

Extension of OH&S and Quality Index project outputs to the post harvest Australian Seafood Industry

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Australian Government

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The **Fisheries Research and Development Corporation** plans, invests in and manages fisheries research and development throughout Australia. It is a statutory within the portfolio of the federal Minister for Agriculture, Fisheries and Forestry, jointly funded by the Australian Government and the fishing industry.

OceanWatch Australia Ltd is a national not-for profit environmental company that works to advance the sustainability in the Australian seafood industry. OceanWatch Australia's key activities involve: enhancing fish habitats and improving water quality in estuaries and coastal environments; working with industry and local communities to minimise environmental impacts; and introducing industry and communities to sustainable technologies and behaviours. To achieve these positive outcomes, OceanWatch Australia works in partnership with the Australian seafood industry, federal and state governments, natural resources managers, private enterprise and local communities.

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NON-TECHNICAL SUMMARY

**2010/305 Extension of OH&S and Quality Index project outputs to the post harvest
Australian seafood industry**

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OBJECTIVES:

1. To increase the adoption and uptake in relation to R&D which relates to OH&S and quality.
2. To develop a set of materials (presentation, fact sheet and references) appropriate to the seafood industry.
3. To deliver key messages (including sets of developed material) to target audience (seafood postharvest sector) across key processing regions.
4. To evaluate the methods for seafood industry extension used in this project to inform future extension activities.

NON TECHNICAL SUMMARY:

The FRDC identified the need to develop an extension plan to raise awareness of the Sydney Fish Market Occupational Health and Safety Video and Quality Index Manual. As a result of this, OceanWatch Australia, through its flagship SeaNet extension program, designed and implemented a campaign to roll-out the awareness raising information on OH&S and QI to the seafood postharvest sector, as well as to promote the materials produced by the Sydney Fish Market.

The campaign involved the design of messages on OH&S and QI. The development of the messages was underpinned by the key principles of OH&S and QI, which are hazard reduction and produce refrigeration. The platform to deliver these messages considered the intrinsic characteristics of this sector; fast-paced perishable goods with a reluctance to change. Thus, fact sheets were produced tailored to each region (i. e., state, territory) promoting the Sydney Fish Market Occupational Health and Safety Video and Quality Index Manual, as well as providing relevant sources of information for each topic, which included training, guidelines, legislation and insurance issues.

In addition to the fact sheets, awareness raising stickers were produced and delivered to the post harvest sector. These materials were designed to carry the message in physical to the workplace in a more immediate way. For example, stickers are able to be positioned at critical workstations to remind staff of key messages. For the OH&S stickers, the character "Hazard Man" was created as a way to increase penetration and behavioural change. This character, which was specially orientated towards the seafood industry, featured in all stickers carrying messages on hazard reduction. Stickers on QI which was concerned with correct produce handling, had refrigeration as central message.

Whilst sustainability was not the focus of this project, this topic was identified by the post harvest sector as an issue because of consumers' concern. As SeaNet Officers have significant expertise in sustainability issues and are able to impart information to this sector, OceanWatch Australia produced an additional fact sheet on sustainability topics, which also worked as a suitable ice breaker to liaise with outlet staff. This material was aimed at helping to demystify the commercial fishing industry, by handing out accurate and relevant information to consumers demonstrating the environmental credentials of seafood harvesting in Australia.

The project over-achieved its target of 15% penetration of this sector. A total of 18.3% of wholesalers and retailers were reached across all states, the Northern Territory and the ACT.

Attitudes towards the materials and messages varied. The OH&S material was widely well-received, particularly by medium-sized and start-up businesses. Small-sized businesses struggled to acknowledge the need for OH&S implementation. Large well established businesses were more likely to have in-house implementation capacity, and therefore were less likely to need assistance. These findings were based on anecdotal evidence collected through interviews.

The QI material had a low level of interest from the targeted businesses as a result of its scope. The QI manual focuses on species traded through the Sydney Fish Market and not necessarily traded by the targeted businesses, which coupled with its elevated cost, made it irrelevant to many businesses.

Despite the varied levels of interest, the face-to-face roll-out reached a high percentage of the post harvest sector, contributing to the successful achievement of the planned outcomes, with a large quantity of materials distributed. If the materials are displayed, noted and acted upon by the staff of the businesses contacted, this roll-out may have contributed to a reduction in OH&S incidents.

Whilst the materials were of questionable relevance to some sector businesses, the engagement and enthusiasm the SeaNet team was received with will help pave way to further engagement with the post harvest sector.

OUTCOMES ACHIEVED TO DATE

The OH&S materials and associated campaign delivered by the SeaNet team may have an effect in reducing OH&S incidents across the post harvest sector. The OH&S fact sheets were delivered to key personnel within businesses which will most likely result in further information gathered from the sources promoted, and thus disseminated to shop staff. Likewise, the stickers handed out at outlets will ensure messages underpinned by key OH&S principles will remain at workplaces in the long-term.

Whilst the QI materials generated less interest, businesses did agree about the importance of seafood produce handling best practice. Even though people engaged did not indicate interest in the QI manual, they were very interested in produce handling in general. Thus, the list of seafood handling guidelines provided in the fact sheets, tailored to each region (i. e., state and territory), will give the opportunity to access further information. In this context, the dissemination of information sources about QI and produce handling will leverage the post harvest sector.

KEYWORDS: Quality Index, Occupational Health and Safety, extension to the seafood post harvest sector.

ACKNOWLEDGMENTS

The roll-out process of this project was possible thanks to the support of the Sydney Fish Market, the Northern Territory Seafood Council, Seafood Industry Victoria, the Tasmanian Seafood Industry Council, Wildcatch Fisheries SA, the Western Australia Fishing Industry Council, the Queensland Seafood Industry Association, and the Marine Fishers Association.

BACKGROUND

The FRDC Board asked the FRDC secretariat to develop an extension plan for the Sydney Fish Market Occupational Health and Safety Video and Quality Index Manual. As a result of this request the FRDC approached OceanWatch Australia to develop a plan for the roll-out and extension of these project outputs through the national SeaNet Program.

NEED

The FRDC Board asked the FRDC secretariat to develop an extension plan for the Sydney Fish Market Occupational Health and Safety Video and Quality Index Manual. As a result of this request the FRDC approached OceanWatch Australia to develop a plan for the roll-out and extension of these project outputs through the national SeaNet Program.

In addition, the FRDC compiled related research in these topic areas, so that all appropriate outcomes were incorporated into the SeaNet extension plan.

Both *occupational health & safety* and *quality* have been identified by industry as major issues that require on-going action. The FRDC over the past 10 years has invested in numerous projects to develop tools for both issues, however very little has been allocated to extension of these materials.

In recent research funded by both the FRDC and Seafood CRC, quality has been identified as a major issue for the seafood industry. Consumers are becoming heavily focused on quality, an issue flowing onto the credibility and standing of the industry. Wastage and spoilage are factors that consumers can readily see, affecting produce quality and the sustainability perceptions of the fishing industry.

OBJECTIVES

1. To increase the adoption and uptake in relation to R&D regarding OH&S and quality.
2. To develop a set of materials (presentation, fact sheet and references) appropriate to the seafood industry.
3. To deliver key messages (including sets of developed material) to target audience across key processing regions
4. To evaluate the methods for seafood industry extension used in this project to inform future extension activities.

METHODS

Target audience

The target audience for this plan was the post harvest sector of the Australian seafood industry. Post harvest refers to those handling the produce once it is caught, or farmed, right through to retail shop fronts selling fresh and packaged product. This includes fishmongers (i. e., shop owners, managers and floor staff), seafood processing plant staff, seafood dealers/transporters and seafood markets' workers, such as forklift truck drivers (Figure 1). The sector can be broken down into groupings however it is a difficult task to neatly classify all businesses due to the vertically integrated nature of many.

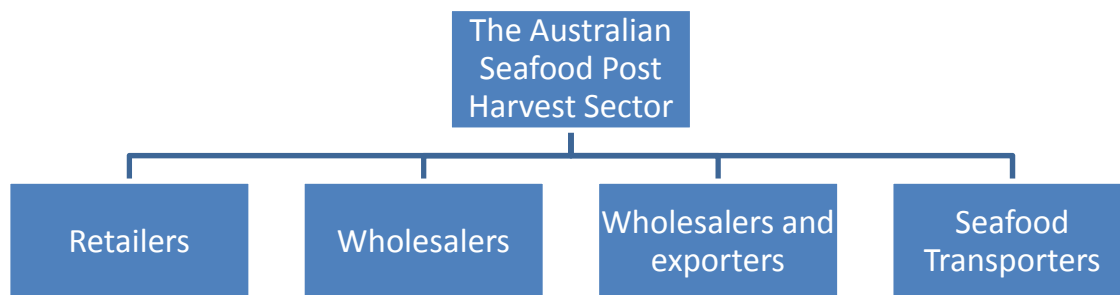


Figure 1. Composition of the Australian seafood post harvest sector.

The most useful database for current business information was the online yellow pages. This was cross referenced against other data bases at state and local levels, such as network contacts of the SeaNet program and the Seafood Services Australia data base. However, the latter proved insufficient and did not really support the identification and scoping process due to the reduced number of businesses indexed. It was found that many businesses could be double counted if they were vertically integrated so it was difficult to accurately scope each sector composition. In addition some businesses, particularly those from non-English speaking backgrounds, were identified as not registered with the yellow pages which presented a further challenge. This was perhaps a result of their specific niche market within ethnic communities making unnecessary marketing their businesses on English-based internet outlets.

SeaNet officers profiled the sector in each state as a means to understand how best to implement this extension project, both methodologically and logistically. One of the main outcomes of this process was the identification of trading hubs and the size of businesses to be targeted. Our target was identified as small to large-sized businesses. The two leading supermarkets (i. e., Coles and Woolworths) were excluded. Businesses defined themselves what size category they belonged to (i. e., small, medium, large) in an anecdotal manner, without objective parameters. The profile for each state was as follows:

ACT

The ACT post harvest sector consists mainly of independent private business, most family run. They consist of a combination of purchase/on sell and processing.

New South Wales

The New South Wales post harvest sector is characterised by a combination of wholesalers, retailers and cooperatives, which are distributed along the coast on major hubs, such as Port Macquarie, Newcastle, Sydney and Eden, with 50% of NSW produce being traded through the Sydney Fish Market. Transport is undertaken by larger businesses such as Cooperatives and fleets of smaller owner operated vans and trucks.

Northern Territory

This sector ranges from a handful of large- to medium-sized wholesale/retail operations which buy, process and sell seafood to a number of very small operators who may just be involved in buying and selling specific produce (e. g., Mud Crab). A number of the traders own licences and are involved in selling their own product or product from leased licences.

Queensland

The Queensland post harvest sector consists mainly of independent private businesses. Most of these are family owned and run with some connection to on-water fishing operations, thus integrating purchase, retailing and processing. Some even act as a consignment depot for other fishers. A limited number of producers sell via Sydney Fish Market or Raptis Brisbane auctions, via direct consignment. No single business dominates the state but a number of businesses source product from around the state to access seasonal availability. Despite this, the Queensland Seafood Marketers Association is made up of 45 of the larger seafood processing and marketing companies in the state controlling approximately 75% of the value of the seafood traded.

South Australia

In SA there are two distinct points of difference in the post harvest sector, as with most states, export and domestic. The export sector is based on high value products such as Rock Lobster, Southern Bluefin Tuna and Abalone which are typically controlled by large vertically integrated businesses. In contrast, the domestic sector trades low value species characterised by centralised post harvest market/factory hubs catering for a number of small fishers (i.e., cooperatives). Post harvest sectors are located at strategic fishing ports and transport hubs, such as Port Lincoln, Ceduna and Adelaide metropolitan area.

Tasmania

The Tasmanian post harvest sector consists of a few large independently run businesses such as Poulos Bros, Georgetown Seafoods, Ralphs Seafoods, Mures and Petuna, Tassal, and Huon Aquaculture. Some companies, such as Mures and Petuna, harvest as well as process and export produce. Post harvest processing of farmed Atlantic Salmon occurs within the state and is usually conducted by the grower company. Additionally, there are a number of smaller Rock Lobster holding facilities, Abalone canneries and processors, general processors, fish punts, oyster processing centres and fish shops.

Victoria

Post harvest processing occurs within the state and is usually conducted by retail business owners, the biggest being Clamms (i. e., assorted product), Red Legs (i. e., Rock Lobster) and Vin Gannon (i.

e., Abalone). Additionally, there a number of small license holders who sell produce directly to Victoria Markets or Footscray Markets, general processors and Abalone farms.

Western Australia

There are two groups of processors in the state, those that are exporting Rock Lobster and Prawns, and smaller processors that supply the local market in Perth and interstate. Most fishermen in the regional areas trade locally, but operate their own processing and retail businesses cutting down on freight cost. Perth metropolitan area is by far the large trading hub, where 50% of the total number of retailers in the state is based.

Extension process

The method agreed upon as the extension model for the OH&S & QI projects was by initiating direct relationships with business personnel. This was conducted through one-on-one contact with the business owners or operations manager. The site visits were organised around seafood trading hubs in both urban and regional Australia.

The engagement process comprised of the SeaNet Officer introducing the processor to the topics, providing background of SeaNet to them as industry members, and an explanation of the materials being rolled out via the FRDC program. Delivery of the actual materials promoting the OH&S & QI materials and messages then followed. As *seafood sustainability* is a topic of great relevance and expertise to SeaNet Officers, and whilst the concept of sustainability was outside the scope of this specific project, it was a useful discussion starter for SeaNet Officers as this is a hot topic with the retail/processing sector's interactions with their customers.

Given this sector is hearing the consumer's 'concern' on the topic of sustainable seafood, these conversations were of value and importance to the sector, with a clear need for their front line staff. As a response, OceanWatch Australia developed a simple fact sheet on seafood sustainability facts, which was handed out to businesses along with the OH&S & QI materials (Appendix 3).

Strategic partners for this plan included those in a position to influence post harvest activities and respected industry regulators. Organisations relevant to QI included: state fishery organisations, Seafood Services Australia, food safety departments, fishing co-operatives, processing associations, the Master Fish Merchants of Australia and government agencies. Additionally, for the OH&S outcomes, large businesses (e.g., Tassal aquaculture) and insurance agencies were highlighted as playing a part in the dissemination of information.

Performance indicators

First performance indicator-number of people/businesses engaged

As a proxy to appraise the number of people reached, businesses engaged were compared against the total of business identified for each state/territory. Engaged outlets were identified as either "wholesaler" or "retailer" depending on their main activity. These results were then compared against the total number of business identified for each state/region based on information obtained from Seafood Services Australia, industry groups, local SeaNet Extension networks and local business information (e.g., Yellow Pages, etc.).

Second performance indicator-number of materials delivered to the post-harvest sector

Production of appropriate materials and their distribution to industry was the second performance indicator. OceanWatch Australia worked with the FRDC communication area to develop the materials that meet the FRDC requirements. These materials were used as part of the engagement process, distributing them widely to the post-harvest sector.

Third performance indicator-changes in awareness

An outcome of this project was hoped to be a change in behaviour and increased awareness on the topics being rolled out. SeaNet Extension Officers conducted open-ended interviews to a sample (n=278) of the post-harvest sector, getting feedback on the materials delivered. Responses and comments from interviewees were broken down into five categories in order to quantify qualitative responses, as follows:

- Interested attitude (i. e., when interviewee indicated further interest in the material and information)
- Neutral attitude (i. e., when response was obtained but neither positive nor negative attitude was detected, the material and engagement were just accepted)
- Negative attitude (i. e., when the person provided negative feedback on the material or on their content)
- Duplication (i. e., people commenting on how this roll-out replicates previous or simultaneous roll-outs carried out by other stakeholders)
- Uncertain attitude (i. e., when response could not be obtained)

RESULTS/DISCUSSION

1. To increase the adoption, awareness and uptake in relation to R&D which relate to Occupational Health & Safety DVD and Quality Index Manual.

As indicated in the Extension Plan, the target percentage for the first performance indicator, number of businesses engaged by the SeaNet Extension Officers, was 15%. The total number of businesses engaged across the country was above this target with 18.3% of businesses including wholesalers and retailers combined, equivalent to 348 outlets. The states with lowest coverage were New South Wales with 14.5%, Queensland with 14.1% and Western Australia with 13.67% (Table 1).

State/Territory	Quantity of Outlets				Delivered			% Covered
	Wholesale	Retail	Cooperatives	Total	Wholesale	Retail	Total	
NSW	136	423	20	579	45	39	84	14.5
WA	78	134	N/A	212	N/A	N/A	29	13.7
VIC	126	312	4	442	0	69	69	15.6
TAS	38	25	N/A	63	18	13	31	49.2
NT	33	32	N/A	65	20	23	43	66.1
QLD	146	294	0	440	N/A	N/A	62	14.1
SA	N/A	N/A	N/A	93	15	8	23	24.7
ACT	3	7	0	10	2	5	7	70
Total				1904			348	18.3

Table 1. Number of outlets per region (i. e., state, territory) with coverage percentage of the fishing industry post harvest sector.

It was not always possible to determine the number of business within each category (e. g., wholesale, retails, cooperatives) due to the integrated characteristic of some of them. Thus, businesses operating under more than one category were counted once in the total tally, but were not assigned to any individual category. This condition precluded the estimation of total quantities of business within some categories in some regions (i. e., state, territory).

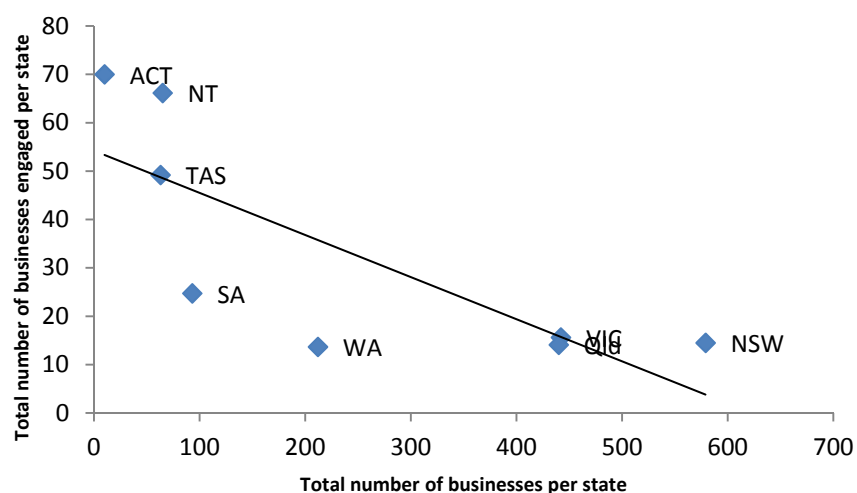


Figure 2. Coverage percentage of Australia's seafood post harvest sector in relation to total quantity of outlets per each region (i. e., territory, state).

Variations in coverage of the post-harvest sector between states/territories reflected differences in their patterns of regional distribution and quantity of businesses. For instance, NT and ACT with coverage over 66% have most of their outlets restricted to a small geographical area, the former around the Darwin area and the latter in the Canberra region. Whereas Qld, Vic, WA and NSW with coverage under 16% have commercial fishing hubs spread along their coasts, which made engagement by SeaNet Extension Officers more difficult. On the other hand, the more outlets a state had the lower the percentage of coverage, due to the limited capacity of SeaNet Extension Officers to engage businesses. As an example, NT, ACT, Tas and SA with under 100 outlets each, had all a minimum of 24% coverage, whereas NSW, Vic, WA and Qld, with over 200 outlets each, had a coverage below 16% (Figure 1).

We observed attitudinal differences towards the OH&S materials depending on business size. Generally small-sized businesses did not recognise the need for improved OH&S adoption, and identified OH&S practices as a burden to their operations. Large businesses had in-house OH&S capacity, having their own policies and dedicated staff. Medium-sized businesses were the most positive towards the OH&S material, recognising the need to improve OH&S procedures but not big enough to resource the capacity in-house. These findings were based on comments received at interviews conducted with business personnel.

Longevity of business existence would appear to affect post harvest sector attitudes towards the OH&S materials. Newly established businesses (<1 year) were more open, and willing, to engage with SeaNet Extension Officers, receive the information pack and explore the possible benefits of the handouts. Businesses operating for a longer period (>20 years) were more reluctant to engage on the topic and open the avenues to uptake it. This pattern showed clearly how newer businesses were more willing to receive external support, as well as to be legislatively compliant and proactive for work practices. "Old businesses" conversely demonstrated a classic attitude of reluctance to change the *status quo*. This approach represents a risk to the future of the sector and its employees.

Interest of the post harvest sector in the OH&S & QI materials was highly variable. The QI materials were more complex and not as appealing to people as the OH&S materials. The QI manual was developed with an emphasis on the Sydney Fish Market, which precluded its applicability to other regions where the sets of traded species is significantly different. This pattern was particularly evident in Northern Territory, Queensland, Tasmania, Western Australia and South Australia. For instance, Tasmanian businesses mentioned the QI material does not make any reference to shellfish, excluding a large sector of industry in the state.

The high cost of purchasing the OH&S & QI products was regularly brought up as was the need to contribute more for products they perceived to have already funded through levies. Anecdotal evidence suggested that this was particularly evident with the QI manual, particularly as many species traded locally in the other states and the territories were not included, the index is applicable only to whole fish – not fillets, and the assessment process is fairly lengthy.

In some cases replication and regional differences may have played a role in the attitudes of the post harvest sector towards the QI materials delivered. For example the seafood industry in Tasmania has a voluntary individually tailored seafood standards program, *Food Safety Manual*, connected to each business, which includes a Quality assurance procedure.

Tasmania's seafood trading supply-chain is relatively short within the state – with relatively short travel distances and few suppliers. Therefore uptake of QI was not expected to be high, as produce

handling happens within short time-spans and is more easily tracked. Feedback received from Tasmania also suggested that highlighting shelf life for some species in the QI manual (>20 days) could send the wrong message to a local industry that supplies, and is reliant on a perception of, "fresh" seafood.

The QI manual would seem to be more relevant to larger trading centres, such as the Sydney Fish Market, due to their large volumes, the longer time of produce in the supply chain and the complexity of traceability.

Seafood sustainability, though not included within the scope of this project's application, was identified as an important topic in the roll-out process. At least three engaged businesses indicated interest in the SeaNet videos (<http://www.oceanwatch.org.au/publications-and-videos/oceanwatch-videos/>), as well as in sustainability aspects of their businesses. For instance, "Mako Fresh Fish", a retail shop in Tasmania, has a display on sustainability related messages including (Appendix 4):

- "We purchase only from commercial fishers who operate under a quota system that is strictly managed"
- "We do not regularly sell fish which is under threat, such as broad bill and blue fin tuna"
- "We promote and support best practice in our farmed fisheries because it helps protect the overfishing and depletion of our wild stocks"

2. To develop a set of materials (presentation, fact sheet and references) appropriate to the seafood industry.

Effective communication with the seafood industry using print material includes using images and pictures conveying the messages. All materials were produced using as little text as possible and incorporated cartoons or images to increase penetration given the busy nature of the audience.

The roll-out focused on the delivery of the OH&S & QI materials using two main formats, fact sheets and stickers (Appendix 5, 6, 7). The fact sheets were made of a double sided sheet promoting the "Occupational Health and Safety Induction DVD" and the "Australian Quality Index Manual" both produced by the Sydney Fish Market and sold to industry via the Seafood Services Australia website. The fact sheets were tailored individually to each state, the ACT and the Northern Territory. The series of stickers promoted the key messages of both the DVD and the Manual.

The fact sheets were a summary of the product content. The OH&S DVD fact sheet had information on material background (i. e., DVD and workbook), suppliers, material content (e. g., responsibilities, risk control, hazard investigation) and relevant regional contacts to access further information. The QI manual fact sheet comprised information on QI justification and background, suppliers, module content (e. g., grading, prediction of shelf-life, training) and relevant regional contacts to obtain further information, such as state agencies responsible for food safety and regulations.

The stickers were produced to facilitate the dissemination of the messages promoted by both materials, OH&S and QI. A total of nine sticker designs were rolled out, with seven of them carrying messages on OH&S and two on QI. The OH&S messages featured a flagship character, "Hazard Man", which was the result of an assessment of the target audience and the need for the messages to relate to the sector. This character gave the SeaNet Extension Officers the ability to get the serious messages out in a playful format. By contrast, the QI related stickers focused on messages about produce refrigeration, which is one of the basic principles shown to be often neglected but underpinning seafood handling.

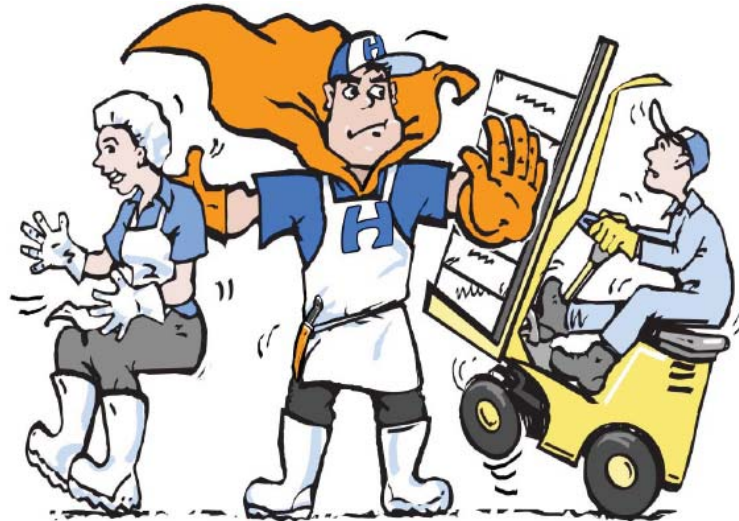


Figure 3. Hazard Man alerting post harvest sector workers about moving objects.

The sustainability fact sheets were on a double sided format with key messages on the sustainability of Australia's fisheries backed up by scientific studies (Appendix 3). This material was aimed at helping engaged businesses to demystify some of the misinformation that reaches seafood consumers distorting the sustainability credentials of Australia's seafood produce impacting on the market.

3. To deliver key messages (including sets of developed material) to target audience across key processing regions.

The materials were delivered by the SeaNet Extension Officers at key processing regions across all states, the ACT and the Northern Territory. For instance, some of the locations targeted where aggregation of seafood processors is high were: Coffs Harbour (NSW), Eden (NSW), Pyrmont (NSW), Darwin (NT), Mackay (QLD), Mooloolaba (QLD), Noosa (QLD), Port Lincoln (SA), Hobart (TAS), Lakes Entrance (VIC), Albany (WA), and Melbourne (VIC). Concentration on these "processing hotspots" ensured an efficient strategy reaching as many outlets as possible.

A total of 8300 printed material units were produced and distributed, which corresponds to the second performance indicator. 533 stickers of each of the nine designs were printed along with 250 copies for each of the two fact sheets. Stickers were produced in higher numbers as they can carry the desired messages within the post harvest sector in a very cost effective manner. Plastic stickers also allowed the messages to be visible and remain visible for some time in seafood processing areas which are often wet. The OH&S sticker messages revolved around the central theme of "*hazard reduction improves production*" with a focus on the most common workplace injuries and risks recorded for this sector, such as (appendix 7):

- Body stress- stress placed on muscles, tendons, ligaments and bones;
- Slips, trips and falls.

Specific messages on stickers included:

- "Hazard reduction improves production"

- “Accidents hurt, safety doesn’t”
- “Watch for moving objects”
- “A spill, a slip, a hospital trip”
- “This tool will punch you in the face if you let it”
- “Lift smart, think then start”
- “Lift with your legs, not your back”

The QI sticker messages were based on the importance of keeping produce at lower temperatures to lengthen shelf-life and quality. Specific messages included in the stickers comprised (appendix 7):

- “Twice as nice on a bed of ice”
- “Double shelf-life by keeping product at 1-2 degrees”

The sustainability fact sheets included messages such as (appendix 4):

- “Australian Fisheries Management has been ranked second in the world for sustainability”
- “Even trawling, the most demonized form of fishing, has been shown to have no detectable impact on bottom biota in estuaries, an unexpected result that was consistent across three regions for both sampling years”
- “If you want to replace the world’s fish catch with animal protein produced by grazing, you would need to cut down the entire rainforest of the world 22 times over”

The third performance indicator indicated a general awareness of the topics delivered, but not necessarily behavioural change, as this was out of the scope of this project. A total of 278 respondent comments were recorded during the roll-out process through open-ended interviews. 35.9% of respondents indicated interest in either OH&S or QI materials, 33.5% showed a neutral attitude (i. e., neither rejection nor interest) and 24.1% were uncertain due to some materials were posted. Only 2.9% of comments were negative towards the materials delivered (Table 2).

Qualitative responses	NSW	QLD	WA	SA	NT	TAS	VIC	ACT	Overall	% Overall
Neutral attitude	21	11	3	0	6	10	37	5	93	33.5
Interested attitude	17	20	16	1	24	4	17	1	100	35.9
Negative attitude	1	1	1	0	2	1	4	0	10	3.6
Duplication	1	3	0	0	1	1	2	0	8	2.9
Uncertain attitude	5	14	9	24	7	2	5	1	67	24.1
Total									278	100

Table 2. Frequency of qualitative responses according to five categories for each region (i. e., state, territory).

The post harvest sector of the fishing industry is highly competitive and fast paced, which made the engagement process challenging. SeaNet Extension Officers aimed to approach business owners, however this method was not always possible due to the busy nature of wholesale and retail businesses. As a result materials were rolled out in some instances to shop assistants or managers.

Examples of quotes from people engaged at outlets are as follows:

-Neutral attitude

- “I think this is good, but everything is fine in our business as we are.”

-Interested attitude

- “Stickers are good. Cheers I will have a read later.”
- “Can I watch the DVD now and photocopy everything?”
- “Thank you for the information, we will have a read and check it out for sure.”
- “Quite interested in the OH&S pack not so much the QI.”
- “Very interested in the QI - has seen it before but most of the species aren't relevant. I'd use it if there were more applicable species.”

-Negative attitude

- “I think the QI Manual would be too slow a process for us to use, I've been interested in the electronic Torry Meter purchased by Darwin Fish Market - much quicker and easier (and cheaper) to use once a standard has been set for a species.”
- “Not really interested in either - already know how to judge quality and refuse to buy off boats with poor quality. The QI would take too long to use in a business environment.”

-Duplication

- “Already have an OH&S plan in place as we supply to Woolworths.”

-Uncertain attitude

- No response could be recorded.

4. To evaluate the methods for seafood industry extension used in this project to inform future extension activities.

Consultation with each SeaNet Extension Officer during the planning and development process before extending information was important to identify the businesses to be targeted and the delivery mechanism. Considering the very busy nature of the sector, the task of dispersing the material, and associated information at a suitable time, could be difficult. Of the options, the team attempted to visit as many businesses on a one-on-one basis, supplying further information via post as a follow up to incomplete/unsuccessful visits. The benefit of one-on-one extension is that businesses had the ability to ask questions, seek more information, give feedback and help the extension officer better understand the business, and sector's, needs.

The formats used to deliver the messages were tailored to industry by being short and simple as well as regionally relevant as much as possible. Additionally, the stickers, with the flagship character “Hazard Man”, increased penetration and were a non-threatening strategy to reach post harvest workers by leaving permanent visual reminders at the workplace. Given differences of the sector and its regulations between regions (i. e., state, territory), customised information was delivered which was considered important.

BENEFITS AND ADOPTION

The post harvest sector is an important part of the seafood industry, being the interface between the harvest/farmed sector and the consumers. Therefore the performance of this sector is crucial to maintain the supply chain which links wildcatch fishermen and aquaculture farmers with the general public. OH&S is an important factor for all businesses with welfare, financial and legal implications.

It is expected that a considerable proportion of the post harvest sector will have benefited from the roll-out conducted by the SeaNet team, because they received one-on-one information in a variety of formats to encourage the uptake of OH&S best practice. The fact sheets distributed provided sources of OH&S information about regulations, insurance and training opportunities, tailored to each region (i. e., state, territory). Whilst sales of the QI manual was not a deliverable of this project, and despite the low levels of interest in the QI material by the outlets engaged, the roll-out did heighten awareness of the importance of quality assurance. The limited scope and high cost of the QI manual did prevent its sale. However, it was clear this sector understood the importance of best practice on produce handling.

The fact sheets handed out to businesses included information not just on the QI manual, but also on other resources available containing guidelines and principles relevant to each region (i. e., state, territory). Appropriate handling of seafood along the supply chain avoids wastage, which has financial implications.

Also, perhaps not as evident, but produce spoilage and waste can have sustainability implications, and result in negative public perceptions. Wasted produce at any stage along the supply chain is a waste of the resource that may have not been harvested otherwise, and can raise community concerns about the sustainability of industry practices, especially in large trade centres where quantity may be visible and have impact.

Delivering this roll-out to the post harvest sector has helped improved OceanWatch Australia's SeaNet program. The post harvest sector has benefited from this project, but the harvest sector will also benefit as the SeaNet program has a more holistic approach and understanding of the seafood industry.

FURTHER DEVELOPMENT

The SeaNet team has helped build the SeaNet Program's capacity to further engage the post harvest sector. SeaNet has successfully identified, located and initiated rapport with this sector and better understanding its drivers and barriers to improvements. The concept of *Hazard Man* could be further used to foster the delivery of OH&S best practice in wildcatch and aquaculture harvest sectors.

Additional roll-outs to the post harvest sector should include consideration of the demographics and context of the target audience. For instance, new extension of quality assurance should be carried out taking into account the locally traded species. Delivering material in multiple languages may be required in future, as the post harvest sector has a broad multicultural population, mainly serviced by people from Mediterranean and Asian backgrounds.

It is vital that future projects being planned and promoted are mindful of changes in OH&S legislation, which may significantly shorten the perceived usefulness and longevity of information being promoted for sale.

PLANNED OUTCOMES

According to the application of the project the planned outcomes are as follows:

-The outcome for the OH&S related components is a reduction in OH&S incidents in both on boat and off boat environments.

-The outcome for the QI related component is a market advantage (both domestically and internationally) for Australian seafood which would lead to a positive outcome for the Australian community.

The OH&S materials and associated campaign delivered by the SeaNet team will have an effect in reducing the OH&S incidents across the post harvest sector. The OH&S fact sheets, in many instances, were delivered to key personnel within businesses which will most likely result in further information gathered from the sources promoted, and thus disseminated to shop staff. Likewise, the stickers handed out at outlets will ensure messages underpinned by key OH&S principles will remain at workplaces in the long-term.

Despite the relatively low levels of interest in the QI material, businesses demonstrated awareness as well as the importance of seafood produce handling best practice. Even though people engaged did not indicate interest in the QI manual, attention was given to produce handling in general. Thus, the list of seafood handling guidelines provided in the fact sheets, tailored to each region (i. e., state, region), will give the opportunity to access further information. In this context, the dissemination of information sources about QI and produce handling will leverage the post harvest sector.

CONCLUSION

The post harvest sector is an important part of the seafood industry as a whole. It is the vital link in the supply chain between seafood producers and harvesters/farmers and the consumer/community. In this context, the FRDC has recognised and supported this industry sector to raise its credentials and profitability.

Being a diverse and fast-paced sector a face-to-face extension process was considered the most appropriate method of delivery of the OH&S and QI materials developed by the Sydney Fish Market. OceanWatch Australia's SeaNet Program is an experienced team of extension experts with a national and well established network of the seafood industry contacts. This background enabled the SeaNet team to effectively deliver the OH&S and QI materials to a higher percentage of the post harvest sector than expected.

The campaign involved the design of messages on OH&S and QI given to the post harvest sector in a friendly but accurate approach. The development of the messages was underpinned by the key principles of OH&S and QI - hazard reduction and produce refrigeration respectively. Fact sheets were produced tailored to each region promoting the Sydney Fish Market Occupational Health and Safety Video and Quality Index manual, as well providing relevant sources of information for each topic (e.g. training, guidelines, legislation and insurance).

In addition to the fact sheets, stickers were produced and distributed. These materials were designed to deliver visual reminders of the issues on-site at workstations in a more immediate way. For the OH&S stickers, a character, "hazard man", was created as a way to increase understanding and promote behavioural change. This character featured in all stickers carrying messages on hazard reduction. Stickers on QI focussed on produce handling with refrigeration as the key message. The topics of seafood quality and OH&S are key issues of concern to the post-harvest sector. Most businesses were very willing to engage with the SeaNet team and were happy to look at the information provided. The Sydney Fish Market materials were recognised to be of high quality and had good credibility, but they were recognised to be of limited value to most post-harvest sector businesses.

The OH&S materials were of greater appeal to the post harvest sector with levels of interest associated with business size and time since establishment. Medium-sized outlets and start-up businesses were most likely to have an interested attitude in the OH&S material.

The QI materials did not have the same level of acceptance as the OH&S materials probably as a result of the high costs and a reduced relevance to most businesses due to the high focus on the Sydney Fish Market.

Whilst seafood sustainability was not the focus of this project, this topic was identified by the Master Fish Merchants of Australia as an important issue facing this sector from their members' feedback about consumer concerns. The additional fact sheet on seafood sustainability topics worked as an ice breaker for SeaNet Officers to liaise with outlet staff. This material was aimed at helping to demystify the commercial fishing industry demonstrating the environmental credentials of seafood production in Australia.

Despite these varied levels of interest in the actual OH&S and QI products, the roll-out reached a high percentage of the post harvest sector as identified in the planned outcomes. Given that the materials - the Occupational Health and Safety Video and Quality Index Manual - were not of particular interest to the sector, a large quantity of supporting materials were distributed carrying a

broader scope of information on the topic that was of interest to the sector, which proved helpful. Therefore, this roll-out will possibly contribute to a reduction in OH&S incidents, as well as potentially contribute to increase the profitability of the post harvest sector. The SeaNet program has now paved the road to further engage the post harvest sector and deliver further extension to it.

APPENDIX 1: INTELLECTUAL PROPERTY

There are no recognised intellectual property issues arising from this research.

APPENDIX 2: STAFF

Principal Investigator:

Lowri Pryce

Co-investigators:

Brad Warren

Project staff:

Simon Rowe

David Kreuz

David Schubert

Anita Paulsen

Lyn Lambeth

Michael Wooden

Nathan Bicknell

Steve Hay

Jay Shoesmith

Eduardo Gallo

APPENDIX 3: SEAFOOD FACT SHEET NO. 1 - SUSTAINABILITY FACTS

Seafood Fact Sheet No 1



“Even trawling, the most demonized form of fishing, has been shown to have no detectable impact on bottom biota in estuaries (Underwood 2007), an unexpected result that was consistent across three regions for both sampling years.”

Underwood, A.J (2007) ASSESSMENT AND MANAGEMENT OF POTENTIAL IMPACTS OF PRAWN-TRAWLING ON ESTUARINE ASSEMBLAGES. Final Report, Project 2000/176. Fisheries Research and Development Corporation, Canberra, Australia, 75 pp.

“The term ‘over-fished’ in relation to Australian fish species almost exclusively describes stocks that have been assessed to be below the level that will produce the maximum sustainable yield (or the more desirable in at least some cases, maximum or optimum economic yield). As such ‘over-fished’ is more often an indicator of economic or social mismanagement with short-term implications. It is seldom an indicator of long-term environmental disaster”.

Page 5 – [“ASSESSMENT OF THE SUSTAINABILITY OF SELECTED FISH SPECIES MARKETED IN NEW SOUTH WALES”](#). Robert Kearney, Emeritus Professor of Fisheries, Institute of Applied Ecology, University of Canberra. April 27, 2009.

“If you want to replace the world’s fish catch with animal protein produced by grazing...
you would need to cut down the entire rainforest of the world 22 times over.”

[Professor Ray Hilborn School of Aquatic and Fishery Sciences, University of Washington.](#)

Seafood Fact Sheet No 1



“Australian Fisheries Management has been ranked No.2 in the world for sustainability.”

Page 11 – [“A COMPARATIVE ASSESSMENT OF BIODIVERSITY, FISHERIES AND AQUACULTURE IN 53 COUNTRIES’ EXCLUSIVE ECONOMIC ZONES.”](#)

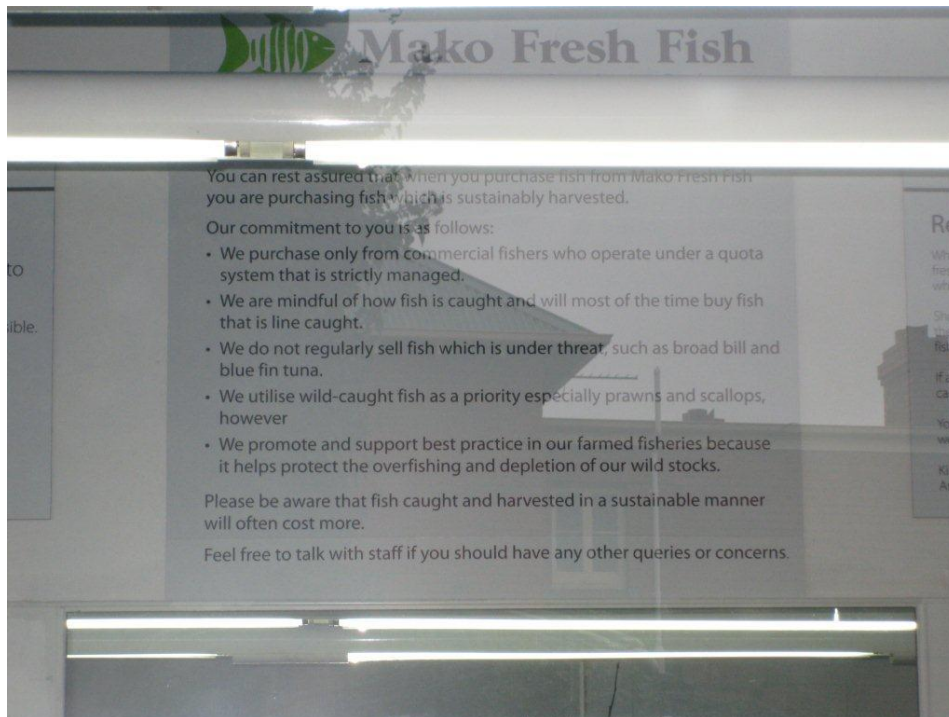
“Environmentally conscious consumers will be pleased to know the seven major wild harvest commercial fisheries operating in NSW have undergone world class environmental assessments, ensuring they are managed sustainably now and into the future.”

[NSW Primary Industries Minister Steve Whan press release 5/7/2010](#)

“There are limited examples of what can be considered well managed shrimp trawl fisheries, the most widely cited example of best practice comes from Australia, where shrimp trawl fisheries are managed well, and where there are many best practice lessons can be drawn” – page 9 “There are very few stocks that appear to be stable. Examples of stocks harvested to optimal levels include fisheries in Australia, USA, and two stocks in Mexico.”

World Wildlife Fund – [“A BLUEPRINT FOR SUSTAINABLE TROPICAL SHRIMP TRAWL FISHERIES”](#)

APPENDIX 4: SUSTAINABILITY POLICY OF SEAFOOD RETAILER IN TASMANIA



APPENDIX 5: OCCUPATIONAL HEALTH AND SAFETY FACT SHEETS

Occupational Health and Safety Induction DVD

for the Post Harvest Sector of the Australian Seafood Industry

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Occupational Health and Safety Induction DVD and Workbook.

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To order a copy for your business contact SSA at

www.seafoodservices.com.au – Seafood Bookshop, Code (OHS DVD).

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- ▶ Employer and employee responsibilities.
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 - ▶ General induction checklist.



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NSW Agency Responsible for OHS Acts and Regulations

WorkCover NSW

Head Office
92-100 Donnison Street
Gosford 2250
Phone (02) 4321 5000
Fax (02) 4325 4145
Office hours 8:30am – 5:00pm

Postal Address

WorkCover NSW
Locked Bag 2906
Lisarow 2252

(Monday to Friday)

WorkCover Assistance Service

13 10 50

After Hours Emergency Contact Number

(02) 9214 9220

Website: www.workcover.nsw.gov.au/

Right to Information Officer on (02) 4321 5000 or gipa@workcover.nsw.gov.au.

Resource material with potential relevance to the Post Harvest sector

Name	Type of material	Available from
Managing risks associated with bandsaws in the retail, meat, seafood and poultry industries	Fact sheet	www.workcover.nsw.gov.au/
Manual Handling Risks in the NSW Seafood Industry	Journal article	
Serious about safe business kit	PDF or printable kit	WorkCover NSW
Retail industry return to work kit for employers: Guide	PDF or printable kit	WorkCover NSW
Steps for Return to Work After Injury: Industry Reference Group - retail	PDF or Kit	WorkCover NSW
Manual handling methods in the retail seafood industry: Final report - September 2002	Report	WorkCover NSW
Manual handling black spots: Retail	PDF	WorkCover NSW
Preventing slips, trips and falls - Retail industry: Factsheet	Factsheet	WorkCover NSW
Smart move Toolkit	Toolkit	www.smartmove.nsw.gov.au/default.aspx?id=112

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Workplace Standards Tasmania

PO Box 56

Rosny Park Tas 7018

Ph (03) 62337657 (outside Tasmania)

1300 366 322 (Inside Tasmania)

Email: wstinfo@justice.tas.gov.au

Website: <http://www.wst.tas.gov.au/>

Resource material with potential relevance to the Post Harvest sector

Name	Type of material	Available from
A guide to the workplace health and safety legislation	guide	Workcover Tasmania
Forklift safety reducing the risk	guide	Workcover Tasmania
Getting started: Information for employers inducting, training and supervising new workers	guide	Workcover Tasmania
Guide to preventing body strain	guide	Workcover Tasmania
Hazard Management Play it safe	guide	Workcover Tasmania
How Loud ?	guide	Workcover Tasmania
Making your factory safer and healthier	guide	Workcover Tasmania
Play it safe with chemicals - a guide to managing hazardous substances	guide	Workcover Tasmania
Workplace Health and safety basics for processing factory workers	guide	Workcover Tasmania
Tasmanian Rock Lobster EMS	EMS	TSIC, TRLFA
Oyster Industry EMS framework	EMS	TSIC, Oysters Tas

TSIC – Tasmanian Seafood Industry Council

TRLFA – Tasmanian Rock Lobster Fisherman’s Association

Workcover Tasmania provides an advisory service to businesses in Tasmania and works closely with Workplace Standards Tasmania. OH&S guides can be found at <http://www.workcover.tas.gov.au/safety/publications>

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SafeWork SA Responsible for OHS Acts and Regulations

SafeWork SA

Level 4, World Park A
 33 Richmond Road, Keswick
 Telephone: Help Centre 1300 365 255
 Fax: (08) 8204 9200
 Email: help@safework.sa.gov.au
 Postal: GPO Box 465, Adelaide SA 5001 DX 715, Adelaide

To report all serious workplace injuries and incidents telephone 1800 777 209 (24 hour service)

Name	Type of material	Available from
Hazard Management Manual Handling	Eight Documents	Safework SA
Back Injury Prevention	Eight Documents	Safework SA
Chemical Use	Nine Documents	Safework SA
Chemical News	National Code of Practice	Safework SA
Electrical Safety	Booklet Checklist and Testing Record	Safework SA
Forklifts	Reducing the Risks Safe work sheet: Forklift and related drivers	Safework SA
Machine Guarding	Booklet Assessment sheet Design and type	Safework SA
Noise	Noise in the workplace what you should know	Safework SA
Transport and Stowage	Tyre Safety	Safework SA
Retail supermarkets and grocery stores resources	Safe work sheet: Food retail industry Safe work sheet: Food wholesale Safe work sheet: Sales representative Safe work sheet: Store person	Safework SA
Wildcatch Fisheries SA	Industry OHS Code of Practice	Wildcatch Fisheries SA

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Northern Territory Agency Responsible for OHS Acts and Regulations

NT WorkSafe

First Floor
 Darwin Plaza Building
 41 Smith Street
 The Mall

GPO Box 1722
 Darwin NT 0801

Phone: 1800 019 115
 Fax: (08) 8999 5141
 Email: ntworksafe@nt.gov.au
 Website: <http://www.worksafe.nt.gov.au/>

Resource material with potential relevance to the Post Harvest sector

Name	Type of material	Available from
NT Fishery Codes of Practice	10 Documents	Northern Territory Seafood Council
Induction of sub-contractors, casual and temporary contract workers - Health & Safety Alert	Fact sheet	NT Worksafe
Portable Fuel Containers - Commercial Fishing Industry - Health & Safety Alert	Fact sheet	NT Worksafe
RCD Use with portable electrical devices	Fact sheet	NT Worksafe
Lock-out, tag-out saves lives - Health & Safety Alert	Fact sheet	NT Worksafe
LPG gas cylinder alert - Health & Safety Alert	Fact sheet	NT Worksafe
Unsecured load causes fatalities - Health & Safety Alert	Fact sheet	NT Worksafe
Fatal electrical shock - Health & Safety Alert	Fact sheet	NT Worksafe
National Codes of Practices	13 Documents	NT Worksafe
Northern Territory Codes of Practice	2 Documents	NT Worksafe
Information Bulletins	20 categories with documents of relevance to the post harvest sector	NT Worksafe
Induction Training	Checklist	NT Worksafe
Emergency Procedures	Checklist	NT Worksafe
A guide to First Aid in the workplace	Checklist	NT Worksafe
Heat Stress	Checklist	NT Worksafe
Forklift Safety	Checklist	NT Worksafe
Elevated work platforms	Checklist	NT Worksafe
Manual Handling	Checklist	NT Worksafe
Chemical & Harmful Substances	Checklist	NT Worksafe
Hot work permit	Checklist	NT Worksafe
Electrical Safety	Checklist	NT Worksafe
Confined space work	3 Checklists	NT Worksafe

Occupational Health and Safety Induction dvd

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Queensland Agency Responsible for OHS Acts and Regulations

Name	Link	Available From
OH&S Frequently Asked Questions	http://www.deir.qld.gov.au	Workplace Health and Safety Queensland
OH&S laws	http://www.deir.qld.gov.au	Workplace Health and Safety Queensland
OH&S Infoline	http://www.deir.qld.gov.au	Workplace Health and Safety Queensland
Industry Information, safety in your workplace	http://www.safeworkaustralia.gov.au	Safework Australia
OH&S Licensing	http://www.justice.qld.gov.au/	Department of Justice and Attorney-General
OH&S Regulations	http://www.justice.qld.gov.au/	Industry information, safety in your workplace

Level 18
State Law Building
50 Ann Street
Brisbane QLD 4000

GPO Box 149
Brisbane QLD 4001

Phone: 1300 369 915

Email: mailnox@justice.qld.gov.au

Website: <http://www.justice.qld.gov.au/> or
<http://www.deir.qld.gov.au>

Resource material with relevance to the Post Harvest sector

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Australian Capital Territory Agency Responsible for OHS Acts and Regulations

National Safety Council of Australia

Level 4, 39 London Circuit

Canberra City, ACT 2601

Phone: (02) 6247 9500

Office hours 8:30am – 5:00pm (Monday to Friday)

Workcover/Worksafe ACT

Level 3, Block B, Callam Offices

Easty Street

Woden ACT 2606

GPO Box 158

Canberra ACT 2601

Resource material with potential relevance to the Post Harvest sector

Name	Type of material	Available from
Workwatch Training Centre	Fact sheets, website with down loadable reference material (from forklift, electrics, stress, first aid etc),publications, courses	www.workwatch.com.au/
Australian Health and Safety Services	Fact sheets, website with down loadable reference material , publications	www.ahss.com.au/
	Acts and Regulations	www.marinesafety.vic.gov.au
National Training Information Service	Seafood Industry Training Package-PDF	www.ntis.gov.au
TAFE	Diploma of Seafood Industry Training package	tafe-australia.org/tafe-australian-capital-territory/

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The OHS module provides information on:

- ▶ Employer and employee responsibilities.
- ▶ OHS training requirements.
 - ▶ Training opportunities.
 - ▶ Training records.
- ▶ Risk management and reporting.
 - ▶ Risk and hazard control.
 - ▶ Incident reporting.
- ▶ Workers compensation requirements.
- ▶ Incident investigation.
 - ▶ Safety signs.
 - ▶ General induction checklist.



Further information on OHS contacts and resource materials relevant to your State or Territory can be found on the back of this Information Sheet.



Victorian Agency Responsible for OHS Acts and Regulations

WorkSafe Victoria

Postal Address

Head Office

Ground Floor

222 Exhibition Street

Melbourne 3000

Phone: (03) 9641 1555

Fax: (03) 9641 1222

Office hours 8:30am – 5:00pm (Monday to Friday)

Resource material with potential relevance to the Post Harvest sector

Name	Type of material	Available from
Worksafe Victoria	Fact sheets, website with down loadable reference material (from forklift, electrics, stress, first aid etc),publications	www.worksafe.vic.gov.au/
Marine Safety Victoria	Fact sheets, website with down loadable reference material (see below), publications	www.marinesafety.vic.gov.au Marine Safety Victoria PO Box 2797 Melbourne, Victoria 3001
	Acts and Regulations	www.marinesafety.vic.gov.au
National Training Information Service	Seafood Industry Training Package- PDF	www.ntis.gov.au
TAFE	Diploma of Seafood Industry Training package	www.tafe.vic.gov.au
Regional Development Victoria	Web site- food processing prospectus	www.discovereastgippsland.com.au
Seafood Industry Victoria	Fact sheets, website with down loadable reference material , publications	www.siv.com.au/files/vic_ohs_code_reference

APPENDIX 6: QUALITY INDEX FACT SHEETS

Australian Quality Index Manual

A tool for evaluating changes in chilled seafood

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An Australian Quality Index (AQI) manual has been prepared by Sydney Fish Market (SFM), FRDC Project 2002/243. **To order a copy for your business contact SSA on www.seafoodservices.com.au – Seafood Bookshop, Code (AQI).**

The AQI manual is an accurate method for measuring changes in chilled seafood through the whole chain, from the point of harvest through transport, auction, distribution and sale. It provides highly reliable information used for control of quality, management of product and enhances marketing opportunities.

The AQI tool is designed in a format to gain wide acceptance domestically and be recognised internationally to provide:

- ▶ Accurate grading
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- ▶ Ease of resolving conflict
- ▶ Use in training and education, and
- ▶ Improve consumer confidence.



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| ▶ Silver Warehou | ▶ Snapper |
| ▶ Tiger Flathead | ▶ Yellowtail Kingfish |



Northern Territory Agency Responsible for Food Safety and Regulations

NT Environmental Health Program

87 Mitchell Street

PO Box 40596

Darwin NT 0800

Casuarina NT 0811

Phone: (08) 8999 2400

Website [www.health.nt.gov.au/Environmental Health/Food Safety](http://www.health.nt.gov.au/Environmental_Health/Food_Safety)

Resource material with potential relevance to the Post Harvest sector

Name	Type of material	Available from
NT Fishery Codes of Practice	10 Documents	Northern Territory Seafood Council
Edibility characteristics of common fish in the Northern Territory	Document	NT Fisheries
Storage life of two species of chilled shark	Document	NT Fisheries
Storage lives of iced reef fish	Document	NT Fisheries
Food Safety Factsheets	24 Fact sheets	NT Government Food Safety
Recommended Handling Methods for Tropical Reef Fish 1991	Booklet	NT Fisheries
Australian Seafood Users Manual	Manual/CD	QLD DPI
Safe Seafood Australia 2005	Manual	Food Standards Australia New Zealand
Safe Food Australia: A guide to the Food Safety Standards Chapter 3 2001	Manual	Australia New Zealand Food Authority
SeaQual Packs 1-4	Information Package	Seafood Services Australia
SeaQual food safety guidelines for seafood processing	Manual	Seafood Services Australia
Focussing on food safety & quality	Manual	Seafood Services Australia
Australian Seafood Standard 2002	Document	Seafood Services Australia

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| ▶ Silver Warehou | ▶ Snapper |
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The Government of South Australia, Department Of Health

The Food Policy and Programs Branch,

Department of Health,

CitiCentre Building,

Level 1, 11 Hindmarsh Square,

Adelaide, South Australia 5000.

Telephone: (08) 8226 7100.

Facsimile: (08) 8226 7102 (International fax: 61 8 8226 7102).

Postal address: PO Box 6, Rundle Mall, SA 5000.

Email address: food@health.sa.gov.au

Resource material with potential relevance to the Post Harvest sector

Name	Type of material	Available from
Food Safety Index http://www.health.sa.gov.au/pehs/food-index.htm	Fact sheets Information Kits	SA Government Food Safety
SARDI Food Safety http://www.sardi.sa.gov.au/foodsafety/about	Research	Bio Securities SA
SA Seafood Industry Food Plan http://www.pir.sa.gov.au/_data/assets/pdf_file/0010/125200/Seafood_Food_Plan.pdf	Plan	South Australian Seafood Industry Federation
Australian Seafood Users Manual	Manual/CD	QLD DPI
Safe Seafood Australia 2005	Manual	Food Standards Australia New Zealand
Safe Food Australia: A guide to the Food Safety Standards Chapter 3 2001	Manual	Australia New Zealand Food Authority
SeaQual Packs 1-4	Information Package	Seafood Services Australia
SeaQual food safety guidelines for seafood processing	Manual	Seafood Services Australia
Focussing on food safety & quality	Manual	Seafood Services Australia
Australian Seafood Standard 2002	Document	Seafood Services Australia

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NSW Food Authority is the agency responsible for food safety and regulations.

NSW Food Authority

PO Box 6682

Silverwater NSW 1811, Australia.

ABN 47 080 404 416

Telephone: (8:30am - 5:30pm) AEST on NSW business days

1300 552 406 (*local call Australia-wide*), or

+61 (02) 9741 4850 (*outside Australia*)

Fax:

(02) 9647 0026 (*within Australia*), or

+61 (02) 9647 0026 (*outside Australia*)

Email: contact@foodauthority.nsw.gov.au

Website: <http://www.foodauthority.nsw.gov.au/>

The NSW seafood industry is regulated by the *Food Act 2003* (NSW) and the *Food Regulation 2010*.

Resource materials with potential relevance to the NSW Post Harvest businesses

Name	Type of material	Available from
Australian Quality Index Manual	Manual	Seafood Services Australia
NSW Fishery Codes of Practice	Information on handling, icing and storage compliance.	Industry and Investment NSW http://www.dpi.nsw.gov.au/
Seafood Handling Guidelines	Booklet	Sydney Fish Market
NSW Food Authority	Codes of practice, safety programs and bi-lingual guidelines	http://www.foodauthority.nsw.gov.au/
Australian Seafood Users Manual	Manual/CD	QLD DPI
Safe Seafood Australia 2005	Manual	Food Standards Australia New Zealand
Safe Food Australia: A guide to the Food Safety Standards Chapter 3 2001	Manual	Australia New Zealand Food Authority
SeaQual Packs 1-4	Information Package	Seafood Services Australia
SeaQual food safety guidelines for seafood processing	Manual	Seafood Services Australia
Focusing on food safety & quality	Manual	Seafood Services Australia
Australian Seafood Standard 2002	Document	Seafood Services Australia

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Tasmanian Agency Responsible for Food Safety and Regulations

Department of Health and Human Services
GPO Box 125
HOBART TAS 7001

Phone: **1300 135 513**

Website http://www.dhhs.tas.gov.au/peh/food_safety

A selection of resource material with potential relevance to the Post Harvest sector

Name	Type of material	Available from
Food Safety Management System for Live Tasmanian Farmed Bivalve Molluscs	Plan	DPIPWE
Scalefish fishery food safety system version 1	Plan	DPIPWE
Scallop Food Safety Plan	Plan	DPIPWE
Food Safety management System for other wild caught bivalve molluscs	Plan	DPIPWE
<i>Primary Production and Processing Standard for Seafood</i>		Safe Seafood Australia
Rock Lobster EMS	EMS	TSIC, TRLFA
Oyster Industry EMS Framework	EMS	TSIC, Oysters Tas
Australian Seafood Users Manual	Manual/CD	QLD DPI
Safe Seafood Australia 2005	Manual	Food Standards Australia New Zealand
Safe Food Australia: A guide to the Food Safety Standards Chapter 3 2001	Manual	Australia New Zealand Food Authority
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Focussing on food safety & quality	Manual	Seafood Services Australia
Australian Seafood Standard 2002	Document	Seafood Services Australia

TSIC – Tasmanian Seafood Industry Council

TRLFA – Tasmanian Rock Lobster Fisherman’s Association

DPIPIWE – Tasmanian Dept Primary Industry, Parks, Water and Environment

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Queensland Health is the agency responsible for Food Safety and Regulations

Contact details for Queensland Health:

Telephone

The general switchboard number for Queensland Health is: 07 3234 0111

The switchboard is staffed from Monday to Friday 8.00am - 5.15pm

Street Address

Queensland Health Building

147-163 Charlotte Street

Brisbane Queensland 4000

Postal Address

GPO Box 48 Brisbane, Queensland 4001

Website

<http://www.health.qld.gov.au>

Resource material with potential relevance to the Post Harvest sector

Name	Type of material	Available from
Food Safety Risks	Document	Safe Food Queensland
Food Safety Scheme	Document	Safe Food Queensland
Food Safety Programs	Document	Safe Food Queensland
Food Safety Factsheets	20 Fact sheets	QLD Health
Australian Seafood Users Manual	Manual/CD	QLD DEEDI
Safe Seafood Australia 2005	Manual	Food Standards Australia New Zealand
Safe Food Australia: A guide to the Food Safety Standards Chapter 3 2001	Manual	Australia New Zealand Food Authority
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Western Australia Agency Responsible for Food Safety and Regulations

Department of Health Western Australia
189 Royal Street East Perth
Western Australia 6004

Postal Address
PO Box 8172 Perth Business Centre
Perth W.A 6849

Phone: **(08) 92224222**

Website www.health.wa.gov.au

A selection of resource material with potential relevance to the Post Harvest sector

Name	Type of material	Available from
Australia Quality Index Seafood Manual ssa@seafoodservices.com.au	Manual	Seafood Services Australia
Western Australian Seafood Quality Management Initiative www.fish.wa.gov.au	Publications and advise	Department of Fisheries W.A
Guidelines for the handling of live seafood www.fish.wa.gov.au	Guide	Department of Fisheries W.A
The West Australian Quality Finfish Guide www.fish.wa.gov.au	Guide	Department of Fisheries W.A
Guidelines for Seafood Retailers www.fish.wa.gov.au	Guide	Department of fisheries W.A
Marketing Names for Fish and Seafood in Australia www.daff.gov.au	Manual	DAFF
Sustainable Seafood Guide www.sustainableseafood.org.au	Guide	A.M.C.S
Australian Seafood Users Manual	Manual/CD	QLD DPI
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Australian Capital Territory Agency Responsible for Food Safety and Regulations

Food Standards Australia New Zealand

Department of Health
Health Protection Branch
Food Safety and Regulation Unit

Address:

PO Box 71186

Canberra BC ACT 2610

Telephone: 1300 652 166

Email: (via website) <http://www.foodstandards.gov.au/search/>

Resource material with potential relevance to the Post Harvest sector

Name	Type of material	Available from
Medibank Health Solutions: formerly trading as Health for Industry	Website- document	www.dhs.gov.au
ACT Health Protection Service	Website- document	www.health.act.gov.au
Primesafe	Licensing information under the seafood safety act	www.primesafe.gov.au
Department of Agriculture, Fisheries and Forestry	Documents, publications, websites	www.daff.gov.au
Productivity Commission	Ch 12; Food safety in seafood production and processing	www.pc.goc.au
National Training Information Service	Training Package	www.ntis.gov.au
Australian New Zealand Food Standards	Manual/CD	www.foodstandards.gov.au
Safe Seafood Australia 2005	Manual	Food Standards Australia New Zealand
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Victorian Agency Responsible for Food Safety and Regulations

Health Victoria

Department of Health
Health Protection Branch
Food Safety and Regulation Unit

Address:

GPO Box 4541
Melbourne 3001

Telephone: 1300 364 352 1300 364 352

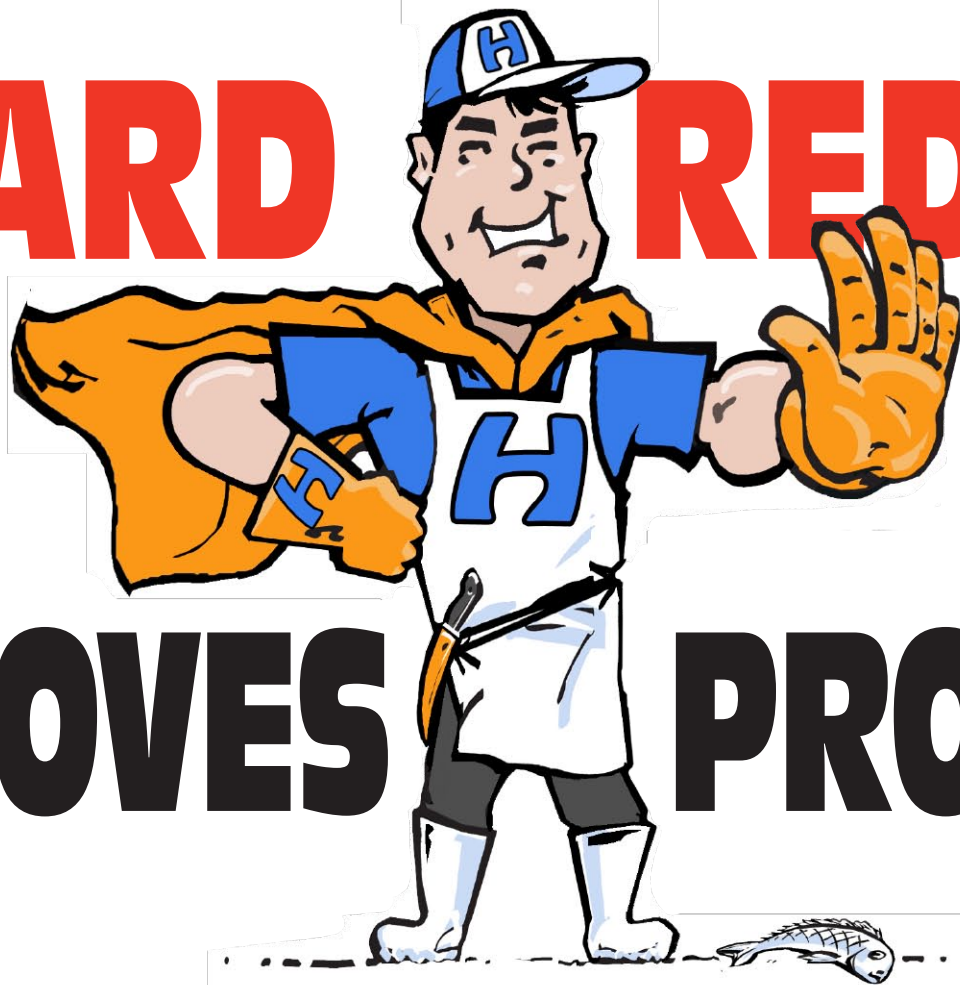
Email: foodsafety@health.vic.gov.au

Resource material with potential relevance to the Post Harvest sector

Name	Type of material	Available from
Victorian Department of Human Services	Website- document	www.dhs.gov.au
Primesafe	Licensing information under the seafood safety act	www.primesafe.gov.au
Victorian Competition and Efficiency Commission	Document	www.vcec.vic.gov.au
Productivity Commission	Ch 12; Food safety in seafood production and processing	www.pc.goc.au
National Training Information Service	Training Package	www.ntis.gov.au
Australian New Zealand Food Standards	Manual/CD	www.foodstandards.gov.au
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**APPENDIX 7: OCCUPATIONAL HEALTH AND SAFETY, AND QUALITY INDEX
STICKERS**

HAZARD REDUCTION



IMPROVES PRODUCTION

Double shelf life by keeping product at 1-2 degrees

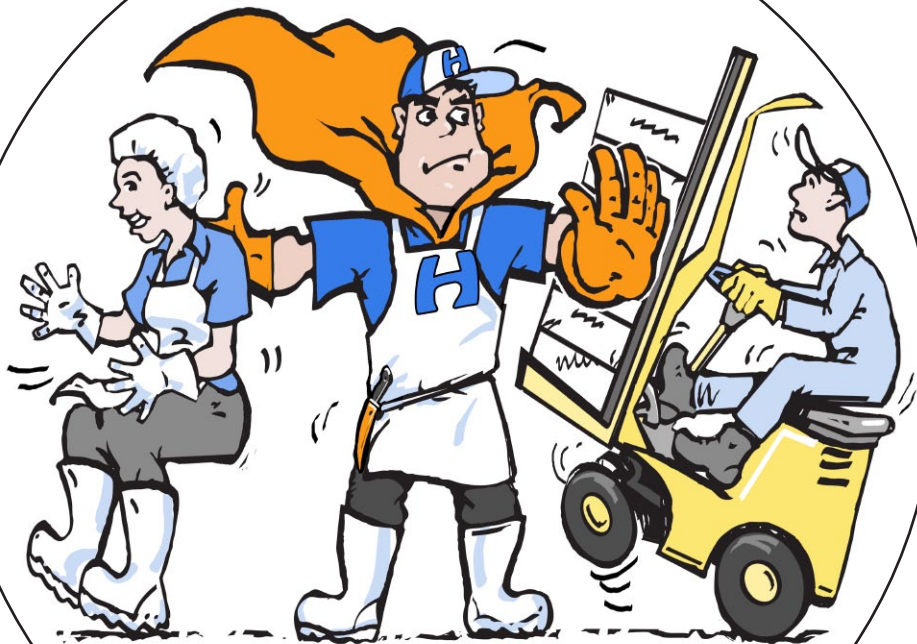


**ACCIDENTS
HURT**

**SAFETY
DOESN'T**



WATCH



**FOR MOVING
OBJECTS**



**A
SPILL**

**A
SLIP**

**A HOSPITAL
TRIP**

**this
tool
will**

PUNCH

**you
in the
face**

if you let it

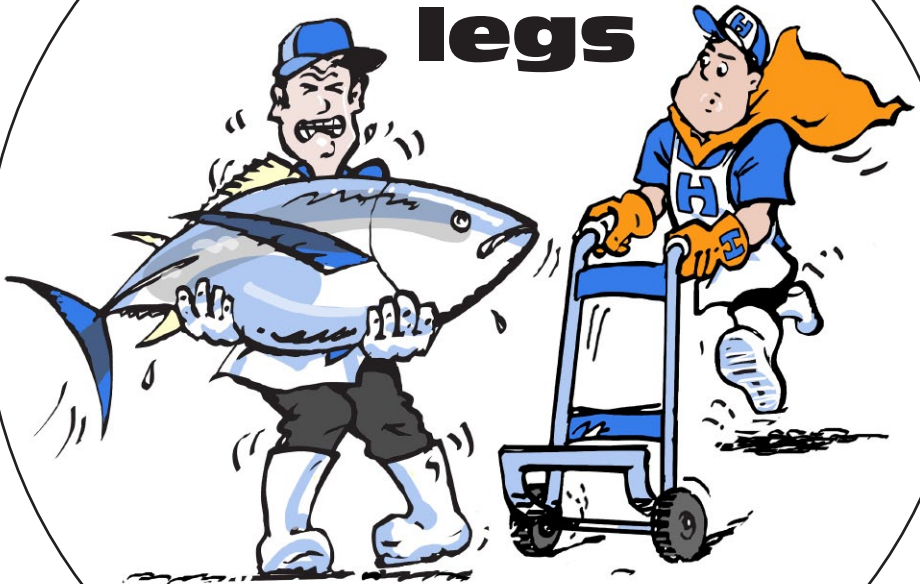


Lift
SMART



THINK then
start

**Lift
with your
legs**



**NOT your
back**

TWICE AS NICE



ON A BED OF ICE