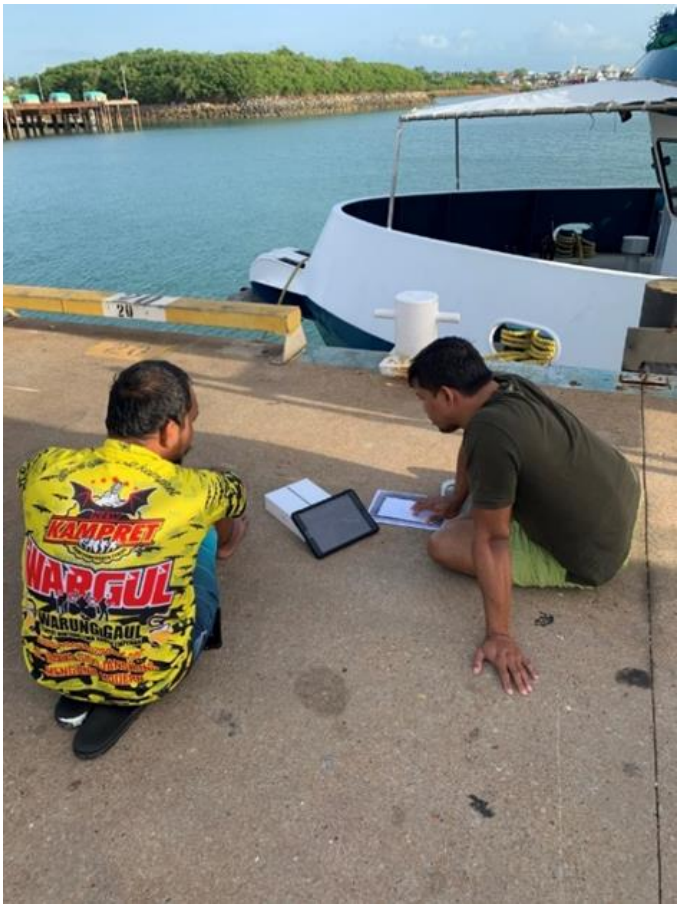
# SeSAFE – Delivering Industry Safety through Electronic Learning




**Stephen Eayrs. Smart Fishing Consulting**
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**SeSAFE – Delivering Industry Safety through Electronic Learning**
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**In submitting this report, the researcher has agreed to FRDC publishing this material in its edited form.**

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## Acknowledgments

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I am also indebted to many industry representatives and commercial fishers for giving me time to talk about SeSAFE and the need for safety training at industry meetings or elsewhere, for smoothing the pathway with other fishers before I walked down the wharf, and to those who encouraged their crews to complete the training. In particular, I want to thank Austfish Pty. Ltd., W.A. Seafoods, Australia Bay Seafoods, and Australian Longline for their support during the life of this project, and the numerous owner-operators that gave it a crack, even when the crew were less than enthusiastic.

## Abbreviations

| | |
|---|---|
| ABARES | Australian Bureau of Agriculture and Resource Economics |
| ACPF | Australian Council of Prawn Fisheries |
| AMSA | Australian Maritime Safety Authority |
| EON | Extension Officer Network |
| FRDC | Fisheries Research and Development Council |
| LMS | Learning Management System |
| PI | Principal Investigator |
| SIA | Seafood Industry Australia |
| WHS | Workplace Health and Safety |
| WRLC | Western Rock Lobster Council |

# Executive Summary

This project represented the latest investment by the Fisheries Research and Development Corporation (FRDC) to improve safety performance in the fishing and aquaculture industry, and it has now established a foundation for future development and training of a greater number of crew on a regular basis. Project highlights include the development of several user-pays scenarios designed to provide ongoing funding and a legacy under a variety of operating scenarios, the transition of components of the SeSAFE program to Seafood Industry Australia (SIA), and the ongoing delivery of SeSAFE training to the commercial fishing crews. One of the most significant developments was modification to modules to render them suitable for use on a mobile phone. This means modules can now be viewed on a range of devices with different screen sizes, from mobile phone to desktop. Also important is that modules can be downloaded in preparation for access when Wi-Fi may be poor or non-existent. The modules have also been converted into video and can now be accessed like any other video online and without the need for a learning management system (LMS).

**Background**

The original SeSAFE project (Project No. 2017-194) resulted in the development of 48 safety modules covering a range of generic safety topics such as emergency response, personal safety, and operational safety. A suite of fishery-specific modules was also developed for Australian prawn fisheries and the Western Rock Lobster fishery.

During the original project additional future needs were identified and deemed necessary to further raise safety awareness, improve access to training modules, and improve safety performance. This included a need to investigate the potential of a user-pays funding model to perpetuate the delivery of SeSAFE training and the potential introduction of a safety card, like the white card in the construction industry. It also included a need to refine the modules so they could be accessed by users on a mobile telephone.

**Aims/objectives**

The aim of this project was to build on the success of the original SeSAFE project (Project No. 2017-194) and further improve safety awareness and performance in the fishing and aquaculture industry. Project objectives were to:

1 INFORM, via an independent review, the design and application of user-pay funding models in Australian primary industries, the potential for a similar model to be introduced by SeSAFE in the fishing and aquaculture industry, and steps recommended to realise this outcome.

2 TRANSITION to a user-pays funding model to perpetuate the cost-effective delivery of SeSAFE training, and to Seafood Industry Australia or other party hosting the SeSAFE program at the conclusion of this project.

3 RETAIN delivery of SeSAFE training to existing users in the Australian fishing and aquaculture industry.

4 EXPAND the number of industry bodies, companies, fishers and others utilising SeSAFE training on a recurrent basis.

5 EXPAND the number of fishery-specific modules beyond those already developed.

6 PROMOTE SeSAFE as the industry benchmark in pre-sea safety training.

7 INCENTIVISE the use of SeSAFE training.

**Methodology**

An independent consulting firm was hired to investigate the introduction of a user-pays funding model to support SeSAFE training and in doing so satisfy Objectives 1 and 2. This included a requirement to investigate the following:

- Revenue models used in Australian primary industries for the purpose of delivering safety and/or other training to employees, including user-pays options
- Evaluate the risks and benefits of applying these models in the Australian commercial seafood industry, including opportunities and challenges associated with a user-pays approach safety training,
- Evaluate the risks and benefits of the introduction of a certificate of achievement in the commercial seafood industry, like a white card in the construction industry,
- Identify and evaluate structure and systems needed for SeSAFE to establish a bespoke revenue model to fund safety training in the commercial seafood industry,
- Evaluate the appetite of the commercial seafood industry to pay for SeSAFE training, particularly small, independent boat owners and their crew, and investigate options to incentivise their adoption of this approach to safety training.
- Evaluate systems necessary to establish a functional user-pays model and the potential for an online portal for users to register and make payments,

Access to modules was provided to fishing vessel owners and crew during the life of the project using Adobe Captivate Prime software (Objective 3). There was also intent to provide additional training to Australian Fishery Management Authority observers upon request and any other interested potential user groups (Objective 4). Expanding the number of SeSAFE users also required awareness-raising efforts with industry through informal, ad hoc discussions on the wharf, presentation at industry meetings and workshops around the country, news updates in industry literature, posts on the SeSAFE Facebook page and other social media, and a video competition for commercial fishers to demonstrate their safe working practices. Collectively, these efforts were designed to increase awareness by the industry of the availability and need for SeSAFE safety training, as well as to newly developed additional fishery-specific safety modules (Objective 5), and to improve recognition of SeSAFE as an industry benchmark in pre-sea safety training (Objective 6).

Consistent with Objective 6, efforts were made seeking formal endorsement of the program from the Australian Maritime Safety Authority and key Registered Training Organisations, as was the introduction of a certificate of training completion for fishers. Such outcomes were also hoped to indirectly incentivise the use of SeSAFE training (Objective 7). Additional incentives such as vessel insurance subsidy or rebate, and discounts for bulk purchase of safety equipment were briefly considered.

**Results/key findings**

Key project results and findings include:

- A survey of individuals involved in the fishing industry did not rate highly the safety performance of this industry and the delivery of the existing onboard safety induction process.
- On average, 70% of all interviewed individuals supported the introduction of an industry safety card.
- Just over half of all these individuals believed the safety card should be mandatory across the industry.
- Similar problems were found to exist overseas regarding lack of funding to motivate/enforce compliance with existing safety regulations, cultural disdain for WHS regulation, and lack of access to accurate safety data. The challenges attracting and retaining young crew, and an ageing workforce were also common problems.
- In each country a suite of core safety training courses exist that are mandatory for fishers to complete, although it was noted there is some noncompliance with this requirement.
- Several Australian primary industries are building a custom, online integrated industry service platform, that combines and makes available information and services in workplace health and safety, sustainability, and productivity. These platforms track data and report on industry performance, and by extension, its social licence to operate. These platforms are non-compulsory, but involvement was often incentivized financially by insurers and other others. The establishment of these platforms was considered by these industries to be “good for business”.
- A bespoke revenue model was also developed by the independent consultants to enable the assessment and testing of revenue raising scenarios to ensure the longevity of the SeSAFE program. Three models were produced, based on a wild catch bare bones scenario, a wild catch services scenario, and a seafood services scenario.
- It was agreed that the transition to SIA included all SeSAFE modules and branding, and the SeSAFE website and Facebook page were to be managed by SIA and rebranded or replaced as deemed appropriate.
- Efforts to expand the number of users occurred but a number of challenges hampered progress.
- A successful Fishers filming Fishers competition successfully raised safety awareness, with competition winners announced at Seafood Directions in Brisbane.
- SeSAFE won the Safety Award as part of the Queensland Seafood Industry Awards and was a Safety Award finalist in the 2022 National Seafood Industry Awards.

**Implications for relevant stakeholders**

This project has further raised safety awareness and has established a ‘roadmap’ from which the future of safety training can be realised, including the potential introduction of a user-pays funding model, the appetite for a safety card, and associated next steps.

With modules now fully responsive and able to be used on a range of electronic devices, module convenience and accessibility has been optimised, particularly as they can now be downloaded ahead of time when Wi-Fi access is likely to be compromised or even viewed as video files.

**Recommendations**

The core project recommendation is that ongoing efforts are made to raise safety awareness and deliver safety training using the SeSAFE modules. A small number of fishing companies around Australia are now regular users of this training and are seemingly intent on doing so into the future. Steps are needed to ensure the modules continue to be available to these companies. Steps are also needed to encourage other fishing companies, owner-operators, skippers, and other fishers to access the modules to train their crew. These steps will need to be dedicated and persistent given there are some inherent barriers described in this report that must be overcome. In an early attempt to facilitate module access in the long-term, the FRDC IT team has commenced using Adobe Learning Manager (formerly Adobe Captivate Prime) as an LMS for users to access SeSAFE training, alongside training modules that have been developed in other topics. In this way individuals can still gain access to the modules and take advantage of the benefits of training delivery via an LMS, such as tracking of training attempts for each individual and ability to complete modules offline. They have also saved the video modules on YouTube, available upon request, although this option provides no record of the training attempt.

Safety advocates employed by SIA and the FRDC Extension Officers will need to take some responsibility for raising awareness of the training modules in the future. For the Extension Officers this is a logical extension of their current role that includes raising awareness of FRDC funded projects.

Based on assumptions at the time, the independent review found that a user-pays approach to safety training could be a feasible option, although the Seafood Industry Safety Initiative (SISI) has for now decided not to progress this option further. The findings of the review are an important foundation upon which future decisions can be made, and they should therefore be periodically considered in the future with a view of their potential realisation at a time deemed more appropriate and acceptable.

**Keywords**

Fishing, Safety, Training, SeSAFE

# Introduction

### Background

The commercial fishing and aquaculture industry is one of the most dangerous professions in the country. Between 2016-2020 a total of 20 fatalities were recorded at an average of 4 per year. This equates to a workplace fatality rate of approximately 24 per 100,000 workers, substantially higher than the national average workplace fatality rate of 1.4 per 100,000 workers. An unknown number of accidents also occurred during this period, and while those resulting in permanent disability or incapacitation are usually documented, those resulting in minor injury are usually not.

All commercial vessels are workplaces subject to Workplace Health and Safety (WHS) Law. This means vessel owners and skippers are required to take all steps deemed reasonably practicable to ensure the health and safety of crew, including their receipt of appropriate safety training. There is, however, there is no legislative requirement for crew in the fishing and aquaculture industry to receive certified safety training prior to boarding a vessel. This means new and inexperienced crew can commence work without any safety training, and hours or days may pass onboard before they receive adequate training in emergency response, safe deck operations, and handling of fishing gear and hazardous animals. The content and delivery of this training is also ad hoc, sporadic, and inconsistent between vessels, and is largely dependent on the knowledge, experience, and enthusiasm of the skipper to provide such training. For experienced crew, there is no opportunity for dedicated, recurrent, and reportable safety training at sea, apart from that provided during onboard safety inductions, musters, and drills.

The initial SeSAFE project (FRDC Project Number 2017-194) was established by Austral Fisheries and FRDC following a fatality at sea in the Northern Prawn Fishery in 2013. This project produced over 40 electronic training modules in risk assessment, emergency response, operational and personal safety, and fishery-specific safety that fishers could complete online or in a classroom environment. Approximately 200 fishers completed this training, and some fishing companies and vessel owners incorporated SeSAFE into their normal safety training program.

### Need

The initial SeSAFE project focused heavily on raising safety awareness and the development and delivery of safety training modules. This new project (FRDC Project Number 2020-067) attempted to build on this effort and:

- Fill the gap that allows new crew to step foot on a dangerous work platform before receiving any safety training
- Provide consistent safety training content to all fishers nationwide
- Promote SeSAFE as the industry benchmark in pre-sea safety training, that also serves to demonstrate achievement towards duty-of-care requirements
- Develop a standard of achievement and certificate of completion, for use as a recognised industry standard and potential requirement for employment at sea

- Overcome jurisdictional inconsistencies and inadequacies in safety training
- Develop fishery-specific modules for multiple fisheries, to complement onboard safety inductions
- Extend SeSAFE training to seafood processors, fishery observers, and others
- Establish a secure funding base to ensure persistent, long-term delivery of SeSAFE training as well as a permanent hosting organisation, e.g. Seafood Industry Australia.
- Respond positively to Objective 3 of FRDC's National RD&E Seafood Industry Safety Initiative Strategic Plan 2019/21, '*Increase uptake by industry of workplace safety and safety training programs and education tools*'.

*"SeSAFE modules are a great way to provide crew basic sea safety information."* and *"SeSAFE modules are convenient, easy to watch, and relevant"*

David Sterling. Skipper. FV Silda

# Objectives

Project objectives as agreed in the contract were to:

1 INFORM, via an independent review, the design and application of user-pay funding models in Australian primary industries, the potential for a similar model to be introduced by SeSAFE in the fishing and aquaculture industry, and steps recommended to realise this outcome.

2 TRANSITION to a user-pays funding model to perpetuate the cost-effective delivery of SeSAFE training, based on the outcome of the independent review, and to Seafood Industry Australia or other party hosting the SeSAFE program at the conclusion of this project.

3 RETAIN delivery of SeSAFE training to existing users in the Australian fishing and aquaculture industry.

4 EXPAND the number of industry bodies, fishing and aquaculture companies, independent fishers and aquaculture workers, processors, observers, researchers, and others utilising SeSAFE training on a recurrent basis.

5 EXPAND the number of fishery-specific modules beyond those already developed for the Australian Council of Prawn Fisheries (ACPF), including completion of fishery-specific modules for the Western Rock Lobster Council (WRLC) and weather forecasting modules for the Bureau of Meteorology.

6 PROMOTE SeSAFE as the industry benchmark in pre-sea safety training to meet duty of care requirements.

7 INCENTIVISE the use of SeSAFE training, including through formal recognition of SeSAFE training by AMSA and others, certification, and potential rebate by insurance agencies.

*"SeSAFE is a great initiative and is really needed, including for crew on small boats."*

Norman Hedditch. Taroona Pty Ltd and Mackerel Online.

# Method

The proposed end game of this project was a nationally recognised safety program delivering consistent training content to the seafood industry and transition of the SeSAFE program to Seafood Industry Australia (SIA) or other interested party. Initially, it was also proposed that this program would be supported by a user-pays funding model to share training costs and sustain the program in the long term.

Consistent with Objective 1, an independent consulting firm was hired following a competitive tender process to investigate the introduction of a user-pays funding model to support SeSAFE training. The scope of work associated with this tender included the following:

1. Investigate and describe revenue models used in Australian primary industries for the purpose of delivering safety and/or other training to employees, including user-pays options. Consideration may also be given to including examples of similar models used in primary industries overseas, particularly the fishing industry.
2. Evaluate the risks and benefits of applying these models in the Australian commercial seafood industry, including opportunities and challenges associated with a user-pays approach safety training.
3. Evaluate the risks and benefits of the introduction of a certificate of achievement in the commercial seafood industry, like a white card in the construction industry.
4. Identify structure and systems needed for SeSAFE to establish a bespoke revenue model to fund safety training in the commercial seafood industry, including:
    a) Potential sources of revenue, including sponsorship opportunities
    b) Fee structure, cost, and estimated break-even points
    c) Processes and systems needed to facilitate payment transactions
    d) Personnel needs and training
5. Evaluate the appetite of the commercial seafood industry to pay for SeSAFE training, particularly small, independent boat owners and their crew, and investigate options to incentivise their adoption of this approach to safety training.

The outcomes of the review were meant to provide a roadmap guiding the development of a funding model that meets industry needs and ensures the longevity of the SeSAFE program over the long term.

The independent review was also designed to provide outcomes consistent with Objective 2. This included evaluation of i) systems necessary to establish a functional user-pays model, ii) the potential for an online portal for users to register and make payments, iii) a database to manage user details and performance data, and iv) the value proposition of a certificate of module completion for fishers, like a white card in the construction industry.

The outcomes of the review were then presented to a SeSAFE revenue committee. This committee was established by the Principal Investigator following request from the FRDC for the purpose of analysing the findings of the review and providing feedback and guidance with respect to next steps. Committee membership included an individual from FRDC, SIA, and the WRLC, and several individuals from the commercial fishing industry. Committee membership was biased towards those with experience in the catching sector because this sector was perceived to be most heavily influenced by the outcomes of the review. Feedback was then additionally sought from the SISI committee[1]. Once this feedback was collected and documented, the future of the project under a Stop-Go provision was to be considered by FRDC.

Access to modules was provided to fishing vessel owners and crew during the life of the project using the Adobe Captivate Prime LMS software (Objective 3). There was also intent to provide additional training to Australian Fishery Management Authority observers upon request, and any other interested potential user groups (Objective 4). Expanding the number of SeSAFE users also required awareness-raising efforts with industry through informal, ad hoc discussions on the wharf, presentation at industry meetings and workshops around the country, news updates in industry literature, taking advantage of social media opportunities, and a video competition for commercial fishers. Collectively, these efforts were also hoped to translate into a growing realisation by the seafood industry of the need for additional fishery-specific modules (Objective 5) and recognition of SeSAFE as the industry benchmark in pre-sea safety training (Objective 6).

Consistent with Objective 6, efforts were made seeking formal endorsement of the program from the Australian Maritime Safety Authority and key Registered Training Organisations, as was the introduction of a certificate of training completion for fishers. Such outcomes were also hoped to indirectly incentivise the use of SeSAFE training (Objective 7). Additional incentives such as vessel insurance subsidy or rebate, and discounts for bulk purchase of safety equipment were briefly considered.

> *"The SeSAFE modules are brilliant and a great way to provide safety training to crew"*
>
> John Standon. Skipper. FV Shomac

[1] Members of the SISI committee include staff from FRDC, SIA, AMSA, and representatives from the commercial fishing industry and the indigenous community.

# Results

**Objective 1. INFORM, via an independent review, the design and application of user-pay funding models in Australian primary industries, the potential for a similar model to be introduced by SeSAFE in the fishing and aquaculture industry, and steps recommended to realise this outcome.**

Following FRDC competitive tender protocols, Ewan Colquhuon and Geoff Diver (Ridge Partners Consultants and Advisors) successfully tendered to complete Objective 1. This team then interviewed over 30 individuals involved the commercial fishing industry, including 19 fishers as well as individuals from industry organisations and other groups. They also interviewed individuals with a history of involvement in fishing industry safety in New Zealand, USA, United Kingdom, and Norway, as well as representatives in the Australian cotton, forestry, wool, dairy, red meat, and grains industry. The result of their effort is provided in SeSAFE Revenue Models Study Report 1 of 2.

Report 1 describes the fishing safety landscape including how fishing safety is managed and should be managed, and safety performance and issues. It presents data and trends in fatalities and injuries in the Australian workplace and steps being taken by several primary industries to facilitate a safe workplace. It also summarises safety initiatives overseas and considers their application in the Australian context and describes the process and topics that comprised the consultation with the Australian fishing industry, including their perceptions regarding industry safety performance, the content and delivery of safety training, and the safety card concept. Importantly it provides a vision for fishing safety in 2030. Report 2 focuses on a bespoke revenue model including viability, design, structure, and systems considered necessary for a model to function and be effective, based on several assumptions and scenarios.

Key findings from the interviews with members of the fishing industry were:

- The overall safety performance of the fishing industry was rated an average of 5.5 out of 10 and the content and delivery of the onboard safety induction process was rated a 4.4 out of 10 (Report 1, p.100-105).
- On average, 70% of all interviewed individuals supported the introduction of an industry safety card, like a white card in the construction industry.
- Small[2] fishers were more positive regarding this concept (75% in support) than medium (63%) or large fishers (50%).
- Fishing industry organisations were very supportive (88%) of the concept, as were RTOs (100%) and fisher organisations (86%).
- Just over half of all interviewed individuals (54%) believed the safety card should be mandatory across the industry (Report 1, p.106-107).

[2] The category of small, medium, and large fishers is a relative term based on the size of the vessel used by each individual. It is a crude and imprecise but common method of classification that varies between types of fishing activity.

- Large fishers strongly (75%) supported the safety card being a requirement if one is to be introduced, more so than medium fishers (63%) and small fishers (50%).
- Only 44% of individuals representing industry organisations believed the safety card should be mandatory.
- Many interviewed individuals indicated that the boat owner should pay for a safety card induction while a few either unsure or indicated the crew should pay (Report 1, p.106-107).
- Just over 50% of commercial fishers were in support of the owner covering this cost. Others suggested either the crew should pay, the government should pay, or the owner should pay upfront and then recover the cost from the crew.

The interviews with individuals involved in fisheries overseas (Report 1, p.75-94) found that:

- Similar problems existed in each country regarding the challenges attracting and retaining young crew, an ageing workforce, lack of funding to motivate/enforce compliance with existing safety regulations, cultural disdain for WHS regulation, and lack of access to good safety data (fatalities and accidents).
- In each country a suite of core safety training courses exist that are mandatory for fishers to complete, although it was noted there is some noncompliance with this requirement.
- In New Zealand, United Kingdom, and Norway safety management systems are apparently utilised and in the United Kingdom and Norway there appears to be some requirement for predeparture training of fishers.
- In all four countries the user pays for safety training costs although they may be subsidised by government grants or through levies on seafood trade.

Conversations with individuals in other Australian primary industries (Report 1, p.38-74) found that:

- Each industry is building a custom, online integrated industry service platform, that combines and makes available information and relevant services in workplace health and safety, sustainability, and productivity, such farm risk plans, induction training kits, chemical use, industry reports, farm production data, animal welfare, etc.
- These platforms track data and report on industry performance, and by extension, its social licence to operate.
- These platforms are non-compulsory, but involvement was often financially incentivized by insurers and other others.
- The establishment of these platforms is considered ‘good for business’ by creating a safe and desirable workplace that exceeds compliance requirements. They also demonstrate industry viability and progress, and product credibility and integrity in an ever-increasing competitive domestic and/or international market.

Resulting from these interviews several perceived risks (challenges) and benefits of applying an integrated service platform were identified (Table 1) and that associated with the introduction of a safety card (Table 2).

Table 1. Perceived risks (challenges) and benefits of applying an integrated service platform. Adapted from Report 2, p.108-136.

| Risks (Challenges) | Benefits |
|---|---|
| • Fishing is unique and risks vary between fisheries and gear types<br>• Culture of independence and widespread disdain for regulation, oversight, and reporting<br>• Job security (lack of) and career path uncertainty<br>• Income insecurity and variability<br>• Fishing is economically small (GVP and FTEs) and labour force is fragmented and small.<br>• Lack of cohesion and agreement within the fishing industry<br>• Lack of consistent Wi-Fi | • Platforms already exist in other industries and can potentially be mimicked/copied<br>• Data needs increasing; timing seems right<br>• Career planning, productivity gains and documentation, risk management (SMS), etc can all feature on such a platform<br>• Many training assets already exist e.g. SeSAFE modules<br>• Registration can be confidential, online, and secure<br>• Owners, skippers, and crew can operate on a single platform<br>• Access potentially 24/7<br>• Costs reasonable |

Table 2. Key perceived risks (challenges) and benefits of introducing a White or SeSAFE card adapted from Report 2, p.7 and p.132-136.

| Risks (Challenges) | Benefits |
|---|---|
| • Poor uptake of card by boat owners and fishers<br>• Upfront cost associated with the design, test, commission of the card<br>• Raising fisher awareness<br>• Ensuring card compliance and integrity; must be more than a WHS box ticking exercise<br>• Must be 3rd party auditable<br>• Software operational with all users/devices<br>• Software access-multiple languages, gender friendly<br>• Service cost must be low - based on not-for-profit model<br>• Card must help attract and retain good people over long term | • Card is in effect a national WHS competence certificate<br>• WHS competence is somewhat portable across fisheries<br>• Card can potentially be endorsed by AMSA and/or other authorities<br>• Helps assuage concerns over industry safety and encourages entry by young people, including women and international visitors i.e. backpackers<br>• Issued only to those who complete/renew core courses<br>• Secure data management to avoid fraud/cyber crime<br>• Eliminates paperwork re registration, induction<br>• Can dovetail with corporate/sectoral WHS programs<br>• Can be available irrespective of training being voluntary or mandatory<br>• Crew can access/download their skills records online<br>• Card can be linked to electronic Vessel SMS records |

Comprehensive responses from industry participants identified additional challenges and deficiencies with respect to safety training in the Australian fishing industry. These included (paraphrased from the final report, SeSAFE Revenue Models Study, Report 2 of 2):

- Most vessel owners and skippers are seeking to improve their safety performance and are aware of and concerned about increased duty of care obligations they must demonstrate under the recently announced national industrial manslaughter laws.
- The fishing industry offers few incentives for new people to join the industry, or for existing ones to stay, as a career or casual employee or contractor.
- Safety data is poor and current induction processes have a high non-compliance rate. The assumption that all skippers have the skills and professional capacity to lead new crew members through an SMS and vessel induction process is flawed. Safety inductions are viewed as exercises in self-protection for owners and skippers. The quality of an induction relies on the quality of the skipper and ability to manage, foster, and promote a safety culture onboard.
- Industry data collection, management, and reporting is not fit for purpose, and unable to inform investment to improve overall WHS performance.
- One WHS solution does not suit all fishers due to inherent diversity in fisheries characteristics. In general, larger, more corporatised fishers are much more aware of risks and are professionally motivated and advanced regarding WHS risk management than smaller operators.
- SeSAFE and existing 3rd party training providers are a useful base but stronger leadership from AMSA and SIA and investment and effort is required to increase awareness and scope of SeSAFE training, and to drive long-term WHS performance. Industry needs to adopt, integrate, and improve SeSAFE induction modules to achieve a better induction process.
- Training resources need to be adapted to meet the needs and expectations for fishing crews, including foreign crews. Many, however, do not want to read or engage in any prerequisite imposed by skippers before to going to sea.
- A lack or financial and management capacity in small fishing enterprises frequently leads to a tick and flick mentality regarding safety. It is viewed as just another rule to follow, and adherence is linked to compliance with regulations and not a strong desire to improve crew safety.

***Revenue model***

A bespoke revenue model was also developed to enable the assessment and testing of revenue raising scenarios to ensure the longevity of the SeSAFE program (see Report 2, p.15-31). Three models were produced, based on a wild catch bare bones scenario, a wild catch services scenario, and a seafood services scenario. The SeSAFE PI worked closely with Ewan and Geoff during this time, identifying assumptions, evaluating findings, and providing comment.

Core assumptions behind these scenarios were based on knowledge and experience in the fishing industry and gut-feel consideration of what was realistic in the absence of data to the contrary. These

assumptions included the number of crew registrations in year 1, the number of crew registrations, a platform registration fee per person in year 1, a safety card renewal cycle and registration renewal fee, staff salaries and wages and industry promotion costs (Table 3). ABARES data was used identify the number of fishing vessels, aquaculture enterprises, and number of employees, but in the absence of available data assumptions were also made with respect to the number of vessels with at least 5 people onboard and the number of vessels owned by multi-vessel owners, i.e. in a fleet. These assumptions are described in greater detail in Report 2, p.17-19. It was also assumed that SeSAFE would remain a not-for-profit entity, have a 15-year lifespan, and would (ideally) breakeven by the end of this period.

***Wild catch bare bones scenario***

This scenario was evaluated to explore was a minimalist approach to the revenue model based on the aforementioned assumptions and recommendations by the SISI committee. This included assuming a reduction in the number of crew registrations in year 1 from 491 to 307 and a reduced number of crew registrations by the end of year 10 from 80% of crew numbers to 50%.

The revenue model found that SeSAFE is not viable if the percentage of crew registered in the first 10 years is 80%, the initial registration fee is $100, and the safety card renewal fee is $20 per 2-year cycle, with a cumulative break-even shortfall of $218,000 after 15 years (Table 4). If the changes requested by the SISI committee were applied, the break-even shortfall increases to $707,000. However, this scenario is viable with a profit of $7,000 if the card renewal fee was increased to $55.

The cumulative shortfall of $218,000 could also be replaced with a profit of $4,000 if the initial registration fee was increased from $100 to $136, or a profit of $6,000 if the $20 fee was raised to $27. Alternatively, extending card renewal to a 3-year cycle with a fee of $45 results in a modest profit of $42,000.

If seed funding of $50,000 per year was available to SeSAFE for the first four years of this model (with no CPI increase), a break-even shortfall of $18,000 after 15 years would be realised based on an initial registration fee of $100 and a card renewal fee is $20 per 2-year cycle. This shortfall would be overcome by increasing the renewal fee to $22 per 2-year cycle, while an increase in seed funding to $56,000 for the first four years would realise a modest profit of $6,000 after 15 years.

The cumulative shortfall of $218,000 could also be replaced by a profit of $1,000 after 15 years if seed funding of $50,000 per year was available (with no CPI increase) and the annual starting salary was reduced to $64,000. This is based on an initial registration fee of $100 and a card renewal fee of $20 per 2-year cycle. An increase in seed funding to $56,000 per year for the first four years (with no CPI increase) would allow a profit of $6,000 to be made after 15 years while retaining the annual starting salary at $65,000.

In summary, adjustment to model variables realised the following minimum conditions to make investment in SeSAFE viable after a 15-year period:

- At least 60% of fishers are registered within 10 years (for a fee of $110 each in Year 1 escalated at CPI thereafter),

Table 3. The assumptions underlying each of the three scenarios (Report 2, p.19). Variables that were manipulated and tested by the revenue model are highlighted in green.

| **SeSAFE Revenue Model Scenario**<br>15-year horizon, nominal Australian dollars | 1. Wild Catch Bare Bones | 2. Wild Catch Services | 3. Seafood Services |
|---|---|---|---|
| **Revenue Assumptions** (cash inflows)**:** | | | |
| **Wildcatch fishing vessels in Yr 1 >7.5m** (AMSA data Mar. 2022) | 3,200 | 3,200 | 3,200 |
| Growth rate p.a. in number of registered fishing vessels | 0% | 0% | 0% |
| Fishing Vessels with 5 or more crew members | 5% | 5% | 5% |
| **Aquafarming enterprises in Yr 1 (ABARES data)** | n/a | n/a | 61 |
| Growth rate p.a. in number of registered aquafarms | n/a | n/a | 1% |
| Aquafarms with 10 or more employees | n/a | n/a | 10% |
| **Personnel Registered and Cards renewed on Platform** | | | |
| Fishing crew/employees on water in Yr 1 (ABARES data) | 6,132 | 6,132 | 6,132 |
| Growth rate p.a. in number of crew/employees on water | 1% | 1% | 1% |
| Fishing crew/employee registrations achieved by end of Yr 10 | 80% | 60% | 60% |
| Aquafarm crew/employees on water in Yr 1 (ABARES data) | 4,469 | 4,469 | 4,469 |
| Growth rate p.a. in number of farm crew/employees on water | 2% | 2% | 2% |
| Aquafarm crew/employee registrations achieved by end Yr 10 | 90% | 90% | 90% |
| Employees of Seafood fishing bodies on water (estimate - nil growth) | 15 | 15 | 15 |
| Employee registrations achieved by end Yr 2 | 100% | 100% | 100% |
| Employees of RTOs, Colleges, etc on water (estimate - nil growth) | 4 | 4 | 4 |
| Employee registrations achieved by end Yr 2 | 100% | 100% | 100% |
| Employees of Cwlth agencies on water (estimate - nil growth) | 40 | 40 | 40 |
| Employee registrations achieved by end Yr 2 | 100% | 100% | 100% |
| Employees of State/NT/ACT agencies on water (estimate - nil growth) | 40 | 40 | 40 |
| Employee registrations achieved by end Yr 2 | 100% | 100% | 100% |
| SeSAFE **Platform Registration Fee** per person in Yr 1 | $100 | $100 | $100 |
| Registration Fee discount for vessels with 5 or more crew | 5% | 5% | 5% |
| Registration Fee discount for aquafarms with 10 or more employees | 5% | 5% | 5% |
| SeSAFE Card Renewals cycle | 2 yrs | 2 yrs | 2 yrs |
| **Card Renewal Fee** per card holder in Yr 1 | $20 | $20 | $20 |
| Crew/aquafarm employee Card cancellations per year | 5% | 5% | 5% |
| Additional SeSAFE Fee-for-service trainees in Yr 1 | 123 | 123 | 123 |
| Growth rate p.a. in Fee-for-service trainees | 2% | 2% | 2% |
| Trainee Fee-for-service fee in Yr 1 | $50 | $50 | $50 |
| Services revenue generated by SeSAFE | $0 | $0 | $0 |
| **Seed Funding by FRDC+AMSA per year for Yrs 1-4** | $0 | $0 | $0 |
| **Expenditure Assumptions (cash outflows)** | | | |
| Staff salaries and wages p.a. | $65,000 | $65,000 | $65,000 |
| Admin, travel, and governance costs | $5,000 | $5,000 | $5,000 |
| Industry awareness and promotion cost per year for Yrs 1 and 2 only | $10,000 | $10,000 | $10,000 |
| SeSAFE entity setup and launch costs (not-for-profit) in Yr 1 | $5,000 | $5,000 | $5,000 |
| Software access costs p.a. in Yr 1 | $5,000 | $5,000 | $5,000 |
| Date security and integrity costs p.a. in Yr 1 | $8,000 | $8,000 | $8,000 |
| **Annual Inflation rate for all fees and costs for Yrs 1-15** | 3% | 3% | 3% |

- Seed funding of $65,000 is received in the first 4 years in aggregate from one or more sources
- Safety cards issued to all fishers are renewed on a 2-year cycle at $30 per person in Year 1, escalated at CPI thereafter,
- SeSAFE staff salary package does not exceed $65,000 in Year 1, escalated at CPI thereafter.

***Wild catch service scenario***

This scenario builds on the bare bones scenario whereby safety data is edited to de-identify fishers and made available at a cost to industry bodies to assist their management of WHS policies and performance, to the marine insurance industry to inform and provide risk management services and (potentially) reduce insurance costs for fishers, or to other third-parties. Such an approach was found to be successfully applied in two Australian fisheries (SRL and WRL) and in Norway.

This service scenario assumes an initial income of $5,000 per annum generated by such fees, increasing by 3% per annum, in addition to the initial bare bones scenario assumptions described above. It also assumes seed funding of $60,000 per year for the first four years from FRDC, AMSA, or other source, and sector/industry body fees being introduced from year four. Such fees are based on an annual membership fee of $500 per sector body plus a factor based on 0.0010% of sector GVP.

Under this scenario SeSAFE will begin to breakeven in year 4 with a cumulative net cash flow after 15 years of $15,000 (Table 5). The inclusion of sector/industry body fees realises over $26,000 - $30,000 per year in revenue from year 5 onwards.

***Seafood services scenario***

This scenario adds aquaculture seafood enterprises to the wild catch service scenario. Assumptions were made based on the number and size of these enterprises and the potential number of registrations per year. Annual membership fee was assumed to be $600 per sector body plus a factor based on 0.00010% of sector GVP and salary is increased to $105,000 to accommodate extra staff.

Under this scenario SeSAFE will begin to breakeven in year 10 (Table 6). The inclusion of sector/industry body fees realises over $20,000 - $26,000 per year in revenue from year 5 onwards, and cumulative net cash flow after 15 years is $11,000.

Table 4. Wild catch bare bones scenario – baseline case.

| SeSAFE REVENUE MODEL | | | | YEJune | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Wild catch Bare Bones Scenario** | | | | | **2023** | **2024** | **2025** | **2026** | **2027** | **2028** | **2029** | **2030** | **2031** | **2032** | **2033** | **2034** | **2035** | **2036** | **2037** |
| **Seafood Fishers on water** | | | | Growth | | | | | | | | | | | | | | | |
| 1. **Fishing Vessels** registered >7.5m | | AMSA Mar 2022 | 3,200 | 0.0% | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 |
| a) Vessels with at least 5 people onboard | | | estimate | 5.0% | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 |
| b) Vessels owned by multivessels owners | | | estimate | 7.0% | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 |
| 2. Employees/Crew on water (ABARES) | | | all fisheries | 1.00% | 6,132 | 6,194 | 6,256 | 6,318 | 6,381 | 6,445 | 6,510 | 6,575 | 6,641 | 6,707 | 6,774 | 6,842 | 6,910 | 6,979 | 7,049 |
| 3. Registrations - Total Cards issued cumul. | | | | | 491 | 991 | 1,501 | 2,022 | 2,553 | 3,094 | 3,645 | 4,208 | 4,781 | 5,366 | 5,419 | 5,473 | 5,528 | 5,583 | 5,639 |
| 4. Registrations - Cards issued per year | | | | | 491 | 500 | 510 | 521 | 531 | 541 | 551 | 563 | 573 | 585 | 53 | 54 | 55 | 55 | 56 |
| 5. Other Non-core SeSAFE course trainees per year | | | estimate | 2.0% | 123 | 124 | 125 | 126 | 128 | 129 | 130 | 131 | 133 | 134 | 135 | 137 | 138 | 140 | 141 |
| 6. Card Renewals per year | | 2Yr cycle; deregistrations p.a. of 5% | | | - | - | 466 | 475 | 951 | 970 | 1,455 | 1,484 | 1,978 | 2,019 | 2,522 | 2,575 | 2,572 | 2,626 | 2,624 |
| **Cash Inflow $'000** | | | $ Yr 1 | CPI p.a. | | | | | | | | | | | | | | | |
| **Registration:** | Fishing employees/crew | 80% reg'd in 10yrs | $ 100 | 3.0% | 50.6 | 53.0 | 55.7 | 58.6 | 61.6 | 64.6 | 67.8 | 71.3 | 74.8 | 78.6 | 7.3 | 7.7 | 8.1 | 8.3 | 8.7 |
| | Large fishers | | $ - | 3.0% | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | Enterprise discount | | | 5.0% | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 |
| | Aquaculture employees/crew | 90% reg'd in 10yrs | $ 100 | 3.0% | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | Large aquafarms | | $ - | 3.0% | | | | | | | | | | | | | | | |
| | Enterprise discount | | | 5.0% | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Seafood body employees | 100% reg'd in 4yrs | $ 100 | 3.0% | 0.2 | 1.4 | 0.2 | 0.2 | - | - | - | - | - | - | - | - | - | - | - |
| | Recreat'l & Customary Fishers | 100% reg'd in 4yrs | $ 100 | 3.0% | | | | | | | | | | | | | | | |
| | RTOs, Training Colleges, etc | 100% reg'd in 2yrs | $ 100 | 3.0% | 0.1 | 0.3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | Cwth & State Gov't employees | 100% reg'd in 2yrs | $ 100 | 3.0% | 2.1 | 6.4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Card Renewal:** | Fishing employees and crew | | $ 20 | 3.0% | - | - | 10.2 | 10.7 | 22.0 | 23.2 | 35.8 | 37.6 | 51.6 | 54.3 | 69.8 | 73.4 | 75.5 | 79.4 | 81.8 |
| | Aquaculture employees and crew | | $ 20 | 3.0% | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | Seafood body employees | | $ 20 | 3.0% | - | - | 0.0 | 0.3 | 0.1 | 0.4 | 0.1 | 0.4 | 0.1 | 0.4 | 0.1 | 0.4 | 0.1 | 0.5 | 0.1 |
| | Recreat'l & Customary Fishers | | $ 20 | 3.0% | | | | | | | | | | | | | | | |
| | RTOs, Training Colleges, etc | | $ 20 | 3.0% | - | - | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 |
| | Cwth & State Gov't employees | | $ 20 | 3.0% | - | - | 0.4 | 1.4 | 0.5 | 1.4 | 0.5 | 1.5 | 0.5 | 1.6 | 0.6 | 1.7 | 0.6 | 1.8 | 0.6 |
| Wildcatch Fishery Specific training fees | | | $ 50 | 3.0% | 6.3 | 6.6 | 6.8 | 7.1 | 7.4 | 7.7 | 8.0 | 8.3 | 8.7 | 9.0 | 9.4 | 9.8 | 10.1 | 10.6 | 11.0 |
| Setup & support - FRDC/AMSA (Aggregate) x Yrs (no CPI) | | | $ - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | | **Total Cash Received $'000** | | **55** | **64** | **69** | **74** | **88** | **93** | **108** | **115** | **132** | **140** | **83** | **89** | **91** | **97** | **98** |
| **Cash Outflow $'** | 1. Admin: | Manager + staff Salary packages | $65,000 | 3.0% | 67.0 | 69.0 | 71.0 | 73.2 | 75.4 | 77.6 | 79.9 | 82.3 | 84.8 | 87.4 | 90.0 | 92.7 | 95.5 | 98.3 | 101.3 |
| | | Travel, admin, reporting & governanc | $ 5,000 | 3.0% | 5.2 | 5.3 | 5.5 | 5.6 | 5.8 | 6.0 | 6.1 | 6.3 | 6.5 | 6.7 | 6.9 | 7.1 | 7.3 | 7.6 | 7.8 |
| | | Industry awareness campaign x Yrs | $10,000 | 2 | 10.0 | 10.0 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 2. Platform: | Entity Setup and Launch x Yrs | $ 5,000 | 1 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | Software access | $ 5,000 | 3.0% | 5.2 | 5.3 | 5.5 | 5.6 | 5.8 | 6.0 | 6.1 | 6.3 | 6.5 | 6.7 | 6.9 | 7.1 | 7.3 | 7.6 | 7.8 |
| | | Data security, integrity | $ 8,000 | 3.0% | 8.2 | 8.5 | 8.7 | 9.0 | 9.3 | 9.6 | 9.8 | 10.1 | 10.4 | 10.8 | 11.1 | 11.4 | 11.7 | 12.1 | 12.5 |
| | | | **Total Cash Paid Out $'000** | | **100** | **98** | **91** | **93** | **96** | **99** | **102** | **105** | **108** | **112** | **115** | **118** | **122** | **126** | **129** |
| **Net Cash Flow $'000** | | | | $'000 | **-45** | **-34** | **-21** | **-19** | **-9** | **-6** | **6** | **10** | **23** | **28** | **-32** | **-29** | **-31** | **-29** | **-31** |
| Cumulative to date | | *Cash breakeven is in year* | *n/a* | $'000 | -45 | -80 | -101 | -120 | -129 | -134 | -128 | -118 | -95 | -66 | -98 | -127 | -159 | -187 | **-218** |

Table 5. Wild catch services scenario.

| SeSAFE REVENUE MODEL | | | | | | YE June | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Wildcatch Services Scenario** | | | | | | | **2023** | **2024** | **2025** | **2026** | **2027** | **2028** | **2029** | **2030** | **2031** | **2032** | **2033** | **2034** | **2035** | **2036** | **2037** |
| **Seafood Fishers on water** | | | | | | Growth | | | | | | | | | | | | | | | |
| 1. **Fishing Vessels** registered >7.5m | | | | AMSA Mar 2022 | 3,200 | 0.0% | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 |
| 2. Employees/Crew on water (ABARES) | | | | | all fisheries | 1.00% | 6,132 | 6,194 | 6,256 | 6,318 | 6,381 | 6,445 | 6,510 | 6,575 | 6,641 | 6,707 | 6,774 | 6,842 | 6,910 | 6,979 | 7,049 |
| 4. Registrations - Cards issued per year | | | | | | | 368 | 375 | 383 | 390 | 398 | 406 | 414 | 422 | 430 | 438 | 40 | 41 | 41 | 42 | 41 |
| 5. Other Non-core SeSAFE course trainees per year | | | | | estimate | 2.0% | 123 | 124 | 125 | 126 | 128 | 129 | 130 | 131 | 133 | 134 | 135 | 137 | 138 | 140 | 141 |
| 6. Card Renewals per year | | | | 2Yr cycle: deregistrations p.a. of 5% | | | - | - | 350 | 356 | 714 | 727 | 1,092 | 1,113 | 1,485 | 1,514 | 1,894 | 1,930 | 1,932 | 1,969 | 1,971 |
| **Cash Inflow $'000** | | | | | $ Yr 1 | CPI p.a. | | | | | | | | | | | | | | | |
| **Registration:** | Fishing employees/crew | | | 60% reg'd in 10yrs | $ 100 | 3.0% | 37.9 | 39.8 | 41.9 | 43.9 | 46.1 | 48.5 | 50.9 | 53.5 | 56.1 | 58.9 | 5.5 | 5.8 | 6.0 | 6.4 | 6.4 |
| | Enterprise discount | | | | | 5.0% | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 |
| | Seafood body employees | | | 100% reg'd in 4yrs | $ 100 | 3.0% | 0.2 | 1.4 | 0.2 | 0.2 | - | - | - | - | - | - | - | - | - | - | - |
| | RTOs, Training Colleges, etc | | | 100% reg'd in 2yrs | $ 100 | 3.0% | 0.1 | 0.3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | Cwth & State Gov't employees | | | 100% reg'd in 2yrs | $ 100 | 3.0% | 2.1 | 6.4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Card Renewal:** | Fishing employees and crew | | | | $ 26 | 3.0% | - | - | 9.9 | 10.4 | 21.5 | 22.6 | 34.9 | 36.7 | 50.4 | 52.9 | 68.2 | 71.5 | 73.8 | 77.4 | 79.8 |
| | Seafood body employees | | | | $ 26 | 3.0% | - | - | 0.1 | 0.4 | 0.1 | 0.5 | 0.1 | 0.5 | 0.1 | 0.5 | 0.1 | 0.6 | 0.2 | 0.6 | 0.2 |
| | RTOs, Training Colleges, etc | | | | $ 26 | 3.0% | - | - | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 |
| | Cwth & State Gov't employees | | | | $ 26 | 3.0% | - | - | 0.6 | 1.8 | 0.6 | 1.9 | 0.6 | 2.0 | 0.7 | 2.1 | 0.7 | 2.2 | 0.8 | 2.4 | 0.8 |
| **Sector Leadership Fee: Wildcatch only** | | | | Other Wild Catch Fisheries NEI | | 3.0% | - | - | - | - | 5.8 | 5.8 | 5.8 | 5.9 | 5.9 | 5.9 | 5.9 | 5.9 | 6.0 | 6.0 | 6.0 |
| | | | | Western Rocklobster | | 3.0% | - | - | - | - | 3.3 | 3.3 | 3.3 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.5 | 3.5 | 3.5 |
| Part A. Membership flat fee | $ 500 | /year | | Aust. Council of Prawn Fisheries | | 3.0% | - | - | - | - | 2.9 | 2.9 | 2.9 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.1 | 3.1 | 3.1 |
| | | | | Southern Rocklobster | | 3.0% | - | - | - | - | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 3.0 |
| Part B. Seafood GVP Factor | 0.0010% | of GVP/year | | Abalone Council Australia | | 3.0% | - | - | - | - | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 |
| | (=$10 per million of GVP) | | | SET RA | | 3.0% | - | - | - | - | 1.4 | 1.4 | 1.4 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.6 | 1.6 | 1.6 |
| | | | | Tuna Australia | | 3.0% | - | - | - | - | 1.3 | 1.3 | 1.3 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.5 | 1.5 | 1.5 |
| To begin in year | 5 | | | SubAntarctic Fishery | | 3.0% | - | - | - | - | 1.2 | 1.2 | 1.2 | 1.2 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.4 | 1.4 |
| Wildcatch Fishery Specific training fees | | | | | $ 50 | 3.0% | 6.3 | 6.6 | 6.8 | 7.1 | 7.4 | 7.7 | 8.0 | 8.3 | 8.7 | 9.0 | 9.4 | 9.8 | 10.1 | 10.6 | 11.0 |
| **Service Fees - generated from reports, database access, etc** | | | | | $ 5,000 | 3.0% | 5.2 | 5.3 | 5.5 | 5.6 | 5.8 | 6.0 | 6.1 | 6.3 | 6.5 | 6.7 | 6.9 | 7.1 | 7.3 | 7.6 | 7.8 |
| Setup & support - FRDC/AMSA (Aggregate) x Yrs (no CPI) | | | | | $60,000 | 4 | 60.0 | 60.0 | 60.0 | 60.0 | - | - | - | - | - | - | - | - | - | - | - |
| | | | | **Total Cash Received $'000** | | | **108** | **116** | **121** | **126** | **98** | **104** | **118** | **124** | **140** | **147** | **108** | **115** | **116** | **123** | **124** |
| **Cash Outflow $'** | 1. Admin: | Manager + staff Salary packages | | | $70,000 | 3.0% | 72.1 | 74.3 | 76.5 | 78.8 | 81.1 | 83.6 | 86.1 | 88.7 | 91.3 | 94.1 | 96.9 | 99.8 | 102.8 | 105.9 | 109.1 |
| | | Travel, admin, reporting & governance | | | $ 5,000 | 3.0% | 5.2 | 5.3 | 5.5 | 5.6 | 5.8 | 6.0 | 6.1 | 6.3 | 6.5 | 6.7 | 6.9 | 7.1 | 7.3 | 7.6 | 7.8 |
| | | Industry awareness campaign x Yrs | | | $40,000 | 2 | 40.0 | 40.0 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 2. Platform: | Subtotal | | | | | 18.4 | 13.8 | 14.2 | 14.6 | 15.1 | 15.5 | 16.0 | 16.5 | 17.0 | 17.5 | 18.0 | 18.5 | 19.1 | 19.7 | 20.3 |
| | | | | **Total Cash Paid Out $'000** | | | **136** | **133** | **96** | **99** | **102** | **105** | **108** | **111** | **115** | **118** | **122** | **125** | **129** | **133** | **137** |
| **Net Cash Flow $'000** | | | | | | $'000 | **-28** | **-18** | **25** | **26** | **-4** | **-1** | **9** | **13** | **25** | **29** | **-14** | **-11** | **-13** | **-10** | **-13** |
| Cumulative to date | | | ***Cash breakeven is in year*** | | ***4*** | $'000 | -28 | -46 | -21 | 6 | 2 | 0 | 10 | 22 | 47 | 76 | 63 | 52 | 39 | 28 | **15** |

Table 6. Seafood services scenario.

| SeSAFE REVENUE MODEL | | | | | | | Y E June | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Seafood Services Scenario** | | | | | | | | **2023** | **2024** | **2025** | **2026** | **2027** | **2028** | **2029** | **2030** | **2031** | **2032** | **2033** | **2034** | **2035** | **2036** | **2037** |
| **Fishing Vessels** registered >7.5m | | | | | AMSA Mar 2022 | 3,200 | 0.0% | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 |
| Employees/Crew on water (ABARES) | | | | | | all fisheries | 1.00% | 6,132 | 6,194 | 6,256 | 6,318 | 6,381 | 6,445 | 6,510 | 6,575 | 6,641 | 6,707 | 6,774 | 6,842 | 6,910 | 6,979 | 7,049 |
| Registrations - Cards issued per year | | | | | | | | 368 | 375 | 383 | 390 | 398 | 406 | 414 | 422 | 430 | 438 | 40 | 41 | 41 | 42 | 41 |
| Other Non-core SeSAFE course trainees per year | | | | | | estimate | 2.0% | 123 | 124 | 125 | 126 | 128 | 129 | 130 | 131 | 133 | 134 | 135 | 137 | 138 | 140 | 141 |
| Card Renewals per year | | | | | 2Yr cycle; deregistrations p.a. of 5% | | | - | - | 350 | 356 | 714 | 727 | 1,092 | 1,113 | 1,485 | 1,514 | 1,894 | 1,930 | 1,932 | 1,969 | 1,971 |
| **Aquafarming enterprises** | | | | | estimate based on ABARES | | 1.0% | 61 | 61 | 62 | 62 | 63 | 64 | 64 | 65 | 66 | 66 | 67 | 68 | 68 | 69 | 70 |
| Employees/Crew on water (ABARES) | | | | | | all aqua fisheries | 2.00% | 4,469 | 4,558 | 4,649 | 4,742 | 4,837 | 4,934 | 5,032 | 5,133 | 5,236 | 5,340 | 5,447 | 5,556 | 5,667 | 5,781 | 5,896 |
| Registrations - Cards issued per year | | | | | | | | 402 | 418 | 435 | 452 | 470 | 487 | 506 | 526 | 545 | 565 | 96 | 99 | 100 | 102 | 104 |
| Card Renewals per year | | | | | 2 Yr cycle, less deregistrations | | | - | - | 382 | 397 | 795 | 826 | 1,242 | 1,289 | 1,723 | 1,789 | 2,241 | 2,326 | 2,332 | 2,420 | 2,427 |
| **Cash Inflow $'000** | | | | | | $ Yr 1 | CPI p.a. | | | | | | | | | | | | | | | |
| **Registration:** | Fishing crew, net of discounts | | | | 60% reg'd in 10yrs | $ 100 | 3.0% | 33.9 | 35.8 | 37.9 | 39.9 | 42.1 | 44.5 | 46.9 | 49.5 | 52.1 | 54.9 | 1.5 | 1.8 | 2.0 | 2.4 | 2.4 |
| | Aqua crew, net of discounts | | | | 90% reg'd in 10yrs | $ 100 | 3.0% | 41.1 | 44.0 | 47.2 | 50.6 | 54.2 | 57.8 | 61.9 | 66.3 | 70.8 | 75.6 | 13.0 | 13.8 | 14.3 | 15.1 | 15.9 |
| | Seafood body employees | | | | 100% reg'd in 4yrs | $ 100 | 3.0% | 0.2 | 1.4 | 0.2 | 0.2 | - | - | - | - | - | - | - | - | - | - | - |
| | RTOs, Training Colleges, etc | | | | 100% reg'd in 2yrs | $ 100 | 3.0% | 0.1 | 0.3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | Cwth & State Gov't employees | | | | 100% reg'd in 2yrs | $ 100 | 3.0% | 2.1 | 6.4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Card Renewal:** | Fishing crew/employees | | | | | $ 20 | 3.0% | - | - | 7.6 | 8.0 | 16.6 | 17.4 | 26.9 | 28.2 | 38.8 | 40.7 | 52.4 | 55.0 | 56.7 | 59.6 | 61.4 |
| | Aquaculture crew/employees | | | | | $ 20 | 3.0% | - | - | 8.3 | 8.9 | 18.4 | 19.7 | 30.6 | 32.7 | 45.0 | 48.1 | 62.0 | 66.3 | 68.5 | 73.2 | 75.6 |
| | Seafood body employees | | | | | $ 20 | 3.0% | - | - | 0.0 | 0.3 | 0.1 | 0.4 | 0.1 | 0.4 | 0.1 | 0.4 | 0.1 | 0.4 | 0.1 | 0.5 | 0.1 |
| | RTOs, Training Colleges, etc | | | | | $ 20 | 3.0% | - | - | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 |
| | Cwth & State Gov't employees | | | | | $ 20 | 3.0% | - | - | 0.4 | 1.4 | 0.5 | 1.4 | 0.5 | 1.5 | 0.5 | 1.6 | 0.6 | 1.7 | 0.6 | 1.8 | 0.6 |
| **Sector WHS Leadership Fee:** | | | | | Tasmanian Salmon Growers Assn | | 3.0% | - | - | - | - | 1.6 | 1.6 | 1.6 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 |
| Part A. Membership flat fee | | | | | Aust. Prawn Farmers Assn | | 3.0% | - | - | - | - | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 |
| | | $ 600 | /year | | Western Rocklobster | | 3.0% | - | - | - | - | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.2 | 1.2 | 1.2 |
| Part B. Seafood Industry scale | | | | | Aust. Council of Prawn Fisheries | | 3.0% | - | - | - | - | 0.9 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.2 |
| | | 0.0001% | of GVP/year | | Southern Rocklobster | | 3.0% | - | - | - | - | 0.9 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 | 1.2 |
| | | (=$1 per million of GVP) | | | Aus. Southern Bluefin Tuna Industry | | 3.0% | - | - | - | - | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 |
| | | | | | Abalone Council Australia | | 3.0% | - | - | - | - | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 1.0 | 1.0 | 1.0 | 1.1 |
| | To begin in year | 5 | | | Other | | 3.0% | - | - | - | - | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | 2.1 | 2.1 | 2.1 |
| Wildcatch Fishery Specific training fees | | | | | | $ 50 | 3.0% | 6.3 | 6.6 | 6.8 | 7.1 | 7.4 | 7.7 | 8.0 | 8.3 | 8.7 | 9.0 | 9.4 | 9.8 | 10.1 | 10.6 | 11.0 |
| **Service fees generated - reports, database, etc** | | | | | | $ 10,000 | 3.0% | 10.3 | 10.6 | 10.9 | 11.3 | 11.6 | 11.9 | 12.3 | 12.7 | 13.0 | 13.4 | 13.8 | 14.3 | 14.7 | 15.1 | 15.6 |
| Setup & support - RDC/AMSA (Aggregate) x Yrs (no CPI) | | | | | | $ - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | | | | | **Total Cash Received $'000** | | **94** | **105** | **120** | **128** | **160** | **170** | **196** | **209** | **238** | **253** | **163** | **173** | **177** | **189** | **193** |
| **Cash Outflow $'** | 1. Admin: | Manager + staff Salary packages | | | | $ 105,000 | 3.0% | 108.2 | 111.4 | 114.7 | 118.2 | 121.7 | 125.4 | 129.1 | 133.0 | 137.0 | 141.1 | 145.3 | 149.7 | 154.2 | 158.8 | 163.6 |
| | | Travel, admin, reporting & governanc | | | | $ 10,000 | 3.0% | 10.3 | 10.6 | 10.9 | 11.3 | 11.6 | 11.9 | 12.3 | 12.7 | 13.0 | 13.4 | 13.8 | 14.3 | 14.7 | 15.1 | 15.6 |
| | | Industry awareness campaign x Yrs | | | | $ 50,000 | 2 | 50.0 | 50.0 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 2. Platform: | Subtotal | | | | | | 18.4 | 13.8 | 14.2 | 14.6 | 15.1 | 15.5 | 16.0 | 16.5 | 17.0 | 17.5 | 18.0 | 18.5 | 19.1 | 19.7 | 20.3 |
| | | | | | | **Total Cash Paid Out $'000** | | **187** | **186** | **140** | **144** | **148** | **153** | **157** | **162** | **167** | **172** | **177** | **182** | **188** | **194** | **199** |
| **Net Cash Flow $'000** | | | | | | | $'000 | **-93** | **-81** | **-20** | **-16** | **11** | **17** | **39** | **47** | **71** | **81** | **-14** | **-9** | **-11** | **-5** | **-6** |
| Cumulative to date | | | | | ***Cash breakeven is in year*** | ***10*** | $'000 | -93 | -174 | -194 | -210 | -199 | -182 | -143 | -97 | -25 | 56 | 42 | 33 | 22 | 17 | **11** |

**Objective 2. TRANSITION to a user-pays funding model to perpetuate the cost-effective delivery of SeSAFE training, based on the outcome of the independent review, and to Seafood Industry Australia or other party hosting the SeSAFE program at the conclusion of this project.**

***Transition to a user-pays funding model***

A key outcome of the independent review was several detailed user-pays funding models, based on a wild catch bare bones scenario, a wild catch services scenario, and a seafood services scenario. These scenarios were presented for discussion and comment at several SISI meetings in late 2021 and in 2022. A SeSAFE Revenue Steering Committee was also established to inform consideration by SISI, with individuals in attendance from SIA, FRDC, the fishing industry, and Ridge Partners. This committee met in February 2022. The goal of these activities was to socialise the outcomes of the independent review, obtain feedback and guidance, and enable FRDC determine their response regarding the Stop-Go provision.

The core agreed outcomes of the SeSAFE Revenue Steering Committee meeting were:

- There was general agreement with the findings of the independent review regarding the introduction and need for a user pays model to access SeSAFE modules,
- There is good potential for the introduction of a SeSAFE user pays model,
- The seafood industry should explore the potential of a WHS/ISP platform that provides a variety of services to stakeholders, which includes a SeSAFE component, noting that the WRLC, Austral Fisheries, and others were already heading down this road,
- There is a need to explore alternatives to the Adobe Captivate Prime software for delivering SeSAFE modules to fisher due to software limitations including a need for a user pays payment portal, improved domestic help support, and an ability to deliver modules on mobile phone,
- A safety card has potential and merit and should be considered further,
- Mandatory pre-sea training should be considered,
- Report findings and meeting outcomes should be presented to the SISI committee.

The outcomes from the SeSAFE Revenue Steering Committee meeting were shared with the SISI Committee in 2022. The outcomes of their deliberations included:

- Accepting that in the short term it is necessary and appropriate for SeSAFE to continue exploration of a user-pays model to co-fund the SeSAFE program,
- Acknowledging that in the short term SeSAFE should continue to offer training at no cost,
- Accepting that a voluntary SeSAFE card to recognise completion of all SeSAFE generic modules is an important step in the short and long term,
- Accepting the signal from industry regarding the introduction of mandatory safety training for crew, particularly new crew, before they step onboard for the first time,
- Considering options to help explore the introduction of mandatory safety training for crew.

No formal commitment in support of a user-pays approach was received from this committee despite the findings of the independent review. Some committee members were either not in support of this approach or harboured additional concerns. With transition of SeSAFE to SIA, adoption of such an approach was considered unlikely, at least initially as they take over management of the SeSAFE program. However,

because of the efforts by Ridge Partners Consultants and the associated feedback from the SISI committee, a decision by FRDC was made to activate the Stop-Go provision and agree to continued SeSAFE project activity for the duration of the funded period.

***Transition to Seafood Industry Australia***

The transition of the SeSAFE program to SIA required a systematic, considered approach that initially included identification of the various components of SeSAFE (Figure 1). Discussions between FRDC staff, SIA staff, Tanya Adams (PI, FRDC Project Number 2017-231) and the SeSAFE PI served to identify what components would transition to SIA.

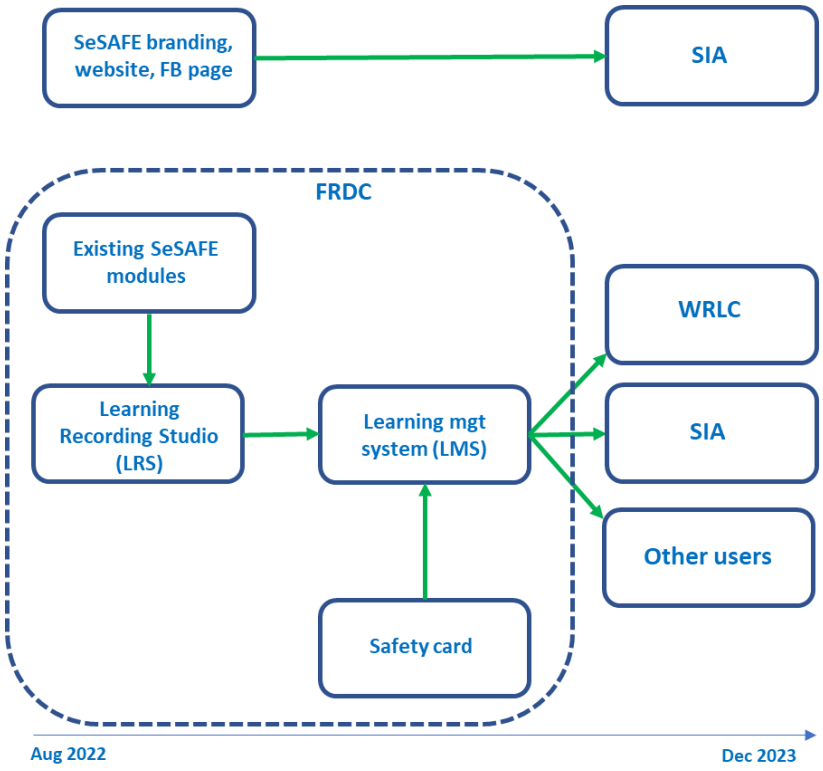



Figure 1. The transition schema. SeSAFE branding, website, and Facebook page will transition to SIA while FRDC will retain the modules and purchase an LRS and LMS for access by all users. The SeSAFE program will also develop a safety card that will be awarded to users upon completion of training. Dashed lines indicate users accessing the modules with their own LMS.

It was agreed that the transition to SIA included all SeSAFE branding, and the SeSAFE website and Facebook page to be managed by SIA and rebranded or replaced as deemed appropriate. SIA subsequently launched their own safety brand in 2023, Sea Safe Australia (see www.seasafeoz.com.au) to replace the SeSAFE brand.

The SeSAFE website was to remain open and available for review, for the foreseeable future at least, to serve as a library of relevant videos and other useful links. It was also edited to include a message redirecting individuals to the new Sea Safe Australia website. The SeSAFE Facebook page was similarly edited, redirecting individuals to the Sea Safe Australia website.

The existing SeSAFE modules were retained by FRDC so that only the FRDC can edit the modules as circumstances warrant. To provide optimal convenience and versatility, the modules were saved as SCORM files to be available to other users with their own training delivery software or LMS. It also meant these modules can be viewed using a mobile phone, a feature that was unavailable previously. These modules were also saved as video files, for users that do not have access to module delivery software such as Adobe Captivate Prime or other Learning Management System (LMS). At the conclusion of this project the FRDC made these video files available on YouTube upon request.

While the independent review provided evidence for a safety card to be delivered to crews completing SeSAFE training, this was not actioned, due in part to uncertainty regarding ongoing costs and who would be responsible for this task post SeSAFE. SISI committee members, SIA, and FRDC are aware this was not actioned. In the future a safety certificate, serving as a de facto safety card, could be automatically provided to users who complete a suite of modules using an LMS. This would require consideration of which modules need to be completed by users to be eligible for the certificate, as well as decisions made regarding the appearance of the certificate.

**Objective 3. RETAIN delivery of SeSAFE training to existing users in the Australian fishing and aquaculture industry.**

SeSAFE training was available to interested boat owners and skippers for their crew for the duration of the project. For example, each year the modules were provided to two fishing companies operating in the Northern Prawn Fishery, Austfish P/L and WA Seafoods. These companies first accessed these modules during the initial SeSAFE project, demonstrating their ongoing interest and need for such training. Australia Bay Seafoods, a company that operates fish trawlers from Darwin (and the very first user of SeSAFE modules), also continued to train crew with the modules.

Training to Austfish P/L crew was provided either through online access to individuals or in a classroom environment to a group, however training in a classroom was the predominant and preferred mode of training delivery. This option provided a cost-effective and efficient opportunity to bring all crews together to complete the training at the same time. Modules were delivered in a sequence and individuals were required to document their answers to questions on their answer sheet. In a safe, non-threatening environment, those with incorrect answers were able to learn why their answers were incorrect and to learn the correct answers. The classroom environment also allowed for management staff to build-on SeSAFE messaging and tailor such messages to suit the design and characteristics of their vessels. It also facilitated their understanding of where additional safety training might be required, including refined messaging during onboard safety inductions. Notably, Austfish P/L required their skippers to also complete the training on occasion, to refresh their memory, improve knowledge of latest developments, and to understand the level of safety training received by their crews. In total between 50-100 individuals were estimated to have completed this training during this project (exact numbers were not kept because sometimes a single subscription was used for several individuals to complete the training), some of whom were required by the company to complete the modules several times as refresher training. Those that were unable to attend the group training were provided access to modules for completion either prior to arriving in Darwin or at the company headquarters in Darwin. In this way most crew were provided training prior to the fishing season.

Crews employed by WA Seafoods were sent modules to complete online although they often did so as a group as the vessels were steaming from to the fishing grounds at the beginning of the season. WA

Seafoods has several trawlers based in Darwin and also accessed the training annually. An estimated 20 individuals completed this training over a three-year period. Australia Bay Seafoods continued using the modules for their crews during this project (they were the first to use the modules during the first SeSAFE project), and each year they required all 18 crew to complete the training.

**Objective 4.** EXPAND the number of industry bodies, fishing and aquaculture companies, independent fishers and aquaculture workers, processors, observers, researchers, and others utilising SeSAFE training on a recurrent basis.

Efforts were made to expand the SeSAFE program but multiple challenges hampered significant growth. These challenges included delays associated with the Covid 19 epidemic and impact on travel and fishing activity. They also included delays associated with the independent review of the future of SeSAFE, such as procedural delays and that associated with completing the review.

With a Stop-Go provision to be activated based on the outcomes of the independent review, little attempt was made to expand the program and increase the number of fishers receiving training given the future of the program was uncertain. This was exacerbated by uncertainties associated with the transition of SeSAFE to SIA or other third-party, including governance of the program's components and timing. Despite these challenges there were however several notable program developments, including delivery of SeSAFE modules to crew working for Australian Longline Fishing Pty Ltd.[3], module transition to enable mobile phone access by crew, and the fishers filming fisher's initiative. Notably also was rejection of SeSAFE training by crew members on several fishing boats.

***Australian Longline Fishing Pty Ltd.***

Initially, the plan was to enrol all crew members into the program using Adobe Captivate Prime, and to allow crew an opportunity to complete the training prior to their arrival in Hobart to commence a fishing trip. By using this software, the answers to questions at the end of each module could be recorded and made available to the company for recordkeeping.

Despite positive feedback from the company regarding module content, several issues were encountered that serve as an example of the challenges associated with delivering training to geographically dispersed individuals, and of the limitations of the software. These issues included:

- Difficulty creating crew logins when crew lists were not finalised by the company until a few days prior to departing port. This meant some crew could not be notified of training availability until a day or two before sailing, thereby missing an opportunity to complete training at home or enroute to the vessel. Upon their arrival at the vessel, a myriad of tasks kept them busy, making it difficult to find time to complete the training. Some crew also did not have an email address, thereby making it impossible to deliver training modules to them prior to departure.
- Many crew originated from New Zealand, where online data usage costs are very high. Many crew complained about this cost.
- The company subsequently decided to create vessel logins so the crew could complete the training onboard in small groups. This also allowed modules to be downloaded and used offline (although individual crew results would not be recorded by the software). For some reason the software

[3] This company is based in Hobart and operates several large longlining vessels targeting Patagonian and Antarctic Toothfish in subantarctic waters.

accepted login details for one vessel and not the other, despite multiple attempts to rectify the issue. It remains unclear why this was the case.

- The software does not allow modules to be used offline on a computer, only on an iPad, tablet, or phone.
- Once modules are played once and answers completed, the software does not like to play the module again, instead taking the user to the questions at the end of the same module. Dragging the cursor back to the beginning of the module is difficult given module set up. Fundamentally, this issue was associated with limitations in software design, which cannot differentiate between users, assumes the same person is logged in, and assumes there is no reason for the same person to complete the same training twice. Attempts to disable a requirement for the questions to be answered online (users would have to entry answers on a sheet of paper) helped with this problem, but the remaining issues resulted in the online option of module access being abandoned.

These issues had similarly been experienced by Australia Bay Seafoods. Both Australian Longline Fishing Pty Ltd and Australia Bay Seafoods subsequently purchased tables to enable modules to be downloaded and completed offline. This option was successful and viewed as a reasonable stopgap measure, notwithstanding the remaining issues.

***Mobile phone access***

To provide further flexibility, convenience, and overcome some of the above-mentioned issues, it was decided to reformat the modules so they could be used on a mobile phone. The modules were saved in a SCORM format and edited so they were 'responsive' and suitable for use on any device with any screen size. Initially the modules were designed for use on a desktop or laptop only, and while they could be accessed on devices with smaller screens, slide formats were corrupted, and they were rendered unreadable. In SCORM format they are also potentially available to users using any LMS.

Working in collaboration with the FRDC IT team, Sprout Labs successfully tendered for the opportunity to edit the modules so they could be used on all devices, from mobiles phones to desktop computers. Sprout Labs is a Hobart-based company that specialises in the development of digital learning platforms and the training in the use of such platforms. Modules were also saved as video files, so they could be delivered directly to users and avoid the use of an LMS.

These processes consumed considerable project time and hampered expanding the number of users engaged in SeSAFE training. Uncertainty also existed that the final product would be suitable for use by fishers, and until that uncertainty was removed, no attempt was made to promise fishers that mobile phone ready modules could be provided. However, the outcome of these developments is that modules can now be accessed either by any individual or industry group with an LMS or as video files viewable on a mobile phone, tablet, laptop, or desktop computer. Unfortunately, no individuals have formerly accessed the modules using a mobile phone as this development occurred towards the end of the life of the project.

***Rejection of training by crew***

The other notable development during this period was that several owner-skippers of small prawn trawling vessels in Queensland were unsuccessful in their attempts to require crew to complete SeSAFE training. One skipper noted that his crew refused outright to complete the training, despite his repeated requests to do so. In times past such a refusal would have had repercussions, perhaps even dismissal from the vessel. However, with a shortage of available and reliable crew, the skipper was reluctant to take this option given the time and energy it takes to find and train replacement crew, and potential to lose fishing time while

finding replacement crew. This and other skippers also reported that crew are aware that replacements are difficult to come by and use it to their advantage.

Another skipper attempted to encourage his crew to complete the modules by offering financial inducements. This skipper offered his crew a financial bonus tied to completing the training, which can be completed in around 2 hours, and remaining on the vessel for 5 consecutive fishing trips, each lasting around one week. This skipper reported that this inducement had no impact with the crew either resigned after one or two trips or being asked not to return due to poor workplace performance.

**Objective 5. EXPAND the number of fishery-specific modules beyond those already developed for the ACPF, including completion of fishery-specific modules for the Western Rock Lobster Council and weather forecasting modules for the Bureau of Meteorology.**

Four fishery specific modules were produced for and made available to the Western Rock Lobster Council: Pot preparation and safety; Pot setting safety; Pot hauling safety, and; Pot diving safety. The Bureau of Meteorology showed interest in funding the development of two meteorological modules for fishers, however, they ultimately decided not to pursue this option. No evidence was provided suggesting they felt the SeSAFE program was not a suitable option for delivery of these modules, nor that a quoted price of $3,000 per module was excessive; they simply decided to not to fund these modules.

Discussions were also had with the Northern Territory Government regarding the development of a wharf safety module. This was following the tragic loss of life of a seafarer while trying to board his vessel late at night on a wharf in Darwin. Despite multiple conversations about module content and submission of a quote for module development, no one in the organisation could commit to funding the module and it was not developed.

**Objective 6. PROMOTE SeSAFE as the industry benchmark in pre-sea safety training to meet duty of care requirements.**

During the life of the project the SeSAFE modules were flagged as an important component in the safety training journey for commercial fishers, either as a first step in the journey for inexperienced crew or as a refresher for experienced crew. No other safety training offering is known to exist that provides a no-cost, convenient and flexible means of delivering such training, let alone one that also complements onboard inductions, musters, drills, and other safety training offerings. SeSAFE training was also flagged as contributing to vessel owners and skippers meeting their duty of care requirements, and that it goes beyond mandatory safety training requirements.

Given the repeat users of SeSAFE training from several fishing companies and interest by industry organisations around Australia such as the WRLC, it is clear they believed that such training was an important component of safety training for their crews. Furthermore, SIA have in effect contributed to this objective and the promotion of SeSAFE training by launching their Sea Safe Australia website (see www.seasafeoz.com.au for details) and making SeSAFE modules available to fishers and others.

***Fishers filming fishers***

This was a competition open to all fishers that offered financial awards to individuals that produced a video of themselves, or others engaged in a safe working practice (Figure 2). This competition was announced in

early 2022 with a total of $8,000 in prize money available, with Australia Bay Seafoods, Tuna Australia, and the Spencer Gulf and West Coast Prawn Fishermen's Association equally contributing to the prizemoney.

## Fishers Filming Fishers

**Win $5000**

**Second prize - $2000 Third prize - $1000**

**This competition is open to all commercial fishers including skippers and crew.**

**Fishers need to use their mobile phone or other video recording device to film themselves and/or other fishers engaged in a safe working practice at sea or at a wharf.**

**The winner will be publicly announced at Seafood Directions in Brisbane on 13-15 September, 2022**

**The winner will also receive a travel prize to attend Seafood Directions, including airfare, accommodation and meals.**

**Judging criteria**

- Fishers must be filmed engaged in a safe working practice onboard a fishing vessel or at a wharf.
- Only video footage will be considered eligible for the award. Photographs can be embedded in the video submission.
- Video duration to be no more than 60 seconds.
- Fishers must not place at risk the safety of themselves or others as part of any mock, staged, or acted video submission.
- Fishers must narrate their video submission by describing a particular safety risk and how they eliminate or reduce the risk. The narration must also include a statement such as, "I am sea safe because……", or "Being safe at sea is important to me because……".
- Additional judging criteria to include, but not limited to, creativity, originality, message clarity, honesty, humour, composition. Video footage using hand held phones/tablets/cameras that are slightly unsteady and not in perfect filming conditions are acceptable. Professional film makers are not eligible for this award.
- Individual fishers may submit more than one entry into this competition.
- The video submission is to be uploaded using the free WeTransfer app and emailed to seayrs@sesafe.com.au. The app includes a message box which must include the following detail: 1. The name, phone number and email address of the person submitting the video. 2. The name of the fishery where the video was recorded. 3. The name, phone number and email address of all other persons filmed or involved in the submitted video.
- All persons filmed as part of a video submission agree to the judging criteria in this competition. SeSAFE reserves the right to contact these persons to verify their agreement to be filmed and participate in this competition.
- Only the person responsible for submitting the video will be eligible for this award. It is their responsibility to make arrangements to share any prize money with other persons involved in the video submission.
- All video submissions must be received by August 15, 2022. All video submissions will become the property of SeSAFE and may be used in future safety promotional activity.
- An independent panel will judge the award and their decision will be final.

**This award is sponsored by SeSAFE, Australia Bay Seafoods, Tuna Australia, and the Spencer Gulf and West Coast Prawn Fishermen's Association**

SeSAFE Australia Bay Seafoods Tuna Australia

*SeSAFE is funded by the FRDC, AMSA, and the Australian fishing industry*

Figure 2. Announcement of the Fishers filming Fishers competition and judging criteria.

The winning entries were announced at a special session at Seafood Directions in Brisbane on September 14, 2022 (Figure 4). All entries were played to the participants of Seafood Directions and subsequently made available on the SeSAFE Facebook page and website.

Figure 3. The PI (middle) alongside Dennis Holder (Two Gulfs Crabs) and Michael O'Brien (Australia Bay Seafoods), who received the awards at Seafood Directions on behalf of the competition winners.

A total of 15 entries were received from around Australia. The winning entry, showcasing the importance of pre-sea onboard inductions was submitted by Angela Barnes, Barnes Seafood in Port Broughton, South Australia. Second place, highlighting the importance of safe work practices when setting crab pots was submitted by Luke Tugwell from Wallaroo in South Australia. Third place was received by the crew of the Territory Leader, owned and operated by Australia Bay Seafoods in Darwin, Northern Territory. Their submission highlighted safe working practices while deploying and retrieving a bottom trawl.

***Awards***

While progress consistent with this objective was limited due to project uncertainty, in late 2022 SeSAFE was a nominee for the Synaco Safety Award as part of the Queensland Community Achievement Awards (Figure 4). In the same year, SeSAFE won the Safety Award as part of the Queensland Seafood Industry Awards and was a Safety Award finalist in the 2022 National Seafood Industry Awards.

***Promotion at fishing industry workshops.***

In 2023, several one-day workshops were held for vessel owners and skippers operating in the Queensland commercial fishery, covering a range of topics relevant to their industry (Figure 5). These workshops were funded by the FRDC and provided an opportunity to raise fisher awareness of the SeSAFE program (and transition to SIA) and other FRDC funded projects relevant to participants. These workshops were held in Cairns, Townsville, Mooloolaba, and Hervey Bay. Over 60 fishers attended these workshops and were introduced to the SeSAFE program. Many owners and skippers commented on the importance and need for the program, and some expressed interest in SeSAFE training for their crews. However, they typically didn't

follow through and require crew to complete the training for reasons previously mentioned. Follow up phone calls were also generally unsuccessful. A presentation was also made to fishers and others during the Spencer Gulf and West Coast Prawn Fishermen's Association AGM in October 2021.


Figure 4. The PI receiving the Synaco Safety Award in Brisbane.

Figure 5. The Principal Investigator demonstrating the Life Cell at the Mooloolaba workshop as part of discussions about the SeSAFE program and need for improved safety performance.

***Social and other media***

Additional efforts to promote SeSAFE as the benchmark in pre-sea safety training included an article in FISH magazine (Appendix A) and in the WAFIC Annual Report (Appendix B). The SeSAFE website and Facebook page was also used to promote SeSAFE and to share relevant articles from other media sources, both from

Australia and overseas. The purpose of these articles was to raise awareness of safety hazards and risks associated with working at sea, particularly those deemed relevant to Australian fisheries, and to encourage conversations about remedial behaviour. Between July 1, 2021, and December 31, 2023, the SeSAFE Facebook page reached just over 6, 500 individuals, and the Fishers filming Fishers videos attracted the most attention (Figure 6). Just over two-thirds of Facebook followers were male. Males between 45-54 years of age dominated by age-group, followed in decreasing order by those aged between 25-34 and 35-44. The dominant female group was aged 35-44 years of age, followed by 45-54 and 25-34 years of age.

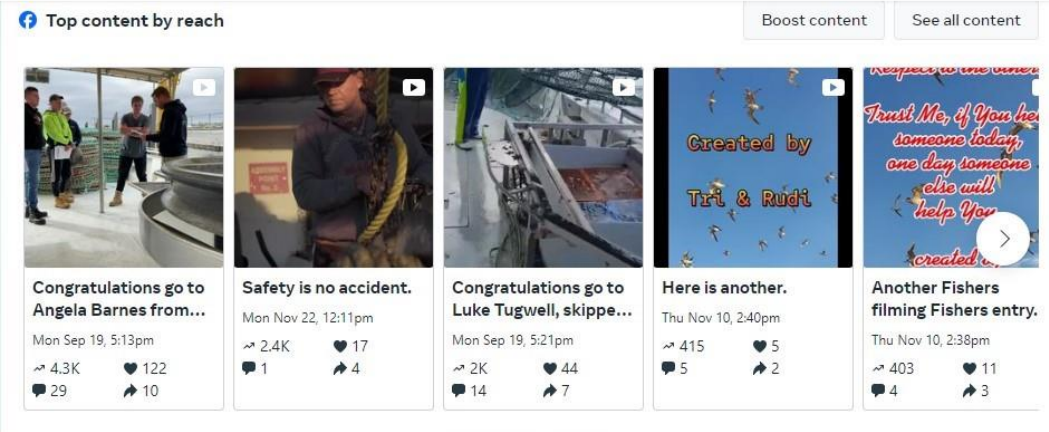



Figure 6. Data summary of the five most popular posts on the SeSAFE Facebook page.

***SeSAFE flyer***

A SeSAFE flyer (Figure 7) was produced designed to provide boat owners and skippers with ten reasons why they should consider SeSAFE training for their crew. This flyer was presented to individuals at workshops, industry meetings, and posted on the SeSAFE Facebook page.

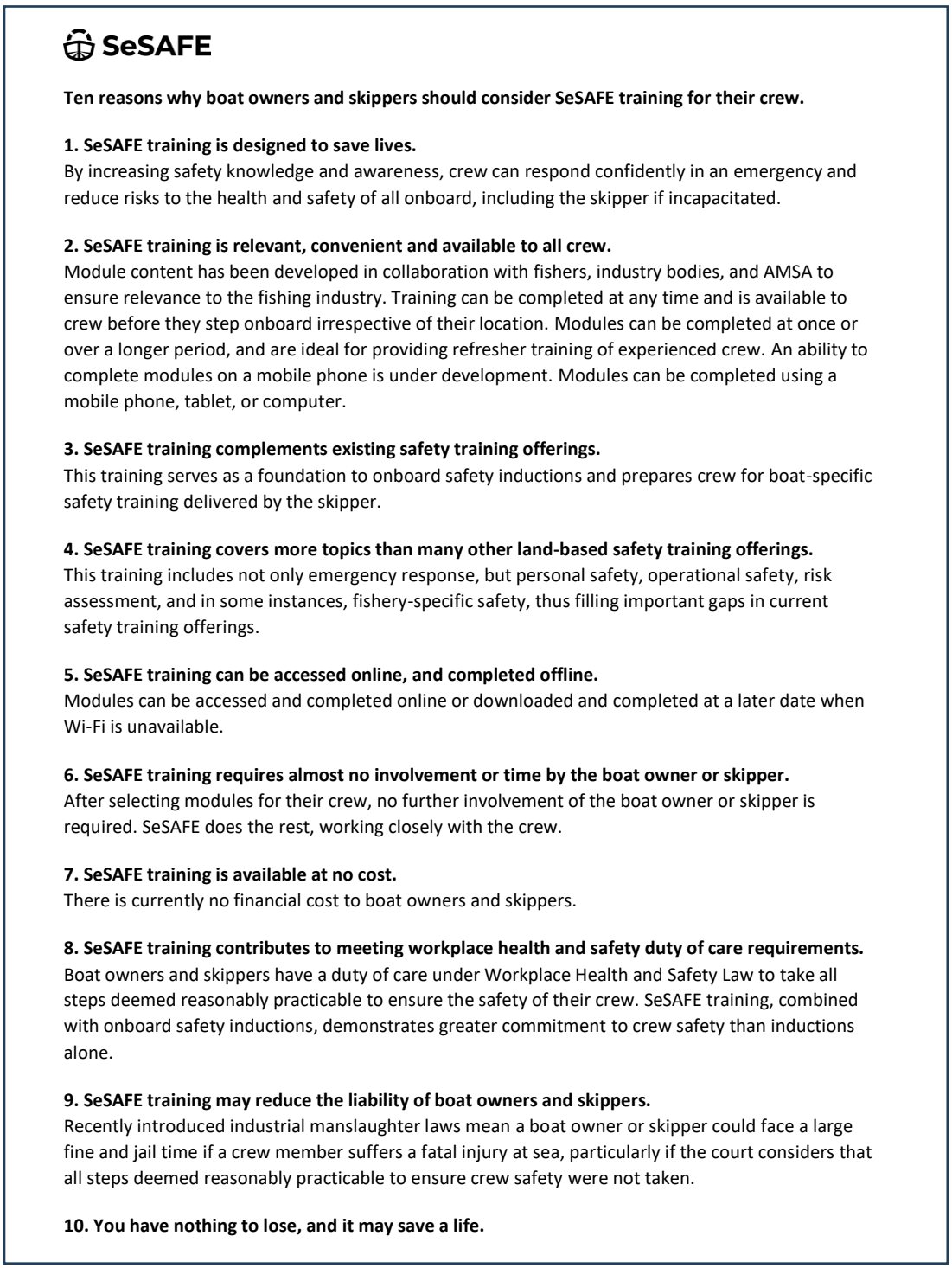
**Objective 7. INCENTIVISE the use of SeSAFE training, including through formal recognition of SeSAFE training by AMSA and others, certification, and potential rebate by insurance agencies.**

Limited progress was made with respect to this objective. Approaches were made to AMSA at the beginning of this project both informally and via the SISI committee regarding formal recognition of SeSAFE training, including potential for such training to be a mandatory requirement for new crew. Through these conversations it became clear that little appetite existed to explore the case for mandatory safety training based on SeSAFE modules, particularly as staff were still focussed on the mandatory requirement for Safety Management Systems on each vessel. The SISI committee also held reservations regarding this initiative, and no further efforts were made in this regard.

As already described, despite the favourable findings of the independent review regarding certification of modules via a safety card, no progress was made to introduce such a card.

The option of an insurance rebate did not progress beyond discussions with several fishers with close knowledge of the insurance industry, who reported that this industry would not entertain such a concept until a larger number of individuals were using the SeSAFE modules on a regular basis. This message was

consistent with a conversation with several individuals in the marine insurance industry during the early days of the original SeSAFE project, that while interested in the delivery of safety training to fishers, limited progress could be made until a critical number of fishers were involved in such training. Given the other described issues associated with attracting larger numbers of fishers to SeSAFE training, this option was also not pursued further.



SeSAFE

**Ten reasons why boat owners and skippers should consider SeSAFE training for their crew.**

**1. SeSAFE training is designed to save lives.**
By increasing safety knowledge and awareness, crew can respond confidently in an emergency and reduce risks to the health and safety of all onboard, including the skipper if incapacitated.

**2. SeSAFE training is relevant, convenient and available to all crew.**
Module content has been developed in collaboration with fishers, industry bodies, and AMSA to ensure relevance to the fishing industry. Training can be completed at any time and is available to crew before they step onboard irrespective of their location. Modules can be completed at once or over a longer period, and are ideal for providing refresher training of experienced crew. An ability to complete modules on a mobile phone is under development. Modules can be completed using a mobile phone, tablet, or computer.

**3. SeSAFE training complements existing safety training offerings.**
This training serves as a foundation to onboard safety inductions and prepares crew for boat-specific safety training delivered by the skipper.

**4. SeSAFE training covers more topics than many other land-based safety training offerings.**
This training includes not only emergency response, but personal safety, operational safety, risk assessment, and in some instances, fishery-specific safety, thus filling important gaps in current safety training offerings.

**5. SeSAFE training can be accessed online, and completed offline.**
Modules can be accessed and completed online or downloaded and completed at a later date when Wi-Fi is unavailable.

**6. SeSAFE training requires almost no involvement or time by the boat owner or skipper.**
After selecting modules for their crew, no further involvement of the boat owner or skipper is required. SeSAFE does the rest, working closely with the crew.

**7. SeSAFE training is available at no cost.**
There is currently no financial cost to boat owners and skippers.

**8. SeSAFE training contributes to meeting workplace health and safety duty of care requirements.**
Boat owners and skippers have a duty of care under Workplace Health and Safety Law to take all steps deemed reasonably practicable to ensure the safety of their crew. SeSAFE training, combined with onboard safety inductions, demonstrates greater commitment to crew safety than inductions alone.

**9. SeSAFE training may reduce the liability of boat owners and skippers.**
Recently introduced industrial manslaughter laws mean a boat owner or skipper could face a large fine and jail time if a crew member suffers a fatal injury at sea, particularly if the court considers that all steps deemed reasonably practicable to ensure crew safety were not taken.

**10. You have nothing to lose, and it may save a life.**

Figure 7. Ten reasons for considering SeSAFE training.

# Discussion

Overall, the success of this project was mixed. Highlights include the development of several user-pays models designed to provide ongoing funding for the delivery of SeSAFE training and a legacy under a variety of operating scenarios, the delivery of training to the crews of several fishing companies, both new to the program and repeat users, as well as the transition of components of the SeSAFE program to SIA. It also includes the development of modules suitable for either mobile phone users or viewing by video. Fundamentally, modules can now be viewed using any LMS, irrespective of screen size, or as a video format that requires no LMS. However, these highlights came at a cost, particularly in raising awareness of the program and growth in the number of module users. Various challenges such the impacts of COVID 19 on an ability to travel and engage with the fishing industry, the Stop-Go provision, and the process of transitioning components of the SeSAFE program, all impacted an ability to grow the number of users engaging in the program.

The independent review, including development of several user pays scenarios, provided an important knowledge base upon which future decisions regarding safety training can be considered. These required a considerable number of assumptions based at the time by experience and knowledge of the fishing industry. They were subjective and not always agreed to by members of the Revenue Steering Committee and the SISI committee, but a start somewhere needed to be made. While it appeared the bare bones scenario could be viable option in the future, it remains to be seen if progress following completion of this project is realised. Meanwhile, the scenarios are available for consideration and further exploration.

The review also found that some countries have introduced mandatory pre-sea safety training and that training costs in some instances are subsidised. Interestingly no evidence was found of online safety training like that provided by the SeSAFE program. Also found were that many primary industries in Australia have or are in the process of building online integrated service platforms to collect, track, and make data available to businesses. Such an approach was viewed as empowering and good business practice. Notably the WRLC and the SRL are both engaged in building their own bespoke platforms to service specific needs, so momentum in this direction has already been established.

Strong evidence was found supporting the introduction of a safety card like that used in the construction industry, although there was less support for such a card being a mandatory requirement for entry into the fishing industry. This was partly due to concerns the card will lessen the attractiveness of the industry to new and existing crew, including those that refuse to complete SeSAFE training, thus challenging the ability of boat owners and skippers to attract new crew. There were also fears it would hamper their ability to source new crew at short notice, a not uncommon practice during the fishing season. Until the value proposition of such a card is improved, either by linking it with a mandatory requirement to complete training, or through financial or other incentives, the introduction of such a card in the short term seems improbable. Notably the introduction of such a card, and associated fees, where an integral part of the use-pays models; the card did not imply a person is safe or guarantee their safety, but simply that they had completed a predetermined suite of modules. In the meantime, a card or certificate that simply acknowledges voluntary completion of SeSAFE training can be offered automatically if an LMS is used to deliver the modules, given they generally all include an ability to produce certificates of completion. Delivery of a card or certificate to users that simply view the modules as video files, or in a group, can also be achieved but requires an administrator to be informed of module completion by each user so that a card or certificate can be produced, either by entering the user's details into the LMS or by using other software

such as Microsoft Word. The LMS automatically informs the administrator when modules are completed and can automatically administer a certificate, so the additional burden to the administrator is minor. The realisation of such an outcome now rests with SIA or the FRDC.

Ironically, and despite challenges increasing the number of regular users of SeSAFE training, the independent review also reported that industry members felt the safety performance of the fishing industry was low and in need of improvement. So too was the content and delivery of the onboard safety induction process. Given the extent and breadth of experience of these individuals was significant, it is not unreasonable to consider their views a good reflection of the wider industry, and that further improvement in safety performance and induction processes is in fact required. Some individuals also indicated the induction process was little more than a tick and flick process, serving no real educational value to crew. Hopefully such attitudes change with time, perhaps as the benefits from this approach become more apparent. This also implies an ongoing need for SeSAFE training.

SeSAFE modules were designed to raise awareness of the need for safety training and the implications of poor safety performance to self, the entire crew, and the vessel. Their design also underpinned by the project theme, 'What if you don't come home?' This theme was deliberately chosen to stimulate fishers into thinking about the impacts that not coming home would have on their loved ones. It was also chosen to evoke affective (emotional) readiness in fishers to change behaviour and improve safety performance, because affective readiness is increasingly considered more important than cognitive readiness to voluntarily change behaviour.

With the completion of this project there is now no longer an individual whose sole focus is raising safety awareness and delivery of safety training. The FRDC Extension Officer Network is well placed to spread the word about safety training, but they are engaged in a myriad of other activities and with few exceptions have relatively limited safety training knowledge. Their efforts risk being piecemeal and less focussed. There is also a risk of similar outcomes by SIA staff, unless they are provided a mandate and opportunity to focus persistently on raising safety awareness and delivery of safety training. A team of sea safety advocates will soon be employed by SIA and they will be responsible for maintaining momentum generated by SeSAFE. In the meantime, the FRDC IT team has commenced using Adobe Learning Manager (formerly Adobe Captivate Prime) as an LMS for users to access SeSAFE training, alongside training modules that have been developed in other topics. In this way individuals can still gain access to the modules and take advantage of the benefits of training delivery via an LMS, such as tracking of training attempts for each individual and ability to complete modules offline. They have also saved the video modules on YouTube, available upon request, although this option provides no record of the training attempt.

The independent review also reported that workplace health and safety data in the commercial fishing industry is, "….underreported, inaccurate, and often misleading." This is a significant cause of concern that challenges an ability to develop effective systems and improve safety performance in this industry. It is difficult to see how fishers can be enticed to improve their reporting when they are time and cash poor, faced with a dwindling pool of competent crew, and for some at least, have little trust in government processes. Furthermore, there appears to be little appetite by AMSA to mandate reporting beyond that already introduced, for example pre-sea safety training for new (green) crew and periodic refresher training, let alone to document achievement of improved safety performance. Steps to mandate Safety Management Systems and crew inductions are positive developments but as the review identified, they are in part at least accompanied by a tick and flick culture. Many fishers are known to hold such reporting requirements with disdain, some believing their long safety record is testament to their ability to keep crew

safe and the futility of recording safety data. Many do not make a secret of their approach and attitudes to safety data recording, and the designation of fishing vessels as a workplace under Workplace Health and Safety Law and the introduction of Industrial Manslaughter Laws have seemingly had little impact on their behaviour. Current regulations therefore do not appear to be eliciting improved collection of safety data, and short of a significant improvement in oversight and/or change in fisher behaviour, it is difficult to see how a regulatory approach can improve this outcome. Changes in regulation that mandate safety training of all crew members could be accompanied by the introduction of a user-pays option, thereby reducing concerns of lack of uptake and the risk of funding failure. Other efforts to improve the value proposition of data collection and safety training include financial or other subsidy, such as reductions in insurance premiums, although without a greater number of fishers engaged in these activities this option appears unlikely.

An alternative approach based on eliciting non-regulatory changes in data collection and behaviour is needed to overcome regulatory limitations, such as eliciting affective (emotional) readiness to change. Affective readiness is increasingly viewed as more important than cognitive readiness in fomenting change and has been explored in a fisheries context previously. Consideration of affective readiness may therefore need to be explored further to identify ways to encourage non-regulatory improvement in safety data collection by fishers, and to improve safety training and performance. Otherwise, the value proposition associated with such improvements will remain challenged and safety will remain compromised in this industry.

"*SeSAFE is a great general introduction to safety at sea. It makes me feel confident in the crew and their ability to respond to a safety risk or hazard. Crew like having SeSAFE training done and dusted at home, before they come to the boat at the beginning of the season*."

Phil 'Casper' Patten. Austfish fleet safety manager.

## Conclusion

Overall, the success of this project was mixed but the outcomes have established a foundation for future development. Highlights include the development of several user-pays scenarios designed to provide ongoing funding and a legacy under a variety of operating scenarios, the transition of components of the SeSAFE program to SIA, the ongoing delivery of training to the crews of several fishing companies, and the development of modules suitable for either mobile phone users or viewing by video.

The transition to SIA has resulted in several developments, including the establishment of a new safety website, SeaSafe Australia, and individuals interested in safety training can contact SIA staff via the website. SIA are also in the process of establishing a safety advocate network of individuals to raise safety awareness and SeSAFE training in the industry. However, SIA do not yet have their own LMS and have limited capability to manage this training. In the meantime, while this transition is still to be fully realised, the FRDC has commenced using Adobe Learning Manager to ensure ongoing and tracked user access to SeSAFE training modules, as well as making them available via YouTube.

*"SeSAFE modules are short and appropriate. They nicely complement my onboard safety induction, and online delivery is a real benefit. It makes me feel good knowing my crew have completed SeSAFE training."*

Pat Rossiter. Skipper. FV Ocean Harvest

## Recommendations

Given that SeSAFE modules are an early step in the safety journey for new and inexperienced crew, it is important that efforts continue to raise awareness of the availability of this training. Safety advocates employed by SIA and the FRDC Extension Officers need to take responsibility for raising such awareness in the future. For the Extension Officers this is a logical extension of their current role that includes raising awareness of other FRDC funded projects.

Based on the assumptions at the time, the independent review found that a user-pays approach to safety training could be a feasible option, although the Seafood Industry Safety Initiative (SISI) has decided not to progress this option at this time. The findings of the review are an important foundation upon which future decisions regarding safety training can be made, and they should be periodically considered in the future with a view of their potential realisation at a time deemed more appropriate and acceptable.

Further consideration is needed to increase interest in safety training by the fishing industry. Many boat owners or skippers believe their years of operation in the industry without incident is proof they operate safely and provide a safe workplace for crew. Many do not see a need for such training, and many ignore or do not appreciate the potential ramifications under recently introduced industrial manslaughter laws. While efforts were made during this project to raise safety awareness and encourage the use of SeSAFE modules via multiple means, these efforts were only deemed moderately successful in that they raised awareness but did not often motivate them to seek SeSAFE training for their crew. The reality is that opportunities for this training did not resonate strongly, despite content being current and relevant, available at no cost, easy to access, and required only a matter of minutes from the boat owner or skipper to request the training and confirm modules for crew completion. Part of the issue is that boat owners and skippers have more pressing needs, such as sourcing reliable crew, and/or are distracted with other issues or developments affecting their fishing business, and so prioritise their time accordingly. Subsequently the number of individuals trained was fewer than anticipated, especially those working on owner-operated boats, and this should be a focus of future efforts to deliver this training.

Future extension and adoption of SeSAFE training now rests with Seafood Industry Australia (SIA). They have now established a dedicated website (www.seasafeoz.com.au) and are in the process of employing safety advocates around the country. They are also responsible for continuing to service various fishing companies that have been regular users of the modules. The FRDC Extension Officer Network (EON) is a resource that can also contribute extension efforts, by raising awareness of the modules to fishers and others, including content, ease of access, and benefits. SIA could engage the EON by providing them periodic updates of the safety training program, including progress and new developments. They could also collaborate with the EON to identify opportunities to engage with industry, particularly in fisheries or regions not covered by the safety advocates. That said, in the foreseeable future the issue is likely to remain how to build momentum and greater interest by fishers in online safety training.

## Extension and Adoption

The communication and extension of this project is described in the results section, under Objective 6.

## Project materials developed

All SeSAFE modules now reside with FRDC and SIA. They are stored in a SCORM format and can be used by almost all LMS's. They are also stored in a video format. Modules are accessible by contacting SIA through the SeaSafe Australia website (https://www.seasafeoz.com.au/).

Project videos remain available at the SeSAFE website (https://sesafe.com.au/), including the three winning entries in the Fishers Filming Fishers competition. All other submissions to this competition are retained by the FRDC.

## Intellectual property

All project modules, data, and videos remain the property of the FRDC, including associated intellectual property.

# Appendices

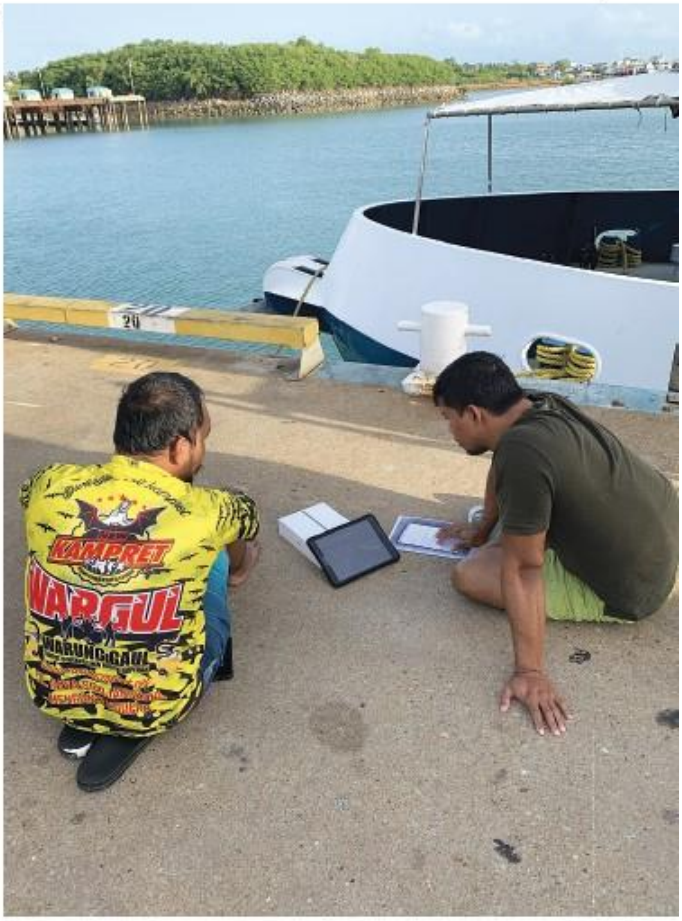
## Appendix A



# Time online to upskill

Coronavirus restrictions on travel and group activities have highlighted learning opportunities and the value of online platforms for participants in the seafood sector

By Catherine Norwood




**Right**
From left, the Australia Bay 2's mate Hari Wibowo and skipper Budijati Sutowo Nur test out the SeSAFE learning modules on a tablet at the wharf in Darwin.
Photo: Mike O'Brien

Online courses have been the go-to format for education and training around the world during COVID-19 restrictions. But they also provide valuable long-term opportunities for Australia's seafood sector, as operators are often in far-flung corners of the country.

### Safety training

For those at sea, the online national safety program SeSAFE, funded by the FRDC, is a means to acquire the latest maritime safety training or update their knowledge. SeSAFE project leader Steve Eayrs says the program has developed a suite of dedicated training modules for the fishing industry, which can be accessed any time that is convenient to fishers, irrespective of their location. "This training is ideal for fishers while restrictions on physical distancing are in place."

As restrictions ease, the program will continue to offer easy access to module-based training to anyone, in the safety of their home. An email address is all that is needed to start.

Most modules are around five minutes long and participants work through each one online. There is no need to travel and take part in group training.

"Crews at sea can also receive training onboard, either in a group or individually, or if quarantined, without risk of exposure to others onshore," Steve Eayrs says. "And if internet is an issue at sea, training is still available – providing modules are downloaded onto a tablet prior to going to sea." The entire crew can also receive training simultaneously by connecting the tablet to a monitor in the wheelhouse or galley.

One of the newest models added to the program, developed in response to the threat of COVID-19, focuses on personal health in the confines of a boat, and personal hygiene to minimise risks of bacterial and viral infection at sea.

SeSAFE now has 42 modules available, including risk assessment, personal safety, operational safety and emergency response, and can provide a solid foundation for the induction processes that are mandatory on all commercial fishing vessels.

Where onshore group training is not available under COVID-19 restrictions, SeSAFE can act as a 'place holder' until it is safe to provide practical, hands-on training.

General Manager of Australia Bay Seafoods Michael O'Brien says the company's crews have made use of the SeSAFE training for the past two years. They started with a shore-based group training session once a

year. Australia Bay Seafoods has three boats operating year round, with up to 40 crew doing the training.

"Now we've put it onto the boats," Michael O'Brien says. "We have a tablet on each of the boats, and the SeSAFE modules are downloaded so crew can do them offline. I've chosen the 25 modules relevant to our business that I want crew to do, but it's up to the skippers whether they do the modules individually, or as a group."

The decision to access modules offline and at sea has worked well in light of COVID-19 restrictions. The company has also moved from annual training to twice-yearly refresher training – in January and July. When the next round of training falls due, and with quarantine restrictions likely still in place for those at sea, they will be well placed to complete it.

Michael O'Brien says he uses the SeSAFE training in conjunction with another app, called Miracle Mobile, which creates electronic documents to record their training activities. The company is in the process of adding all of its Safety Management System documents and related documents for each vessel to the app to provide an electronic reference and record of all relevant activities. With all documents in the one place, the task of recording training activity for each skipper is streamlined and simplified.

## Leadership for women

Women in Seafood Australasia (WISA) is running what president Karen Holder describes as a "101 in leadership" to help young women take the first steps towards a greater role in the sector.

The C-Leaders online course is being run by the National Rural Women's Coalition, and the first program offered was filled quickly. A second course is planned for early 2021.

Karen Holder says providing the training online is essential as it makes it accessible to those whose other commitments or location prevent them attending more formal face-to-face leadership programs.

It is helping to meet what she says is a strong demand for training to help women in the sector improve their skills, thus enabling them to contribute more to the future of the sector and their local communities.

The six-week course, which started in June, is designed to help participants learn about their own leadership style and build confidence. They will also have the support of online forums created to discuss the course and share ideas.

The course is free to WISA members and is funded by the FRDC.

## Community engagement

Peak fishing bodies in New South Wales, Queensland, South Australia, Victoria and Western Australia are offering free online training for members of the fishing sector, with a focus on leadership and community engagement.

Seafood Industry Victoria is coordinating the course and executive director Johnathon Davey says it provides a firm grounding in the skills people might need to participate in a community organisation or to take on a leadership role. It is open to anyone in the seafood industry, including fishers, crew, seafood processors, retailers, those in aquaculture and their family members.

The course covers oral, written and interpersonal communication skills, meeting processes, technological knowledge, decision-making, identifying opportunities for involvement and community engagement. At the conclusion of the training each participant will have a personalised community engagement plan for his or her business.


Johnathon Davey says the online components of the course will take about six hours to complete and will be followed by a one-day, face-to-face training session. There will be several of these sessions in each state, and travel costs to attend the session closest to each participant will be covered.

The Australian Maritime and Fisheries Academy developed the course, which is supported by funding from the Australian Government and industry peak bodies. Further programs may be provided if the first course is successful. F

**MORE INFORMATION**

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Appendix B

SeSAFE

Safety is the
**#1 priority**
for skippers

## SeSAFE project continues to provide safety training despite COVID lockdowns

**Unlike most other safety training offerings, SeSAFE can deliver safety training to crews online, so they can receive training even in lockdown. This training serves as a readily accessible foundation and precursor to practical safety training, including onboard safety inductions by fishing skippers and can be completed by crews in the safety of their home.**

The SeSAFE project is a national initiative designed to raise awareness and improve safety performance in the Australian fishing and aquaculture industry. SeSAFE has now developed 48 training modules (videos) that fishers can complete safely online. Each module takes around four-to-six minutes to complete, covering a variety of topics in emergency response, personal safety, operational safety, and fishery-specific safety.

Skippers select which modules they want their crew to complete and SeSAFE does the rest, linking crew members to the modules online. Modules do not have to be completed at once, but for convenience can be spaced out over a number of days. Crew answer several questions at the end of each module to confirm their comprehension of module content. A record of their completion is then emailed to the skipper.

While COVID lockdowns have made it difficult to raise industry awareness of SeSAFE modules, significant progress has been made in several fisheries.

For example, fishery-specific modules have now been completed for the Western Rock Lobster Council, including safe pot baiting, setting, hauling and stacking. These modules are also serving as a pilot for module delivery to crew using their mobile phone. This mode of delivery has not been achieved previously and will provide crew an unparalleled level of accessibility and convenience to safety training. The roll-out of these modules is planned for later this year.

Earlier this year, Fremantle-based Austfish Pty Ltd required all skippers and their crew to complete several SeSAFE modules prior to commencement of the fishing season in the Northern Prawn Fishery. For new crew this served as a foundation prior to receiving their onboard safety induction, and it served as refresher training for skippers and experienced crew, having completed the training a year or two ago.

The Northern Prawn Fishery has been an early adopter of SeSAFE training and now an estimated 80% of skippers and crew have completed training modules at least once, with many having done so several times.

Further demonstrating the adaptability of online safety training delivery, SeSAFE is now working with the Department of Infrastructure, Planning and Logistics in the Northern Territory to develop two bespoke training modules focussing on safe working practices for fishers when using berthing and wharf facilities. In recent years multiple crew members have suffered injuries and close-calls due to unsafe practices when their vessel has been tied up at the Duckpond or other wharf facilities in Darwin. Injuries include falling between the vessel and wharf and being run over by a forklift, while close-calls with moving cars or trucks are not an uncommon occurrence. These modules will also be completed later in the year and will be available for crew to complete alongside other SeSAFE modules.

As reported last year, future steps for the SeSAFE project include exploring the introduction of a user-pays model whereby crew pay a small amount for module access.

"SeSAFE provides safety training to crew members in the safety of their home." - Steve Eayrs, SeSAFE

This approach is consistent with many other industries where workers complete safety training prior to stepping on the worksite, and it may help perpetuate the availability of this training over the long term. This exploration is ongoing and a report describing the potential introduction of such a model will be completed and released later in the year.

Multiple fishers, industry body representatives and others around Australia have been interviewed seeking their thoughts about such a model, including the introduction of a white-card-equivalent for fishers that have completed SeSAFE training. Notably, SeSAFE training is currently available to any fisher at no cost.

Individuals wishing to test and evaluate one or more modules can do so by contacting Steve Eayrs at seayrs@sesafe.com.au. The SeSAFE project is funded by the FRDC, AMSA, and the commercial fishing industry and administered by the WA Fishing Industry Council. Additional information can be found on the project website, www.sesafe.com.au.

Fishers interested in a no-cost independent audit of their Safety Management Systems can contact Fish Safe Australia at fishsafeaustralia@iinet.net.au.

**Steve Eayrs**
Principal Investigator
SeSAFE

*SeSafe training modules are professionally delivered in an informal environment that suits commercial fishers.*