



# PacMAN

Pacific Islands Marine  
Bioinvasions Alert Network

## 3rd PacMAN advisory board Meeting



**21 December 2023 Suva, Fiji 8.45 am- 12.00 pm**

**Venue: USP's Japan-Pacific ICT Conference Room 1, USP Main Campus**

Attendees:

Dr. Saara Suominen

Mr. Pieter Provoost

Mrs. Saras Chandra (Ministry of Fisheries)

Mr. Seson Komaisoso (MSAF)

Mr. Tuverea Tuamoto (BAF)

Dr. Chaminda Dissanayake (BAF)

Mrs. Senimili Baleicakau (Acting Director, Ministry of Environment (MoEnv))

Mrs. Senivasa Waqairawai (Principal Environmental Officer, Ministry of Environment)

Dr. Chinthaka Hewatherane (SPC)

Mr. Jimmy Gaunavou (FPCL)

Dr. Isoa Korovulavula (USP)

Mr. Joape Ginigini (PacMAN Local project manager)

Ms. Miriama Vuiyasawa (PacMAN project assistant)

Mrs. Mere Naisilisili (USP-IAS QMC)

Mrs. Seruwaia Tuilau (PacMAN Technician)

## **Annotated agenda**

8.45-9.00 AM	Opening of session and housekeeping matters
9:00 - 9:10 AM	Welcome
9:10 - 9:20 AM	Opening remarks
9:20 – 9.35 AM	Introduction of agenda and objectives of the meeting
9.35 – 9.50 AM	Adoption of Agenda
9.50-10.30 AM	Project progress summary

10:30 – 11:15 AM	Discussion on the use of the decision support system and best use model for project work plan
11:15-12.00 PM	Other business or cross cutting issues <ul style="list-style-type: none"> <li>- Latest detection and EDRR</li> <li>- Biofouling Assessments for Fiji (Risk framework) discussion</li> <li>- Meeting end</li> </ul>
12.00-1 PM	Tea

Housekeeping: Mr. Ginigini briefly discussed housekeeping rules and informed the participants that Mr. Ward Appeltans (PacMAN Project Manager) would not be available for the meeting.

## 1. Opening and Welcoming Speech:

Dr. Isoa Korovulavula welcomed the participants to the meeting on behalf of the University of the South Pacific’s Vice-Chancellor, with a special welcome to the Acting Director of the Ministry of Environment, who also chaired the meeting. He also welcomed the participants from the Biosecurity Authority of Fiji, MSAF, the Department of Fisheries and regional organizations such as SPC, SPREP and others that will be joining in later. Dr. Isoa also thanked the local PacMAN team and the OBIS team Dr. Saara Suominen, and Mr. Pieter Provoost who joined in. He mentioned that this will not be a one-off meeting as a continuation is needed to understand the lessons learned. Dr. Isoa Korovulavula hopes that there will be a fruitful discussion and thanks the participants for their presence.

Acting Director (MoEnv):

Mrs. Baleicakau welcomes all participants and is honored to be chairing her first Project Advisory Board Meeting. Some excerpts from the Acting Director’s speech is provided below:

*“The Ministry of Environment is grateful to all participants for participating in the discussion regarding invasive species risks and wish to thank the PacMAN project for providing science-based technology that strengthens policy decisions on Marine Invasive species under Fiji’s National Biodiversity Strategy Action Plan (NBSAP) that the Department of Environment implements. It lists the priority targets that addresses the management of Invasive Alien Species in Fiji which is reflected as Focus Area 4 under the NBSAP. The PacMAN project will contribute to National efforts to raise awareness, build capacity, and detect marine invasive species in our waters. Through the Department of Environment, the government is committed to providing the necessary support for the project. I am pleased to see the other key ministries in the government that will help in this area. From the last discussion with the PacMAN team, this third advisory board meeting will conduct a stock take of the work that has been done in Year 2 and collectively contribute to discussions for the Year 3 work program.*

*It is important for board members to provide the clarity needed to map a way forward in terms of integration of the PacMAN support system to operational processes for each stakeholder, with the focal point being the Department of Environment. Eliminating invasive species as an underlying driver for biodiversity loss will ultimately require our collaborative efforts of all government departments, the academic community, and the scientific community to advance science-based tools for invasive species management in Fiji. It is with anticipation that the third Project Advisory Board meeting will provide the platform for this discussion and much-needed exchange that contributes to the finalization of the Year 3 program for the PacMAN project. Thank you all”.*



PacMAN advisory board chair- Mrs. Seinimili Baleicakau (Acting Director Environment) during her opening remarks. *Courtesy- Mere Naisilisili, IAS*

## **2. Adoption of the Agenda**

Board chair reviewed the meeting agenda and proposed that the meeting agenda was accepted. All participants were in favor.

## **3. First Presentation: Latest Progress of the PacMAN project (Mr. Joape Ginigini)**

The local project manager updated the stakeholders on the progress of the PacMAN project. He informed the board that PacMAN team has come up with two positive detections: *Didemnum perlucidum* commonly known as the White colonial sea squirt and the spaghetti bryozoan *Amathia verticillata* have been detected within Fiji’s Port area. The project has not been able to confirm the presence of the spaghetti bryozoan through qPCR analyses but has detected a large presence of this organism through eDNA sequencing. Mr. Ginigini shared the eDNA results representing one year and two months of collection. He also shared the a snapshot of the bioinformatics pipeline as well as the qPCR analyses from the samples in Year 2 (2022).

PacMAN project manager confirmed that the PacMAN has discovered and confirmed the positive detection of *Didemnum perlucidum* in 70% of samples collected in Suva harbor samples.

#### **4. PacMAN Decision Support System and 2024 Work Plan (Mr. Pieter Provoost)**

Mr. Provoost gave an overview of the dataflow that is behind the decision support tool.

1. *PacMAN monitoring campaign*: samples collected for molecular (Metabarcoding and qPCR) and voucher specimens for morphological identification. Data and images are entered into PlutoF (general scientific data management system). These run in parallel with this, and a lot of DNA sequence data is generated using the bioinformatics pipeline developed by Saara and Pieter.
2. *Ocean Biodiversity Information System*: Species occurrence from samples flow into the data system (OBIS). There are also other sources of information that is included into the system. This also contributed to the risk analysis and decision support system.
3. *Risk Analysis in OBIS*: detections recorded in OBIS go through a risk analysis, which is checked with known ranges of potentially invasive species. The World Register of Marine Species (WoRMS) database can be used to see if a detection may be a potential problem for Fiji. Also, risk analysis for all potential invasive species is conducted. Able to look at the temperature preference for the species and may understand if they are potentially invasive species. Any detection that could be a problem will appear as an alert on the decision support system.

Mr. Provoost mentioned that the Bioinformatics pipeline is an open source that is available on GitHub. He showed a prototype of the support system and further explained that the public may be able to view species data and the map of the distribution of the species. He was concern with data utilization routes and asked how the alerts were going to be given and who will verify these information.

#### **5. Other businesses and cross cutting issues**

PacMAN project manager informed the board that from current practices in subtropical Australia (through the Marine Pest Sectoral Committee in Australia is a member through PacMAN), eradication is not viable and only management practices are the recommended corrective action.

Department of Environment commonly requests for Environment Impact Assessments (EIA) prior to any hull cleaning at the Suva and Lautoka ports. The Department of Environment requests shipping agencies to submit an application and also have a scientist provide the list of species on the ships, whether they may be invasive or not.

##### Recommendation for assessment criteria:

1. Dry dock hull cleaning is a more ideal option for hull cleaning as ships are contained as the water can first be treated before it is released into the ocean. Current practices in Fiji involve in water cleaning
2. MSFA has resources on hull assessment criteria

3. Two day turnaround time for hull cleaning may not be ideal. A review needs to be conducted on the current requirements
4. Hull cleaning to be conducted at 12 nautical miles from seashore

#### Next Steps and Action Items:

1. The Department of Environment, Biosecurity Authority of Fiji, Ministry of Fisheries will draft a Communication Protocol Mechanism for invasive species as the Focal Point with the PacMAN team
2. Once the communication protocol is drafted, DOE will convene a FIST and have it endorsed.
3. Dr. Chinthaka (SPC) to send list of pathogens that may be included in the Marine Invasive species work
4. Department of Environment is committed to convening FIST in early 2024 in discussion with BAF
5. The PacMAN team, with the assistance of stakeholders to draft a solution on how we can control the spread of *Didemnum perlucidum* and prevent the further introduction of new marine invasive species
6. The Department of Environment to send a country request to SPC to request for a consultant to determine the economic impact of the marine invasive species and pathogens in Fiji
7. USP to send the *Didemnum perlucidum* factsheet to BAF
8. PacMAN project to present project work to FIST
9. PacMAN team to draft a demarcation of roles for the different ministries for the exit strategy
10. PacMAN team to come up with a budget for the monitoring of marine invasive species in Fiji biannually ( DOE to provide funds) until the government can take over and pending work

## **Board Recommendations**

1. The *Didemnum perlucidum* species may be all over the Suva Harbour, thus there is a high chance it has spread into other ports in Fiji. It is important to know the spread of the invasive species to determine whether the species can be eradicated or controlled. It may be good to involve the Lau Seascape program in the project.
2. BAF suggested that delimiting assessments be conducted in Suva harbor and asked if PacMAN can conduct these. PacMAN project manager responded saying that the project only aims to deliver a support tools and a monitoring plan for 12 target species. Further funding will be needed to extend the area of coverage.
3. PacMAN team requested if additional funds can be provided by the government to survey the other ports in Fiji on the presence of *Didemnum perlucidum* or other marine invasive species.
4. There is a need to draft a plan for the potential loss of infrastructure and economic impact due to the presence of *Didemnum perlucidum*. To be discussed in the FIST.
5. Include aquatic quarantine facilities in Fiji in the monitoring program or management plan.
6. There is a need to establish a legal framework for the management of marine invasive species in Fiji. A draft legislation has been initiated during Fiji's GEF project by the BAF and local stakeholders. Needs to be formalized with some discussions at FIST.

7. Social science, economic impact and other policy measures need to be considered. Has been identified as another way to get funding possibly through GEF. We need to find a solution to the spread of the invasive species?

The Director of Environment closed the meeting by acknowledging the project and the presence of all stakeholders, including Pieter and Dr. Saara. She mentioned that there were a lot of tasks that needed to be done and the urgency to move forward with the project work. She also acknowledged everyone's contribution to the meeting.