MACALISTER ELLIOTT & PARTNERS LTD

Preparation of a needs assessment for a CPPL fisheries centre on Kiritimati Island and carry out an economic assessment of the viability of developing sustainable supply chains in the Line Islands – Final Inception Report

REPORT FOR MINISTRY OF FISHERIES AND MARINE RESOURCES DEVELOPMENT (MFMRD)



MacAlister Elliott & Partners Limited
56 High Street, Lymington, Hampshire, SO41 9AH, England
www.macalister-elliott.com

Document Information

Project Number:	3489
QA Number:	3489R01D
Report Title:	Preparation of a needs assessment for a CPPL fisheries centre on Kiritimati Island and carry out an economic assessment of the viability of developing sustainable supply chains in the Line Islands – Final Inception Report
Author(s)	MEP
Date:	31/01/24

Revision Modification Log

Revision Date	Page no	Description of Modification
12/12/23	Various	Minor edits and suggestions based on Beero's feedback
18/12/23	Various	Additional comments from Beero
31/01/24	Various	Minor edits based on Beero's feedback

Approval Signatures

Name	Title	Signature	Date
Frances James	Director		5/12/2023

Frances James	Director		13/12/2023
Frances James	Principal Consultant		22/01/2023
Frances James	Principal Consultant		31/01/24

Table of Contents

Table of Tables

Acronyms

EEZ	Exclusive Economic Zone
CBA	Cost Benefit Analysis
CFD	Coastal Fisheries Division
CPPL	Central Pacific Producers Limited
FAD	Fish Aggregating Device
GESI	Gender Equality and Social Inclusion
KFL	Kiribati Fish Limited
IRR	Internal Rate of Return
IUU	Illegal, Unreported, and Unregulated
MEP	MacAlister Elliott and Partners Limited
MFMRD	Ministry of Fisheries and Marine Resources Development
MLPID	Ministry of Line and Phoenix Islands Development
NGO	Non-Governmental Organisation
NPV	Net Present Value
PROP	The Pacific Islands Regional Oceanscape Program
SPC	The Pacific Community
SVC	Seafood Value Chain
ToR	Terms of Reference
ULT	Ultra-low Temperature

QA	Quality Assurance
VCA	Value Chain Analysis

Introduction

The purpose of this inception report is to document the objectives, outputs and anticipated outcomes of the project and set out the methodology and work program required to achieve those objectives. This report therefore provides the first project deliverable (**Deliverable 1.1**) as part of **Phase** 1 (Inception). This project is split into two phases, where **Phase 1** is the **Inception Phase** and **Phase 2** is the preparation of supply chain development economic viability study and Central Pacific Producers Limited (CPPL) needs assessment pre-feasibility study. **Phase 2** also includes developing a suitable concept design for a cold storage (seafood) and live holding facility for aquarium fish/commodities at Cassidy Airport, to support the export market.

Details of the intended methodologies have been included as far as possible but will be finalised over the coming months as the project progresses. Risks associated with the consultancy which have the potential to impact the project workplan have also been considered in this report.

Feedback areas

The consultancy team (referred henceforth as the Team) would also like feedback from the Ministry of Fisheries and Marine Resource Development (MFMRD) on the following specific points.

Beero has addressed some of the specific comments relating to the attendees of the workshop, the tuna fishery and point of contact for the duration of the project. Beero has confirmed that the list of questions (in Appendix 2 – Inception Meeting Notes) will be sent to the PROP Officer in Kiritimati and will arrange for invites to stakeholders. The following points still need to be addressed.

They are also highlighted in more detail below in the wider inception report. In order of priority, they are as follows:

- Available data:

Beero has confirmed (18/12/23) that the data will be requested as soon as possible, see below for details on the data:

  - The data is detailed in Appendix 3 – Data requirements/requests. This data includes harvesting (catch-effort, landings, and fleets characteristic), processing outputs (product types and production capacity) and trade volumes (international and domestic) for the products of interest, as well as current surface, sea, and air freight capacity (a) between outer islands (in the Line Islands) and Kiritimati, (b) between Kiritimati and Tarawa, and (c) from Kiritimati to international market destinations.
  - The Pacific Community (SPC) socio-economic data (coastal fisheries) that MFMRD collects and provides to SPC.
- Stakeholders:
  - Beero is happy with the stakeholders in Table 2.
  - Awaiting confirmation for the participants for the January fieldtrip (Beero confirmed on 07/12/23 that invites to the stakeholders will be arranged with the PROP Officer based in Kiritimati).

- Final confirmation of focal species/products for study. The focal species are:
  - Longline and handline caught tuna species (bigeye, yellowfin, and skipjack) caught for domestic consumption markets. Beero confirmed on 07/12/23 that no longliners are used for domestic fisheries unless KIFL is operational in the Line Islands, but their tuna catch will be mainly for export only.
  - Farmed and wild caught milkfish. Farmed milkfish are those kept in government owned ponds managed by fisheries, whilst wild caught milkfish are those found in other natural ponds. Milkfish are caught mainly by using gill nets and also by handline.
  - Wild caught snappers and groupers caught by handline, hand reels for deep bottom snappers and spearfishing (free diving). They are sometimes caught using gill nets.
  - Wild caught lobster. The focus will be on the live and frozen export of lobster tails, and/or canned head meat for domestic consumption market. Wild caught lobsters are many caught by spear/diving fishing at night. Can be live and frozen lobster tails for export. Head is sold frozen to locals with FAO value chain project planning to can tuna for local consumption.. Scuba diving fishing for lobster and other marine food species is prohibited.
  - Wild caught marine aquarium fish are mainly petfish.. These are caught mainly by scuba diving. Please note that giant clams haven't been exported yet but there are plans to set up a hatchery for giant clam breeding/farming in the lagoon for the aquarium trade. This planned initiative includes corals as well.

  Beero added a few other species to consider (18/12/23):

  - Napolean/hump head wrasse. Deep bottom snappers

- The focal island will be Kiritimati (Christmas Island), and that the team will be provided with the relevant information from Teraina (Washington Island) and Tabuaeran (Fanning Island) to be considered for domestic export of products between islands for this study. Relevant information on the other two islands will be carried out when the Team is in Kiritimati or through email exchanges.

Background and scope

The Republic of Kiribati comprises three island chains – the Gilbert Islands in the West, the Phoenix Islands in the centre and the Line Islands in the East. They collectively form one of the most fisheries dependent countries in the world, contributing significantly to the country's economy and livelihoods. Kiribati's fisheries are characterised by the hugely productive and vast Exclusive Economic Zone (EEZ), which is one of the largest in the world. The EEZ encompasses the waters surrounding the Gilbert, Phoenix and Line Islands, providing ample opportunities for fishing activities. Tuna is a major focus of Kiribati's fisheries industry. Species that can commonly be found in their surrounding waters include skipjack (*Katsuwonus pelamis*), yellowfin (*Thunnus albacares*), albacore (*T. alalunga*) and bigeye tuna (*T. obesus*)[1][2]. These species attract both domestic (local) and international fishing fleets that capitalise on the abundant marine resources. Other important species for the Republic of Kiribati fisheries are spiny lobster (family *Palinuridae*), snappers (family *Lutjanidae*), bonefish (*Albula glossodona*), milkfish *(Chanos chanos*), groupers, sea cucumber and giant freshwater prawns (*Macrobrachium spp.*).

The tuna fishery has historically led fisheries policy to be focused on the offshore sector with less attention paid to coastal fisheries. Kiribati has amongst the highest offshore tuna production of all PNA members. This pattern is also evident regarding the insufficient allocation of resources for management, monitoring and enforcing of coastal fisheries which have historically been considered of lower importance. Coastal and nearshore fisheries play a crucial role in providing direct livelihood benefits such as employment and income, as well as providing food security, contributing to the overall well-being of coastal communities. Kiribati's fisheries are facing increasing challenges, including overfishing, climate change, Illegal, Unreported and Unregulated (IUU) fishing, which coupled with weak monitoring, control and enforcement, inadequate infrastructure and technology, lack of data, imperfect access rights and conflict, and population growth have led to a significant decrease in fish production.

In recognition of this, the Kiribati Fisheries (Conservation and Management of Coastal Marine Resources) Regulation of 2019 now provides a framework for improved coastal fisheries management the aim to ensure the long-term viability of coastal fisheries resources. Furthermore the 'vision' from the Kiribati National Coastal Fisheries Roadmap (2019-2036) is "[b] 2036, a resilient, healthy, and prosperous Kiribati through sustainable coastal fisheries, underpinned by inclusive, collaborative and innovative approaches between communities and the Government". Therefore, the commitment and acknowledgement from the Government of the importance of healthy and productive coastal fisheries against the backdrop of effective management in combination with empowered communities, is apparent.

[1] *FAO, (2021). Fishery and Aquaculture. The Republic of Kiribati.* https://www.fao.org/figis/pdf/fishery/facp/KIR/en?title=FAO%20Fisheries%20%26amp%3B%20Aquaculture%20-%20Country%20Profile

[2] *Campbell, B., Hanich, Q. (2014). Fish for the future: Fisheries development and food security for Kiribati in an era of global climate change. WorldFish, Penang, Malaysia. Project Report: 2014-47.* https://digitalarchive.worldfishcenter.org/bitstream/handle/20.500.12348/497/3760_2014-47.pdf?sequence=1&isAllowed=y

Implementation of the Pacific Islands Regional Oceanscape Program (PROP), led by MFMRD of the Government of Kiribati, in cooperation with the World Bank is timely in further progressing the effective management of Kiribati's oceanic and coastal fisheries. Within the PROP program is the aim to promote diversified sustainable fisheries supply chains in the Line Islands. MFMRD's Coastal Fisheries Division (CFD) is responsible for ensuring the sustainable management, development, and conservation of coastal fisheries resources in Kiribati, including in Kiritimati Island (as part of the Line Islands). A big driver in diversifying the sustainable fisheries supply chains in the Line Islands, is the domestication of the offshore fishery whereby fishing vessels (mostly purse-seiners) operated by the partly government owned joint venture fishing companies are scheduled to land their catches at a new fisheries processing centre that is planned to be built in Kiritimati in the near future.

Kiritimati an atoll located in the northern Line Islands in the Republic of Kiribati, and forms the focus of this assignment, specifically as component 2D of the PROP which seeks to accelerate the development and diversification of sustainable fisheries supply chains in the Line Islands and aims to specifically provide the following three technical assistance activities:

- A study to evaluate the economic viability of small-scale fisheries supply chains within the Line Island and barriers to such viability.
- A needs assessment and costing exercise for a small-scale fisheries development and production centre to be operated by CPPL.
- A needs assessment and costing exercise for cold storage, packaging and holding facility at Cassidy Airport in Kiritimati with inputs from relevant stakeholders.

The following deliverables are required:

Table 1: Project deliverables

Deliverable	Description
Phase 1	
D1.1 (Draft)	*Inception report (Draft)*
D1.1 (Final)	Inception report (Final)
D1.2 (Draft)	*Review report of relevant Line Island development plans and national/regional fisheries legislation and obligations (Draft)*
D1.2 (Final)	Review report of relevant Line Island development plans and national/regional fisheries legislation and obligations (Final)
Phase 2	
D2.1 (Draft)	*Two pre-feasibility reports including recommendations and action plan (Draft)*
D2.1 (Final)	Two pre-feasibility reports including recommendations and action plan (Final)
D2.2 (Draft)	*Concept design of cold storage and holding facility at Cassidy Airport (Draft)*
D2.2 (Final)	Concept design of cold storage and holding facility at Cassidy Airport (Final)

Methodology

Phase 1: Inception phase

Task 1.2 - Inception Meeting

An initial online inception meeting took place on Tuesday 21st of November 2023, with the following participants:

- Beero Tioti (MFMRD)
- Wiiriki Tooma (PROP, MFMRD)
- Max Peter (MFMRD)
- Bwakura Metutera (PROP, MFMRD)
- Taati Eria (MFMRD)
- Tooreka Teemari (MFMRD)
- Tenaku Teataa (PROP, MFMRD)
- Temarewe Tio (CEO, CPPL)
- -Ruta Ioata (CPPL, Kiritimati)
- Andrew Harvey (MEP) – Fisheries Development Specialist
- Dr Philippe Lallemand (MEP) – Fisheries Economist and Team Leader
- Stewart Sinclair (MEP) – Regional Expert (Economist)
- Frances James (MEP) – Project Director
- Guuske Tiktak (MEP) – Project Manager

The items discussed in the meeting were:

1. Introductions
2. Background and context to the work
3. Work planning
    a. Terms of Reference (ToR)
    b. Deliverables
    c. Timeline
    d. Expected Deadlines

In addition to this, a set of follow up questions were presented to MFMRD in relation to specific project tasks and were discussed in the Inception Meeting (refer to Appendix 2 – Inception Meeting and summary of key feedback points above). The outcomes of this initial meeting, any subsequent discussions and additional identified information or planning that informs the methodology, fieldtrip with stakeholder engagement, and workplan are provided in this report **(Deliverable 1.1)**.

Please find the Inception Meeting notes in Appendix 2 – Inception Meeting of this document.

Task 1.4 – Review Relevant Line Island Development Plans and National/Regional Fisheries Legislation

As a first step, an important part of the inception phase is for the team to fully familiarise themselves with the PROP project documentation to understand the wider context of the assignment. During this stage team members will share information from an existing assignment under component 2A as well as sharing background information from other relevant assignments that the team may have previously undertaken. Following this, island development strategies / plans and associated policy, regional agreements and legislation and additional international obligations Kiribati may be party to, as well as international best practice, in relation to fisheries and ocean management, will be reviewed. This will be a high-level review which establishes an understanding of strategic priorities for Kiribati and will provide an important basis for the development of **Phase 2**. This deliverable will be presented in the form of a review report **(Deliverable 1.2)**.

The review will include the following documents:

- Line and Phoenix Islands Integrated .Development Strategy 2016 – 2036[3]
- Kiribati National Coastal Fisheries Roadmap 2019-2036[4]
- Kiribati Development Plan 2020 - 2023[5]
- The Phoenix Islands Protected Area Management Plan 2015 -2020[6]
- National Biodiversity Strategies and Action Plan 2016 - 2020[7]
- WCPFC Conservation and Management Measures[8]
- Parties to the Nauru agreement strategic plan 2019-2025[9]
- The Noumea strategy: A new song for coastal fisheries – pathways to change. 2015[10]
- FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication[11]
- The Kiribati Gender Equality and Women's Development (GEWD Policy) 2019–2022[12]

---

[3] *Ministry of Line and Phoenix Islands Development, (2016). Line and Phoenix Islands Integrated Development Strategy 2016 – 2036. https://www.mfed.gov.ki/sites/default/files/Line%20and%20Phoenix%20Islands%20Sustainable%2C%20Integrated%20Development%20Strategy%202016%20-%202036%20online%20version.pdf*

[4] *https://spccfpstore1.blob.core.windows.net/digitallibrary-docs/files/5e/5ecc31f9e9d91c72878e960ff626fe99.pdf?sv=2015-12-11&sr=b&sig=BUb0j6pqzct0ddvFEP%2Biygoh%2Fzr4QeVbeQ8nlFCOC0M%3D&se=2023-04-01T15%3A59%3A38Z&sp=r&rscc=public%2C%20max-age%3D864000%2C%20max-stale%3D86400&rsct=application%2Fpdf&rscd=inline%3B%20filename%3D%22Anon_19_Kiribati_Roadmap.pdf%22*

[5] *Government of Kirbati, (2020). Kiribati Development Plan 2020 – 2023. https://policy.asiapacificenergy.org/sites/default/files/Kiribati%20Development%20Plan%202020-2023.pdf*

[6] *Ministry of Environment, Lands and Agricultural development, Bikenibeu Tarawa, Republic of Kiribati PIPA, (2020). Management Plan 2015 – 2020. https://rris.biopama.org/sites/default/files/2021-04/PIPA-Management-Plan-2015-2020.pdf*

[7] *Ministry of Environment, Lands and Agricultural Development, (2016). Kiribati National Biodiversity Strategies and Action Plan. https://www.cbd.int/doc/world/ki/ki-nbsap-v2-en.pdf*

[8] *https://www.wcpfc.int/conservation-and-management-measures*

[9] *Western and Central Pacific Fisheries Commission, (2023). Conservation and Management Measures. https://www.pnatuna.com/sites/default/files/PNA%20Strategic%20Plan%20web%20version.pdf*

[10] *https://spccfpstore1.blob.core.windows.net/digitallibrary-docs/files/fe/fedc2bcffdee2b46bbb2ef08caad7e54.pdf?sv=2015-12-11&sr=b&sig=LwfBbV7y2NL%2BG0sDIs9uBC3q7djCcy%2B88baeZcFRjzs%3D&se=2023-04-04T13%3A10%3A12Z&sp=r&rscc=public%2C%20max-age%3D864000%2C%20max-stale%3D86400&rsct=application%2Fpdf&rscd=inline%3B%20filename%3D%22Anon_2015_New_song_for_coastal_fisheries.pdf%22*

[11] *FAO, (2023). Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries. https://www.fao.org/voluntary-guidelines-small-scale-fisheries/en/*

[12] *Pacific Women, (2019). Kiribati GEWD Policy. https://pacificwomen.org/wp-content/uploads/2019/07/Kiribati-GEWD-Policy.pdf*

- Environment (Amendment) Act 2007 – implications for civil workers, environmental impacts assessment, etc.
- Fisheries Act 2007/ Fisheries (Amendment) Act 2021 – implications for licensing, species management, etc.
- Fisheries (Conservation and Management of Coastal Marine Resources) Regulation 2019 – implications for licensing, species management, restrictions on production, volume, etc.
- Fisheries (Processing and Export) Regulations 1992.

Task 1.5 Rapid Supply Chain Review and Stakeholder Mapping

As part of **Phase 1**, an initial, and rapid supply chain review and stakeholder mapping activity will be carried out. This will allow the team to understand and visualise the various supply chains currently in operation (not including FAD fisheries – removed from TOR in second iteration), and key actors for engagement throughout the assignment. Prioritising this activity will highlight any gaps in information which may need to be filled, and/or clarified by MFMRD before work progresses into **Phase 2**. This activity is highly important and will see the Team identify stakeholders to be consulted throughout the duration of the project. Here, the Team will first seek to develop an understanding of selected components of the fisheries sector in the Line Islands, including fleet size, fishing extent, type of vessels/gears/methods, species targeted/bycatch, type of seafood product sold etc. There are several types of fisheries for various species of tuna in Kiribati waters (coastal and wider EEZ) and the Team will review the data, and in **Phase 2** talk to relevant stakeholders relating to these fisheries to determine the most suitable supply chains for development. The longlining tuna fisheries are not used for domestic use unless KFL is operational in the Line Islands. Their tuna catch is mainly for export only. Data will be collected from several sources, including published reports, online databases, and meetings with relevant staff from MFMRD, CPPL, and other stakeholder groups. Although, it is also anticipated that MFMRD and CPPL will be able to provide historical data on coastal fisheries, this data will be supplemented using data from other sources, for example SPC Coastal Fisheries Report Card data sheets. This step will support in the identification of the different actors present along the supply chain based on the seafood product type in the Line Group fisheries sector. **The team have identified initial data to be requested from the MFMRD and CPPL, see Appendix 3 – Data requirements/requests for more details.**

An initial list of stakeholders is presented below in Table 2 as identified during the Inception Meeting, this list may change as stakeholders are added or removed when finalised with the MFMRD, CPPL and KFL. The method of the engagement will be decided in this task as the Team will visit Kiritimati Island in January as part of **Phase 2**. Most likely, the stakeholder engagement will be in-person interviews either during workshops, or one-to-one/group during organised focus group meetings. As this becomes clearer, the table below will be filled with details such as specific contact details, method of engagement, and the specific information sought from each stakeholder. Once completed, the table will be shared with MFMRD for feedback to ensure all relevant stakeholders are included.

Table 2: Stakeholder planning table

Stakeholder	Stakeholder group
Ministry of Fisheries, and Marine Resources Development (MFMRD)	Government
Ministry of Line and Phoenix Islands Development (MLPID)	Government
Central Pacific Producers Limited (CPPL)	Producers/Exporter
Kiritimati Island Fish Limited (KIFL)	Processor
Kiribati Fish Limited (KFL)	Processor/Exporter
Skylight Seafood.	Exporter
Ministry of Women, Youth, Sports and Social Affairs	Government
Island Councils	Local government
Local fishers	Stakeholders
Logistics operators (Fiji Airways, Nauru Airlines, Air Kiribati, Kiribati National Shipping Line, Lu's Marine Shipping Services)	Logistics
Hawaii-based seafood importer	Logistics
Market managers	Resource users
Cassidy Airport stakeholders (including customs and biosecurity/quarantine enforcement, Airport Kiribati Authority)	Logistics
Community leaders group (*Unimwane*), women's group and youth groups	Resource users
Pet Fish Association	Resource users
The Pacific Community (SPC)	Scientific and technical organisation
Other development partner (FAO Sustainable Fish Value Chains for Small Island Developing States (SVC4SID) project, New Zealand MFAT Tobwan Waara project)	Development partners
External stakeholders (from Hawaii, Fiji, and Australia)	Importers

Phase 2: Preparation of a supply chain development economic viability study and CPPL needs assessment pre-feasibility study

Phase 2 focuses on the preparation of the pre-feasibility assessment and economic Cost Benefit Analysis (CBA) of the CPPL fisheries development and production centre. Here, qualitative, and quantitative data will inform a series of analyses to provide a comprehensive understanding of the supply chain. The tasks and expected outputs are prescriptive, so the approach to this is presented in the form of a work package with three key elements:

- Data collection and stakeholder engagement
- Data analysis
- Report consolidation and recommendation

Task 2.1 – Data Collection and Stakeholder Engagement

(a) Data Collection

Seafood trade data such as local trade, exports, imports, re-exports and information on main trade partners will be required for the assessment. Much of this data will be requested from MFMRD and CPPL, however it may need to be supplemented with and compared to the following international publicly available online databases:

- UN Comtrade[13]
- International Trade Centre (ITC)[14]
- FAO FishStatJ[15]

The Team will also require tuna market price data and the primary source used for this will be the Forum Fisheries Agency (FFA) tuna price dataset[16]. It is acknowledged that some seafood data, particularly for the outer islands will not be available through mainstream data sources. In these cases, surveys and / or interviews with local fishers / processors / distributors / retailers / exporters will be used as key evidence source (please see stakeholder engagement section below).

MEP also notes the requirement for a gender assessment in the TOR. Therefore, any relevant literature of data will also be reviewed to capture Gender Equality and Social Inclusion (GESI) in Kiribati and Kiribati Island Context. This includes experiences and issues regarding GESI and fisheries, especially women and youth and expansion of income generation activities, livelihoods/income sources, decision-making structure, gender division of roles in collection and management of natural resources, gender-based access to/control over natural resources, gender relations/decision-making power, and available services by the government or NGOs in different regions in Kiribati.

[13] *United Nations, (2022). UN Comtrade Database. https://comtradeplus.un.org/TradeFlow*

[14] *ITC, (2019). Trade Map. https://www.trademap.org/Country_SelProductCountry_Map.aspx?nvpm=1%7c296*

[15] *FAO, (2023). FishStatJ. Software and database available to download here: https://www.fao.org/fishery/en/topic/166235/en*

[16] *FAO, (). Indian Ocean Tuna Commission. https://iotc.org/sites/default/files/documents/2022/10/FFA_import_price_tuna_time_series.zip*

Other data that will be useful include:

1. Current capacities:
   a) transport means/logistics (flight schedules, boat/ferries/trucks), distances from fishing to landing to processing to market.
   b) available storage (holding tanks, natural/man-made ponds, cold chambers)
   c) Maximum processing capacity per day/ month and/ or year for different type of seafood products).
2. Level of vertical integration along the chain (from harvesting, to middleman, processing, distributing)
3. Cost data:
   a) Available annual operating costs data; labour, energy consumption and energy costs by cost centre (fossils/renewable), water, oil & lubes, fuel consumption and costs (fishing boats, trucks).
   b) Available fixed cost data: administrative costs, capital depreciation.
   c) Cost of a typical vessel by main gear/ method type.
4. Output level by cost centre:
   a) Catch/landings level by species, gear type and geographic location (landing area mainly).
   b) Production by processed product type e.g. fillet, H&G, frozen, whole, canned, other preparation, animal feed, and any combination by main species group (see Appendix 1 – Focal Species for more information).
5. Exports by product type following the Harmonized System classification of 2017 i.e. HS2017.
6. Domestic sales by product type
7. Number and names / description of main companies involved in the seafood chain (output capacity and number of people employed w/ ratio men/ women)
8. On the social side (socioeconomic):
   a) Average wages of fishers/ plant workers/ etc.
   b) Level of unemployment in the fishery sector.
   c) Level of immigration/ emigration in/ from the sector.
   d) Gender equality level by cost centre along the relevant seafood chains
   e) Level of qualification by cost centre along the relevant seafood chains

(b) Stakeholder Engagement

Stakeholder engagement is a critical process in understanding the viability of developing small scale fisheries supply chains. Ongoing engagement with a diverse range of actors in the supply chain allows for a comprehensive and inclusive assessment which supports strengthened decision making. The Team will use a variety of methods to engage with stakeholders, including focus group discussions (*maroro*), semi-structured interviews, formal surveys, and questionnaires. Informed primarily in **Task 1.5** (stakeholder mapping) in **Phase 1**, the stakeholders will include, but will not be limited to fishers, auctioneers, traders, processors, distributors, retailers, and exporters (Table 2). The stakeholder engagement will take place in Kiritimati when the Team is set to visit between January 17th until the 24th 2024.

Gender perspectives will also be captured during stakeholder engagement, which will include the development of structured and semi-structured questionnaires to obtain the following information:

- Gender roles, responsibilities, and time use
- Cultural norms and beliefs
- Access to and control over assets and resources
- Patterns of power and decision-making
- Laws, policies, regulations, and institutional practices

Task 2.2 – Value Chain Analysis Viability of Small-Scale Fisheries Supply Chains

Information collected from stakeholder engagement in **Task 2.1** and initial data collected in **Phase 1** will be used to construct the seafood supply/value chain scenarios. Firstly, the strengths, weaknesses, and limitations i.e. SWOT analysis, of the actors identified in the current seafood supply chain in selected components of the Line Islands fisheries sector will be completed.

The team will then apply a strategic diagnostic approach based on an analysis used in the Proposed Global Segmentation of PICS Fishery Products[17]. This serves to identify the segments with the most potential, and their respective comprehensive requirements for entry, survival, and growth. The seafood products can be classified as processed, fresh, or live defined as such:

- Processed products: preservation of fishery products through freezing, canning, drying, and processing to extend shelf life, add value, and which appeal to the customer. This includes the preservation of tuna through ultra-low temperature (ULT) or flash freezing, allowing the tuna to stay in or close to its original state and therefore used later as a higher-value product.
- Fresh products: fresh and chilled fishery products with short shelf lives and therefore should be consumed rapidly.
- Live products: examples are aquarium fish, giant clams, live corals and live lobsters/fish

The value chain will be characterised by breaking down each product under their fisheries activities. These activities are spread across national and international boundaries and must be integrated into any given value chain[18].

Our methodology aims to allow for benchmarking factors of production intensity across segments and activities. The four factors identified below influence production and are important metrics to estimate the value being generated along the chain, namely:

i. Capital intensity, as measured by the investment cost.
ii. Labour intensity, as measured by the number of workers required.
iii. Knowledge intensity, as measured by the years of pertinent training.
iv. Natural resource intensity, as measured by input cost.

The combination and degree of each of these will help the Team determine the challenges with any given fisheries value chain activity. Considering how Line Islands producers may operate, this analysis will also focus on Porter's methodology for the application of global conditions (such

[17] *Greer, R., & Failler, P. (2022). Pacific Value Chain Analysis Assignment. Final Report – Fisheries Sector. Auckland, NZ: FCG ANZDEC Ltd for the World Bank.*

[18] *World Bank. (2017). Food Production and Processing: A Strategic Segmentation of the Food Sector.*

as the substitutes, rivals, new entrants, suppliers, buyers, trending markets, and minimum efficient size of production) to determine the attractiveness of each segment.

Several criteria can be used to rank the fishery product options such as the Net Present Value (NPV) and Interna Rate of Return (IRR) associated with each segment[19]. The Team will carry out the Value Chain Analysis (VCA) for each segment, identifying each actor, comparing current and estimated costs, and estimating economic rent at each level of the value chain. Ultimately, the analysis will provide a breakdown of the different activities along the Seafood Value Chain (SVC) and offer a better understanding of the supply chain structure as:

- Seafood product segmentation.
- Structure of the value chain (diagrammatic).
- Analysis of Key Actors Roles & Contributions.
- Price build up along the value chain.
- Costs, productivity, and socio-economic impacts (role of women in the chain, etc).
- Benchmarking with other PIC States.
- Development implications.
- Quality management requirements.

The methodology presented above will be presented across two pre-feasibility reports **(Deliverable 2.1)**. The first concerns the economic viability of developing a sustainable supply chain, whilst the second will be focused on the assessment of the CPPL production centre.

Task 2.3 – Concept Design of Cold Storage and Holding Facility at Cassidy Airport

The task is to assess and develop a suitable concept design for a cold storage (food fish) and live holding facility for aquarium fish/commodities at Cassidy airport, to support the export market. International best practice in fish cold storage will be reviewed and applied, as well as the application of International best practice in live fish handling and holding[20]. The results of the preceding tasks will inform the design concept, specific to the different export fishery supply chains in operation. International best practice in fish cold storage will be reviewed and applied[21].

In summary, the output produced by the team **(Deliverable 2.2)** will comprise a concept design document, considering the following:

- Storage layout required for sufficiently spaced and separated live and cold storage areas season (handling areas, boxing areas, holding tanks, generator/power room etc).
- Dimensions and required capacity for expected throughput of cold storage and live product in peak season.
- Storage temperatures.
- Type of refrigeration.
- Power supply.
- Water supply.

---

[19] Lallemand, P. (2018). Economic Analysis, part of the report on the Value Chain Analysis for the Fisheries Sector in the United Republic of Tanzania. 1st Southwest Indian Ocean Fisheries Governance And Shared Growth - SWIOFish. SOFRECO. Cape Town, South Africa: The World Bank and The United Republic of Tanzania, unpublished document.

[20] FAO, (2023). Codex Alimentarius. https://www.fao.org/fao-who-codexalimentarius/en/

[21] FAO, (2023). Food Loss and Waste in Fish Value Chains. https://www.fao.org/flw-in-fish-value-chains/value-chain/processing-storage/cold-storage/en/

- Staffing/maintenance.
- Legal tenure/other relevant regulations.
- High level operating costs.
- Waste management (including wastewater).
- Ownership and operating arrangements (i.e., who will oversee managing the facility).
- Rental arrangements (i.e., what are the terms and arrangements under which third parties can use the facility).
- What other uses or activities need to be considered (i.e., is this only a holding facility, or will customs and excise inspections also be conducted here).

Workplan

Tasks and deliverables

The submission of deliverables for **Phase 1** and **Phase 2**.

Description	Start Month	Completion Month for Final Report (including client review periods)
Task 1.3: Inception Report	October 2023	December 2023
Task 1.4: Review Report	November 2023	January 2024
Task 1.5: Rapid Supply Chain Review and Stakeholder Mapping.	November 2023	January 2024
Phase 1 Completed	**October 2023**	**January 2024**
Task 2.1: Data Collection and Stakeholder Engagement	November 2023	January 2024
Task 2.2: Economic viability and needs assessment and costing exercise for fisheries development and production centre, and cold storage centre at Cassidy airport	December 2023	March 2024
Task 2.3: Design of cold-storage centre at Cassidy Airport	January 2024	April 2024
Phase 2 Completed		**April 2024**

Table 3: MEP Workplan

			Months													
Deliverable	Task/Phase	Description	October		November		December		January		February		March		April	
	Phase 1	**Inception phase**														
	Task 1.1	Review PROP Project documentation														
	Task 1.2	Inception workshop														
D 1.1 (draft)	Task 1.3	Inception report (draft)														
		client comments (2 weeks)														
D 1.1 (final)		Inception report (final)														
D1.2 (draft)	Task 1.4	Review report of relevant Line Island development plans and national/regional fisheries legislation and obligations (draft)														
		client comments (2 weeks)														
D1.2 (Final)		Review report of relevant Line Island development plans and national/regional fisheries legislation and obligations (final)														
	Task 1.5	Rapid supply chain review and stakeholder mapping														
	Phase 2	**Preparation of supply chain development economic viability study and CPPL needs assessment pre-feasibility study**														
	Task 2.1	Data collection and stakeholder engagement														
	Task 2.2	Economic viability and needs assessment and costing exercise for fisheries development and production centre, and cold storage centre at Cassidy airport														
	Task 2.3	Design of cold-storage centre at Cassidy Airport														
D2.1 (draft)		Two pre-feasibility reports including recommendations and action plan (draft)														
		client comments (2 weeks)														
D2.1 (final)		Two pre-feasibility reports including recommendations and action plan (final)														
D2.2 (draft)		Design of cold storage and holding facility at Cassidy Airport (draft)														
		client comments (2 weeks)														
D2.2 (final)		Design of cold storage and holding facility at Cassidy Airport (final)														

MEP and MFMRD Communication plan

To ensure successful and efficient delivery of the project outputs, fully engaged and deliberative interaction with the MFMRD team will be pursued to foster constructive and creative dialogue.

The agreed contacts within the MFMRD team are Mr Beero Tioti (Project Manager/Contract Management), Ms Wiiriki Tooma and Mr Max Pita. Ms Temwarewe Tio and Ms Ruta Ioata will be the main points of contact for CPPL. Frances James (Project Director) and Ms Guuske Tiktak (Project Manager) will be the main points of contact within the MEP Team.

Virtual meetings will be held at mutually convenient dates/times (allowing for multiple time zones) throughout the project's duration. MEP will immediately inform the MFMRD of any issues that might adversely affect the project.

Quality Assurance and control

MEP maintains and promotes standard policies and procedures which look to promote quality in the company's work, interaction with its clients and its final outputs.

To achieve these competencies and capabilities, the Company has a formal quality management (QA) system which has evolved from ISO 9001:2000. This QA system contains detailed requirements for control of contract details, staff employed, sub-contractors, contacts with client, correspondence monitoring, the filing system, peer review, change control, and archiving procedures.

At all times, MEP's Quality Objective is to meet the detailed requirements of the client. MEP's Quality Assurance policies maintain procedures for the addressing and resolution of complaints in a timely and thorough manner. Upon receipt of a complaint the following processes will be followed by MEP. The member of Staff hearing of a complaint from a client by any means must make a formal written report of the circumstances, effects and remedial action proposed, copied to the Project Director and the QA Director. The report will include an analysis and review of all information to identify any trends or situations which have a potential to cause non-conformity. Consideration will be given to recommending preventive actions to avoid potential problems in the future.

Action should be taken to prevent a re-occurrence of any non-compliances and a note made of the dispute and action taken in the Project records and the matter raised at the Weekly Project Meetings implemented by MEP. The QA Director shall assess the problem and decide what, if any, changes need making to the QA System. Any changes necessary shall be implemented as soon as possible.

The QA Director will keep a record of incidence of complaints & non-compliances and report to the Management Review. Preventive action implemented previously will be documented and a comment on the effectiveness of such action will be made. Recommendations on further amendments in working practices or QA procedures should be made.

Further details on the MEP Quality Assurance system are available through the MEP Quality Assurance Manual.

Team and team tasks

Table 4: Team roles, responsibilities, and number of days

Name and Role of Team member (Email)	Assigned Tasks or Deliverables (Focus areas)	Location	Number of Days
Ms Guuske Tiktak Project Manager gtiktak@macalister-elliott.com	Task 1.1 – 1.3: Inception meeting and report Task 1.4: Review report of relevant Line Island development plans and national/regional fisheries legislation and obligations Task 1.5: Rapid supply chain review and stakeholder mapping Task 2.1: Data collection and stakeholder engagement Task 2.2: Economic viability and needs assessment and costing exercise for fisheries development and production centre, and cold storage centre at Cassidy airport Task 2.3: Design of cold-storage and holding facility for live marine commodities (petfish, giant claim, corals, and others) centre at Cassidy Airport	UK	20
Dr Philippe Lallemand Fisheries Economist and Team Leader Philippe.d.lallemand@gmail.com	Task 1.1 – 1.3: Inception meeting and report Task 1.4: Review report of relevant Line Island development plans and national/regional fisheries legislation and obligations Task 1.5: Rapid supply chain review and stakeholder mapping Task 2.1: Data collection and stakeholder engagement Task 2.2: Economic viability and needs assessment and costing exercise for fisheries development and production centre, and cold storage centre at Cassidy airport Task 2.3: Design of cold-storage and holding facility for live marine commodities (petfish, giant clams, corals and others) centre at Cassidy Airport	South Africa	40
Mr Andrew Harvey Fisheries Development Specialist andrew@oceanect.com	Task 1.1 – 1.3: Inception meeting and report Task 1.4: Review report of relevant Line Island development plans and national/regional fisheries legislation and obligations Task 1.5: Rapid supply chain review and stakeholder mapping	Indonesia	25

	Task 2.1: Data collection and stakeholder engagement Task 2.2: Economic viability and needs assessment and costing exercise for fisheries development and production centre, and cold storage centre at Cassidy airport Task 2.3: Design of cold-storage and holding facility for live marine commodities (petfish, giant clams, corals, and others) centre at Cassidy Airport		
Stewart Sinclair Regional Expert sinclastew@gmail.com	Task 1.1 – 1.3: Inception meeting and report Task 1.4: Review report of relevant Line Island development plans and national/regional fisheries legislation and obligations Task 1.5: Rapid supply chain review and stakeholder mapping Task 2.1: Data collection and stakeholder engagement Task 2.2: Economic viability and needs assessment and costing exercise for fisheries development and production centre, and cold storage centre at Cassidy airport Translation of reports in i-Kiribati	Australia	20
Frances James (MEP) Project Director and Fisheries Specialist frances.james@macalister-elliott.com	General project overview and QA	UK	As required

Risks and Mitigation

Identified risk	Potential impact on project	Mitigation action
Data / information limitations	Limited data to inform baseline assessments	It is acknowledged that the analysis could confront data constraints. To supplement or compensate for lack of data, where possible (and appropriate), assumptions may be made based on similar data from other contexts.
International & Regional Travel Restrictions	Limit's ability of MEP team to engage with stakeholders	The MEP team are experienced in the use of virtual meeting platforms. If local restrictions mean that team member(s)/contacts are unable to travel for data/information collection/verification activities (if/where required), MEP may seek to use a combination of MFMRD persons in country and virtual meetings, where required.
Team Member Illness or Exposure	Experts' delivery of project delayed or hindered due to illness	If a team member were to fall ill to the extent that project quality or delivery would be affected (due to COVID-19 or indeed other illness), MEP has access to a network of international experts who would be able to provide backstopping, if the MFMRD agreed.

Appendices

Appendix 1 – Focal Species

Summarised list of focal species

Based on conversations with the client and local knowledge we suggest:

- Longline and handline caught tuna (bigeye, skipjack, and yellowfin) for domestic consumption markets.
- Farmed milkfish for domestic consumption markets.
- Wild caught snappers (including deep bottom snappers) / grouper / Napolean wrasse for domestic consumption.
- Wild caught lobster (frozen tails for export, and/or canned head meat for domestic consumption market).
- Marine aquarium fish will need to be considered in the context of the Cassidy airport holding facility. Species may include: petfish, giant clams, corals, lobster etc.

Appendix 2 – Inception Meeting Notes

Kiritimati Island

Inception Meeting – Tuesday 21st of November 16:00 – 18:00 (Tarawa Time)

Tarawa Time	Item	Led By	Comments
16:00 – 16:15	**1. Introductions**	CPPL, MFMRD and MEP	Attendees: - Beero Tioti (PROP, MFMRD) - Wiiriki Tooma (PROP, MFMRD) - Max Peter (MFMRD) - Bwakura Metutera (PROP, MFMRD) - Taati Eria (MFMRD) - Tooreka Teemari (MFMRD) - Tenaku Teataa (PROP, MFMRD) - Temarewe Tio (CEO, CPPL) - Ruta Ioata (CPPL, Kiritimati) - Andrew Harvey (MEP) - Dr Philippe Lallemand (MEP) - Stewart Sinclair (MEP) - Frances James (MEP) - Guuske Tiktak (MEP)
16:15	**2. Background and context to the work:** • PROP • ToR Requirements for this project	MEP	
	3. Work planning • Deliverables • Timeline	MEP	Points of contact: - Beero Tioti (Tarawa based) - Wiiriki Tooma (PROP Kiritimati) - Temarewe Tio (CEO CPPL,Tarawa based) - Ruta Ioata (CPPL Kiritimati) - Tooreka Teemari – Director of Fisheries

			- Mr Natario Keati, Secretary, Ministry of Line and Phoenix Islands Development Review process: - Send documents to Beero, MFMRD

Eight project specific questions were asked during the inception meeting by MEP and were answered during the Inception Meeting:

- Focal products/ value chains: for the rapid supply chain assessment task, currently the TOR does not specify which value chains/products should be assessed apart from mentioning small-scale fisheries, sport fishing and aquarium fish. Does MFMRD have a narrower list they wish us to focus on? For the specific assessment for products coming through CPPL, we understand the focus should consider lobsters, tuna, milkfish, and snappers. Is this list exhaustive, or are there others that could/should be included?
- Focal islands. The TOR indicates the need to assess the viability of a sustainable supply chain development plan for the Line Island Group. Could you please confirm if there is a priority list of Line Islands, we should also be considering for supply chain connections? We have only budgeted for trips to Kiritimati and understand the focus due to CPPL's location. We assume we can easily gather information (such as current infrastructure, value chain actors, transport links) on other Line Island supply chains via conversations with relevant stakeholder groups (i.e. MFMRD liaison officers or partners on these outer islands in the stakeholder engagement group)?
- List of participants for inception meeting and January field trip - we suggest that we (with the help of MFMRD) confirm a list of participants whom we would like to interview and send out invites asap to secure their participation as we suspect that it would be difficult to receive responses promptly in Dec and Jan. Are there any other stakeholder groups that are not listed in the TOR that should be included? Could you confirm these for us?
- Available data.
- Can MFMRD provide production (catch/ effort) and export (international and domestic) data for the products of interest? And/or can we obtain any trade data from CPPL?
- Do MFMRD have any data or insights into current surface and air freight capacity (a) between outer islands and Kiritimati; (b) between Kiritimati and Tarawa; and (c) from Kiritimati to international export destinations.
- Line island development plans: Please could you send us the relevant Line Island Development Plans that we are required to review in advance of the inception meeting?
- FADs: Please could you remind us of the reason for FADs being removed from the TOR?

Meeting Notes

1. ***Why were FADs removed from the proposal?***

There are no FADs on the islands, even with FAO Kiritimati project they didn't install any.
FAD implementation needs careful monitoring.
Philippe: Are they free school? Why no FAD? Concern level of monitoring traceability capacity?
Rarely fish FAD in local/domestic fisheries
Potential to have tuna as part of the export. Realistic in scope of project/timeframe maybe not tuna. FADs too much for this.
Didn't seem to know benefit of anchored FADS – possible.
Andrew: Tuna – handline tuna or longline tuna?
Both. Focus on coastal domestic tuna, bit of longlining (if domestic). Pole line – only future investigation of tuna (future of Kiritimati, not for this project). Coastal development.
CPPL tuna production – local fisherman tuna trading to one centre. Plan will explore catch from raw material. Tuna is one of the core species. CPPL will explore foreign landings.

2. ***KFL – export or domestic? Foreign investment initiative part venture KFL or different company? (Stewart)***

Ministry: core business export and provide domestic. Trying to receive with assistance of PROP and this project.
CPPL enter export market but lots of gaps to put in place (e.g. hygiene). Improve standards for this operation so it's export ready.
KFL is a joint venture between the government of Kiribati, Golden Ocean Fish of Fiji Ltd and Shanghai Deep Sea Fishing of China.
KFL sister company KIFL is a joint venture between the Kiribati government, Golden Ocean Fish of Fiji Ltd and Zhejiang Ocean Family Co. Operating in Kiritimati, development moving to Christmas with future of longliners fleet export EU market (same market).
Landing catch in Christmas, yellowfin, and bigeye tuna. Higher priced!
Short term – market domestic tuna and long term – export tuna
Philippe: What is the main product type?
Mostly iced tuna. Separate storage centre.
Tarawa currently low-grade tuna
One of the issues is how it can be better stored? Iced? Fresh tuna that's safe to eat domestically and future = export.
Supply chain issues – transport and storage (freezers).
Priority, get product to that level, basics first!
Philippe: suggested freezer vessels for overseas export.
Beero: thought of transport vessel (freezer) recommendations for transport (e.g. deep freezer vessels).
Freezer vessels for tuna – can Kiribati do this?

3. Focal products/value chains

CPPL: species include lobster and tuna (longline).

FAO are already doing a cost analysis value chain. But *Beero* said we can complement it with supply chain but take that into consideration (that the FAO is already working on this).

Philippe: lobster alive or dead?

Alive.

Also export frozen lobster tails but FAO is live, mainly for export to Hawaiian market.

Tawara further to export to than Honolulu, Hawaii.

Importance for holding tanks is live lobster (live marine products in general). Currently very high transport costs (motorbikes) for fishers at the moment.

Other species: milkfish, snappers, mullet, bonefish, groupers (orange). Groupers are for export to USA and Hawaiian market.

Mullet and bonefish breed in captivity and release into lagoon?

Private small company lobsters and snappers.

Philippe: are milkfish very bony fish like herring? Not for export?

CPPL: think that we can make milkfish more accessible to market (export), for example Tarawa to Kiritimati and to Hawaii. Hawaii now gets their milkfish from the Philippines (as it's much cheaper).

Aqua milkfish deboning quite labour intensive (2 mins per fish to debone it).

Lots of gillnetters in lagoon for milkfish, impact on sport fishery (**action point:** ask Andrew more). Do they mean farmed/wild milkfish? All farmed milkfish.

Finfish hatcheries to be set up (WB funding) for bait fishing and to re-stock milkfish ponds. Aquaculture of milkfish keep in mind as a solution. Out of scope?

Andrew: are milkfish wild caught or farmed? Are you only considering it as food fish or supply for bait for longliners?

CPPL: no plans for bait, targeting milkfish for export and domestic, farmed not wild caught.

There are some wild caught milkfish in Tarawa.

Beero: line of Pheonix ministry that breed in captivity. Breeding restocking the pond on Kiritimati for captive rearing then plan to longline – mullet and bonefish.

Bonefish have a complicated lifecycle, for future research as US has been successful in breeding them in captivity (https://www.fau.edu/newsdesk/articles/bonefish-spawn-aquaculture.php). Recent China technical mission to Tarawa indicated that they can also breed bonefish in captivity,

Philippe: sustainability and captivity of milkfish (aquaculture), time frame?

Beero: ToR does not include it but it can be included. Since the ToR was proposed, there has been development in aquaculture, and they are convinced to do it now.

Extra work – natural population developing so new idea to timeframe? Aquaculture.
Stewart: Are the ponds a common carbon resource where everyone can access it or are they permit based?
Beero: some are managed by the fisheries, but most are natural (stocks declined though).
Stewart: CPPL fishes from which ponds?
CPPL to take over harvesting of ponds and manage the resources.
Stewart: who is managing the ponds?
CPPL: fish from ones managed by the fishing ministry. You have permits to fish and ministry as well. Get it from unrestricted ponds, but right now wild caught.
Philippe: could lobster be kept in ponds prior to export?
Beero: No, if they were deeper then yes but as they are quite shallow it would be too hot, and they would not survive.
Andrew: can holding tanks be closer to landing?
Action points: That's something that the team will have to investigate.
Philippe: what's the access to freshwater on the island? And ice? Is it an issue or is it widely available?
Beero: rely on rainwater, and yes, it is an issue on the island. Quantity is the issue.
Other islands have fish centres and ice – funded by Japanese government.
Action points: possibility to look at water storage, as it is an issue. What tanks are around?
Wells have to be treated. Kiritimati is very susceptible to droughts. Water is an issue and it should definitely be considered. Desal plant?
Other aquarium fish (not in list and not for food)?
Our ToR is only for food fish. Stay focussed on food fish.
Holding facility also for aquarium trade and live fish.
Beero: doesn't hurt to include for Hawaiian makret (e.g. aquarium > supply chain > high end profit). Potential for freshwater pond for giant freshwater prawns (*Macrobrachium spp*). Potential aquaculture.
Brine shrimp and larvae. Suitable saline ponds. **Action point:** see old studies.
Philippe: keep aquarium as a revenue instead. Help investment which is important to mention and keep in mind.
Philippe: what about sea cucumber and seaweed?
Seaweed is refined transport. There is no plant for processing.
Seaweed farming already done on Fanning Island. Need a processing plant, transportable low-cost freight product. Lots of byproducts?
Don't try to compete with Asia, just create a domestic demand – fertiliser, biofuel, jelly for food, ice cream making etc.
Sea cucumber hatchery and breeding, species from Fiji – potential in one of the islands (Fanning) where seaweed is also grown but now on halt due to transportation problem to market (mainly Asia) and also high freight costs.

Focal species: tuna (bigeye for export), live lobster, aqua milkfish, wild caught grouper (tomato grouper, orange), snapper, live fish trade/pet trade
Possibly outside of scope of ToR, but can investigate if there is time: mullet, bonefish, to domestic islands/Hawaii, freshwater prawn, brine shrimp, sea cucumber, seaweed.
Action point: Andrew to confirm species.

4. ***Focal Islands***

There are only three Islands: Kiritimati (focus island – Ministry Line Phoenix Group), Washington and Fanning.
On Kiritimati the ministry control everything.
Washington and Fanning access is limited. Only accessible by small plane (10-seater plane) or boats. Ship takes a while, but plane is better.

5. ***Stakeholder engagement, confirm the list of stakeholders?***

- CPPL
- Ministry
- Local fisherman
- Hawaii exporter
- Air Kiribati and shipping
- Women's association
- Youth groups
- Market managers
- Other island group association

Philippe: what about NGO presence?
Women's association (Beneawa women's groups)
Ask island council – CPPL will ask.
Need full list of stakeholders from Cassidy Airport.
Action point: get Andrew to give list from another project and Neil on MSP. Andrew to confirm list.
Philippe: cargo included?
Government and private and Chinese. Tarawabaid regulators (customs and fishery office).
Competent authority (check for EU). Kiribati seafood Verification Authority (KSvA). Tarawa not Kiritimati – but plans to have someone there from the same authority
Andrew: Cassidy Airport CPPL skylight Kiribas fisheries pet trade

No individual fisherman at Cassidy Airport

6. Data Requirements

Action points: we need to send the list of data we need so that they can ask.
They will share the data – CPPL have the data.
Data is reliable as obligations for export.
Stewart: most of the data is coastal based and some recent on pet fish and some socioeconomic
We don't have access to it, but they can assist in getting consent via a letter (fisheries have to ask SPC).
Action point: ask Stewart to clarify what he asked for the socioeconomic data.
Philippe: catch/gear data from fishermen?
Action points: also, data so ask Tooreka Teemari
CPPL exports now? Pre covid - Honolulu lobster from Kiritimati, lockdown stopped, company had issues, now connecting back with Honolulu, looking at compliance, competent authority.
From Tarawa had a scoping mission to other islands exporting red snapper

7. Surface and freight capacity

Action point: Beero to get data.
Need domestic freight and shipping data, confirm of planes, vessels, plans etc, collection vessel for Kiritimati cold storage capacity, 3 government owned longliners, under a trial, just in Tarawa not in Kiritimati yet, but plan for one to operate in Kiritimati.

Appendix 3 – Data requirements/requests

General data/document request	Data available (yes/no)?
Socio-economic data (coastal fisheries) provided to SPC	
Current capacities: a. transport means/ logistics (planes schedules, boat/ ferries/trucks); distances from fishing to landing to processing to market. b. available storage (holding tanks, natural/ manmade ponds, cold chambers, ...). c. Maximum processing capacity per day/ month and/ or year for different type of seafood products).	
Level of vertical integration along the chain (from harvesting, to middleman, processing, distributing)	
Costs data: a. available annual operating costs data; labour, energy consumption and energy costs by cost centre (fossils/ renewable), water, oil & lubes, fuel consumption and costs (fishing boats, trucks, etc). b. available fixed cost data: admin costs, Capital depreciation, c. cost of a typical vessel by main gear/ method type.	
Output level by cost center: a. catch/ landings level by species, gear type and geographic location (landing area mainly). b. production by processed product type e.g. fillet, H&G, frozen, whole, canned, other preparation, animal feed, and any combination by main species group.	
Exports by product type following the Harmonized System classification of 2017 i.e. HS2017.	
Domestic sales by product type.	
Number and names/description of main companies involved in the Seafood chain (output capacity and number of people employed w/ ratio men/ women).	
On the social side (socioeconomic):	

a. average wages of fishers/ plant workers/ etc... b. level of unemployment in the fishery sector. c. Level of immigration/ emigration in/ from the sector. d. gender equality level by cost centre along the relevant seafood chains. e. level of qualification by cost centre along the relevant seafood chains.	