



Revised Project annual report

project **Innovating fish-based livelihoods in the
community economies of Timor-Leste and
Solomon Islands**

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List of abbreviations

ACIAR	Australian Centre for International Agricultural Research
ANCORS	Australian National Centre for Ocean Resources & Security
ARC	Australian Research Council
DECRA	Discovery Early Career Researcher Award
CANADAPT	FAO Project funded by Canada
CBRM	Communities Based Resource Management
CFC	Constituency Fisheries Centre
CGIAR	Consultative Group for International Agricultural Research
CSC	Centre for Sustainable Communities
DG-PARM	Directorate General Fisheries and Agriculture Resources Management Timor-Leste
EOPO	End of Project Outcomes
FAO	Food and Agriculture Organisation
FI	Fish Innovations
GESI	Gender Equality and Social Inclusion
GPS	Global Positioning System
ICT	Information and communications technology
IP	Intellectual Property
KGA	Kastom Gaden Association
MAF	Ministry of Agriculture and Fisheries (Timor-Leste)
MEL	Monitoring and Evaluation
MFAT	New Zealand Ministry of Foreign Affairs and Trade
MFMR	Ministry of Fisheries and Marine Resources (Solomon Islands)
MISSIF	Mekem Strong Solomon Island Fisheries
NSFM	Nutrition Sensitive Fisheries Management
OP	Outcome Pathway
PADTL2	Partnership for Aquaculture Development Timor-Leste
PFC	Provincial Fisheries Centre
PFO	Provincial Fisheries Officer
QGIS	Geographic Information System Software
RTPA	Municipality Fisheries Officer (Timor-Leste)
SI or SLB	Country Code for Solomon Islands
SINU	Solomon Islands National University
SPC	The Pacific Community
TL	Country Code for Timor-Leste
ToC	Theory of Change
TOMAK	To'os ba Moris Di'ak – an agricultural livelihoods program
UOW	University of Wollongong
WF	WorldFish

1 Executive Summary

Project work has progressed rapidly following the COVID-19 lockdowns in Q1/Q2 2022. During the reporting period the project hosted over 20 partner meetings, and we spent 280 staff days conducting field work, whereof at least half were Government partner staff days. Three community-level fish-handling and product demonstrations were arranged and two showcase events for international visitors and dignitaries. Two community meetings were independently carried out by Government partners using project funds and six trainings events were arranged for research teams and/or partners. We published two peer-review papers, two reports, three briefs, one book section and presented at three international conferences. These metrics represent a very busy year focused on partner integration, field work, and outreach. The year was brought together at the 4-day reflection and learning workshop at Nusatupe research station in May, where the entire project team reflected on implementation and learning so far, then planned out the remainder of the project.



In Solomon Islands, we strengthened project collaboration with WorldFish, MFMR and SINU. The project is a central part of the 2023 operational plan for WorldFish and MFMR. We hosted an event at the annual PFO conference where we consulted with officers from all provinces for guiding our design of an MFMR national program on fish-handling with technical support from SINU. In addition, together with the CGIAR Initiative on Aquatic Foods we hosted a forum on Island food systems with Kastom Gaden Association (KGA). This collaboration with KGA is a deliberate scaling logic for project outputs within a bigger agricultural movement and training system. To complete project research activities we also arranged a community economies research training workshop, and subsequent field work at Temotu and Malaita provinces. We completed several outputs that summarized learning from innovation in aquatic foods systems, assessed and planned out a national program on fish-handling and post-harvest innovation.

In Timor-Leste, we worked with Municipalities in Baucau and Lautem to integrate community engagement in fisheries officers planning and workplans. At WorldFish we set up a new office in Baucau to enable better engagement at that level. From Baucau, we arranged several workshops and training events. For example, in November 2022 we contracted the organisation Bridging Peoples to arrange a “Working with communities” training workshop. Subsequently, the project provided financial support for community engagement activities by fisheries officer. The training is being followed up with mentoring of officers to support their ongoing growth and skills in this area. We are collaborating with officers on innovative fish-tracking research. All ethics approvals have been obtained, piloting completed, and data collection is ongoing. We developed fish-handling materials for a tilapia cookbook, and supported school meal trials and training of cooks. The project held several fish powder demonstrations. For example, as part of events organised for Senator Penny Wong, Minister for Foreign Affairs of Australia, in Dili; World Food Day event in Balibo; ACIAR Commission field visit with ACIAR CEO Andrew Campbell. National staff presented at international conferences in Brisbane and Dili.

Activities during the reporting period has validated the project design and research strategy. The work on fish-handling has gathered a lot of momentum and MFMR is seeking project leadership in supporting the development of a national strategy. This process is taking the approach of first gaining a deep understanding of what has happened in the past. Two project reports from Solomon Islands provide the basis for designing the strategy and a new program. In addition, two PhD students from Solomon Islands and one from Timor-Leste commenced their studies within the project on UOW Scholarships.

2 Reflection on Project Design

2.1 Project research strategy

In May 2023, we arranged a project-wide 4-day reflection and learning workshop at Nusatupe research station in Solomon Islands. The workshop brought 23 participants involved in the project together to take stock of our collective learning and how the project is responding to the many partners it seeks to support. The workshop location, which is remote and with basic amenities, meant that team members both lived and worked together. This strengthened professional relationships and gave ample time to reflect and plan. The agenda was structured with sessions organised around project outcome pathways and other important themes, such as GESI, MEL, and output write shops. The workshop was a significant moment for the project as it nears mid-point. It will be referenced frequently throughout the report as the ‘reflection workshop’.

The reflection workshop provided mid-point evaluation of progress to date and where it is going to take us. We reviewed progress along all project Outcome Pathways and reflected on the project ToC. Based on these reflections of work done so far, the project team validated the research strategy and overall approach to integration (See also Section 2.3). The consensus was that the project strategy continues to respond well to national partner priorities and was seen as “unique” in its scope and approach to support Ministry and Provincial/Municipality government staff.

From these reflections we were also able to set out the planning for the second half of the project and look at a more realistic picture of what can be achieved on the project ToC (See also Section 3.2). An important component of that reflection and planning was the collective re-visioning of a project logic, or a simplified ToC with pathways to impact considering the parallel Outcome Pathways of the project (Figure 1).

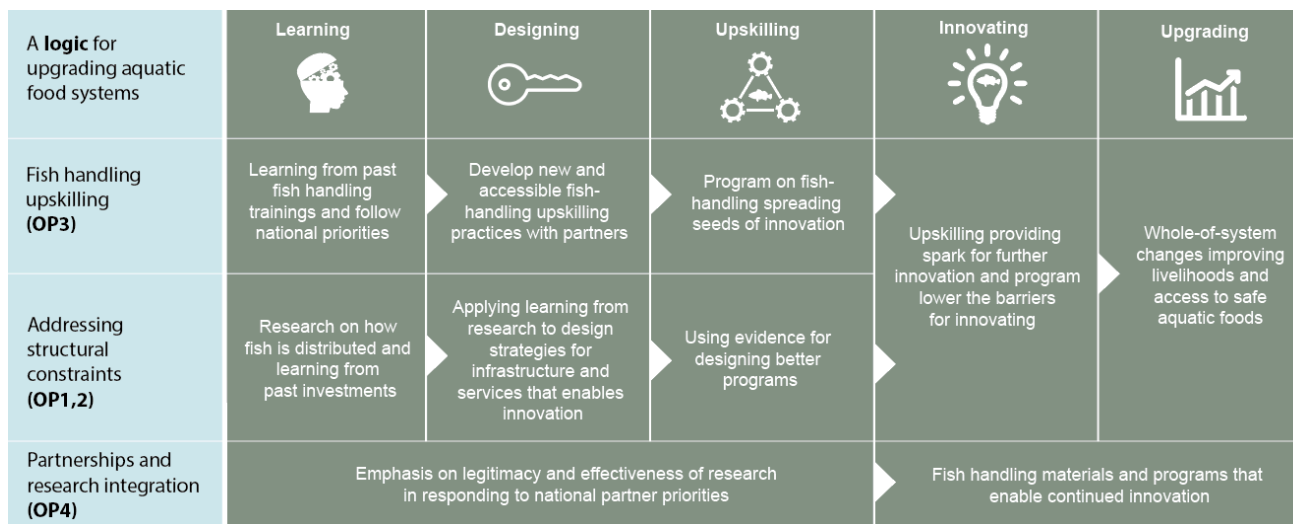


Figure 1. Simplified ToC as a logic for upgrading aquatic foods systems through the project Outcome Pathways (OP).

2.1.1 Responsiveness of research strategy:

We have reflected on the project’s ToC at midpoint and assessed the appropriateness of the research strategy in its potential to reach end of project outcomes. Overall, the team found the ToC logic to hold true. Key participants from MFMR confirmed the appropriateness and need for the project’s science components (learning about fish distribution practices and existing innovations through the case studies) and strongly supported work towards a national program in fish handling upskilling. As discussed in further detail in section 2.1.3, the work in the project’s ‘action’ component

in Outcome Pathway 3 is progressing more slowly than anticipated, but still following the same logic although intermediate and end of project outcomes are likely to transpire beyond the endpoint of the current project phase.

In Outcome Pathway 3 there is evidence of significant progress in terms of learning, reflecting a deliberate approach to not repeat mistakes or failed approaches of the past. Three activities/outputs are important to take note of here. First, the report on past fish-handling trainings in Malaita. Second, the workshop at the PFO conference in November 2022 where we consulted with all provinces in Solomon Islands on needs and priorities for a lasting fish-handling program. Third, based on these consultations and further planning at the Nusatupe workshop we have just finalised a report on national assessment and planning for improved fish handling in Solomon Islands. This process symbolises an approach responsive to new understanding.

A session during the reflection workshop evaluated Outcome Pathway 4 – the way we work – and saw an overwhelmingly positive response and some constructive suggestions for improvement. The key themes supported by the group that emerged include: joint teams during implementation (national and subnational government, WorldFish, scientists); strong alignment with national priorities; peer-to-peer learning; and the project's emphasis on strengthening existing and creating new partnerships. Suggestions for areas where we could improve include: to seek out new partnerships (especially in Timor-Leste); look for new opportunities to showcase the project; set up a platform for project communication; more regular updates to government partners in Timor-Leste; and look for new ways to work more closely with government in Timor-Leste by learning from experiences in Solomon Islands where the partnership and activity integration is very strong. The suggestions relating to Timor-Leste have been discussed at internal WorldFish meetings there.

2.1.2 Activities & outputs:

No major changes to activities or outputs are required. Minor changes to timelines are detailed in section 3.1 activity tables. Changes to Activity 3.1 outputs to include new outputs on learning from past fish handling training as a precursor to building the program on fish handling, including training modules. The reflection workshop was a moment in which the project team collectively drew up and committed to a revised implementation plan for the remainder of the project, which is captured in the Gantt chart in Appendix 6. This is an evolving planning document that will continue to be updated with the team as progress is made.

2.1.3 Intermediate Outcomes:

At midpoint, work is progressing well and there is evidence that intermediate outcomes in Outcome Pathways 1, 2 and 4 are achievable. Work to date in Pathway 3 – the 'action' component of the project in upskilling in fish handling and peer-to-peer exchange – hasn't progressed according to original anticipated timelines, therefore the project is likely to create the conditions to achieve immediate outcomes only ("Fish handling training is accessible for rural communities" and "Partner communities and women's groups have increased understanding of how existing resources and assets can be mobilised for innovation") by project endpoint.

A deliberate approach to learning from what's been done before is the strategy in Outcome Pathways 1 and 2. It became apparent at the beginning of the reporting period that this strategy would also need to be adopted in Outcome Pathway 3. Investment in the Malaita report, PFO conference, National Assessment – were not originally planned in the project proposal, but were significant intellectual and resource intensive undertakings that precede activity 3.1 – the design of training modules.

2.1.4 Project Monitoring and Reviews:

Presentations by those involved in each Outcome Pathway during the reflection workshop reported on progress to date. The joint discussion and reflection following those was a moment for co-interpretation, learning and adjustment. The planning sessions set up systems for outcome evidencing during the second half of the project. The MEL session on the final day included capacity development component in which the project team gained skills in identifying and reporting change stories (Figure 2). These will become an important part of the evidence base for the project's contribution to the end of project outcomes.



Figure 2. Project team MEL session reviewing progress, milestone planning, and updating regular project MEL practices.

2.2 Reflection on gender strategy

The project gender strategy is centred around a commitment to:

- 1) work in partnership with women leaders and existing women's groups to build on their strengths and networks to collectively improve their wellbeing
- 2) elucidate the multiple factors that influence women's economic participation through the reality of women's lives.

The project team discussed the project's gender strategy in plenary at the reflection workshop. The session was conducted as a joint reflection on (i) *how we work* and (ii) *what we hope to see* (Table 1). The outcomes of the workshop demonstrate that overall, this strategy is providing a platform through which to promote awareness of gender in aquatic food networks and with national agencies. However, the project reflection workshop also highlighted that the existing approach does not yet introduce activities that could be more than gender sensitive and promote change towards greater gender equity. Moving forward the project is responding by identifying opportunities to support policy change through cross-Ministry engagement (in the Solomon Islands) and continuing to make visible to participants and stakeholders the important role played by women in fisheries and aquatic food networks.

In Outcome Pathway 1 research on fish distribution, gender sensitivity is evidenced by the explicit recognition of the roles that women and men play in fish distribution networks and the commitment to understand the role of women in fish trading as well as working with men who often play a more visible role in fish distribution. The project has established relationships with key women fish traders and will be engaging with these individuals in a more focused way in the second half of 2023.

In Outcome Pathway 2 all additional data collection in both Timor-Leste and Solomon Islands has deliberately sought to elaborate a gendered understanding of local economies and the roles of women and men in fisheries and aquatic food economies. The research design is intended to lead into and enable intersectional analysis as per the gender strategy. This work has been undertaken in ways that ensure data collection is sensitive to gender, providing spaces for women and men to engage separately to encourage women to feel safe to speak freely. The data collected is also gender disaggregated to reveal the similarities and differences in perspectives of women and men.

Pathway 3 is moving forward with a focus on developing training programs to improve capacity in fish handling and fish safety. As design work proceeds there is recognition that such programs must both fit with the social norms of communities to ensure engagement and uptake, but that the trainings also provide opportunities for supporting incremental change through the presentation of materials that highlight the importance of the role played by women and encourage participants to move outside normative gender roles (for example, by encouraging men to learn cooking skills). The reflection workshop also identified that developing partnerships with the Ministry for Women and Youth and involving them in developing and piloting trainings is one way to strengthen the potential gender impact of the training program.

Pathway 4 has revealed significant differences in the existing capacity and capacity-building needs of national agencies for them to pursue community-led fisheries in a gender equitable manner. In the Solomon Islands, activities are focusing on awareness raising through distribution of project outcomes and findings, and the involvement of MFMR personnel in research workshops and data collection activities through which a gender sensitive perspective is shared and strengthened. In Timor-Leste, municipality fisheries officers are being resourced and supported to attend community engagement training to develop skills. This training includes a gender aware approach to community engagement.

Table 1. Identified inputs and outcomes during team reflection on project gender strategy at Nusatupe workshop.

Engagement/input (how we work)	Outcomes (what we hope to see/create/make happen)
<ul style="list-style-type: none"> - Break up participants into 2 groups – men/women - Women’s group uses female facilitator; men’s group uses male facilitator; male & female facilitator for youth group - Allow women to bring children to events/workshops - Fish handling consideration of diverse participants, including women - Fish handling module development with a gender lens – e.g. not just fish handling, also shellfish (traditional women’s harvest) - Find male and female and youth champions that represent a practice - Change mindsets through how we deliver trainings and in content of training (e.g. fish handling, Timor-Leste municipal officer trainings) - Tracking and logbooks pay attention to women’s harvest species - Encourage people to move outside their gender role during training (e.g. men cooking) - Missing disability and marginalised people – can incorporate diversity into training materials, inclusion in fish handling training sessions and program. Involve relevant agencies in training (e.g. Disability Solomon Islands). - Adapt research method (i.e. motorbike fish trader research) and expand participant groups to include women traders in tracking. Fish trader registry survey includes women. 	<ul style="list-style-type: none"> - Changing mindsets (PFOs, RTPAs, community) - Promote sense of entrepreneurship - More fisheries officers who are women - Ensure fishers and vendors (male and female) are fully aware of why fish handling is important - Understanding culture and wellbeing so as not to do harm - Gender awareness in policy - Cross Ministry engagement in fisheries (e.g. Ministry of Women, Youth and Children involved in fish handling). - Recognising role of women and men in fish trading - Gender lens on our network, distribution of knowledge network, partners - Recommendations from our work consider ‘for whom’? (gender lens) - Knowing which activities are most impactful for women/men/youth and identify opportunities to create change

<ul style="list-style-type: none"> - Timor-Leste municipal officers do gender training. - Look carefully and critically at our outputs – have a critical gender lens to all outputs, and in engagement in policy, and in engagement with Ministry Women and Agriculture. - Involve Ministry of Women and Youth in fish handling pilot/testing and activities. 	
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2.3 Reflection on capacity building strategy

One of the project’s four pillars – Outcome Pathway 4 – has a deliberate approach to project research integration and supporting change processes underway and led by partners. This represents the project’s core capacity building strategy at the individual and organisational levels. Outcome Pathway 4 is symbolic of a project philosophy of co-creation of knowledge with immediate utility and uptake in mind and is promoting a culture of working together. The reflection workshop validated the approach to our capacity building strategy and there are many examples of intended progress at both individual and organisational levels (Figure 3). The modality of working in joint teams across partners was seen as a mechanism for skill development. So was the focus on supporting national staff on research capabilities and the awarding of UOW PhD scholarships to project country nationals.

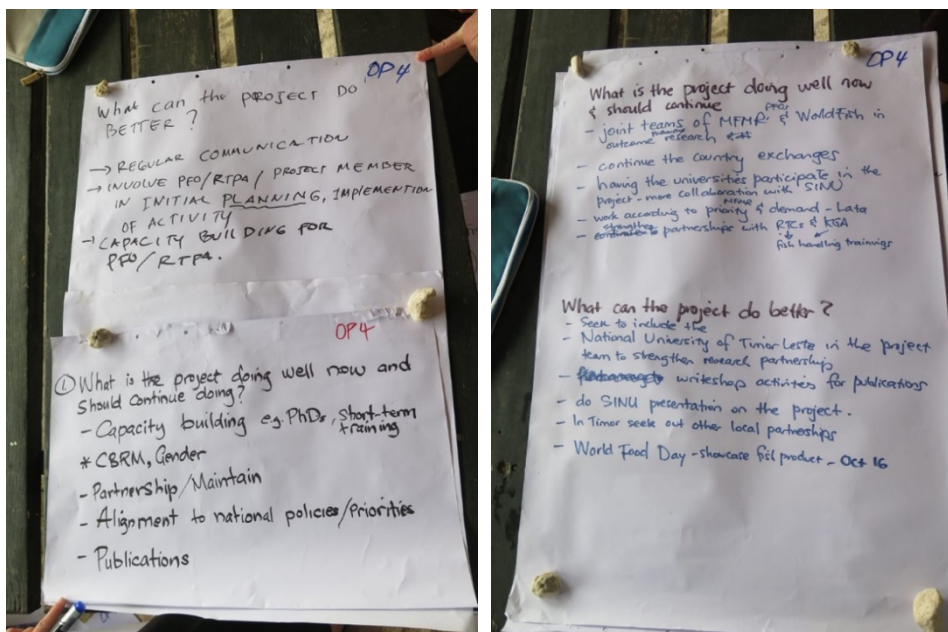


Figure 3. Flipcharts from the Nusatupe workshop session reflection on what the project is doing well and can do better in terms of coordination, capacity building and outcomes.

At an individual level, there has been participation of national and provincial staff in research training workshops and growing leadership in field research. This also includes strengthening of skills and experience of data management, analyses, and reporting. At the organisational level, project is responding to identified capacity gaps and resourcing of priority activities within the scope of the project. The process of municipality engagement and support in Timor-Leste, through the recently established WorldFish office in Baucau, serve as a useful example of responding to organisational capacity needs, and is outlined in detail in a case study box (Box 1) in Section 3.1 on partnerships under Outcome Pathway 4.

As an external validation of sorts, the project leader was invited to the Crawford Fund Pacific Dialogue conference in June 2023 to present on research legitimacy and programming, which are elements of the project’s embedded capacity building modality.

2.4 Recommended adaptations to the research strategy

The activities and outputs of the project are still relevant and were validated at the project reflection and planning workshop at Nusatupe. The team has made slight amendments in the timeline to milestones at activity and output level. Adjustments to Outcome Pathway 3 have been described above and in more detail in Section 3.1. Preliminary discussions with partners have highlighted strong demand for the project team's long-term support for growing national priorities on fish handling, post-harvest innovation and reduced waste and loss.

3 Delivery on project activities, outputs and intermediate outcomes

3.1 Activities and outputs

Outcome Pathway 1: How is fish distribution practices and associated livelihoods generating benefits for women and men across the rural economy?

New research relating to OP1 has focused on distribution networks and practices in Timor-Leste. The project received Ethics Approval from the University of Wollongong Human Research Ethics Committee (2023/098) for research activities on post-harvest fish distribution in Baucau and Lautem municipalities, including: fish trader tracking with GPS and temperature sensors, a fish trader survey, focus group discussions as well as informal conversations and observations.

Initial discussions were held with municipality fisheries staff (RTPA), fish traders and fishers to draw maps of post-harvest fish distribution routes. These maps were digitised using QGIS software, validated with RTPA staff in August 2022, and used to inform decisions on fish trader tracking methods (below). This data will be published in a report alongside a review of existing literature on fish trade and distribution in Timor-Leste and analysis of data from the national fisheries catch monitoring program, Peskas (<https://timor.peskas.org/>), and government boat registrations (Output 1a).

A research method for tracking motorbike fish traders using GPS and temperature sensors was piloted in September–October 2022. RTPA staff assisted to arrange meetings with fish traders to discuss the research and identify participants. Based on a successful pilot, the research activity was expanded to involve a total of 10 motorbike fish traders – see photos taken during installation below. Data collection will continue for the next 9 months to collect a year-long data set to map seasonal patterns. A dashboard showing the GPS data collected has been developed for use in future analysis and presentation of results. As the motorbike traders are all men, the project plans to work more closely with 2-3 women fish traders, who trade fish by foot and/or public transport, in Q3 2023.



Through regular field visits over the past 6 months, the project team has started building relationships with many of the numerous fish traders that operate in Baucau and Lautem. There is no government register of fish traders, so this has involved spending time at fish landing sites and markets to meet fish traders at work. A fish trader survey planned for Q3 2023 will produce a register of fish traders in the 2 municipalities and be used to contract traders for future research and training opportunities (including those linked to OP3 on fish handling). The research has been well-received by fish traders. Many have expressed interest in the research findings (particularly temperature results) as well as training opportunities to improve their small businesses and fish handling practices.

No. and Activity	Outputs/ Milestones (due date)	Completion date
1.1 Research planning workshop with national and district fisheries officers and other stakeholders in Baucau and Lautem	1a. TL: Research plan with validated research methods, confirmed roles, and agreed research schedule (Q2 2022)	Q2 2022
Comments from previous reporting periods (if relevant)	N/A	
Comments for this reporting period	Output complete, previously reported. Research plan updated in reflection workshop. Baucau Lautem report summarises preliminary data and learning and guides the research plan to project end.	
1.2. Training workshop for community researchers in Baucau and Lautem districts	1b. TL: 5-10 trained community researchers (Q2 2022)	N/A
Comments from previous reporting periods (if relevant)	N/A	
Comments for this reporting period	Deleted. The model of using community researchers is not practical with respect to the research methods as decided in activity 1.1.	
1.3. Monitoring of fish distribution and marketing in Baucau and Lautem districts	1c. TL: Quantification of current fish distribution, transport and storage practices for activity 1.5 (Q2 2023)	Q2 2023
Comments from previous reporting periods (if relevant)	<u>2021-22</u> : Plans progressing with partners for the piloting of trackers on motorbikes transporting fish, and sensors logging temperature.	

No. and Activity	Outputs/ Milestones (due date)	Completion date
Comments for this reporting period	Partially completed. First set of data will be published as Baucau-Lautem Report. Further data collection is ongoing over next 12 months. Ethics protocol approved. GPS trackers have been installed on 9 motorbikes, temperature loggers installed in trader buckets. Logbooks developed and distributed; ongoing data entry. Tracking dashboard developed.	
1.4 Documenting livelihood experiences of women's and men's participation in fish marketing and distribution in Timor-Leste	1d. TL: Opportunities and challenges for innovation identified from the participants' perspectives for activity 1.5 (Q3 2022) Output added in 2021-22 reporting TL: paper on mechanisms of distribution and acquisition across formal and informal systems (Q1 2023) – <u>now deleted, see comments below.</u>	
Comments from previous reporting periods (if relevant)	<u>2021-22:</u> Piloting of research methods in Q3 2022. Output 1d delayed until Q4 2023. An output has been added to reflect some evolution in thought about the integration of livelihoods and food in rural food systems.	
Comments for this reporting period	As part of the next phase of research (activity 1.3), research protocol has received ethics approval for focus group discussions to inform this output. Focus groups will discuss findings from activity 1.3 – there is a step-by-step logic, which will be completed by Q4 2023. Added paper deleted. It will not be completed due to staff member moving to take on Project Leader role on FIS/2022/121.	
1.5 Co-construct results and policy advice with national and district fisheries officers and other stakeholders in Timor-Leste	1e. TL: Workshop with national and district partners (Q4 2024)	
	1f. TL: District level report and factsheet on identified patterns of aquatic foods distribution and identified opportunities for innovation (see Activity 4.2) (Q4 2024)	
	1g. TL: Awareness and training material on identified opportunities for improving fish handling for quality and safety (see Activity 3.2) (Q4 2024)	
	1h. TL: Scientific publication on the application of sensor technology for mapping fish distribution to improve food and livelihood outcomes (Q4 2024)	
Comments from previous reporting periods (if relevant)	N/A	
Comments for this reporting period	Not due yet. On track to be completed from activities 1.3 and 1.4.	
1.6. Analyse existing Solomon Islands datasets to identify gaps in information and knowledge where further research on fish distribution is most needed	1i. SLB: Gaps in knowledge identified for partners planning workshop under Activity 1.7 (Q4 2022)	Q2 2023
Comments from previous reporting periods (if relevant)	<u>2021-22:</u> A template is completed for the innovation/exemplar briefs to form a national compendium (under the oversight of MFMR) to summarize existing data relating to a set of national innovation examples. The goal is to summarize key learning from a gradient of externally supported and locally-led innovations and fish distribution/marketing, with ideas about requirements for rural livelihood innovation and research gaps. We have identified a list of potential topics for the briefs, MFMR clearance for production and a process for that. The outcome from doing this type of output is to help define future research needs/gaps and prioritise planning in livelihood support, which we can then develop during the rest of the project. So far draft innovation briefs have been developed for: "Dried fish from Shortlands islands", "Solar freezers in Malaita", "Seaweed chips", with a series more under development.	
Comments for this reporting period	Completed. Gaps were identified at the project reflection workshop and decisions were made to: (i) complete the analysis of Auki market data and publish as a (new) scientific output together with the Provincial government in Malaita (output 1l), (ii) focus on a report on themes discussed at the workshop that influence distribution of fish, using existing data (output 1n). We made limited progress on the Innovation Briefs in the intervening year. The solar powered freezer brief has been completed but not yet published. At the	

No. and Activity	Outputs/ Milestones (due date)	Completion date
	project reflection workshop, it was agreed the template was not suitable for all innovations so it hindered the process of documenting these innovations. Instead, a decision was made to focus on stories or ideas in a more narrative form and flexible format. MFMR representatives promoted this approach. These idea briefs will be ongoing for the duration of the project, incorporating new research and ideas as project implementation progresses. The Innovation Briefs and outputs 1j and 1n will be reported in Activity 1.9.	
1.7. Research planning workshop with national and district fisheries officers and other stakeholders from Guadalcanal, Western, Malaita and Isabel provinces	1j. SLB: Report on information and knowledge gaps in rural-to-urban fish-based economic activities (Q1 2023)	
	1k. SLB: Research plan with validated research methods, confirmed roles, and agreed research schedule (Q1 2023)	Q2 2023
Comments from previous reporting periods (if relevant)	2021-22: Under planning. Based on the gaps identified in 1.6, a brief report or factsheet is being discussed with MFMR. Possibly, this output will be integrated with the compendium of "Innovation briefs" utilising existing data and knowledge in preparation (Output 1i).	
Comments for this reporting period	1j. (information and knowledge gaps) will be integrated into output 1n (aquatic food distribution practices) as agreed with MFMR and Provincial Government partners during the reflection workshop. 1k. Completed. Research plan completed with partners during the reflection workshop.	
1.8. Filling the research gaps on women's and men's livelihood experiences from participation in fish marketing and distribution in Guadalcanal, Western, Malaita and Isabel Provinces in Solomon Islands	1i. SLB: New information about fish-based livelihoods of women and men in rural places filling information gaps on gendered livelihood experiences at these locations for Activity 1.9 (Q3 2024) Added: Roscher et al. (2023) paper on decadal characteristics in Pacific fish-based livelihoods.¹	
Comments from previous reporting periods (if relevant)	N/A	
Comments for this reporting period	Partially completed. Data from Auki market monitoring partially analysed. This will be published in a new paper 'spatial and nutrition patterns at Auki market, Solomon Islands'. This work also leads to the now combined output 1j/1n that will be reported in Activity 1.9 below. Completed: Roscher et al. (2023) added paper on decadal characteristics in Pacific fish-based livelihoods. This paper was developed with SPC for a regional summary of longer-term trends in fishing participation and livelihoods.	
1.9. Co-constructing results and policy advice with national and provincial fisheries officers and other stakeholders in Solomon Islands	1m. SLB: Workshop with national and provincial partners (Q4 2024)	
	1n. SLB: Report on rural-to-urban aquatic foods distribution practices and key areas of locally appropriate innovation (Q4 2024)	
Comments from previous reporting periods (if relevant)	N/A	
Comments for this reporting period	Not due yet	

Outcome pathway 2: How have livelihoods changed as a result of rural economic development initiatives focusing on aquatic foods?

Project activities for Outcome pathway 2 during the reporting period have focused on data collection and analysis to complete research protocols for case studies as agreed with partners. These protocols increase our understanding of a) the diverse economic activities of women and men in each case study site to gain a contextualised understanding of the livelihood impacts of each case

¹ Red text denotes changes to activities/outputs to be updated in the Project Proposal through a variation (pending).

study innovation, and b) the contributions of each innovation to community economies and wellbeing, of women and men in each case study site.

For the Timor Leste case studies, this work was initiated in Q3 2022 with piloting of in depth semi-structured interviews in Illilai (Case Study 4 – fisheries infrastructure), followed by completion of eight interviews of women and men involved in Case Study 4, and five interviews with women involved in Case Study 3 – fish powder. Interviews were conducted in Tetun, then transcribed and translated. Analysis has been undertaken to identify emergent themes for enablers and challenges, describe diverse community economic activities, and identify key components of locally defined wellbeing. Analysis for Case Study 4 is complete, while Case Study 3 requires further ground truthing scheduled for Aug 2023.

For the Solomon Islands case studies, a research planning workshop held in Q1 2023 with Solomon Islands team members, Malaita Provincial government, and MFMR sought to validate the research design for additional data collection for Case study 1 – fisheries centres. The resulting design, involving participatory workshops and interviews with community members and key informants, has been carried out at one Constituency Fisheries Centre (CFC) in Foufou (Malaita), and one Provincial Fisheries Centre (PFC) in Lata (Temotu) (Figure 4). Field research in two additional centres, CFC Sasamunga (Choiseul) and PFC Bahana (Isabel), is scheduled for Jul-Sept 2023.



Figure 4. Participatory workshop, men's group activities, March 2023

Outputs for Pathway 2 due during the reporting period are 2c. national report co-authored with MFMR presenting findings from fisheries centre case studies. Drafting is underway and report is on track to be completed by end 2023. Paper summarizing the learning from piloting rural fish-based micro-enterprise through introducing solar freezers with Rokotanikeni (output 2e) has been published: Batalofo et al. (2023b).

No. and Activity	Outputs/ Milestones (due date)	Completion date
2.1 Standardise research framework for case study comparisons across Solomon Islands and Timor-Leste	2a. Research protocol finalised and validated with partners (Q2 2022)	TL – Q2 2022 SLB – Q1 2023
Comments from previous reporting periods (if relevant)	<u>2021-22</u> : Research plan and project engagement in the sector developed with District Fisheries Officers in Baucau (Estevao) and Lautem (Eligito) and MAF (Alda) in April 2022. This plan has also been validated with district aquatic food	

No. and Activity	Outputs/ Milestones (due date)	Completion date
	system actors (mana Theresa at Watabou beach, centro peskador at Sawataisi, Buigira, Com) NGOs (TOMAK, World Vision). Fieldwork scheduled for 15 August will pilot key informant interviews and engage in country staff in development of further tools for community economies research in Timor-Leste.	
Comments for this reporting period	TL – Completed, previously reported. Outcomes from research planning workshop – a CGIAR Initiative on Aquatic Foods – Workpackage 2 - is published as Bonis Profumo et al. (2023) which demonstrates alignment of CGIAR and ACIAR investments. SLB – Completed. Research planning workshop in Q1 2023 with Malaita Provincial government, MFMR.	
2.2. Case study 1. Constituency and Provincial fisheries centres in Solomon Islands.	2b. SLB: Data set for cross-country synthesis (activities 2.6,2.7,2.8) (Q2 2023)	Q2 2023
	2c. SLB: National report with MFMR that describes the function and options for governing fish distribution enterprises at centres within the context of national development and international aid programming containing ideas for “options” about what can be done in the constituency fisheries centres (Q2 2023)	
Comments from previous reporting periods (if relevant)	<u>2021-22:</u> Will likely be delayed until Q4 2023. The COVID outbreak in Solomon Islands (2021, early 2022) has delayed this work. A project meeting in Honiara will look to plan and develop tools to pilot at prioritised CFCs based on MFMR report on CFC/PFCs by project team member Paul Tua. In the meantime, existing data has been shared amongst project partners.	
Comments for this reporting period	2b. Completed. Data has been collected from 1 CFC and 1 PFC, remaining data collection will be completed by end of August 2023. 2c. Delayed but on track to be completed by end 2023. At the reflection workshop, MFMR indicated interest in augmenting this report with a follow-up cost-benefit analysis report. This will be drafted together in 2024 depending on MFMR availability.	
2.3. Case study 2. Women’s solar freezer enterprises in Solomon Islands	2d. SLB: Factsheet on rural solar freezer enterprises in Solomon Islands (Q4 2022)	Q4 2022
	2e. Paper that summarizes the learning from piloting rural fish-based micro enterprise through introducing solar freezers with Rokotanikeni (Q4 2022)	Q4 2022
	2f. SLB: Data set for cross-country synthesis (activities 2.7,2.8) (Q4 2022) This should refer to activities 2.6, 2.7	Q1 2023
Comments from previous reporting periods (if relevant)	<u>2021-22:</u> 2d. Not due yet – on track. Fact sheet in development for inclusion in the MFMR-led “Innovation brief” compendium. 2e. Not due yet – on track. Paper by Batalofo et al. submitted to Asia-Pacific Viewpoint: “What can the experiences of rural women in Melanesia teach us about developing community economies with innovation in aquatic food systems?”, summarizing the learning from piloting rural fish-based micro enterprise through introducing solar freezers with Rokotanikeni 2f. Not due yet – likely delayed until Q2 2023 due to COVID. The dataset on life stories makes up the model for data collection.	
Comments for this reporting period	2d. Completed as Batalofo et al. (2023c) 2e. Completed as Batalofo et al. (2023b). 2f. Completed. Dataset is ready for cross-country synthesis in activities 2.6 and 2.7.	
2.4. Case study 3. Fish-based products in Timor-Leste	2g. TL: Factsheet on rural fish-based product enterprises in Timor-Leste (Q4 2022)	Q1 2022
	2h. TL: Paper that summarizes the learning from piloting rural fish-based microenterprise in Timor-Leste (Q4 2022)	Q4 2021
	2i. TL: Data set for cross-country synthesis (activities 2.7,2.8) (Q4 2022) This should refer to activities 2.6, 2.7	Q2 2023
Comments from previous reporting periods (if relevant)	<u>2021-22:</u> 2g, 2h. These two products will be complemented with a paper responding to the strong demand for fish-powder: Eriksson et al. - Ex ante	

No. and Activity	Outputs/ Milestones (due date)	Completion date
	evaluation of the scaling up and out of aquatic food innovation in the Timor-Leste food system. To be submitted in Q4 2022. 2i. Not due yet – on track. Data compiled from Hunnam et al. (2021), to be complemented with new methods described in 2.1.	
Comments for this reporting period	2g, h. Completed. Previously reported as Hunnam et al. (2021) program report and Tetun language summary factsheet. 2i. Partially completed. Data is collected and will be ready for cross-country synthesis in activities 2.6 and 2.7 by September 2023.	
2.5. Case study 4. Fish distribution infrastructure in Timor-Leste	2j. TL: Data set for cross-country synthesis (activities 2.6, 2.7, 2.8) (Q1 2023)	Q2 2023
	2k. TL: National report with MAF that describes the function and options of infrastructure investments in enhancing fish-based livelihoods. (Q1 2023)	Q4 2021
Comments from previous reporting periods (if relevant)	<u>2021-22:</u> 2j. Not due yet – on track. Data compiled from Hunnam et al. (2021), to be complemented with new methods described in 2.1 2.k. Completed as Hunnam et al. (2021) program report and Tetun language summary factsheet.	
Comments for this reporting period	2j. Completed. Dataset is ready for cross-country synthesis in activities 2.6 and 2.7. 2.k. Completed. Previously reported as Hunnam et al. (2021) program report and Tetun language summary factsheet.	
2.6. Identify key characteristics of multidimensional benefits emerging from case studies	2l. Scientific publication assessing the multidimensional benefits and challenges that are experienced among participants in fish-based livelihood programs synthesised from datasets across four cases (Q2 2024)	
Comments from previous reporting periods (if relevant)	N/A	
Comments for this reporting period	Not due yet – likely to be delayed because of delays in data collection for 2.2, 2.4 and 2.5 due to covid travel restrictions in 2021-22.	
2.7. Identify key enablers and disablers to gendered engagement in multidimensional benefits from case studies	2m. Scientific publication from cross country analyses of intersectional gendered dynamics that inhibit or support women's and men's ability to engage in enterprises, and most significant opportunities for increasing equity (Q2 2024)	
Comments from previous reporting periods (if relevant)	N/A	
Comments for this reporting period	Not due yet – likely to be delayed because of delays in data collection for 2.2, 2.4 and 2.5 due to covid travel restrictions in 2021-22.	
2.8. Describe social and ecological trade-offs and rebound effects on sustainability from case-studies	2n. Scientific paper on development programming in the coastal fisheries sector contrasted with lessons from the CBRM development (Q2 2024)	
	2o. Scientific publication on 'Jevon's paradox' in coastal fisheries development from cross country analyses on the social and ecological interactions (Q2 2024)	
Comments from previous reporting periods (if relevant)	<u>2021-22:</u> Scientific journal article by Roscher et al. (2022) describes the diverse theoretical livelihood outcome pathways that are often muddled up in livelihood diversification project planning and evaluation. The theoretical foundation will guide forthcoming outputs under this activity.	
Comments for this reporting period	Not due yet.	

Outcome pathway 3: How can the capacity to innovate in a community economy be enhanced and spread?

One of the main lessons from the activities in the first half of the project is that past fish-handling activities have been irregular, used old and inaccessible materials, and have been implemented by staff without skills and confidence to be trainers – or have been too external to be accessible to intended users. In addition, fish-handling has never been viewed as a “program” with deliberate goals that different types of activities seek to achieve. This was a barrier to the intended plan of the project, which sought to build from existing trainings. Therefore, the work in this Outcome Pathway has focused on a deliberate approach to learning from past activities, a stronger collaboration with SINU as the national educator in area of fish-handling and food safety, and to co-design a program with several national partners filling different roles in services, training, and education.

This significant body of work is developed under a revised Activity 3.1, where we have conducted an evaluation of past fish handling training in Malaita (Batalofo et al. 2023a); we have hosted a one-day workshop with PFOs from all provinces discussing their needs and asking for input on future programs. Based on this work we have prepared a national assessment report summarising experiences and providing design principles for a program on fish handling published as Batalofo et al. (2023d). With this new information we have planned next steps with MFMR, PFOs, and SINU. A tentative training module and accompanying evaluation framework has been scoped and will be taken forward by a core reference group consisting of SINU, MFMR, PFOs, other partners, WorldFish and UOW. While this has delayed the intended plan of the project, it has aligned ideas and plans of partners and created conditions for a new program as well as a draft for an MFMR strategy for fish-handling and post-harvest innovation. The work leading to these outputs create the conditions for the next activities in this Outcome Pathway.

We are integrating with the CGIAR Initiative on Aquatic Foods – Work Package 2 where emphasis is on working with partners outside the fisheries sector. This multi-sectoral approach to services and training is framed in additional project output Eriksson et al. (2023), Bonis-Profumo et al. (2023). It demonstrates alignment and complementarity of CGIAR and ACIAR investments and a theory of scaling. The project has also provided fish-handling related input to other WorldFish-led projects. To date, this has included a fish handling section/chapter in a collection of recipes promoting the use of farmed tilapia, and a practical fish handling session at a 1-day Training of School Cooks as part of a pilot to include farmed tilapia in school meals provided at inland schools.

No. and Activity	Outputs/ Milestones (due date)	Completion date
3.1. Collaborative development of training on safe and hygienic handling of aquatic foods that are appropriate and relevant in a rural context	<p>New outputs:</p> <p>3a.i. Report to summarise learning from past fish handling activities carried out in Malaita Province</p> <p>3a.ii. Host Provincial Fisheries Officers fish handling workshop at annual PFO conference, Honiara</p> <p>3a.iii. Report to summarise learning from past fish handling activities carried out in Solomon Islands</p> <p>3a.iv. SLB: Training modules for rural fish handling developed with SINU, market associations and community groups (Q3 2022)</p>	
Comments from previous reporting periods (if relevant)	<p><u>2021-22:</u> This work is progressing but has been delayed due to COVID-19 outbreak in Solomon Islands. Made contact with key academic staff at Solomon Islands National University (SINU) and Hampus will meet and develop this work in September trip to Honiara. In Malaita, staff are summarizing the work by PFOs and NGOs in these areas and also establishing the type of demand from ladies in the Rokotanikeni association as well as from Auke Bay fishers association.</p>	
Comments for this reporting period	<p>Partially completed. During the reporting period, progress has been made through:</p> <p>3a.i. evaluation of past fish handling training in Malaita (Batalofo et al. 2023a,</p> <p>3.a.ii. hosting a one-day fish handling workshop at the annual PFO conference</p>	

No. and Activity	Outputs/ Milestones (due date)	Completion date
	<p>(Nov 2022), including conduct surveys with PFOs from all provinces on past training and ask for input on future programs; 3a.iii. a national assessment report summarising past training across Solomon Islands and providing design principles for a program on fish handling based on 3a.i and 3a.ii above, published as Batalofo et al. (2023d);</p> <p>3.a.iv. reflection workshop fish handling sessions with MFMR, provincial government, SINU. A tentative training module and accompanying evaluation framework has been scoped and will be taken forward by a core reference group consisting of SINU, MFMR, PFOs, other partners, WorldFish and UOW.</p> <p>This activity is integrating with the CGIAR Initiative on Aquatic Foods – Work Package 2 where emphasis is on working with partners outside the fisheries sector. In Solomon Islands, these are Kastom Gaden Association and Rural Training Colleges which are nationally recognised training providers. This multi-sectoral services and training approach is framed in additional project output Eriksson et al. (2023) and Bonis-Profumo et al. (2023).</p>	
3.2. Pilot training and develop a program on upskilling of aquatic food handling practices of women in Solomon Islands	3b. SLB: piloted approach to co-construction of place-based training programs for the fisheries context (Q2 2023)	
	3c. SLB: Program for upskilling practices drawing on social networks of women that produce and market aquatic foods established (Q2 2023)	
Comments from previous reporting periods (if relevant)	N/A	
Comments for this reporting period	<p>3b. Delayed. Anticipated piloting by Q4 2023.</p> <p>3c. Delayed. During discussions on project outputs in 3.1 at the reflection workshop, MFMR indicated strong interest in the project supporting the development of a fish handling strategy. We anticipate that this strategy will form the basis of a national program which will impact timelines to develop training modules and products.</p>	
3.3. Transfer of training modules on safe and hygienic handling of aquatic foods (Activity 4.1, 4.2) that are appropriate and relevant in a rural context from Solomon Islands to Timor-Leste	3d. Exchange event between Solomon Islands Representatives (SINU, MFMR, WorldFish) and Timor-Leste representatives (MAF, WorldFish) (Q4 2022)	
Comments from previous reporting periods (if relevant)	N/A	
Comments for this reporting period	3d. Partially completed. A first exchange event occurred as part of the reflection workshop through sessions on the design of training modules in fish handling and demonstrations on safe handling of fish in tuna bottling.	
3.4. Pilot training and develop a program on upskilling of aquatic food handling practices and fish-powder production with women in Timor-Leste	3e. TL: Piloted approach to co-construction of place-based training programs for the fisheries context (Q4 2024)	
	3f. TL: Program for upskilling practices drawing on social networks of women that produce and market aquatic foods, including fish-powder production, established (Q4 2024)	
Comments from previous reporting periods (if relevant)	<p><u>2021-22</u>: We have piloted fish consumption campaigns and fish-powder demonstrations at market events at three community markets in Timor-Leste (Loro-Betano-Manufahi, Simpan-Tiga-Same-Manufahi, Suai-Covalima). A total of 197 women and 53 men participated in the activities and received information. The learning from these pilots will inform planning with partners for training and awareness programs (Activities 3.1, 3.5). The activity was done together with MAF and Mercy Corps.</p>	
Comments for this reporting period	<p>Not due yet.</p> <p>Fish handling input to a WorldFish-led aquaculture project in Timor-Leste (PADTL2), including: a section of a Tilapia Recipe Book (WorldFish & Mercy Corps 2023) and a practical training session at a Training of School Cooks.</p>	

No. and Activity	Outputs/ Milestones (due date)	Completion date
	Fish powder demonstrations: as part of events organised for Senator Penny Wong, Minister for Foreign Affairs of Australia in Dili (September 2022); World Food Day event in Balibo (November 2022); ACIAR Commission field visit (June 2023).	
3.5. Peer-to-peer learning events to facilitate exchange and shared learning between women from different geographical areas on how to increase gains from aquatic foods marketing in Solomon Islands and Timor-Leste	3g. At least 5 knowledge exchange events (Q2 2024)	SLB – one event Q2 2023
Comments from previous reporting periods (if relevant)	N/A	
Comments for this reporting period	3g. Partially completed. The inaugural <i>Island Food System in Transition Forum</i> (Q2 2023 with CGIAR Initiative on Aquatic Foods – Workpackage 2) provided an opportunity for exchange of ideas and learning in <i>tok stori</i> format. It included a demonstration of smoked fish from Shortland Islands. It was attended by over 30 participants, including Indigenous experts, Dr Shane Tutua (Manager Za Nai Tina), Dr Transform Aqorau (Vice-Chancellor at SINU, Dr David Gegeo (Director Research, SINU). Rural food system actors from Isabel, Malaita, Guadalcanal participated in a panel.	
3.6. Follow up assessment of upskilling and peer-to-peer activities	3h. Report to MFMR, PFO, MAF and other national partners to share findings on how Pathway 1 activities contributed to building sustainable and profitable livelihoods from fish-marketing. (Q4 2024) This should refer to Pathway 3.	
Comments from previous reporting periods (if relevant)	N/A	
Comments for this reporting period	Not due yet. Evaluation framework for assessment scoped out during reflection workshop.	

Outcome pathway 4: How can national agencies meet their existing commitments to community-led fisheries development in a gender equitable manner?

The project's deliberate focus on integration of project activities with national agencies and partners was commended on at the reflection workshop. The workshop served as an important moment of review and planning for the second phase of the project (Activity 4.1). During this review it was also highlighted the importance of ensuring a continued commitment into a Fish Innovation phase 2, building on the momentum we have now created in national priority areas on fish-based livelihood and fish handling. Outputs under Activity 4.2 were discussed and reviewed amongst national output leaders. Outputs reported on the Outcome Pathway 3 meets intended objectives for these outputs and have the same national authors.

Box 1 - Case study: Supporting Timor-Leste Municipality Officers

In Timor-Leste, initial inception meetings (April 2022) and planning meetings (August 2022) with government partners at municipal level (Baucau and Lautem RTPA leaders) indicated that a lack of operational funds for basic activities (such as motorbike fuel) over the past 2 years had prevented staff from visiting coastal communities to meet and discuss issues with fishery actors. RTPA leaders expressed interest in carrying out more regular engagement and information exchange in coastal communities. The project team proposed to provide a small budget for RTPA operational expenses so that municipal government fisheries staff could carry out some of their priority community engagement activities. To facilitate this, the project team held separate 2-day workshops with Baucau and Lautem RTPA with the objective to help them plan an activity to strengthen their engagement and planning with fishing communities (October 2022). The workshops were attended by most municipal-level fisheries and aquaculture staff, including leaders: 13 men and 1 woman in Lautem; and 8 men in Baucau. During the workshop, it was evident that RTPA staff had a top-down approach to planning and limited experience listening to or planning collaboratively with communities. This indicated a need to build capacity among RTPA staff for good community engagement practices in order to make progress towards desired end-of-project outcomes relating to government agencies being better able to support community-led innovation. Consequently, the project team contracted community engagement specialists ‘Bridging Peoples’ to deliver a 3-day training on ‘Working with Communities’ (November 2022). The training was attended by both national and municipality fisheries staff as well as WorldFish staff and others (7 women and 18 men in total). The project funded the attendance of staff from Baucau and Lautem RTPA (7 men and 1 woman), national DG-PARM (2 women), WorldFish (1 woman) and University of Wollongong Timorese PhD candidate (1 man). The training was positively received and generated good discussions, with participants commenting on the importance of the concepts to their work. To promote application of learning, the project has now engaged Bridging Peoples to provide 5 mentoring meetings over a 12-month period with Baucau and Lautem RTPA staff (one meeting completed to date, May 2023). After the initial training, the project team encouraged the RTPAs to revisit their plans for their community engagement activities and provided verbal and written feedback on their plans on several occasions. At a follow-up meeting (March 2023), the project team also supported the production and presentation of a poster summarising fishery catch monitoring data for 2022 (from Peskas) in each of the 2 municipalities by the WorldFish research analyst who supports the national government with this program. The municipal-based data collectors involved in this program were encouraged to use the posters to report back to fishers during the planned community meetings. With operational funds provided by the project, Lautem RTPA proceeded to carry out 2 meetings with fishers from ~4 (of 12) fisher centres (March 2023). Similar progress by Baucau RTPA has been hindered by internal leadership issues and funding requests not aligned with government regulations. From April to July, many government and community activities in Timor-Leste were slowed or halted due to the National Parliamentary Election on 21 May 2023 and subsequent implications for leadership positions in national and municipality agencies resulting from the change in government.



No. and Activity	Outputs/ Milestones (due date)	Completion date
4.1. Create national theories of change (ToC) with MFMR and MAF for planning sustainable improvement fish-based livelihoods in support for national policies and strategies	4a. Participatory ToC developed for Solomon Islands and Timor-Leste in collaboration with national agencies and other stakeholders (Q3 2022, with follow up at mid-point of project and end of project)	Q4 2021, Q2 2023

No. and Activity	Outputs/ Milestones (due date)	Completion date
Comments from previous reporting periods (if relevant)	2021-22: Design of project ToC completed. Outputs from the co-design process reported as Eriksson et al. (2021) and Schwarz et al. (2021).	
Comments for this reporting period	Completed. Mid-point review completed at Q2 2023 Nusatupe reflection workshop.	
4.2. Mentoring national and provincial staff to produce communication, translation and information products emerging from project activities	4b. MFMR led SPC Bulletin article on seconded PFOs and their role in training and supporting Provincial programming (Q2 2022)	Q2 2023
	4c. District office-led fact sheet on fish trading practices across Baucau and Lautem districts and options for local innovation (Q4 2022)	
	4d. PFO led SPC Bulletin article on experiences from operating provincial programming for developing fish-based livelihood (Q2 2023)	Q2 2023
	4e. Factsheet on activities that contribute towards capacity building in the gender and development theme (Q3 2023)	
	4f. MFMR and WorldFish led practice brief on enabling community ownership and governance in rural fish-based livelihood programming in Solomon Islands (Q4 2023)	
	4g. MAF and WorldFish report on the role of how national agencies can enabling enhanced fish-based livelihoods and safe fish distribution (Q2 2024)	
Comments from previous reporting periods (if relevant)	2021-22: 4b. In draft - co-mapped with FIS-2020-172 Pathways-2 for “cost of CBRM” report. Led by Delvene Boso and with MFMR/PFOs	
Comments for this reporting period	<p>4b and 4d. Completed. In addition to the “Cost of CBRM report”, which is still in preparation with FIS-2020-172 both these outputs are augmented and replaced with new Malaita fish-handling review report (Batalofo et al. 2023a) and the national assessment report (Batalofo et al. 2023d). These two reports describe the role of PFOs and focus on their priorities for designing a program for fish-handling to enhance fish-based livelihoods and improve food safety.</p> <p>4c. In preparation. To enable municipal RTPA teams to start engaging with communities, the project team: (i) held planning workshops with Baucau and Lautem RTPA staff (Oct 2022); (ii) arranged a 'Working with communities' training workshop delivered by community-engagement specialists, Bridging Peoples (Nov 2022); (iii) provided verbal and written feedback on planned community activities (11+ in person meetings, and numerous phone calls and text messages); (iv) provided operational funds for Lautem RTPA to carry out 2 community meetings; and (v) arranged the first of 5 planned mentoring meetings between RTPA staff and Bridging Peoples.</p> <p>4e – 4g. Not due yet, discussed and progressed during Nusatupe workshop under the headlines of research integration and extension services.</p>	
4.3. District level symposium of learning across sectors and initiatives in Baucau and Lautem	4h. TL: District level 'fish for nutrition and income' strategy with an emphasis on women entrepreneurs (arranged with FIS/2017/032 for joint output) (Q3 2024)	
Comments from previous reporting periods (if relevant)	N/A	
Comments for this reporting period	Not due yet	
4.4. Project country symposium for sharing of experiences and synthesis of learning from project	4i. ACIAR monograph 'Guiding principles for innovating fish-based livelihoods in gendered community economies' as symposium proceedings (Q4 2024)	
Comments from previous reporting periods (if relevant)	N/A	
Comments for this reporting period	Not due yet	

3.2 Summary of progress towards anticipated outcomes

Table 1: Summary of project outcome information

Intermediate outcomes	Results Summary	Evidence
Constraints and opportunities for improving fish distribution practices are understood by all through dissemination of learning	Progressing through research in Outcome Pathway 1, which is defining current distribution and summarizing innovation examples. This research is co-designed and implemented with next users to bring about co-creation of knowledge. The reflection workshop also was a moment of shared interpretation of results to date.	Research piloted and designed with MAF and Municipal government officers in TL 10 traders participating in research (TL) Output authorship includes 5 next user groups
Learnings from assessed case-studies form foundation for how to improve fisheries development programs	Progressing through the publication of learning from case studies 3 and 4.	Batalofo et al. (2023c), Batalofo et al. (2023b), Hunnam et al. (2021)
	Community economies livelihood data collection to complement existing data for case studies 2, 3 and 4, in progress for 1 (2 of 4 Fisheries Centres).	13 interviews TL and 15 interviews SI completed (and/or transcribed and translated)
Partner communities and women's groups have increased skills for safe fish handling and processing	(TL) Messaging on safe and hygienic fish handling practices have been taken up by other WorldFish projects and international organisations working to promote fish for nutrition at the community level.	Project supplied fish handling messages to incorporate in NZ MFAT and USAID-funded cookbook supporting an aquaculture program to promote safe consumption of tilapia in communities (WorldFish and Mercy Corps 2023).
	(SI) Progress in program design principles, establishing networks, mobilising a Solomon Islands-wide coalition with MFMR, SINU, KGA, provincial fisheries officers to support the design of a program on fish handling.	Malaita report (Batalofo et al. 2023a), PFO conference, national assessment (Batalofo et al. 2023d), sessions at the reflection workshop, recruitment of a new staff member in post-harvest fisheries.
Communities and women's groups have capacity to innovate and value-add to their fish-based livelihoods	Progressing through market events and fish consumption campaign (Activity 3.4) and peer-to-peer exchange (Activity 3.5).	Women's groups demonstrating skills in fish handling and processing during peer-to-peer, demonstration and advocacy events in TL (3) and Solomon Islands (1 event)
New skills from project activities are found to be valuable and improve current workplans and practice	National agency staff are contributing to scientific and translation outputs, with increased capacity in research and scientific writing.	100% project outputs have national agency staff co-authorship
	(Sub)national agency staff have a sense of 'expertise' in community-led innovation within their organisation.	Participation in story-telling components of the reflection workshop and contribution to plenary sessions by national and subnational agency staff (TL) National and subnational staff participants in community engagement training reported they see the value in developing skills in good community engagement, with evidence they are building a sense of 'expertise' in community-led innovation
	National agency staff see value in evaluating existing interventions and looking for less-costly alternatives to enhance fish-based livelihoods (e.g. fish	(SI) MFMR staff leading cost-benefit analyses of existing interventions; MFMR and Provincial fisheries staff invest time in project activities such as the reflection workshop

	handling training, peer-to-peer exchange, information provision)	
End of project outcomes	Results Summary	Evidence
Co-created knowledge with tools and techniques for enabling the spread of community-led innovation ready for uptake	The project is making progress in areas of technical research and learning (OP 1 and 2), as well as practical approaches for scaling fish handling (OP 3), underpinned through project integration and culture of co-learning with (sub)national government (OP 4).	See evidence in all five intermediate outcomes.
Communities and women's groups in Solomon Islands and Timor-Leste have skills and knowledge to pursue innovation in fish-based livelihoods	Learning from fish powder and fish house case studies shows that various factors influence the uptake of fish-based innovations, many of which are beyond a project's control.	Case study data
	Women's group in TL are continuing to produce fish powder and participate in peer-to-peer learning and advocacy events, suggesting this pathway to impact is still relevant, but results in this area won't be apparent until closer to end of project.	Women's groups produce fish powder on request and provide demonstrations for peer-to-peer and advocacy events in TL (3) and Solomon Islands (1 event)
Communities and women's groups in Solomon Islands and Timor-Leste have access to safer aquatic foods	This EOPO is dependent on the roll-out of the fish handling training and in implementation by other partners of resources containing fish handling messages.	The fish handling training will include an evaluation framework that will provide evidence on whether the training is contributing to this EOPO
National agencies are better able to support community-led innovation as part of rural fish-based livelihoods development programs	Timor-Leste Municipality officers are in the process of building skills in community engagement which will provide a good foundation for achieving this EOPO.	12 (8M/4F) participants in community engagement training; 8 (7M/1F) participants in ongoing mentoring with Bridging Peoples (experts in community engagement); participants have prioritised and are implementing community engagement skills in their regular duties through supported activities in 12 fisheries centres for 100% coverage of Lautem coastline
	There is some indication that Solomon Islands MFMR staff are investing time and effort in planning for service delivery to meet community needs and priorities in fish-based livelihoods, such as fish handling training, awareness programs, information provision. MFMR staff participation in project meetings and workshops also indicate an enthusiasm to develop skills in community engagement for future community-led initiatives.	MFMR staff seeking project support to develop a strategy in fish handling; MFMR staff involvement in reference group for development of the fish handling training module; MFMR contribution to innovation briefs; MFMR personnel involved in participatory workshops and interviews with community members for Pathway 2 focus on livelihoods change.
	There is evidence that national agencies and international aid agencies are adopting initiatives from the project in project locales. MFMR/FAO has adopted the same approach in engaging non-fisheries partners in fish handling training	Participants from KGA, Rural Training Centre attending the MFMR/FAO Fish handling training in May 2023

Unanticipated outcomes	Results Summary	Evidence
The project's approach is having influence beyond its geography and scope	Hampus Eriksson guided the design team for British government-funded \$50M BlueTech Superhighway project in coastal East Africa who have adopted FIS/2019/124 approaches and techniques for addressing aquatic food waste and loss. One of four major components (and ¼ budget) is building on the learning of the Fish Innovation project.	https://worldfishcenter.org/project/asia-africa-bluetech-superhighway

3.2.1 Gender outcomes

The project is undertaking intersectional analysis that provides a comprehensive investigation of key enablers and barriers to innovation, and more fully accounts for the wellbeing impacts of innovation in communities. The project gender strategy is embedded in the aims and outcomes of the project and reported in Section 3.2 above. In addition, we provide a tabulated structure for areas of analyses in the project towards gender outcomes (Table 3).

Table 3: Areas of analyses which address gender outcomes, organised by gender strategy goals.

Gender Strategy	Areas of analyses
Build partnerships with existing women's groups, such as church-based organizations, market vendor associations and savings groups	Pathway 1 working with women fish traders, Pathway 2 engaging with women's leadership in existing fish livelihood innovation case studies, Pathway 3 committed to working with women's groups as training is designed and delivered.
Identify strengths and networks to collectively improve women's wellbeing	Pathway 2 analysis investigating the role of women's networks in case studies.
Build understanding of gendered aspects of economic dynamics of livelihood innovations (e.g. what resourcing is available, what ways to get resources to make things happen)	Pathway 1 and Pathway 2 analysis to identify resourcing dynamics
Build understanding of the gendered dynamics of livelihood innovations (what do women do, what do men do, what ways are women working together to make things possible, and what ways are they stopping each other)	Pathway 2 analysis of case study data
Build understanding of social and cultural aspects of livelihood innovations (what household and community leadership dynamics make new initiatives possible or stop new initiatives from getting off the ground, how are those dynamics felt differently for women and for men)	Pathway 2 analysis of case study data
Build understanding of the technological dynamics of livelihood innovations (what know-how and skills are in place that makes things possible for women and men, what other know-how and skills are needed to make things possible for each gender)	Pathway 2 analysis of case study data, Pathway 3 design of training
Build understanding of the political dynamics of livelihood innovations (what regulations, policies, leadership structures are in place that facilitate and support new innovations by women and men, in what ways do existing regulations/policies/leadership structures fail to support new innovations for each and what aspects of this can be changed).	Pathway 2 analysis of case study data

3.2.2 Capacity building outcomes

The project's focus on "on the job learning" has bridged knowledge systems and developed skills among all staff to operate as interdisciplinary teams, as well as to summarize diverse learning. The reflection workshop validated this mode of strengthening building capacity, both in technical work but also in how to operate and get value out of an international project. Among team members, statements from the reflection workshop gives some examples of how partners experience their role and participation in the project: *"help myself to broaden my mind and learn exchange from other experiences and from their work"*; *"on the whole it exceeded my expectations I learned a great deal and come away with new ideas"*. From the post-workshop survey: 95% participants gained new knowledge from attending the workshop and 90% expected to be able to apply this knowledge to their work. 95% agreed that the discussion challenged them to think critically about the topics presented. The information in Box 1 (Section 3.2) and the evaluation session at the reflection workshop (Appendix 5) serves as evidence of sorts that the project is building capacities both among those involved as well as other partners and communities.

The project supported national staff from Timor-Leste (Agustinha Duarte) to present research relating to the project at two international conferences: TropAg in Brisbane (November 2022) and Timor-Leste Studies Association in Dili (July 2023). The three PhD candidates are progressing in their studies and are scheduled to present their proposals in September 2023. Paul Tua (MFMR) has been accepted into the ANCORS Masters program and been successful in his application to the Solomon Islands government for a scholarship to support this. He will begin his studies in 2024 and will be supported by project science staff throughout his studies particularly relating to ongoing and planned outputs in Outcome Pathway 3. In addition, it is worth noting that Margaret Batalofo – a Research Analyst based in Auki, Malaita, Solomon Islands – published 3 outputs this year. She received on-the-job mentoring and support in particular by Dr Kim Hunnam under the projects scientific mentoring and support model.

3.3 Key Findings/Knowledge generation

A) Summarised learning from piloting solar freezers with rural women

Summary: Solar-powered freezers bring cold storage to remote rural communities, enabling preservation of fish catches (and other foods). WorldFish and the West 'Are'Are Rokotanikeni Women's Association piloted the installation and use of 12 solar-powered freezers from 2016 to 2020. Through the project, we reviewed lessons learned from this work and findings in two published outputs: a peer-reviewed paper and a summary brief (citations below). In summary, solar-powered freezers offer a useful, cost-effective alternative to expensive infrastructure construction projects, such as fishery centres. They can lead to a wide range of innovative income-generating ideas, such as freezer space rental or small trading businesses, particularly when introduced in partnership with organised grassroot savings and cooperative groups (including women's groups) who have existing business skills. Small businesses associated with solar freezers have good income-earning potential in areas that have good customer demand from shipping or transport routes, sporting events or households with other sources of cash-income. However, the quality and design of solar-powered freezers varies widely. While cheaper models are attractive to buy, they can be severely flawed, so investments in more expensive, higher quality products are strongly recommended. Regular maintenance and upkeep – and providing training to do so – is essential. Furthermore, providing training for freezer users on proper fish handling, preservation, and chilling

techniques, as well as nutrition awareness, to accompany installation, could help improve the quality of stored food and avoid food safety issues.

Output: Batalofo, M. et al. (2023b) What can the experiences of rural women in Solomon Islands teach us about innovation in aquatic food systems? Asia Pacific Viewpoint, *early view*, 1-15.

Output: Batalofo, M. et al. (2023c). Innovation brief: solar-powered freezers. MFMR and WorldFish.

B) Review of fish-handling and past upskilling activities carried out in Malaita Province and throughout Solomon Islands

Summary: Fish handling refers to the practices, infrastructure and innovation that determine the quality and safety of aquatic foods, influence livelihoods and affect waste and loss. Initiatives that focus on improving or enhancing fish handling can result in better quality aquatic foods that are safer to eat, opportunities for increased income and availability of nutritious foods, and less waste and loss associated with fisheries. Throughout Solomon Islands, provincial fisheries officers (PFOs) and others have carried out various past activities relating to fish handling. However, to our knowledge, there has been no review of such activities to document what has taken place or evaluate their effectiveness in bringing about change. Through the project, we carried out two assessments of past fish handling activities in Solomon Islands and published findings in two reports (citations below).

The first assessment focused on Malaita Province to (a) examine the need and demand for training to improve fish-handling practices, and (b) evaluate past fish-handling training activities in the province. We identified both need and demand for improving fish-handling practices in Malaita Province. Nine training workshops had been carried out over the past six years by two providers. Trainings were reportedly well received by participants, however none had included any form of assessment of learning nor involved any post-training follow-up. The review indicated a need for future training activities to: focus on simple, locally appropriate practices and techniques; be delivered by trainers with good skills and confidence; and include assessment of learning and change.

The second report – a national-level assessment and planning for a future program on upskilling in fish handling – summarised interviews and discussions with PFOs at their 2022 Annual Conference and planning discussions at the May 2023 project reflection workshop. PFOs reported fish handling challenges in all provinces in Solomon Islands, most commonly relating to maintaining cold chains and a lack of good handling practices and knowledge. Past training activities to upskill fishers and/or vendors have been carried out in most provinces. However, activities have tended to be one-off events, typically dependent on ad hoc funding from external organisations. Insufficient training materials and equipment, and lack of prioritisation in government planning and budgets were noted to be a main barrier to provision of training. Ideas from PFOs for future improvements related to five broad themes: updated standardised training materials; other printed resources and communication methods; building partnerships and networks; financial and technical support for PFOs; and approaches to help communities to support themselves. Experiences and ideas shared by PFOs and subsequent discussions at the project reflection workshop involving the project team including partners from MFMR and SINU, form a strong foundation for planning and designing a program on upskilling in fish handling in Solomon Islands. The remainder of the report provides a summary of discussions on conceptual elements of such a program (goals, structure and content) and agreed next steps, which will guide subsequent project work.

Output: Batalofo, M., Hunnam, K., Buga, B., Jasper, M., Isihanua, M. and Eriksson, H. (2023a) A review of fish-handling training activities in Malaita Province. Penang, Malaysia: WorldFish. Program Report: 2023-04.

Output: Batalofo, M., Hunnam, K., Buga, B., Akao, I., Tua, P.J., Gereniu, C., Jino, L., Solo, M., Tutuo, J., Siota, F., Boso, D., Saeni-Oeta, J., Huoma, J., Konamalea, A., Panasasa, C. and Eriksson, H. (2023d) National assessment and planning for improved fish handling in Solomon Islands. Penang, Malaysia: WorldFish. Program Report: 2023-08.

C) Legitimate partnerships for effective research impact

Summary: Co-implemented with collaborating project, One CGIAR Initiative on Aquatic Foods, two briefs were published to provide a foundation for and acknowledge the development and strengthening of new and existing partnerships in Timor-Leste and Solomon Islands (see citations below).

The first brief (from Timor-Leste) documents a partner consultation workshop held in June 2022 to introduce a WorldFish-led planned action research program in Baucau and Lautem municipalities (including this project, ACIAR-funded project FIS/2017/032 and the One CGIAR Initiative on Aquatic Foods). Attendees included representatives from national and municipal government departments in the fisheries, nutrition and health sectors; local authorities, such as village leaders; community members, including fishers, gleaners, aquaculture farmers and fish traders; international organisations, CARE International and TOMAK (To'os ba Moris Di'ak – an agricultural livelihoods program supported by the Australian Government); and local organisations, Centru Feto Haburas Dezenvolviment and Fraterna. The workshop provided a platform for these partners to discuss municipal aquatic food systems, provide input on how WorldFish work could be aligned with local priorities and ideas, and start to develop novel partnerships to integrate aquatic foods into broader municipal-level food security and nutrition planning. Future activities across the three projects will build on discussions and outcomes from this workshop, including strengthening partnerships with municipality government officers to support delivery of services for safe and effective aquatic food distribution, as well as developing partnerships and resources to aid integration of aquatic foods into information, education and communication about food and nutrition security.

The second brief (from Solomon Islands) outlines a vision for an island food system centred on rural food system actors and Indigenous foods. Solomon Islands has unique food system characteristics based on traditional practices and Indigenous foods. There are opportunities to strengthen these for better health outcomes and food sovereignty, yet traditional food practices and Indigenous foods can be invisible in strategic planning for food system transformations. This vision provides the foundation for a new partnership between the Kastom Gaden Association (KGA) and WorldFish. This partnership will strive to make traditional food practices and Indigenous foods visible in agricultural, fisheries, food, nutrition and health policies and programs. Planned activities include celebrating traditional food practices through campaigns and recipe collections, integration of aquatic foods in agricultural demonstrations and training, and strengthening local food system networks.

Output: Bonis-Profumo, G., Alves Almeida C.J, Simões, N, Duarte A, Hunnam K and Eriksson H. (2023) Co-creating nutrition-sensitive development pathways with aquatic foods: Consulting with local food system partners in Baucau and Lautem municipalities, Timor-Leste. Penang, Malaysia: WorldFish. Program Brief.

Output: Eriksson, H., Tikai, P., Pelomo, M., Gomes, C., Ride, A., Hunnam, K., Bonis-Profumo, G., Siota, F., Boso, D., and Tutuo J. (2023) Island food systems in transition: Strengthening Indigenous food systems in Solomon Islands. Penang, Malaysia: WorldFish. Program Brief.

D) Decadal characteristics in Pacific fisheries livelihoods

Summary: Participation rates in, and benefits from, Pacific coastal fisheries has historically been guesstimated from scattered data. The use of household income and expenditure survey (HIES) data has previously been suggested and promoted for this use, but only recently have HIES included questions that could be used for this purpose under the custodianship of SPC. The data contained in these HIES brings enhanced resolution to these historically data-poor fisheries and contributes to a more precise understanding regarding how fishing fits within Pacific Island livelihoods. We used these data to provide a snapshot of household participation in small-scale fishing livelihood activities from across the Pacific and to quantify the economic value generated from these activities.

We find that most households do not actively participate in fishing. For those that do actively fish, the majority that do so only for subsistence, most frequently in coastal habitats such as lagoons and inner reefs. The total equivalent value of aquatic foods caught for subsistence was nearly double that of the economic value of foods caught for sale. Yet, on a per household basis fishing for commercial purposes was more lucrative. These differences point to important distinctions in how households engage with and generate economic value from commercial and subsistence fishing, including where activities are often conducted, and the types of aquatic foods targeted.

This updated knowledge helps us, and others, attune strategies and development agendas. In a parallel study on global livelihood projects, also led by project affiliated PhD student Matt Roscher, a pattern of scattered approaches and outcomes were apparent. Our body of work in the project is starting to make use of the understanding from these global patterns, paired with the regional characteristics of Pacific fisheries livelihoods, and the grounded learning from case studies and fish handling work presented above, to earn an argument for alternative development thinking. The decadal characteristics found in the Pacific symbolise the highly integrated nature of aquatic foods in island food systems, and this is important to guide equally integrated programs for enabling innovation and community-led development. This is the scope of the project integration with CGIAR WP2 focus on island food systems and indigenous foods discussed above. In practical terms, one goal is to utilise the project's fish handling trainings in established agricultural networks as a scaling strategy.

Output: Roscher, M., Eriksson, H., Sharp, M., Menaouer, O., and Andrew, N. (2023). Decadal characteristics of small-scale fishing livelihoods in 13 Pacific Island Countries and Territories. *ICES Journal of Marine Science*, 0, 1-13.

3.4 Most Significant Change observed by the project team this year

The project team collectively effected a change in strategy in Outcome Pathway 3: *Upskilling in fish handling as a prerequisite and spark for further innovation*. The project design originally envisaged a simple translation of existing classroom-based and practical training materials from Solomon Islands National University into a set of practical modules suitable for delivery in rural settings, with input from market vendors and community groups from Malaita. The team's approach has shifted to a more consultative and co-learning process of development, to first look more deeply and learn from past initiatives on fish handling (and produce new outputs Batalofo et al. 2023a, 2023d), and to ask those who will primarily implement this training through a survey of 9 Provincial Fisheries Officers (PFOs) to share their experiences and ideas going forward. The co-development process now involves PFOs from all provinces, not just Malaita. The broader participation base, building from ideas and experiences within provincial and national government and national university experts, and involving other non-fisheries partners and training providers, has brought about momentum. There is also a sense of ownership developing in government stakeholders who are the next users in delivering this training program. For example, at a project meeting in May 2023, the Head of Provincial Fisheries Division suggested the training modules could be supported with a national fish handling strategy for

Solomon Islands. This change in Outcome Pathway 3 means the project is working on a longer timeframe to delivery, but there are indications that the change increases likelihood that the program will be adopted at a national level.

4 Partnerships

Purpose, values and culture

Research integration in partnerships are central to the project. Therefore, we have invested significant thought and effort in how to create legitimate and effective partnership arrangements (this has been reported on in previous year, and published in Schwarz et al., 2021)². How we work to achieve legitimacy and transparent collaboration was discussed among partners at the reflection workshop. In break out groups project team members, including from partners, brainstormed the strengths of the way we work (and what we can do better). The most stated strength of the project which speaks to our partnership strategy was the project's alignment to and support of government priorities (see also Appendix 5 for a complete list). The statements in Appendix 5 symbolise a project modality and approach that is serving partnerships well.

Working relationships

National agencies have taken custodianship over implementation and have been very active in planning and delivering activities. Two areas relating to working relationships were highlighted as strengths in the reflection workshop (see Appendix 5):

1. The project is working across organisations and affiliation in joint teams.
2. The international scope of the project has enabled cross-country learning and international exposure (training, conference, daily work relationships).

One workshop participant stated that “interaction with diverse participants and partners in the project” was what they liked most about the workshop, “because this is how future work is strengthened”.

In both countries, the project interacts with the workplans and staff of One CGIAR Initiative on Aquatic Foods. The Initiative brings more resources and focus specifically towards strengthening existing partnerships and developing new ones. The co-hosted “Island food systems in transition forum” is one example of collaborative activities. We are in regular planning with the FAO project CANADAPT in Solomon Islands and have collaborated over activities. The FAO national lead, Sylvester Diake, attended the project reflection workshop. The project is also working collaboratively with other WorldFish-led projects in Timor-Leste across both fisheries and aquaculture, including ACIAR-funded NSFM project and PADTL2 (Aquaculture). For example, the project wrote a fish handling section/chapter of a tilapia recipe book and provided a practical fish handling session for Training of School Cooks involved in piloting the use of farmed tilapia in meals provided for inland school children. As such, the FI TL team has taken a leading role in providing technical guidance and input into activities relating to fish handling and fish powder across projects, as well as facilitating coordination and partnerships with municipality-level fisheries departments in Baucau and Lautem. This role is expected to continue and be strengthened, particularly in relation to fish handling activities with the commencement of the UoW Fish Handling Research Fellow.

² Schwarz A-M, Eriksson H, Ramofafia C, Masu R, Boso D and Govan H (2021) *Three-Decades of Research Integration—Transforming to Collaborative Aquatic Food Systems Research Partnerships in the Pacific*. *Front. Sustain. Food Syst.* 5:757407. doi: 10.3389/fsufs.2021.757407

Monitoring

We don't have a structured program for how to monitor the health of project partnerships but the reflection workshop is a very positive indication. We work daily across the project team and speak with each other as colleagues regardless of affiliation. This practice of embedded modality of working comes from long-standing partnership with project partners and a deliberate focus on positive research behaviours and attitudes. Because the activities are co-created it tends to generate mutual responsibilities from the start. Of course, sometimes people are very busy, and timelines slip, but that is not viewed as a reflection on a particular partnership as such. Activities are led by different project members depending on their strength and skills. We come together in regular meetings to reflect on progress and necessary adaptations.

5 Risk Management

Project implementation

In the project design possible risks and their mitigations were identified (see Annex E in project document). The project is operating in countries where disruption and natural hazards are frequent; within its planned lifetime there will be at least one national election in each of the project countries and at least one severe cyclone is likely to hit Solomon Islands. So far in the project none of these risks have eventuated. The lockdowns in Solomon Islands in the first half of 2022 delayed delivery of some activities, but has not affected the overall scope of the project in any meaningful way. The election in May in Timor-Leste similarly has not disrupted activities. All communication to Western Province, Solomon Islands were cut off for a period following an incident when a ship dropped an anchor on the communications cable. WorldFish has now installed a satellite communication system at the Nusatupe research station and this will mitigate further delays in implementation due to lack of communication networks.

There have been some changes in staff at UOW (Anna Farmery left the project in Jan 2023 to undertake a DECRA and project leadership of the Food Systems-2 project) and WorldFish (a research analyst moved to UOW in Dec 2022 to undertake a PhD with our associated Pathways-2 project FIS/2020/172). The project has adapted and reprioritised skillsets in a way that we are confident will enable delivery of the project outcomes. For example, Anna's role was primarily in fish distribution research. This work has been taken up by Postdoc Kim Hunnam who has deep experience operating in Timor-Leste and the position at UOW has been reprioritised into the work on developing the fish handling training program in Solomon Islands and Timor-Leste. The position is currently advertised and is expected to be filled by October 2023. The new position is expected to bring technical skills in food safety and post-harvest processing.

There have also been some staff changes of project personnel at the Solomon Islands Ministry of Fisheries and Marine Resources (MFMR). Ben Buga, a strong advocate, and key part of the project team, has recently announced his retirement. There is a risk that his replacement will not be as supportive of the project's objectives. We will be working to ensure continuity in planning and priorities with the Ministry and by investing in a comprehensive handover or initiation to the project for Ben's replacement.

Two ethics protocols are now in place – for the livelihoods research (approved by University of Canberra ethics committee) and for the post-harvest fish distribution research in Timor-Leste (approved by University of Wollongong). All data collection will be strictly implemented following the government COVID-19 safety protocols and the ethics protocol contains actions to ameliorate low-level risks (e.g. discomfort) to participants.

Next user risks

No new information has emerged in the reporting period that prompts consideration about risks to next users. The risks are being monitored through the logic set out in the project document. The joint reflection on what the project is doing well and could do better during the reflection workshop (see Appendix 5), which included several next users, validated the project's approach and did not reveal any unanticipated risks to next users.

6 Appendices

Appendix 1: [Publications list](#)

Attached.

Appendix 2: [Personnel table](#)

Name	Gender	Agency	Discipline	Roles in project and specific responsibilities for project outputs	% Time on Project	ACIAR Funding of time input %
Hampus Eriksson	M	UOW	Systems ecology; rural development	Project Leader	50%	40%
Anna Farmery	F	UOW	Value-chain and food systems	Timor Leste value chains research lead, coordination of research data collection, analyses and outputs, capacity development	100% (to end 2022)	50% (to end 2022)
TBC – 2 (UOW)		UOW	Post-harvest fisheries	Lead for project's fish handling components	100% (from Sept 2023)	50% (from Sept 2023)
Lisa Wraith	F	UOW	Project management; M&E	Project management, M&E and reporting	20%	10%
TBC - 1 (UOW)		UOW	Rural livelihoods	Data cleaning, analysis	15%	0%
Rosalie Masu	F	UOW	Solomon Islands	N/A – supported PhD student, but not responsible for project outputs	100%	0%
Maximus Tahu	M	UOW	Timor Leste	N/A – supported PhD student, but not responsible for project outputs	100%	0%
Enly Saeni	M	UOW	Solomon Islands	N/A – supported PhD student, but not responsible for project outputs	100%	0%
Katharine McKinnon	F	UC	Human geography	Social sciences and gender research lead	40%	30%
Delvene Boso	F	WF	Fisheries management	Country leader, Solomon Islands	15%	10%
Margaret Batalofo	F	WF	Rural livelihoods	Community facilitator and leader of community engagement, field research operator	100%	100%

Name	Gender	Agency	Discipline	Roles in project and specific responsibilities for project outputs	% Time on Project	ACIAR Funding of time input %
Chelcia Gomeze	F	WF	Gender, CBFM	Gender leader for community engagement, field research operator	50% (to Oct 2022)	50% (to Oct 2022)
Faye Siota	F	WF	Rural livelihoods, CBFM	Community facilitator Western Province, field research operator	50%	50%
Mario Pereira	M	WF	Fisheries management	Country leader, Timor-Leste	10%	10%
Agustinha Duarte	F	WF	Rural livelihoods	Community facilitator and leader of engagement, field research operator	100%	100%
Alex Tilley	M	WF	Fisheries management	ICT fish distribution monitoring	8%	3%
Kim Hunnam	F	WF	Rural livelihoods and food systems	Implementation, capacity development, analysis and reporting of research	96%	69%
Megi Cullhaj	F	WF	Monitoring and evaluation	Facilitating project implementation in CGIAR MEL platform	2%	2%
Rosalie Masu	F	MFMR SI	Fisheries management	Overall project focal point	40%	0%
Ivory Akao	F	MFMR SI	Fisheries management and development	Oversight of integration with Ministry work-planning. Overall project focal point.	15%	0%
Paul Tua	M	MFMR SI	Fisheries and value-chains	Integration with Ministry work-planning and research delivery in provinces	15%	0%
Stenneth Atu	M	MFMR SI	Fisheries extension services	Design and implementation of project research and activities	15%	0%
Celestino Cunha Barreto	M	MAF TL	Fisheries management	Overall project focal point	5%	0%
Alda de Sousa	F	MAF TL	Fisheries economics	Coordination with MAF priorities, design of project research and activities	15%	0%
Estevao da Silva	M	MAF TL	Coastal fisheries management	District coordination, design and implementation of project research and activities	15%	0%

Significant changes include:

- Recruitment of a Post-harvest Fellow (TBC-2 UOW) to replace Anna Farmery, who left the project to undertake her ARC DECRA and Food Systems-2 design work as Project Leader in January 2023. Anna's role in the project is replaced by Kim Hunnam. The Post-Harvest

Fellow will start in Sept/Oct 2023 to spearhead development of the fish handling training program in Outcome Pathway 3.

- Rosalie Masu has joined the project team as a UOW Scholarship PhD student. Her role as MFMR focal point in the project is replaced by Ivory Akao (Deputy Director Inshore).
- Chelcia Gomes left WorldFish to start her PhD on a UOW Scholarship in FIS/2020/172 in October 2022. A replacement has not yet been selected.
- Katharine McKinnon has reduced her fte to 0.15 ACIAR, 0.05 in-kind for the 6-month period from Jul – Dec 2023 for personal reasons.

Appendix 3: Annual Budget

Overall, the project spend rate is 91% of funds disbursed to date. UOW personnel is tracking at 73% of budget to date since Anna Farmery left the project in January 2023 and recruitment (of what will be a more junior position) is ongoing. The UOW research operating budget is underspent (41% of budget to date), but the travel budget is overspent (174% at UOW, also at WorldFish) since the number of trips and post-COVID travel costs have proven to be greater than originally budgeted. We will initiate a reallocation of funds to the Travel budget line through a variation request in order to allow necessary trips to take place. We also seek to extend the project by three months to 30th June 2025 (necessitated by the late initiation of the project) and to reallocate between budget lines. All changes will be cost neutral.

Appendix 4: Intellectual Property

There were no IP issues during the reporting period, nor changes to the IP Register.

Appendix 5: Project team joint reflection – what can the project do better to work together?

Four groups reflected on the following two questions followed by a plenary discussion.

What is the project doing well now and should continue doing?

- Working according to MFMR priorities and demand (e.g. demand in Lata)/alignment with govt priorities/consulting government and agency (x4)
- Joint teams – MFMR PFOs, WFish – in research. Networking > partnership between multiple institutions. Engagement with national stakeholders (e.g. government) (x3)
- Country exchanges; bringing everyone together in a workshop; project team reflection. Helps share what they've learned, how they're going so far. (x3)
- Universities' participation in project (collaboration with SINU)
- Strengthening partnerships with Rural Training College & KGA (fish handling training)
- Resourcing > availability of funding, technical support (i.e. experts in the project e.g. Hampus)
- Support to PFO/RTPA: PFOs feel supported when we engage in the project. Project is supporting part of our work in the provinces, through technical knowledge + funding.
- Engaging various community groups / associations to improve their livelihood.
- Empowering rural women through recognition and support of gender inclusiveness.
- Capacity building e.g. PhDs, short-term training (e.g. CBRM, gender)
- Publications
- Building relationships + strengthening relationships
- Creating creation of new connections and relationships (e.g. PFOs and SINU)
- Listening
- Standing behind

What can the project do better or keep doing well?

- Seek to include the National University of Timor-Leste in team to strengthen partnerships
- Writeshop activities for publications. MFMR staff involved in writing, but don't have time. Suggest a writeshop at Nusatupe so they can focus on writing.
- Do presentation on the project at SINU (guest lecture)
- Seek out other local partnerships in Timor-Leste (Sols has a lot of partnerships)
- World Food Day (Oct 16) – showcase fish powder. Look for other opportunities to showcase project.
- PhD student – in the past PhD students from different countries come to work in the country then go back. Now we see people from our own country doing PhDs (keep doing well)
- Building on existing mechanisms > partnership between WFish and MFMR is strong, working together more. Keep learning from past experiences with projects/programs. (keep doing well)
- Strategic partnerships – e.g. students engaged to WorldFish program (Sols and Timor). Want students to go out to communities/Nusatupe and practice what they've learned in the classroom. (WFish organisation goal – resourcing to build this platform).
- Regular communication/ a platform for open and direct communication? Formal or informal updates through Skype, Whatsapp, project meetings.
- Involve PFO/RTPA/project member in initial planning, implementation of activities (e.g. only Malaita PFOs involved in case study planning)
- Capacity building (x2) for PFOs – e.g. how to write proposals for funding (e.g. to MISSIF); one-week attachment for food safety specialist to come in and do technical training; administrative training.
- More research to fill identified knowledge gaps
- Scaling – mixed feelings. But it would be good to scale out. Risk spreading ourselves too thin.
- Evaluation – want to see the impact of the project. Evaluate how the project has impacted livelihoods on the ground.
- Publications with partners (MFMR group that want to publish – not enough time, but not enough technical support within MFMR – project could support)
- Financial constraints – similar arrangement to MISSIF to support PFO activities
- Duplication/conflict with other partners. Western province – too many NGOs - over work in one community, engage with community too much. No specific example from the project. Paul commented that project is aligned with govt priorities/govt work on the ground so less risk of this.
- Understanding differences between countries
- More regular updates on project to government partners in Timor-Leste
- Consider ways of more closely working together with govt in Timor-Leste (e.g. secondment).

Activity	Activity#	People involved	2023							2024							2025											
			J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	
SOLS Fish distribution report Write report	1.7, 1.8	Hampus, Paul, Ben, Silvester, Janet, Delvene, Malaita PFOs																										
TL/SOLS partner workshop Organise workshop, prepare preliminary findings from research, draft 'opportunities and constraints' report Hold workshop Finalise 'opportunities and constraints' report	1.5, 1.9																											
Frame Survey Report Make template Mapping from PFO survey Complete data summaries Write report	2.2?	Paul J, Faye, Jill, Alick, Hampus, Katharine, Ben																										
WARA Freezer analysis	2.3	Katharine, Margaret																										
CFC/PFC workshop and report Revise guidelines for workshop & interviews Workshops & interviews - Sasamunga Workshops & interviews - Buala Process data - wkshp reports, transcripts, community profiles Write report	2.2 2b 2c	Paul J, Katharine, Delvene, Margaret, Faye, Jill, Alick, PFOs in provinces																										
SOLs co-interpretation of results in-country comparative FCs and solar freezers		Sols team																										
Fish house and Fish powder Fish powder dataset Community profiles Report - Fish house and fish powder Co-interpretation of results in-country Report back to community and DCP (national fisheries dept) Write T.L. paper	2.4. 2.5	Katharine, Inha, Kim Alex																										
Cross-country synthesis and analysis Multidimensional benefits & challenges paper Women's and men's engagement & equity paper Whole team cross country writeshop	2.6 2.7	Katharine, TBD Katharine, TBD																										

Annual Progress Report: Innovating fish-based livelihoods in the community economies of Timor-Leste and Solomon Islands

Activity	Activity#	People involved	2023												2024												2025					
			J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J					
Timor-Leste fish for nutrition activities	WP2	Abelita, Gianna, (Inha + Kim)																														
Fish for nutrition training activities (PADTL2 and Mercy Corps)																																
Training package development with partners						tbc																										
TL Ongoing mentoring of RTPA	4.2	Kim, Inha, Bridging Peoples, Abelita																														
Facilitate / support RTPA teams to carry out their engagement activities																																
Reflection / mentoring meetings with Baucau & Lautem RTPA teams						x			x																							
Learning report with Bridging Peoples and RTPA teams															x																	
Workshop SPC Bulletin article	4.1, 4.2	All				x																										
Baucau and Lautem Symposium (with FIS/2017/032)	4.3																															
End of project symposium	4.4	All																														
Planning, prep																																
Hold symposium																								x								