
CONFIDENTIAL REPORT

A Review of Seafood Freight Logistics in Tasmania

Conducted during April & May 2006

on behalf of

The Tasmanian Freight Logistics Council

by

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Introduction

This report to the Tasmanian Freight Logistics Council (TFLC) summarises the findings of an industry survey relating to the freight logistics of fresh and live seafood exported from Tasmania.

The report is divided into a number of sections:

- An **Executive Summary** of key findings and recommendations arising from this project
- A brief **Background** to the TFLC and this project
- A description of the **Methods** used in this project
- A series of **Sector Summaries** of aggregated data from individual interviews
- A series of **Appendices** providing aggregated responses to interview questions for each sector, copies of the survey instruments (Question Sheet, Information Sheet, Consent Form) and a list of organisations interviewed for this survey

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We would like to thank the following for their assistance with the design and content of this project report;

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I Executive summary

I.1 Key Recommendation

*Establishment of a **Tasmanian Seafood Logistics Working Group** – comprising representatives from the Tasmanian Fishing Industry Council, the Tasmanian Freight Logistics Council, freight forwarders and industry – to develop and implement a Tasmanian seafood industry freight logistics strategic plan.*

Analysis of data gathered during this survey has revealed a number of freight logistics issues faced by Tasmanian seafood exporters. Of these, we suggest the following areas, listed in our interpretation of priority, are worthy of industry-wide attention:

- Product safety and quality liability, including Chain of Responsibility legislation
- Maintenance of seafood safety and quality throughout the chain
- Freight capacity and consistency
- Forecasting and planning
- Supply chain management and communication
- Packaging considerations
- Real time product traceability
- On-line freight brokerage

That these areas have been identified and prioritised based on 2006 data and projections is an important step. We feel, however, that real value of this survey lies in the clarity it has brought to the need for a fundamental change to the way seafood export logistics are coordinated within Tasmania.

When analysing the survey data and drafting this report, a number of consistent patterns became apparent:

The first was that those organisations that have accepted responsibility for their role in supporting their own supply chain/s reported a greater level of satisfaction with the operation of those chains. Conversely, those organisations expressing dissatisfaction with the operation of their supply chain/s were more likely to feel that they had little role to play in implementing structural changes to those chains. *A sense of responsibility leads to positive action.*

The second pattern was that most interviewees expressed the opinion that the relevant peak industry bodies – the Tasmanian Fishing Industry Council (TFIC) and the Tasmanian Freight Logistics Council (TFLC) – should act to represent the interests of individual enterprises in facilitating structural changes to the logistics of moving fresh and live seafood out of Tasmania.

We see these as key indicators that TFIC and TFLC should take a combined lead role in helping the industry as a whole, along with individual enterprises, develop the framework, expertise and networks necessary to give the industry a stronger voice in determining the effectiveness and efficiency of their respective supply chains.

Executive Summary

The TFLC has conducted three surveys¹ relating to Tasmanian seafood logistics in the past 5-6 years. From the seafood industry's point of view, this is surely a commendable focus of effort by the TFLC. But the time has come for members of the seafood industry itself to pick up this particular ball and start *really* collaborating in the common interest of selling more Tasmanian seafood.

An early draft of this report contained a list of some 20 recommendations. Each recommendation was designed to help the Tasmanian industry understand and address the major freight logistics issues identified during this survey and presented in the following pages – issues either specific to a given seafood sector, or affecting the Tasmanian seafood industry as a whole.

An iterative process of paring this list to its core elements resulted in the emergence of the one key recommendation listed at the start of this section. This recommendation is based on the obvious need for improved coordination, innovation, communication and training within Tasmanian seafood export supply chains, and will provide the foundation from which Tasmanian seafood logistics issues can be addressed under a strategic framework that is developed and owned by the industry as a whole:

A critical step will be for this group to become immediately integrated with the current Tasmanian Fishing Industry Council Future Directions project. We see the fit to be obvious, and strongly feel that this initiative needs to be owned and driven by committed members of the Tasmanian seafood industry in the push to ensure the continued competitiveness of this high value industry.

We are acutely aware of the potential for this recommendation to lead to the formation of another group that spends valuable time not changing anything. The challenge will be to ensure the Working Group is afforded the resources, responsibility, authority and accountability to actually facilitate positive changes to the movement of fresh and live seafood out of Tasmania. To help meet this challenge, we propose the following early steps.

Task	Human Resources	Performance Indicator	Date
Initial TFIC – TFLC meeting	<ul style="list-style-type: none">● TFIC and TFLC Executive and/or Project officers	<ul style="list-style-type: none">● MOU between TFIC and TFLC to establish Working Group● Criteria for Working Group membership defined	1 Sep 2006
Initial Tasmanian Seafood Logistics Working Group meeting	<ul style="list-style-type: none">● Working Group chair/facilitator and members	<ul style="list-style-type: none">● Establish working protocol and terms of reference	3 Nov 2006
Develop Tasmanian Seafood Logistics Strategic Plan	<ul style="list-style-type: none">● Working Group chair/facilitator and members● Project manager● TFIC Project officer	<ul style="list-style-type: none">● Draft Strategic Plan developed – to focus on Coordination, Innovation, Communication, Training and Evaluation over an initial 2 year period	1 Dec 2006
		<ul style="list-style-type: none">● Stakeholder feedback on Strategic Plan received and incorporated	2 Feb 2007

¹ Tasmanian Department of Infrastructure, Energy and Resources (1999-2000); Myriad Consultancy (2005); Rural Development Services – this project – (2006)

Executive Summary

Task	Human Resources	Performance Indicator	Date
Develop Tasmanian Seafood Logistics Priority Projects	<ul style="list-style-type: none">● Working Group chair/facilitator and members● Project manager	<ul style="list-style-type: none">● Priority projects designed and scoped● Funding source/s identified	2 Mar 2007
Communicate Tasmanian Seafood Logistics Strategic Plan and Priority Projects	<ul style="list-style-type: none">● Working Group chair/facilitator and members● Project manager	<ul style="list-style-type: none">● Industry meeting, convened by TFIC, to discuss and seek endorsement of Strategic Plan and Priority projects	6 Apr 2007
Conduct Priority projects	<ul style="list-style-type: none">● Project manager● Trainers● Project deliverers	<ul style="list-style-type: none">● Priority projects resourced and started	6 Jul 2007

Outputs from this initiative will be the Strategic Plan, industry communications (e.g. a supply chain communication self-assessment tool), Priority project plans and subsequent results.

Outcomes should be measured in terms of increased participation in effective, efficient and high quality supply chains by Tasmanian seafood exporters, especially as they relate to the eight priority areas listed on Page 1 of this report..

If at any stage the Working Group is seen not to be meeting its objectives, it should be disbanded – pushing Tasmanian seafood exporters back into the current disparate and disorganised situation – or revitalised.

We have identified a number of potential funding sources that could be approached to help support different parts of this initiative. These include:

- Tasmanian Workforce Development Fund
- FarmBi\$
- Tasmanian Office for Post Compulsory Education and Training
- Seafood Services Australia
- Food Processing in Regional Australia Program
- National Food Industry Strategy – Food Chains Program
- Federal Department of Agriculture, Fisheries and Forestry
- Tasmanian Natural Resource Management Program

1.2 Key Issues

The survey conducted for this report canvassed the views of selected representatives of Tasmania's live and fresh seafood export industry. In this case, export product is defined as that sold to customers outside of Tasmania. Seventeen interviews were conducted, with most interviewees providing data

relating to two or three seafood sectors (e.g abalone and rock lobster). Interviewees were questioned specifically regarding their current and anticipated export freight usage and supply chain systems, and the constraints and opportunities for seafood freight logistics out of Tasmania.

This section provides an aggregated summary of issues arising from the interviews. Issues have been divided into three groups: those that affect the industry as a whole, those that were specific to supply chains incorporating air freight out of Tasmania, and those that were specific to sea-road supply chains.

1.2.1 Common issues

- Lack of engagement between relevant industry peak bodies (Tasmanian Fishing Industry Council; Tasmanian Freight Logistics Council) and industry
- Lack of coordination between Tasmanian Fishing Industry Council and Tasmanian Freight Logistics Council
- Need for increased coordination of supply and demand for freight services to allow maximum efficiency and effectiveness for all participants in the supply chain
- Limited planning engagement with freight forwarders
- Lack of coordination between export and import volumes – cost implications
- Little knowledge of Chain of Responsibility legislation and requirements
- Satisfaction with supply chain partners correlated with export volumes
- Influence over supply chain logistics decreases with increasing supply chain complexity
- Influence over supply chain logistics decreases with increasing consolidation of freight supply companies
- Smaller exporters appear not to be subject to the same customer-regulated quality and safety rigour as larger exporters
- Smaller exporters appear less confident in understanding quality and safety responsibilities and liabilities
- Little knowledge of potential for real-time traceability technology, but realisation that this will become important if not mandatory
- Increasing transport costs (fuel, labour)

1.2.2 Air freight specific issues

Air freight out of Tasmania is used primarily by exporters of live product (e.g. abalone, king crab, rock lobster) and to a lesser degree by other seafood processors for whom short lead times to market are important, especially with products with limited shelf life.

- Lack of space out of Tasmania

- Limited frequency out of Tasmania, especially with regard to filling short orders with high quality product
- Lack of guaranteed uplift, even for booked consignments
- Lack of guaranteed cold chain management
- Demand for dedicated seafood air-freight service

1.2.3 Sea-Road freight specific issues

Sea-road freight out of Tasmania is used by most seafood exporters.

- Planned Brighton freight consolidation hub
- Poor use of available assets in Tasmania (e.g. cool store near Devonport)
- Packaging of different products to allow flexible loading on same truck

2 Background

2.1 *Tasmanian Freight Logistics Council*

The Tasmanian Freight Logistics Council is a public company established with the express purpose of supporting improvements in Tasmania's freight chains by working jointly with service providers and shippers. Its focus is on the logistics aspects of trade in and out of Tasmania.

The Tasmanian Freight Logistics Council:

- is involved in projects to improve logistics service standards and quality management of logistics-chains
- is an information source on logistics-related technologies, training support, packaging and transport systems
- is a conduit between shippers, industry associations, freight service providers and government about logistics issues and initiatives.

Membership of the TFLC is open to both service providers and producers/shippers that together make up the Tasmanian freight community.

The Council's strategic objectives are to:

- initiate logistics-chain improvements that enable more efficient shipment of goods from Tasmania by air and sea
- facilitate enhanced freight logistics service standards and better quality management of logistics-chains, including across land/sea and land/air interfaces
- work collaboratively with the Tasmanian Freight Community (at all levels) on removing impediments to effective, reliable and competitive freight services
- act as a conduit between shippers, respective industry associations, freight service providers and government about logistics issues and initiatives
- provide information about logistics-related topics such as training support, emerging technologies, packaging and transport systems.

2.2 *Project Brief*

With these organisational objectives in mind, the TFLC undertook, on behalf of DIER, a study in 1999-2000 to describe the logistics surrounding the movement of fresh chilled and live seafood, excluding aquaculture product, in Tasmania.

With the substantial changes in Tasmanian freight logistics (e.g. Ansett, TT line) and seafood industry structure (e.g. Tassal mergers, Tasmanian Fishing Industry Council restructuring) since that report, the need exists for a review the current situation to allow the TFLC to maintain its effective support of the Tasmanian seafood industry.

Research was confined to movement of live and fresh, chilled products from catch/harvest to post-processing and shipment up to the initial step of each logistics-chain beyond Tasmania. Aquaculture production was included as well as wild-caught fish species in the data. Frozen seafood products were expressly excluded from this study.

2.3 Study Objectives

- to describe/map respective supply-chain functions for a range of products originating throughout the state, up to the first step beyond Tasmania in each chain
- to identify freight issues that are or may be contributing to inefficiencies/constraints for various industry participants
- to compare producer perceptions of logistical constraints on their respective businesses for different seafood products

Finally, and perhaps most importantly, we see that the TFLC is seeking to catalyse action – to undertake a process which not only leads to collaborative action in the private and public sectors, but also inspires key stakeholders to invest in turning their opportunities into realities. This project supports that aim.

3 Methods

A survey instrument (Appendix 4) comprising 41 questions was developed with substantial input from TFLC members. The survey sought information regarding:

- Sector size and markets
- Current freight usage
- Current supply chain organisation
- Forecast freight usage
 - 1 year out
 - 5 years out
- Constraints to current freight efficiency and effectiveness
- Industry outlook
- General comments on seafood freight logistics in Tasmania

Potential interviewees were selected by consensus of representatives from the TFLC and the Tasmanian Fishing Industry Council (TFIC). Candidates were initially invited to participate by telephone or email. Those agreeing to participate were sent (email or fax) an Information Sheet (Appendix 2) and Consent Form (Appendix 3). Interviews were conducted either by telephone or in person, and took 45-60 minutes to complete. Seventeen (Appendix 5) of the initial list of 22 interviewees completed the survey. Qualified respondents were those responsible for dealing with freight issues within each organisation

Data from interviews were aggregated and analysed based on product category, and are presented and interpreted in this report.

4 Sector Summaries

This section provides summaries of aggregated data and recommendations arising from interviews within defined sectors. Aggregated data for each sector are presented in Appendix I.

4.1 Abalone

4.1.1 Brief category description

The Tasmanian abalone fishery is predominantly an export fishery to Asian markets. The categories in which product form is recorded by the Australian Bureau of Statistics relevant to abalone are: 'canned'; and, 'fresh, chilled, frozen'. Unfortunately, this data does not provide any information specifically as to quantities being exported in the 'live fish' trade.

Countries importing abalone from Tasmania also exhibit preferences for particular product forms. For example, Taiwan exhibits a marked preference for canned product rather than fresh. Conversely, Hong Kong and China show a strong preference for live product (although quantities of other forms such as canned and vacuum packed product are also imported).

(Source: Abalone Industry Profile - <http://www.dpiw.tas.gov.au/inter.nsf/WebPages/EGIL-5HU3VL?open>. 10 June 2006)

Under the current fisheries management system, the annual quota or total allowable catch is set to apply from 1st January each year. The process is usually by consultation between industry and the Minister in regard to level of quota. Under the zoning system a separate total allowable catch will be set for each individual zone.

The separate total allowable catch or annual quota for each zone is the key to the benefits of zoning. Under zoning, the appropriate level of fishing effort and abalone harvested from each specific area can be individually assessed and adjusted according to biological and other conditions relating to each separate zone.

Zone	TAC (tonnes)	Kilograms/unit
Eastern	770	220
Western	1260	360
Northern	280	80
Greenlip	122.5	35
Bass Strait	70	20
Total	2502.5	715

The current level of export revenue generated by the abalone industry injects some \$335 million of associated economic activity into the state's economy

(Source: Tasmanian Abalone Council website – <http://www.tasabalone.com.au>. 10 June 2006)

4.1.2 Current freight usage and supply chain

Those interviewed from this sector exported about 650 t of fresh and live abalone during the past year. The vast majority (99%) of product sold by interviewees is exported live, by air freight. Product is exported on demand, with volumes varying by +/- 50% between shipments. Contact between supply chain participants is *ad hoc* – by phone and email.

The typical supply chain for this sector is:

- Truck from boat to processor
- Truck (sometimes refrigerated, sometimes not) to airport
- *Air out of Tasmania to interstate and export customers*

Abalone exporters were reasonably satisfied with the supply partners from who they receive their raw product, but less so with their downstream freight partners. The major source of dissatisfaction was the perceived treatment of product by freight companies.

4.1.3 Forecast freight usage

All interviewees anticipated export growth during the next 1 - 5 years. Estimates of growth were variable and often unquantified, but a conservative interpretation of responses would indicate that the volume of live abalone exported from Tasmania could double in the next 5 years or so.

Growth in this market is likely to come from increasing proportion of wild caught abalone (the total allowable catch of which is not expected to increase) being exported live instead of in cans, along with an increase in the supply of farmed abalone. Growth of this type will increase demand for air freight for this sector.

Apart from increased volume, no interviewees anticipated substantial change in their freighting systems and frequency during the next five years.

4.1.4 Constraints to current freight efficiency and effectiveness

The major issues for this sector all surround the lack of guaranteed uplift for air freight. Interviewees all emphasised the importance of this issue.

Most other constraints mentioned were to do with the impact of increasing fuel prices on the cost of the product and on the cost of moving the product along the supply chain.

It is interesting to note a positive correlation between the size of the export organisations and their level of satisfaction with their freight partners. It seems that larger organisations chose to, or are able to, play a more proactive role in supply chain partnerships. This higher level of engagement correlates with higher levels of satisfaction with supply chain operations.

4.1.5 Opportunities for future freight efficiency and effectiveness

A noticeable trend in discussions with interviewees was a reported lack of connectivity between peak bodies (e.g. TFIC, TFLC) and industry. This represents a major opportunity for these two groups to work together to make an early difference in the way they work with, and are perceived by, their industry members.

4.2 King Crab

4.2.1 Brief category description

The [King or] Giant crab industry comprises 95 fishing licences and 1,035 quota units. The majority of vessels are used primarily for rock lobster fishing and only fish for crab on a part time basis. Currently there are about 26 vessels participating in the fishery, however approximately 90% of the catch is taken by 10 vessels.

Licences vary in price according to the number of quota units attached, and the other types of licences in the licence package. In 2005 the average market value of a giant crab quota unit was around \$6,000 which puts the asset value of all the access rights at \$6.2m. However there have been significant fluctuations in demand for quota units because of the marketing difficulties experienced by the industry in recent years.

All giant crab are landed live from the fishing vessel and are generally purchased by a processor at the wharf. The giant crab are then marketed live.

Production peaked in 1994 at about 260 tonnes. Production for the last two years has been limited to 62.1 tonnes by the total allowable commercial catch. Increasing costs and low beach prices are an issue for this sector.

(Source: Giant Crab Industry Profile - <http://www.dpiw.tas.gov.au/inter.nsf/WebPages/EGIL-5K68JS?open>. 10 June 2006)

4.2.2 Current freight usage and supply chain

Those interviewed from this sector exported about 20 t of fresh and live King crab during the past year. The majority (70%) of product sold by interviewees is exported live, by air freight. Product is exported on demand, with volumes varying substantially between shipments. Contact between supply chain participants is *ad hoc* – usually by phone.

The typical supply chain for this sector is:

- Truck from fishing boat to processor
- Truck to airport
- Air out of Tasmania to customer

Satisfaction with supply partners from who they received their raw product, and also with their downstream freight partners, was poor. The major source of dissatisfaction was the availability and flexibility of air freight out of the state, and the perceived treatment of product by freight companies. It was noted that satisfaction levels with airline availability and freight handling practices have improved from a very low level for this sector in recent years.

4.2.3 Forecast freight usage

Interviewees anticipated no growth in this sector during the next year, and hope for growth in the next five years.

Growth is likely to come from increasing supply and demand for this unusual product and will increase demand for air freight for this sector.

Apart from the hoped for increase in volume, interviewees anticipated no substantial change in their freighting systems and frequency during the next five years.

4.2.4 Constraints to current freight efficiency and effectiveness

The major issues for this sector all surround communication within the supply chain and the lack of guaranteed uplift for air freight.

Companies interviewed for this sector were typically small (as can be seen from the volume of product exported). Interviewees did not think that they could play much of a role in freight logistics organisation, and look to their peak bodies for representation.

4.2.5 Opportunities for future freight efficiency and effectiveness

Interviewees saw an opportunity for the establishment of a dedicated seafood air freight service to the mainland to fill the shortfall in space available on domestic flights.

A noticeable trend in discussions with interviewees was a lack of connectivity between peak bodies (e.g. TFIC, TFLC) and industry. This represents a major opportunity for these two groups to work together to make an early difference in the way they work with, and are perceived by, their industry members.

4.3 Rock Lobster

4.3.1 Brief category description

During 2005/06, about 58 processors around the State were licensed to process rock lobster; however, 12 processors handle 80% of the fish. The Tasmanian licensed processors purchased over 90% of the catch taken during 2005/06. The remaining 10% were sold directly by fishers to the public, to retail outlets, or to interstate buyers, or were landed outside Tasmania.

All Rock Lobster landed in Tasmania are delivered live from the catching vessel and are generally purchased by the processor at the wharf. The rock lobster is then processed and marketed in a variety of ways.

Production peaked in 1984/85 at about 2,245 tonnes. Production for the last three years has been capped at around 1,523 tonnes. This level of harvest has allowed the rock lobster stocks to rebuild, which should reduce fishing costs as the catch rates will increase. The total allowable commercial catch remains at 1,523.5 tonnes for the 2006/07 quota year.

(Source: Rock Lobster Industry Profile - <http://www.dpiw.tas.gov.au/inter.nsf/WebPages/EGIL-5J375D?open>. 10 June 2006)

Research into Rock lobster culture is continuing. Although the fruits of this effort are likely to be some years away, a successful closed life-cycle culture industry would necessarily increase demand for freight.

4.3.2 Current freight usage and supply chain

Those interviewed from this sector shipped about 620 t of fresh and live rock lobster during the past year. The vast majority (reportedly 100%) of product sold by interviewees is shipped live, by air freight. Product is shipped on demand. Volumes varied between interviewees, with about 30% of product being shipped with little variation to standing orders and 70% being shipped depending on variable supply and demand. Contact between supply chain participants is usually by email and phone. About 60% of product is shipped through freight forwarders.

The typical supply chain for this sector is:

- Truck from fishing boat to processor
- Truck to airport
- *Air out of Tasmania to customer*

Those interviewed were quite satisfied with the supply partners from who they received their raw product, and less so with their downstream freight partners. The major source of dissatisfaction is the perceived treatment of product by freight companies. It was noted that satisfaction levels with airline availability and freight handling practices have improved from a very low level for this sector in recent years.

4.3.3 Forecast freight usage

Some interviewees anticipated some growth in this sector during the 1 – 5 years. Given the tightly controlled quota for rock lobster in Tasmania, it is unlikely that such growth will be seen throughout the industry. It is more likely that growth anticipated by some companies will be at the expense of others.

Apart from the hoped for increase in volume, interviewees anticipated no substantial change in their freight systems and frequency during the next five years.

Recent developments in the marketing of Rock Lobster (e.g. see www.southernrocklobster.com) are intended to increase the penetration of Australian Rock lobster in international markets. As the influence of this campaign grows, it is possible that Tasmanian exports of Rock lobster may increase.

4.3.4 Constraints to current freight efficiency and effectiveness

The major issues for this sector all surround communication within the supply chain and the lack of guaranteed uplift for air freight.

As with other sectors, the level of satisfaction with the operation and effectiveness of individual supply chains increased with the size of the shipper. Smaller players typically did not see that they could play much of a role in freight logistics organisation, and look to their peak bodies for representation. Conversely, larger players are looking to increase their involvement with – and influence over – supply chain logistics.

4.3.5 Opportunities for future freight efficiency and effectiveness

Interviewees saw an opportunity for the establishment of a dedicated seafood air freight service to the mainland to fill the shortfall in space available on domestic flights. One interviewee reported having already attempted this, with no success.

A noticeable trend in discussions with interviewees was a lack of connectivity between peak bodies (e.g. TFIC, TFLC) and industry. This represents a major opportunity for these two groups to work together to make an early difference in the way they work with, and are perceived by, their industry members.

4.4 Mussels

4.4.1 Brief category description

Tasmanian mussels are rope cultured deepwater blue mussels (*Mytilus galloprovincialis*).

This species is also found in other state waters of southern Australia and in parts of Europe and the Mediterranean. The other species which looks very similar is *Mytilus edulis*, grown in northern Europe, North America and Canada and is often referred to as the black mussel.

Tasmanian marine farmers have been growing mussels commercially for over 20 years but only recently has our production expanded to a level where Tasmanian mussels are now available year round and in significant quantity.

Around the world over 1 million tonnes of mussels are consumed every year. In parts of Europe annual consumption per person is over 1300 grams. However here in Australia we consume as little as 300 grams per person per annum.

(Source: www.springbayseafoods.com.au)

Interviewees for this sector represented the majority (80-90%) of Tasmanian mussel shippers. There was no current data available describing the mussel industry, but information gathered during this survey will provide a clearer idea of the current market.

4.4.2 Current freight usage and supply chain

Those interviewed from this sector shipped about 900 t of fresh and live mussels during the past year. The vast majority (95%) of product sold by interviewees is shipped live, by sea-road freight. Product is shipped on demand, but demand is reasonably steady, with a number of standing orders being filled with +/- 20-30% variation between days. Contact between supply chain participants was usually by means of a customised software package, backed up by email and phone. A small volume of product (up to about 20% by weight) is shipped by air freight on an ad hoc basis. These shipments are usually made to satisfy last minute customer demand, and are seen as a vital element in competition with mainland suppliers.

The typical supply chain for this sector is:

- Truck or boat from farms to processor
- Sea-road out of Tasmania to customer

Those interviewed were quite satisfied with the supply partners from who they receive their raw product, and marginally less so with their downstream freight partners. The major source of dissatisfaction was the perceived treatment of product by freight companies. One interviewee reported that much effort goes in to working with supply chain partners to improve efficiency and effectiveness of the system.

4.4.3 Forecast freight usage

There was strong expectation of export growth in this sector, with 1 and 5 year forecasts being for increases in the order of 30% and 250% respectively on current volumes. It is anticipated that shipping

frequency will increase to 6-7 days per week, compared to the current 5-6, and that the proportion of product shipped by air will decrease steadily. Cost was cited as the main factor driving this decrease.

Apart from the hoped for increase in volume, interviewees anticipated no substantial change in their freighting systems and frequency during the next five years.

Interviewees anticipate that more communication among supply chain partners will occur on-line in coming years, but have no current plans to change their communication strategy.

4.4.4 Constraints to current freight efficiency and effectiveness

The major issues for this sector all surround the influence of fuel prices and the Freight Equalisation Scheme (FES) on transport costs.

As with other sectors, the level of satisfaction with the operation and effectiveness of individual supply chains increased with the size of the shipper. Interviewees for this sector were among the larger players in Tasmania, and are looking to increase their involvement with – and control over – supply chain logistics.

4.4.5 Opportunities for future freight efficiency and effectiveness

Interviewees saw opportunities for an increased frequency of shipping options and demand to lead to a gradual reduction in transport costs. This is seen as an area critical to market competitiveness, as mainland producers are able to move product into markets more cheaply and with shorter lead times, than Tasmanian producers.

As with other sectors, a noticeable trend in discussions with interviewees was a lack of connectivity between peak bodies (e.g. TFIC, TFLC) and industry. This represents a major opportunity for these two groups to work together to make an early difference in the way they work with, and are perceived by, their industry members.

4.5 Scallops

4.5.1 Brief category description

Interviewees for this sector represent the majority (>80%) of Tasmanian scallop shippers. There is no reliable data available describing the scallop industry, but information gathered during this survey will provide a clear idea of the current market.

About 90% of scallops shipped from Tasmania in the last year came from wild stock. This ratio is expected to change markedly in the next few years, with a substantial increase in the availability of aquaculture product coming on line.

4.5.2 Current freight usage and supply chain

Those interviewed from this sector shipped about 500 t of fresh and live scallops during the past year. The majority (70%) of product sold by interviewees is shipped by air and sea-road. Product is shipped on demand typically on week days, with larger shipments typically going on Mondays, Tuesdays and Fridays to meet demand. Current medium term demand is reasonably steady, with a number of standing orders being filled with +/- 20% variation between days.

Contact between supply chain participants is usually by email and phone. Product shipped by air freight is sent on an *ad hoc* basis. These shipments are usually made to satisfy short lead time customer demand, and are seen as a vital element in competition with mainland suppliers.

This sector uses two main supply chain models:

- Boat or truck to processor
 - *Sea-road out of Tasmania to customer*
- or
- Boat or truck to processor
 - *Truck to airport, then air out of Tasmania to customer*

Those interviewed were reasonably satisfied with their upstream and downstream supply chain partners. The primary source of dissatisfaction was the perceived treatment of product by freight companies. One interviewee reported that much effort goes in to working with supply chain partners to improve efficiency and effectiveness of the system.

4.5.3 Forecast freight usage

There is strong expectation of export growth in this sector, with 1 and 5 year forecasts being for increases in the order of 20% and 250% respectively on current volumes. It is anticipated that shipping frequency will increase to 6 days per week, compared to the current 5, and that the proportion of product shipped by air will decrease steadily. Cost was cited as the main factor driving this anticipated decrease.

Apart from the planned increase in volume, interviewees anticipated no substantial change in their freighting systems and frequency during the next five years.

Interviewees anticipate that more communication among supply chain partners will occur on-line in coming years, but have no current plans to change their communication strategy.

4.5.4 Constraints to current freight efficiency and effectiveness

The major issues for this sector surround the influence of fuel prices and the Freight Equalisation Scheme (FES) on transport costs and the lack of choice and low frequency of transport options.

As with other sectors, the level of satisfaction with the operation and effectiveness of individual supply chains increased with the size of the shipper. Interviewees for this sector were among the larger players in Tasmania, and are looking to increase their involvement with – and influence on – supply chain logistics.

4.5.5 Opportunities for future freight efficiency and effectiveness

Interviewees saw opportunities for an increased frequency of shipping options and demand to lead to a gradual reduction in transport costs. This is seen as an area critical to market competitiveness, as mainland producers are able to move product into markets more cheaply and with shorter lead times, than Tasmanian producers.

As with other sectors, a noticeable trend in discussions with interviewees was a lack of connectivity between peak bodies (e.g. TFIC, TFLC) and industry. This represents a major opportunity for these two groups to work together to make an early difference in the way they work with, and are perceived by, their industry members.

4.6 Pacific oysters (including small freight volume bivalves)

4.6.1 Brief category description

Tasmanian oysters are sold in three forms: fresh unopened (by far the most common form), fresh opened (half-shell), and frozen opened. In 2002/03, exports to Japan increased in the frozen half-shell form.

The majority of Tasmanian oysters are still distributed to domestic markets. Historically Victoria was the main market for Tasmanian oysters, but other states are also now taking an increased share of Tasmania's production. For instance, the Queensland market has become more attractive, while the decline of oyster production in New South Wales has meant an opening for Tasmanian product.

Most growers sell their own oysters unopened in 50kg bags. The unopened oysters are sent by chilled road freight. [It is believed that because of their shorter shelf life, processed (opened) fresh oysters need to be sent by airfreight.

There is a growing trend for some smaller producers to sell through other larger producers. In addition, the cooperative marketing of Tasmanian oysters is currently under way through Tasea, a cooperative of oyster growers set up to market premium oysters.

(Source: Shellfish Industry Profile - <http://www.dpiw.tas.gov.au/inter.nsf/WebPages/EGIL-5KD7FQ?open>. 10 June 2006)

Minor bivalves, including periwinkles, are included in this section, as the freight logistics issues facing suppliers of these products are similar to those facing shippers of live oysters.

4.6.2 Current freight usage and supply chain

This survey included interviews with shippers of two main oyster products: bulk live, unopened oysters in Hessian bags; fresh, value-added oysters in the half shell. There was a marked difference in responses to survey questions from these two broad groups.

Those interviewed from this sector shipped about 2,600 t² of fresh and live oysters during the past year. The vast majority (98%) of product shipped by interviewees is moved by sea-road. Product is shipped on demand, but medium term demand is reasonably steady, with a +/- 20-30% variation between days. Contact between supply chain participants is usually by email and phone, with one interviewee using customised software to match harvest schedules to orders. A small volume of product (up to about 5% by weight) is shipped by air freight on an *ad hoc* basis. Air shipments are usually made to satisfy last minute customer demand, and are seen as a vital element in competition with mainland suppliers.

This sector uses two main supply chain models:

- Truck from farm to processor for value adding
- Sea-road out of Tasmania to customer

or

- Truck from farm to depot for consolidation
- Sea-road out of Tasmania to customer

² As interviewees provided export volumes by the kg or dozen, this figure is based on the assumption that, on average, 1 dozen unopened, market size oysters weighs 1kg. This estimate was confirmed by interviewees.

Interviewees in the value-adding sector were satisfied with their relationship with supply chain participants. These interviewees reported that they put a lot of effort into ensuring adequate communication within their supply chain, and report their chain to be quite well refined.

Conversely, interviewees involved in the bulk shipment of live oysters expressed a level of dissatisfaction with their supply chain partners. The major source of this dissatisfaction is the perceived treatment of product by freight companies. Again, those who report making an effort to work with their supply chain partners also report higher levels of satisfaction with these partners.

4.6.3 Forecast freight usage

There is expectation of export growth in this sector, with 1 and 5 year forecasts being for increases in the order of 10% and 50% respectively on current volumes. It is anticipated that shipping frequency will not change much during this time, with the majority of shipments occurring during the working week. Interviewees anticipate that the proportion of product shipped by air will decrease. Cost was cited as the main factor driving this decrease.

Apart from the hoped for increase in volume, interviewees anticipated no substantial change in their freight systems and frequency during the next five years.

Interviewees anticipate that more communication among supply chain partners will occur on-line in coming years, but have no current plans to change their communication strategy.

4.6.4 Constraints to current freight efficiency and effectiveness

The major issues reported for this sector surround the influence of fuel prices and the Freight Equalisation Scheme (FES) on transport costs, the influence of limited transport options on asset utilisation and market shelf life, and the influence of increasing labour costs on profit margins.

4.6.5 Opportunities for future freight efficiency and effectiveness

Interviewees saw few opportunities for improvement of freight logistics systems for their products. They reported that their current systems are well refined and are operating as well as can be expected.

One comment was made indicating closer work with trucking companies could result in a clean, waterproof bulk handling system for live, unopened oysters. If this were to occur it is likely that greater efficiencies and cost savings could be made in this area.

The dilemma of packaging live oysters has been facing the industry for some time. Modern transport and handling equipment is not ideally suited to the Hessian bag-based systems commonly used to ship oysters to the mainland. Cost considerations have mitigated against changing to a different primary packaging system.

It is interesting to note that the development of such a system could have wider ramifications, as bagged oysters currently are not allowed to be freighted alongside or above some other seafood products for safety and quality reasons.

All interviewees saw the trend towards real-time traceability and data logging as an opportunity to provide customers with increased surety of product source and handling while in transit.

4.7 Salmonids

4.7.1 Brief category description

In 2003: “There are nine companies that have salmon farming operations around the State. Most farming operations are concentrated in the south-east, particularly in the D’Entrecasteaux Channel and Huon River. Macquarie Harbour is another important production area, while the River Tamar operations are also increasing in significance.

Most of Tasmania’s ocean (rainbow) trout is produced in Macquarie Harbour by Petuna Seafoods Pty Ltd, Southern Ocean Trout Pty Ltd, and Aquarius Seafoods Pty Ltd.”

(Source: Salmonid Industry Profile - <http://www.dpiw.tas.gov.au/inter.nsf/WebPages/EGIL-5KD7D6?open>. 10 June 2006)

In 2006: The Tasmanian salmonid production and processing sector has consolidated markedly in recent years. There are now two main companies involved in grow out and processing Atlantic salmon, with two or three involved in ocean trout. Contemporary industry statistics are not readily available, but those interviewed for this survey would account for > 80% of Tasmanian salmonid shipments.

4.7.2 Current freight usage and supply chain

Those interviewed from this sector shipped about 17,500 t of fresh salmonid products during the past year. The vast majority (around 96%) of this production is shipped to mainland and overseas markets, with >90% moving by sea-road systems. Product is processed and shipped on demand, with shipments going every day. There is typically a +/- 30-50% variation between days, with Saturday being the lowest volume day. A small volume of product (up to about 10% by weight) leaves the state by air freight on an *ad hoc* basis. Air shipments are usually made to satisfy last minute customer demand, and are seen as a vital element in competition with mainland suppliers.

Contact between supply chain participants is usually by email, fax and phone.

This sector uses two main supply chain models:

- Truck from farm to processor for value adding
 - *Sea-road out of Tasmania to customer*
- or
- *Air out of Tasmania*

Interviewees reported fairly high levels of satisfaction with suppliers of raw product to their processing depots, with a lower level of satisfaction with those moving freight from processing to customer. The major source of dissatisfaction is the perceived treatment of product by freight companies. Again, those who report making an effort to work with their supply chain partners also report higher levels of satisfaction with these partners. Different satisfaction levels were reported between Tasmanian and mainland-based freight companies. Interviewees felt they had a good rapport with local companies, and were quite satisfied with these supply chain partners. Satisfaction levels decreased for mainland-based partners, with whom there is less personal communication and less control over the way product is moved and treated.

4.7.3 Forecast freight usage

There is expectation of substantial freight growth in this sector, especially considering the starting point of nearly 20,000 t per annum, with 1 and 5 year forecasts being for increases in the order of 20% and 50% respectively on current volumes. It is anticipated that shipping frequency will not change much during this time, with the majority of shipments occurring during the working week. Interviewees anticipate that the proportion of product shipped by air will decrease. Cost was cited as the main factor driving this decrease.

Apart from the hoped for increase in volume, interviewees anticipated no substantial change in their freighting systems and frequency during the next five years.

Interviewees anticipate that more communication among supply chain partners will occur on-line in coming years, but have no immediate plans to change their freight logistics communication strategy.

4.7.4 Constraints to current freight efficiency and effectiveness

The major issues for this sector surround the influence of Bass Strait competition, fuel prices and the Freight Equalisation Scheme (FES) on transport costs, and the influence of limited transport options on asset utilisation and market shelf life.

Interviewees noted that there is an increasing resistance to the use of polystyrene packaging, and see this as a potential constraint unless an appropriate substitute is developed soon.

Communication along the supply chain was also noted as a potential issue. It is felt that increasing volumes and centralisation of freight capacity will lead to the loss of personal contacts and rapport which underpin much of the operational strength of current chains.

4.7.5 Opportunities for future freight efficiency and effectiveness

Interviewees in this sector all take responsibility for communication with supply chain partners, and consequently see few opportunities for improvement of freight logistics systems for their products. They reported that their current systems are well refined and are operating as well as can be expected.

All interviewees see the trend towards real-time traceability and data logging as an opportunity to provide customers with increased surety of product source and handling while in transit, although there was no evidence of any developments in this direction.

4.8 Wild-caught scalefish

4.8.1 Brief category description

The Tasmanian commercial scalefish fishery is a multi-gear and multi-species fishery. It includes all Tasmanian coastal waters within three nautical miles of State baselines. Management of the fishery is complicated by a number of species being harvested across jurisdictions.

Many fishers adapt their operations in response to changes in fish availability and market requirements. Only a minority of the fleet has specialised in targeting a single species. For some operators, scalefish represent an adjunct to other fishing activities, for example rock lobster fishing, and a number of scalefish fishers also participate in commercial activities outside fishing.

Approximately 310 individuals reported fishing commercially for scalefish in 2004. A similar number of vessels were active in the fishery.

Approximately 100 species were taken in the Tasmanian commercial scalefish fishery in 2004/05, totalling 916 tonnes. Over 30 species were taken in quantities greater than one tonne.

The beach price gross value of production of the Tasmanian commercial scalefish fishery in 2004/05 was over four million dollars. This value, however, hides a number of means available to fishers to add value to their catch.

As there is no central fish market in Tasmania, a number of fishers process their own catch, predominantly southern calamari and garfish. These fish are transported interstate for sale, principally in the Melbourne fish market where higher prices may be achieved. The Melbourne fish market is a market place in which combinations of fishers, agents and wholesalers buy and sell fish from all over Australia. Fish traded on the Melbourne Fish Market is predominantly for retail in Victoria.

(Source: Scalefish Industry Profile - <http://www.dpiw.tas.gov.au/inter.nsf/WebPages/EGIL-5L25BW?open>. 10 June 2006)

4.8.2 Current freight usage and supply chain

Those interviewed from this sector shipped about 900 t of fresh scalefish products during the past year. The majority (around 70%) of this production is destined for mainland and overseas markets, with >95% moving by sea-road systems. Product is processed and shipped on demand, with shipments going every day. There is typically a +/- 30-50% variation between days, with Tuesday and Friday being the highest volume days. A small volume of product (about 2% by weight) is shipped by air freight on an *ad hoc* basis. Air shipments are usually made to satisfy last minute customer demand, and are seen as a vital element in competition with mainland suppliers.

Contact between supply chain participants is usually by phone.

This sector uses one main supply chain model:

- Truck from boat to processor
- *Sea-road out of Tasmania to customer*

Interviewees reported high levels of satisfaction with suppliers of raw product to their processing depots, with a slightly lower level of satisfaction with those moving freight from processing to customer. The major source of dissatisfaction is the perceived treatment of product by freight companies. Again, those who report making an effort to work with their supply chain partners also report higher levels of satisfaction with these partners. Different satisfaction levels were reported

between Tasmanian and mainland-based freight companies. Interviewees felt they had a good rapport with local companies, and were quite satisfied with these supply chain partners. Satisfaction levels decreased for mainland-based partners, with whom there is less personal communication and less control over the way product is moved and treated.

4.8.3 Forecast freight usage

There is expectation of substantial freight growth in this sector, with forecasts being in the order of a 20% per annum increase on current volumes. It is thought that aquaculture product will be a significant source of increased supply to meet this demand, indicating a likely blurring of the lines between wild-caught and aquaculture product processing and shipment. Interviewees anticipated that shipping frequency will not change much during this time, with the majority of shipments occurring during the working week. Interviewees anticipate that the proportion of product shipped by air will decrease. Cost was cited as the main factor driving this decrease.

Apart from the hoped for increase in volume, interviewees anticipated no substantial change in their freighting systems and frequency during the next five years.

Interviewees anticipate that more communication among supply chain partners will occur on-line in coming years, but have no immediate plans to change their freight logistics communication strategy.

4.8.4 Constraints to current freight efficiency and effectiveness

The major issues for this sector surround the influence of Bass Strait competition, fuel prices and the Freight Equalisation Scheme (FES) on transport costs, and the influence of limited transport options on asset utilisation and market shelf life.

Interviewees noted that there is an increasing resistance to the use of polystyrene packaging, and see this as a potential constraint unless an appropriate substitute is developed soon.

Communication along the supply chain was also noted as a potential issue. It is felt that increasing volumes and centralisation of freight capacity will lead to the loss of personal contacts and rapport which underpin much of the operational strength of current chains.

4.8.5 Opportunities for future freight efficiency and effectiveness

Interviewees in this sector all take responsibility for communication with supply chain partners, and consequently see few opportunities for improvement of freight logistics systems for their products. They reported that their current systems are well refined and are operating as well as can be expected, but as one interviewee stated "There's always room to make it better". Given reported constraints caused by freight availability, it seems an opportunity may lie in this arena.

All interviewees see the trend towards real-time traceability and data logging as an opportunity to provide customers with increased surety of product source and handling while in transit.

4.9 Freight forwarders

Freight forwarders were included in this survey to capture issues and ideas from this important section of many seafood supply chains.

4.9.1 Current freight usage and supply chain

Those interviewed from this group were responsible for moving 2,600 t of fresh and live seafood out of the state each year. The majority (around 90%) of this production subsequently is exported to overseas markets. Typically fresh product is shipped from Tasmania by sea-road, with live product going by air. Product is shipped on demand, with shipments going every day. Daily volumes were reported to vary quite markedly, but no reliable estimates were provided.

Contact between supply chain participants is usually by email and phone.

Interviewees reported moderate levels of satisfaction with their supply chain partners, including the way they perceived product was treated in transit. In line with reports from seafood suppliers, interviewees in this sector reported that higher levels and sophistication of communication between supply chain partners resulted in increased levels of satisfaction and cooperation.

4.9.2 Constraints to current freight efficiency and effectiveness

The major issues identified by interviewees in this sector surrounded the influence of Bass Strait competition, fuel prices and the Freight Equalisation Scheme (FES) on transport costs, and the influence of limited transport options on competition.

The level of product security at Tasmanian airports was also noted as an area that may develop as a risk for shippers.

4.9.3 Opportunities for future freight efficiency and effectiveness

Interviewees in this sector all raised the importance of Tasmania's reputation for high quality product to current and future demand. While this is not solely a freight logistics issue, the treatment of product along the supply chain has great bearing on the maintenance of high quality from processor to customer.

Freight forwarders also reported that they would like more engagement in planning and "bigger picture" discussions with supply chain participants to help increase efficiency and effectiveness.

All interviewees see increasing demand for real-time traceability and data logging as the start of a trend which will result in the mandatory use of such technology. This was seen to be an opportunity for Tasmanian seafood shippers to set their own benchmarks for others to follow.

Appendices

Appendix I: Aggregated Sector data

ABALONE	
Annual volume	Interviewee total 650 tonnes
Annual value	Interviewee total \$20-40M
Major source	Wild catch state-wide
Market %: (Tas / Mainland / Export)	1 / 5 / 94
Satisfaction with supply chain partners 1 = high; 5 = low	Divers: 1-3 Airlines: 2-4
Satisfaction with treatment of product by transport companies 1 = high; 5 = low	3-4; average 3.7
Current export freight usage	
<i>Transport method</i>	Road to airport, then air
<i>Days on which product exported</i>	All days
<i>Variation in shipment volumes</i>	+/- 50% depending on supply and demand
<i>How shipment is arranged</i>	Phone, email
Forecast export freight usage (1 year)	Wild catch to stay the same; Farmed to double
<i>Transport method</i>	Same as current
<i>Days on which product exported</i>	Same as current
<i>Variation in shipment volumes</i>	Same as current
<i>How shipment will be arranged</i>	Same as current
Forecast export freight usage (5 year)	All expect an increase; No reliable figures, but double is a common estimate
<i>Transport method</i>	Same as current
<i>Days on which product exported</i>	Same as current
<i>Variation in shipment volumes</i>	Same as current
<i>How shipment will be arranged</i>	Same as current, but all aware that changes are likely
Supply chain description	Truck from boat to processor Truck to airport Air to customer
Change of ownership	Clear – changes on delivery to customer, with some leeway for claims
Change of liability	Clear – changes on delivery to customer, with some leeway for claims
Current attributes of seafood supply chain	
<i>Strengths</i>	"No strengths, hard to see positives, take what's available, due to air transport" "Own transport contract"
<i>Weaknesses</i>	All mentioned lack of guaranteed uplift for air freight
<i>Opportunities</i>	Dedicated freight air service
<i>Threats</i>	Transport reliability - "Airlines, mainly lack of dedicated space"

Current trends influencing seafood logistics	
<i>Political</i>	"None"; "Government needs to push for better airline space"
<i>Economic</i>	Fuel prices were only/main issue for all
<i>Environmental</i>	Low response to this question. One mentioned fuel efficiency and biofuels
<i>Social</i>	"Seafood becoming more popular"; "Traceability, AQIS system - will affect everyone"
<i>Technological</i>	Low response; ability to handle larger freight units; traceability
Roles for making changes to seafood logistics in Tasmania	
<i>Individual company</i>	Responses varied depending on export volumes - smaller exporters thought they had less of a role than larger exporters. Larger exporters are looking at more integrated supply chains
<i>Tasmanian Fishing Industry Council</i>	Not much known about TFIC in this group. "Hopefully good but not sure of role at present"
<i>Tasmanian Freight Logistics Council</i>	"Important, united voice in all issues"; "Don't hear of them, don't know what have done or are doing"
<i>State government</i>	Limited regard for Government and its potential role - one respondent mentioned Freight equalisation;
Other comments	One response that encapsulated all other concerns mentioned "Outlook negative for live freight out of state - due to airlines and competition with tourism. Winter, flights decrease, space decrease, security compliances, AQIS/customers. This is all driving business out of state"

KING CRAB	
Annual volume	Interviewee total 20 tonnes
Annual value	Interviewee total \$1M
Major source	Fishing boats state wide
Market %: (Tas / Mainland / Export)	30 / 10 / 60
Satisfaction with supply chain partners 1 = high; 5 = low	4
Satisfaction with treatment of product by transport companies 1 = high; 5 = low	4
Current export freight usage	
<i>Transport method</i>	Air (live)
<i>Days on which product exported</i>	Everyday depending on sales
<i>Variation in shipment volumes</i>	Yes, varies all the time
<i>How shipment is arranged</i>	Phone
Forecast export freight usage (1 year)	Same as current
<i>Transport method</i>	Same as current
<i>Days on which product exported</i>	Same as current
<i>Variation in shipment volumes</i>	Same as current
<i>How shipment will be arranged</i>	Same as current
Forecast export freight usage (5 year)	Hopefully increased
<i>Transport method</i>	Same as current
<i>Days on which product exported</i>	Same as current
<i>Variation in shipment volumes</i>	Same as current
<i>How shipment will be arranged</i>	Same as current
Supply chain description	Boat and truck to processor Truck to airport Air to customer
Change of ownership	Unclear
Change of liability	Unclear
Current attributes of seafood supply chain	
<i>Strengths</i>	Own transport contract
<i>Weaknesses</i>	Availability of air transport
<i>Opportunities</i>	Virgin freighter in AAE fill shortfall in flights
<i>Threats</i>	Less flights, etc. problems with air freight companies
Current trends influencing seafood logistics	
<i>Political</i>	None
<i>Economic</i>	None
<i>Environmental</i>	None, licenses?
<i>Social</i>	Fishing industry declining

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<i>Technological</i>	New systems being trialled. Better efficiency
Roles for making changes to seafood logistics in Tasmania	
<i>Individual company</i>	Not at present
<i>Tasmanian Fishing Industry Council</i>	Need to be involved
<i>Tasmanian Freight Logistics Council</i>	Need lobbying flight/airlines, pressure on more flights
<i>State government</i>	No
Other comments	Slowly improving airlines, lack of flights a real issue

ROCK LOBSTER	
Annual volume	Interviewee total 620 tonnes
Annual value	Interviewee total \$25-40M
Major source	All from wild fishing around the state
Market %: (Tas / Mainland / Export)	0 / 10 / 90
Satisfaction with supply chain partners 1 = high; 5 = low	Fishermen 1-3; Airlines 2-4
Satisfaction with treatment of product by transport companies 1 = high; 5 = low	4-5; average 4.2
Current export freight usage	
<i>Transport method</i>	99% road to airport then air
<i>Days on which product exported</i>	Any day when space available
<i>Variation in shipment volumes</i>	70% varies +/-50% depending on demand; 30% doesn't vary much
<i>How shipment is arranged</i>	Phone and email, ~60% through Freight Forwarders
Forecast export freight usage (1 year)	Increases expected, but no reliable figures
<i>Transport method</i>	Same as current
<i>Days on which product exported</i>	Same as current
<i>Variation in shipment volumes</i>	Same as current
<i>How shipment will be arranged</i>	No change from present expected, but aware that changes may occur
Forecast export freight usage (5 year)	All expect an increase; No reliable figures, but double a common estimate
<i>Transport method</i>	Same as current
<i>Days on which product exported</i>	Same as current
<i>Variation in shipment volumes</i>	Same as current
<i>How shipment will be arranged</i>	Same as current
Supply chain description	Truck to processor Truck to airport Air to customer
Change of ownership	Clear – delivery to customer
Change of liability	Not clear – varying opinions from total chain to delivery
Current attributes of seafood supply chain	
<i>Strengths</i>	"Speed of air link"; "Own transport contract"
<i>Weaknesses</i>	All mentioned lack of guaranteed uplift from air freight, passenger airline priorities
<i>Opportunities</i>	Dedicated freight air service, but one has tried it and says it won't work
<i>Threats</i>	Transport reliability - "Airlines, mainly lack of dedicated space"
Current trends influencing seafood logistics	

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<i>Political</i>	"None"; "Government needs to push for better airline space"
<i>Economic</i>	Fuel prices; Tasmanian market share increasing
<i>Environmental</i>	None mentioned
<i>Social</i>	"Seafood becoming more popular"; "fishing industry declining"; "Traceability, AQIS system - will affect everyone"
<i>Technological</i>	Low response - "Better air freight systems"
Roles for making changes to seafood logistics in Tasmania	
<i>Individual company</i>	Responses varied depending on export volumes - smaller exporters thought they had less of a role than larger exporters. Larger exporters are looking at more integrated supply chains
<i>Tasmanian Fishing Industry Council</i>	Not much known about TFIC in this group, but all thought that TFIC "Need to be involved"
<i>Tasmanian Freight Logistics Council</i>	"Important, united voice in all issues"; Lobbying for flights
<i>State government</i>	"Lobbying air freight companies"; Freight equalisation
Other comments	One response expressed what all were saying " Air freight cargo, rescheduling times for international connections and daylight savings issues, a real problem for quality live exports, ½ hour earlier in winter, etc. treating company unfairly flight space booked . . . but filled with passengers instead, drivers turned around due to lack of cargo space. "

MUSSELS	
Annual volume	Interviewee total 900 tonnes
Annual value	Interviewee total \$4.5M
Major source	Farms around Tasmania
Market %: (Tas / Mainland / Export)	5/ 80 / 15
Satisfaction with supply chain partners 1 = high; 5 = low	2-3; average 2.5
Satisfaction with treatment of product by transport companies 1 = high; 5 = low	2-4; average 3
Current export freight usage	
<i>Transport method</i>	sea road, air
<i>Days on which product exported</i>	Week days largest, some weekends
<i>Variation in shipment volumes</i>	Tuesday and Friday biggest; +/-20-30% between days
<i>How shipment is arranged</i>	Standing bookings varied as required; Custom software
Forecast export freight usage (1 year)	30% increase; supply and demand
<i>Transport method</i>	Road out of Tasmanian will increase
<i>Days on which product exported</i>	Same as current
<i>Variation in shipment volumes</i>	Same as current
<i>How shipment will be arranged</i>	Same as current
Forecast export freight usage (5 year)	250% increase; supply and demand
<i>Transport method</i>	80% road-sea; 20% air
<i>Days on which product exported</i>	6 days a week
<i>Variation in shipment volumes</i>	Same as current
<i>How shipment will be arranged</i>	Probably little change; Maybe more on internet
Supply chain description	
Change of ownership	Clear – delivery to customer
Change of liability	Clear – delivery to customer
Current attributes of seafood supply chain	
<i>Strengths</i>	Speed of response; Partner reliability
<i>Weaknesses</i>	Low frequency; Have to fit with others' schedules; Lack of choice
<i>Opportunities</i>	If frequency increases, volumes will grow and freight prices will decrease
<i>Threats</i>	Competitors closer and cheaper to markets; More flexibility, shorter lead times
Current trends influencing seafood logistics	
<i>Political</i>	Fuel rebate, freight equalisation
<i>Economic</i>	Fuel prices
<i>Environmental</i>	n/a
<i>Social</i>	n/a

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<i>Technological</i>	On-line communication and freight arrangements and tracking
Roles for making changes to seafood logistics in Tasmania	
<i>Individual company</i>	Industry is growing and gaining influence. Should use this to increase efficiencies
<i>Tasmanian Fishing Industry Council</i>	No idea. No evidence for their role to help in this issue. But they should take more leadership in this area. Critical.
<i>Tasmanian Freight Logistics Council</i>	Should act as peak body in major negotiations with govt, transporters.
<i>State government</i>	Important role, hard to articulate; Managing resources, facilitating, supporting industry; More specific freight logistics activity
Other comments	Biggest issues are choice and frequency of freight.; Improving logistics will improve efficiencies and competitiveness

SCALLOPS	
Annual volume	Interviewee total 500 tonnes
Annual value	Interviewee total \$1.6M
Major source	90% wild catch
Market %: (Tas / Mainland / Export)	30/60/10
Satisfaction with supply chain partners 1 = high; 5 = low	2-3; average 2.5
Satisfaction with treatment of product by transport companies 1 = high; 5 = low	2-3; average 2.5
Current export freight usage	
<i>Transport method</i>	Air and road
<i>Days on which product exported</i>	Mon, Tues Fri more consistent days; Others more sporadic
<i>Variation in shipment volumes</i>	70% on Mon Tue Fri; Probably +/- 20% variation day to day
<i>How shipment is arranged</i>	Book space before or on the day; Have regular schedule, advise of changes on the day; Based on price. Toll expensive
Forecast export freight usage (1 year)	20-40% increase; stock in water
<i>Transport method</i>	Same as current
<i>Days on which product exported</i>	Same as current
<i>Variation in shipment volumes</i>	Same as current
<i>How shipment will be arranged</i>	Same as current
Forecast export freight usage (5 year)	250% increase; supply and demand
<i>Transport method</i>	80% road; 20% air
<i>Days on which product exported</i>	6d/week
<i>Variation in shipment volumes</i>	No change
<i>How shipment will be arranged</i>	Probably little change; Maybe more on internet
Supply chain description	Boat or truck to processor Truck to mainland or airport Air to mainland for distribution
Change of ownership	Clear – delivery to customer
Change of liability	Clear - responsible all along supply chain
Current attributes of seafood supply chain	
<i>Strengths</i>	Partner reliability
<i>Weaknesses</i>	Low frequency; Have to fit with others' schedules; Lack of choice
<i>Opportunities</i>	If frequency increases, volumes will grow and freight prices will decrease
<i>Threats</i>	Competitors closer and cheaper to markets; More flexibility, shorter lead times

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Current trends influencing seafood logistics	
<i>Political</i>	Fuel rebate, freight equalisation
<i>Economic</i>	Fuel prices
<i>Environmental</i>	n/a
<i>Social</i>	n/a
<i>Technological</i>	On-line communication and freight arrangements and tracking
Roles for making changes to seafood logistics in Tasmania	
<i>Individual company</i>	Industry is growing and gaining influence. Should use this to increase efficiencies
<i>Tasmanian Fishing Industry Council</i>	No idea. No evidence for their role to help industry in this issue. But they should take more leadership in this area. Critical.
<i>Tasmanian Freight Logistics Council</i>	Should act as peak body in major negotiations with govt, transporters.
<i>State government</i>	Important role, hard to articulate; Managing resources, facilitating, supporting industry; More specific freight logistics activity
Other comments	Biggest issues are choice and frequency of freight.; Improving logistics will improve efficiencies and competitiveness

OYSTERS	
Annual volume	Interviewee total 2,600 tonnes (assuming 1 doz = 1 kg)
Annual value	Interviewee total \$16M
Major source	Marine farms state wide
Market %: (Tas / Mainland / Export)	2 / 90 / 8
Satisfaction with supply chain partners 1 = high; 5 = low	2-5; average 2.8
Satisfaction with treatment of product by transport companies 1 = high; 5 = low	2-5; average 3.8
Current export freight usage	
<i>Transport method</i>	95% road-sea, 5% air
<i>Days on which product exported</i>	Peak on weekdays, some on weekends
<i>Variation in shipment volumes</i>	Variable within and between exporters; no trends as to peak days and low days
<i>How shipment is arranged</i>	Most by phone and email; One by custom software that matches harvest schedules to orders
Forecast export freight usage (1 year)	10% increase
<i>Transport method</i>	Same as current
<i>Days on which product exported</i>	Same as current
<i>Variation in shipment volumes</i>	Same as current
<i>How shipment will be arranged</i>	Same as current
Forecast export freight usage (5 year)	50% increase; demand
<i>Transport method</i>	Same as current
<i>Days on which product exported</i>	Same as current
<i>Variation in shipment volumes</i>	Same as current
<i>How shipment will be arranged</i>	Same as current
Supply chain description	Truck to processor Truck to mainland Truck to customer
Change of ownership	Clear - delivery to customer - but one mentioned this has not been tested
Change of liability	Clear - delivery to customer - but one mentioned this has not been tested
Current attributes of seafood supply chain	
<i>Strengths</i>	Speed of air and delivery flexibility
<i>Weaknesses</i>	Limited transport options mean decreased utilisation of assets and loss of shelf life
<i>Opportunities</i>	Few opportunities identified, systems well refined and not much opportunity for improvement
<i>Threats</i>	Fuel prices, lack of influence of mainland freight

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	companies, airline cargo capacity
Current trends influencing seafood logistics	
<i>Political</i>	Freight equalisation and Patrick Toll merger
<i>Economic</i>	Fuel costs, labour costs, very difficult to pass these on to customer
<i>Environmental</i>	Consumer demand for sustainable production systems
<i>Social</i>	Traceability; push towards rail from road (lose a day on this)
<i>Technological</i>	Traceability, increasing ability to provide information leads to demand for that information
Roles for making changes to seafood logistics in Tasmania	
<i>Individual company</i>	Lobbying airline and freight forwarders
<i>Tasmanian Fishing Industry Council</i>	Typical comment "Zero: now. Should be more representative of seafood industry, needs to change its focus"
<i>Tasmanian Freight Logistics Council</i>	Working with industry to lobby government on industry realities and needs. Change focus to e.g. Tas Commercial Transport Council
<i>State government</i>	Health, quarantine - legislation adherence, ship scheduling, freight is our lifeline, need return freight to make it viable, -- efficiency dependant on containers coming back full,
Other comments	Transport industry must focus on food safety all the way along the chain and currently they are not aware of the need for food safety at every stage of the chain

SALMONIDS	
Annual volume	Interviewee total 17,500 tonnes
Annual value	Interviewee total \$175M
Major source	Tasmanian aquaculture
Market %: (Tas / Mainland / Export)	4 / 82 / 14
Satisfaction with supply chain partners 1 = high; 5 = low	1-2 in Tasmania; Worse on mainland
Satisfaction with treatment of product by transport companies 1 = high; 5 = low	1 - 4; average 2.2; Satisfaction higher with more integrated chains
Current export freight usage	>90% by road-sea
<i>Transport method</i>	Refrigerated trucks
<i>Days on which product exported</i>	Every day, Saturday lowest
<i>Variation in shipment volumes</i>	No peak day obvious; vary by +/- 30-50% per day
<i>How shipment is arranged</i>	Phone, fax, email
Forecast export freight usage (1 year)	20% increase ; supply and demand
<i>Transport method</i>	Increasing reliance on road-sea – due to costs
<i>Days on which product exported</i>	Same as current
<i>Variation in shipment volumes</i>	Same as current
<i>How shipment will be arranged</i>	Same as current
Forecast export freight usage (5 year)	50% increase; supply and demand
<i>Transport method</i>	Increasing reliance on road-sea – due to costs
<i>Days on which product exported</i>	Same as current
<i>Variation in shipment volumes</i>	Same as current
<i>How shipment will be arranged</i>	Same as current
Supply chain description	Truck from farm to processor Truck to mainland Truck to customer
Change of ownership	Clear – delivery to customer
Change of liability	Clear – varying window for customer feedback
Current attributes of seafood supply chain	
<i>Strengths</i>	Flexible response to demand; good understanding with freight companies
<i>Weaknesses</i>	Communication within diverse and fragmented supply chain
<i>Opportunities</i>	Improving rapport with supply chain; more flexibility and effort by all
<i>Threats</i>	Failure of supply chain (breakdown); Freight equalisation removal; getting too big and losing personal contacts
Current trends influencing seafood logistics	
<i>Political</i>	Freight Equalisation scheme; Competition on Bass Strait

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	link
<i>Economic</i>	Labour costs; Fuel costs; Toll-Patrick merger will decrease Tasmanian influence
<i>Environmental</i>	Packaging - polystyrene; Big trucks on road
<i>Social</i>	Traceability; Trucks on road - efficient but decreasing acceptance of this
<i>Technological</i>	Traceability; Increasing real-time information systems - needs to be balance against price
Roles for making changes to seafood logistics in Tasmania	
<i>Individual company</i>	All want to drive changes to increase efficiency internally and with freight companies
<i>Tasmanian Fishing Industry Council</i>	Very little awareness of TFIC role - think this should change and that TFIC should take on broader representation of seafood industry
<i>Tasmanian Freight Logistics Council</i>	Those interviewed not on TFLC had little knowledge of its role and representation; All thought TFLC should be vehicle for industry dialogue, linking people up
<i>State government</i>	"More of a role from political point of view rather than operational. Bass strait needs to be declared part of national highway system, which would allow federal government to apply freight equalisation to exports which then makes exports attractive to Salmon Industry" "Critical - watch dog, competition, infrastructure, needs to be aware of cost of freight to tax paying companies, needs to be part of TFLC"
Other comments	This reply encapsulated the majority of all comments "What is coming back into Tasmania is important. Our systems depend on it. Air out of Hobart no real advantage to road for export."

WILD SCALEFISH	
Annual volume	Interviewee total 900 tonnes
Annual value	Interviewee total \$8M
Major source	Tasmanian fishers
Market %: (Tas / Mainland / Export)	30 / 50 / 20
Satisfaction with supply chain partners 1 = high; 5 = low	2
Satisfaction with treatment of product by transport companies 1 = high; 5 = low	1-3, average 2
Current export freight usage	
<i>Transport method</i>	Road -sea; air (2%)
<i>Days on which product exported</i>	Every day
<i>Variation in shipment volumes</i>	Peak Tuesday and Friday (extra 40%)
<i>How shipment is arranged</i>	Phone to transport company
Forecast export freight usage (1 year)	20% increase
<i>Transport method</i>	Same as current; air decreasing
<i>Days on which product exported</i>	Same as current
<i>Variation in shipment volumes</i>	Same as current
<i>How shipment will be arranged</i>	Same as current
Forecast export freight usage (5 year)	10-20% pa ; tending to aquacultured product
<i>Transport method</i>	Same as current; air decreasing
<i>Days on which product exported</i>	Same as current
<i>Variation in shipment volumes</i>	Same as current
<i>How shipment will be arranged</i>	Same as current
Supply chain description	Truck to processor Truck to mainland Truck to customer
Change of ownership	Clear - sold free in store responsible for all freight and cold chain
Change of liability	Clear – transferred to customer at freight company
Current attributes of seafood supply chain	
<i>Strengths</i>	Understanding of the system; good rapport with customers
<i>Weaknesses</i>	Low control of mainland transporters; low info flow to industry from TFLC
<i>Opportunities</i>	Always room to make it better
<i>Threats</i>	Fuel prices
Current trends influencing seafood logistics	
<i>Political</i>	n/a
<i>Economic</i>	Fuel prices; cheap imports

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<i>Environmental</i>	Push away from polystyrene boxes, packing
<i>Social</i>	Use lots of freight
<i>Technological</i>	Internet systems for booking and traceability
Roles for making changes to seafood logistics in Tasmania	
<i>Individual company</i>	More focus on changing internal systems
<i>Tasmanian Fishing Industry Council</i>	Don't have much to do - now more aquaculture TFIC mainly would issue. Air passenger, fuel, luggage, cargo (last!) Spirits as good as air freight
<i>Tasmanian Freight Logistics Council</i>	Vehicle for industry dialogue, keep info flowing both ways, specialist peak body for freight services
<i>State government</i>	Critical - watch dog, competition, infrastructure, needs to be aware of cost of freight to tax paying companies, needs to be part of TFLC
Other comments	Always want to improve supply chain, need to look at trends, need to work with transport companies, need alignment of needs, need to maintain sustainable competition

FREIGHT FORWARDERS	
Annual volume	2600 tonnes
Annual value	
Major source	Statewide from producers
Market %: (Tas / Mainland / Export)	0 / 10 / 90
Satisfaction with supply chain partners 1 = high; 5 = low	2-3; average 2.5
Satisfaction with treatment of product by transport companies 1 = high; 5 = low	2-3; average 2.5
Current export freight usage	
<i>Transport method</i>	Sea-road, air; consolidated in Melbourne
<i>Days on which product exported</i>	every day
<i>Variation in shipment volumes</i>	yes - supply and demand
<i>How shipment is arranged</i>	phone and email
Forecast export freight usage (1 year)	5 – 10% increase; increased demand from recognition of quality
<i>Transport method</i>	Same as current; no choice
<i>Days on which product exported</i>	Same as current
<i>Variation in shipment volumes</i>	Same as current
<i>How shipment will be arranged</i>	Same as current
Forecast export freight usage (5 year)	20-50% increase; increased demand from recognition of quality
<i>Transport method</i>	Same as current; no choice
<i>Days on which product exported</i>	Same as current
<i>Variation in shipment volumes</i>	Same as current
<i>How shipment will be arranged</i>	Same as current
Supply chain description	n/a
Change of ownership	Clear - belongs to exporter until reaches destination
Change of liability	Clear - forwarders covered for some loss in exceptional circumstances
Current attributes of seafood supply chain	
<i>Strengths</i>	clear systems, know what can and can't be done; high quality product
<i>Weaknesses</i>	security; lack of space out of Tasmania
<i>Opportunities</i>	dedicated freight service - will need to run at a loss early on to gain producer confidence
<i>Threats</i>	lack of competition limiting space
Current trends influencing seafood logistics	
<i>Political</i>	Security at Tas airports; fuel surcharges; foreign politics
<i>Economic</i>	fuel prices; exchange rates
<i>Environmental</i>	Tasmanian image as quality supplier
<i>Social</i>	Demand for traceability and real time information (time,

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	temperature etc)
<i>Technological</i>	New bigger aircraft - more capacity; ITC technology
Roles for making changes to seafood logistics in Tasmania	
<i>Individual company</i>	Support processors; work with industry to improve services and capacity
<i>Tasmanian Fishing Industry Council</i>	Lobbying; promotion of industry needs
<i>Tasmanian Freight Logistics Council</i>	Lobbying; promotion of industry needs
<i>State government</i>	Listen to industry - communication. Work with industry to match in with tourism events etc
Other comments	need dedicated, consistent space out of the state

Appendix 2: Survey Information sheet

RURAL DEVELOPMENT SERVICES SURVEY INFORMATION SHEET

Project Title: Freight Logistics Survey of the Tasmanian Seafood Industry

Project objectives:

The Tasmanian Freight Logistics Council (TFLC) has engaged Rural Development Services (RDS) to investigate the freight logistics associated with movement of live and fresh, chilled seafood from Tasmania to markets interstate and overseas.

The project aim is to review and compare the current situation to that reported in a similar study completed in 1999-2000, and to expand upon that work in terms of identifying actions that can be realistically undertaken to improve seafood logistics effectiveness and efficiency.

Research will be confined to movement of live and fresh, chilled products from catch/harvest to post-processing and shipment up to the initial step of each logistics-chain beyond Tasmania. Aquaculture production will be included as well as wild-caught fish species in the data. Frozen seafood products are not part of the scope of this study.

Data will be collected via semi-structured interviews, with analysis and presentation of results to be in a form that is easily read, understood and available for reproduction and wide circulation among the industry sectors involved. Strict protocols will ensure the protection of anonymity and commercial interests of all interviewees, while allowing aggregate data to be used to help inform TFLC policy and actions.

Why be involved in the survey?

Analysis of survey information will allow RDS to provide the TFLC with a view of your perceptions with regards to Tasmanian seafood freight logistics, so that the TFLC is able to more accurately:

- describe/map respective supply-chain functions for a range of seafood products originating throughout the state, up to the first step beyond Tasmania in each chain, identifying relevant changes to the situation described in the 1999 report
- identify freight issues that are or may be contributing to inefficiencies/constraints for various industry participants
- compare producer perceptions of logistical constraints on their respective businesses for different seafood products
-

Criteria for inclusion in the survey:

Stakeholders have been invited to participate on recommendation from the Tasmanian Fishing Industry Council and/or the Tasmanian Freight Logistics Council.

Survey procedure:

Stakeholders who agree to participate by signing the attached Consent Form will be interviewed using a questionnaire.

Every effort will be made to maintain confidentiality and anonymity of survey data by providing only aggregate data in all project reports.

All interviewees will be provided with a transcript of their interview to check for accuracy and to allow the participant to add or withdraw information before any analysis starts.

Participation is voluntary. Any participant may fully withdraw at any time.

For further information on the project and conduct of the interviews, contact:
Tom Lewis on 6231 9033 or 0417 537 806.

Appendix 3: Survey Consent Form

RURAL DEVELOPMENT SERVICES SURVEY CONSENT FORM

Project Title: Freight Logistics Survey of the Tasmanian Seafood Industry

Participant Declaration

I agree to participate in this investigation and understand that:

- I may withdraw at any time
- I may request at any time that any or all data I provide be withdrawn from the project.

In agreeing to participate in this investigation, I acknowledge that:

1. I have read and understood the 'Information Sheet' relating to this study.
2. The nature and possible effects of the study have been explained to me.
3. The interview will involve the following:
 - a. An interview of up to 1 hour
 - b. Coverage of the following areas (emphasis will be on areas iii – vi):
 - i. Business size and markets
 - ii. Industry outlook
 - iii. Current freight usage
 - iv. Forecast freight usage
 - v. Supply chain organisation
 - vi. Constraints to current freight efficiency and effectiveness
 - c. Opportunity to comment on the interview transcript to assure its accuracy.
4. All research data will be securely stored on Rural Development Services Pty Ltd premises for a period of 1 year. The data will be destroyed at the end of 1 year.
5. Any questions that I have asked have been answered to my satisfaction.
6. A study report is intended to be published using the research data.
7. Information or quotes I provide may be used in the report, but will not be attributed to me without my consent.
8. I will be identified as a participant only by inclusion in a list of participants unless I provide consent to the contrary.
9. Specific information I provide will:
 - a. be kept confidential to Rural Development Services Pty Ltd
 - b. be only published as an aggregate of collected data
 - c. be used only for the purposes of the research.

Participant Name: _____

Participant Signature _____ Date _____

Investigator Declaration

I have explained this project and the implications of participation in it to the Participant and I believe that the consent is informed and that the Participant understands the implications of participation.

Investigator Name _____

Investigator Signature _____ Date _____

Appendix 4: Survey questionnaire

Question	SECTOR SIZE AND MARKETS	Product I
1.	What are the fresh, chilled or live seafood product/s in which you trade	
2.	What is your average annual trade in [(e.g. live abalone)] (weight/numbers)	
3.	What is your average annual trade in [product] (value)	
4.	From where do you obtain the raw materials for [product]	
5.	How are your raw products delivered to your processing facility	
6.	Into which markets do you sell [product] Tas/Mainland/Export	
7.	What ratio of [product] do you sell into each market Tas/Mainland/Export	

Question	CURRENT FREIGHT USAGE	
8.	Tell me how you have moved your product out of Tasmania over the last year	
9.	On which days do you freight product each week	
10.	Is there a variation in the volume of your shipments	
11.	How do you arrange to freight your product	

Question	CURRENT SUPPLY CHAIN ORGANISATION	
12.	How do you communicate with other participants in your supply chains	
13.	Please rate your satisfaction with the level of cooperation with other participants Please use a rating of 1 to 5, where 1 = totally satisfied and 5 = totally dissatisfied	
14.	Is the stage at which change of ownership occurs clear and unambiguous	
15.	Does liability for the safety and quality of your product change along the supply chain. If so, is the stage at which this change occurs clear and unambiguous	
16.	Are you aware of the Chain of Responsibility legislation being introduced in Tasmania and other states [<i>will need to give brief explanation to most</i>]	
17.	To what extent are you satisfied with the way the freight companies in your supply chain/s treat your product? Please use a rating of 1 to 5, where 1 = totally satisfied and 5 = totally dissatisfied	

Question	FORECAST FREIGHT USAGE – ONE YEAR OUT	
18.	Thinking about your likely freight requirements in the future, how do you think they will compare to current usage in one year	
	What is the reason for this change	
19.	How often will you freight product each week	
	What is the reason for this change	
20.	How do you expect volumes to vary between shipments	
	What is the reason for this change	
21.	How will you arrange to freight your product	
	What is the reason for this change	
22.	What type of transport will you use	
	What is the reason for this change	

Question	FORECAST FREIGHT USAGE – FIVE YEARS OUT	
23.	Thinking about your likely freight requirements in the future, how do you think they will compare to current usage in five years	
	What is the reason for this change	
24.	How often will you freight product each week	
	What is the reason for this change	
25.	How do you expect volumes to vary between shipments	
	What is the reason for this change	
26.	How will you arrange to freight your product	
	What is the reason for this change	
27.	What type of transport will you use	
	What is the reason for this change	

Question	CONSTRAINTS TO CURRENT FREIGHT EFFICIENCY AND EFFECTIVENESS	
28.	Thinking about your current freight system, what do you see to be the (internal) Strengths of this system?	
29.	Thinking about your current freight system, what do you see to be the (internal) Weaknesses of this system?	
30.	Thinking about your current freight system, what do you see to be the (external) Opportunities for this system?	
31.	Thinking about your current freight system, what do you see to be the (external) Threats to this system?	
32.	Thinking about your current freight system, what current Political trends are influencing the efficiency and effectiveness of this system?	
33.	Thinking about your current freight system, what current Economic trends are influencing the efficiency and effectiveness of this system?	
34.	Thinking about your current freight system, how do you see current Environmental trends are influencing the efficiency and effectiveness of this system?	
35.	Thinking about your current freight system, what current Social trends are influencing the efficiency and effectiveness of this system?	
36.	Thinking about your current freight system, what current Technological trends influencing the efficiency and effectiveness of this system?	

Question	INDUSTRY OUTLOOK	
37.	What do you see as your role in making structural changes to seafood logistics operations in Tasmania	
38.	What do you see as TFIC's role in making structural changes to seafood logistics operations in Tasmania	
39.	What do you see as TFLC's role in making structural changes to seafood logistics operations in Tasmania	
40.	What do you see as government's role in making structural changes to seafood logistics operations in Tasmania	

Question	GENERAL COMMENT	
41.	Is there anything else you wish to add about how your supply chain could be improved to enable you to better service your markets	

Appendix 5: Interviewees

Participating Companies	Companies invited but not participating
Australian Seafood Exports	Abalone Farms Australia
Coastal Waters	Abtec Seafoods
Cold Gold	Hai Loong
DHL	Red Rock Lobster
George Town Seafoods	Southern Ocean Trout
Huon Aquaculture	Tasmanian Highland Eels
Moulting Bay Oysters	
Oyster Bay Oysters	
Petuna	
Seafood Traders	
Spring Bay Seafoods	
Stanley Fish	
Tasea	
Tasmanian Quality Foods	
Tassal Group	
Tassie Lobster	
WorldLink	
