Stakeholder Inception Report

AQUA-PEARL REPORT

IISD
International Institute for Sustainable Development

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Georgia Exell

December 2024

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Acronyms

AQUADAPT Nature-based Climate Solutions in Aquaculture Food Systems in Asia-Pacific

AIIH Aquaculture Innovation and Investment Hub

CEFAS Centre for Environment, Fisheries and Aquaculture Science

EbA Ecosystem-based adaptation

GAC Global Affairs Canada

IISD International Institute for Sustainable Development

IDRC International Development Research Center

NACA Network of Aquaculture Centres in Asia-Pacific

NbS Nature-based solutions

NGO Non-governmental organization

SPC Pacific Community

TEK Traditional Ecological Knowledge

WCS World Conservation Society

Background

The AQUA-Pearl project (September 2024–August 2027) aims to support communities in Fiji in building resilience to climate change through nature-based approaches to oyster aquaculture. The project will be implemented by the International Institute for Sustainable Development (IISD) along with the Wildlife Conservation Society (WCS) and J. Hunter Pearls, in collaboration with the Pacific Community (SPC) and Fiji's Ministry of Fisheries. It is supported by the International Development Research Centre (IDRC) and Global Affairs Canada (GAC). The main activities in this project are

- exploring current and future gender and climate vulnerabilities, risks, and opportunities in the aquaculture sector;
- implementing community-led edible pearl oyster farms in two villages in Vanua Levu (Vatulele and Vuadomo);
- identifying entry points to align fisheries and aquaculture development with national priorities and policies;
- identifying the role of the private sector and other stakeholders in community-led aquaculture that integrates gender-responsive, nature-based climate solutions;
- fostering knowledge sharing and capacity building among civil society organizations, private sector entities, and national and local authorities from Fiji and other Pacific Island states.

On November 22, 2024, the project partners and collaborators convened a workshop to introduce the AQUA-Pearl project and its objectives and activities to diverse stakeholders. Other objectives were to discuss nature-based aquaculture and related approaches and their contribution to multiple policy objectives on climate adaptation, biodiversity conservation, and gender equality, in addition to trade, health, and a sustainable and inclusive blue economy. Another workshop objective was to strengthen support among policy-makers for nature-based approaches to aquaculture to achieve joint policy objectives on biodiversity conservation, climate change adaptation, gender equality, food and livelihoods security, and economic development.

The stakeholder workshop was preceded by a site visit to the J. Hunter Pearls hatchery and oyster farms in Savusavu and the village of Vatulele to meet with the community members involved and introduce the AQUA-Pearl project. The site visits were attended by representatives of IISD, IDRC, WCS, Network of Aquaculture Centres in Asia-Pacific (NACA), J. Hunter Pearls, and FutureFish.

The stakeholder workshop was followed by the Global Development Conference, hosted by the Global Development Network in Suva from November 26 to 28. AQUA-Pearl team members represented the AQUA-Pearl project in Plenary Session 1: Foundations of Climate

Resilience and Parallel Session 1: Nature-based Aquaculture for Climate Resilience in the Pacific, hosted by IDRC.

Participants in the conference were:

- Dr. Mélanie Robertson, Senior Program Specialist, IDRC
- Professor Jimaima Lako, Pro-Vice-Chancellor (Learning and Teaching), Fiji National University
- Dr. Veronica Lo, Senior Policy Advisor, IISD
- Justin Hunter, Chief Executive Officer of J. Hunter Pearls
- Dr. Daykin Harohau, Senior Researcher, WorldFish
- Shalendra Singh, Principal Fisheries Officer Central Division, Ministry of Fisheries
- Niran Warin, Business Development Manager and Innovation, FutureFish
- Dr. Sanghamitra Nayak, Aquaculture Professional and Researcher, NACA.

Participants of the AQUA-Pearl Stakeholder Workshop in Suva, Fiji, November 25, 2024 / Credit: IISD

Agenda overview

The workshop was facilitated by the members of the project team: Dr. Chinthaka Hewavitharane, SPC; Paul van Nimwegen, WCS; and Dr. Veronica Lo, IISD. The agenda began with opening remarks from Dr. Alok Kalla, Ministry of Fisheries and Forests, and David Fournier, GAC. Dr. Mélanie Robertson, Senior Program Specialist, IDRC, provided an overview of the Nature-based Climate Solutions in Aquaculture Food Systems in Asia-Pacific (AQUADAPT) Consortium. Project partners and collaborators; Representatives of IISD,

WCS, SPC, and J. Hunter Pearls all presented their roles in the project, and Dr. Sanghamitra Nayak (NACA) and Niran Warin (FutureFish) presented their knowledge-brokering project under AQUADAPT. (See Appendix for the full agenda).

Multiple opportunities were built into the agenda to give participants the opportunity to discuss nature-based aquaculture, the opportunities and barriers, policy pathways, and how the stakeholders see their role in supporting nature-based aquaculture in Fiji.

Opening Remarks

Dr. Alok Kalla discussed the global imperative for sustainable food sources as populations continue to grow. He acknowledged that commercial aquaculture practices have often come with environmental costs, such as pollution, habitat destruction, and overfishing. Moreover, large-scale intensive aquaculture often relies on polluting, unsustainable feed derived from wild-caught fish, thus depleting ecosystems. He noted the promise of nature-based aquaculture, as it mimics natural processes in ecosystems and can be integrated with conservation efforts to create sustainable and resilient food systems. Dr. Kalla underscored the need to restore critical habitats, such as mangroves, seagrass beds, and coral reefs, as they support a wide range of marine life while filtering water, protecting coastlines from erosion, and sequestering greenhouse gases. He concluded by calling on participants to embrace nature-based aquaculture and strive for a world where aquaculture is a force for good, nourishing communities while preserving our precious marine ecosystems.

Dr. Alok Kalla, Ministry of Fisheries and Forests / Credit: IISD

David Fournier noted his excitement due to the large number of partners included in this project because cooperation and coordination are needed to solve complex problems. He explained the two priorities in the Indo-Pacific commitment and increased presence—gender equality and climate change—and noted how this project is an example of how both priorities

can be addressed. He also brought up the importance of doing work that builds resilience in fisheries, as the impacts of climate change may be catastrophic.

David Fournier, Global Affairs Canada / Credit: IISD

Outcomes

AQUADAPT Network

Dr. Mélanie Robertson, Senior Program Specialist, IDRC: AQUADAPT: Nature-based Climate Solutions in Aquaculture in Asia-Pacific (2023–2027)

The focus of this jointly funded (IDRC and GAC) partnership is addressing intertwined critical challenges of climate change, biodiversity loss, and food insecurity through applied research on nature-based solutions in aquaculture for all genders and marginalized groups in Southeast Asia and the Pacific region. The five approaches to advancing nature-based solutions in aquaculture were explained as

- creating an evidence base on nature-based solutions (NbS)
- coordinating knowledge management and learning
- facilitating transdisciplinary collaboration through a portfolio approach
- strengthening capacity for socially inclusive NbS
- catalyzing cross-sectoral partnerships through knowledge brokerage

Dr. Robertson then highlighted some of the key outcomes of the first year of the program, which included two peer learning events, six feature stories on the IDRC website, two peer-reviewed articles, and presentations and panels at seven international conferences. She also mentioned participation in the aquatic foods side event at the 29th UN Climate Change Conference (COP 29). Lastly Dr. Robertson described the upcoming milestones for the AQUADAPT consortium, including a third peer learning event in Thailand, participation in Adaptation Futures 2025, the Aquaculture Innovation event in Thailand, research featured at the 3rd Annual Food and Agriculture Organization of the United Nations/NACA High-Level Meeting for Aquaculture Transformation, a program newsletter, and a knowledge management platform.

Dr. Sanghamitra Nayak (NACA) and Niran Warin (FutureFish): Knowledge brokering for NbS in aquaculture transformation in Asia-Pacific & Supporting the Aquaculture Innovation and Investment Hub (AIIH)

Dr. Sanghamitra Nayak (NACA) opened this presentation with a description of the AQUADAPT Project, which aims to amplify and extend AQUADAPT learning, improve understanding of stakeholder needs, and collaboration with the AQUADAPT partners and program to expand social inclusive NbS. The three project milestones are national innovation and investment baselines, private sector engagement and scoping, and an aquaculture innovation and investment hub.

The three country focal points are Fiji, Thailand, and the Philippines. The ultimate goals are to promote and accelerate aquaculture transformation in Asia-Pacific through a functional ecosystem of partners and create the AIIH.

The project's selected NbS technologies are renewable energy (solar and hydro), geomembrane pond liners, biofloc technology, unfed aquaculture in Savusavu, and unfed mangrove oyster in central coastal aquaculture.

Next, Niran Warin (FutureFish) detailed the second part of the project, the Private Sector Engagement Study, which is related to the AIIH. The key focus of the project is the identification and assessment of aquaculture innovations with a stronger emphasis on NbS to develop strategies that will encourage investments in these areas. One of the activities is private sector engagement research. The results from the study will be further developed to contribute to the AIIH development, bringing stakeholders together into the hub.

Lastly, Niran discussed that an upcoming milestone of this AQUADAPT project is an innovation event taking place in Thailand in 2025. This event will unite AQUADAPT stakeholders and support private sector uptake of AQUADAPT research on nature-based aquaculture.

Dr. Sanghamitra Naya, NACA / Credit: IISD

AQUA-Pearl

Dr. Veronica Lo, IISD: Introduction to AQUA-Pearl

Dr. Lo introduced AQUA-Pearl and its overall objectives. She gave a broad overview of activities that different partners are responsible for and discussed progress in the first year of the project: a workplan has been established, a private sector partner (J. Hunter Pearls) formally engaged, equipment procured, and a site established in one community. Preparatory work for quality-assurance testing (for waters around the oyster farms and for the oysters themselves) has been completed, and a contractor has started work on the Fiji Pearl Oyster marketing website. Dr. Lo also noted participation in peer learning events as part of the wider AQUADAPT network described by IDRC, where the AQUA-Pearl team was able to strengthen relationships, explore different framings of nature-based aquaculture, and discuss enabling factors for project success.

Justin Hunter, J. Hunter Pearls: Innovation for a blue economy in Fiji

This presentation discussed the importance of relationship building in Fiji with dual ownership of fishing rights between traditional owners and the government. Justin spoke

about his experiences with working with Indigenous communities through his work and noted the importance of working with Indigenous communities in a respectful and mutually beneficial way. Justin noted the three priority areas for J. Hunter Pearls: preservation of marine ecosystems, social and economic sustainability, and creating internationally recognized culinary products. Lastly, Justin discussed the role of the private sector within aquaculture and how creating income for communities is key for creating stewards of nature and not just another resource extraction scheme.

Kevin Ellard, SPC: Quality Assurance (recorded)

This presentation began with a discussion around the unique testing requirements for oysters and the history of the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) program. Kevin then detailed the testing requirements for J. Hunter Pearls for the AQUA-Pearl project, with the ultimate goal of the testing leading to a health certification to sell the oysters domestically and internationally. Kevin described some of the challenges associated with running a testing and quality-assurance program in Fiji, including funding and laboratory services: some of the testing is not possible within Fiji, and the export of tissue to other countries is complicated.

Paul van Nimwegen, WCS: Rights and Biodiversity

Paul started his presentation by describing how WCS works using a community-based approach, which it will be using for its role within the AQUA-Pearl project. This approach utilizes a free, prior, and informed consent process to engage with communities in Fiji. This approach involves a process where community members are provided as much relevant information as possible about the risks and benefits of a proposed partnership. Equipped with this knowledge, they can then make a decision as a community without outside influence.

Paul also discussed WCS's approach to enhancing biodiversity with a systems approach, working within catchments—not just the water where the aquaculture is taking place—and using community-led watershed planning and management. Paul then discussed how WCS monitors its projects, including monitoring programs for coral health and fish biomass.

Nature-Based Aquaculture

Dr. Veronica Lo, IISD, provided a brief introduction to nature-based aquaculture and led the participants in a group discussion in plenary, followed by a World Café session where participants continued to discuss aspects of nature-based aquaculture in small groups. She discussed the origins of NbS and related terms and went over the concepts of ecosystem approaches to aquaculture, regenerative aquaculture, and restorative aquaculture. Dr. Lo explained how the AQUA-Pearl team conceptualized nature-based aquaculture, as the "process of creating food resilience using inclusive and sustainable aquaculture practices that are restorative (direct ecological benefit) and help ensure sustainable livelihoods for coastal communities." She noted that pearl oyster aquaculture farms implemented under AQUA-

Pearl is considered a type of NbS because filter-feeding oysters improve water quality, oyster lines attract biodiversity, and watershed restoration upstream will enhance biodiversity in the long term. Social benefits include livelihoods for women and youth, adaptation to fisheries losses by supplementing income for coastal communities, and the provision of alternative protein sources.

"The AQUA-Pearl team conceptualized nature-based aquaculture, as the process of creating food resilience using inclusive and sustainable aquaculture practices that are restorative (direct ecological benefit) and help ensure sustainable livelihoods for coastal communities."

Participants went through a Mentimeter exercise, discussing different aquaculture scenarios and whether those constitute nature-based aquaculture. They then discussed concepts related to nature-based aquaculture in three World Café groups.

Group 1: What are the challenges, opportunities of nature-based aquaculture in Fiji?

- Marketing and branding are important for these projects, particularly as NbS and aquaculture can be interpreted so differently by different groups.
- Leveraging NbS/aquaculture to brand products creates a connection between nature and business that people may connect to.
- Capacity building needs to happen at agency and community levels to ensure longevity of projects; creating stewardship.
- Discussion about if it's possible to adopt a NbS to a particular community if capacity is not built in.
- Funding is a problem and an opportunity.
- Changing the mindset: traditional ways can be adaptive, need to be open to new ways of operating.

Group 2: How does nature-based aquaculture relate to:

- climate resilience
    - aquaculture as a form of mitigation and adaptation
- community welfare (Gender equality as part of that)
    - resources for community development opportunities

    - there is a cultural element, the facilitation of continuation/passing along of Traditional Ecological Knowledge (TEK)
    - economic opportunities that may help keep youth in communities
- biodiversity conservation and restoration
    - maintenance and conservation of biodiversity is built into these initiatives

Prashneel Chandra, Ministry of Fisheries and Forests / Credit: IISD

Group 3: How do other drivers (pollution, land-use change, agriculture) affect the implementation and scaling up of nature-based aquaculture?

- Land degradation and mismanagement (rubbish, pollution, landfills)
- Downstream waste, impacts
- Solutions—better policies

Round Table Discussions

In the afternoon, workshop participants tackled questions about policy alignment and stakeholder support for nature-based aquaculture. Plenary discussion topics included the following:

How does nature-based aquaculture support policy alignment?

The Ministry of Fisheries and Forests claimed this is a priority area, particularly within the area of licensing (a sense of ownership) and safety.

- Licensing involves its own set of challenges and strategies, including a need for a robust monitoring and assessment regime.
- NbS would fit into the Climate Change Act, as it has long-term impacts.

What are the barriers to the widespread implementation of nature-based aquaculture in Fiji?

- There are concerns about climate washing in including climate into every policy without meaningful thought.
- Worry about the instrumentalizing of nature.

World Café Session / Credit: IISD

How do stakeholders see their role in supporting nature-based aquaculture initiatives/programming?

The Fiji Government plans on developing an NbS policy with an added component of ecosystem-based adaptation (EbA) and has held two workshops throughout the year to define what NbS is for Fiji; however, discussions on the NbS policy have come to a halt due to a change in executive management within the climate change division of the Fiji Government.

Participants reflected on and identified concrete needs to facilitate their support for upscaling NbS in aquaculture:

- research on nature-based aquaculture to inform policy
- open data and information on parallel initiatives
- evidence-based approaches in site development, markets, and socioeconomic assessments
- relevant governance and management mechanisms

- seed funding for pilot projects
- capacity building of community-based farmers
- whole-of-government approach for operationalizing and institutionalizing elements of the 5-year aquaculture policy
- community engagement
- policy support and alignment
- capacity building on seafood safety, good hygiene, and post-harvest handling
- research and development providing evidence and a scientific base for sustainable aquaculture through NbS.

On behalf of the AQUA-Pearl project team, Dr. Veronica Lo IISD thanked participants, speakers, and facilitators for a productive day of discussions on AQUA-Pearl and nature-based aquaculture.

The AQUA-Pearl team visits the Vatulele community / Credit: WCS

Appendix

Agenda

November 25, 2024, 08h30–16h30, Holiday Inn, Banyan Conference Room, Suva, Fiji.

Objectives

- Introduce the AQUA-Pearl project to stakeholders in Fiji and its overall objectives and activities.
- Discuss nature-based aquaculture and related approaches, and its contribution to multiple policy objectives on climate adaptation, biodiversity conservation, and gender equality, in addition to trade, health, and a sustainable and inclusive blue economy.
- Strengthen support among policy-makers for nature-based approaches to aquaculture to achieve joint policy objectives on biodiversity conservation, climate change adaptation, gender equality, food and livelihoods security, and economic development.

Table 1. Agenda

Time	Agenda item	Speaker/facilitator
8:30	Registration & morning refreshments	
9:00	Welcome	Ministry of Fisheries
9:10	High-level remarks	David Fournier, Head of Cooperation for the Pacific Mission, Global Affairs Canada
9:20	Workshop introduction and agenda overview	Dr. Chinthaka Hewavitharane, SPC
9:30	Round table of introductions Short group exercise on aspirations for the event	Paul van Nimwegen, WCS & Georgia Exell, IISD
9:45	Introduction to AQUADAPT	Dr. Mélanie Robertson, IDRC
10:00	AQUA-Pearl: Introduction to project and its goals and objectives	IISD

Time	Agenda item	Speaker/facilitator
10:15	Innovation in blue economy approaches: Research and innovation in sustainable nature-based aquaculture– role of AQUA-Pearl and needs for the fisheries and aquaculture sector	Justin Hunter, J. Hunter Pearls
10:30	Q&A, Discussion	
10:45	BREAK	
11:00	Knowledge brokering for sustainable aquaculture: The NACA project	Dr. Sanghamitra Naya, NACA Niran Warin, FutureFish
11:10	Nature-based aquaculture: Concepts and questions: Overview of nature-based aquaculture–concepts, approaches and frameworks	Dr. Veronica Lo, IISD
11:30	World Café 1. What are the challenges, opportunities of nature-based aquaculture in Fiji? 2. How does nature-based aquaculture relate to • Climate resilience • Community welfare (including gender equality) • Biodiversity conservation & restoration 3. How do other drivers (pollution, land-use change, agriculture) affect implementation and scaling up of nature-based aquaculture?	1. Dr. Chinthaka Hewavitharane, SPC 2. Paul van Nimwegen, WCS 3. Prashneel Chandra, Ministry of Fisheries and Forests
12:30	Report-backs, discussion on how AQUA-Pearl can integrate findings from discussions	Dr. Veronica Lo
12:45	LUNCH	
14:00	Rights and biodiversity • Community-based and rights-based approaches in AQUA-Pearl • Current status of biodiversity in target systems, and approaches to restoration and complementarity with other initiatives • Approach to monitoring net biodiversity increase	Paul van Nimwegen, WCS
14:15	Shellfish safety in Fiji and market research • Role of AQUA-Pearl in community trainings	Kevin Ellard, SPC

Time	Agenda item	Speaker/facilitator
	• Developing safety and quality-assurance guidelines for the shellfish aquaculture industry	
14:30	Q&A, Discussions	
14:45	Round Table Discussions Part A: How does nature-based aquaculture support policy alignment?	Dr. Chinthaka Hewavitharane, SPC
15:10	BREAK	
15:30	Round Table Discussion Part B: • What are the barriers to the widespread implementation of nature-based aquaculture in Fiji? • How do stakeholders see their role in supporting nature-based aquaculture initiatives/programming?	Paul van Nimwegen, WCS
16:00	Next steps, Wrap-up, and Thanks	Dr. Veronica Lo

Participants

Table 2. List of participant names, organizational affiliation, and stakeholder categories assigned

Name	Organization	Stakeholder category
Dr. Razia Rahid	Fiji National University	Academia
Daykin Harohau	Researcher, Solomon Islands	Academia
Esaroma Ledua	University of the South Pacific	Academia
Shirleen Bala	University of the South Pacific	Academia
Justin Hunter	J. Hunter Pearls	Business
Odette Hazelman	J. Hunter Pearls	Business
David Fournier	GAC	Government
Dr. Mélanie Robertson	IDRC	Government
Epi Batibasaga	Ministry of Fisheries and Forests	Government
Prashneel Chandra	Ministry of Fisheries and Forests	Government
Shalendra Singh	Ministry of Fisheries and Forests	Government
Sanjeshni Devi	Ministry of Health	Government
Ateca Rounds	Ministry of Trade	Government

Name	Organization	Stakeholder category
Dr. Chinthaka Hewavitharane	SPC	Non-governmental organization (NGO)
Niran Warin	FutureFish	NGO
Georgia Exell	IISD	NGO
Izhaar Ali	IISD	NGO
Dr. Veronica Lo	IISD	NGO
Dr. Sanghamitra Nayak	NACA	NGO
Paul van Nimwegen	WCS	NGO
Milika Tabua	WCS	NGO
Dr. Alok Kalla	Ministry of Fisheries and Forests	Government
Diana D	Ministry of Fisheries and Forests	Government
Isoe Karoiwaga	WCS	NGO
Milika Tabua	WCS	NGO
Isikeli Odro	Ministry of Fisheries and Forests	Government
Monishka Pratap	Fiji Village	Press

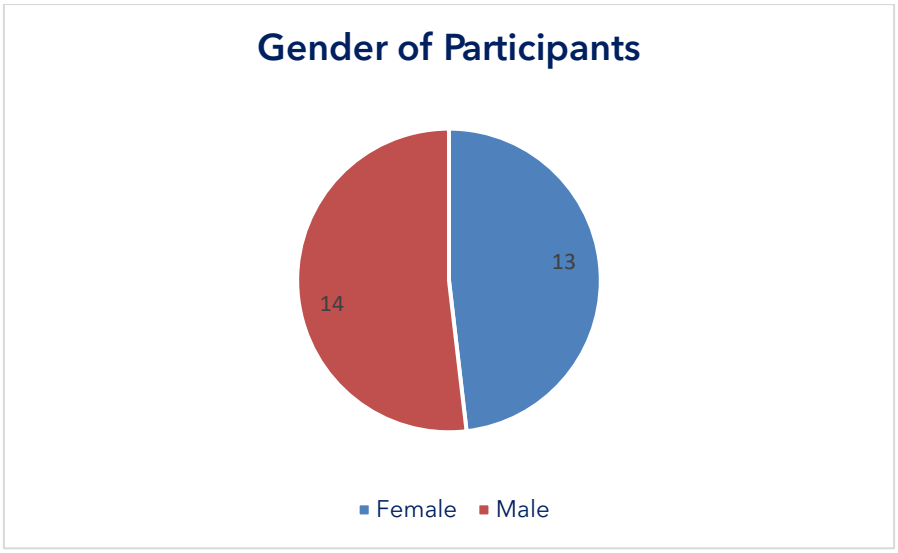


Figure 1. Gender distribution of workshop participants

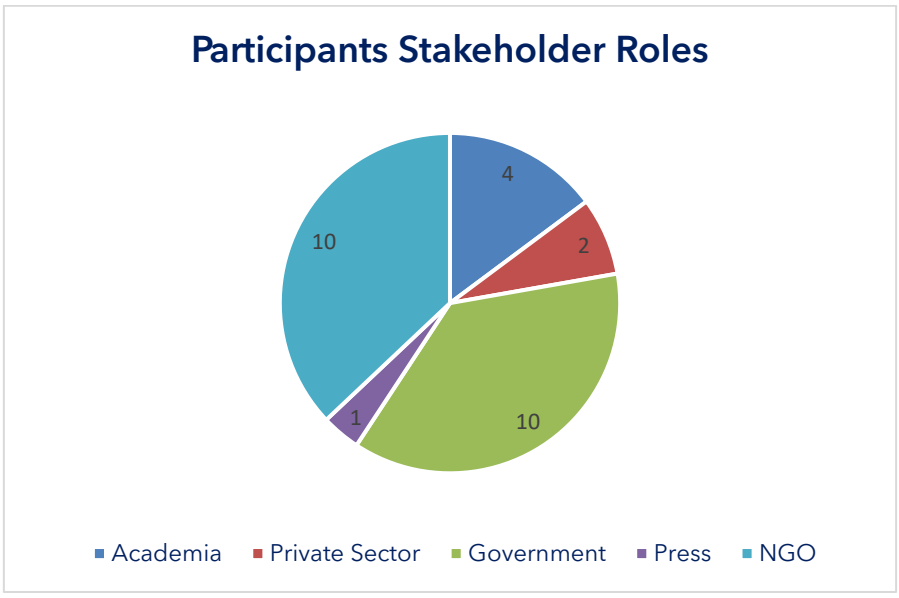


Figure 2. Stakeholder roles of workshop participants

Media Coverage

Sigavolavola, J. (2024, November 28). AQUA-Pearl targets villages. *The Fiji Village*.

(see also video 1 and video 2).

Mentimeter Results

Attached.

Presentations

Attached.

Published by the International Institute for Sustainable Development

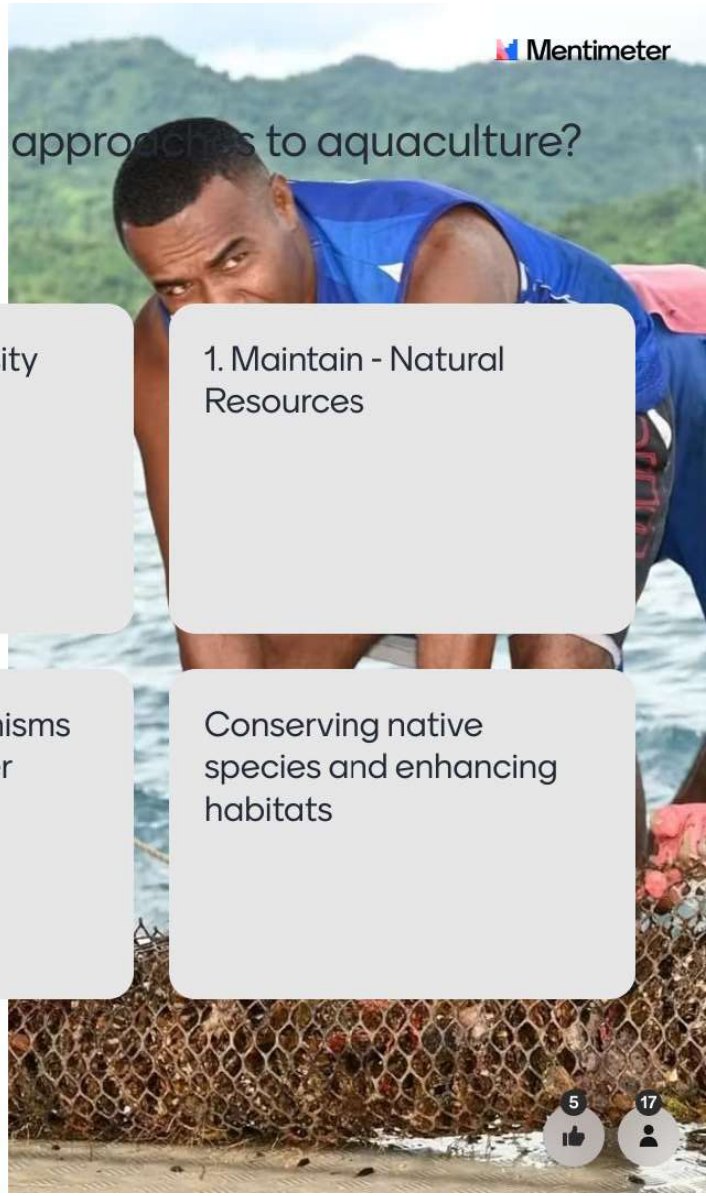
Funded by

Mentimeter

Instructions

5

What kinds of ecological benefits can be gained by nature-based approaches to aquaculture?



Biodiversity is not harmed

Ensured environmental integrity

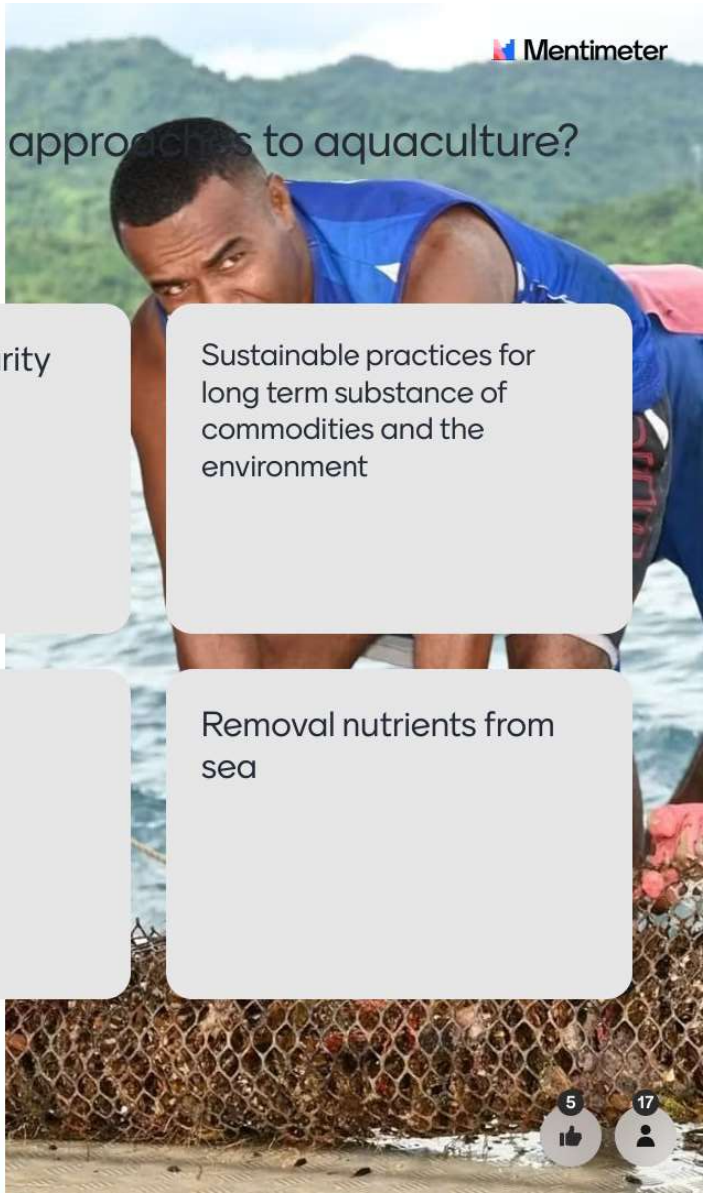
Increased biodiversity

Healthier marine environment!

Ecological restoration

Interaction of organisms enhance each other (interdependence).

What kinds of ecological benefits can be gained by nature-based approaches to aquaculture?



It can reduce the carbon footprint, enhance the food security .

Biodiversity enhancementWater quality improvement

Improved food security

Sustainable practices for long term substance of commodities and the environment

Postive environmental benefitsSustainable aquaculture Improve aquaculture productivity

Diseases risk management

Reduced carbon footprint

Removal nutrients from sea

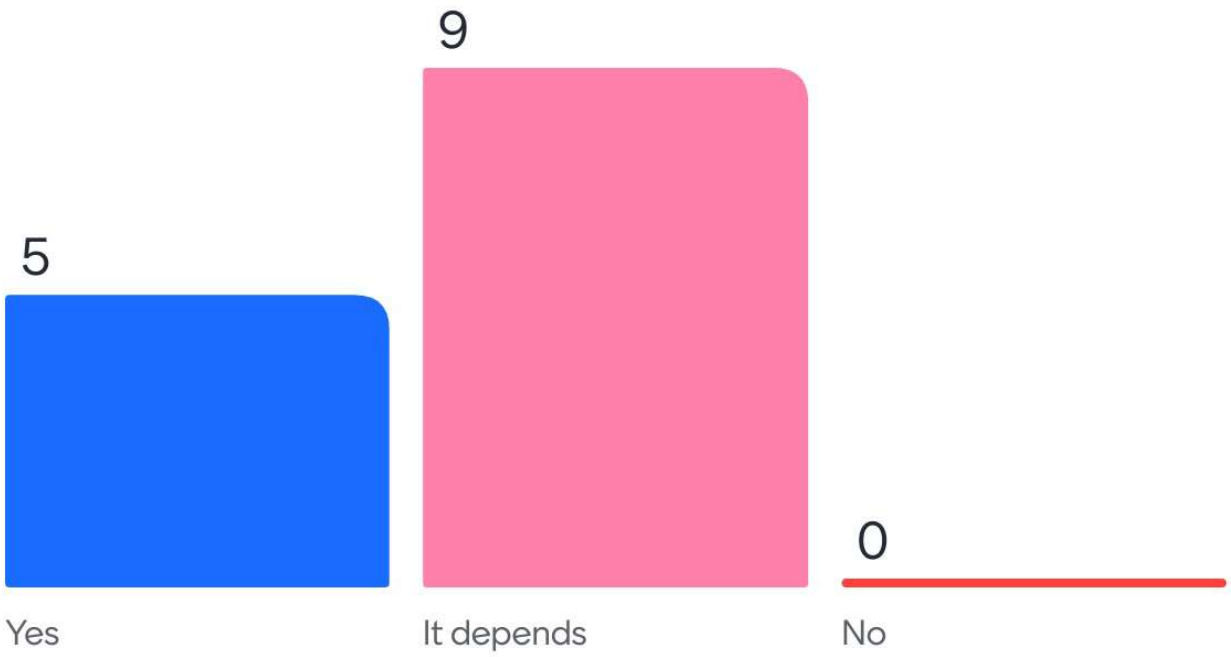
What kinds of ecological benefits can be gained by nature-based approaches to aquaculture?

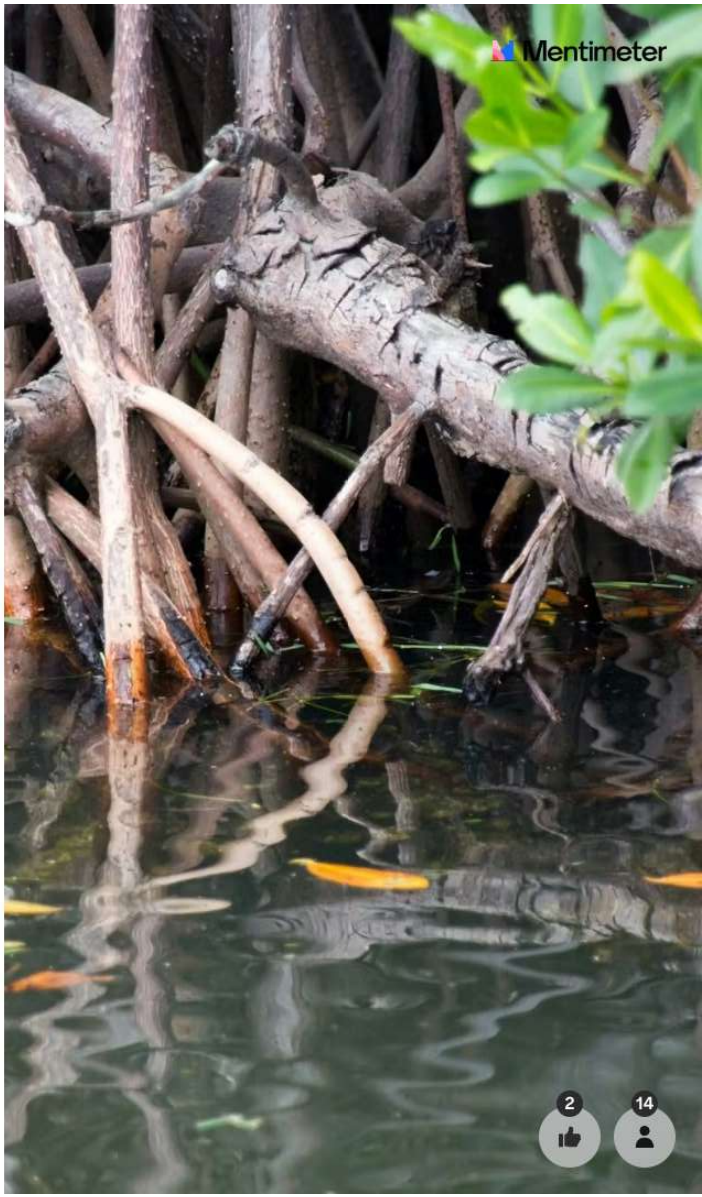
Communities taking ownership

What societal challenges can nature-based approaches to aquaculture address?

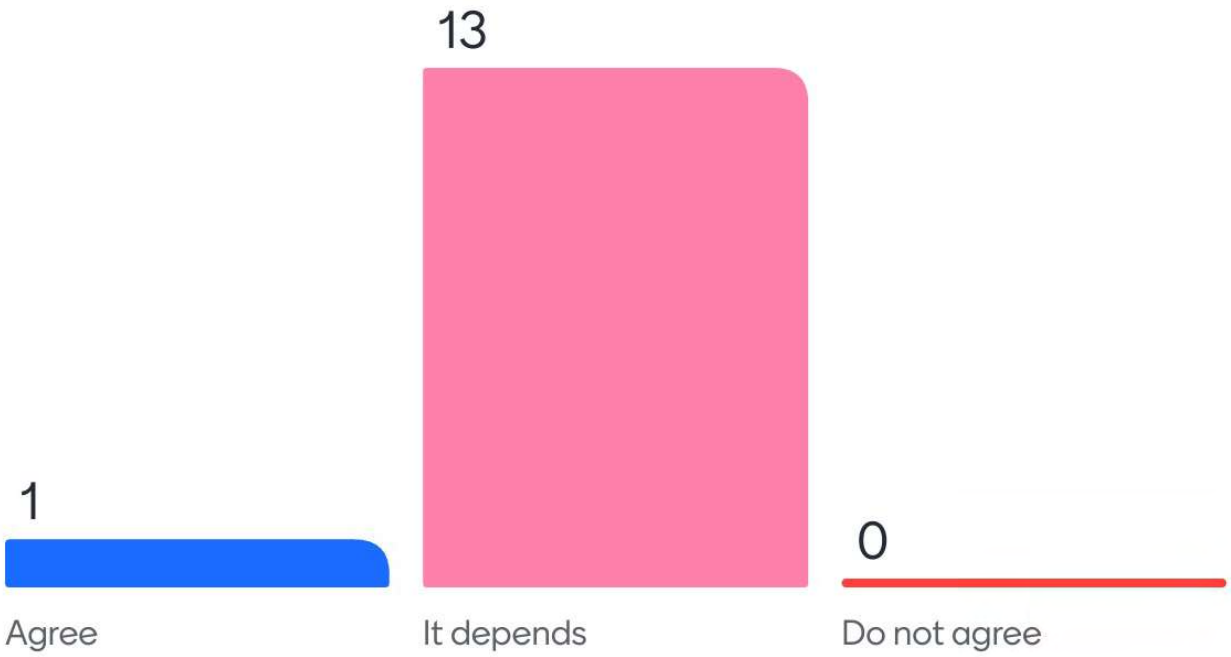
23 responses

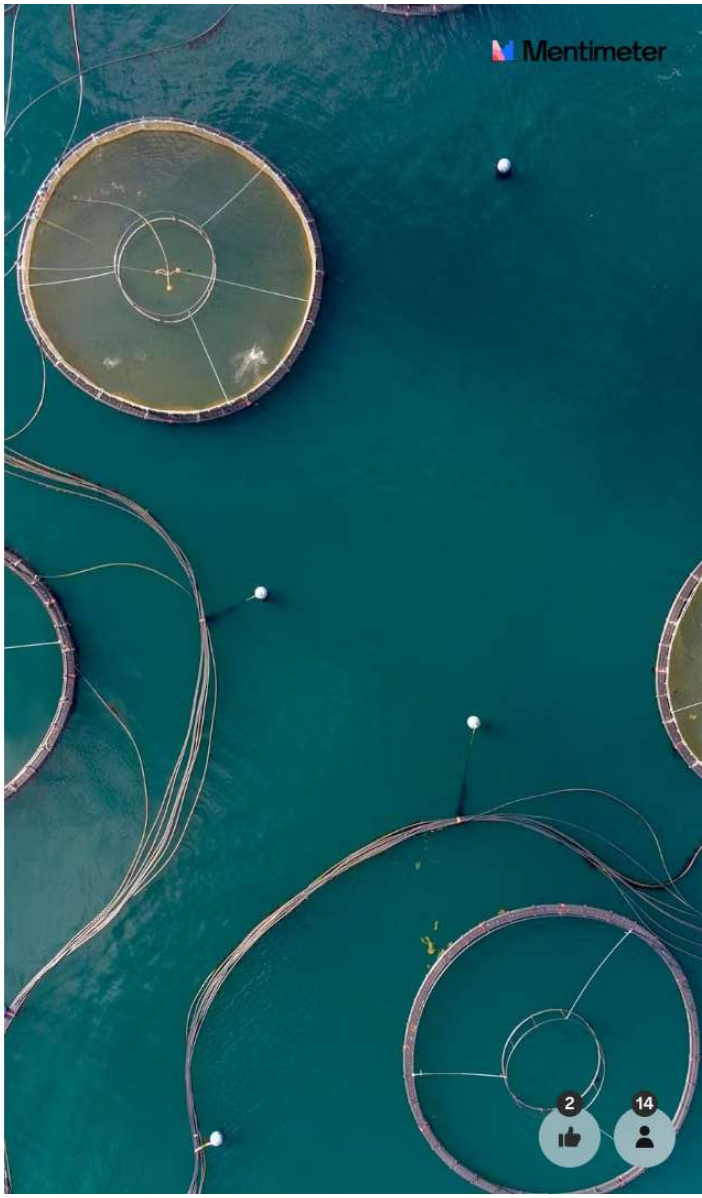
Restoring degraded mangrove ecosystems following intensive shrimp farming can be a nature-based approach to aquaculture.



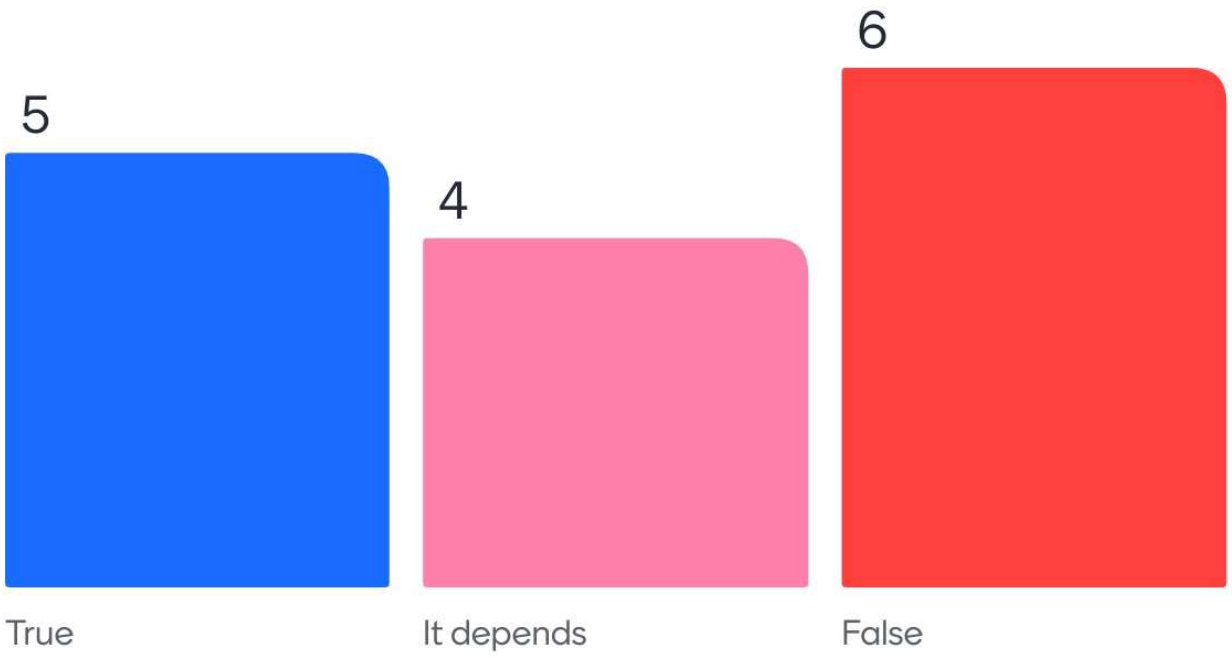


Using sustainable feed (like non-GMO soy) in aquaculture makes it a nature-based approach .





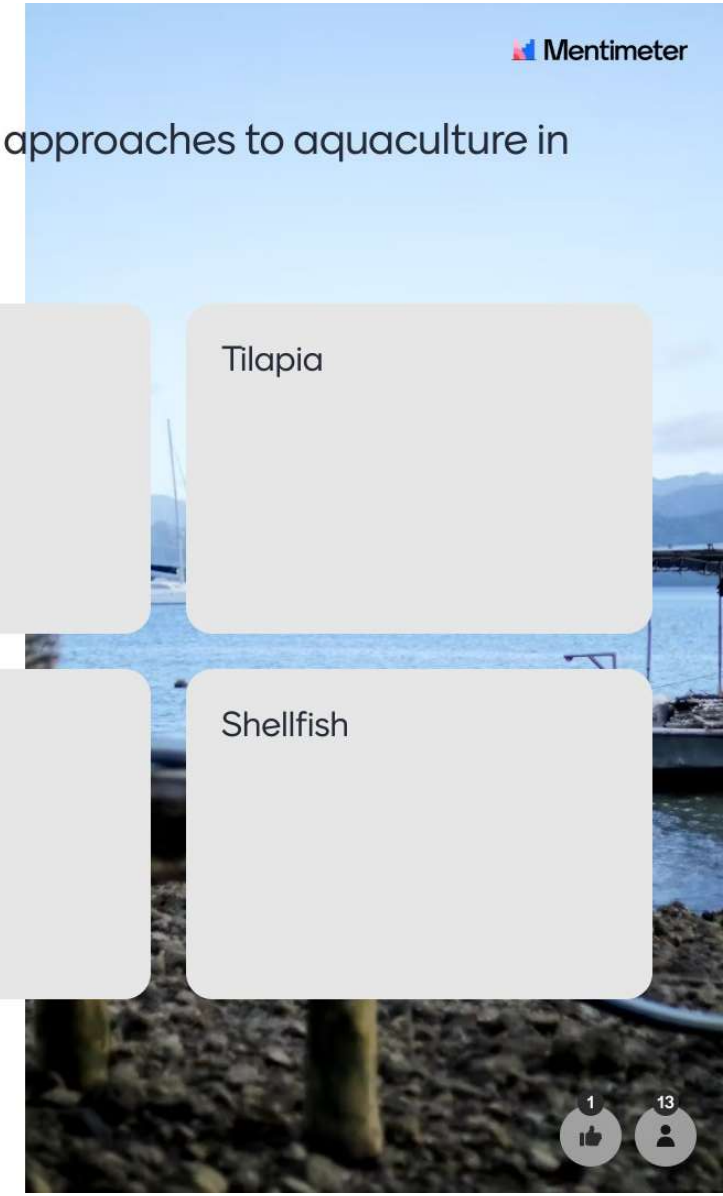
Unfed aquaculture (bivalves, seaweed) is the only true kind of nature-based aquaculture.



Mentimeter

What species or systems would be most promising for nature-based approaches to aquaculture in Fiji?

- Black lip pearl oysters
- Giant Clams
- Pearl oysters
- Tilapia
- Edible Pearl Oyster, & Managrove Oyster
- Seaweed farming
- Seaweed
- Shellfish



Mentimeter

What species or systems would be most promising for nature-based approaches to aquaculture in Fiji?

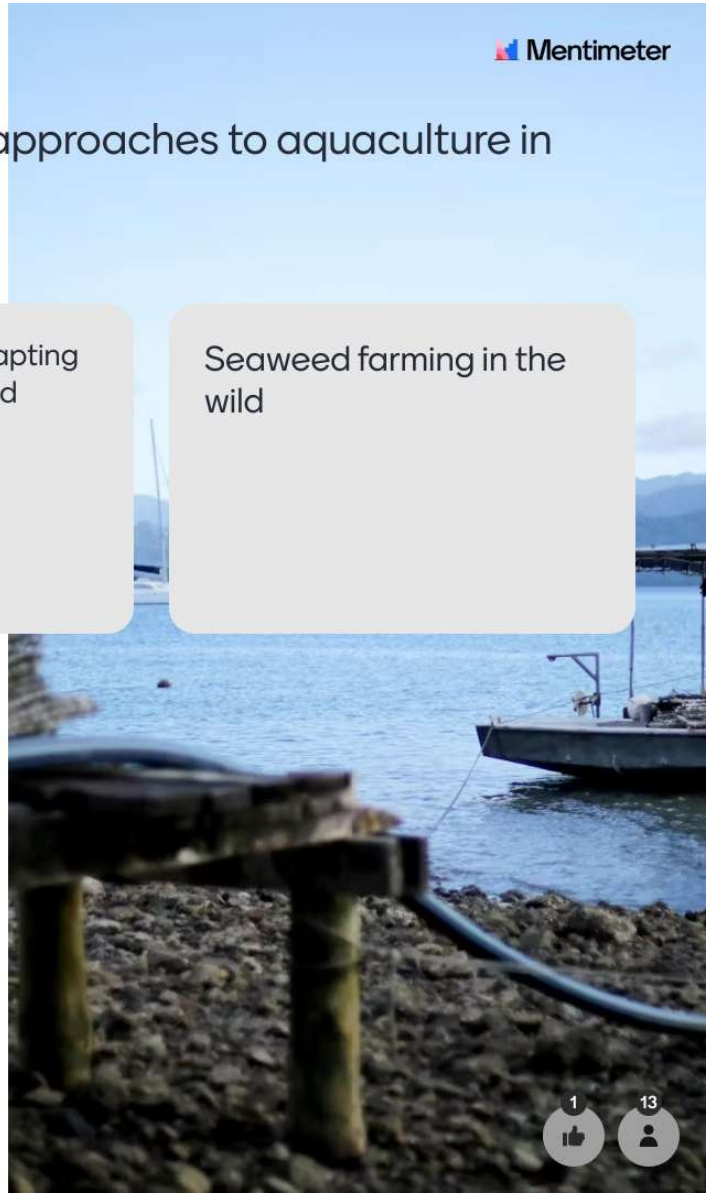
Sea ranching for groupers and sea cucumbers

Marine environments with improved monitoring

Renewable energyAdapting to climate change/food security Mollusks

Seaweed farming in the wild

Seaweed



My favourite seafood is....

18 responses

1

Agenda – Morning

9:00	Welcome & Introductions	MoFF, GAC, SPC, WCS
9:45	Introduction to AQUADAPT	IDRC
10:00	AQUA-Pearl: Revisiting objectives, activities & outputs	IISD
10:15	Innovation for a blue economy in Fiji	JHP
10:45	*Break*	
11:00	Knowledge Brokering for Sustainable Aquaculture: The NACA Project	NACA & FutureFish
11:10	Nature-based Aquaculture: Concepts & Questions	IISD
11:30	World Café	All
13:00	*Lunch*	

2

Agenda – Afternoon

14:00	Rights & Biodiversity	WCS
14:15	Shellfish safety in Fiji & market research	SPC
14:45	Roundtable Discussion Part A	SPC
15:10	*Break*	
15:30	Roundtable Discussion Part B	WCS
16:00	Next steps, Wrap-up, & Thanks	IISD

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4


AQUA-Pearl Stakeholder Inception & Workshop
25 November 2024
Project partners
IISD
Pacific Community Communauté du Pacifique
Wildlife Conservation Society
Funders
Canada
IDRC · CRDI
Canada

5


Workshop Introduction

6


Workshop Participant Introductions

7


Introduction to AQUADAPT
Dr. Melanie Robertson, IDRC

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IDRC · CRDI
In partnership with Canada
AQUADAPT
Nature-based Climate Solutions
in Aquaculture in Asia-Pacific (2023-2027)
Stakeholder Meeting – November 26, 2024

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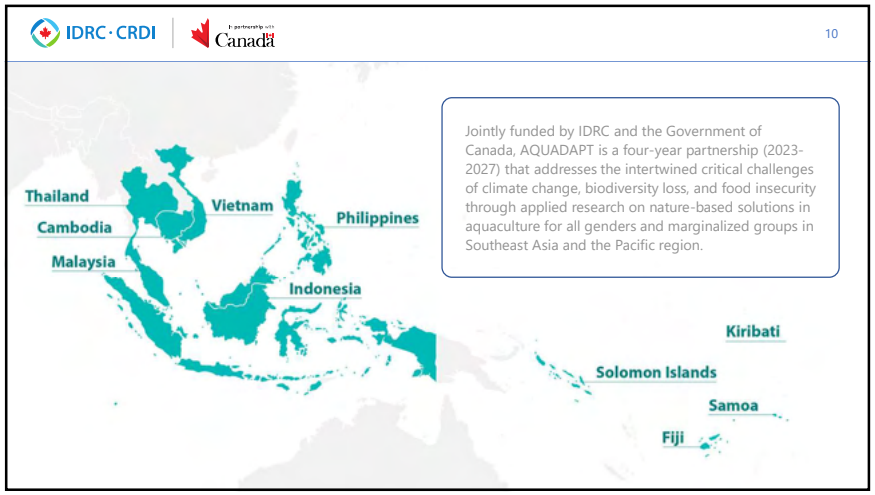
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10
Thailand
Cambodia
Malaysia
Vietnam
Philippines
Indonesia
Kiribati
Solomon Islands
Samoa
Fiji
Jointly funded by IDRC and the Government of Canada, AQUADAPT is a four-year partnership (2023-2027) that addresses the intertwined critical challenges of climate change, biodiversity loss, and food insecurity through applied research on nature-based solutions in aquaculture for all genders and marginalized groups in Southeast Asia and the Pacific region.

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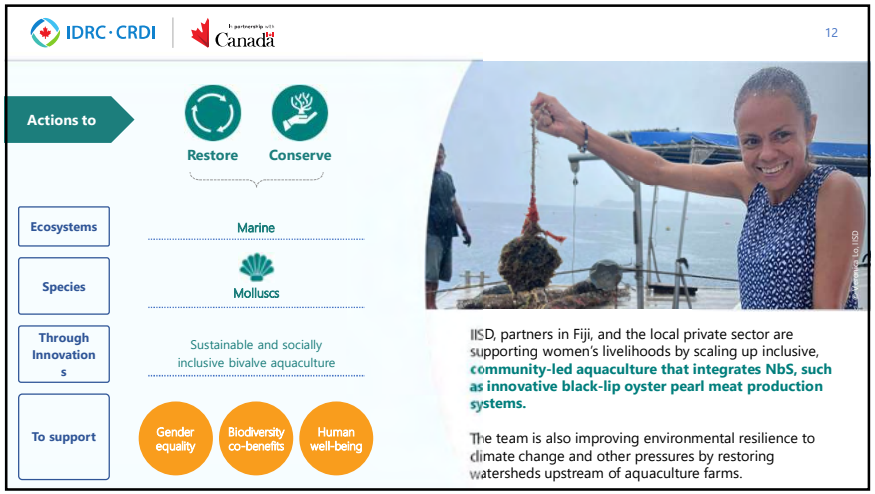
ACTION TO
Protect
Conserve
Restore
Sustainably manage
ECOSYSTEMS
Freshwater
Inland aquaculture production, including freshwater species cultivation
Marine
Marine aquaculture production, including nearshore (e.g., coastal) and offshore saltwater species cultivation
SPECIES
Fish
Crustaceans
Molluscs
Algae
BENEFITS
Climate resilience
Ecosystems services
Human well-being
Gender equality and social inclusion
Food security
Biodiversity benefits
Animal health

11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Actions to
Restore
Conserve
Ecosystems
Marine
Species
Molluscs
Through Innovations
Sustainable and socially inclusive bivalve aquaculture
To support
Gender equality
Biodiversity co-benefits
Human well-being
IISD, partners in Fiji, and the local private sector are supporting women's livelihoods by scaling up inclusive, community-led aquaculture that integrates NbS, such as innovative black-lip oyster pearl meat production systems.
The team is also improving environmental resilience to climate change and other pressures by restoring watersheds upstream of aquaculture farms.

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AQUADAPT's five approaches to advancing nature-based solutions in aquaculture

1. **Creating an evidence base on NbS**
   11 projects with 30+ action research pilots and inventories of solutions to document NbS benefits and trade-offs
2. **Coordinating knowledge management and learning**
   To disseminate findings, track progress, and measure impact
3. **Facilitating transdisciplinary collaboration through a portfolio approach**
   To develop a shared vision of socially inclusive NbS
4. **Strengthening capacity for socially inclusive NbS**
   To address gender inequality and social exclusion along the aquaculture value chain
5. **Catalyzing cross-sectoral partnerships through knowledge brokerage**
   To promote adoption and scaling of socially inclusive NbS in aquaculture

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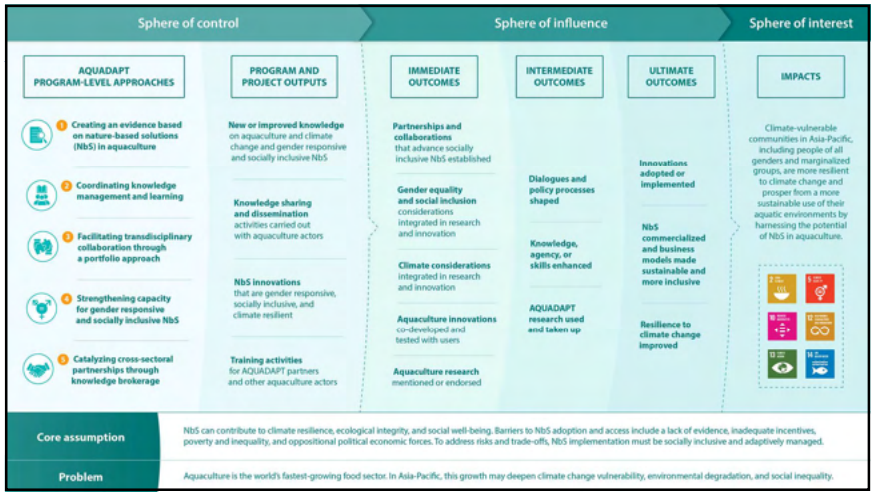

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AQUADAPT Program Highlights

November 2023-November 2024

2 peer-learning events with entire cohort
- May 2024, virtual
- July 2024, Penang, Malaysia

6 feature stories on the IDRC website

2 peer-reviewed articles published

Presentations and panels at **7 international conferences**

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- Participation in aquatic foods **side event at COP29**, Baku, Azerbaijan

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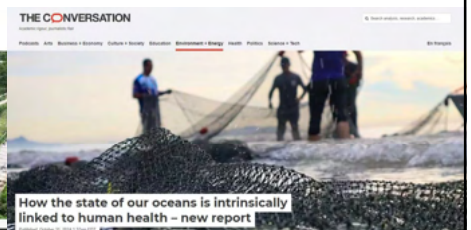
Chiang Mai University's AQUADAPT-Nature project featured in *Quebec Science* article: "Thai aquaculture: Between science and tradition."



WorldFish researcher Prof. Eddie Allison discusses the importance of ocean ecosystems in *The Conversation*.

17

Upcoming milestones

Peer Learning #3 in conjunction with Gender in Aquaculture and Fisheries Section of Asian Fisheries Society Conference (GAFS9), *Bangkok, Thailand, October 2025*

Adaptation Futures, *New Zealand, October 2025*

IDRC-sponsored Aquaculture Innovation Event organized by NACA and FutureFish in *Bangkok, Thailand, March 2025*

AQUADAPT research featured at 3rd Annual FAO/NACA High-Level Meeting for Aquaculture Transformation, *Shanghai, China, April 2025*

1st program newsletter *(coming in December)*

Knowledge Management Platform *(coming in 2025)*

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Thank you!

Email: aquadapt@idrc.ca

https://idrc-crdi.ca/initiative/aquadapt

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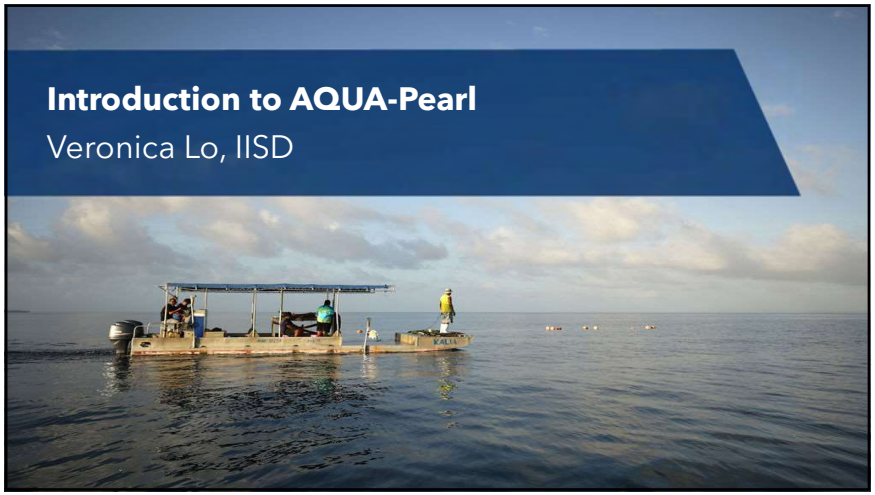
Introduction to AQUA-Pearl

Veronica Lo, IISD



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AQUA-Pearl at-a-glance

Enhance community & ecosystem resilience to climate change in Fiji by upscaling gender-responsive & inclusive community-led nature-based approaches to aquaculture

Village households (~150) & community members, policymakers, private sector, other stakeholders

JHP, IISD, WCS, SPC, MoFF
Funded by IDRC & Global Affairs Canada
Part of IDRC's AQUADAPT-SEAPAC consortium

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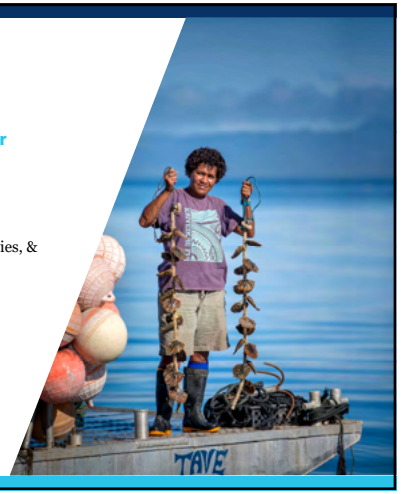
AQUA-Pearl Objectives

1. **Understand current & future climate risks for aquaculture in Fiji & role of gender-responsive nature-based approaches**

- Report detailing climate risks, differentiated vulnerabilities, & opportunities for integration of NbS



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AQUA-Pearl Objectives

2. **Plan & design a community-led aquaculture initiative, integrating community & stakeholder values & preferences**

- Development of workplan with detailed activities and timeline
- Community consultations
- Co-development of gender-responsive pearl farm implementation guide

23

AQUA-Pearl Objectives

3. **Implement the aquaculture initiative & strengthen its resilience by integrating NbS**

- Set-up of pearl oyster farms
- Restoration
- Quality assurance
- Sustainability

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AQUA-Pearl Objectives

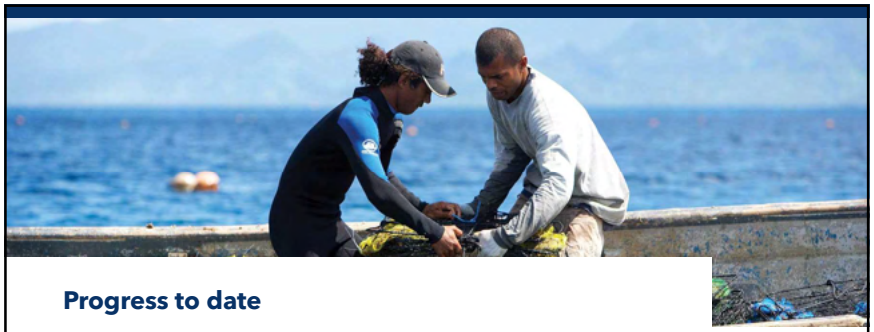
4. **Identify entry points to aligning fisheries & aquacultural development plans with national adaptation, biodiversity & development priorities**
   - Technical brief for policymakers: recommendations for mainstreaming policy objectives into aquaculture sectoral plans and policies
   - Technical brief for private sector: Role of private sector and other stakeholders in scaling up community-led, gender-responsive nature-based approaches to aquaculture

25

AQUA-Pearl Objectives

5. **Synthesize lessons learned to inform replication & scaling up across other Pacific Island States**
   - Peer Learning events, final report synthesizing lessons learned

26



Progress to date

- Workplan established, private sector partner formally engaged
- Equipment for 2 farms procured, establishment of new site in Vatulele
- Project-level MEL framework developed

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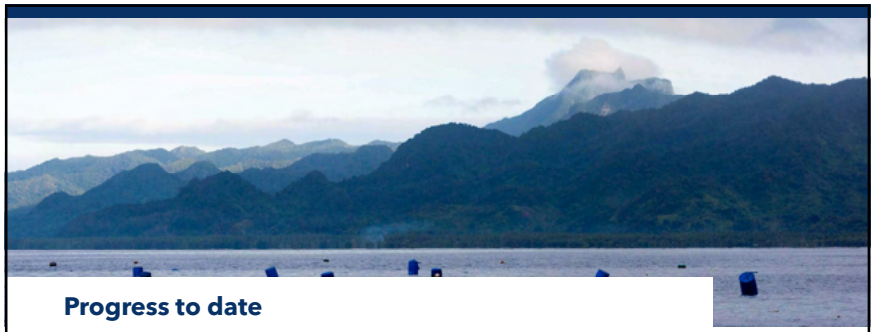

Progress to date

- Quality assurance preparatory work and development of sampling protocol
- Fiji Pearl Oyster website architecture set up
- Photography complete

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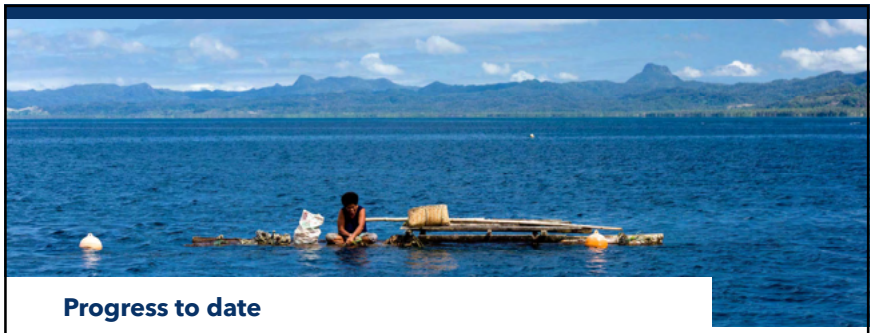

Progress to date

- Engagement in AQUADAPT consortium and peer learning events
- Presentation at 2 conferences

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IIFET Congress, Penang, 2024

ICAF Conference, Phu Quoc, 2024

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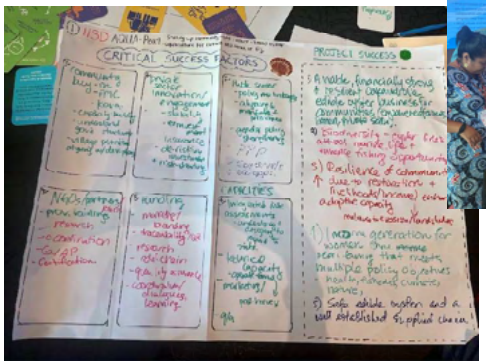
AQUADAPT Peer Learning



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Our People, Our Oceans and Fiji Pearls

Fiji, like most other Pacific Island countries, often has dual “ownership of fishing rights".

1. Traditional Fishing Right Owners or Custodians of the Sea
2. Government

Our Pearl farms see the traditional fishing right owners as Partner’s & we invest in our People and the communities are farms are located in.

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Engage with indigenous communities to create sustainable aquaculture partnerships

Due to the rarity of Fiji Pearl Oysters, we spent ~18 years developing hatchery techniques that allow us to produce some of the most unique and sought after pearls.

Our hatchery was destroyed in 2016, and we completed our new facility in 2018. The success of our hatchery allows us to look at diversification of pearl oyster products.

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UN World Oceans Conference June 2017 co-chaired by Sweden and Fiji. Saving our Oceans

The Fiji Pearl Development Plan

Initially proposed to develop more Community owned Pearl farms, our significant hatchery production and understanding the significant continued investment, risks and sensitivity of luxury markets…we decided to invest in developing edible community owned Pearl Oyster farms.

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1 | Preservation of Marine Ecosystems

Pearl Oyster farming is Bivalve Aquaculture: Pearl oysters farming / Bivalve Aquaculture is described as ecological aquaculture that requires pristine water conditions for the very survival of our oysters.

Oysters are non-selective filter feeder, and are often referred to as “indicator species”. Any decline in water quality has a direct impact on oyster health and survival.

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Through the engagement of indigenous communities, their inclusion of local knowledge and inherent governing / institutional structures, the plan provides a model for effective conservation: Inherently merging economic opportunities based on Marine conservation.

Pearl oyster farms serve as important regulators of water quality; as pearl oyster farmers naturally adopt the role of Stewards of the Sea in order to protect their investment in this case edible Pearl oysters

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2 | Social & Economic Sustainability. The greatest threat to our marine environment is poverty

A key concern for any Marine Protected Area is in finding the right balance between conservation and economic opportunities so that both man and nature benefit.

There is no MPA in the world that will be successful unless we provide alternative livelihoods.

Women and youth directly benefit through employment, capacity building and eventual income generated through pearl oyster sales.

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3 | Creating an internationally recognized culinary product that merges conservation and economic opportunities

Establishing a global market system and network that will allow small community-owned shellfish farm in Fiji to not only access, but allow these farms to take advantage of global high value markets and marketing.

Our vision consists of a unique culinary delicacy that actionably contributes to the health of our oceans, climate change and can inspire consumers to engage with these important issues.

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If we are serious about creating sustainable aquaculture, creating income at the community level, creating income through a need to protect rather than extract. If we really want to develop this "Circular Blue Economy', we need to acknowledge the role of private sector.
We need to share not only the benefits but also the cost and risks to develop sustainable aquaculture in a fair and transparent manner.

The role of Private sector in the Blue Economy

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The project is part of the wider IDRC AQUADAPT initiative, a four-year partnership running from **2023 to 2027.**

CLIMATE CHANGE | BIODIVERSITY LOSS | FOOD INSECURITY

Through applied research on nature-based solutions in aquaculture across Southeast Asia and the Pacific region, with a focus on Gender Equality and Social Inclusion (GESI)

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NACA & FutureFish Project Team

Network of Aquaculture Centres in Asia-Pacific

NACA
- Dr. Eduardo Leaño
  Principal Investigator
- Dr. Sanghamitra Nayak
  Professional Associate
- Mr. Simon Wilkinson
  Part time project coordinator
- Ms. Siyuan Wang
  Intern, Gender in aquaculture
- Mr. Xichen Jin
  Intern, Aquaculture transformation

FUTUREFISH

FutureFish
- Dr. Michael Phillips
  Co-Investigator
- Mr. Niran Warin
  Business Development Manager
- Ms. Putsorn Chuntachorn
  Farm Outreach Lead

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Objectives of our Knowledge Brokering Project

Amplify and extend AQUADAPT learning to the wider NACA and AIIH community in Asia-Pacific through exchanges between project teams and policymakers, private sector actors, and investors.

Improve understanding of stakeholders' needs, visions of and barriers to investing in inclusive nature-based climate solutions (NbS) in aquaculture systems.

Collaborate with the AQUADAPT partners and program to better integrate socially inclusive NbS into the hub's development and aquaculture innovation and investment activities.

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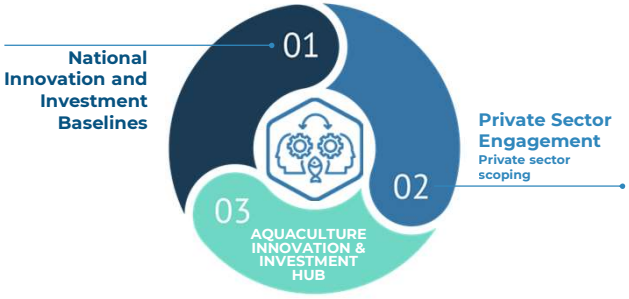
Milestones to achieve



The project's 2024–2025 activities will be centred on laying the groundwork and enhancing AIIH's capacity for knowledge brokerage so that it can support the transformation of aquaculture systems.

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Country Focal Points and Project Team Members

Fiji
Dr. Chinthaka Hewavitharane (FP)
Mr. Prashneel Chandra
Mr. Tekata Toaisi
Ms. Katarina Baleisuva (PS)

Thailand
Dr. Montakan Tamtin (FP)
Dr. Jiraporn Charoenvattanaporn
Ms. Wanna Thawinwan
Ms. Chanisara Phothirat
Mr. Sookkasame Jarupong (PS)

The Philippines
Mr. Wilfredo Cruz (FP)
Mr. Sammy Malvas
Ms. Elisa Claire Sy (PS)

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Potential Impacts

Promote and accelerate Aquaculture Transformation in Asia-Pacific through a functional ecosystem of partners among:

- Government & policies
- Private sectors
- Relevant institutions
- Investors

The Aquaculture Innovation and Investment Hub (AIIH) to strengthen:

- Partnerships
- Private sector engagement and investment
- Social balance
- Information sharing among relevant stakeholders to increase AQUADAPT's visibility
- Develop future strategy

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NIIP Baseline updates in Fiji

Fiji country team has been working in joint collaboration with the SPC

SPC Secretariat of the Pacific Community

SPC has launched a Private Enterprise grant program,
funded by MFAT, which has selected five enterprises to support their efforts in incorporating nature-based solutions (NbS) to improve sustainable aquaculture practices.

The selected technologies are:

1. Renewable energy (solar and hydro)
2. Geomembrane Pond liner
3. Biofloc technology
4. Unfed aquaculture in Savusavu
5. Unfed mangrove oyster in central coastal Aquaculture

The species considered under the study:

1. Giant Fresh Water Prawn (*Macrobrachium rosenbergii*)
2. Whiteleg Vannamei shrimp
3. GIFT tilapia
4. Pearl oyster meat production
5. Mangrove oysters

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Innovative NbS Practices in Fiji Aquaculture

Geomembrane Pond liner

Hydro Turbine

Mangrove Oyster
long line grow out system

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AQUADAPT **Private Sector Engagement Study**

NACA: Network of Aquaculture Centres in Asia-Pacific

FUTUREFISH

AQUAPearl Inception Workshop
November 25, 2024
Suva, Fiji

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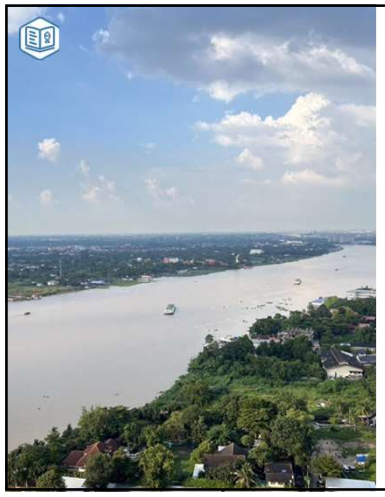

Why a private sector engagement study?

NACA & **FutureFish** team is currently working on a project to establish an "**Aquaculture Innovation and Investment Hub (AIIH)**" aimed at accelerating aquaculture transformation across the Asia-Pacific region.

A key focus of our project is the identification and assessment of aquaculture innovations, with a stronger emphasis on **Nature-based Solutions** (**NbS**), to develop strategies that will encourage investments in these areas. One of the activities is **Private Sector Engagement** (**PSE**) research.

This study aims to understand current NbS innovation practices in aquaculture across the private sector, government, and research institutions. The results from the study will be further developed to contribute to **the AIIH development**, bringing together stakeholders such as the private sector, government, research institutions, investors, and financial institutions into the hub.

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Who will be involved in this study?

A. AQUADAPT Projects and partners

Map stakeholder, map private sector actors of the AQUADAPT project

A. Industry Expert

In this study, we will conduct a **Deep-dive** analysis of selected **AQUDADPAT projects** to establish strategies for commercializing the innovation (commercialization strategy). We will work with industry experts in specific fields to gain invaluable insights that will inform engagement strategies for the selected AQ projects.

Visited AQUADAPT-Nature Project, Chiang Mai Thailand

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COMING IN
2025
Innovation Event
Planning Uniting AQUADAPT researchers, private sector, startups, investors, government.
Date & location March/April 2025 in Thailand's diverse and innovative aquaculture
Supporting Private sector uptake of AQUADAPT Research on Nature-based aquaculture.
Bringing diverse private stakeholders together to collaborate, share and engage.
Fiji Feedback Seeking event ideas to boost the Fijian private sector NbS engagement.

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Thank you
Canada

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Nature-based Aquaculture: Concepts and Questions
Veronica Lo, IISD

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Objectives
Brief introduction to nature-based solutions (NbS) as it relates to aquaculture
Share our interpretation of nature-based aquaculture for AQUA-Pearl
What is your interpretation? Menti
World Cafe

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What are NbS?

"Actions to **protect, conserve, restore, sustainably use** and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems which address **social, economic and environmental challenges** effectively and adaptively, while simultaneously providing **human well-being, ecosystem services, resilience and biodiversity benefits**."

(UNEA 2022)

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NbS Global Standard

(IUCN)

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Nature-based Aquaculture Concepts

Concept	Definition
Nature-based Aquaculture Solutions IDRC	Nature-based aquaculture solutions are: actions to **protect, conserve, restore, and sustainably** manage natural or modified ecosystems including Freshwater and Marine ecosystems, and that contribute to enhancing **human well-being, climate resilience, biodiversity benefits, and ecosystem services**.
Ecosystem Approaches to Aquaculture (EAA) FAO	A strategy for the integration of the aquaculture within the wider ecosystem such that it promotes **sustainable development, equity, and resilience** of interlinked social- ecological systems
Regenerative Aquaculture Mizuta et al., 2023	Commercial or subsistence aquaculture performed with focus on **social, economic, and ecological responsibility and stability**, with minimal external input and impact to the environment
Restorative Aquaculture TNC	Restorative aquaculture occurs when commercial or subsistence aquaculture **provides direct ecological benefits** to the environment, with the potential to **generate net-positive environmental outcomes**

Alleway et al. 2023, *Conservation Science & Practice*

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What makes AQUA-Pearl an NbS?

- **Adapting** to fisheries losses by supplementing income for coastal communities & providing alternative protein sources
- Filter-feeding oysters can **improve water quality**, do not require unsustainable feed sources
- Oyster lines attract **biodiversity** (fish, seagrapes, inverts)
- Watershed **restoration** upstream to enhance water quality around farms in the long-term, increasing biodiversity & stormwater infiltration
- Oysters **sequester carbon** in shells & pseudo-faeces
- **Livelihoods** for women and youth

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AQUA-Pearl

Nature-based approaches to aquaculture:

Process of creating **food resilience** using **inclusive and sustainable** aquaculture practices that are **restorative** (direct ecological benefit) and help ensure **sustainable livelihoods** for coastal communities

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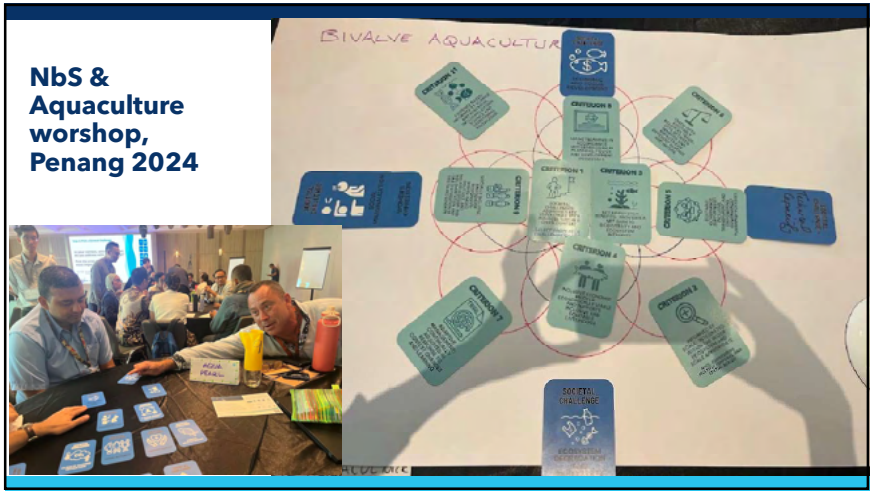
NbS & Aquaculture worshop, Penang 2024



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AQUA-Pearl & NbS

1. Addresses challenges of:
   Economic and social development,
   Ecosystem degradation, loss of livehoods

3. Biodiversity net gain: restoration and habitat
4. Inclusive economic models
5. Equitable governance through community-led approach
8. Mainstreaming NbS into policy and programming

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Nature-based Aquaculture: Mentimeter

Join at Menti.com | code 4823 0864

https://www.menti.com/al4r16dss5gd

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World Café

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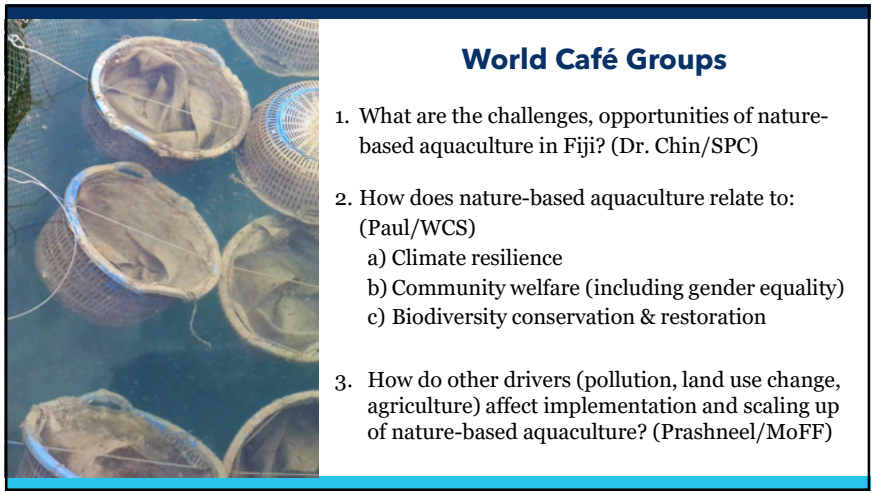
World Café Groups
1. What are the challenges, opportunities of nature-based aquaculture in Fiji? (Dr. Chin/SPC)
2. How does nature-based aquaculture relate to: (Paul/WCS)
a) Climate resilience
b) Community welfare (including gender equality)
c) Biodiversity conservation & restoration
3. How do other drivers (pollution, land use change, agriculture) affect implementation and scaling up of nature-based aquaculture? (Prashneel/MoFF)

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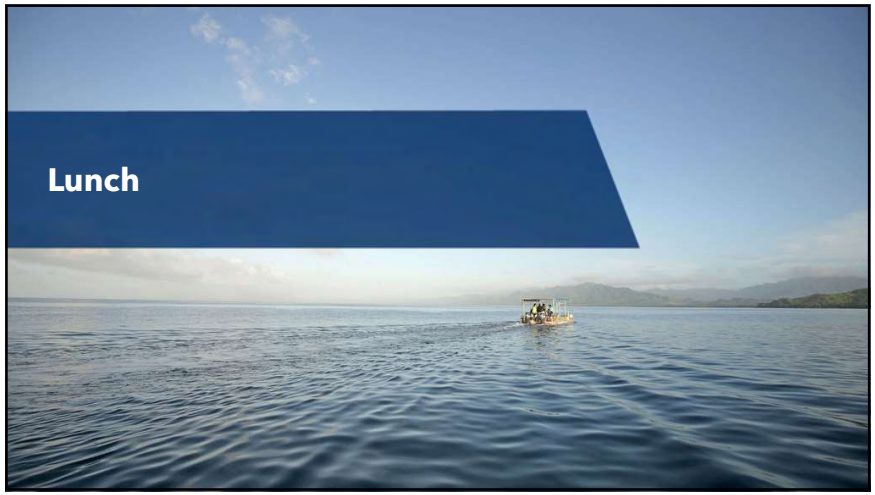
Lunch

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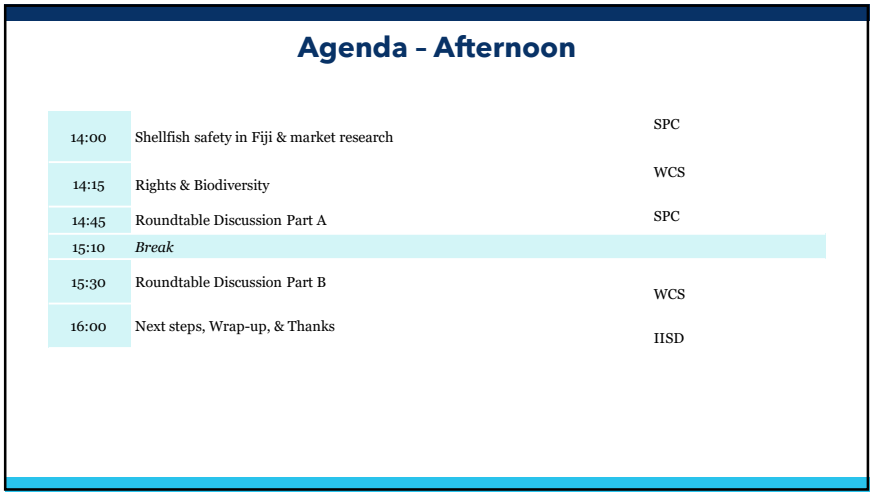
Agenda – Afternoon
14:00 Shellfish safety in Fiji & market research SPC
14:15 Rights & Biodiversity WCS
14:45 Roundtable Discussion Part A SPC
15:10 Break
15:30 Roundtable Discussion Part B WCS
16:00 Next steps, Wrap-up, & Thanks IISD

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02294629

Shellfish safety in Fiji & market research

SPC

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In partnership with Canada

Developing a food safety model for bivalve mollusc aquaculture

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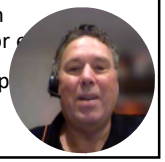
The task

Pacific Community Communauté du Pacifique

- Need, what are we trying to achieve and what are the benefits
- Project outline, short description of project
- Discussion on current legislation and best approach.
- Best approach to health certification required for
- Next steps, how do we p



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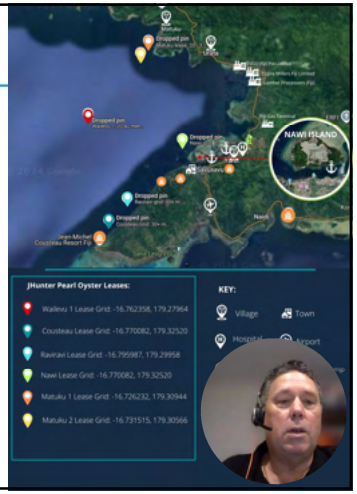
The Project

Part 1: Baseline testing requirements

1. Develop recommended pilot testing protocol
2. Undertake survey of production area to assess potential risks
3. Conduct pilot testing program.
4. Liaising with CEFAS



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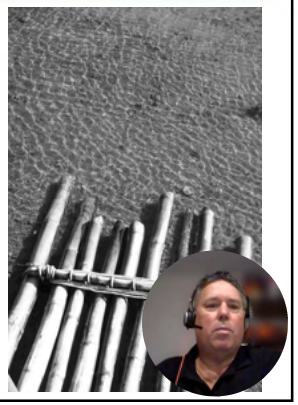
Testing requirements

Quarterly testing for two years
Coliform/e-coli testing of meat
Vibrio bacteria
Heavy metals
Biotoxin/phytoplankton sampling
Based on results, revise long-term testing requirements



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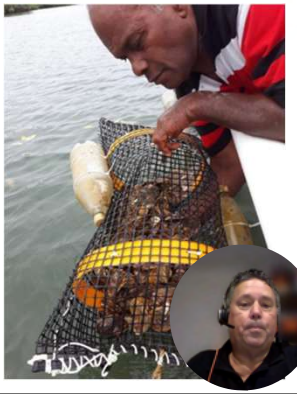
The Project

Part 2: Development of a basic testing program for domestic markets

1. Liaise with relevant competent authorities and seek their input
2. Provide recommendations
3. Identify minimum testing requirements and testing options
4. Liaise with relevant laboratories for testing



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The Project

Part 3: Access to international markets.

1. Liaise with overseas authorities seeking clarification on import requirements.
2. Review requirements and determine whether these can cost-effectively be achieved.
3. Identify persons within relevant authorities to facilitate exports.
4. Health certificates and HACCP programs

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Constraints and Challenges

Funding	2023 & 2024 funded by SPC/NZ Funding with intent (FIT). Funding for 2025 not yet confirmed.
Laboratory resources	
Transition to management by Fiji authorities	
Identifying markets	

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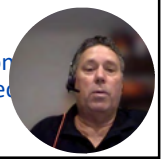
Where do we go from here

- SPC can continue to provide technical advice
- Need to identify logistical support post-2024
- Need to examine how additional laboratory resources can be provided
- Need to work with Fiji authorities to transition ownership of the proje



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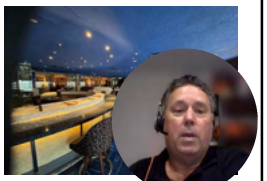
Questions? (kevine@spc.int, SPC team in Suva)





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Rights and Biodiversity

WCS

83

IDRC · CRDI

In partnership with Canada

Rights and Biodiversity

Wildlife Conservation Society (WCS)

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- Content
- Community-based and rights-based approaches in AQUA-Pearl
- Current status of biodiversity in target systems, and approaches to restoration and complementarity with other initiatives
- Approach to monitoring net biodiversity increase

85

Community-based and rights-based approaches in AQUA-Pearl

WCS's principles on **Local Engagement**, **Knowledge** and **Data Protection** strives to **ensure** that our **community engagement** and **research associated** is **consistent with best practice ethical procedures** and the **priorities and rights of communities and government**.

All work, particularly those with community groups, should **adhere to principles of Free, Prior and Informed Consent (FPIC)**.

- **'Free'** means the absence of coercion or manipulation.
- **'Prior'** means that consent will be sought sufficiently in advance of any authorization, including respect for the time requirements of consultation and discussion processes.
- **'Informed'** means that full information about the proposed activities, including their scope, purpose, outputs, and risks is provided in an appropriate and easily understood format before consent is sought.
- **'Consent'** means collective decision made by the right holders and reached through a customary decision-making processes of the communities.

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Community-based and rights-based approaches in AQUA-Pearl

WCS **acknowledge**s that:

Our work occurs in customary lands and adjacent waters, which are managed, and accessed according to tribal and family linkages;

Indigenous and local knowledge are critical to the governance of land and sea, and should inform conservation work;

Indigenous and local knowledge remain the intellectual property of the knowledge holders;

Engagement and research from international NGOs should benefit the owners and users of the customary land in which it is situated;

Real partnership is critical to successful engagement; research with communities needs to be founded on principles of mutual respect and understanding, which can only be built up over time.

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Outcome 2.2

Community stakeholder values and preferences are integrated into a gender-responsive, co-developed plan for implementing a community-led aquaculture initiative integrating NbS for adaptation.

- Community consultations with diverse community members to elicit local preferences for scaling up community-led aquaculture will be integrated into the WCS FPIC process
  - Consultations with JHP on suitable site(s) – 1 new site at Vuadomo
  - FPIC and Community Profile/Socio-economic analyses – for new Vuadomo site
  - 2024/2025

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Biodiversity

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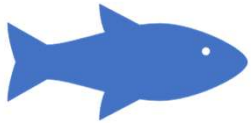

The **AQUA-Pearl project addresses** the **intertwined critical challenges** of **climate change**, **biodiversity loss**, and **poverty** by -

integrating community values and preferences;

enhancing community and ecosystem resilience to climate change;

identifying entry points to aligning fisheries and aquacultural development plans with national adaptation, biodiversity conservation, and development priorities (including gender and development priorities).

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Outcome 3

Tentative to begin in late 2024/2025 the AquaPEARL project teams deliverables under this outcome **expands learning and testing** from scaling up a community-led aquaculture project to **enhance livelihoods and income** for women and **diversify local protein sources.**

- The implementation of the pearl meat aquaculture plan through our collaborative partnership with JHP will see a suite of activities that will result in an inclusive scaled-up gender-responsive, community-led aquaculture initiative with local input and participation.

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2025 Activities…	Water testing & mapping to develop watershed restoration plan
	Socialization of watershed management plan
	Donation of trees to communities in Vatulele and Vuadomo Villages
	Fine-scale catchment planning
	Support for re-vegetation activities
	Monitoring (2025-2027)

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Current Status of Biodiversity in Target Systems and Approaches to Restoration

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Biodiversity in the target systems under the AquaPEARL project are subjected to the impending pressures from climate change and human activities.

Restoration efforts under this project will strengthen habitat protection and enhance the carbon sink potential of the area to restored.

WCS will implement upstream catchment restoration NbS activities to enhance water quality for the pearl farms from **2025**

Consultation and awareness for Vuadomo Village will be undertaken through the FPIC process.

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Approach to Monitoring Net Biodiversity Increase from the Oyster Farms

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Monitoring biodiversity in oyster farms involves assessing the ecological benefits of aquaculture practices.

Studies have shown that oyster farms can enhance biodiversity by providing habitat and trophic support for various marine species.

Methods include using underwater cameras, water quality measurements, and biodiversity assessments to track changes over time.

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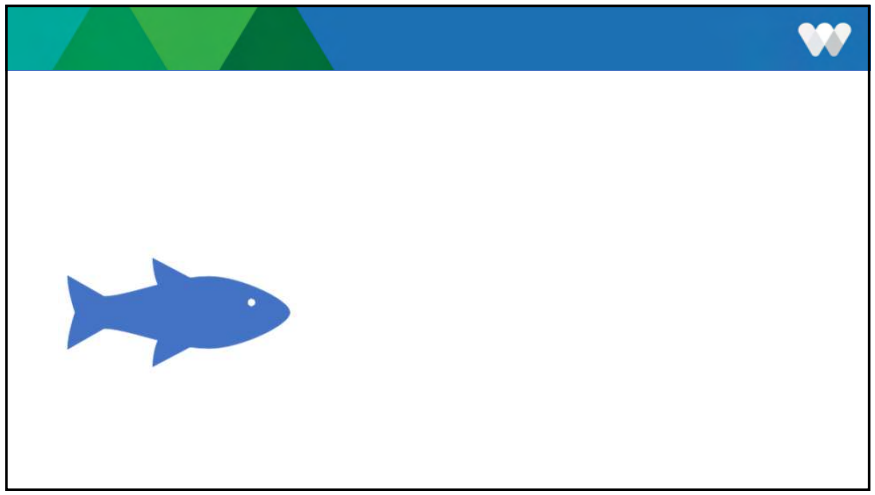

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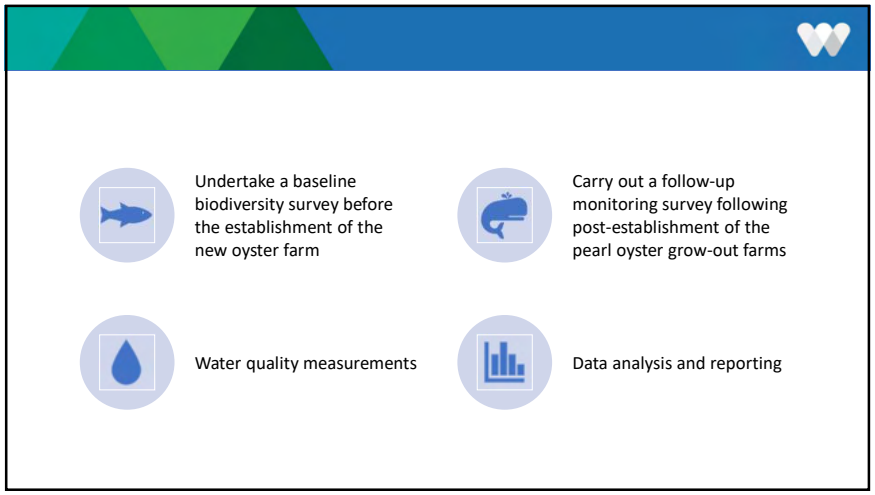
Undertake a baseline biodiversity survey before the establishment of the new oyster farm
Carry out a follow-up monitoring survey following post-establishment of the pearl oyster grow-out farms
Water quality measurements
Data analysis and reporting

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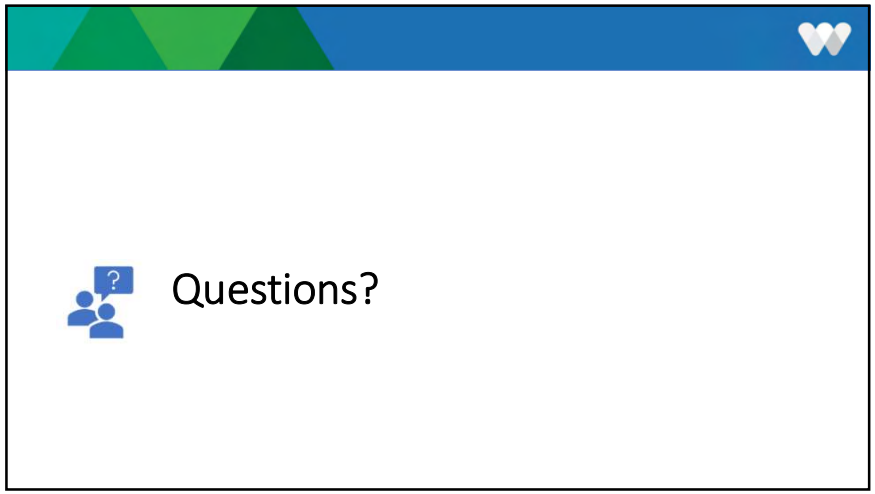
Questions?

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AQUA-Pearl
Discussion and Q&A
Project partners
IISD
Pacific Community Communauté du Pacifique
Wildlife Conservation Society
Funders
Canada
IDRC · CRDI

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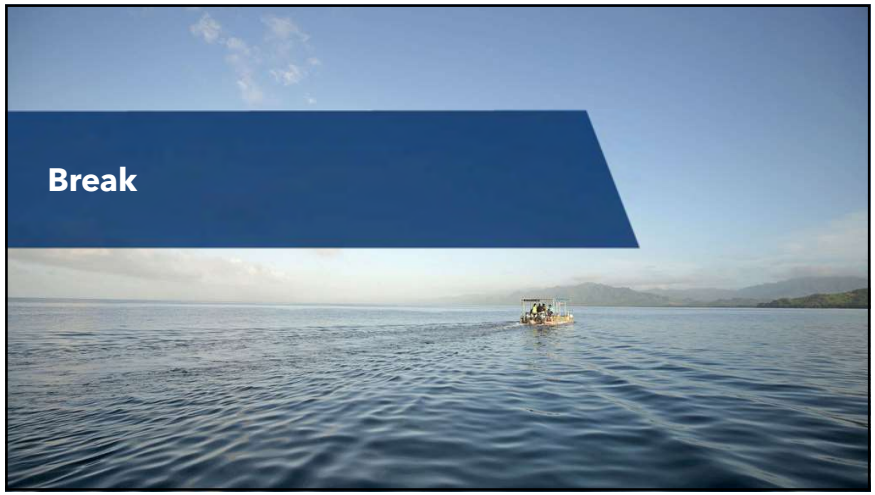

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Roundtable Discussion Part B
• What are barriers in adopting and scaling up nature-based aquaculture in Fiji?
• How do stakeholders see their role in supporting nature-based aquaculture?
• Identify one or two needs to facilitate your support (on sticky notes)

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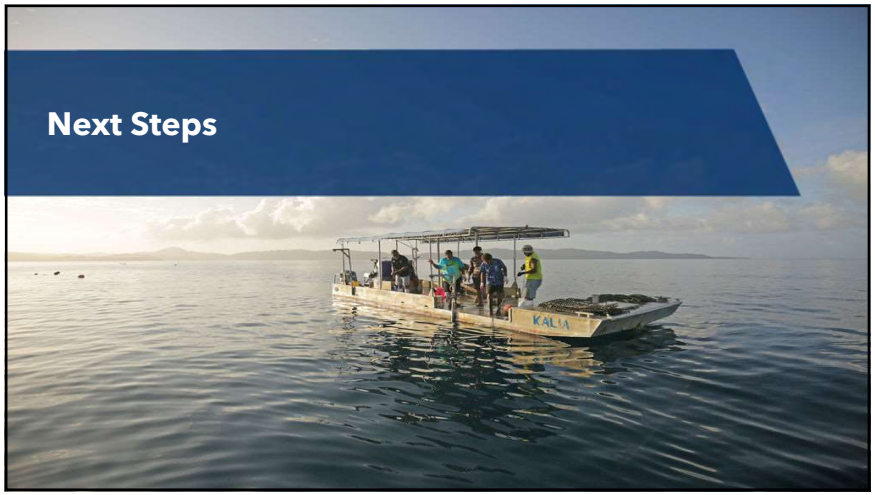
Next Steps
KALIA

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Vinaka!

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