



PACMOSSI

Pacific Mosquito Surveillance
Strengthening for Impact



ANNUAL REPORT 2024

Dear Friends,

Welcome to our 2024 Annual Report.

Throughout the year, PacMOSSI has continued its vital work in advancing mosquito surveillance and control efforts across the Pacific region. We are particularly proud to announce the establishment of Phase II funding from the Australian Government through Partnerships for a Healthy Region (PHR), which extends our program through to 2028. This significant development ensures our continued commitment to strengthening regional cooperation and enhancing local capabilities in addressing mosquito-borne diseases.

A key highlight of 2024 has been the completion of updated Vector Control Needs Assessments across multiple Pacific Island Countries, providing essential data to guide future interventions. PacMOSSI's strategic planning support has also achieved notable success, with Fiji and Tonga finalising their national mosquito control strategic plans with support from our team. These plans were developed through extensive consultation with local stakeholders and align with each country's specific health priorities and resources.

Our workforce development initiatives have continued, with participants engaging in both online training and a practical training workshop in insecticide resistance monitoring, held in Fiji. We launched our first mentorship program, pairing experienced mosquito control specialists in consortium partner institutions with Pacific Island colleagues from Ministries and Departments of Health. In response to specific country requests, we held in-country trainings in mosquito-borne disease outbreak preparedness and insecticide spraying in both Samoa and Kiribati.

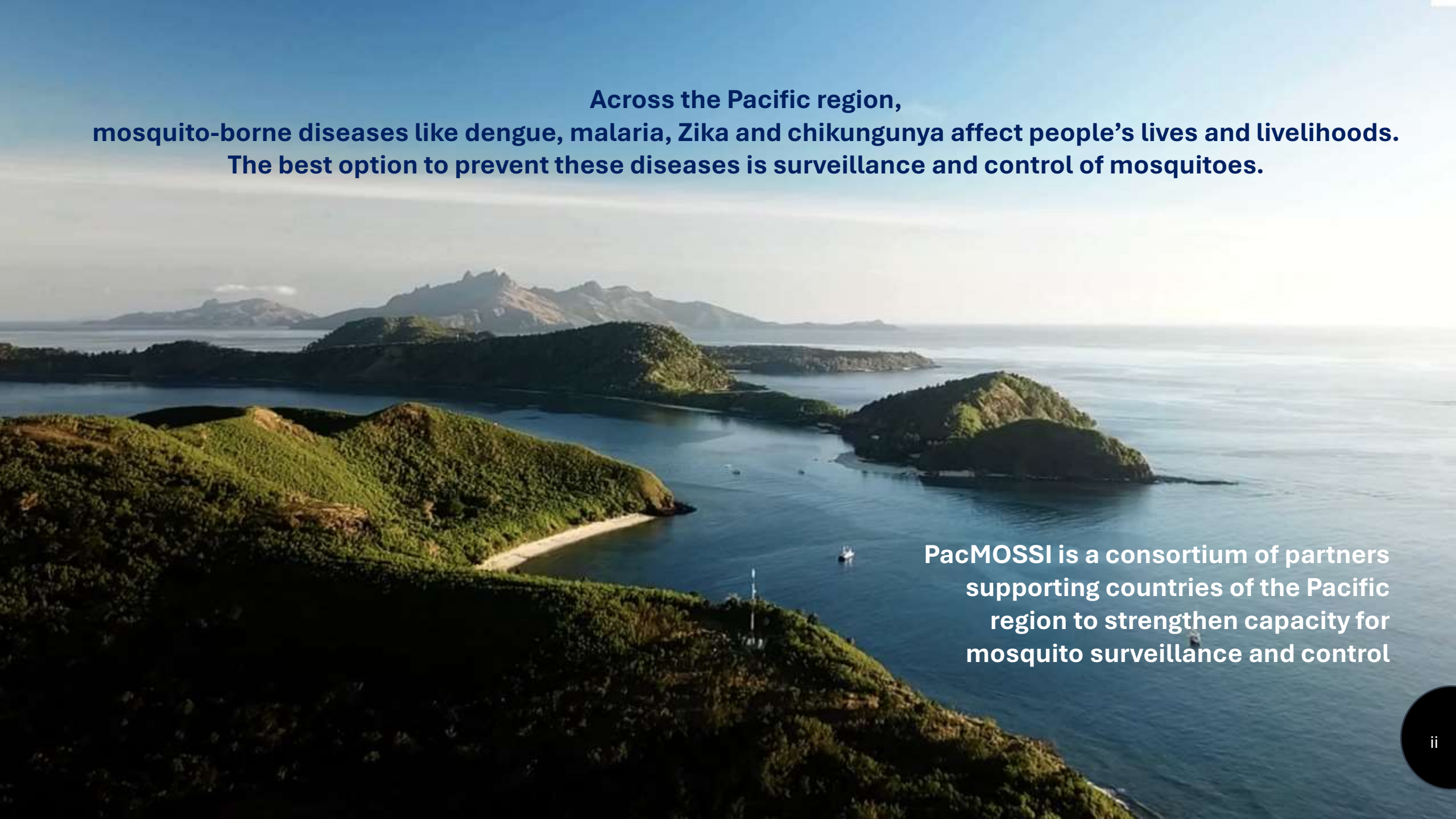
Operational research remains a cornerstone of our approach, with multiple projects generating new data to actively inform mosquito surveillance and control strategies across the Pacific. Our collaboration with Beyond Essential Systems (BES) continues to advance digital data management capabilities, enhancing the region's capacity for evidence-based decision-making in mosquito control.

As we reflect on the accomplishments of 2024, we acknowledge the invaluable support from our partners and stakeholders. We especially thank the Australian Government through Partnerships for a Healthy Region, the French Government, the New Zealand Government, and the European Union for their financial support to PacMOSSI. We also extend our gratitude to all institutions and individuals in Pacific Island Countries and beyond who have contributed to improving Pacific health outcomes through PacMOSSI activities.

Looking ahead, we are excited about the opportunities that PacMOSSI Phase II presents. Our focus remains steadfast on supporting sustainable, locally-driven solutions that will contribute to reducing the burden of mosquito-borne diseases in Pacific communities. The achievements detailed in this report reflect not only our progress but also the strong partnerships and dedication of our Pacific Island colleagues.

Warm regards,

PacMOSSI Management Team



**Across the Pacific region,
mosquito-borne diseases like dengue, malaria, Zika and chikungunya affect people's lives and livelihoods.
The best option to prevent these diseases is surveillance and control of mosquitoes.**

**PacMOSSI is a consortium of partners
supporting countries of the Pacific
region to strengthen capacity for
mosquito surveillance and control**

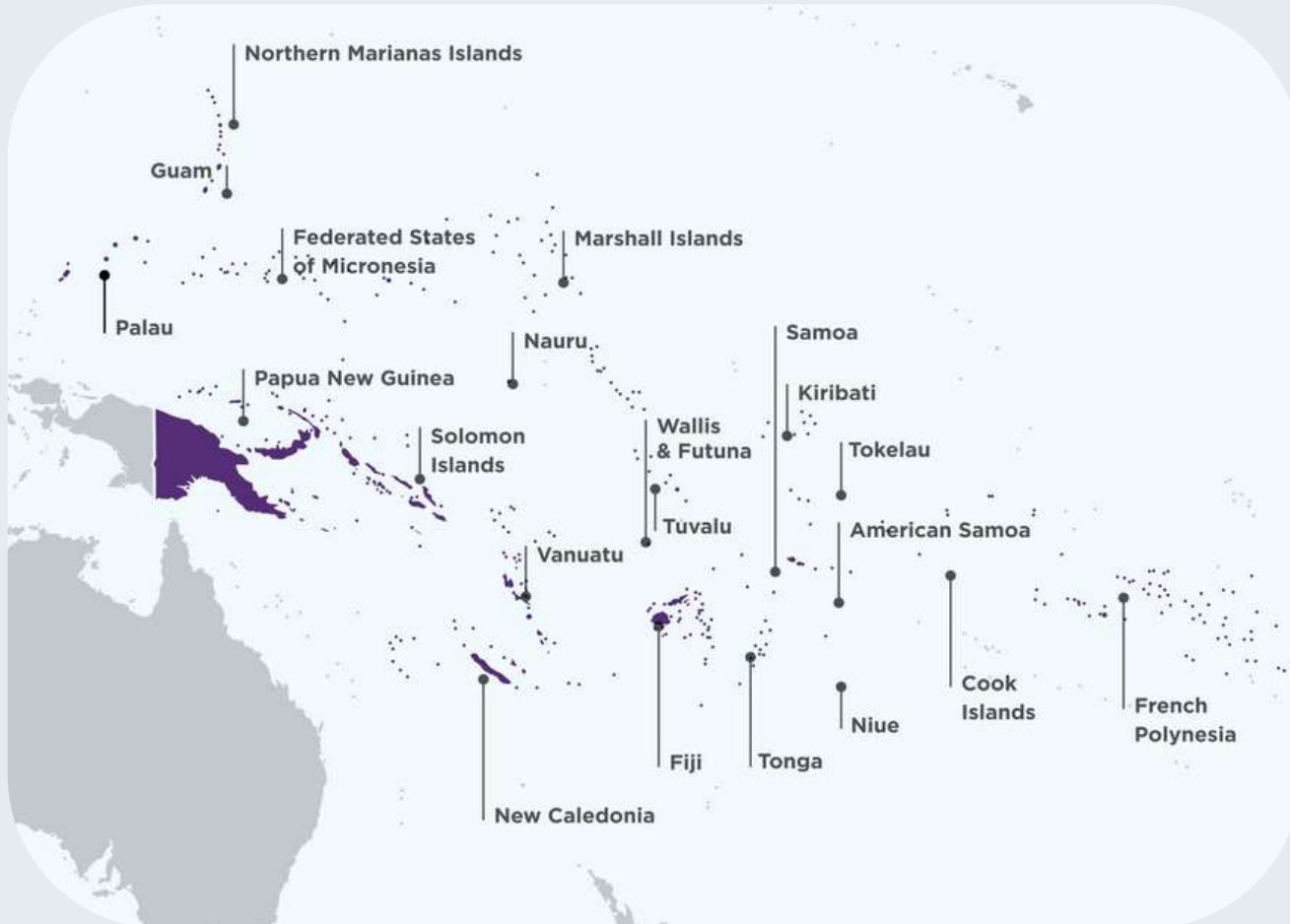
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Image: Attendees at the 2024 PacMOSSI Annual Meeting, Apia, Samoa, June 2024.

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Situation



The problem of mosquito-borne diseases across Pacific Island Countries and areas

The Pacific is home to 11.4 million people residing in 21 countries and territories. The Pacific has seen outbreaks of dengue, chikungunya, Zika virus, malaria and lymphatic filariasis. This has a direct impact on morbidity and mortality and places a heavy toll on the already fragile health systems.

Vector control interventions are essential for controlling mosquito-borne diseases. For vector control to be effective, surveillance and control of mosquitoes needs to be adapted to local conditions, aligned with best practices, and implemented by well-trained staff with sufficient equipment and resources.

The PacMOSSI consortium

The PacMOSSI project is a regional partnership between Pacific Island countries and areas (PICs) and multiple international institutions working to combat mosquito-borne diseases throughout the Pacific. We focus on preventing current and emerging arboviral and parasitic diseases transmitted by *Aedes* and anopheline mosquitoes in PICs such as dengue, chikungunya, Zika virus disease and malaria.

PacMOSSI comprises a series of initiatives jointly coordinated by James Cook University (JCU) in collaboration with the Pacific Community (SPC). Support is provided by the Australian Government through Partnerships for a Healthy Region, the French Government, the New Zealand Government and the European Union.

PacMOSSI overview



Supports PICs to combat mosquito-borne diseases with effective mosquito surveillance and control.



Focusses on current and emerging diseases including dengue, chikungunya, Zika & malaria.



Provides useful and practical support aligned with WHO guidance and best practice.



Determines priorities in conjunction with Pacific Island Ministries of Health.



Engages credible and well-respected individuals with mosquito surveillance and control expertise and Pacific experience.

Our philosophy is to empower Pacific Islanders to do more with their existing resources.

Our goal is to support PICs to strengthen mosquito vector surveillance and control to prevent, contain and control mosquito-borne diseases and to improve the health and well-being of Pacific communities.

The anticipated outcome is a reduction of mosquito-borne disease outbreaks and their burden throughout the Pacific through sustainable increases to local capacity for prevention and effective control responses.

This annual report summarises the achievements of PacMOSSI during 2024. Since its initiation in 2020, PacMOSSI has developed into a highly successful program that is strengthening mosquito surveillance and control capacity throughout the Pacific region.

**GOAL: Strengthened vector surveillance and control
across PICs**

Workforce
development

Translation into
policy and
practice

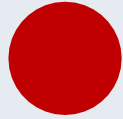
Enhanced
vector
surveillance
and control

Key achievements in 2024



Situation reviews

19 countries were assisted to complete Vector Control Needs Assessments. A dashboard of key indicators is available [here](#).



Strategic planning

Fiji and Tonga finalised their national mosquito control strategic plans. These plans will form the foundation for implementing effective mosquito control.



Online course

334 vector staff from 19 PICs have enrolled in online PacMOSSI modules. Another 416 individuals from Africa, the Americas, Asia, Europe, the Middle East & other countries of Oceania had enrolled. As of the end of 2024, 59 vector staff from 15 PICs had completed at least 5 modules.



Practical workshops

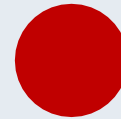
One face-to-face mosquito surveillance and control training workshop was held in 2024:

- A short course on *Aedes* insecticide resistance monitoring was held in Suva, Fiji from 25 to 29 November 2024 with 14 participants (64% women).



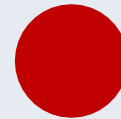
Mentoring program

Mentees from 5 countries were selected for Phase 1 of the PacMOSSI Mentoring Program (PMP) and were coupled with 5 mentors. The launch meeting was convened online on 24 October 2024 and monthly mentorship activities have been held since.



In-country technical support & training

Samoa and Kiribati were provided with additional in-country technical support and training based on identification of specific needs areas, including response to an outbreak of dengue in Samoa.



Meetings and presentations

The PacMOSSI Annual meeting was held in Apia, Samoa from 4 to 5 June 2024 and brought together 47 participants including 17 PICs. The meeting showcased the latest work in mosquito surveillance and control and raised awareness of the need to enhance preparedness for future mosquito-borne disease outbreaks.

Other meetings attended by PacMOSSI representatives included:

- Global Health Security Conference 2024, Sydney
- Pacific Vector Network Annual Meeting 2024, Guam
- COR-NTD meeting for the Pacific Islands 2024, Brisbane



Equipment and supplies

The PacMOSSI consortium provides PICs with selected items essential for mosquito surveillance and control with allocations based on needs identified through direct consultation, situation reviews, strategic plans, requests received from countries, and coordination of support provided by other development partners. In 2024, items to enable insecticide resistance monitoring were provided to selected countries.



Operations research

The operational research grant scheme continued with 7 projects from 6 PICs awarded small grant funding to assist with implementation. Topics ranged from dengue risk communication and insecticide resistance monitoring to AI surveillance. A multi-country project comparing the feasibility and performance of three different *Aedes* sampling methods was completed. Project implementers were supported by PacMOSSI core partner organisations, with in-country technical support provided where needed. Findings from these projects are informing policy and program decisions related to optimal mosquito surveillance and control methods across the various settings in PICs.



Citizen science

The citizen science projects on community-participatory approaches continued in Solomon Islands, Fiji and Kiribati. Communities in all 3 countries were empowered to design and implement citizen-led mosquito surveillance systems. Active participation came from school students, residents in rural and remote areas, and members of housing cooperatives.



Data management

BES provided in-country support and training to a further 2 countries (Samoa and Fiji), both of which actively use Tupaia for vector surveillance and control. Tupaia now has 29 separate surveys, 35 dashboards and 40 map overlays that were developed through the PacMOSSI consortium.



Technical guidance

Key documents produced included:

- New PacMOSSI strategic plan and monitoring, evaluation and learning framework for 2024-2028
- Participant manual for insecticide resistance monitoring short course
- Standard Operating Procedure for insecticide resistance testing with tube tests



Communications

A communications strategy was developed to guide the work of core PacMOSSI partners, ensuring alignment with donor requirements and including promotion of gender equity, disability, and social inclusiveness. New communications initiatives included a “Mozzies in a Minute” conversation series and increased reach and engagement through social media channels including Facebook, X and LinkedIn.

The PacMOSSI website at www.pacmossi.org was refreshed based on feedback from a user survey.

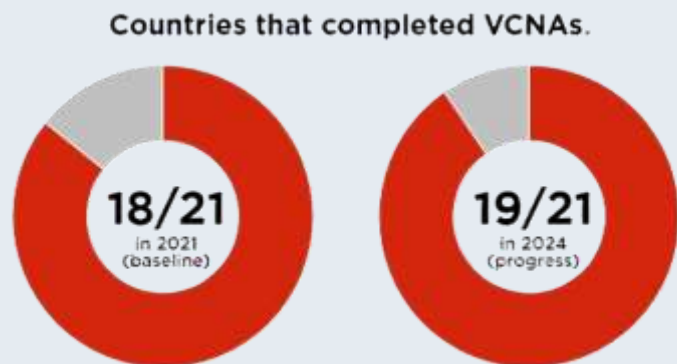
Situation reviews

The PacMOSSI consortium assists PICs to determine mosquito surveillance and control needs, capacity and gaps. In 2021, baseline VCNA were conducted in 18 countries and outcomes were used to prioritise PacMOSSI support. In 2024, 19 countries completed VCNA.

Across the region, substantial variation in the capacity and capability for mosquito surveillance and control programs was found. Although most countries have limited *Aedes* surveillance, extensive *Anopheles* surveillance is ongoing in some places. Mosquito vector control ranges from conventional approaches like insecticide-treated nets in malarious countries to advanced technologies like *Wolbachia*-based biocontrol for *Aedes* in some PICs.

A common underlying programmatic limitation found in 2021 was the absence of up-to-date strategic plans for mosquito surveillance and control to provide a framework for decision-making. There was also a lack of well-trained staff, limited equipment and supplies, and limitations in data management and operational research.

Through PacMOSSI support, many of these key limitations were addressed and regional improvements were evident in the 2024 VCNA. An [indicator dashboard](#) and an [interactive table](#) available on the PacMOSSI website display key data. Summary reports were provided to countries. An analysis of data is ongoing for publication.



Selected indicators from 2024 VCNA.

Pacific Island Countries and areas	Dengue transmission status in previous year	Malaria transmission status in previous year	National strategic <i>Aedes</i> control response plan status	National strategic <i>Anopheles</i> control response plan status	Vector surveillance or control included in national budget
American Samoa	● No cases	● No cases	● Draft plan	N/A	● No
Cook Islands	● No cases	● No cases	● Draft plan	N/A	● No
Fiji	● Endemic	● No cases	● Final plan	N/A	● Yes
French Polynesia	● Outbreak	● No cases	● Final plan*	N/A	● Yes
Guam	● Outbreak	● No cases	● Draft plan	N/A	● No
Kiribati	● Endemic	● No cases	● No plan	N/A	● No
Marshall Islands	● No cases	● No cases	● Draft plan	N/A	● No
Micronesia (FSM)	● Endemic	● No cases	● Draft plan	N/A	● No
Nauru	● No cases	● No cases	● Final plan*	N/A	● Yes
Niue	● No cases	● No cases	● No plan	N/A	● Yes
Northern Mariana Islands (CNMI)	● No cases	● No cases	● Draft plan	N/A	● No
Palau	● Outbreak	● No cases	● Final plan*	N/A	● Yes
Papua New Guinea	● Endemic	● Endemic	● Draft plan	● Draft plan	● No
Samoa	● Endemic	● No cases	● Final plan	N/A	● No
Solomon Islands	● Endemic	● Endemic	● Draft plan	● Final plan	● No
Tokelau	● Outbreak	● No cases	● Draft plan	N/A	● Yes
Tonga	● Outbreak	● No cases	● Draft plan	N/A	● Yes
Tuvalu	● Outbreak	● No cases	● No plan	N/A	● Yes
Vanuatu	● No cases	● Endemic	● Final plan	● Final plan	● Unknown

* A finalised plan exists but it requires update (is more than 3 years past the end date)

Strategic planning

PacMOSSI worked with 8 countries in 2024 to provide tailored support for mosquito control strategic planning. The approach taken incorporated guidance on gender equity, disability, and social inclusiveness (GEDSI) and broader considerations that included climate change, environmental impact, and One Health principles. Support focused on enabling countries to develop robust and comprehensive approaches to mosquito surveillance and control that are country-owned, aligned to national health plans, and have clear and actionable objectives and evidence-based interventions for routine and outbreak use.

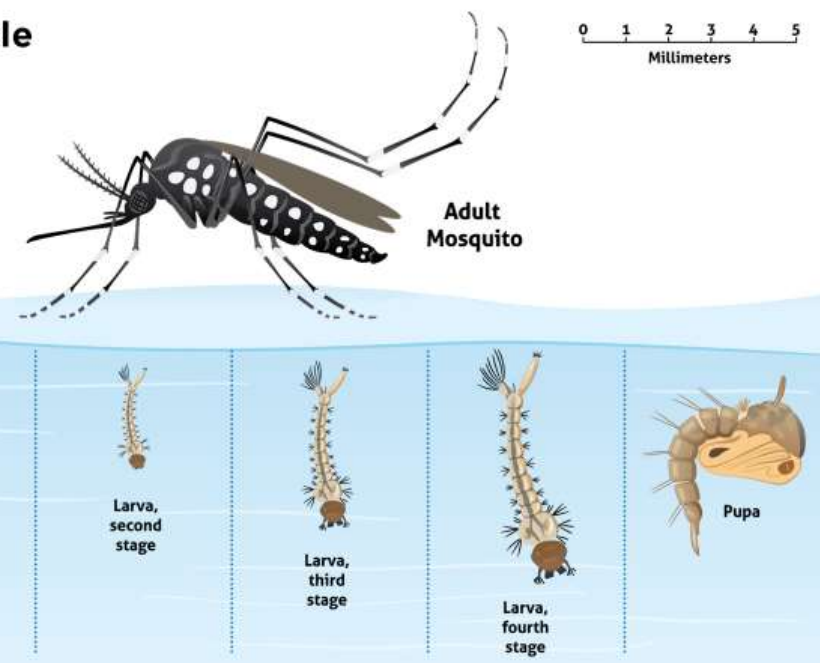
The support was delivered through multiple channels, including face-to-face meetings during the PacMOSSI annual meeting, strategic planning field visits to Tonga and Fiji, and ongoing communication via email and virtual meetings.

Countries are at different stages of engagement and planning so support was aligned with the specific needs of each. Significant progress in strategic planning was made in 2024.

- Fiji and Tonga completed their plans' final drafts, including comprehensive costings to inform and facilitate resource mobilisation.
- Kiribati received feedback with specific recommendations for vector-borne disease surveillance and control components in a broader National Environmental Health and Climate Change and Health Action Plan.
- American Samoa has sought *ad hoc* advice to complement WHO clinical management recommendations.
- Papua New Guinea requested and received a summary of *Aedes*-borne diseases to support plan development.
- Nauru's existing plan is being reviewed, providing evidence-based updates.
- Solomon Islands and Niue were oriented on available support.



Mosquito life cycle



Reactive vector control includes:











Top 2nd from left: Indonesia Malaria Care Foundation
 Top 3rd from left: Dr Mutizwa Odwell Muzari, Queensland Health
 Top right: © WHO/Yoshi Shimizu
 Bottom left: © WHO/Sebastian Olliel
 Bottom 2nd from left: © WHO/Yoshi Shimizu
 Bottom right: John Rae Productions

Online course

The PacMOSSI online training course in mosquito surveillance and control continues to be an essential component of workforce development. The course provides comprehensive theoretical training, reference materials, and practical guidance for evidence-based surveillance and control of *Anopheles* and *Aedes* mosquito vectors.

The primary audience for the course is Ministry of Health (MoH) operational and managerial staff in PICs; however, the training is also being accessed by other individuals seeking to upskill in mosquito surveillance and control.

Since March 2022, 59 vector staff (42% women) from 15 PICs have completed the online training.

 <p>Free enrolment</p>	 <p>Available to everyone</p>	 <p>Eight modules</p>	 <p>Case studies, quizzes, audio, videos, animations</p>
 <p>Aedes and Anopheles components</p>	 <p>Content tailored to job roles</p>	 <p>3 to 5 hours to complete each module</p>	 <p>Access materials even after course completion</p>

Images: Examples of the online mosquito surveillance and control training course.

Practical workshops

Short course: *Aedes* Insecticide Resistance Monitoring.

Insecticide resistance in *Aedes* mosquito vectors threatens the effectiveness of vector control. Resistance data are needed to inform the selection of interventions and design of strategies. However, there is no recent data available for numerous countries in the Pacific. This training was designed to support participants to generate resistance data after returning to their countries.

Participants from 11 countries undertook 5 days of training in Suva, Fiji from 25 to 29 November 2024. Topics covered included: rearing *Aedes* species in low capacity insectaries; evaluating insecticide resistance using the WHO tube test; basic mosquito identification; documenting and interpreting insecticide resistance data, and determining implications for vector control approaches.



Images: Taken during the practical training workshop, Fiji, November 2024.



In-country technical support and training

Samoa

In response to an ongoing dengue outbreak and at the request of the Ministry of Health of Samoa, PacMOSSI supported a technical assistance field visit from 7 to 12 June 2024. The visit of Rod Bellwood and Amanda Murphy focused on providing practical training for residual spray operators, and drew on the expertise of two local staff who received training-of-trainer experience through PacMOSSI in November 2023.

Training sessions were held for Ministry of Health staff in both Upolu and Savaii, featuring theoretical and practical components. A public health officer from Tokelau also participated in the sessions. The training covered essential aspects of mosquito control operations, including proper chemical storage practices and effective cross-departmental coordination during outbreak responses. The implementation of new mosquito control technologies was also discussed, as well as options for improving existing facilities to support improved mosquito surveillance and control.



Kiribati

PacMOSSI supported a technical assistance field visit to Kiribati from 2 to 6 December 2024 to support mosquito surveillance and outbreak preparedness and response, at the request of the Ministry of Health and Medical Services. Training sessions were held for 8 staff in Tarawa which featured both theoretical and practical components.

Training covered mosquito surveillance, trapping and identification, outbreak control including residual spray training, as well as equipment storage and waste management.

One staff member had completed PacMOSSI training through the online course and the practical workshop attended in Fiji the week prior to the in-country training, and was able to assist with training of her peers.

Mentoring Program

Mentorship is a collaborative learning relationship and working alliance based on intentionality, trust, and shared responsibility towards co-defined professional and personal goals.

The PacMOSSI Mentoring Program (PMP) complements other capacity building initiatives of the consortium. It fosters further professional development for a select cohort of Pacific-based mosquito surveillance and control specialists.

Phase I of the PMP commenced in October 2024 with a small cohort of mentees and mentors. Following the launch meeting which included goal and expectation setting, regular online meetings are held between mentees and mentors. The PMP Coordinator provides support and guidance on mentoring activities.

Phase I will run for 12 months with learnings to inform program optimisation and potential expansion to additional participants.

Benefits.

FOR MENTEES	FOR MENTORS
Guidance and advice on careers ideas, helping you make more informed choices	Validate leadership skills
Opportunity to learn from an experienced professional in vector surveillance and control	Networking opportunities
Advice on resources relevant to your areas of interest	Gain communication experience by explaining scope and skills in your area of work
Enhanced professional development	Become recognised as an advisor
Increased confidence	Gain new perspectives / Find and foster new talent



Dr Edgar Pollard
Coordinator
PacMOSSI Mentoring Program

"In my professional journey I have benefitted from receiving much knowledge and insights from informal conversations and field-based work with respected colleagues.

The new PacMOSSI Mentoring Program provides an opportunity for capacity building, knowledge sharing and character development within areas of shared interest. It also offers chances for practical 'real-world' problem-solving and collaboration across space and time"

Operations research (OR)

The Small Grants Scheme, launched in conjunction with the PacMOSSI OR training module, provides a platform for PIC officers to design, implement, and report on practical and impactful OR.

To date, the scheme has funded 7 diverse projects across the Pacific, ranging from testing dengue risk communication methods in Kiribati to monitoring insecticide resistance in Palau and developing artificial intelligence-based mosquito surveillance in Papua New Guinea. Other projects have been implemented in the Solomon Islands, and projects are ongoing in Papua New Guinea and Vanuatu. Each project addresses policy and program challenges faced by health authorities in the delivery of their work, with findings shared through the PacMOSSI regional network to drive change across the region.

In 2023-2024, PacMOSSI initiated a multi-country OR project to evaluate the performance of commonly used mosquito traps. This initiative aimed to identify the most suitable traps for use in the Pacific, considering the distinct context and challenges in the region. The collaborative effort involves 6 countries—Kiribati, Samoa, Tonga, Cook Islands, Fiji, and Solomon Islands—and has generated valuable insights to inform decisions about which mosquito surveillance tools to use, where and in what situation. Results will contribute to regional practice and the global public health evidence base. The results of this study are due to be published soon.

PacMOSSI's OR activities are further strengthened by in-country mentoring. Visits by experts such as Tessa Knox to Vanuatu and Adam Craig to Kiribati have been pivotal in refining project proposals, securing research and ethics approvals, ensuring compliance with protocols, and building collaborative relationships. In this way, PacMOSSI contributes to improving the evidence base on mosquito surveillance and control strategies across PICs through support to individual projects and regional initiatives.



Citizen science

To enhance community involvement in mosquito surveillance and establish innovative mechanisms for data collection, PacMOSSI has supported the development of community-participatory approaches, also referred to as citizen science, for *Aedes* mosquito surveillance in three Pacific nations: Fiji, Kiribati, and the Solomon Islands. This country-led initiative engages community members in setting mosquito traps within their local areas to collect *Aedes* mosquito eggs. The eggs are then sent to health authorities for analysis, contributing to data production that informs arboviral disease risk profiles.

This approach has been adopted by national officers to meet local needs and build on existing networks. For example, in Fiji, the Ministry of Health and Medical Services has partnered with a local social services NGO to recruit, train, and support residents of social housing to participate in the initiative.

This citizen science initiative exemplifies community-driven approaches to disease surveillance and highlights a strong commitment to south-to-south mentoring. In Kiribati, mentoring was provided by Dr Hugo Bugoro from the Solomon Islands National University (SINU) and Dr Adam Craig from UQ, focusing on strengthening citizen science initiatives and enhancing local capacity in mosquito surveillance techniques.



In the Solomon Islands, the program is more advanced. The Ministry of Health and Medical Services has collaborated with environmental health students from SINU and incorporated the initiative into students' field-based practicum placements, ensuring its sustainability. So far, 340 senior students from 14 schools, including four rural schools, have been engaged. With the support of citizen scientists, SINU students have reared 916 mosquitoes to adulthood and mapped the presence and distribution of *Aedes* mosquitoes, the primary vectors of dengue and other arboviruses.

In Kiribati, village nurses lead the program and have involved 30 households in South Tarawa. A knowledge-attitude-practice survey found that engaging in two-way discussions about arboviral transmission and risk significantly improved knowledge and promoted behaviour change among participants. The Ministry of Health and Medical Services in Kiribati has integrated this model into environmental field visits to outlying islands, marking the country's first mosquito surveillance efforts in recent memory. Surveys have already been conducted on Tabiteuea and Temaraira Islands.

Average mosquito mortality rates by insecticide, Demo Land

Jan 2024 – Dec 2024

Reset to default

< 90 90 - 97 > 97

	North	South East	South West
Aedes aegypti			
Alpha-cypermethrin 0.05%	78.36	74.19	99
Bendiocarb 2%	—	96	—
Permethrin 0.1%	—	—	—
Permethrin 5%	—	—	92
Aedes albopictus			
Alpha-cypermethrin 0.05%	83.89	96	99
Bendiocarb 2%	—	100	—
Permethrin 0.1%	0	—	—
Permethrin 5%	—	—	—
Aedes polynesiensis			
Alpha-cypermethrin 0.05%	85.28	100	99
Bendiocarb 2%	—	80	—



Data management & use

Provision and development of the Tupaia data management platform continues with the support of Beyond Essential Systems. Two new digital survey forms were built in Tupaia to support insecticide resistance testing, along with several data visualisations, including a ‘traffic light’ table showing the average mortality rate by species according to the type and concentration of insecticide tested. Environmental health staff from 11 PICs were trained on how to use the new insecticide resistance module during the practical workshop in Fiji in November 2024.

A new Vector Surveillance module added to Tupaia Meditrak includes digital forms for trap collection and mosquito identification details, including for eggs, larvae and adult mosquitoes. The module also includes new visualisations such as a searchable table showing all survey responses submitted. These visualisations update in real time as data is submitted by users via Tupaia’s MediTrak and DataTrak data collection tools.

Information about support mechanisms in place for users of Tupaia was also provided (i.e., BES Regional Support Centre based in Suva; in-country BES staff or country managers for several countries; and, project manager support).

In Samoa, co-development and implementation of insecticide spraying forms was completed. Survey forms track where spraying takes place and other key factors related to the spraying activity. The primary purpose of this was to support Samoa’s hosting of the Commonwealth Heads of Government Meeting (CHOGM) in October 2024. Increased spraying activities occurred in the lead up to this meeting, however the forms and dashboard were developed in a way that will allow continued use to track routine surveillance in future.



Images: Tupaia dashboards including output graphs and Tupaia training in Fiji, November 2024.

Design

Gender equality, disability and social inclusiveness (GEDSI)

The major outputs for GEDSI in 2024 have included a baseline survey of PIC Ministry of Health vector-borne disease control programs and a situation analysis on GEDSI approaches in program management and implementation. An orientation to GEDSI and mosquito-borne diseases was provided to attendees at the PacMOSSI annual meeting along with findings from the survey and situation analysis. Implications were discussed by attendees, who included PIC representatives, PacMOSSI management team and core partners. Findings and further deliberations informed development and refinement of the GEDSI Strategy for PacMOSSI.

Country summaries of survey outcomes were also shared with each country to support ongoing planning, activities and evaluation as continual quality improvement to progress GEDSI responsiveness and transformation. The Fiji, Samoa and Tongan strategic plans have GEDSI strategy embedded in their plans.

The PacMOSSI GEDSI advisor also assisted with development of the PacMOSSI Monitoring, Evaluation and Learning Framework for 2024-2028, design and instructions for a mentoring program, and training materials and activities undertaken in 2024. Discussions have been held with SPC for coordination and collaboration on GEDSI in the Pacific and mentoring GEDSI champions within VBD programs. The GEDSI advisor is a member of the PHP GEDSI CoP and shares the materials broadly across PacMOSSI partners.

Moving ahead, PacMOSSI will continue its efforts to ensure equal access to all online and in-person training initiatives. A training recruitment strategy that incorporates GEDSI considerations is being implemented. Curriculum design guidance will be utilised to ensure accessibility of content and materials to anyone regardless of gender, disability status or position in the vector control programs.



Equality
Diversity
Inclusion



Image: Education activities on mosquito trapping techniques at World Mosquito Day event, Suva, Fiji (Source: WHO).

Sustainability

PacMOSSI empowers Pacific Islanders to maximize their existing resources through sustainable capacity building. Our integrated approach combines a range of interventions to extending beyond traditional training approaches to sustainable capacity building.

The program supports countries in developing robust, long-term strategic plans rooted in local data and tailored to specific contexts. These evidence-based, cost-effective plans ensure continuity by addressing critical priorities such as proactively minimizing transmission risk, containing introduced mosquitoes, and rapidly responding to outbreaks. Through strategic planning, policy reform can be facilitated, resulting in deep and lasting transformations.

A cornerstone of sustainability is the comprehensive training approach. At its foundation are open access, self-paced online modules delivered through a sustainable cost-effective platform that can be reused over many years. This is complemented by regional hands-on workshops that build practical skills, and a dedicated mentoring program that provides individual professional development support. Furthermore, PacMOSSI has established a valuable network of mosquito surveillance and control officers across the region, facilitating peer-to-peer information exchange.

The program emphasises locally-led vector control through participatory community-based approaches, focusing on transitioning from vertical to more horizontal programs. This transformation is achieved through citizen science-led mosquito surveillance to expand geographic reach and utilise local data to plan and respond to threats more cost- and time-effectively. The approach emphasises empowering communities to recognize their strengths and assets, supported by carefully developed template information and education materials for ongoing community engagement.

Foundational and Cross-Cutting Elements



Partnerships

Partnerships are fundamental to PacMOSSI's success and impact in the Pacific region. The consortium fosters collaboration between PICs and institutional partners, with a particular focus on building peer-to-peer networks.

Led by JCU as the managing partner, PacMOSSI brings together core partners including SPC, QIMRB, UQ, BES, IPNC, and PNGIMR, who work directly with Ministries and Departments of Health to address gaps in vector surveillance and control capabilities.

The consortium also includes collaboration with numerous other organisations such as WHO, IVCC, the World Mosquito Program and the Pacific Vector Network.

All activities are co-designed with partner countries and institutional partners, ensuring that interventions are locally relevant and adaptable to meet emerging needs and country priorities.



One Health

PacMOSSI embraces a One Health approach in recognition that vector surveillance and control require multi-sectoral initiatives involving various stakeholders to ensure benefits and to minimise harm to humans, animals and the environment.

In 2024 this was reflected in several key initiatives: providing training and guidance on safe pesticide management and waste disposal to minimize environmental contamination, promoting collaborations and joint activities between ministries of health and other sectors like biosecurity and natural resources, and investigating shared insectary/laboratory capacity for health, agriculture and food security, and integrating One Health principles into support for country strategic planning including co-design with other sectors and local communities to ensure integrated, inclusive and sustainable vector control practices.



Climate Responsiveness

The consortium addresses climate responsiveness through multiple integrated approaches, including national mosquito surveillance and control plans that incorporate preparedness mechanisms for climate-related disease outbreaks, collaboration between climate scientists and vector control programs, and improved data management through electronic tools like Tupaia Meditrak.

PacMOSSI specifically targets climate-sensitive populations through community engagement and operational research, with special attention to socioeconomically disadvantaged groups who may be disproportionately impacted by climate change. This comprehensive approach, combining data-driven surveillance, cross-sector partnerships, and community empowerment, helps increase preparedness in PICs and enables targeted support to minimize mosquito-borne disease impacts in climate-vulnerable communities.

Implementation

Pacific Island Countries



Institutional partners



Donors





Thank you to all involved in making PacMOSSI a success



PACMOSSI

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