR preliminary evaluation report (Ome-Kaius et al., 2023) on the HMM program in East and West Sepik providing effective health service delivery to communities, alleviating geographical, financial and contextual constraints to malaria treatment and case management. Malaria diagnosis through the use of RDTs has increased at the sentinel site in Baro, WSP. Both the negative and positive results are documented, and all dry blood spot (DBS) samples are transported to the molecular lab in Port Moresby for further molecular testing and confirmation. The results from the molecular lab are further updated onto the Tupaia platform as part of the real time feedback mechanism. It would be a positive development if some of the best practices at the sentinel sites can be shared through the PHA to improve surveillance at the other non-pilot sites in the province. It is hoped that the finalised evaluation of the HMM will contain a complete account of all the HMM activities with further analysis of the full qualitative data set, in order to provide comprehensive recommendations to the NMCP and NDoH.

Despite the M&E support from TMP there is a lack of demonstration in the WSPHA of a sound knowledge and use of malaria data available through the eNHIS or Tupaia tablets. e-NHIS is supported by DFAT and ADB through the Health Services Sector Development Program (HSSDP) project, with tablets for e-NHIS data entry placed at the facility level. In WSP, the surveillance nurse told the evaluation team that e-NHIS data is entered into the tablets (separate from the Tupaia tablets). There was no visibility however, of the e-NHIS and TMP or Tupaia interface and how either is augmenting the performance of the other. However, the e-NHIS data quality indicators, for Vanimo Green (where Baro clinic is located), is 96% complete, whilst the other three districts in WSP are 100% (NDOH, 2024) For Madang, the reporting completeness ranged between 96% and 100%. The evaluation team notes that the sample is limited. It is also unclear if TMP is able to access eNHIS data as TMP does not support eNHIS.

As noted under EOIO 1, TMP and the PATH PAS team have carried out MEL capacity development work in WSP. The Project Stocktake (TMP, 2024b) notes that the project was planning to support an Evidence Synthesis Officer position within WSPHA to map malaria related data sources, and make recommendations to the PHA on how to utilise the data. However TMP decided not to proceed with this appointment, and this remains an unmet need. For example, the data generated by Tupaia needs to be extracted and shared with the PHAs, and further analysed to identify gaps where community level interventions can be designed. A senior government official suggested, that a bottom-up, community-led, one community, one district approach to eliminating malaria is the way, and the use of facility specific malaria data for key interventions at the household level can yield good results.

EOIO4 An effective and efficient trilateral project governance and management model that can be replicated

Indicators for EOIO4:

- Project partners maintain/increase level of engagement
- # Efficient systems in place for decision-making at all levels
- # new initiatives trialled in the trilateral partnership

- # new funding opportunity explored

Findings:

Finding: In Phase 1 there was explicit recognition of what each of the three country partners wanted from the partnership and this was outlined in the TMP Partnership Manual. The 2018 MTR found that the model was successful.

Finding: The partnership model introduced by TMP was actively chosen as the basis for the STRIVE program where it is considered to be functioning well.

Finding: While many partners still value the partnership model, the way that TMP project governance and management has evolved in TMP Phase 2, often in response to very challenging circumstances, means that few are happy with how it is currently implemented. Meetings are often delayed and many find the processes burdensome.

In Phase 1 the project's governance model and proactive approach to partnering were its unique value and the reason why TMP was a much-loved project. The partnership prioritised technical and local expertise, while also leveraging the experience, knowledge, and relationships of the government and international partners. The model also formed the basis of Phase 2 enabling TMP to have a wider impact and was particularly valuable when governments needed to respond quickly during the COVID-19 pandemic. The Partnership Manual (TMP, 2021e) clearly articulates what each of the three countries were expected to contribute and benefit.[15]

In Phase 1, the model brought together the comparative advantages, skills, and expertise of institutions from China, PNG, and Australia, as well as technical government entities like CPHL, and UPNG SMHS, together with the independent IMR. Throughout the project this has been particularly evidenced by the cooperation of the Technical Directors, their willingness to give their time to the project, and to work together in a highly respectful and collaborative manner. This enabled a more cohesive working relationship between the various stakeholders working in malaria and provided invaluable support to the NMCP and its ability to manage development cooperation. As a result of both Phase 1 and Phase 2 of the project, partners such as CPHL, PNG IMR, and SMHS have more direct interaction with the NMCP and their Technical Working Group (TWG). Many people that our team consulted with in the health sector in PNG stated that the partnership principles that TMP birthed was a major positive with one former staff member of the PMU saying '*Partnership was the condition of the project-it was the glue that held the project together'.*

As outlined throughout this report the context and operating environment for Phase 2 was quite different to Phase 1. In Phase 2 TMP encountered many challenges and although Partnership Health checks were carried out the Project struggled to find its feet even after COVID restrictions ended, meetings were often delayed because of competing priorities of stakeholders and there was difficulty in achieving a quorum for meetings. The governance and management of the project were found by many to be burdensome. In the 2022 TMP Annual report, it was noted that the 'first JPWG meeting was held in October 2022 after almost 3 years of delays'. The delays in convening these meetings may have been both a symptom and a cause of the problems that developed in the partnership (TMP, 2023a).

EOIO5: A practical understanding of respective countries health policies and practices

Indicators for EOIO5:

policy exchanges initiated between Trilateral partners

new initiatives initiated on health security

[15]PNG partners wanted malaria burden reduced and achieve a strong on-going trilateral relationship; Chinese partners were recognised for their country's huge progress in malaria prevention and control in the past six decades and were expected to bring on board that first-hand experience in this field; Australian partners wanted to continue to work on their government's priority to support the PNG's health system as a close neighbour, as health is a priority for the Australian aid program. For all the three countries, health is a logical area to engage in, given shared interests in promoting health security in PNG and significant experience and expertise in disease control

Findings:

Finding: Getting traction on the intent of EOIO 5, like other components of Objective 2, proved challenging in Phase 2. However, the target of "at least one discussion facilitated" over a period of three years as outlined in the TMP Results Framework appears exceptionally unambitious. There was only AUD2,155.67 spent against EOIO5 of only AUD10,000.00 budgeted, leaving 78.4% remaining at end of 2023.

Finding: Despite challenges a range of information sharing and learning opportunities continued to be facilitated by TMP both internationally and domestically.

The EOIO5 indicators were set to measure exchanges between the three countries in the areas of policy, innovations and technical collaborations. Internally, the PMU coordinated the collaborations at various forums, including at the National Malaria Technical Working Group. The malaria TWG brings together various stakeholders and supporting partners and is one of the most collaborative programs under NDoH. COVID-19 however, has impacted effective collaborations internally, and cross-country learning opportunities were minimal from 2020 onwards. The TMP team attributes the failure to get traction on EOIO5 to the inability of partners to agree on what was required and what should be covered.

At the higher level, some learning exchanges occurred, supported by TMP and facilitated by the PMU.

- The NMCP was requested to present at the NIPD Symposium on Surveillance-Response Systems Leading to Tropical Diseases Elimination (SRS), co-sponsored by the National Institute of Parasitic Disease, Chinese Center for Disease Control and Prevention (China, CDC), the Chinese Center for Tropical Disease Research, the Swiss Tropical and Public Health Institute (Swiss TPH), and the World Health Organization. This symposium happened between 14 and 15 June 2022. The 6th SRS proposed to address the impact of the COVID-19 pandemic to the control and elimination of tropical diseases and explored constructive approaches to strengthen surveillance and response mechanisms through effective cooperation and innovative partnerships. *However, it is not clear whether the learnings from this high-level symposium was applied back in PNG.*

Contributions by the PMU Project Coordinator at the time (Ms Annie Dori) were extensive and include:

- Presenting at the Global Health Security conference in Singapore in June-July 2022 on 'Utilizing a partnership-based approach in implementation research'.
- Presenting at the Health System Research Conference in Colombia in November 2022 on 'Using a partnership-based approach to strengthen National Malaria Control Program activities and health systems in Papua New Guinea' (STRIVE funded participation).
- Contributing to an article in the *Health Research Policy and Systems* journal. The article reflected on the modality of the STRIVE partner project, which was based on the TMPs approach.

In addition,

- the Manager of the NMCP at that time, the late Mr. Leo Makita presented at the Medical Symposium in September 2023 on the 'Burden of P. falciparum and vivax infection on the North Coast of Madang Province' (TMP funded participation) (TMP, 2024a).
- GoPRC partners presented two sessions on malaria elimination lessons at the April 2023 JPWG meeting which covered the keys to success in GoPRC's elimination journey and provided recommendations for PNG (TMP, 2024b)
- PATH Health Security Lead Dr Stella Jimmy presented on' Laboratory Strengthening' at the NMCP Annual Meeting in November 2023 (TMP 2024b)

It is not known to what extent any of these activities were utilised and applied in the PNG context.

EOIO 6 Dialogue on health policy to strengthen health security

Indicators to track EOIO 6: #of dialogues held among the three partners and #of policies being included in

the dialogues

Findings:

Finding: The combined effects of COVID-19 restrictions resulted in partners experiencing difficulties agreeing on definitions of health security. Despite many efforts of TMP to get this EOIO back on track it was not possible to achieve the hoped for outcomes. The unspent budget against EOIO6 at the end of 2023 was 95.5% of the allocated AUD43,924.47.

The Phase 2 Design Document made explicit the intention for TMP to expand their focus from malaria to include health security more broadly. The rationale laid out in the design was as follows:

> *PNG is located at the mid-point of the Western Pacific Region (WPR) between China and Australia. It is a region with a high level of disease outbreaks and health threats. In the past decade this region has seen outbreaks of avian influenza, Middle Eastern Respiratory Syndrome, dengue and a wide range of natural disasters. PNG has recently seen a polio outbreak, outbreaks of measles and cholera, and has a high level of multi-drug resistant tuberculosis. The WPR has a population of nearly 1.9 billion people, with a high level of trade, transport and travel interconnectedness. It is vital for the region that there is a collective effort to protect the health security of the region, and also to protect trade, growth and economic and social development. Health security, including antimicrobial resistance, is the first of three priorities in WHO's "For the Future" vision paper for the forthcoming Regional Committee Meeting.*

During interviews, one key respondent (a former DFAT staff) noted that the issue of health security was already being struggled with by some partners at the time of the design, and ultimately the design left the definition to be resolved by the project at a future date. Another key respondent (at the PMU) noted that the interest in health security increased with the arrival of COVID-19 with particular focus on Vanimo (border with Indonesia), Daru (border with Australia), and Madang (as a major shipping port).

A Partnership Health Check was completed early in 2021 identifying a range of opportunities for engagement, with the resultant report circulated to partners for feedback. When the JPWG was postponed, the PMU worked with partners online over November and December 2021 to consider activities to take the recommendations of the revised report forward (TMP, 2022a).

Following on from these discussions the PMU prepared a paper to assist partners in defining the concept of health security within the project context, and to identify potential activities to further support health security in PNG. The final Health Security Paper was discussed at the 2022 JPWG, and while not endorsed, members approved PMU to progress work in alignment with the paper. As a result, two working groups were formed: (i) Operational Research for Policy; and (ii) Laboratory System Strengthening. These working groups were comprised of internal and external partners with relevant technical expertise and were intended to refine the nominated priority areas and translate them into Health Security activities that could be implemented by project partners. (TMP, 2022a)

However, not much progress has been made and the discussions did not continue because of both the political and practical challenges offered by the COVID-19 pandemic. Even after the pandemic settled, there is no evidence that the discussions on the Health Security paper progressed. By the time of the TMP 2023 Annual Report, the project was reporting that:

> *Progress against EOIO 6 has been stalled. A primary contributor to this has been reaching consensus on what dialogue is required and what is defined as "health security". The preference has been to focus on dialogue around health security concerning malaria. Some activities have been proposed, but these have stalled due to a lack of formal agreement on an approach (TMP, 2024a).*

Although EOIO 6 did not occur as intended, the TMP Project Stocktake in 2024 noted a range of TMP's work which has positively impacted on broader health security. These include TMPs support for:

- the LIMS which will benefit the whole laboratory sector across all disease areas, and will assist in meeting WHO standards as a national reference laboratory;
- the molecular hub which tests beyond malaria;
- a Polymerase Chain Reaction (PCR) scientist for PNG's COVID response;
- capacity support to GoPNG partners for future pandemic responses

- a session at the forthcoming (June 2024) APLMA Summit, hosted by GoPNG (TMP, 2024b).

3.4 Efficiency

This section addresses the efficiency of TMP through **KEQ4: To what extent is the project being delivered efficiently?**

Finding: The overall budget for Phase 2 TMP was underspent every year from 2020—2023. At the end of 2023 the budget was underspent against every EOIO (ranging from 24.2% to 95.5%) and there was still a total of 43.4% of the budget remaining (TMP, 2024c). This level of underspend would not normally be considered efficient.

Finding: Phase 2 of TMP demonstrated some efficiencies and value for money including utilising in- kind contributions from PNG, Australia and China in addition to financial contributions from Australia; and sharing of resources across partners. The involvement of Chinese partners dwindled over time.

Finding: The *anticipated* outcomes of TMP Objective 1 including improved diagnosis and real time surveillance of malaria at the national, provincial and district levels, and research and analysis informing national policy and practice are laudable but only partially achieved. This raises the question of whether the supported activities, in isolation, can be considered value for money in the longer term.

Finding: It is some of the *unanticipated* outcomes of TMP that possibly demonstrate some of the best value for money of the project. These are largely attributable to Phase 1, but continued to be supported to a lesser extent in Phase 2

Finding: The attenuation of the activities of TMP over time, combined with few achievements against Objective 2 means that the complex governance mechanisms aimed at an effective trilateral partnership; and a comparatively high level of staffing for the activities that are maintained can no longer be considered efficient.

Finding: While there is no apparent overlap between the two projects, the complex co-funding of a range of activities through both STRIVE and TMP does not appear to be efficient.

Budget underspend

The overall budget for Phase 2 TMP was underspent every year from 2020—2023 At the end of 2023 the budget was underspent against each EOIO (ranging from 18.2% to 95.5%) and there was still a total 40.8% of the budget remaining (TMP, 2024c). Money was spent against EOIO5 only in 2020 and 78.4% of the EOIO5 budget was remaining as at end of 2023. Money was only spent against EOIO6 in 2022 and 95.5% of the EOIO6 budget was remaining at end of 2023. The project received a no-cost extension to the end of 2024.The underspend can be attributed partly to pandemic disruption, including travel and movement restrictions, remote working and prioritising the COVID-19 response; not achieving full staffing complement till the first quarter of 2024; frequent change of key personnel in TMP PMU; change in ways of working among the AHC in Port Moresby, PMU, Technical Directors, and PATH; uncertainty in the future of TMP; and complex and cumbersome governance processes and diplomacy. Over time it was exacerbated by disengagement of various project partners, in varying ways and to varying degrees, making utilising the budget difficult.

Efficiencies achieved

Phase 2 of TMP demonstrated some efficiencies and value for money including utilising in-kind contributions from Papua New Guinea, Australia and China in addition to financial contributions from Australia; and through sharing of resources across partners. The involvement of Chinese partners dwindled over time. Efficiencies were achieved through harnessing relevant experience, expertise and resources available within the partners themselves, such as the provision of technical experts, laboratory space, diagnostics

equipment, access to in-house training programs, meeting rooms and sharing specimens for referral. The 2022 TMP Annual Report notes that shared partnership support to the NMCP is provided through the PMU, with some reimbursement of costs through the STRIVE program, contributing to efficiency (TMP, 2023a).

The opportunity for Chinese inputs dwindled in Phase 2 and by 2024 was confined to some renewal of contact between PMU in PNG and the PMU member in China, feedback on the Annual Report, technical activities approval, appointing Dr Jun Cao as an evaluation team member, participation in selection of a new Senior Project Manager for TMP, and anticipated involvement in the JPWG scheduled for July. Some in TMP report that there was no opportunity for technical input in 2024 as the project was already winding down, although others in the team report they are awaiting replies on invitations to participate in forthcoming training. During the April JPWG 2023 meeting, Chinese colleagues presented on their malaria elimination control efforts and successes.

Value for money

The anticipated outcomes of TMP Objective 1 including improved diagnosis and real time surveillance of malaria at the national, provincial and district levels; and research and analysis informing national policy and practice are laudable but realistically are only partially achieved. This raises the question of whether the supported activities, in isolation, can be considered value for money in the longer term.

Improved real-time surveillance can only be true for the sentinel sites, and improved diagnosis only applies in sites that TMP supported. There is the need for a broader national application coupled with additional system strengthening. The surveillance activities are now largely managed by STRIVE, as part of a broader VBD approach, but there is a case for ongoing discussion on how surveillance can be effectively scaled to the national level.

The percentage of malaria cases diagnosed by RDT in PNG was 96.85% as at 2021, with the number of cases diagnosed by microscopy continuing to fall, along with the number of facilities carrying out microscopy diagnosis (Abdur, 2022). Microscopy remains a broader public good and is seen as key at the malaria elimination stage, but the question remains whether a principal focus on microscopy represents value for money. Respondents were divided on this issue. It is the view of the evaluation team that there is a good case for maintaining PNG ‘s microscopy skills but in considering a way forward it is likely that it may be identified as needing to be integrated better into other initiatives.

It is some of the unanticipated outcomes of TMP that possibly demonstrate some of the best value for money of the project. These are largely attributable to Phase 1, but continued to be supported to a lesser extent in Phase 2

These include the uptake of the partnership model, the development of a successful domestic trilateral partnership, preparedness for COVID-19, improved relationships between PNG partners and GoPNG, and the development of the molecular hub. This is discussed in more detail in Section 5.5. on Impact.

Governance model and management arrangements

The attenuation of the activities of TMP over time, combined with few achievements against Objective 2 means that the complex governance mechanisms aimed at an effective trilateral partnership; and a comparatively high level of staffing for the activities that are maintained can no longer be considered efficient.

TMP’s EOIO4 is: *An effective and **efficient** trilateral project governance and management model that can be replicated*. The TMP MEL Plan anticipated assessing this through several indicators including Project partners maintaining or increasing their level of engagement, and efficient systems being in place for decision making at all levels. This was to occur through an annual survey of partners but this does not appear to have occurred (TMP, 2022c). Interviews with respondents revealed a reasonably high level of dissatisfaction with both the governance and management of the project. Although the partnership model itself was viewed very positively from Phase 1, by Phase 2 many across project staff, implementing partners and the GoA found the governance arrangements cumbersome and time consuming. Decision making by Technical Directors was reportedly not able to occur in the way that was intended, with an increasing role taken by the AHC. There was a decreasing satisfaction with the management by PMU over time. The reasons expressed for this included new and more stringent requirements introduced by PATH, delays due to the high turnover of staff, and a perceived reduction in both the value add and the appropriate skills being available among PMU staff. A new SPM is due to commence in late May 2024, reportedly with extensive partnership brokering experience. However, it will

be difficult to utilise this experience fully in the remaining months of the project. It is noted that STRIVE has utilised the partnership model introduced by TMP, and this is reported to be working effectively.

Co-funding of activities by TMP and STRIVE

While there is no apparent overlap between the two projects, the complex co-funding of a range of activities through both STRIVE and TMP does not appear to be efficient or add value. The complexity of these arrangements has made it difficult for project staff and implementing partners to administer, as well as making attribution to a particular project complicated. A more efficient use of GoA funds would be to roll any activities identified as worth continuing beyond TMP into a broadened STRIVE or similar program. It could include the option to draw on other international expertise as required,

3.5 Impact

This section addresses the impact of TMP through **KEQ5: To what extent has the Project contributed to PNG's health system more broadly?** It is addressed through considering two sub-questions:

KEQ 5.1 Are there impacts beyond the EOIOs?

KEQ 5.2 Are there any examples of a broader health impact beyond malaria response?

Finding: TMP is able to demonstrate a range of largely positive, and often unanticipated, impacts of TMP beyond the EOIOs. These are a result of activities commenced in Phase 1 and supported further in Phase 2, and the impact can often be attributed jointly to TMP and STRIVE. These impacts relate to the uptake of the partnership model, the development of a successful domestic trilateral partnership, preparedness for COVID-19, improved relationships between PNG partners and GoPNG, and the development of the molecular hub.

Finding: Support for the molecular hub from TMP, together with STRIVE, has resulted in an improved capacity of partner organisations to carry out molecular diagnosis and strengthen surveillance work beyond malaria to include other parasites and viruses. This increased capacity for molecular diagnosis of disease will be vital for responding to future epidemics and pandemics.

As noted earlier in the Effectiveness section (Section 3.3), some of the anticipated outcomes of TMP Phase 2 have not been fully realised, in particular in relation to Objective 2 and its attendant EOIOs.[16] Yet a range of unanticipated and mostly positive longer-term outcomes and impacts on PNG's health system have been identified. Some of these impacts are as a result of activities commenced in Phase 1 and that were built on in Phase 2.

The introduction and spread of the partnership brokering model supports PNG's health system more broadly

TMP introduced an explicit partnership brokering model from Phase 1, based on the work of the Partnership Brokers Association,[17] to bring together partners from across PNG, Australia, and China. As explained by the 2018 MTR partnership brokering is:

> *a formalised approach to developing mutual partnerships which respect the shared and different interests of each partner. It is often contrasted with typical development and aid relationships where power and control tend to rest with the donor partner. The approach is characterised by several principles which include valuing diversity, equity, openness, mutual benefit and courage (Hombhanje, et. al, 2018).*

These principles were encapsulated in the TMP Project Partnership Manual which was updated over time (See e.g. TMP, 2021e). The 2018 MTR attributes much of the success of Phase 1 to utilisation of the Partnership model (Hombhanje, et. al, 2018). Based on the acknowledged success of Phase 1, the design of Phase 2 TMP was also

[16] Objective 2: Transformative partnership between the three countries is addressing health security challenges through mutual learning and enhanced cooperation.

[17] The Partnership Brokers Association (PBA) is the international professional body for those managing and developing collaboration processes. The PBA's primary aims are to challenge and change poor partnering practices so that multi-stakeholder collaboration can become truly transformational; ensure those operating in partnership brokering roles are skilled, principled and work to the highest standards; and promote the critical importance of partnering process management to decision-makers in all sectors (https://partnershipbrokers.org/)

based on this model, with the intention to expand its scope to encompass health security more broadly. It was hoped that it might also form the basis for other future collaborations. However, in Phase 2 TMP faced considerable challenges which made implementing the practicalities and underlying intent of the model very difficult. This is in no small part attributable to the disruptions caused by COVID-19 and the attendant change in the Australia-China relationship. However, these challenges were greatly accentuated by the transition of the project contract management from the GoA funded Health and HIV Implementing Services Provider (HHISP) to PATH (also GoA funded), a change in the lead GoPRC agency resulting in delays, and turnover of staff in the AHC, PATH and TMP, with new staff not fully understanding (or unable to apply) the partnership model, what was required to maintain it, and in its place seeking to apply a more traditional donor approach.

TMP was widely acknowledged in interviews carried out by the evaluation team as the catalyst for the successful STRIVE program (See also DFAT, 2019a; Farquhar et al., 2022).[18] Having been exposed to the partnership model through Phase 1 TMP, and experienced it as empowering and effective, TMP Technical Directors decided that the STRIVE program would also utilise the partnership model of governance and implementation (IMR, 2023). The advantages of applying this partnership model for successful implementation research designed to strengthen surveillance and health systems in PNG has been outlined in a case study of STRIVE (Farquhar et al., 2022).

Although TMP continued to carry out partnership health checks, this had to sit alongside a broader failure to *allow* TMP to continue utilising a partnership model. TMP Technical Directors became increasingly dissatisfied with the attenuated version that was being implemented in TMP Phase 2.[19]At the end of 2023 IMR refused a grant from TMP, considering that PATH's requirements were unnecessarily onerous, that they were being subjected to micromanagement, and that the arrangement no longer met their needs. While this possibly does not reflect positively on how TMP had developed within PATH, a longer view would see this as a positive outcome, with an empowered partner able to transition to greater independence and a more diversified support base through an increased capacity to attract other sources of funding.

An effective domestic trilateral partnership

While the goal of TMP was focused on what could be achieved through trilateral cooperation between the GOA, GoPNG and GoPRC, this proved difficult to implement in Phase 2 (Hombhanje, et. al, 2018). However, the real success story of TMP concerns how the introduction of the partnership model and attendant partnership brokering through TMP in Phase 1 resulted in three Papua New Guinean organisations (IMR, Central Public Health Laboratory-CPHL, and UPNG SMHS) forming a successful trilateral partnership, whereas they had previously worked in very siloed arrangements (Hombhanje, et. al, 2018). This partnership received some further support during TMP Phase 2, as well as support through the STRIVE program (Farquhar, et al, 2022). With support from both TMP and STRIVE, these three organisations established the Molecular Hub at the UPNG SMHS in 2019, utilising partnership principles, sharing resources and technical expertise, and carrying out joint planning, with resultant strengthened diagnostic capacity across the three institutions (Farquhar, et al., 2022). In Phase 2 TMP has continued to provide ongoing support through this mechanism to malaria surveillance, and STRIVE supports the broader real time VBD (arboviruses and malaria) and emerging pathogen surveillance (IMR, 2023) work. Together TMP and STRIVE have supported work on anti-malarial drug resistance markers at PNG (Ayres, et al., 2023). The extension of this work beyond malaria is a key achievement as well as support through the STRIVE program (Farquhar, et al., 2022). With support from both TMP and STRIVE, these three organisations established the Molecular Hub at the UPNG SMHS in 2019, utilising partnership principles, sharing resources and technical expertise, and carrying out joint planning, with resultant strengthened diagnostic capacity across the three institutions (Farquhar, et al., 2022). In Phase 2 TMP has continued to provide ongoing support through this mechanism to malaria surveillance, and STRIVE supports the broader real time VBD (arboviruses and

[18] Both TMP and STRIVE are funded by the GoA through DFAT, although TMP is funded through DFAT PNG and STRIVE is funded through the GoA Centre for Health Security in Canberra. There are some overlaps in governance and implementation partners, and there are both separate and overlapping technical and resource contributions. The two investments have complemented each other, co-resourcing sentinel activities (financial and in-kind) and sharing learnings to expand the scope and impact of the activities. These complex arrangements were helpfully clarified by STRIVE PMU (Pers. Comm 29 April 2024)

[19] The majority of respondents who were associated with TMP in Phase 1 spoke glowingly of their experience of the partnership model; and compared it unfavourably with their experience of TMP in Phase 2, and favourably with their experience of working through STRIVE. The most common difference between the two Phases as expressed by Papua New Guinean respondents was that in Phase 1 they felt they "had a voice", and that the Technical Directors of TMP had recognised decision-making capacity in Phase 1 which was substantially eroded in Phase 2.

malaria) and emerging pathogen surveillance (IMR, 2023) work. Together TMP and STRIVE have supported work on anti-malarial drug resistance markers at PNG IMR (Ayres, et al., 2023). The extension of this work beyond malaria is a key achievement

Capacity to respond to COVID, improved relationship with GoPNG

With the technical and material support received, the Molecular Hub was then in a good position to respond rapidly to the emergence of COVID-19 in early 2020. In February and March 2020, IMR reorganised their laboratories to conduct real time polymerase chain reaction (PCR) tests for COVID-19 and were responsible for confirming the first positive case in PNG in the IMR Goroka laboratory (IMR, 2021). Farquhar et al., 2018 note that the Hub was also able to attract additional funding from the DFAT Centre for Health Security to establish new serological assays testing for recent exposure to COVID-19, and in the process demonstrate the value of integrating diagnostic and surveillance approaches and expertise for multiple infectious diseases.

Professor William Pomat, in his IMR Director's report noted that PNG IMR's role in the national pandemic increased the public's understanding of their mission and activities (IMR, 2021). One key respondent attributed an improved relationship between IMR and GoPNG to the role that IMR played in the pandemic, and that this in turn contributed to IMR finally receiving sufficient funding from GoPNG for their new research facility located in Madang. This was something that had been on the 'back burner' for many years. The evaluation team visited this impressive building which is nearing completion, and were able to contrast it with IMR's current ageing facility.

3.6 GEDSI

This section addresses GEDSI within TMP through **KEQ6: To what extent have GEDSI considerations and strategies been effectively implemented in the Project?** It is addressed through considering two sub-questions:

KEQ 6.1 How effective has implementation of GEDSI strategies been for reducing the malaria burden for women and marginalised groups?

KEQ 6.2 What are the opportunities for improvement?

Finding: Attention to both the gender and disability aspects of GEDSI in TMP Phase 2 appear to have been inadequate. This may in part be explained by the increasingly attenuated and fragmented nature of the project, the focus on laboratory activities, and by restrictions resulting from COVID-19. It can also be partly explained by the difficulty of ascertaining the overall contribution of the project to reducing the malaria burden, something recognised as unrealistic subsequent to the design.

Finding: The project reports the percentage of women receiving TMP supported training for 2020 (52%), 2022(30%) and 2023 (43%).[20] The percentage of Papua New Guinean positions supported by TMP was 66% female for both 2022 and 2023 (TMP, 2021a; TMP 2022a; TMP, 2023a; TMP 2024).[21] This is commendable.

Finding: TMP has not completed a GEDSI strategy during Phase 2, despite it being a requirement of the design, and there is no evidence that the overarching PATH gender strategy (PATH, 2021) has been utilised by the program.[22] Collecting gender disaggregated data, ensuring women have equitable access to training, and that women occupy a majority of TMP positions are all important actions, but do not amount to a considered gender strategy.

Finding: Attention to disability within TMP was minimal. Over 2022 and 2023 TMP carried out consultations with the Assembly for Disabled Persons (ADP) on malaria communication materials

[20] This data was not published for 2021

[21] This data was not published for 2020 or 2021

[22] The PMU did not initially have a copy of PATH's gender strategy when requested by the evaluation team, and no mention of the PATH gender strategy is made in any TMP Progress reporting

and budgeted for actioning of recommendations but this did not eventuate.

Finding: Of the research supported by TMP that was available to the evaluation team at the time of writing, there appears to be some collection of gender disaggregated data, and a minor focus on disability.

Evidence

The Phase 1 MTR (Hombhanje et.al., 2018) identified the need to pay more attention to gender and social inclusion in both project implementation and reporting. Consequently, one of the responsibilities of the PMU, as outlined in the Phase 2 design document (DFAT, 2019a), was to facilitate development of a GESI strategy, in coordination with the GESI Division at the NDoH and DFAT's Gender Specialist. This did not occur. Although PATH has a gender strategy (PATH, 2021) there is no evidence that this was utilised by the TMP program.

The Phase 2 design also anticipated that GESI indicators would be incorporated into the MELF and identified a need to conduct research to identify "significant gaps in our understanding of how sex, gender roles and poverty intersect to create gender-specific malaria vulnerabilities". While the MEL Plan (TMP, 2021) anticipates reporting six-monthly on the extent to which provincial and local governments are ensuring women and marginalised groups are benefitting from better malaria surveillance and data collection, this does not appear to have occurred. TMP had an initial intention to undertake gender analyses of malaria vulnerability but this was reported as not being an NMCP priority. In its place a review of malaria treatment in pregnancy to inform the national treatment guidelines was mooted. This also did not occur (TMP, 2021a; TMP 2022a; TMP, 2023a; TMP 2024a). It is of note that this research did not appear in either the 2020—2022 or 2023 workplan (TMP, 2022e; 2023d).

In July 2022 PMU consulted with the PATH GEDSI Team to explore new opportunities to promote GEDSI through the project. The areas identified were to: 1. Strengthen support to ensure equitable access to TMP-supported training. 2. Facilitate a review of national malaria health promotion materials to ensure materials are accessible. A reasonable balance of men and women were already accessing TMP supported training and the health promotion materials review occurred. Additional assistance was provided to a participant in 2022 who was supported to attend the PNG Medical Symposium with her newborn baby and a carer (TMP, 2023a). Budget was allocated in 2023 to action the recommendations of the review but this did not occur (TMP, 2024a).

TMP consistently reported in progress reports that it considered DFAT's *Gender equality and women's empowerment strategy* (DFAT, 2016) throughout all activities, and that this was achieved 'through focusing on promoting women's economic empowerment through participation in training activities, enhancing women's voice in decision-making and working to combat violence against women and girls'. The project achieved a reasonable to good attendance of women at TMP sponsored training and reported positive outcomes of training for women laboratory staff at PNG IMR, with IMR management subsequently encouraging further skill development. A significant number of women, including senior laboratory staff, were represented in staff positions supported by TMP. It is not clear what contribution TMP made to combatting violence against women and girls.

The evaluation team recognises that implementation of Phase 2 TMP activities faced many challenges, and the range of activities became attenuated over time. This in turn affected the ability to address gender and disability considerations in the project. However, given that Objective 1 of TMP is "*Health system has improved capacity to reduce the malaria burden in PNG*" it appears that more effort could have been made to act upon the well-recognised differential burden of malaria according to gender (See e.g. NDoH, 2020a; Giduthuri, 2023).[23] Some respondents have argued that apart from promoting women's participation in trainings,

[23] The National Malaria Strategic Plan 2021—2025 (NDoH, 2020a) notes that "pregnant women and young children (particularly those who are malnourished) living in highly endemic lowland areas are at elevated risk of malaria". Other elevated risks that could compound this vulnerability would include where those women and children are part of mobile populations or living in large squatter settlements. The 2022—2023 Malaria Indicator Survey (MIS) (Giduthuri, 2023) found that household net coverage has been decreasing

ensuring equity in TMP supported positions and collecting disaggregated data there were few activities that would lend themselves to taking a gendered approach. A more proactive approach to gender mainstreaming would have been beneficial, as would applying a gendered lens to the activities chosen for support by TMP.

3.7 Sustainability

This section addresses Sustainability within TMP through **KEQ7: To what extent are the Project's interventions likely to be sustained?** It is addressed through considering two sub-questions:

KEQ 7.1 What are the supporting and inhibiting factors that will contribute to sustainability of specific Project interventions?

KEQ 7.2 What strategies can be employed to improve sustainability in the remaining Project time available?

Finding: Factors that will contribute to the sustainability of project interventions include that the key priority activities of TMP were determined and co-developed with NDoH, the three domestic organisations are continuing to work together in partnership through the molecular hub, IMR has access to alternative funding, and the localisation of ECAMM training and accreditation is underway. The sentinel site activities are now primarily supported by STRIVE. STRIVE's focus on a broader range of diseases is also key.

Finding: Factors that could inhibit the sustainability of project interventions could include insufficiency of government funding or attention, insufficient capacity within PHAs, and the focus on a single disease when system strengthening does not need to occur in silos. Effort would be required to reinvolve Chinese technical expertise.

Finding: The remaining Project time available is very limited. The focus should be on transitioning remaining activities to STRIVE or another suitable project and/or PNG entities, and identifying what support is required in the future. There is still time to work with the pilot PHA on data utilisation. This may best occur through the parts of PATH focused on PHA strengthening.

This section works on the premise that development programs have to be sustainable, transferrable to host governments and integrated with host government programs in order for them to be successful. And then, the host governments also has to demonstrate leadership and ownership of those programs and activities, and help guide resource allocation to address gaps and achieve intended results.

The Phase 2 Design (DFAT, 2019a) clearly summarises the following aid coordination and malaria policy objectives adopted from the PNG's DCP 2018-2022:

i. To assert Government leadership in the coordination and management of development cooperation aligned to PNG's development objectives and targets for better value of support.
ii. To mobilise strategic and innovative external partnerships to promote effective and sustainable development cooperation.
iii. To strengthen partnerships and coordination between Development Partners, Government and stakeholders in the delivery of development cooperation interventions.
iv. To build and strengthen national capacity for the effective delivery and sustainability of development initiatives.
v. To institutionalize and coordinate PNG's regional assistance in the Region (GoPNG, 2018).

In this review, the evaluation team explored Objective 4 of the development objectives enshrined in the DCP to ascertain if it was achieved.

What sustainability matrices/frameworks were in place before the commencement of Phase 2?

Section 5.6 of the Phase 2 Design Document discusses Sustainability as a key element in TMP implementation. It notes that:

The project will work largely through PNG systems and focus on capacity-building and institutional

since 2014, and for vulnerable populations, such as children under 5 years and pregnant women, there is also a downward trend. The % of pregnant women sleeping under LLINs decreased significantly from 2020 to 2023

strengthening to ensure sustainability and is consistent with the MTDP, NHP and the NMSP. …Phase 2 offers a program of work that addresses the key health priorities of PNG, as determined by the NDOH and as co-developed in partnership with Technical Leads. This is rare in terms of how a great deal of health research and development is conducted in PNG, whereby technical partners apply for grants in areas of work that they think are critically important to the field generally and donors commission project designs that may not always reflect PNG priorities and build upon institutional strengths in a sustainable manner. The outcomes of project-supported operational research should inform relevant policy adaptation and can also be used to include in educational curricula. Other ways that the project contributes to sustainability include shared ownership between PNG government institutions and technical agencies, strengthening PNG systems and institutions (e.g. NMCP, CPHL, IMR and SMHS), diversifying PNG's donor support base and development mechanisms, entrenching good donor coordination practices, supporting better data and policy advocacy to help NDOH and PHAs advocate for more government funding, and brokering new initiatives such as STRIVE PNG (DFAT, 2019a).

Ownership

- Positively, the key priority activities of TMP were determined and co-developed with NDoH.
- The Phase 1MTR found that the project had promoted a high level of ownership by the GoPNG as well as improved coordination between the three relevant departments (NDoH, DNPM and PNG Department of Foreign Affairs and International Trade-DFAIT) (Hombhanje, et al., 2018). The project continues to work through PNG systems and focuses on capacity-building to ensure sustainability and is consistent with the Medium-Term Development Plan, and NHP(GoPNG, 2021a, 2021b; DNPM, 2023). However, sadly, this sense of ownership of TMP was diminished in Phase 2, though not necessarily the component activities.

PHA Strengthening

- PHAs remain the vehicle for addressing health issues in PNG at the sub-national level, and this approach of working through PHAs can be seen as a sustainable model. TMP utilised this approach by using PHAs to pilot and implement activities. There is much more to be done here to connect the various stakeholders involved in addressing malaria and other febrile illnesses, and utilise data for planning and implementation of programming.

Capacity Strengthening

- There has been a lot of capacity strengthening that has happened for individuals as well as for PNG institutions.COVID-19 highlighted the need to strengthen molecular diagnostic capacity in-country. With the initial support from TMP, the molecular diagnostic capacity has now been built at CPHL and UPNG. Initial plans with NIPD partners to screen for various pathogens causing non-malaria cases of febrile illness did not eventuate due to global COVID-19 restrictions. However, local partners discussed a way to address this challenge and facilitate in-country testing and through the STRIVE partnership, molecular tests for arboviruses have instead been established at the PNG Molecular Hub, allowing in-country testing.
- Human Resources Capacity Building:
    - The Malaria PCR Scientist attended the WHO ECAMM training in March 2023, attaining Level 1 certification. He continued to support the national MSB with slide validation using PCR diagnostics and malaria External Quality Assurance (EQA) activities. He further contributed to developing the National Malaria Microscopy Training Modules following the National Core Group meeting in May 2023. Additionally, he provided supervision and training of Medical Laboratory Scientific students in malaria diagnostics and offered online support for PCR diagnostics to regional sites and CPHL in malaria and dengue; the other arboviruses are in the pipeline. This is a significant capacity strengthening activity that is ongoing.
    - Malaria surveillance officers in the sentinel sites are training to better collect blood samples for DBS cards as well as maintaining quality.

Localisation

- Utilising local implementing partners
    - Crysan Technologies (a local company) was engaged in 2021 to develop a functional Laboratory Information Management System (LIMS) consisting of 2 phases. This project is nearing completion. Utilising a local company and local expertise has a very positive sustainability impact.

- ECAMM institutionalisation: CPHL, IMR, NMCP, and UPNG SMHS are taking on more roles in reviewing training materials, facilitating refresher trainings, building a malaria slide bank to facilitate ongoing use of slides, and facilitating molecular diagnosis of malaria species. There is already discussions on CPHL molecular scientist (TMP supported) taking on the lead role in facilitating ECAMM training, with accreditation needing to take place every three years.

Collaboration

- Malaria Surveillance – Sentinel Sites: TMP and STRIVE jointly implement and share resources in partnership with PNG IMR for the operation of the sentinel sites for febrile illness sentinel surveillance and molecular monitoring of malaria at the PNG Molecular Hub.

What further actions are needed to achieve sustainability?

There is a need for a dialogue between key partners (likely facilitated by PATH/PMU) to discuss key activities that needs to be transitioned to PNG entities (IMR, CPHL, NDoH, etc) or to other partners.

Actions to improve capacity for PHAs to utilise already available data, including GEDSI data, for planning, coordination and resource allocation remains critical. It is likely that work in this area should take place across multiple diseases, rather than just malaria, and could be carried out as per the overarching PATH design.

As part of the consideration of whether to support microscopy training and accreditation in future, there needs to be consideration of whether the diminishing confirmation of malaria via microscopy represents a decrease in national microscopy capacity or whether it just represent a preference for use of RDTs.

4. Future focus

This section focuses on considerations post Phase 2 as well as adaptations until the end of Phase 2.

4.1 Adaptations until the end of Phase 2

There is a fair bit of work that needs to happen to augment and sustain the key elements of TMP until the end of Phase 2. The technical directors' meetings and the JPWG meetings need to be scheduled, coordinated and re-commenced to improve project governance and provide oversight to allow smooth transition of technical elements of TMP. Particular attention needs to be given to a mapping exercise, looking at the different activities of TMP and their viability: what activities have been integrated into the national program, what activities need to be dropped, and what activities can be picked up by government agencies and other partners. Key learnings such as the effectiveness of the partnership principles need to be embraced and advocated for across different programs.

4.2 Post Phase 2

The evaluation team finds it difficult to see how a third phase of the trilateral malaria project in its current form could be justified. For the many reasons outlined in this report, the project has run its course and although there is some beneficial aspects of the project remaining, it is hard to imagine how the project could be got 'back on track' either with the existing objectives, or by repairing the relationship between TMP and its PNG and Chinese partners.

The TMP project now has minimal work undertaken on partnership brokering, and in 2023 IMR declined a TMP grant. The views of TMP and partners are at odds on why this has occurred, with TMP placing a much greater emphasis on it being attributable to the undeniably substantial disruptions caused by COVID-19. A senior member of the TMP team attributes these developments to partners disengaging from TMP, including not responding to emails or requests for meetings or engagement on TMP matters, or not attending meetings. It was felt that prioritisation for partners waned after COVID.

The perspective from partners is somewhat different. They too acknowledge the substantial effects of COVID-19 but one senior partner noted that in Phase 2 disengagement occurred due to disenfranchisement of TMP's technical directors, with decisions increasingly being taken by TMP and the AHC, coupled with perceived onerous reporting requirements and micro-management.

There is a compelling need to revisit what the best contributions are that can be made towards reducing the

malaria burden in PNG in the longer term. The GoA is already contributing to health security in PNG through the Partnerships for a Healthy Region and through one of the PATH streams. The malaria landscape has changed (and is continuing to change) during the course of Phase 2. Consideration of which activities should be supported going forward will need to reassess other malaria related initiatives that have been developing during this time, including the expanding STRIVE program, the NATNAT program, and the PDAP program; and the various research initiatives supported by other partners that have been discussed above.

The evaluation team notes that at the time of the evaluation TMP's PNG partners were prioritising applying to the Pandemic Fund for support which could potentially overlap with TMP's current focus. The Pandemic Fund prioritises "i) early warning and disease surveillance systems; ii) laboratory systems (human and animal); and iii) strengthening human resources/public health and community workforce capacity, including workforce capacity related to human and animal health" (https://www.thepandemicfund.org/call-for-proposals).

Many of TMP's activities now supplement more substantial work being carried out by the STRIVE program There is a case that can be made that in the future greater efficiency could be achieved by rolling remaining TMP activities into the STRIVE program, including if any support for continued microscopy training and accreditation is required. While STRIVE is bilateral and TMP is trilateral there is nothing to prevent an expanded STRIVE program from harnessing the technical expertise of relevant Chinese or other international partners.

The evaluation team also considered whether the option of a revised malaria program could be absorbed into PATH in the future. The advantage of this would be that many of the malaria activities could co-exist with other PATH activities focused on PHA strengthening in concert with other diseases such as TB. Given that partners have in many ways 'moved on' from their engagement with TMP and PATH, this may be difficult to achieve.

5. Conclusion

It is clear that Phase 1 of TMP was a much loved project with significant outcomes and accompanying esprit de corps. Some of these outcomes developed further through continued support during Phase 2. Many of the unintended outcomes of the combined duration of TMP are notable and positive. Due to a variety of challenging circumstances, and despite some consistent effort on the part of champions of the project, Phase 2 did not achieve to the extent that it was hoped. The project ended up being seriously hampered by COVID-19, the loss of understanding of the intended partnership approach that accompanied turnover of staff in the AHC, PATH and TMP, and eventual frustration and disengagement on the part of many. Malaria continues to be a serious problem for PNG and there is considerable scope for development partners, in close collaboration with PNG partners, to review the most relevant contributions that can continue to be made in this area.

Recommendations

Recommendation 1. The JPWG should not plan on a further phase of the TMP in its current form.

For the remainder of the current phase:

Recommendation 2. PATH and TMP should work with partners to carry out a mapping and planning exercise to ascertain which of their current activities can be transitioned to Papua New Guinean or other donor entities.

Recommendation 3. PATH and TMP should consider opportunities for improving the sustainability of existing initiatives including through programs and approaches in PATH that address themselves to transition, strengthening PHAs, GEDSI, and broader health security issues.

For the future:

Recommendation 4. The TMP country and implementing partners should consider the benefit of rolling any remaining relevant activities requiring donor support into a broadened STRIVE or other similar program. This should be with a multi-disease focus, utilising a gender and disability lens, and include the option for partnering with relevant Chinese or other technical expertise.

Recommendation 5. Any planning by donors for future contributions to reducing the malaria burden in PNG should take adequate account of the changed donor landscape to reassess the most useful contributions that

can be made, without the encumbrance of demonstrating a trilateral model

6. Annexes

ANNEX 1: TERMS OF REFERENCE

Australia-China-Papua New Guinea Trilateral Collaboration on Malaria and Health Security

Terms of Reference - Project Evaluation

Evaluation Purpose

The purpose of the evaluation is to (i) assess the progress of the Trilateral Malaria Project (TMP); and (ii) provide recommendations to the Joint Project Working Group (JPWG) on the remaining project period and possible future investments. In particular, the evaluation will assess the programme in terms of coherence and relevance, efficiency, effectiveness, impact, and sustainability.

Background

The Australia-China-Papua New Guinea Trilateral Collaboration on Malaria and Health Security (the TMP or the project) commenced in January 2020[1] with a goal to '*strengthen the public health system in Papua New Guinea (PNG) to contribute to malaria elimination through enhanced trilateral cooperation'.* The TMP goal is based on the PNG National Health Plan (NHP) and contributes to the achievement of Sustainable Development Goals 3 and 17. The goal statement is supported by two objectives:

- Health system has improved capacity to reduce the malaria burden in PNG.
- Transformative partnership between the three countries is addressing health security challenges through mutual learning and enhanced cooperation.

The two objectives are supported by six End of Investment Outcomes (EOIOs) which include:

- EOIO 1: Improved diagnosis and real-time surveillance of malaria at the national, provincial and district levels.
- EOIO 2: NDOH malaria policies and practice are based on quality data analysis and interpretation that are disaggregated by gender, including evidence informed by local research.
- EOIO 3: Selected pilot provinces demonstrate improved capability to prevent, detect and respond equitably to malaria.
- EOIO 4: An effective and efficient trilateral project governance and management model that can be replicated.
- EOIO 5: A practical understanding of respective countries' health policies and practices.
- EOIO 6: Dialogue on health policy to strengthen health security.

The overall performance target for the Project is that there is a marked reduction in the incidence of malaria and that partnerships are strengthened to bring about longer-term change to the policy and institutional framework for malaria and health security within the GoPNG.

TMP does not directly influence the incidence of malaria but contributes to strengthening the systems around surveillance and diagnosis that ultimately impact incidence rates. A brief summary of each

objective and associated EOIO is provided below.

[1] Phase 1 was implemented 2016 - 2019.

Objective 1: Health system has improved capacity to reduce the malaria burden in PNG.

Under Objective 1 the key focus of assessment is how the TMP contributes to building national capacity in malaria diagnosis; the collection, analysis, interpretation and dissemination of malaria data; policy relevant operational research; and pilot provincial activities to improve prevention, detection and response to malaria.

The objective is supported by three EOIOs focused on diagnosis, real-time surveillance, policy development and capacity.

The objective has a mix of quantitative and qualitative indicators and performance measures. For EOIO 1 (Diagnosis and Surveillance) the quantifiable measure is the percentage of cases diagnosed in-line with the PNG diagnosis algorithm. A qualitative assessment is provided on how provinces and local governments are using evidence on malaria trends to inform policy and planning.

For EOIO2 the measures are quantitative in terms of the number of research and guidance papers prepared to support policy dialogue and the number of new practices adopted. The figures will be supported by an assessment of quality of these contributions.

EOIO 3 focuses on the application of improved capacity development, through a pilot in West Sepik. An assessment will also be applied to determine improvements in capacity within West Sepik. Data collection tools are to be developed. Assessment will also be made on the timeliness of information and data being entered into the eNHIS system.

Objective 2: Transformative partnership between the three countries is addressing health security challenges through mutual learning and enhanced cooperation.

Under Objective 2 there are three key EOIOs. The first is an assessment of the effectiveness and efficiency of the governance and management model. The measure will primarily by qualitative with a "satisfaction" assessment based upon the guiding principles contained with the Project Partnership Manual. An assessment of quality will also be applied.

Structure of the Terms of Reference

Given the importance of the evaluation and the various components required to implement and manage the process, the TOR is divided into three distinct yet inter-related parts.

Part I outlines the purpose, objective and scope of the evaluation including guidance around the approach and methodology and associated Key Evaluation Questions (KEQs). Part II provides specific details on the proposed team composition and required skillsets and experience. Part III focuses on governance arrangements as to how the evaluation will be managed and oversighted.

i. PART I: Evaluation Purpose, Objective and Scope

The purpose of the evaluation is to assess the progress of the project; and to provide recommendations to the Joint Project Working Group (JPWG) on the remaining project period and possible future interventions and investments. In particular, the evaluation will assess the programme in terms of

coherence and relevance, efficiency, effectiveness, impact, and sustainability. The evaluation will:

- Assess overall progress, and the quality of that progress, towards the Project's EOIOs.
- Assess achievements and progress against the outcomes detailed in the MEL Framework using the Key Evaluation Questions (KEQs). This will include a detailed assessment of progress and achievement of outputs, issues, challenges and how they were addressed.
- Assess the extent to which the project outcomes are likely to be sustainable and provide recommendations to programme stakeholders to promote sustainability and support further development of the outcomes.
- The extent gender equality, social and disability inclusion (GEDSI) principles have been applied and utilised.
- Assess the overall Value for Money (VfM) GoA, GoPNG and GoPRC.
- Make recommendations for the remaining project period, and for a subsequent Phase of the project.

The scope of the evaluation will cover the period 1 January 2020 to 31 December 2023**.** The evaluation will commence in the first quarter of 2024, however preparatory work will commence in the final quarter of 2023.

The evaluation will review all project interventions across the six EOIOs. It will consider all documents, deliverables, and products linked to the project, including the project document, progress reports, as well as documents produced as outputs of the project. Special attention should be given to the impacts that the COVID-19 had on project implementation and how and to what extent the pandemic affected the relevance, efficiency, and effectiveness of project activities.

The evaluation process will also identify and emphasise key lessons learned to inform future malaria and health security interventions in PNG. The evaluation will integrate GEDSI and other non-discrimination concerns, as crosscutting themes throughout its deliverables and process.

Audience

The primary audience for the evaluation is the members of the JPWG.

Evaluation Criteria & Key Evaluation Questions

The evaluation will be conducted according to the DAC criteria[2], namely: relevance, coherence, effectiveness, efficiency, sustainability, and impact. Moreover, the evaluation should assess the alignment and extent to which the project has promoted and supported GEDSI considerations.

The following questions are intended to guide and facilitate the evaluation. Other aspects can be added or modified as identified during the evaluation process in consultation with the Evaluation Working Group (see Part III related to governance arrangements).

[2] Referring to, the Organisation for Economic Co-operation and Development (OECD), Development Assistance Committees (DAC) globally recognised criteria for evaluating development assistance.

Any fundamental changes to the evaluation criteria and questions should be agreed between the evaluation team and the Evaluation Working Group and will be reflected in the evaluation report.

Relevance

- To what extent does the Project remain relevant in addressing malaria prevention and mitigation in PNG?
- To what extent has the project remained relevant to the priorities of the Government of Australia (GoA), Government of PNG (GoPNG) and Government of People's Republic of China (GoPRC)?

Coherence

- To what extent has the project aligned with other malaria initiatives in PNG?
- To what extent has the project aligned to other GoPNG health interventions and initiatives?

To what extent has the project promoted a joint response and better engagement between government partners (GoA, GoPNG and GoPRC)?

Effectiveness

- To what extent has the Project progressed towards its six EOIOs and two overall objectives?
- What evidence is there that demonstrates the GoPNG health system has improved capacity to respond to the incidence and treatment of malaria? If yes, how has the Project contributed to the improvements? If the answer is no, why?
- What contribution has the project made to the better sharing, utilisation and application of real-time surveillance data at national and provincial levels?
- What contribution has the project made to the development and application of evidence-based policymaking by GoPNG?

- To what extent has the broader contextual environment influenced and contributed towards the achievement (or non-achievement) of EOIOs?
- To what extent has the Project contributed to strengthened and enhanced partnership both between the three Government partners and between national implementing partners within PNG?
- To what extent has the Project contributed toward dialogue and engagement on health security matters? What have been some key barriers and challenges?
- To what extent is the Project's trilateral partnership mechanism and arrangements effective? Is a trilateral partnership model appropriate and does it generate coherence and learning?
- How has the Project strengthened individual and institutional capacity to prevent, detect and respond equitably to malaria?

Efficiency

- To what extent is the Project being delivered efficiently? What factors are facilitating or impacting efficiency?
- To what extent are activities being delivered in a timely and economic way?
- To what extent have efficiencies and value for money been realised (e.g. leveraging financial and in-kind support)?

GEDSI

- How has the Project implemented GEDSI considerations and strategies in removing the impacts of malaria of all groups (specifically women and marginalised groups)?
- What are some tangible examples of what could be done to improve on these initiatives?

Sustainability

- To what extent are the Project's interventions likely to be sustained?
- What strategies can be employed to ensure effective transition in the remaining months of implementation?

Proposed Methodology

The final methodology and associated KEQs will be determined by the evaluation team in consultation with Evaluation Working Group. A thorough Evaluation Plan will be developed by the evaluation team and presented to the Evaluation working Group for approval.

For quality control of the process the evaluation team will refer to and follow DFAT'S M&E Standards (as they relate to final independent evaluations). The information provided below is for guidance to inform the evaluation plan and is expected to be built upon and refined based on the decisions of the evaluation team in consultation and agreement with the Evaluation Working Group.

The evaluation will be primarily qualitative in nature but will incorporate quantitative summative target values tracked and reported by the project, through its results framework. It will include triangulation to increase the validity and rigor of the evaluation findings, engaging with tripartite constituents, stakeholders, and partners of the project, as much as feasible, at all levels during the data collection and reporting phases.

The evaluation methodology will include (but is not limited to):

1. A desk review of key project documents and associated GoPNG, GoPRC and GoA strategy and policy documents. List of documents to be approved by the Evaluation Working Group and outlined in the Evaluation Plan.
2. Meetings and interviews with the Evaluation Working Group and the project team to reach a common understanding of the evaluation process, the preparations required for the evaluation and logistical and technical support required.
3. Meetings and interviews with project implementing partners, project governance partners and relevant stakeholders[24] through virtual meetings and an in-country visit to PNG to undertake interviews. Interviews with Chinese and Australian based partners will be conducted either online or in person depending on location of evaluation team members.
4. A validation/stakeholder workshop will be organised toward the end of the evaluation, with participation from key stakeholders (including donors), the Evaluation Working Group and TMP staff. This is an opportunity to present the preliminary findings, invite participants to validate them and to fill in any data gaps.
5. Production of the evaluation report. The draft will be subject of a methodological review by the Evaluation Working Group, and upon the necessary adjustments, it will be circulated among the key stakeholders. Subsequently, the Evaluation Working Group will consolidate any written comments and feedback from partners and provide these to the evaluation team - who will develop the final version of the report, addressing the comments and feedback. The format of the final report is to be agreed upon and approved by the Evaluation Working Group.
6. Once the evaluation report is approved and finalised, the evaluation team will generate a 2 page overview of the evaluation's findings and a 1 page overview of the evaluation recommendations.

An indicative methodology structure is described below. A more detailed methodology will be provided in the evaluation plan by the evaluation team.

Planning

- Evaluation team to have teleconference with Evaluation Working Group for inception meeting
- Evaluation team to review relevant documentation
- Evaluation team to develop evaluation plan
- Evaluation Working Group, on behalf of JPWG, to review and approve evaluation plan

Consultations

[24] Stakeholders approved by the Evaluation Working Group and specified in the Evaluation Plan

- Evaluation team to undertake a mix of in- country and remote consultations with key informants (e.g. DFAT, GoPNG - NDoH, JPWG members, WSPHA etc.)
- As part of in-country consultations, the evaluation team will visit 2 or 3 locations; Port Moresby, West Sepik and potential to visit another project site, to be determined by evaluation team and Evaluation Working Group.

Data analysis and reporting

- Evaluation team to iteratively analyse data and develop preliminary findings against KEQs
- Evaluation team to first present preliminary findngs to the Evaluation Working Group and then a follow-up briefing with other key stakeholders (e.g. JPWG.)
- Incorporating feedback from those briefings, evaluation team to draft report
- Evaluation Working Group and other stakeholders to provide feedback
- Evaluation team to finalise the evaluation report
- Evaluation team to provide regular update on the progress of evaluation to the Evaluation Working Group

At a minimum, the methodology will include a series of semi-structured interviews and focus group discussions with key stakeholders. The evaluation team may consider utilising quantitative surveys, but these will need to be discussed and considered in light of timing and resource constraints. Relevant secondary data will also be provided and can be accessed to support the evaluation. An indicative list of documents to be made available is included as Annex 1.

In addition, an indicative list of people to be interviewed will be prepared by the evaluation team in consultation with the Evaluation Working Group. At a minimum, the evaluation will interview: (i) members of the JPWG; (ii) government representatives from DFAT (PNG and PRC) and government representatives from PNG (NDoH, DNPM, DFAIT) and government representatives from GoPRC (MOFCOM, NHC); (iii) Technical Directors' (iv) a selection of representatives related to the sentinel sites and other provincial activities (including West Sepik); and (v) activity beneficiaries (e.g. microscopists and NMCP).

Key Deliverables

Specific deliverables are expected at key points in the evaluation: (i) an evaluation plan at inception, (ii) an aid memoire (in the form of a slide pack) after the in-country field work for the evaluation; (iii) a final report following consolidated feedback from the Evaluation Working Group and other stakeholders; and a summary of recommendations from the evaluation. The final report should present clear findings and analysis in addition to clear guidance and recommendations to enable JPWG to consider and decide on the value of continuing with the investment and if the project is to continue, what elements, structures and possible changes/enhancements are required.

To allow sufficient time for consultations, analysis, writing and feedback, the deliverables need to be adequately spaced. The table below shows expected deliverables and timing. Specific dates will need to be agreed during the inception process.

Draft evaluation plan

The evaluation plan should comply with DFAT's M&E Standards (Standard 5) and include refined KEQs, description of the methodology to collect data against the KEQs, evaluation timeline, and a detailed breakdown of responsibilities between team members. The evaluation will be conducted in line with DFAT's *Research overview | Australian Government Department of Foreign Affairs and Trade (dfat.gov.au).*

A detailed description of stakeholder engagement will be included in the plan, including the locations that will be visited, who will be interviewed, as well as engagement protocols (e.g. introductions, consent, confidentiality etc.). The plan should no more than a maximum of 15 pages plus annexes.

Final evaluation plan
The final evaluation plan should address all comments and questions from the Evaluation Working Group on the draft.

Aide Memoire and Stakeholder Workshop Presentation
A short 6-page aide memoire supported by a slide-deck presentation to key findings and results of the evaluation and additional questions and requests to fill information/data gaps.

Draft evaluation report
The evaluation report should meet DFAT's M&E Standards (Standard 6) and address the KEQs. The report should have a succinct and clear executive summary (2 -3 pages) that is written in plain English that can be read as a stand-alone document. Key achievements and challenges should be clearly presented in the executive summary, throughout the report and should be evidence-based. The recommendations should be clear and unambiguous. The report should be no more than 30 pages plus annexes.

Final evaluation report
The final report must incorporate feedback on the draft report from the Evaluation Working Group, as well as other stakeholders as relevant. The final report should also meet DFAT's accessibility guidelines. Final Evaluation Report should also include a Summary Document: Summary of findings from the evaluation (2 pages) and a summary of the recommendations (1 page).

Evaluation timetable and schedule

The final evaluation is scheduled to take place in early 2024. The indicative allocation of days is provided below.

- Desk based document review – 5 days – Evaluation Team
- Evaluation Plan: preparation of first draft, receipt of comments, and final draft submission – 5 days – Evaluation Team
- Evaluation Plan: Partners review/feedback and evaluation team finalise – 3 days – Evaluation Working Group
- Data Collection – 21 days – Evaluation Team
- Team consolidates findings – 5 days – Evaluation Team
- Stakeholder Workshop – presentation of initial findings – 1 day – Evaluation Team and Evaluation Working Group
- Evaluation draft report and Aide Memoire prepared and submitted – 10 days – Evaluation Team
- Partner review and feedback – extend beyond partners to all stakeholders – 10 days – Evaluation Team

Total – 52 days

ii. Part II: Composition and recruitment of the Evaluation Team

As indicated earlier, the evaluation will be conducted by a team representing the three participating countries, led by an independent evaluation specialist (Team Leader). The Team Leader will provide leadership and oversight to the review team in the planning and completion of the evaluation.

Evaluation team members will be expected to bring a mix of relevant knowledge and expertise. It will be important for the evaluation team members to work together collaboratively, particularly given that they will be from different countries and are not likely to have worked together previously. The importance of the partnership approach also means the team need to demonstrate and appreciate strong partnership in its approach to the review. This means that sufficient time should be allowed for team members to communicate with each other beforehand, to build a shared understanding of the project and its associated processes and tasks, prior to meeting together to start the actual review process. This is essential for the Evaluation process to be established effectively and thus maximize the chances that the

findings will be relevant and helpful to all partners.

The selection process for consultants will be streamlined and fit for purpose. The Evaluation Working Group will present a pre-selected shortlist of consultants for the nominated roles below. Each partner will consider and assess potential candidates against the criteria outlined below. A joint meeting of the Evaluation Working Group will be convened to make a final selection of candidates which will be endorsed collectively by the Group. The team will be selected in line with the following process:

- Evaluation Working Group to approve the composition of the team and relevant skills and experience.
- The Evaluation Working Group to instruct the project team to advertise the roles and provide an initial screening of applicants from a long list to a short list.
- The project team to provide a short list to the Evaluation Working Group for final consideration and selection.
- The Evaluation Team will then report to the Evaluation Working Group with administrative support provided through the PMU.

The evaluation team will be led by a highly experienced evaluation specialist/team leader with outstanding performance history in leading participatory evaluations of complex development programs, strong understanding of health sector, PNG context, and partnership approaches.

The Team Leader will be supported by a review team comprised of representation of health systems, malaria and partnership experts from Australia, PNG and China. A summary of the team and required characterises and experience is presented below.

Evaluation Team Leader

Item	Explanation
Required Experience	• Outstanding experience in successfully designing and completing independent reviews and evaluations of complex development programs in cross-cultural contexts in line with DFAT's standards (15+ years) • High level experience in leading participatory review and evaluation processes, preferably within a partnership modality • Senior leadership experience in leading cross-cultural, multi-sectoral teams, with high level team management, facilitation, and coordination skills • Experience in PNG and in health systems strengthening preferred • Strong GEDSI experience and in assessing and evaluating GEDSI considerations on development investments.
Required skills and qualifications	• Exceptional written and verbal communication skills and a demonstrated ability to provide timely analysis, reports, and knowledge products. • Tertiary or post graduate qualifications in international development, global or public health, monitoring and evaluation, or similar relevant discipline
Cultural/Language Requirements	• Outstanding ability to work successfully across cultures, preferably within the PNG, Chinese and Australian context
Personal Attributes	• Exceptional ability to effectively collaborate and build strong working relationships and trust with clients, team members and partners to achieve agreed deliverables and performance objectives • Sound judgement, sensitivity, and flexibility, and an ability to exercise initiative in adapting preferred approaches when and where required

Item	Explanation
Key Responsibilities	The Team Leader has overall responsibility for delivering the evaluation in line with the agreed evaluation plan. The Team Leader is responsible for management of the evaluation team throughout the evaluation process. • Key client contact. Responsible for ensuring Evaluation Working Group is duly informed throughout evaluation process. • Lead the inception meeting. • Lead the drafting and finalisation of the evaluation plan. Including developing the evaluation schedule and applying DFAT M&E principles. • Review relevant documentation and background information. • Lead consultations and interviews, both remote and in-country. • Lead the preliminary analysis and the presentation of findings to the Evaluation Working Group • Lead the drafting and finalisation of the evaluation report • Responsible for management of the evaluation team and the inputs of each team member

The remainder of the evaluation team will be comprised of one representative from each of the partner countries; Papua New Guinea, Australia and China.

The team will require a mix of complementary skills related to M&E, malaria, health systems and complex partnerships. All of the skills are listed in the descriptions below, however it will be at the discretion of the Team Leader, the project team and the Evaluation Working Group as to how these attributes are balanced between the team members.

Below is the breadth of expertise required between the three candidates;

3 x Evaluation Team Members; representatives from PNG, Australia and the People's Republic of China.

Item	• Explanation
Required Experience	• Outstanding experience in health, particularly malaria epidemiology and control interventions including diagnosis and surveillance. • Experience with the PNG health system, including PNG's decentralised health system; laboratory services; and operational research. • Expertise in health systems strengthening • Exceptional experience in public health and/or regional health security, preferable with a focus on the Asia-Pacific region • Experience with the partnership brokering methodology and approach.

	• Understanding of complex multilateral partnerships and regional cooperation • Knowledge of DFAT programs in the health sector and previous experience on evaluations in PNG • Demonstrated understanding of GEDSI considerations for health system strengthening
Required skills and qualifications	• Strong English written and verbal communication skills and a demonstrated ability to provide timely analysis, reports, and knowledge products • Tertiary or post graduate qualifications in relevant discipline (public health, M&E, international development, parasitology)
Cultural/Language Requirements	• Demonstrated ability to work successfully across cultures, preferably within the PNG, Chinese and Australian context.
Personal Attributes	• Demonstrated ability to effectively collaborate and work as part of a cross-cultural team to achieve agreed deliverables and performance objectives • Sound judgement, sensitivity, flexibility, and adaptiveness
Key Responsibilities	• Support the team leader and participate in relevant inception and progress meetings. • Contribute to the drafting and finalisation of the evaluation plan. • Review relevant documentation. • Facilitate consultations, both remote and in-country • Support preliminary analysis and the presentation of findings to the Evaluation Working Group • Support the drafting and finalisation of the evaluation report • Complete additional tasks as required by the team leader.

Part III: Evaluation Governance Arrangements

To maintain a high degree of rigor and to promote an overarching partnership approach to the evaluation, an Evaluation Working Group will be formed comprising JPWG representatives from PNG, PRC, and Australia. The JPWG will nominate a single candidate from each partner country to participate. A PMU representative will act as an observer to provide secretariat support. Candidates should have an operational focus and involvement with the project and have the capacity and authority to represent their respective government. Decisions do not need to be made immediately and Evaluation Working Group members can report back to respective senior government representatives for final approval which can then be discussed and formalised in the Evaluation Working Group meeting.

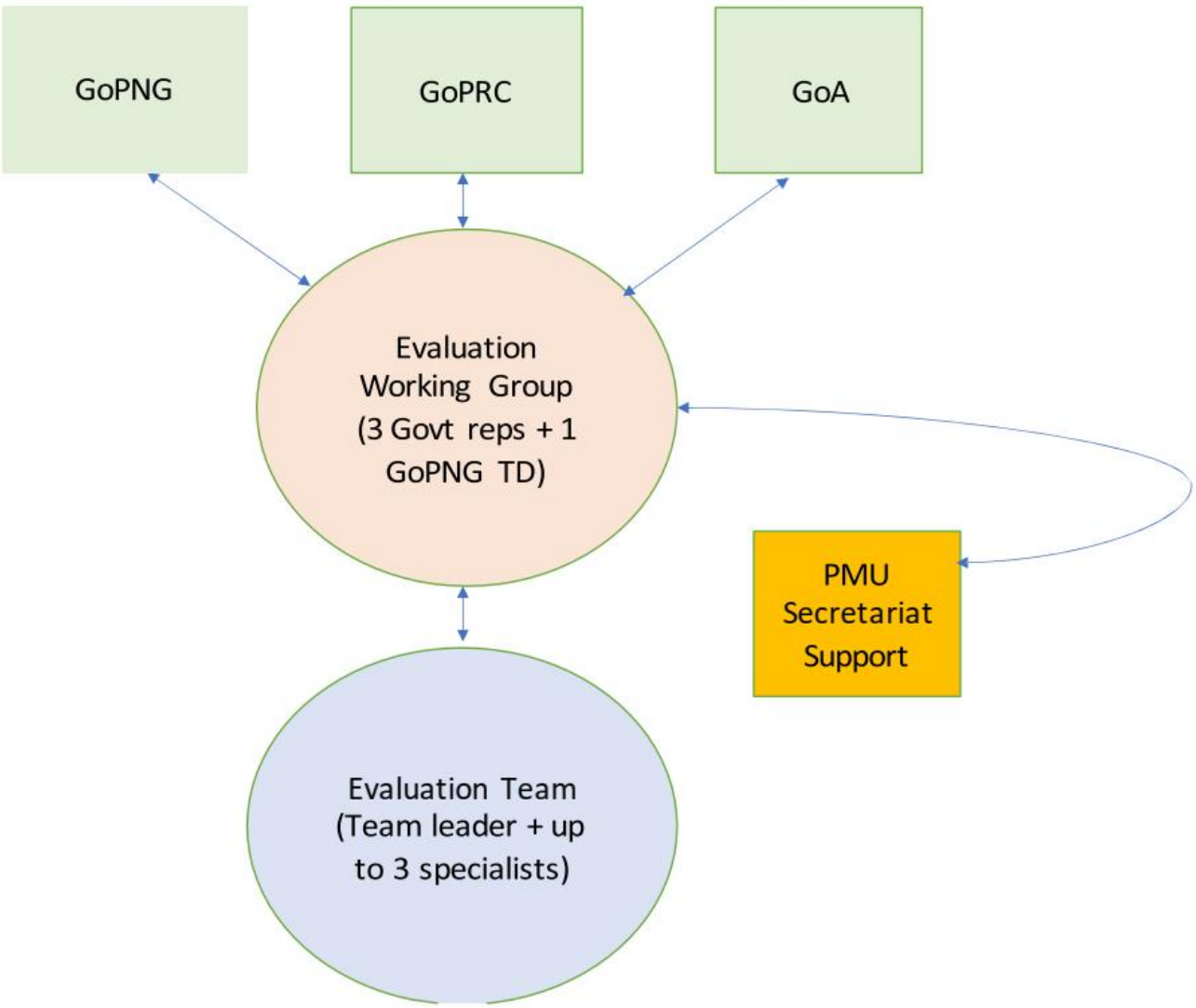
Key tasks of the Evaluation working group include:

- Recruitment of the evaluation team: reviewing CV's, supporting interviews and providing approval of the evaluation team on behalf of respective governments.
- Reviewing the Evaluation Plan (provided by the Evaluation team) and providing feedback and approval on behalf of governments (the EWG representative would consult with JPWG members, POOs and Technical Directors as appropriate)
- Assisting in setting up interviews or consultations for the Evaluation Team.
- Attending regular meetings while the evaluation is underway (in 2024), to hear updates on the evaluation's progress
- Reviewing the draft evaluation report on behalf of partner governments. Providing feedback and approval on behalf of partner governments
- Providing approval for the final report

The PMU will be able to support with the coordination of meetings and the development of a workplan and schedule. The project team will also provide key documents to support the desk review. The project team will also track the milestones and deliverables for the evaluation. The project team may also be requested to coordinate receipt of feedback from partners on the draft evaluation plan and draft report as appropriate.

The evaluation team leader will schedule regular briefings, likely fortnightly, with the "Evaluation Working Group to provide updates, seek guidance and seek relevant approvals. On a day-to-day basis the evaluation team will report to the Senior Program Manager TMP.

The governance structure for the evaluation can be summarised in the following diagram which highlights the role of the Evaluation Working Group and its central coordinating role.



A draft ToR for the Evaluation Working Group is presented in the table below:

Evaluation Working Group

Item	Explanation
Key Responsibilities	The Evaluation Working Group will represent the various partners in managing the Evaluation process; • Be involved in the recruitment process for Evaluation team • Meet regularly with the review team to monitor progress of Evaluation • Assist in coordinating inputs to the Evaluation from their respective Governments/organisations (eg. Stakeholder interviews) • Oversee the implementation and management of the evaluation. • Provide strategic guidance and input into the evaluation process. • Provide guidance and recommendations on overall approach and methodology. • Review key deliverables (evaluation plan, draft report) and provide comment and feedback. • Provide approvals on deliverables on behalf of the respective government partners • Assist in facilitating the stakeholder workshop and provide relevant feedback. • Review key recommendations and draft a management response to these.
Composition	• 1 JPWG representative from each of GoPNG, GoPRC and GoA • 1 Technical Director representative • TMP MEL Adviser
Key Deliverables	• Approval and sign-off to the nominated evaluation team – formal letter • Feedback and comment on draft evaluation plan • Approval of final evaluation plan. • Feedback and comment on draft report • Approval of final report.
Input Required	Before the evaluation commences, the evaluation team will be involved in recruitment of the team and document reviews as needed. Once the Evaluation is underway (tentatively Q1 2024) the team will be involved in regular meetings with the team and will consistently provide feedback and reviews on deliverables.

Annex 1: Indicative List of Documents

- Investment Design Document – December 2019
- Monitoring, Evaluation and Learning Framework and Plan – October 2022
- Project Partnership Manual – Version 5.0
- National Malaria Strategic Plan (NMSP) 2021-2025
- Mid-Term Review (of the National Malaria Strategic Plan) - 2022
- National Health Plan 2021 -2030
- Documents on the Partnership Brokering Approach (eg. An Introduction to Partnership Brokering)
- 6-monthly and Annual Project Reports; 2020 - 2023
- Activity Reports

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ANNEX 3 GOVERNANCE OF THE PROJECT

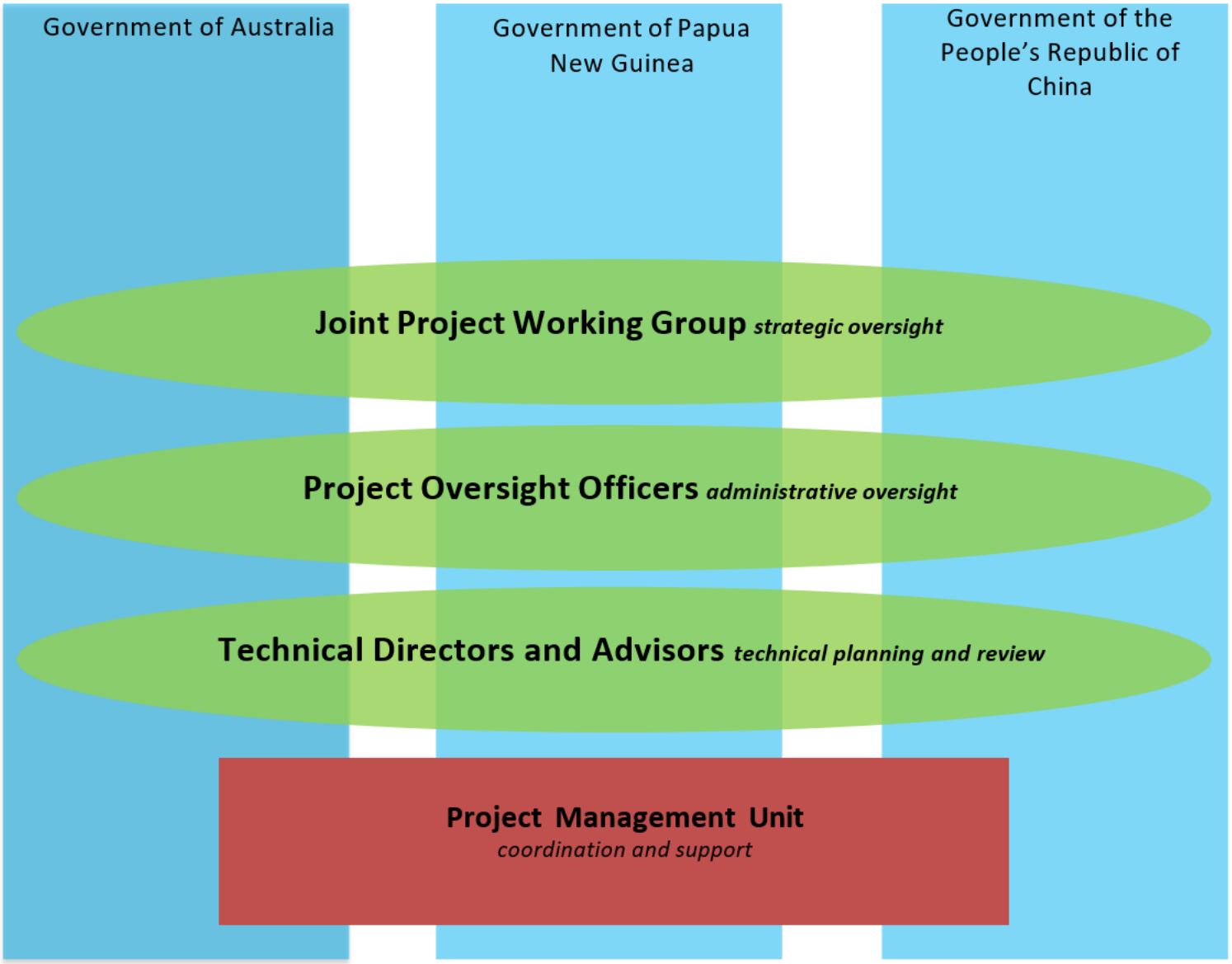
Source: TMP, 2023e.

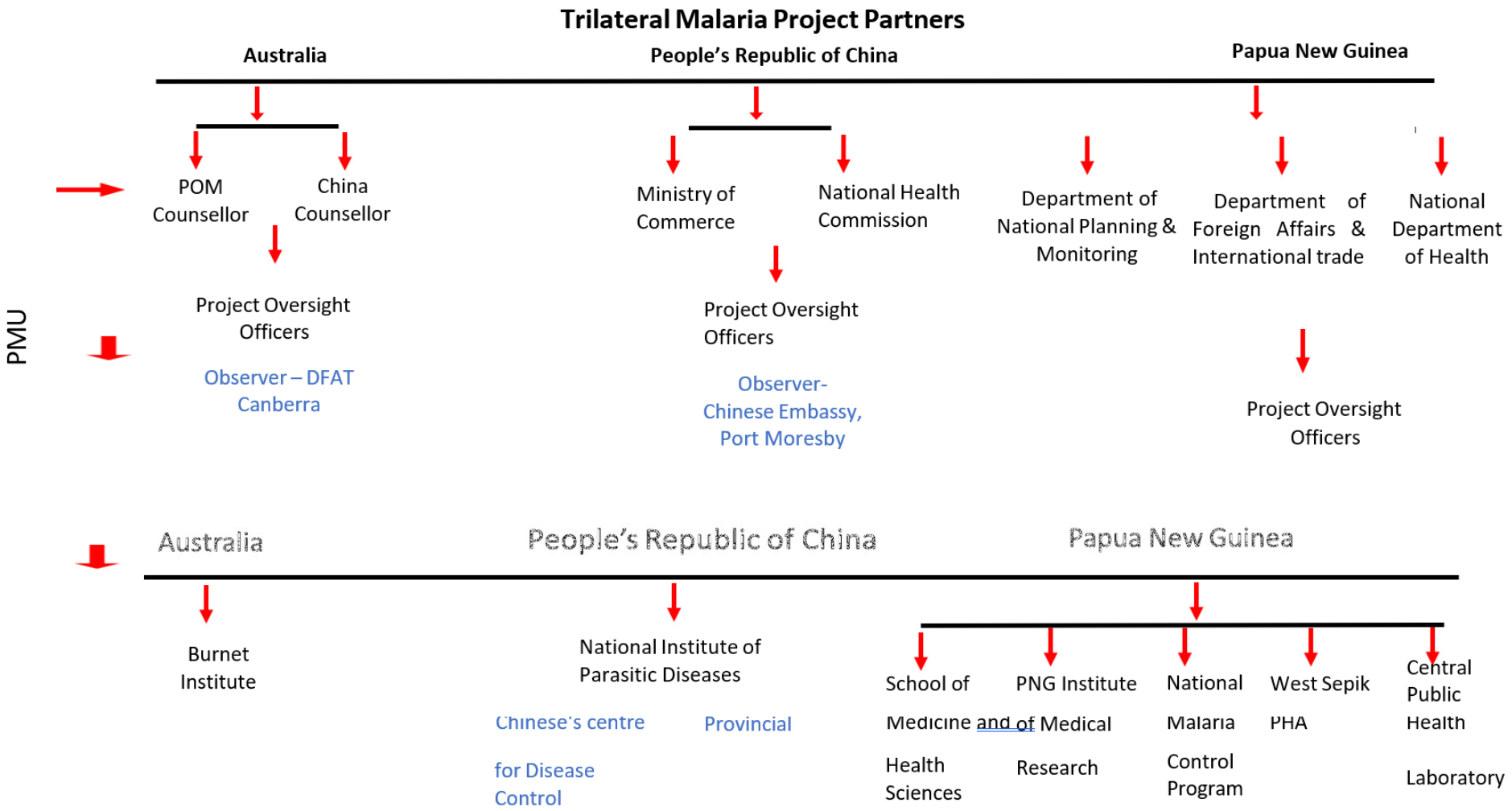
Joint Project Working Group and Project Oversight Officers

- National Department of Health, PNG
- Department of National Planning and Monitoring, PNG
- Department of Foreign Affairs and International Trade, PNG
- Ministry of Commerce, China
- National Health Commission, China
- National Disease Control and Prevention Administration, China
- Department of Foreign Affairs and Trade, Australia (POM)
- Department of Foreign Affairs and Trade, Australia (Beijing)

Technical Directors and Advisors

- National Department of Health, PNG
- Central Public Health Laboratory, PNG
- PNG Institute of Medical Research
- School of Medicine and Health Sciences, PNG
- West Sepik Provincial Health Authority, PNG
- National Institute for Parasitic Diseases, China
- Chinese Provincial Disease Control Agencies
- Burnet Institute, Australia
- Australian Defence Force Malaria and Infectious Disease Institute


Government of Australia
Government of Papua New Guinea
Government of the People's Republic of China
Joint Project Working Group strategic oversight
Project Oversight Officers administrative oversight
Technical Directors and Advisors technical planning and review
Project Management Unit
coordination and support


Trilateral Malaria Project Partners
Australia
People's Republic of China
Papua New Guinea
PMU
POM Counsellor
China Counsellor
Project Oversight Officers
Observer – DFAT Canberra
Ministry of Commerce
National Health Commission
Project Oversight Officers
Observer- Chinese Embassy, Port Moresby
Department of National Planning & Monitoring
Department of Foreign Affairs & International trade
National Department of Health
Project Oversight Officers
Australia
People's Republic of China
Papua New Guinea
Burnet Institute
National Institute of Parasitic Diseases
Chinese's centre for Disease Control
Provincial
School of Medicine and Health Sciences
PNG Institute of Medical Research
National Malaria Control Program
West Sepik PHA
Central Public Health Laboratory

ANNEX 4 EVIDENCE MATRIX

KEQ1: To what extent does the project remain relevant in addressing malaria prevention and mitigation in PNG?

Key Evaluation Question	Assessment Criteria/Factors for Consideration	Desktop Review	Govt/Governance Partners	Tech Directors	Tech Partners	Implementing Partners	Project Support	Other
1.1. Have contextual factors affected relevance?	Changes in: • Donor landscape • GoPNG response to malaria prevention and mitigation • Malaria prevalence	Project Documents GoPNG Reports	Yes	Yes	Yes	Yes	Yes	Yes (academic analysis)
1.2 To what extent aligned with initiatives in PNG?	• Extent of alignment • Extent of coordination	Project documents GoPNG reports Other malaria initiative reports	Yes	Yes	Yes	Yes	Yes	No

KEQ2: To what extent does the Project remain relevant to the priorities of the GoA, GoPNG and GoPRC?

Key Evaluation Question	Assessment Criteria/Factors for Consideration	Desktop Review	Govt/Governance Partners	Tech Directors	Tech Partners	Implementing Partners	Project Support	Other
2.1 To what extent does the Project remain relevant to the individual partner governments?	Continuity and change in • Priorities of partner Govts • Relationships between partner Govts	Partnership elements document	Yes	No	No	No	No	No

KEQ3: To what extent has the Project been effective in progressing towards its six EOIOs and two objectives

Key Evaluation Question	Assessment Criteria/Factors for Consideration	Desktop Review	Govt/Governance Partners	Tech Directors	Tech Partners	Implementing Partners	Project Support	Other
3.1 To what extent has the Project contributed to improved individual and institutional capacity in PNG to prevent, detect and respond to malaria?	• Refer to Objectives 1&2 • Refer to EOIOs 1-6 • Consider supporting and inhibiting factors Equity of response • Effectiveness and appropriateness of the trilateral partnership model for implementation, learning, coherence, & dialogue on health policy/security	Project documents GoPNG documents	No	Yes	Yes	Yes	No	No
3.2 To what extent has the Project contributed to improved sharing, utilisation, and application of real time surveillance data at national and provincial levels?	N/A	Project documents GoPNG documents	Yes	Yes	Yes	Yes	Yes	No
3.3 To what extent has the trilateral partnership model and arrangements been effective?	N/A	Project documents Partnership elements documents	Yes	Yes	Yes	Yes	Yes	No

KEQ 4: To what extent is the project being delivered efficiently?

Key Evaluation Question	Assessment Criteria/Factors for Consideration	Desktop Review	Govt/Governance Partners	Tech Directors	Tech Partners	Implementing Partners	Project Support	Other
4.1 To what extent is the project	VfM	Project	Yes	Yes	Yes	Yes	Yes	No

Key Evaluation Question	Assessment Criteria/Factors for Consideration	Desktop Review	Govt/Governance Partners	Tech Directors	Tech Partners	Implementing Partners	Project Support	Other
being delivered efficiently?	Supporting and inhibiting factors Timeliness and economy Leveraging financial and in- kind support	documents Budget documents						

KEQ 5: To what extent has the Project contributed to PNG's health system more broadly?

Key Evaluation Question	Assessment Criteria/Factors for Consideration	Desktop Review	Govt/Governance Partners	Tech Directors	Tech Partners	Implementing Partners	Project Support	Other
5.1 Are there impacts beyond the projects EOIOs?	Both +ve and -ve Impact on incidence and treatment of malaria can be covered in KEQ3	Project documents	Yes	Yes	Yes	Yes	Yes	No
5.2 Are there any examples of a broader health impact of the project beyond malaria response?	Eg. Systems strengthening Policy Development Coordination	Project documents	Yes	Yes	Yes	Yes	Yes	No

KEQ6: To what extent have GEDSI considerations and strategies been effectively implemented in the Project?

Key Evaluation Question	Assessment Criteria/Factors for Consideration	Desktop Review	Govt/Governance Partners	Tech Directors	Tech Partners	Implementing Partners	Project Support	Other
6.1 How effective has implementation of GEDSI strategies been for reducing the malaria burden for women and marginalised groups?	Examples required Women, children, PWD, youth	Project documents Gender and Malaria Evidence Review Guide to Gender and Malaria Resources	No	Yes	Yes	Yes	Yes	No
6.2 What are the opportunities for	Examples required Women, children, PWD,	Project documents	No	Yes	Yes	Yes	Yes	No

Key Evaluation Question	Assessment Criteria/Factors for Consideration	Desktop Review	Govt/Governance Partners	Tech Directors	Tech Partners	Implementing Partners	Project Support	Other
GEDSI improvement?	youth	Gender and Malaria Evidence Review Guide to Gender and Malaria Resources						

KEQ 7: To what extent are the Project's interventions likely to be sustained?

Key Evaluation Question	Assessment Criteria/Factors for Consideration	Desktop Review	Govt/Governance Partners	Tech Directors	Tech Partners	Implementing Partners	Project Support	Other
7.1 What are the supporting and inhibiting factors that will contribute to sustainability of specific project interventions?	Diagnosis Surveillance Treatment Policy Development Evidence Utilisation Partnership Program Support	Project documents Other health sector analysis	No	Yes	Yes	Yes	No	Yes
7.2 What strategies can be employed to improve sustainability in the remaining Project time available?	Diagnosis Surveillance Treatment Policy Development Evidence Utilisation Partnership Program Support	Project documents Other health sector analysis	No	Yes	Yes	Yes	No	Yes

ANNEX 5 Project Governance Alternative Text

Project Governance Diagram
Diagram with three pillars:

1. Government of Australia
2. Government of Papua New Guinea
3. Government of the People's Republic of China

Three pillars are overlaid with four groups/teams illustrating how all four teams/groups support the three governments:

- Joint Project Working Group – strategic oversight
- Project Oversight Officers – administrative oversight
- Technical Directors and Advisors – technical planning and review
- Project Management Unit – coordination and support

To the left of the diagram, there are text boxes summarising the composition of each group/team:
Joint Project Working Group and Project Oversight Officers

- National Department of Health, PNG
- Department of National Planning and Monitoring, PNG
- Ministry of Commerce, China
- National Health Commission, China
- National Disease Control and Prevention Administration, China
- Department of Foreign Affairs and Trade, Australia (POM)
- Department of Foreign Affairs and Trade, Australia (Beijing)

Technical Directors and Advisors

- National Department of Health, PNG
- Central Public Health Laboratory, PNG
- PNG Institute of Medical Research
- School of Medicine and Health Sciences, PNG
- West Sepik Provincial Health Authority, PNG
- National Institute of Parasitic Diseases, China
- Chinese Provincial Disease Control Agencies
- Burnet Institute, Australia
- Australian Defence Force Malaria and Infectious Disease Institute

Trilateral Malaria Project Partners Diagram
Diagram illustrating project partners by country.
Top row:
Australia

- POM Counsellor
- China Counsellor
- Project Oversight Officers
- Observer – DFAT Canberra

People's Republic of China

- Ministry of Commerce
- National Health Commission

- Project Oversight Officers
- Observer – Chinese Embassy, Port Moresby

Papua New Guinea

- Department of National Planning & Monitoring
- Department of Foreign Affairs and Trade
- National Department of Health
- Project Oversight Officers

Bottom Row:
Australia

- Burnet Institute

People's Republic of China

- National Institute of Parasitic Diseases
- Chinese Centre for Disease
- Provincial

Papua New Guinea

- School of Medicine and Health Sciences
- PNG Institute of Medical Research
- National Malaria Control Program