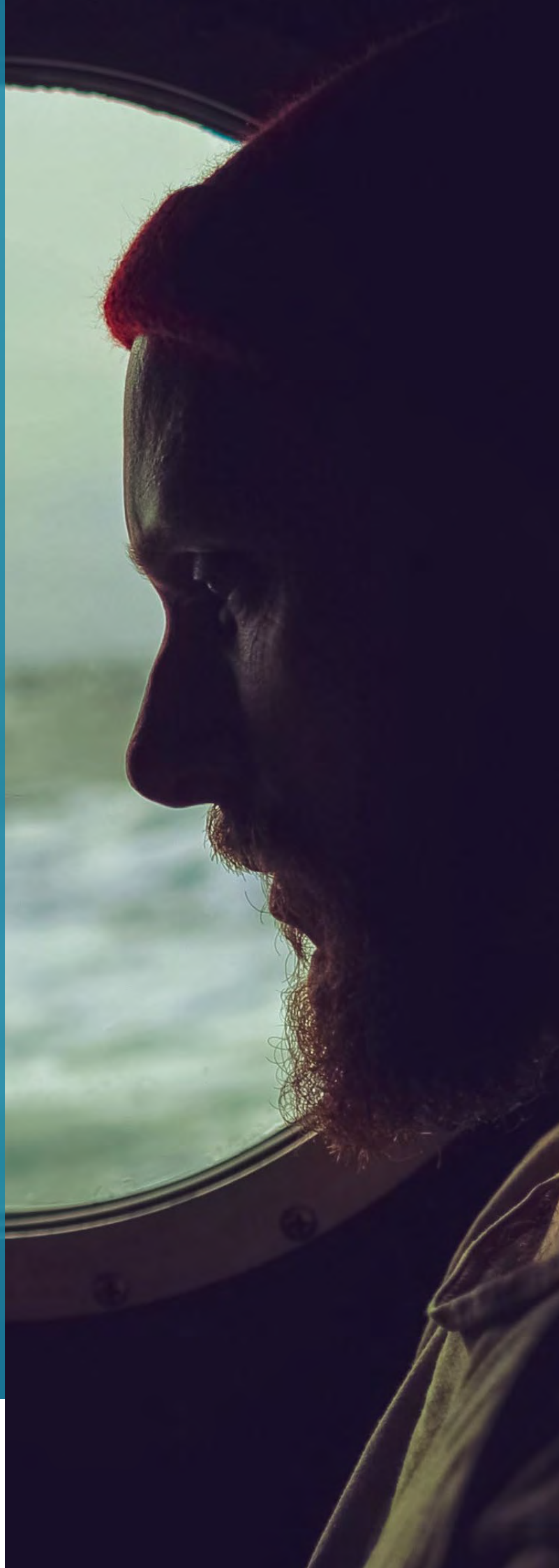
APRIL 2024

Exploring current best practice for provision of Wi-Fi to crew on fishing vessels at sea



Global Seafood ALLIANCE

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Please note that photographs contained within this report are not intended to represent good or bad examples of fishing crew welfare or access to Wi-Fi. Photographs are intended for illustrative purposes only.

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Definitions

- **Wi-Fi:** A system for connecting electronic equipment such as computers to the internet without using wires
- **Worker Voice:** Is a term frequently used to describe the way in which workers have access to third-party advice, to voice concerns, have influence over matters which affect them in the workplace and to improve the effectiveness of remediation. In effect, the effort directed at a higher authority to achieve change in practice (Kochan et al. 2019; Hirchman 1970). 'Voice' is considered by the International Labor Organization (ILO) Declaration on Fundamental Principles and Rights at Work (1998) as a fundamental right of workers to be represented, organize and collectively bargain.
- **A Grievance Mechanism:** Is a framework for addressing grievances of workers that relate to all stages of their employment, including during recruitment, at the workplace, and through to termination. This typically takes the form of the employer's internal procedure for complaints, followed by consideration and management response and resolution. It takes different forms and can be informal or consist of a written procedure managed by human resources and can include worker representatives, such as a trade union.
- **Competent Authority:** Means the minister, government department or other authority have the power to issue and enforce regulations, orders or other instructions having the force of law in respect of the subject matter of the provision concerned.
- **Crew:** All workers on a fishing vessel who participate on fishing trips, but that are not the skipper or vessel owner.
- **Debt Bondage:** This is the requirement to work in order to repay a debt. In fisheries this can occur when costs are deducted from crew payment such as recruitment costs, visa costs, food and medical supplies, or other operational costs.
- **Fisherman:** Any personnel taking part in fishing activities on a fishing vessel.
- **Fishing Vessel Owner:** the company or individual who owns the fishing vessel. Responsible for the skipper, crew and operations on board the vessel.
- **Flag State:** the country in which a vessel is registered, which means that State has exclusive legislative and enforcement authority over that ship. The flag State also has exclusive control over the vessel's administrative matters, such as its registration; social elements, including labor standards and rights.
- **Migrant Worker:** a person who moves to another country or area in order to find employment.
- **Skipper:** The person who, at sea and in port, who has responsibility for the safety of the vessel and crew and a duty of care to the crew.
- **Worker:** A more general term for an employee who may need to use a Grievance Mechanism or engage with representative bodies to exercise Worker Voice.

Introduction

While work to improve crew welfare on fishing vessels may have been going on for centuries, it has only come to mainstream attention in recent years, in particular since the adoption of ILOc188 – Work in Fishing Convention in 2007. It now receives considerable press attention, in particular highlighting significant modern slavery issues related to migrant crew.

This move to a more central position on the responsible seafood radar has prompted development of a number of tools and initiatives to address crew welfare. These include, but are not limited to:

- Private initiatives,
- Private sector collaborations,
- Development of third party audited standards,
- Benchmarks and research.

Global Seafood Alliance (GSA) spent three years transparently developing the Responsible Fishing Vessel Standard (RFVS), based on ILOc188, which was released in 2020. RFVS is a globally applicable standard for fishing vessels of all sizes and, at time of publication, is the only crew welfare standard successfully benchmarked to the GSSI At Sea Operations benchmark.

Through the development of RFVS, GSA recognised a number of gaps in knowledge around best practice for good fishing crew welfare. Accordingly the organisation began to undertake research to help fill these gaps. The first piece of research created a white paper on existing tools (2020). This was followed by work seeking to understand the expectations of grievance mechanisms and worker voice, in particular at sea, for fishing crew (2022).

One of the recommendations from the 2022 work was to better understand the level and challenges to providing Wi-Fi access to fishing crew at sea. This was flagged as critical to provide access to grievance mechanisms and worker voice options.

THIS REPORT SHARES THE FINDINGS FROM RESEARCH UNDERTAKEN BY GLOBAL SEAFOOD ALLIANCE IN 2023 TO:

- ***Better understand Wi-Fi requirements in international law and independent standards.***
- ***Assess current best practice, challenges and opportunities in relation to provision of Wi-Fi for fishing crew at sea.***

The intent is to support the provision of Wi-Fi access for crew on fishing vessels as practice and technology become more standard, and to begin to notice how to create best value from Wi-Fi at sea through potential improvements in operations and real time data transmission.

In many places Wi-Fi on fishing vessels is still in the early phases, but developing fast. Normalisation and expectation are likely to occur quickly for those vessel owners, policy makers and standard holders looking at best practice for fishing crew welfare.

Executive Summary

This report is intended to:

- **Capture different examples of Wi-Fi connectivity onboard fishing vessels and how it is provided to crew**
- **Consider incentives for providing Wi-Fi to fishing vessel crew**
- **Better understand the challenges and opportunities of providing Wi-Fi connectivity for fishing vessels and crew at sea**
- **Evaluate private sector initiatives**
- **Highlight other recent / on-going research of relevance**
- **Identify emerging technology applicable in the fishing vessel context**
- **Provide recommendations and actions for consideration**

This report is not intended to highlight the worst practice, but focuses on current best practice, drivers, opportunities and risks, and what can be expected on fishing vessels seeking to ensure good crew welfare.

Robust connectivity and quality live time communication are rapidly becoming an overarching requirement to enable a suite of best practice processes and emerging regulations that address fisheries management, operations and good crew welfare to operate efficiently.

Providing Wi-Fi at sea on fishing vessels, and the conditions of access for crew, are not uniform in regulations, standards or delivery. There are a number of policies and tools that require Wi-Fi to be provided to crew on fishing vessels, but there is no uniformity to what that requirement looks like. Furthermore, Wi-Fi access is missing from some crew welfare tools and appears in very little regulation. Wi-Fi at sea varies in expense, quality, and availability.

This can be due to a variety of factors such as, but not limited to:

- **Location**
- **How Wi-Fi is provided (satellite or wireless)**
- **Data usage levels**

Improvements in technology appear to be improving the quality and development of services. For example, Starlink has begun to revolutionise connectivity at sea, and its would-be competitors will soon offer attractive alternatives. Additionally, there are ideas to regionalise services which may give more uniform access and affordability while also acting as a platform on which to provide services such as training. One such example is highlighted in this report by Geeks without frontiers, which can be found on page 35.

It is suggested that providing **Wi-Fi for crew at sea can improve both well being and retention.** The former may be particularly relevant because the job operates under harsh conditions often with long periods away from friends and family.

The latter may be important when fisheries are competing for crew and recruitment is low. In some cases Wi-Fi at sea, at no charge to crew, is an expectation of conditions of employment.

General consensus through interviews, research and anecdotal evidence suggests that there is agreement that **fishing vessel crew, in particular where fishing trips are over 24 hours port to port, should have free of charge, reliable connectivity** to be able to make and receive messages and calls with shore, which may include using face time and sharing media, as a minimum during rest periods. This should be both at sea and in port.

Further work is required to develop norms around when Wi-Fi should be available with particular reference to safety, and to clarify management of data usage.

Creating agreement on what acceptable access to Wi-Fi for crew looks like has not been agreed upon.

In most cases it is considered that prohibiting use of cell phones or tablets when crew are active i.e. setting gear, hauling, processing, or on other duties such as maintenance or cooking, is appropriate for both the crew members' safety and potentially food safety. It may also be acceptable to limit data usage to ensure sufficient data is available for all. This may change over time as data usage becomes less expensive or unlimited.

There is sensitivity over the potential of sending confidential media i.e. fishing ground locations may need to be addressed.

Improvements in operational practices have been noted when quality Wi-Fi is available at sea. Furthermore, it may be that as some regulators enforce electronic monitoring on board, Wi-Fi will be a requirement of relaying data. Over time this could lead to near real time data being provided enabling more dynamic, responsive and agile fisheries management driven by observations at sea.

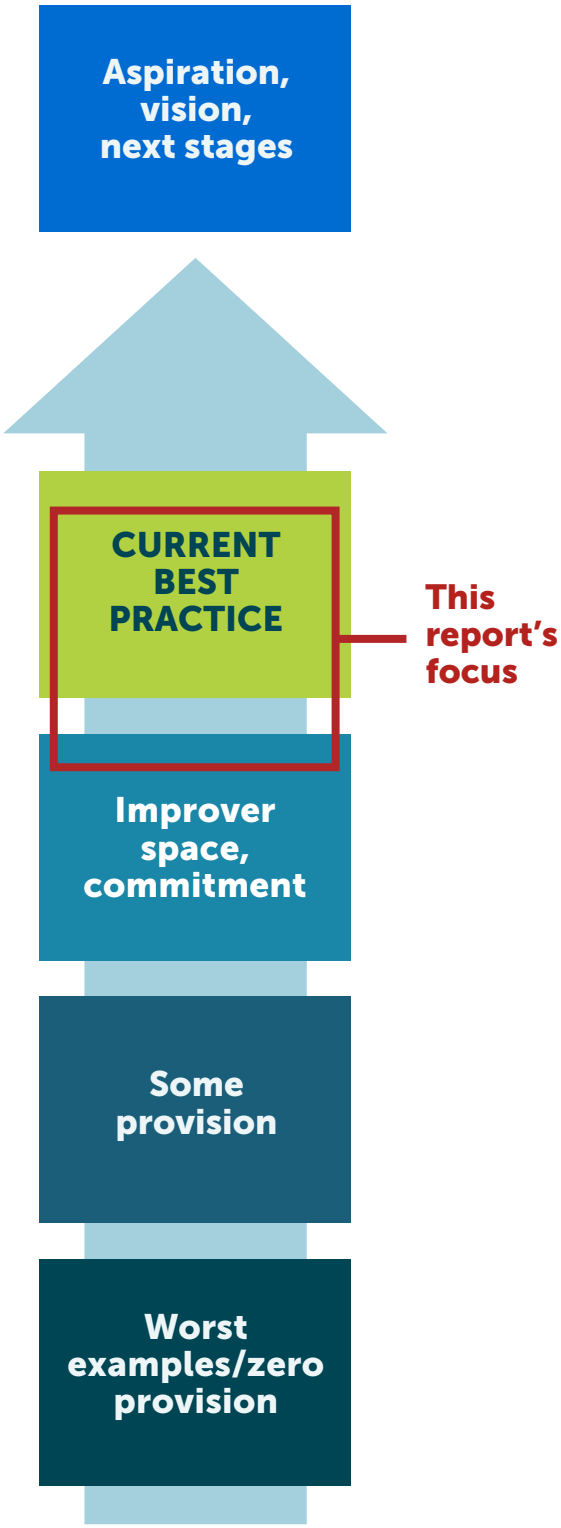


Figure 1 - Graphic highlighting focus of report content.

Acronyms

ACRONYM	
CoP	Code of Practice
CBA	Collective Bargaining Agreement
CEO	Chief Executive Officer
CSO	Civil Society Organisations
DOF	Department of Fisheries (Thailand)
DPPO	Danish Pelagic Producers Organisation
ESG	Environmental and Social Governance
ETF	European Transport Workers' Federation
EU	European Union
FISH SC	FISH Standard for Crew
FRN	Fishers' Rights Network
GLF-ILRF	Global Labor Justice-International Labor Rights Forum
GLP	Good Labor Practices
GSA	Global Seafood Alliance
GSSI	Global Sustainable Seafood Initiative
ILO	International Labor Organisation
IRLF	International Labor Rights Forum
ITF	International Transport Workers' Federation
MOL	Ministry of Labor (Taiwan)
NOAA	National Oceanic and Atmospheric Administration
NGO	Non-Governmental Organisation
PSMA	Agreement on Port State Measures
RFVS	Responsible Fishing Vessel Standard
SWFPA	Scottish White Fish Producers Association
TFA	Taiwanese Fisheries Agency
UN	United Nations
US	United States
WFFP	World Forum of Fisher Peoples
WRO	Withhold Release Orders (US)
WV	Worker Voice
GM	Grievance Mechanisms

It was noted in researching this report that connectivity for other seafarers is still an issue of debate. For example, on cargo ships there are similar challenges and complaints from seafarers. A recent **Maritime Labor Convention (MLC)** amendment, was expanded to include the provision of internet access to seafarers.

This new requirement is scheduled to come into effect on the **23rd of December 2024 and has been made a legal requirement by more than 100 countries, representing over 90% of the world fleet** – however the MOC does not include fishing vessels and their crew.

Additionally, the amendment allows for crew to be charged for access, albeit at reasonable rates. It is acknowledged that the circumstances of fishing vessel crews may be very different with high levels of migrant workers and the nature of the work, however it is important to note that other seafarers have not yet fully agreed or resolved issues.

DRIVERS	CHALLENGES
• Well being of crew, in touch with home • Access to information and support services ie contracts, financial services • Access to grievance mechanisms and worker voice support when needed • Access to training and medical information • Efficiency in operations	• Lack of collective agreement on policies and procedures to guide appropriate, safe access • Lack of training for vessel owners, skippers on managing Wi-Fi access fairly and safely • Lack of clear understanding for crew as to what access to expect and any restrictions
OPPORTUNITIES	**RISKS**
• Improving efficiency of operations, liaison with port office and authorities • Potentially greater retention or success of recruitment • Transmission of live data which can give rise to faster, more efficient, decision making and dynamic management • Potential to connect EM, AI and Wi-Fi • Regionalised/group connectivity solutions • Efficiency in compliance • Potential to help mitigate IUU fishing • Live data may support compliance or audit processes	• Managing access at sea • Constant contact with land may prove unsettling for some • Signal issues, lack of complete ocean coverage particularly in remote fishing areas - leaves crew isolated • Inadvertently sharing sensitive information

Figure 2 - Overview of some of the drivers, challenges, opportunities and risks for Wi-Fi onboard fishing vessels.

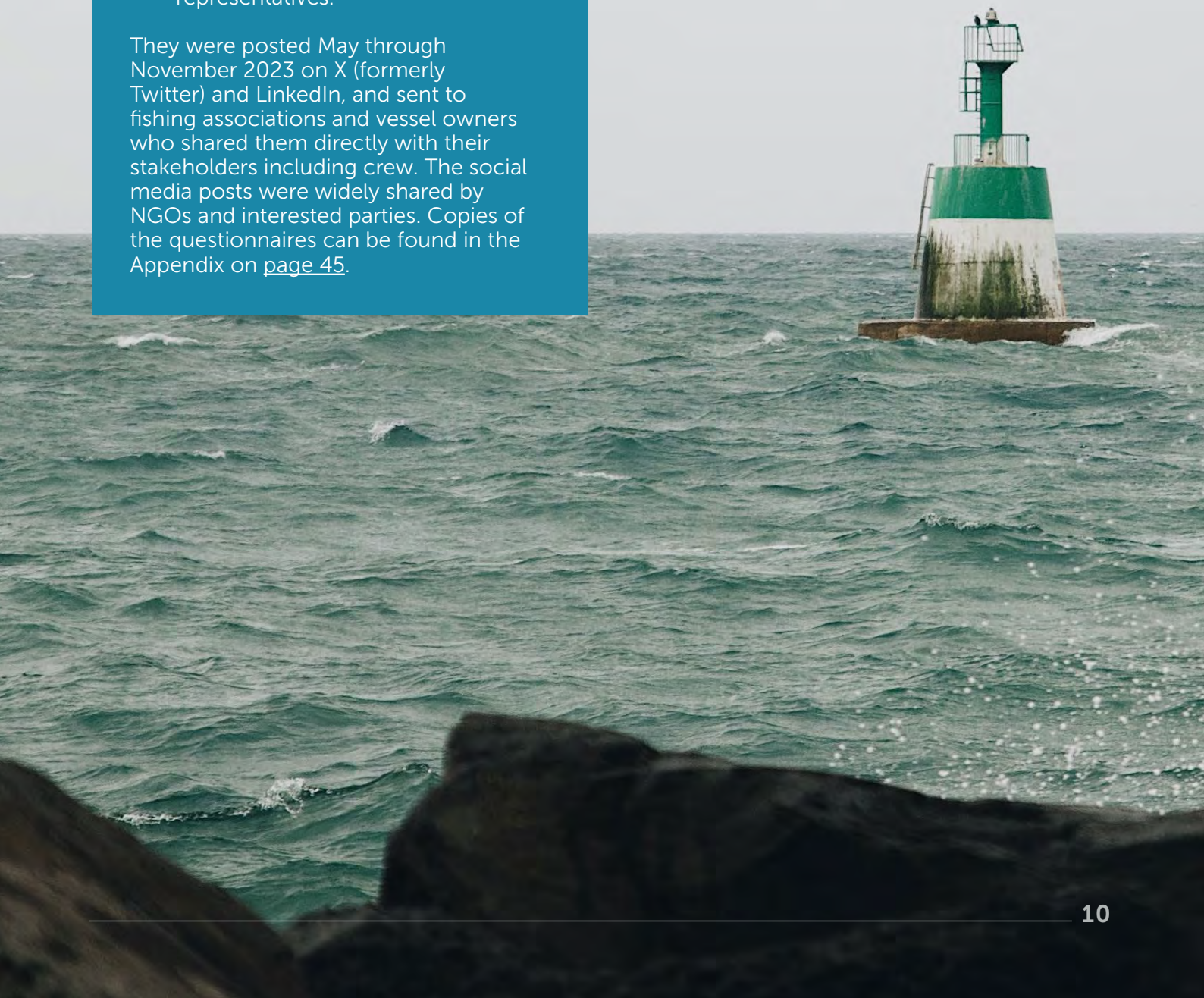
Methodology

The research informing this report was carried out periodically through 2023. It used a combination of desk-based research exploring academic papers, news reports, project reports, comparison of regulations, standards and policies, together with anonymized bilateral interviews and online electronic questionnaires.

The questionnaires were aimed at:

- **Crew on fishing vessels**, or their representatives and,
- **Vessel owners**, or their representatives.

They were posted May through November 2023 on X (formerly Twitter) and LinkedIn, and sent to fishing associations and vessel owners who shared them directly with their stakeholders including crew. The social media posts were widely shared by NGOs and interested parties. Copies of the questionnaires can be found in the Appendix on page 45.



Recommendations and actions

RECOMMENDATION	ACTION
AGREE MINIMUM BEST PRACTICE • It is proposed that fishing vessels at sea for 24 hours or more should have access to Wi-Fi at sea. • Access to Wi-Fi should be available, at no cost, to crew for use on their personal technology platforms i.e. cell phones or tablets. • Access may be subject to data and access restrictions to ensure operational safety at sea. This should be in line with, as yet to be agreed, guidelines.	**NGOs**, **vessel owners** and **other relevant stakeholders** should participate in collective, transparent, open, facilitated dialogues at the local, regional, and global level to agree a model and best practice toolkit for crew access that illustrates appropriate minimum access and, potentially, grades of greater access that may, or may not, be linked to length of time at sea and minimal charges. **Vessel owners** should research the most cost effective quality provision of resilient offshore connectivity for their vessels. Specialist partners are available to work with them. They are encouraged to consider how to use robust Wi-Fi to improve current operations to reap additional value. They are encouraged to share experience. **Vessel owners** should include Wi-Fi access, and conditions of access, into crew's contracts. **Recruiters**, **trainers** and **vessel owners** should ensure crew understand the access, and conditions of access, to Wi-Fi. **Standard holders** should examine their Wi-Fi at-sea requirement to ensure certified vessels are providing Wi-Fi free of charge to crew, over 24 hours, but within limitations of an agreed best practice model which may, for example, seek to ensure sufficient data protection for operational tasks (such as sending or receiving of critical information) and to allow all crew fair access. **Buyers of seafood** should require vessels to provide Wi-Fi for crew while at sea beyond 24h or in line with best practice, when agreed. **Funders** and **the private sector** should support this work. **Vessel owners** should provide training and support for the skippers and officers who impose the rules governing provision of Wi-Fi.

Recommendations and actions continued...

RECOMMENDATION	ACTION
BUILD KNOWLEDGE SHARING TOOLS Continue research, share information and experience in relation to, but not limited to; • improvements to connectivity at sea, • the potential regulatory, operational and management benefits, • well being, retention and recruitment of crew. Build tools and pathways to ensure knowledge sharing on best practice, technology developments for vessel owners, decision makers (policy/regulators), standard holders.	**NGOs** and **technical experts** work with recruiters, vessel owners and crew to research the benefits of quality, reliable access while at sea. **NGOs**, **vessel owners**, **recruiters** and **technical experts** continue researching, documenting and sharing of operational benefits, and hurdles, of WI-FI on fishing vessels showcasing examples. **Data collectors**, i.e. regulators, scientists and standard holders should explore how their own services, systems and responses can be improved through real time data reporting and where incentives may be appropriate. **Technical experts**, **NGOs**, **standard holders**, **Producer Organisations** and **Sector Associations** work together to ensure vessel owners, decision makers and others are kept up to date on best practice and technology developments via press, webinars, email etc. **Funders** and the **private sector** support continued research and a knowledge sharing network.
• Explore whether regional services may help to reduce costs and add benefits to provision of WI-FI at sea.	**PROPOSAL FROM GEEKS WITHOUT FRONTIERS:** **Technical experts**, **NGOs**, **standard holders**, **Producer Organisations and Sector Associations** work together to explore cost saving opportunities through working together. **Standard holders/Certification Bodies** and **Regulators** explore incentive opportunities for quality connectivity at sea that can transmit real time data. **Funders and the private sector** support connectivity that can create efficiencies and agility in compliance and certification.
• Explore cost saving opportunities, incentives and business. • Explore if beneficial contracts and services can be contracted for vessels within a producer or similar organisation.	**PROPOSAL FROM GEEKS WITHOUT FRONTIERS:** **Technical experts, NGOs, standard holders, Producer Organisations and Sector Associations** work together to explore cost saving opportunities through working together. **Standard holders/auditors and Regulators** explore incentive opportunities for quality connectivity at sea that can transmit live or near-live time data. **Funders and private sector** support connectivity that can create efficiencies and agility in compliance and certification. Countries should ratify ILOc188 and those that have ratified should put in place regulations requiring connectivity for fishing vessel crew at sea on vessels flagged to their jurisdiction. **Governments and regulators** ratify and implement ILOc188 Private sector stakeholders and NGOs encourage and incentivise ratification and implementation.

Figure 3 - Table displaying list of recommendations and actions to summarize the findings of this report titled 'Exploring current best practice for provision of Wi-Fi to crew on fishing vessels at sea'.

Global Conventions

The **Maritime Labour Convention 2006 (MLC)** international treaty was expanded to include the provision of internet access to seafarers. This new requirement will come into effect on the 23rd of December 2024 and has been made a legal requirement by more than 100 countries, representing over 90% of the world fleet – however the MOC does not include fishing vessels and their crew.

> ***"Shipowners should, so far as is reasonably practicable, provide seafarers on board their ships with internet access, with charges, if any, being reasonable in amount."***
>
> - Maritime Labour Convention amendment 2022

The **International Labour Organisation's (ILO)** 'Work in Fishing Convention (ILO 188)' was published in November 2017. It underpins requirements for good crew welfare on fishing vessels.

A number of countries have ratified this convention, in order to provide fishing crew with safe and legal working conditions. Since 2017 a number of countries have ratified the convention. A list of those countries is provided on the next page (at February 2024). A number of other countries have publicly said they will adopt the principles of ILOc188.

COUNTRY	DATE	STATUS AT FEBRUARY 2024
Angola	11 Oct 2016	In Force
Antigua and Barbuda	28 Jul 2021	In Force
Argentina	15 Sep 2011	In Force
Bosnia and Herzegovina	04 Feb 2010	In Force
Congo	14 May 2014	In Force
Denmark	03 Feb 2020	In Force
Estonia	03 May 2016	In Force
France	28 Oct 2015	In Force
Kenya	04 Feb 2022	In Force
Lithuania	16 Nov 2016	In Force
Morocco	16 May 2013	In Force
Namibia	20 Sep 2018	In Force
Netherlands	19 Dec 2019	In Force
Norway	08 Jan 2016	In Force
Poland	17 Dec 2019	In Force
Portugal	26 Nov 2019	In Force
Senegal	21 Sep 2018	In Force
South Africa	20 Jun 2013	In Force
Spain	28 Feb 2023	Not in Force - The Convention will enter into force for Spain on 29 Feb 2024.
Thailand	30 Jan 2019	In Force
United Kingdom of Great Britain and Northern Ireland	11 Jan 2019	In Force

Figure 4 - Table displaying list of countries that have ratified the The International Labour Organisation's (ILO) 'Work in Fishing Convention (ILO 188).

Most of the standards and other crew welfare tools highlighted in this report use ILOc188 as a basis along with other relevant global conventions.

In addition to safeguarding crew through clauses related to working hours, health and safety, and accommodation the convention also includes a requirement in relation to communication equipment that should be provided to all crew members on board fishing vessels.

> ***"Communication equipment shall be adequately provided to all crew members on board a fishing vessel, and the expenses shall be as reasonable as possible and shall not exceed the total expenses of the owner of the vessel".***
>
> - Article 71 of ILOc188

The convention does not specify what is meant by communication equipment, guidance on the level of provision nor what is meant by reasonable expenses other than prohibiting vessel owners from making profit from charges made to crew.

There are typically two methods of ensuring that crew have connectivity when needed; through satellite phones or Wi-Fi access.

The difference being that Satellite phones are typically located in areas of access only to skippers and officers, generally require permission of use and communication is limited technically.

Wi-Fi gives fishers access to more personal communications and, in many cases, is more similar to the access they may have at home.

Thailand ratified ILOc188 in 2019 and has made it a legal requirement that satellite-based connectivity is provided for crew.

> **"Employers engaged in distant water fishing as defined in fisheries laws must provide equipment or a system for satellite-based communications that provides no less than 1 megabyte bandwidth per person per month for a minimum of 25% of the crew onboard the fishing vessel to access and use in contacting or coordinating with government officials or institutions, husbands, wives or relatives at all times. The employer must pay for all costs."**

- Thailand ratified ILO C188

1MB of data, for 25% of the crew for one month's usage, is roughly equivalent to:

- Sending or receiving 6-8 emails without attachments
- Sending or receiving 2 mails with simple attachments
- Browsing the web for around 10 minutes (depending on the website and content)
- Streaming audio for 1-2 minutes
- Sending or receiving around 5 instant messages with no attachments

However, it will also depend on the bandwidth. If a number of the 25% of crew were trying to use it at the same time that could significantly limit capability. Many of these vessels have 10 or more crew so this may well be an important factor. It is unclear how the 25% is determined.

Independent standards

RESPONSIBLE FISHING VESSEL STANDARD, GLOBAL SEAFOOD ALLIANCE

The Responsible Fishing Vessel Standard (RFVS) is a vessel-based program that is designed to be third party audited in order to certify the safety and welfare of crew onboard.

Through using the RFVS, fishing vessel owners and suppliers are able to show that they are using industry best practice based on ILOc188 and a strong governance process.

RFVS is on version 2 and is currently (February 2024) the only crew welfare standard successfully benchmarked to the Consumer Goods Forum's Sustainable Supply Chain Initiative (SSCI) At Sea Operations benchmark.

The RFVS includes an indicator on the provision of connectivity, free of cost, for fishing crew together with clear requirements dependent on days at sea. The standard does not specify a requirement for Wi-Fi or internet access.

> **"2.62 All crew shall have the right to access a confidential, free, real time communication link, appropriate for the length of the fishing trip, with which to contact family and friends when out at sea."**
>
> -The Responsible Fishing Vessel Standard (RFVS)

CREW COMMUNICATION PROVISIONS

2.62 - All crew and passengers shall have the right to access a confidential, free, real time communication link, appropriate for the length of the fishing or support trip to contact family and friends when out at sea.

CLAUSE CATEGORY	Essential			Supplementary			
CLAUSE APPLICATION	All	> 30 days	72 hrs - 30 days	24 hrs - 71 hrs	Day trip	Single hander	Support/ Tender
Supplementary clause compliance time limit				12 months from initial certification			

Note – Additional requirement with immediate effect for vessels operating at sea for more than 30 consecutive days at sea.

2.62a - All crew and passengers shall have the right to access a confidential free, real time communication link, appropriate for the length of the fishing or support trip, to contact family or friends when out at sea. Additional requirement with immediate effect for vessels operating at sea for more than 30 consecutive days.

CLAUSE CATEGORY	Essential			Supplementary			
CLAUSE APPLICATION	All	> 30 days	72 hrs - 32 days	24 hrs - 71 hrs	Day trip	Single hander	Support/ Tender

The intent of this clause is to demonstrate the crew have access to an accessible and confidential communications link, mitigating the risk of isolation where trip durations are significant.

CERTIFICATION REQUIREMENTS – EVIDENCE REQUIRED AT AUDIT

Real time communications links must be available and free for all crew to use. For full compliance to be verified responses to any crew interview must confirm that these facilities are available and free to use.

Other than for vessels operating at sea for more than 30 days (who must comply with immediate effect) the above requirements must be met by all vessels operating at sea for more than 72 hours no later than 12 months after initial certification.

Full compliance may be verified via responses to any crew interview which must confirm that these facilities are available and free to use.

FISH - FAIRNESS, INTEGRITY, SAFETY, AND HEALTH

The FISH standard version 1.1 includes a section regarding crews' ability to communicate with those based onshore requiring provision for crew to be able to contact family and fishers' organisations. It specifies it is not the intent to mandate continuous internet access while on board.

REQUIREMENT FOR INDICATOR 4.7.13

4.7.13 Fishers shall have full access to their own communication devices and be given reasonable access to vessel communications, reflecting trip duration and personal situations but without compromising normal vessel activities.

GUIDANCE FOR AUDITORS:

Clarification: The intent of Indicator 4.7.13 is to promote the mental health well-being of crew by ensuring they have agency to communicate with their families ashore with some regularity depending on the nature of fishing operations. In this context, acceptable forms of communication may include, among other things, radio calls, cell phone calls or texts, satellite phone calls, and messages conveyed via the internet (e.e., emails, instant messages etc.). As stated in the indicator 1.2.6, the scope of Indicator 4.7.13 also extends to providing for the fisher's right to maintain communication with a fisher's support organization as applicable. However, it is not the intent of 4.7.13 to mandate that the vessel owners/company shall provide fishers with continuous internet access while on

REQUIREMENT FOR INDICATOR 4.7.14

4.7.14 The access to communications in 4.7.13 shall be provided to fishers at a cost not to exceed the cost to the vessel owner/company.

GUIDANCE FOR AUDITORS:

Clarification: The intent of Indicator 4.7.14 is that the fisher should not pay a cost for accessing communications that exceeds the cost paid by the vessel owner/company for providing such usage. In other words, fishers should not be 'upcharged' by the vessel owner for communications access. Under no circumstances should the vessel owner/company charge fishers for the fixed costs associated with vessel communications. Such fixed costs include, for example, the purchase and installation of communications devices, equipment and other supporting infrastructure.

However, the vessel owners/company does have a right to recover a portion of the variable costs associated with the use of onboard communications devices. For example, it may be reasonable for the vessel owner/company to charge fishers for the time used on a satellite phones if the vessel owner/company bears an incremental cost of that usage. Another example of variable cost recovery: monthly subscriber fees from an internet provider might be recovered via an equitable distribution of payment among the internet users on board the vessel.

FAIR TRADE CERTIFIED

Capture Fisheries Standard 2.0 (effective January 2022) includes a suite of indicators aimed at ensuring good crew welfare on fishing vessels. It draws on a number of global conventions, including ILOc188.

OBJECTIVE 3.1.1A

At a minimum, crew members must be informed and aware of 13 indicators including

- Electronic communication provided

There is no specificity as to what should be provided only that if it is available the crew must be informed.

FISHERY PROGRESS AND THE MONTEREY FRAMEWORK

FisheryProgress provides information via a tracking system on the progress of global fishery improvement projects (FIPs). It uses the Social Responsibility Assessment (SRA) Tool for the Seafood Sector as the framework for FIPs to report on social performance. The SRA is the operationalization of "The Monterey Framework," a shared definition of social responsibility specific to the seafood sector.

There are no specific requirements for crew to have connectivity at sea, however work underway looking at grievance mechanisms and worker voice access acknowledges the need for connectivity.

THAI UNION

Thai Union is one of the world's leading seafood companies. In 2015, Thai Union implemented the Business Ethics and Labour Code of Conduct, and subsequently used this to create The Fishing Vessel Code of Conduct (VCoC).

This VCoC is comprised of 12 'fundamental principles' to monitor the unique set of working conditions onboard fishing vessels. The VCoC is now on its third version and is regularly revised to ensure that it stays abreast of any emerging best practices and expectations. The overarching aim of the code of conduct is to improve the social conditions on board fishing vessels.

The twelve principles aim to improve the conditions onboard fishing vessels, and relate to a broad range of indicators but the VCoC does not include any specific clauses regarding the provision of connectivity for crew on fishing vessels. Thai Union are currently carrying out a project of work relevant to Wi-Fi connection which is detailed in this report here.

AT SEA OPERATIONS

During July and August of 2020, a 60 day public consultation was held by The Consumer Goods Forum's (CGF) Sustainable Supply Chain Initiative (SSCI) and GSSI with the aim of reviewing the draft of the At-Sea Operations (ASO) Framework.

This framework is a benchmark that allows third-party social compliance certification schemes in the seafood industry to be benchmarked and to receive recognition accordingly, if they meet the criteria. This enables third-party schemes to demonstrate equivalency and quality.

Currently the criteria does not require standards to include indicators in relation to crew connectivity. However, it does require that "grievance mechanism shall be accessible to all workers".

As of February 2024 only the Responsible Fishing Vessel Standard meets the requirements of the At-Sea Operations Framework.

SEAFOOD TASK FORCE

The Seafood Task Force aims to demonstrate continuous improvement across people, product, process and policy in seafood through the participation of 35 commercial members the implementation of the Seafood Taskforce Vessel Auditable Standard. This standard is used to oversee supply chains and places a focus on reporting Illegal, Unreported and Unregulated fishing (IUU), as this is an issue that includes both social and environmental elements. The goal of the Seafood Task Force Code of Conduct and Vessel Auditable Standards is to set clear expectations in all parts of the supply chain.

The SFTF standard does require that "ship to shore communications are in place" but does not clarify what is required or at what level.

The Seafood Task Force Worker Voice Work Group (STF-WVWG) is moving forward with a new project to ensure a consultative, best practice process for establishing a safe and effective grievance mechanism for tuna fishermen. Connectivity and ensuring access will be a part of that project's work.

Analysis of questionnaires

In order to gain further insight into the availability of Wi-Fi for fishers, questionnaires were sent out. One questionnaire for crew working on fishing vessels was issued, and another for fishing vessel owners. 28 responses were registered for the survey for crew, whilst 12 responses were given for the vessel owner survey. Copies of these surveys can be found in the appendix.

RESPONSES TO QUESTIONNAIRE FOR CREW OR THEIR REPRESENTATIVES:

Crew of a range of nationalities provided answers to the survey, including Namibian, Ghanaian, Indian, and Sri Lankan individuals. The majority of crew who responded to the survey were Namibian or Ghanaian. The majority of crew who responded were working on vessels that were UK flagged, whilst other responses were gathered from those working on vessels flagged to Namibia, Spain, Iran, and Bahrain.

There were **28 respondents** to the Crew questionnaire.

80% of the surveyed crew responded that **Wi-Fi is available** at sea on the vessel they work on.

However approximately **20% of crew on these vessels are not permitted access to the Wi-Fi** with some respondents stating that only workers in more senior positions, such as the vessel skipper and officers, are granted access.

OTHER FINDINGS INCLUDED:

- **No crew** had to pay for Wi-Fi access.
- **72% said they would not work** on a **vessel that did not provide Wi-Fi** access.
- Almost **half of the crew respondents are provided with free access to Wi-Fi when in port**, half are not.
- Crew with access to Wi-Fi indicated that they **use it for several purposes**, including:
  - contacting friends and family members
  - social media
  - watching films
  - listening to music
  - checking their contracts
  - ensuring they have been paid.
- The range of **time spent at sea** was from 24hrs to 1 week (the majority) to a year, or more.
- Crew sizes varied greatly with some on vessels with crew below 10 persons to 36 and **originated from a number of different countries** as illustrated on page 22.

QUESTIONNAIRE RESULTS

RESPONSES TO QUESTIONNAIRE FOR VESSEL CREW OR THEIR REPRESENTATIVES:

Q: WHAT IS YOUR NATIONALITY?

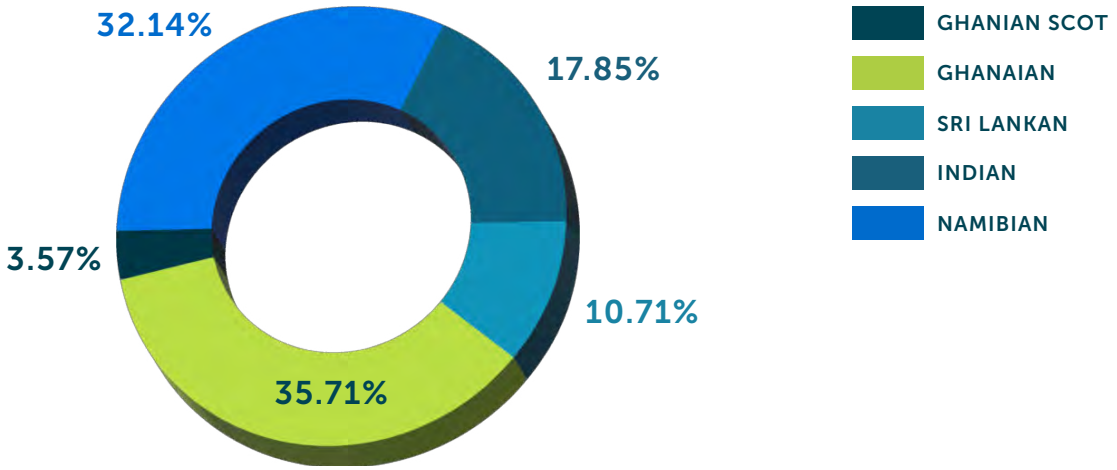


Figure 5 - Diagram displaying vessel crew nationality onboard fishing vessels.

Q: HOW LONG ARE YOU TYPICALLY AT SEA?

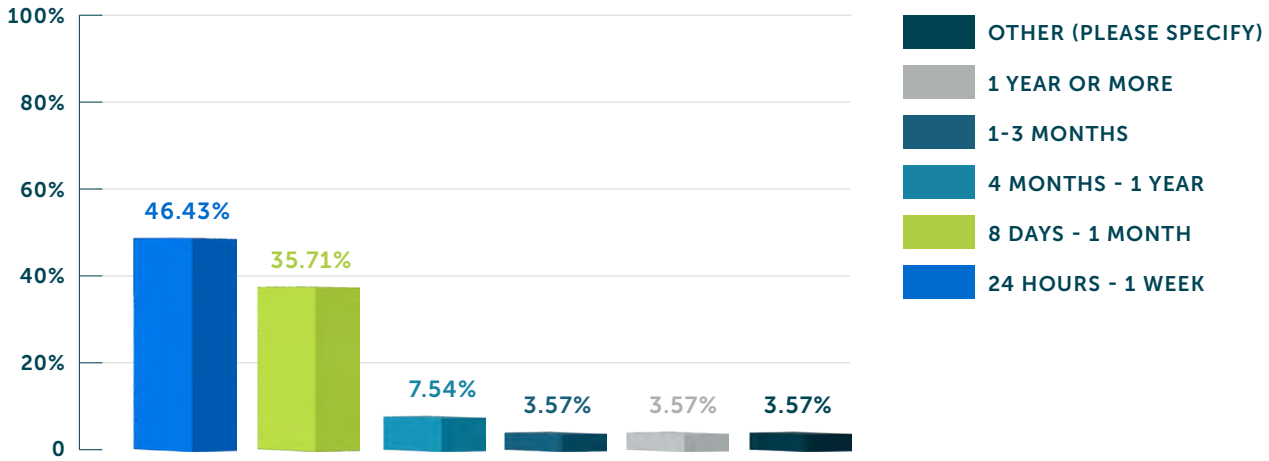


Figure 6 - Diagram displaying the average fishing trip duration for vessel crew.

Q: UNDER WHAT CONDITIONS IS WIFI AVAILABLE?

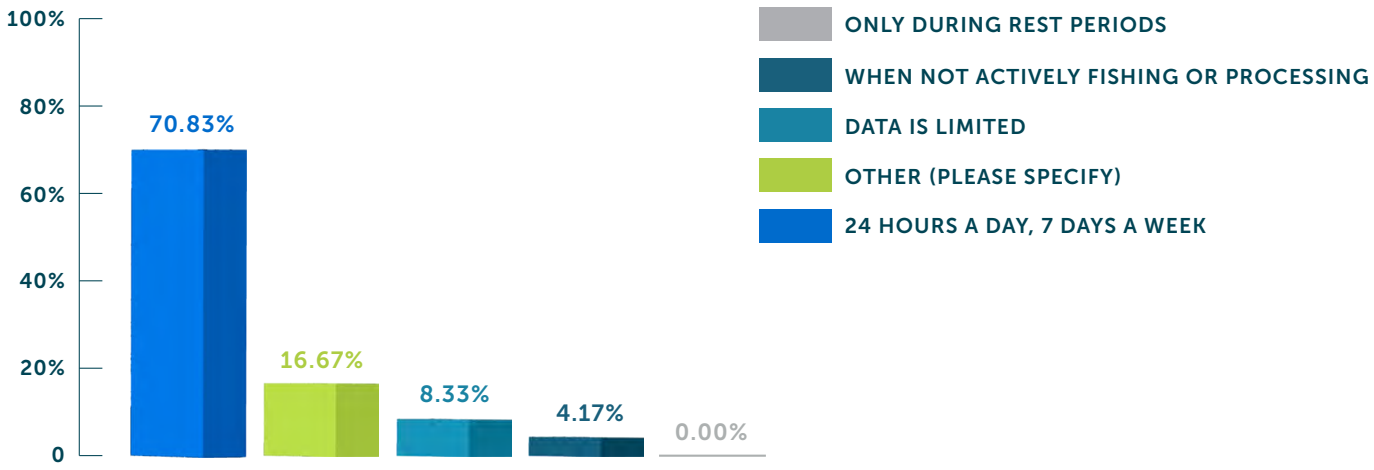


Figure 7 - Diagram displaying the availability of Wi-Fi onboard fishing vessels.

OTHER COMMENTS:

- Only for the vessel use no crew allowed to use the Wi-Fi or get any password.
- Wi-Fi is only available for captain and bridge officers.
- It's available all the times but during fishing time very hard to use, don't have good signal. Sometimes we can't make a call to our family.
- Only the officers.
- Only the engineers for company use.
- The Captain and the Chief Mate.
- I don't know.

Q: HOW RELIABLE IS THE WI-FI? PLEASE TELL US AS MUCH AS YOU CAN ABOUT THE RELIABILITY OF WI-FI AVAILABILITY AT SEA.

- There now and then coverage problems.
- Very reliable. Its makes our work easier in terms of when you see something new to communicate that back to shore.
- Always available bridge officers only.
- Doesn't have any effect. It functions properly.
- Perfect.
- We have good Wi-Fi.
- Not strong enough **(x5 responses)**.
- Reliability of the Wi-Fi at sea is sometimes very poor and not stable.
- Wi-Fi is stable and always available.
- Very reliable 24/7.
- It will be very easy to touch with our family especially it's avoid home sick.
- We need Wi-Fi at sea and it's very slow during fishing time. In harbour we use all mobile data but at sea we need good speed because we want to call our family's and sometime very hard to make a call.
- Its not reliable at all we cannot even do a phone call properly..Wi-Fi keeps on disconnecting and some times doesn't work at all.
- Good.
- Not bad.
- Not reliable.
- It helps me to get contact with my family and to read the messages about my payment.

Q: WHAT DO YOU USE WI-FI FOR?

USE OF WIFI	PERCENTAGE OF RESPONDENTS	NUMBER OF RESPONDENTS
Contacting my family	63.64%	14
Contacting friends	00.00%	0
Social Media	4.55%	1
Watching the news	00.00%	0
Checking I have been paid	00.00%	0
Checking details of my contract	00.00%	0
Downloading films or listening to music	4.55%	1
Contacting support services on land	4.55%	1
All of the above	22.73%	5
TOTAL RESPONDENTS	22	

Figure 8 - Table displaying what participants use Wi-Fi for at sea.

OTHER COMMENTS:

- For me as a fisheries observer deployed on fishing vessel to contact the office when I see some activity happening that need attention at that moment and to communicate when we see different species not known to use to ask questions from the scientist, bascially using Wi-Fi for work related stuff.
- I am not allowed to use it.
- I feel Wi-Fi is needed for all crew onboard fishing vessels, this also helps stop illegal fishing and for you to stay in contact with your loved one's as well while away from home for 8 days and more.
- Wi-Fi must be made available to all crew on the vessel if any, Not only to some privileged people onboard, crew must be treated equal at all time.
- I insinuate that Wi-Fi must be a mandatory to all fishing vessels. The motive behind this is that we need to contact our families and pay our accounts plus sending money to our relatives when the need arises.
- All officers on board vessels should have access to Wi-Fi.
- Some vessels have Wi-Fi but is only limited to the captain and chief engineer.
- Sometimes food issues coming on. All crew need their nationality food and we can't get here.
- Almost every one have Wi-Fi on board ..but as we spend so much time at sea we should be provided with Starlink Wi-Fi ..everyone one the quay wants it on the boat .. that will definitely make our life easier and help to talk to our loved ones ..and also would be good for our mental health.
- I like the Wi-Fi because it helps me to know my problem and the situation about my family.

RESPONSES TO QUESTIONNAIRE FOR VESSEL OWNERS OR THEIR REPRESENTATIVES:

- From the 12 vessel owner respondents 66% are certified to the Marine Stewardship Council. No other GSSI benchmarked fisheries standards were represented by the respondents.
- 25% of the respondents owned vessels that were part of a Fisheries Improvement Program.
- 72% were certified by the RFVS and another 36% by the FISH crew standard.
- The majority of respondents stated that fishing trips usually last one week, however some 30% range from 2 months to over a year, see figure 9.
- The vessel size ranged from 16m – 105m, and the amount of crew ranged from only 4- 154. Nationality of foreign nationals were mostly Filipino or Ghanaian working on the vessels in question.
- 100% of the vessel owners provided Wi-Fi to crew both in port and at sea. There were some limitations of crew access to Wi-Fi for example 14% of vessel owners indicated that they prohibited Wi-Fi access when actively fishing or processing.
- Not all Wi-Fi is provided for 24 a day. No respondents were charging crew for Wi-Fi access.

Q: WHAT IS THE TYPICAL DURATION OF A FISHING TRIP?

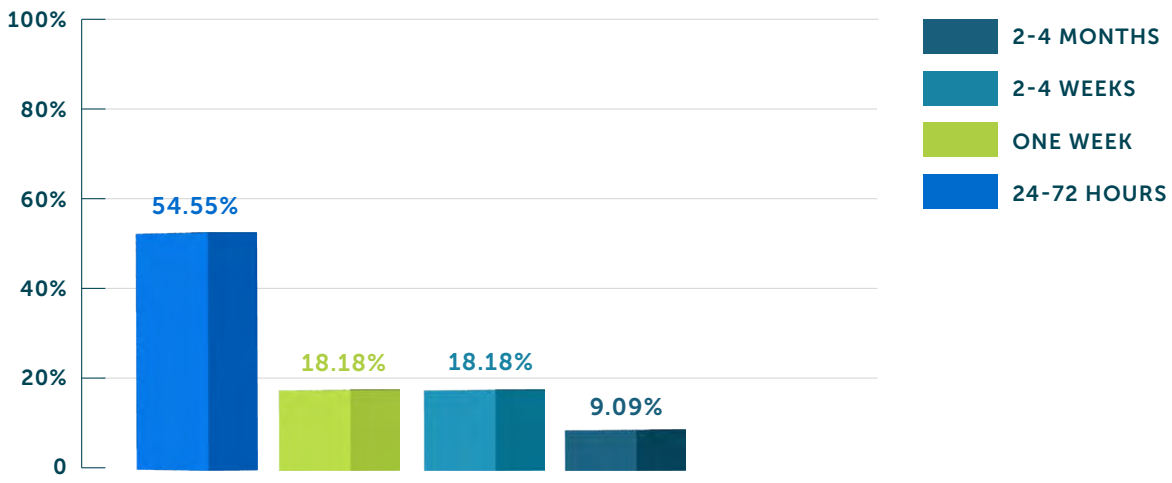


Figure 9 - Diagram displaying the average duration of a fishing trip for vessel crew.

- Over 90% of vessel owners thought that Wi-Fi is expected by crew, but only (approximately) 16% included this provision in crew contracts, but evidently the majority do not write it into contracts.
- Most of the vessel owners stated that they receive consistent coverage, however in some cases they highlighted they need to closer to shore to get signal.

IS PROVISION OF WIFI PART OF THE CREW'S CONTRACT?

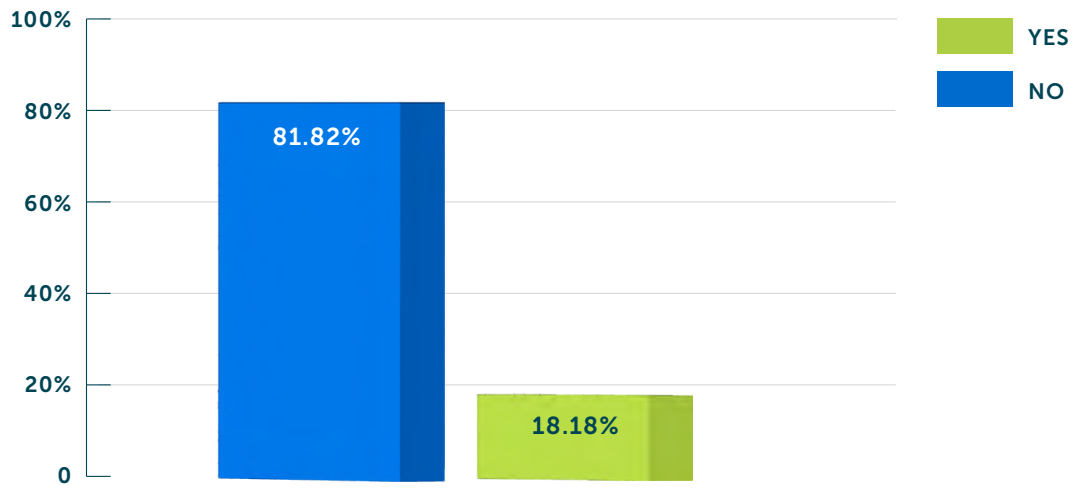


Figure 10 - Diagram displaying the average percentage of provision of Wi-Fi in a fihsing crew members contract.

There were some concerns over providing crew with Wi-Fi at sea. It was asserted by one respondent that crew sleep less and tire quicker if they are online during rest periods. One vessel owner indicated that they expect this to result in an accident. Other respondents noted that they think Wi-Fi is not a problem for crew who only use it responsibly.

- Crew sleep less, tire quicker restricting how much hours work they can safely do
- Allows better weather forecasting and decision making, also allows keeping in touch with family easier Happier crew
- Don't have to steam inshore for mobile signal
- Crew retention is higher
- We are hoping if Starlink improves, it should lead to some operational change
- Crew access had helped crew morale, we can more easily transmit data

Bi lateral interviews with vessel owners or their representatives

Six bilateral interviews were held with skippers and owners of fishing vessels during Q3 and Q4 2023. It was agreed the content would be anonymised and aggregated and is presented accordingly. Some comments are verbatim and these are *italics* and coloured bright blue, where comments aligned they have been aggregated. The interviews were held in Africa, Northern Europe, Asia and Oceania.

EXPECTATION

Some vessel owners and their skippers commented on the change in expectation over the years.

- *Once (historically) crew got to call home, via short wave phone facility, every few days so that they could ring home. Generally the call was made in a public area. No one is saying that it should still be the same, technology and expectation has moved on, but there were less issues. If family at home had an emergency they would call to the office who would call the captain. The captain would tell the crew member and they could make a call, then a plan might be made. Sometimes they would be dropped at port if needed, but that cost a lot of money to do. Now there is constant contact with home. Of course, this is good for lots of reasons, but it also means the crew don't let go, they stay thinking about the smaller things at home and sometimes small things get blown up. We cannot, and should not judge, what is important, but the amount of issues and home distraction has grown. I don't think they think about whether or not there will be Wi-Fi on board, it is just part of life and it would be a big, unwelcome, surprise if it wasn't available.*
- *People don't value things they don't pay for. They (crew) expect more data than they would have at home. They think it is limitless.*
- *We are aware of a campaign to get Wi-Fi on board fishing vessels.*
- Interviewees thought crew would increasingly expect to find quality connectivity on board. Some felt that while it would be expected for messaging and calls, streaming and downloading would likely not be expected, but welcomed. Most felt connection that enabled gaming would not be expected, but welcomed by some.

CONNECTIVITY

- Most of those interviewed, regardless or region, said connectivity varied according to location. Some said it had deteriorated over the past year.
- Those who had Starlink connection appeared to have more reliable service.
- One interviewee said they agreed, and their authorities agreed, crew should have connection for messaging and calls during rest periods, but added they were having difficulty finding a provider with good service and non-prohibitive costs.
- They added they were committed to providing connection *'when it is possible'*.
- All interviewees agreed that connectivity for calls and messaging should be free of cost. Some felt additional data might be purchased if technically possible, but all felt concerned at the administration.
- All interviewees felt quality Wi-Fi connection was becoming increasingly important for efficient operational reasons and that these must take priority. *Connection used to be very good, but had got bad in recent months. We heard it was a land based problem of more usage.*
- *Connection will get much better, technology is improving all the time. Starlink will make it better, but it all adds to the cost of fishing.*

CHALLENGES OF MANAGING ACCESS

- *We have had problems with people using all the data. I guess we didn't think about it and didn't put any restrictions on using the Wi-Fi.*
- *We get complaints they can't get emails out or the Wi-Fi is not good enough, but often it is because there are lots of people on YouTube or downloading films. It is hard to manage now.*
- *Using up all the data is a problem. People don't value what is free. It wouldn't be free at home.*
- *Sometimes all the data gets used, or the system is overloaded. That's not good for the rest of the crew, but can be serious for the systems on board.*
- *We give each crew member – that's 50 or 60 – a PIN number. We could analyse who is using data, but that would add more time and cost, more burden, to our work. Someone would have to download, cross reference and analyse data. Then they'd have to deal with the findings.*
- *It's not practical to have two systems (i.e. one for crew one for the skipper).*
- *Only the skipper and officers have Wi-Fi. The crew can ask for access if they need it to contact home.*
- When asked if they would consider providing it for crew. I think it would be dangerous. When asked about entertainment interviewer was shown a television in the galley area and large collection of DVDs.

OTHER

- *We take on (Wi-Fi) contracts separately not as a fishery or through an association.*

Wi-Fi connectivity at sea

There are many companies, such as Inmarsat, Intelsat and Iridium who provide satellite services to vessels at sea. This report and section does not provide a full list of providers. When in port or within, up to 8km offshore, a 4G or 5G connection may be a good option. Starlink Maritime is broadly considered, by technical experts, to be one of the most suitable options at sea currently. Starlink Maritime is satellite internet for boats. It uses constellations of Low Earth Orbit (LEO) satellites to provide fast and expansive coverage, meaning users can usually find an internet connection even in the middle of the ocean, far from traditional internet infrastructure.

However, on open water internet access is entirely lost if the vessel uses all their priority data. Given there is still risk of loss of connection, experts recommend quality satellite phones be in operation at all times to support communication and emergency contact.

USAIL is a maritime communications company with specialist packages for the fishing industry.

The below graph presents the findings from the questionnaire provided to vessels owners or their representatives.

IS THIS A WI-FI OR SATELLITE SERVICE?

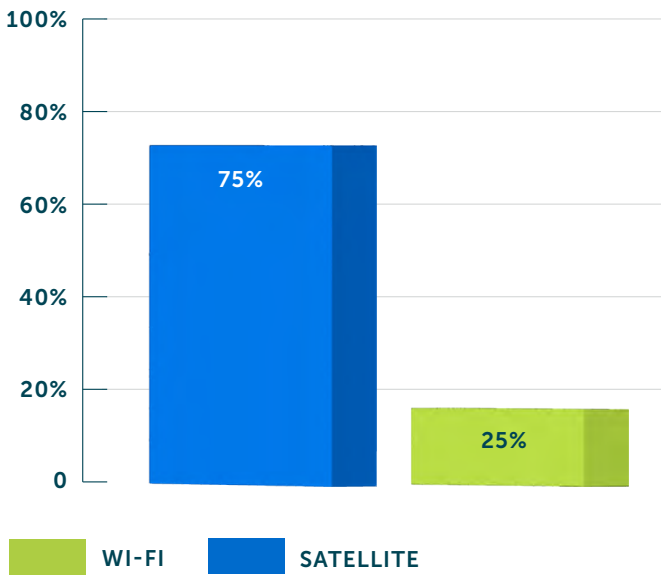


Figure 11 - Diagram displays results from the questionnaire provided to vessels owners or their representatives. Results show the comparision of service provided to vessel crew.

The below table presents the available regions within the USAIL service, alongside the benefits of their maritime communication packages.

COVERED REGIONS
Sole Bank
North Atlantic , NAFO, NEAFC
South Atlantic , International waters
West Atlantic
Indian Ocean
Pacific Ocean
Falklands, Terranova
Namibia, Angola, Mauritania
Central Atlantic Area
Falkland Islands

BENEFITS
Coverage across routes and fishing grounds
Tailored plans to the fishing calendar
Flat rates and unlimited internet
Very low call rates
Regional phone number
Crew access and management for welfare
Wi-Fi on board
Individualized prepaid cards
Video security CCTV

Figure 12 - Tables presenting the details of the maritime communications service package from USAIL.

BANDWIDTH BURDENS

Some services, such as Facetime and Netflix for example, use considerable bandwidth. There are options on some services to prioritise different usages of the bandwidth to help maintain connectivity a nd equity amongst users, while also prioritising vessel operations that use Wi-Fi. Other bandwidth saving options include being able to add services that maintain access to frequently-used pages, meaning they don't have to be downloaded many times. The cost of such services are expected to both improve and become more cost effective over time.

There are four main companies providing satellite Wi-Fi to fishing vessels. A table showing this can be found in figure 6 below.

	SERVICE PROVIDER:			
	Inmarsat Ltd.	**Intelsat**	**Iridium Communications INC.**	**Starlink**
Wi-Fi/ Satellite	Geosynchronous Equatorial Orbit (GEO) Satellite	GEO Satellite	GEO Satellite	Low Earth Orbit (LEO) Satellite
Installation	USD $8,500 - $9,000	USD $15,000	$8,000	USD $2500 Hardware only (installation not included)
Monthly Fees	USD $199 - $550	USD $2000	$580	USD $200
Bandwidth	5- 25 MB	2 MBps/ downloads 512 KBps/ uploads	Up to 704 KBps	Full details here.

Figure 13 - Table presenting a comparison of the four main companies providing satellite Wi-Fi services to fishing vessels.

It was indicated by some vessel owners that it is expensive to provide Wi-Fi packages to their crew. Despite this, it was found that none of them charged the crew any fee.

OPERATIONAL IMPLICATIONS

In addition to personal communication or entertainment, provision of Wi-Fi on fishing vessels means crew with connectivity can access processes that relate to their employment such as payment records and contracts, worker voice and grievance mechanism support. Additionally, the vessel owner would be able to provide online training and other relevant communications.

Good connectivity may increase efficiency of operations. This may be communications with ports, markets and business, but also for regulatory compliance. For example, by reducing the amount of documentation through the use of electronic logbooks, data can be easily stored, monitored and compared. Through this capability, companies would be able to demonstrate compliance with regulatory requirements faster than via paper versions.

- Operations and services may be demonstrably improved by smart use of Wi-Fi at sea. This can include advising port offices of crew recruitment, medical, stores, mechanical or other needs in advance of docking to optimise preparation and expedition.
- Training, information and other employment related information may be provided to crew and others through quality connectivity at sea.
- Live or near live data transmission may lead to more dynamic, adaptive fisheries management and agile decision making.

There were some concerns from vessel owners interviewed or via questionnaires as to crews ability to perform their job effectively if they spend rest periods online. If crew are tired or spending too much time online then they may be more likely to make mistakes, which may be dangerous. Ensuring that crew use the internet responsibly is difficult to enforce. Anecdotal evidence suggested that constant communication with friends and family on shore can make crew unsettled and worried over non-critical issues. While this may be understandable, this may be a cause for concern given the remoteness and commitment needed.

Live, or near live data may also enable more dynamic management of fisheries and agile decision making which could revolutionise fisheries management. Combining growing requirements, or acceptance of, electronic monitoring by regulators and standards bodies, with good connectivity may also be possible. While these are not directly related to crew access these improvements, or requirements in operations may demonstrate greater overall value in ensuring quality connectivity at sea.

REMOTE ELECTRONIC MONITORING (REM)

Remote Electronic Monitoring (REM) technology consists of an integrated array of equipment that monitors fishing activities on vessels at sea, such as sensors (e.g. net/gear sensors) and Closed-Circuit Television cameras. The resulting information enables both the cross-checking of logbook data and the confirmation of vessel compliance with regulations. There are discussions about the use of REM to help monitor good crew welfare conditions on board.

REM is becoming an increasing regulatory requirement. In the EU all fishing vessels of 18 meters or more will have to carry on-board remote electronic monitoring systems, including closed-circuit television. Some private standards operators are accepting REM inputs for audit purposes.

The European Fisheries Control Agency (EFCA) in an advisory document (2019) noted the use of connectivity on board for transmission of REM data.

1. Utilization of existing on-board satellite data connection for sensor data transmission. For vessels only fishing within in cell phone range 4G can be used for sensor data transmission.
2. Automatic prioritisation of the best suitable connection for data transfer and remote access.
3. 4G/LTE or faster(upload), mobile data connection.
4. Possibility to have a wireless option for uploading the data from vessel to land-based system.

In 2019, Inmarsat introduced more attractive tariffs for their FleetOne & FleetBoadband services which lowered the effective MB rate to USD0.50. Integrated monitoring pilots in Chile, New England (USA) and the Maldives were based on this service. Each crew member typically used 50-100MB of data, or around USD25-USD50/month.

In 2023, Starlink introduced global maritime coverage and a new entry-level plan with USD5/GB for the first 50GB and USD2/GB thereafter. For crew welfare Integrated Monitoring propose around USD2/GB rate, with the company using the initial 50GB allocation for their own purposes. This is a remarkable example of how fast services are changing. Over a short period of time 1GB (gigabyte) plans on Starlink are price significantly lower than 1MB (megabyte) plans 6-7 years ago.

This means that (Feb 2024) a1GB/month in data allocation per crew member equates to USD2.00/crew/month.

This is sufficient for all mainstream social apps, email, web browsing, etc. The services that still require limiting are video streaming (Netflix, Youtube) and large quantities of music streaming. For everything else the experience onboard is quite similar to a shoreside 4G network. It remains a challenge: to limit data use to appropriate levels and allocate bandwidth to crew members fairly.

Case Studies

Three case studies are highlighted as examples of technical experts, private sector companies and NGOs seeking to advance solutions on connectivity at sea for fishing vessel crew. There are others including recognition of the importance of connectivity at sea in their projects related to Worker Voice and Grievance Mechanism, for example, Seafood Task Force and Seafish Ethics Alliance which are both private sector collaboratives..

1. **Geeks without frontiers**
2. **Thai Union**
3. **Integrated Monitoring**
4. **Human rights at sea**

Geeks without frontiers

A Sustainable Blueprint for the Connected Fishing Vessel

Cost-effective voice and data services that can be bundled and scaled

January 2024

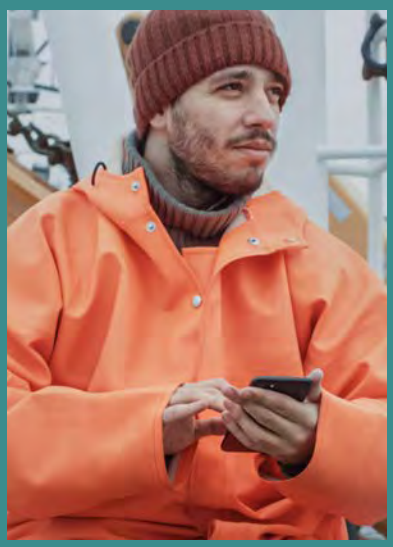
A SUSTAINABLE BLUEPRINT FOR THE CONNECTED FISHING VESSEL

Cost-effective voice and data services that can be bundled and scaled

Vessel owners and workers can benefit from affordable voice and data services. These solutions, which can be bundled and scaled according to need, are based on an independent assessment of available communication services in markets where commercial fishing is a major contributor to local economies.

Geeks without Frontiers (GWF), a not-for-profit, technology-neutral organization, has collaborated with maritime stakeholders since 2019 to develop an implementation framework for cost-effective digital solutions on fishing vessels that a) encompasses the public-policy needs of government, b) delivers returns on investment (ROI) for the private sector, c) makes grievance mechanisms accessible, while also improving the well-being of workers and their families, and d) promotes environmentally sustainable fishing practices.

GWF's work, completed in 2022, defined economical and resilient internet connectivity options to be used in the fight against illegal, unreported, and unregulated (IUU) fishing and for the improvement of human welfare for fishing vessel workers. Fueled by the strategic pillars outlined in USAID's Oceans And Fisheries Partnership [1], the project laid the groundwork to bring information and communication technology (ICT) and internet connectivity to fishing vessels, to address human rights concerns and provide enduring commercial benefits for vessel owners.



SHIP TO SHORE CONNECTIVITY OFFERS SIGNIFICANT REWARDS FOR PRIMARY STAKEHOLDERS

- **Fishers** can stay in touch with their family and friends. Labor issues can be addressed through the digitisation of grievance procedures, contracts and payment records. Workers at sea can access on-line training and digital applications such as telemedicine.

- **Vessel owners** gain greater operational visibility and improved ROI, through the implementation of navigation system, vessel geo-positioning, as well as weather and fish monitoring technology. These solutions can help to reduce bycatch, enhance operational safety and accountability. Intelligence (AI) can facilitate the recording of catches and enable greater alignment with health and safety requirements by regulating working hours, helping compliant fleets to gain a competitive advantage in the marketplace. Connectivity streamlines operations and increases efficiency by enabling quicker decision-making and faster response times when problems arise.

- **Retailers and Consumers** benefit from enhanced traceability throughout the supply chain, which advances biodiversity, increases the assurance of food security and promotes ethical business practices.

- **Governments and local administrations** can use digital connectivity to address IUU, overfishing and seafood fraud, by supporting customs compliance through greater accountability and traceability. Furthermore, dark vessels can be identified by combining earth observation data and GPS to detect movement on the seas, even if a vessel has disabled its Automatic Identification System (AIS).

> **"Digital sustainability can be implemented at national level and scaled globally. Operating costs can start at less than USD$10 per month"**

RECOMMENDATIONS

GWF's work in Thailand and Fiji indicates that the coverage of wireless operators supports the viability of near-shore connectivity, with satellite offering a feasible far-offshore solution. Harnessing private sector innovation through the N50 Project Global Alliance [2], GWF has developed a technology toolkit that can be matched to diverse operational budgets.

The following off-the-shelf solutions are available today:

1. Low/no airtime options, existing telecommunications infrastructure, can deliver near-shore voice and website access for crew and bridge staff. Local providers can expand into new markets, with pricing and communication plans tailored for the fishing vessel.

2. Stand-alone or plug-in modules: metered technologies can provide a Wi-Fi interface for crew and bridge staff to connect to Low Earth Orbit (LEO) satellite networks for storing and forwarding messaging services. While video and high-resolution image sharing would not be possible, this option provides a resilient and cost-effective solution to enable worker connectivity at sea.

3. As anticipated, LEO satellite connectivity - including SpaceX's Starlink and Eutelsat's OneWeb - has become increasingly accessible, enabling higher throughput, lower latency and greater responsiveness than today's geosynchronous satellites. It offers simple internet connectivity at a lower cost and dynamic bandwidth allocation.

Guidelines for designing the connectivity solution include:

- Accessibility for all crew members
- User interfaces for all of the main languages spoken on the vessel
- Avoidance of processes such as tickets or Wi-fi vouchers, which act as a debt burden for the worker
- Ease of installation and maintenance
- Scalability, so that additional services can be added as required

Note that an effective awareness campaign should accompany the launch of such a platform, to ensure proper usage and encourage adoption.

ATTRACTING INVESTMENT

GWF's extensive research has demonstrated that digital sustainability can be implemented at national level and scaled globally. Installation costs for the connectivity solutions remain affordable, and operating costs can start at less than USD$10 per month. Local governments and communities alike acknowledge the benefits that internet access can offer the fishing industry as a whole and show a willingness to engage to secure the future success of this economy.

GWF's digital sustainability blueprint includes consistent, off-the-shelf, and proven connectivity that can scale to address growing needs and new applications in the future. These solutions can be developed and packaged according to the requirements and budgets of vessel owners, giving stakeholders the opportunity to reap the rewards of improved operational efficiencies and greater ROI, while meeting the expectations of worker voice and grievance mechanisms.

NEXT STEPS

To demonstrate the viability of a responsible blueprint for the connected fishing vessel, field implementation of the above solutions is required for an extended period (at least 12 months) in multiple geographies.

Critical success factors include:

- Involve retailers as a key stakeholder
- Focus on a specific fish type (tuna, for example)
- Compare by vessel type: a) distant 50-meter-longliners and b) smaller vessels
- Engage with local labor associations, vessel owners, and social service organizations
- Define appropriate incentive mechanisms for worker participation
- Include, as relevant, national and regional bodies to standardize connectivity solutions

If your organization would like to be a forerunner in this ground-breaking initiative for a sustainable, connected fishing industry, contact Geeks without Frontiers travis@geekswf.org.

SUSTAINABLE BLUEPRINT FOR THE CONNECTED FISHING VESSEL SOLUTION OVERVIEW

	Nearshore "airtime"	"Connectivity Box"	Metered Technologies	LEO Satellite
Description	Extends coverage up to 30 km (GSM) and 100 km (LoRa)	Carry-on/off box equipped with WiFi and/or cellular data connection	Low latency connection for store/forward messaging	High-speed, low latency broadband from anywhere (subject to availability)
Use / Application Fit	Wi-Fi crew and bridge staff	Once the terrestrial connection has been lost.	Wi-Fi Interface to crew and bridge staff via smartphone.	Basic internet connectivity
HW / SW Needs	Stand-alone or plug-in modules	Native support for vessel-wide Wi-Fi. Houses "plug-in" modules for GSM, LoRa, Swarm-VHF, and L-Band SBD	Small low-cost, low-power embeddable satellite modem	Antenna and modem
Data Transmission	Mid (good voice quality and loading of websites	Video Calls possible	Secure text messages	Video Calls possible
Vessel Fit	Small (all) vessels operating within one hundred nautical miles of land	Small (all) vessels operating within one hundred nautical miles of land	Distant long liners fifty meters in length	Distant long liners fifty meters in length
Regulatory	Little or None: uses Public Spectrum	None	None for “high-seas” operation	Available, expanding monthly

ABOUT GEEKS WITHOUT FRONTIERS

Geeks Without Frontiers (GWF) is a platform for global impact. An award-winning 501(c)3 non-profit, Geeks' mission is to promote technology for a resilient world including bringing the benefits of broadband connectivity -health, education, poverty reduction, gender equality and the other UN Sustainable Development Goals (SDG's)- to the estimated 3 billion people who remain unconnected.

Geeks aspires to empower the unserved, including the forcibly displaced, creating Smart Communities and helping to catalyze positive global change. It does this by leveraging the benefits of exponential preparedness technologies as well as data, connectivity and other scalable solutions in a resilient, technologically neutral and sustainable manner; by the creation of innovative regulatory and business models designed to democratize and accelerate connectivity and through education and training, thought leadership, advocacy and public and private advisory support.

Geeks without frontiers
technology for a better World

www.GeeksWF.org

ABOUT THE N50 PROJECT

Digital Participation for the Next 50%

The **N50 Project** accelerates digital adoption and community enrichment through innovative applications, network design, and business models to enable the next 3 billion people to participate in the digital world. Broadband adoption will be accelerated and sustained, globally, through commercial, non-profit, government, and community partnerships.

Geeks Without Frontiers serves as the Project Management Office for the N50 Project.

N50

www.N50Project.org

[1] https://www.usaid.gov/sites/default/files/2022-05/FS_USAID_Oceans_May_2020.pdf
[2] https://www.n50project.org

THAI UNION SUPPORTS WI-FI TRIALS ON BOARD LONGLINE VESSELS

Staying in touch with family and loved ones is one of the fundamental challenges seafarers face when they're out at sea for extended periods of time in areas where cell coverage does not exist. Based on this need, a supplier of Thai Union operating in the Indian Ocean, installed satellite connection using Wi-Fi hotspot managed technology units on board five longline vessels – with Thai Union as their partner.

The trial aimed to test the capabilities of connectivity in different fishing grounds. Thai Union and the vessel owner selected different sized antennas to test. Working alongside Satlink, the owner installed an antenna on board their transshipment vessel to 1) be able to test each vessel location and the connectivity in each area, and 2) check whether the vessels were able to connect to the transshipment vessel.

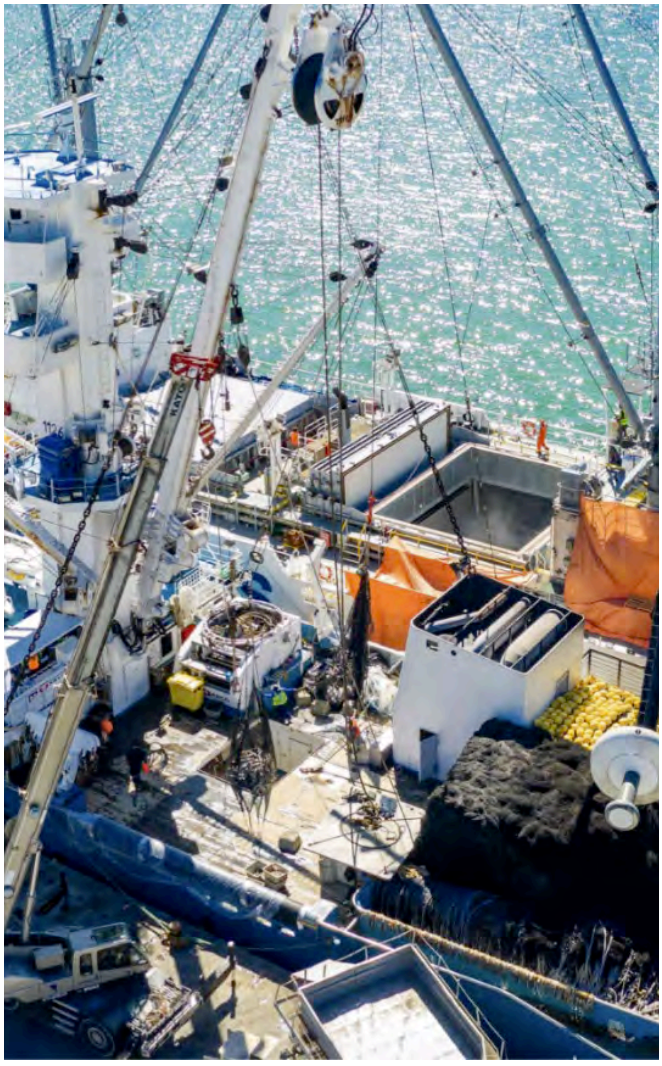
The trial is ongoing as new technology becomes available and first results show that the technology is suitable. During the first phase of the trial, the vessels faced connectivity issues, for example when the vessels went below a certain altitude. Thai Union, Satlink, and the vessel owner hope to continue discussions on how to improve the Wi-Fi effectiveness to be able to scale up the project with an overall aim to have all vessels connected both when they're at port or at sea.

The vessel owner, the captain and crew have appreciated the benefits of being connected by Wi-Fi, such as being able to contact their family, friends, recruitment agencies, or representatives. It also adds an additional layer of safety as the crew can contact medical experts when required. The Wi-Fi technology also provides the captain with real-time communication with the vessel owner.

Going forward, Thai Union looks to partner with organizations that are directly associated to the crew, such as Stella Maris who are located near Port Louis (Mauritius) to ensure the crew have a third-party contact point.

As of now, the vessels still experience interruptions when they're operating in remote fishing locations. The partners aim to fix these connectivity issues before scaling up.

Thai Union would like to establish an overview together with service providers and vessel owners alike about the technology packages that are available including details of their costs and capabilities to showcase that an investment into Wi-Fi technology offers advantages on several levels: crew welfare, productivity, and safety.



Integrated Monitoring

INTEGRATED MONITORING: WIRELESS ELECTRONIC MONITORING & CREW INTERNET

Integrated Monitoring of Boston, Massachusetts, has developed a cloud-based Monitoring, Control and Surveillance platform—known as Monitor. This provides fleet owners and regulators with real-time access to video, GPS, and quality metrics such as well temperature. Crew access to the Internet while at-sea is increasingly a requirement, as is video monitoring. Combining both technologies within a single system provides a powerful tool to address illegal, unreported, and unregulated (IUU) fishing, enhance transparency and accountability, and for operators to comply with the increasing number of regional fisheries management standards that mandate both technologies be installed onboard.

The IM Remote Electronic Monitoring (REM) system includes a Starlink Satellite Internet modem for dual-mode use by the video surveillance platform and crew Wi-Fi gateway. Both purposes are complementary: consider an unsafe incident reported by a crew member, where video from the onboard cameras is then available immediately for corroboration.

ADVANCES IN TECHNOLOGY

Recent advances in the bandwidth capabilities of Low Earth Orbit (LEO) constellations have reduced the cost of ship-to-shore communications. Whereas in the past, crew were limited to text messaging (or no Internet service at all) it is now possible to include photo-sharing, video chat and standard definition video-streaming within crew welfare packages. The advent of direct-to-cell satellite technology—being introduced by satellite operators over the next few years—promises to extend crew access to artisanal and small-scale fishing vessels.

Under this model, crew use their own devices to send short messages to/from shore under a roaming agreement with their cellular provider. Depending on the capabilities of the service, voice calling services may also be available.

Ghana Case Study

Commencing in 2023, Integrated Monitoring piloted Electronic Monitoring in the Ghanian industrial trawl fishery for the Ministry of Fisheries and Agricultural Development, under contract to The Nature Conservancy. Program funding is provided by USAID.

In addition to the science and management benefits of reviewing realtime video while the vessel is fishing, a key aspect was provision of reliable Internet to the crew. IM gained valuable experience from this pilot to develop best practices for managing data usage onboard for different users: e.g. captain (for company use), fisheries observer, and individual crew members. Remotely configurable routers allocate out bandwidth (Internet speed) at individual crewmember level. Services such as social, email and voice calling work normally, but higher bandwidth services such as 4K-video streaming will fall back to lower resolutions. Crew can "roll over" unused data allocations to use on subsequent days, and exceeding the cap on any one day only reduces connectivity for a 24hr period (rather than the entire voyage).

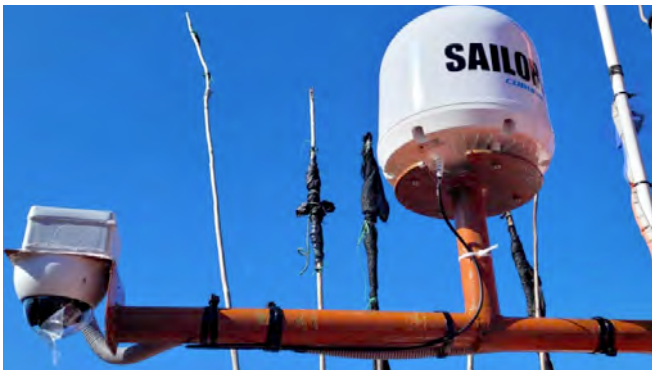
Onboard Monitor on a Ghanaian trawl vessel on Starlink--Real-time remote snapshot

Ghana Industrial Trawl Vessel (note the metal shack living quarters for crew--juxtaposed against high speed internet access for the first time via Starlink antenna).

Chile Case Study

During 2022-2023, Integrated Monitoring supported The Nature Conservancy, The National Fisheries Service of Chile (SERNAPESCA), and local artisanal fishermen to pilot Wireless Electronic Monitoring within the artisanal Chilean Seabass fishery.
As an added value to participants, Inmarsat's Fleet One Internet service was provided to participating vessels. Several specific benefits were reported by captain and crew based on their use of the 2G-speed satellite system:

- Crew used WhatsApp extensively to communicate with their families and friends.
- During foul weather and storms, the crews' families could see the situation in real-time, via still images from the camera system, and confirm that their loved ones were safe.
- The captains sent daily reports/images to the fleet owners. The owners obtained premium pricing by pre-selling fish and coordinating the exact port/time of landing.
- The captains downloaded weather charts daily via the satellite communications system.
- Satellite Internet proved particularly valuable in coordinating a response to a medical emergency experienced onboard one vessel.



FleetOne install on Chilean LL vessel (about 1 year before starlink came out). FleetOne terminals are priced at about $2500 per antenna, and have different data options--the most useful is America's leisure plan that provides unlimited data at 32 kbps for $250/mo. This is just fast enough for text and email, but if more than 2-3 people are trying to use it at the same time, it doesn't have enough bandwidth.

Human rights at sea

Falkland Islands Fishing Companies Open Up to Scrutiny

7 Jun 23

Law Reform and Policy

Review. Following direct engagement with the fishing industry in the Falkland Islands, three of the leading companies have provided full and frank disclosure in response to Human Rights at Sea (HRAS) crew welfare enquiries.

The recent visit to the Falkland Islands by HRAS to conduct an independent review of fishing licensing, enforcement, and improvements for seafarer crew safety and welfare, saw three leading companies opened their doors to scrutiny. This included access to one of the licensed squid fishing vessels and its crew at sea.

Polar Seafish Ltd and Dragon Fishing and Trading Company Ltd licensed by the Falkland Islands Government (FIG) along with Argos Froyanes Ltd, licensed by the South Georgia Government and the UK Government, have detailed their company positions on several review areas concerning onboard crew working conditions and resources.

These include mandatory safety training in the presence of flag and class personnel, access to Wi-Fi, accommodation facilities, remote medical support, complaints procedure, company code of conduct, incident reporting and remediation, access to onshore welfare services and access to fresh food supplies.

Polar Seafish Ltd

Polar Seafish operates three vessels with 180 crew with a focus on fishing for Loligo squid (Doryteuthis gahi) which powers off the Falkland Islands coast.

In a recent statement to HRAS but with required International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW) requirements (in force 1984), Polar Seafish example that their actions to address crew safety, security and welfare. This included 24/7 telemedicine service and medical support from Spain in real-time photos, sound and videos to diagnose the patient and the steps to follow to take care of their crewman.

Additionally, they stated all vessels use the company's safety risk assessment process manual with ongoing risk assessments and crew awareness being consistently implemented, with incidents reported direct to FIG departments.

"All incidents or accidents are reported to locally FIMA [Falkland Islands Maritime Authority] for statistical and recording purposes and to look at improvements that can be carried out to try and avoid the same occurrences in future, not only onboard our vessels but also across the entire fleet."

In terms of crew Wi-Fi access, the company is trialling a low-orbit satellite system on one of their vessels and stated: **"We know how important it is for our officers and crew to keep in touch with their families while they are on board, which is why we are proud to offer Wi-Fi on our vessels. This means that all crew members have access to the internet and can communicate in whatever way they prefer using their own devices. This has been a huge improvement compared to the limited means of communication available years ago, where phone calls were the only option."**

Alex Reid, Managing Director, Polar Seafish, commented: **"As a company, we strive to provide our crew with the best possible working conditions and support them in every aspect of their work and personal life while at sea. We believe that providing them with work clothing, food, accommodation, training, medical care, continued employment, and taking care of them from when they leave their home until they return is crucial."**

Argos Froyanes Ltd

As a British-Norwegian partnership, **Argos Froyanes** is focused on the sustainable capture of Patagonian Toothfish (Dissostichus eleginoides) and **operate three vessels and circa 85 crew** from the Falkland Islands to fish around South Georgia and South Sandwich Islands (SGSSI) Maritime Zone.

Engaging with HRAS, Argos have also shared detailed responses to HRAS queries around onboard crew working conditions and resources.

In addition to company Safety Compliance and Operations crew training and qualifications, Argos highlight several points.

In terms of onboard and remote medical support, all Officers have medical provision training backed by 24/7/365 medical support from Norway and Spain. Further, all vessels carry an extensive medical stock, above UK Maritime and Coastguard Agency (MCA) requirements, in purpose-built hospitals (3 berths) ensuite, with internal and satellite communications.

In terms of Wi-Fi provision, all vessels have routers, and all crew have access to Wi-Fi at all times.

Argos state: **"...we have 3 levels of connection depending on geographical position. Each level allows for crew to at normal levels have internet as well as VOIP and messaging services, to at worst messaging services. They have international phone call to cabin ability for incoming calls and can make outgoing calls as well. Additionally, if required we have 3 methods of voice calling from the vessel which crew can use in addition to their own access."**

All incidents are recorded and reported to the flag state and processed through the company's in-house Safety Management System. Data is also supplied to the licensing authority, as required.

Andrew Newman of Argos, said: **"Crew welfare in the modern fishing industry suffers from historic bad performance or current bad performance by certain countries/flag states/regulators. We welcome this opportunity to showcase what some areas of the modern fishing industry are like, albeit in a very hostile and remote area like the South Atlantic."**

Dragon Fishing and Trading Company Ltd

With 30 licensed South Korean squid jigger vessels, each with 48 crew and totalling around 1500 crew onboard during a season, Dragon Fishing and Trading Company Ltd are responsible for one of the larger fleets operating in Falklands waters.

Increased Safety Awareness, Crew Welfare and Living Conditions has been bought about by directed internal change working with owners, equipping the crew and vessel issues, but providing solutions too. This ongoing improvement process has been 100% funded by owners and it has involved independent surveys and audits of each vessel, pre-deployment visits, pre fishing season audits and in-season company support.

To date, it is reported to HRAS that all vessels have been raised to a standard where they voluntarily comply with ILO C188 and the 1993 Torremolinos Protocol, superseded by the 2012 Cape Town Agreement, neither of which are yet enacted in South Korea. Auditing by a third party is voluntary.

As for the previous two companies, all crew have STCW basic safety training which for the company is checked to be within date for the previous five (5) years. In addition to 'basic training' additional onboard training is provided by a team of trainers, pre-season. The trainers include a qualified firefighter, master mariner, marine surveyor, auditor and a safety specialist.

The training covers command teamwork, fire firefighting, first aid, muster stations, man overboard, and abandon ship. The training is provided at anchor on the fisher's vessel and involves 'live' drills, 'on air' firefighting including use of charged hoses and use of the rescue boat, by way of example. The training is mainly in-person, not classroom led. If a vessel's crew do not reach a required standard, then the day is repeated until it is confirmed by the trainers as being correct.

It is reported to HRAS that in 2022 one vessel was sent back to Montevideo to rectify onboard safety equipment and associated training. It was delayed by nearly two (2) weeks before returning to the fishery. It was subsequently internally assessed that for the 2023 season, the vessel in question was one of the best prepared.

For crew, all licensed vessels have a documented complaints procedure, posted up in the crew mess, and part of the company's Safety Management System (SMS).

In response to questions of Wi-Fi availability, all vessels have been required by South Korean law since 2022 to have full satellite connectivity and Wi-Fi provision; how that provision is locally managed is up to each company and master.

In practice, the company has encouraged 24/7 availability for crew which spreads the band with loading, reduces tension around set times. It is reported that some masters prefer to provide specific schedules when the Wi-Fi is on, though Wi-Fi use is highlighted as coming with problems too, with crew more readily aware of issues at home. Nonetheless, the company states that, **"overall, the negative aspects are outweighed by the benefits."**

In terms of ongoing improvements, some of the older vessels are being improved and **new vessels are being constructed.** Specifically, there are galley and crew accommodation upgrades, increased fresh water making capacity, and increased onboard safety training.

Wendy Shelbourne, Managing Director, said: **"Korean owners have been at the forefront of change for the Falkland Island Jigger fleet. Cooperation from the [South] Korean Flag State (KOMSA) and Korean Class Society (KR) has bought about a common approach where safety is being improved collectively. This change has not been without financial cost, but there is a determination to show that the [South] Korean fleet is committed to a long-term presence on the South Atlantic waters."**

HRAS Comment

For all coastal States, it is crucial to recognise the significance of allowing civil society direct access to the fishing industry and its activities.

Human Rights at Sea, an **accredited NGO of the United Nations** and official **Observer of the Western and Central Pacific Fisheries Commission (WCPFC),** play a vital role in reviewing working conditions, onboard facilities, and training standards for fishing crews.

These independent reviews result in submissions to relevant agencies and state authorities, providing examples of both good and bad working practices in order to drive change.

In terms of the current dialogue with the Falkland Island's fishing industry, HRAS has benefited from an initial open and welcoming discourse which has set the standard for future discussions.

Related articles

1. Falkland Islands Seafarer Welfare. An Essential Jewel in the Crown in the South Atlantic

2. South Atlantic Fisheries Enforcement with the Falkland Islands Maritime Authority

3. New Falklands Fisheries Patrol Vessel (FPV) LILIBET to Impact Crime and Abuse at Sea

Photo credit: David Hammond 2023

Organisation in special consultative status with the UN Economic and Social Council since 2022

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Appendix - Questionnaires

Copy of Questionnaire for fishing vessel crew or their representatives

Regarding access to WIFI

Thank you for participating in Global Seafood Alliance's study to better understand the level of access to WIFI, conditions of access and how WIFI is used by fishing vessel crew at sea.

Your participation will help to define what can be expected and help improve crew welfare for all, now and in to the future.

We are also asking questions of vessel owners about what they provide, cost, coverage and any challenges or opportunities it raises.

All questionnaires are handled in confidence and information will be fully anonymised and aggregated before results are shared.

The questions 1-7 help us understand the circumstances under which you are working as these may impact on accessibility of WIFI.

1. Are you employed as crew on a fishing vessel that spends 24 hours or more at sea?

◯ Yes

◯ No

If No - This survey does not apply to you, but thank you for your interest.

If Yes - Please continue.

2. What is your nationality?

[ ]

3. What is the flag state of the vessels you are working on?

[ ]

4. What is the name of the vessel you work on, or the company that employs you? (optional)

[ ]

5. Which port are you working from?

6. How long are you typically at sea?

- ◯ 24 hours - 1 week
- ◯ 8 days - 1 month
- ◯ 1-3 months
- ◯ 4 months - 1 year
- ◯ 1 year or more
- ◯ Other (please specify)

7. What gear type is the vessel using?

Questions 8-12 refer specifically to your access to WIFI

8. How many crew are on the vessel you work on?

9. Is WIFI available at sea on the vessel you work on?

- ◯ Yes
- ◯ No

If Yes - Continue to question 10

If No - Continue to question 16

10. Under what conditions is WIFI available?

- ◯ 24 hours a day, 7 days a week
- ◯ Only during rest periods
- ◯ When not actively fishing or processing
- ◯ Data is limited
- ◯ Other (please specify)

11. Do all crew have access? If not, who has access?

- ◯ Yes
- ◯ No

Comment

12. How reliable is the WIFI? Please tell us as much as you can about the reliability of WIFI availability at sea

13. What do you use WIFI for? Tick all that apply

- ◯ Contacting my family
- ◯ Contacting friends
- ◯ Social Media
- ◯ Watching the news
- ◯ Checking I have been paid
- ◯ Checking details of my contract
- ◯ Downloading films or listening to music
- ◯ Contacting support services on land
- ◯ All of the above

Other (please provide information)

14. Do you have to pay to use the WIFI?

- ◯ No
- ◯ Yes

If Yes, how much do you have to pay and how is this payment taken?

15. Would you work on a fishing vessel that is at sea for more than 24 hours if WIFI was not provided?

- ◯ Yes
- ◯ No

16. Are you provided with free WIFI access when in port?

- ◯ Yes
- ◯ No

17. Any further comments you would like to make?

If you are willing for us to contact you, please provide contact details as below:

18. Date

Date / Time

Date

MM/DD/YYYY

19. Name (optional)

First name

Last name

20. Vessel Name

21. How may we contact you? Please provide in comments

Email

WhatsApp

Phone

Access to WIFI for fishing vessel crew at sea

Thank you for participating in Global Seafood Alliance's study to understand the levels of access to WIFI provided for fishing vessel crew at sea. Your contribution helps us establish what is possible together with the challenges or opportunities in doing so.

All results will be anonymised and aggregated before being shared.

The fishery
These questions help us understand where you are operating and more about the vessel or gear type.

1. Is the fishery you operate in certified to a GSSI benchmarked standard?

- ◯ Yes
- ◯ No

2. If Yes - Which one?

- ◯ RFM
- ◯ Marine Stewardship Council
- ◯ MEL
- ◯ N/A

3. Is the fishery you operate in undertaking a Fisheries Improvement Project, registered with Fishery Progress?

- ◯ No
- ◯ Yes

If Yes - Please give the name of that fishery

4. What species are you fishing? (local and latin name)

5. What gear type are you using?

6. What part of the ocean are your vessels operating? (by FAO areas)

The vessels
These questions help us understand about the type and size of vessel, and its activity, which may impact on your access to WIFI.

7. Are your vessels certified to:

- [ ] Responsible Fishing Vessel Standard
- [ ] Fish Crew

Other (please specify)

8. Do you own fishing vessels which are at sea for 24 hours or more?

- ◯ Yes
- ◯ No

If No - Move on to question 10

9. If Yes - What is the typical duration of a fishing trip?

- ◯ 24-72 hours
- ◯ One week
- ◯ 2-4 weeks
- ◯ 2-3 months

Other (please specify)

10. How many fishing vessels do you own?

11. What is the size of these vessels?

12. Where are your fishing vessels flagged to?

The crew
These questions help us understand more about your crew. It may be of particular relevance to understand if they are local nationals or foreign crew and how crew are recruited.

13. How many crew, excluding the skipper, are working on each of these vessels?

14. What percentage of the crew are nationals of the country where the vessel is based?

0 100

15. From which countries do the remainder of the crew originate?

16. Is provision of WIFI part of the crew's contract?

- Yes
- No

17. Do you recruit crew directly or via a recruiter?

- Directly
- Via a recruiter

18. Do you think access to WIFI is an expectation?

- ◯ Yes
- ◯ No

The WIFI

19. Do you provide any WIFI access for the crew when in port?

- ◯ Yes
- ◯ No

20. Do you provide any WIFI access for the crew when at sea?

- ◯ Yes
- ◯ No

21. If you do not provide WIFI access, please explain why not

22. Is access 24 hours a day?

- ◯ Yes
- ◯ No
- ◯ N/A

23. If No - Please indicate all that apply

- [ ] During rest periods
- [ ] During meal periods
- [ ] During night times
- [ ] All times other than when not actively fishing or processing
- [ ] N/A

Other (please specify)

24. Estimated hours per day

25. Are crew charged for WIFI access?

- ◯ Yes
- ◯ No

26. Is that all crew or only some?

- ◯ Yes
- ◯ No
- ◯ N/A

If only some, please provide details

27. If crew are charged, what is the cost to them?

28. How is that collected?

29. Is access limited to calls/messages only, or does it include data streaming, such as sending videos, photos, downloading?

- ◯ Calls/messages only
- ◯ Includes data streaming
- ◯ Includes sending of photos/videos
- ◯ All of the above

WIFI at sea
These questions help us understand the challenges of providing WIFI at sea, and the potential benefits to the vessels operations.

30. What have been the challenges to providing WIFI to crew at sea?

31. How much does it cost you to provide WIFI on a vessel, per month?

32. Who provides the service?

33. Is this a WIFI or satellite service?

- ◯ WIFI
- ◯ Satellite

34. How consistent is the coverage in the areas where you operate?

- ◯ Very
- ◯ Not Very

Other (please specify)

35. Has WIFI on board led to any changes in operations?

- ◯ Yes
- ◯ No

If yes, please specify

36. Any other information you would like to provide

37. May we follow up with you if we have any questions?

- ◯ Yes
- ◯ No

38. If yes, please provide contact details

Name	
Email	
WhatsApp	
Phone	

References

Bates, Q. (2022). Marking progress for fishing workers as tactics shift to retailers and consumers. FiskerForum. [Online] Available at: https://fiskerforum.com/marking-progress-for-fishing-workers-as-tactics-shift-to-retailers-and-consumers/

Boris, E. and Fish, J.N. (2014). Domestic Workers Go Global: The Birth of the International Domestic Workers Federation. New Labor Forum, 23(3), pp. 76–81. [Online] Available at: https://doi.org/10.1177/1095796014544508

Campaign for Wi-Fi on Fishing Vessels Gains Momentum. [Online] Available at: https://www.humanrightsatsea.org/news/campaign-wi-fi-fishing-vessels-gains-momentum

Charoen Pokphand Foods (CPF Worldwide) (2017). Songkhla's Fishermen's Life Enhancement Centre set to lift migrant workers' quality of life. Charoen Pokphand Foods Public Company Limited. [Online] Available at: https://www.cpfworldwide.com/en/media-center/448

Chiang, M. & Chen, S. (2023). Briefing: Wi-fi for fishers at sea. Global Labor Justice-International Labor Rights Forum. [Online] Available at: https://laborrights.org/publications/briefing-wi-fi-fish-ers-sea

Chiang, M. (2022). The exemplar in Taiwan's distant water fishing industry: "it's definitely worthwhile to ensure good working conditions for the foreign fishermen on my vessels!", Humanity Research Consultancy. [Online] Available at: https://humanity-consultancy.com/2022/03/22/the-exemplar-in-taiwans-distant-water-fishingindustry-its-definitely-worthwhile-to-ensure-good-working-conditions-for-the-foreign-fishermen-on-my--vessels/

Cohen (2022). Delegation in Taiwan Calls for Wi-Fi on All Vessels to Ensure Fishers' Rights. [Online] Available at: https://laborrights.org/releases/delegation-taiwan-calls-wi-fi-all-vessels-ensure-fishers-rights

Department of Economic and Social Affairs. Ship to shore rights – combatting unacceptable forms of work in the Thai fishing and seafood industry. United Nations. [Online] Available at: https://sdgs.un.org/partnerships/ship-shore-rights-combatting-unacceptable-forms-work-thai-fishing-and-seafood-industry

Department of Fisheries Thailand (2021) Thailand Fisheries Supply Chain 2021. [Online] Avaliable at: https://www4.fisheries.go.th/dof_en/view_message/215

Environmental Justice Foundation (EJF) (2022). An EJF policy briefing prepared for the Royal Thai Government. [Online] Available at: https://ejfoundation.org/resources/downloads/ejf-policy-briefing-prepared-for-the-royal-thai-government.pdf

Falkland Islands Fishing Companies Open Up to Scrutiny. [Online] Available at: https://www.humanrightsatsea.org/news/falkland-islands-fishing-companies-open-scrutiny

FCF Co., Ltd. (2021). FCF continues the rollout of worker's voice solutions. [Online] Available at: https://fcf.com.tw/fcf-continues-the-rollout-of-workers-voice-solution/

FCF Co., Ltd. (2022). FCF supports TSSFA for holding social responsibility training session and demonstrates worker's voice app. [Online] Available at: https://fcf.com.tw/fcf-supports-tssfa-for-holding-social-responsibility-training-session-and-demonstrates-workers-voice-app/

FCF Co., Ltd. (2023). Company Update. [Online] Available at: https://fcf.com.tw/companyupdate6/

Fisheries agency Taiwan,(2022a). Council of Agriculture, Executive Yuan. Fisheries Agency discussed the policy of promoting WiFi on fishing vessels with Indonesia fishers and International Human Rights Organizations. [Online] Available at: https://en.fa.gov.tw/

Godfrey (2022) Labor group seeks help covering Wi-Fi costs onboard Taiwanese fishing vessels. Available at: https://www.seafoodsource.com/news/supply-trade/labor-group-seeks-help-covering-wi-fi-costs-onboard-taiwanese-fishing-vessels

GLJ-ILRF (2022) Briefing: Benefits of Wi-Fi for Fishermen at Sea. [Online] Available at: https://laborrights.org/publications/briefing-wi-fi-fishers-sea

C188 - Work in Fishing Convention, 2007 (No. 188). [Online]. Available at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C188

ILRF (2020) TIME FOR A SEA CHANGE: Why union rights for migrant workers are needed to prevent forced labor in the Thai seafood industry. [Online] Available at: https://laborrights.org/sites/default/files/publi cations/ILRF TimeforaSeaChange.pdf

Inmarsat. (2018). New report reveals impact of Digital Access on Seafarers' well-being and social connections. [online] Available at: https://inmarsat.com/en/news/latest-news/maritime/2018/new-report-reveals-impact-of-digital-access-on-seafarers-well-being-and-social-connections.html

Inmarsat. (2019). Satellite Technology saves lives, supports sustainable fishing in Indonesia. [online] Available at: https://www.inmarsat.com/en/news/latest-news/maritime/2018/new-report-reveals-impact-of-digital-access-on-seafarers-well-being-and-social-connections.html

International Collective in Support of Fisherworkers. Fishworker organizations. [online] Available at: https://www.icsf.net/useful-resources/fishworker-organizations/

International Labor Organisation (ILO). (2020). Ship to shore rights: Endline research findings on fishers and seafood workers in Thailand. [Online] Available at: https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_848445.pdf

International Labour Organization (ILO) (2022a). Turning principles into pathways: The future of the Seafood Good Labour Practices programme. [Online] Available at: https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_848445.pdf

Internet on ships a key to recruiting and retaining seafarers, IMO symposium told. [Online] Available at: https://www.imo.org/en/MediaCentre/PressBriefings/Pages/40-WMD-symposium.aspx

International Transport Workers' Federation (ITF). (2015). ILO work in fishing convention 188. [Online] Available at: https://www.itfglobal.org/en/sector/fisheries/-ilo-work-in-fishing-convention-188

Issara Institute, worker voice, Technology & Innovation. [Online] Available at: https://www.issarainstitute.org/

Provisional guidance on Implementation of ILO (UK) Work in Fishing Convention (ILO 188).[Online] Available at: https://assets.publishing.service.gov.uk/media/5a81d5d4e5274a2e87dbfbb7/1._Explanatory_Table.pdf

NOAA Fisheries. (2022). Fisheries of the United States, 2020, NOAA. [Online] Available at: https://www.fisheries.noaa.gov/resource/document/fisheries-united-states-2020.

SeafoodSource (2023) Indonesian migrant fishers protest lack of Wi-Fi onboard distant-water fishing vessels [Online] Available at: https://www.seafoodsource.com/news/environment-sustainability/indonesian-migrant-fishers-protest-lack-of-wi-fi-onboard-distant-water-fishing-vessels

Shift, Oxfam and Global Compact Network Netherlands. (2016). Doing business with respect for human rights, a guidance tool for companies. [online] Available at: https://www.unglobalcompact.org/library/4911

Ship to Shore Rights SEA (2023). Thai Government agencies attend workshop for pilot project on improving port-in port-out inspection. [online] Available at: https://shiptoshorerights.org/thai-government-agencies-attend-workshop-for-pilot-project-on-improving-port-in-port-out-inspection

SSPI. (2020). Satellites and the Deep Blue Sea. [Online] Available at: https://www.sspi.org/cpages/satellites-and-the-deep-blue-sea

Taiwan Fisheries Agency (2022). Fisheries Agency discussed the policy of promoting WiFi on fishing vessels with Indonesia fishers and International Human Rights Organizations. [Online] Available at: https://en.fa.gov.tw/view.php?theme=Press_Release&subtheme=&id=81

Tuna Association Comments Underscore Why the Taiwanese Government Must Act Quickly on Agreement to Protect Fishers. [Online] Available at: https://laborrights.org/releases/tuna-association-comments-underscore-why-taiwanese-government-must-act-quickly-agreement#:~:text=In%20an%20interview%20with%20industry,distract%20them%20from%20their%20work

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