Taking Stock and Setting Directions

Wild-Catch Prawn Industry of Australia
Situation Assessment
Challenges and Opportunities
A Strategic Path Forward

Report

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Prepared by

AgEconPlus Consulting

Michael Clarke
P: (02) 9817 5888
M: 043 8844024
E: clarke@AgEconPlus.com.au

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Abbreviations

AAA  Agriculture Advancing Australia – Major DAFF program package
ACPF  Australian Council of Prawn Fisheries
AFMA  Australian Fisheries Management Authority
APPA  Australian Prawn Promotion Association
ASIC  Australian Seafood Industry Council
ASPC  Australian Seafood Promotion Council (proposed)
BRD  Bycatch Reduction Device
DAFF  Aust. Govt Department of Agriculture, Fisheries and Forestry
DEH  Aust. Govt Department of Environment and Heritage
EMS  Environmental Management Systems
FRDC  Fisheries Research and Development Corporation
FSANZ  Food Standards Australia New Zealand
GBRMPA  Great Barrier Reef Marine Park Authority
GVP  Gross Value of Production
IPP  Industry Partnerships Programme
IRA  Import Risk Assessment
ITQ  Individual Transferable Quota
NAC  National Aquaculture Council
NFIS  National Food Industry Strategy
NPF  Northern Prawn Fishery
NORMAC  Northern Prawn Fishery Management Advisory Committee
MEY  Maximum Economic Yield
MRL  Minimum Residue Limit
MSC  Marine Stewardship Council, International
MSY  Maximum Sustainable Yield
PIRSA  Primary Industries and Resources South Australia
QDPI&F  Qld Department of Primary Industries and Fisheries
ROVES  Record of Practical Experience and Sea Service
SEA  Seafood Experience Australia
SFM  Sydney Fish Markets
SFR  Statutory Fishing Rights’
SSA  Seafood Services Australia
SWOT  Strengths Weaknesses Opportunities and Threats analysis
TAC  Total Allowable Catch
TEDs  Turtle Exclusion Devices
USITC  United States International Trade Commission
VET  Vocational Education and Training
WRL  Western Rock Lobster
WINSC  Women in Seafood Network Industry Community
WSSV  White Spot Syndrome Virus
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Executive Summary

Introduction

This project is a situation analysis of the Australian wild-catch prawn industry to determine the magnitude of production, fisheries management, market, business and other challenges in the near to medium future and prepare response strategies for priority areas. The project identified the industry’s:

- Current situation;
- Future environment;
- Capacity to respond to challenges and opportunities;
- Areas that it can build on to increase its success; and
- Strategies for priority areas.

The analysis framework employed was prepared specifically for the Industry Partnerships Programme (CIE 2005) and cascades through industry attributes, enabling environment, external environment and success criteria. Summaries of Australian wild-catch prawn industry performance in these areas are provided at the end of each report chapter.

Current Situation and SWOT

The Australian wild-catch prawn industry is currently characterised as follows:

1. Profitability – many fisheries are of marginal profitability and are under increasing pressure in recent times. Pressure on profitability is linked to both prices received and the cost of production. Overseas aquaculture with large-scale production and low cost labour is more price competitive than the Australian wild-catch.

2. Industry comparative advantage – a reliable volume of premium product, caught in clean oceans and delivered through a safe ‘first world’ supply chain.

3. Production – between 20,000 and 25,000 tonnes with little capacity to respond to additional demand. Additional Australian demand will have to be met by domestic or imported aquaculture or diversion of product from export markets. On a world-scale Australia is a small boutique industry that supplies high priced, quality products. Industry profit will need to be generated by lowering cost or better marketing this supply limited product.

4. Production cost – is well understood by larger fishers but less well understood by small and part-time operators. Australian cost of production is higher than competing suppliers – standout cost items include labour, fuel, repairs/maintenance and the cost of restrictions associated with fisheries management. Australian wild-catch cost of production ($US8/kg to $US12/kg) is higher than aquaculture imports ($US6/kg to $US8/kg) and the most efficient of Australian aquaculture production ($US11/kg).
5. Production efficiency – constrained by fisheries management policies which favour substitution of non-controlled inputs for controlled inputs. This substitution results in ‘effort creep’ and further rounds of structural adjustment to remove the increase in efficiency. A vicious circle of adjustment to remove efficiency gains has been created. Structural adjustment is favouring large integrated operators over small single boat enterprises.

6. Labour supply and skills – industry wide labour supply and skill shortage. A shorter fishing season has made it more difficult to retain labour and labour has been attracted to higher paying industries with superior working conditions. The skills required of skippers, crew and the supply chain have increased overtime.

7. Skills and knowledge in the industry – the business of fishing has become more complex and some small/part-time fishers have failed to keep up. Fishing industry culture is not conducive to training. Training in fishery skills takes priority over business management and marketing. Investment by fishers in all types of training contracts in low profit years. Skills are also missing in the supply chain. There is a significant gap in product handling skills in the retail sector.

8. Structural adjustment – the structure of Australian wild-catch prawn fisheries is constantly changing as operators respond to changing economic conditions, environmental conditions and the institutional environment. The primary impetus for structural adjustment has been stock changes and declines in fisher returns. Despite ongoing adjustment many wild-caught prawn fisheries continue to exhibit excess capacity (i.e. too many fishers).

9. Environmental impact and public image – industry is quick to implement technology that will enhance environmental management. However, bycatch remains a major issue in some, especially northern, fisheries. The public is concerned about bycatch levels and seafloor degradation associated with prawn trawl. A negative public image is perpetuated by a lack of capacity to communicate environmental achievements.

10. Community impact on the fishing environment – fishing grounds managed for multiple community objectives risk environmental degradation. Estuaries and ocean environments in more populous areas suffer nitrification, biodiversity loss and a reduction in sustainable catch.

11. Resource management - all prawn fisheries are currently managed via input controls. Input controls increase the cost of fishing and disadvantage Australian production relative to imports. Typically, input controls result in too many vessels expending too much effort to catch too few prawns. The end result is a much lower net financial return to both fishers and the Australian community. There is a need to reorientate fishery resource management away from ‘biology’ and

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1 The consultants note the 2005 Ministerial announcement that the Northern Prawn Fishery (NPF) will have access to a structural adjustment package subject to it moving to output (quota) controls.
toward industry profitability. Resource management solutions will need to be tailored to the circumstances of individual fisheries.

12. Resource access – there is a strong trend toward decreasing access to fishing grounds over time. Access reductions are linked to both fishery resource management policies and other community objectives (marine protected areas, recreational fishing, etc). Further marine protected areas were gazetted in NSW and Commonwealth waters during the course of this study.

13. Sustainability – the top 30% of fishers who produce 80% of industry output are economically and environmentally sustainable. Other fishers will have difficulty with economic sustainability (i.e. capacity to generate a sustainable profit).

14. Research and development – industry expenditure (measured as a ratio of dollars invested to industry GVP) is low in comparison to other industries. There has been a high emphasis on environmental R&D at the expense of initiatives to increase industry efficiency.

15. Integrated value chain – highly sophisticated in large corporate players. Small/part-time operators disengage after the product is landed. Margins potentially available to small/part-time operators who disengage from the value chain are handed over to other parts of the industry.

16. Product differentiation - by species and catch quality only. Room for additional product branding focussing on food safety, freshness and sustainability. Proposed country-of-origin-labelling should assist with product differentiation on domestic markets. The wild-catch industry will need to drive country of origin labelling. A recent survey completed by Sydney Fish Markets indicates that retailers do not see benefits for their business in this change.

17. Promotion – there is no category-based promotion and the industry is reliant on private brand marketing. Consumers are relatively unsophisticated in their purchase decisions (eg almost anything sells as a ‘king prawn’) and imports at the same price as chicken meat risks moving the whole category ‘down market’. Promotion is needed to educate consumers and reduce the risk of prawns becoming a single low cost commodity.

18. Eating quality – consistent and no major problems. Imports are often used in cooking (eg Asian food dishes) and ‘eat well’.

19. Food safety – imports meet all domestic standards. Australia has an issue with meeting cadmium Minimum Residue Limits in the EU and is perceived in some parts of this market as not addressing customer requirements. Australia (rather than individual exporters) is on ‘rapid alert’ in the EU for cadmium and this also risks making buyers in other markets (eg China) wary of Australian product. Reports of dioxin residues in Sydney Harbour prawns were reported in the Chinese press.
20. Competition – wild-catch prawns compete with other special occasion seafood categories, farmed Australian prawns and imported farmed prawns. Currently there is insufficient differentiation between wild-catch and low cost farmed imports.

21. Price - in both export and domestic markets Australia achieves premium prices for its prawns. Whether promotion is capable of lifting price in these markets or only protecting existing premiums is unknown.

22. Imports – very low cost and increasing in volume to Australia. The USA has responded to a similar surge in imports in their country with anti-dumping provisions (in part exacerbating the Aust situation). It is unlikely that Australian Government would respond with similar anti-dumping intervention.

23. Exports – 46% of production is exported. The volume of prawn exports has declined as the $A has increased. A high reliance on East Asia (Japan, Hong Kong/China) has been offset by growth in exports to the EU. Australia has a genuine export culture backed with established commercial relationships. Export success is dependent on exchange rates and capacity to favourably differentiate the Australian wild-catch.

24. Export market access – priorities include the lowering of tariffs, especially in the EU, and non-tariff issues with the potential to derail trade (eg heavy metals in the EU and turtle protection in the US).

25. Trade policy – nationally, there is bipartisan support (government and opposition) for removal of trade barriers on both imports and exports. The cost to industry of imports, including those supplied at less than the cost of production, must be balanced against the benefit to consumers of lower prices. As a small open economy reliant on international trade, Australia is poorly placed when it comes to imposing punitive trade barriers such as anti-dumping measures.

26. Industry information and statistics – a statistical database exists for most fisheries and market prices in Sydney and Melbourne. Information driving resource assessment decisions is more piecemeal. Industry would benefit from national communication that would encompass news from other fisheries and the market along with a cohesive and consistent source of industry data.

27. Industry culture and leadership – there is a tendency for the industry to be production rather than market focussed and individual fishery rather than nationally oriented. Industry has demonstrated a willingness to embrace a national agenda and invest in representative capacity. There is a need to secure ongoing funding for the new body and build industry leadership capacity.

Wild-catch prawn industry performance against Industry Partnership Programme criteria for industry success (CIE 2005) are summarised in Table E1.
Table E1  Performance Against Industry Success Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profitability</td>
<td>• Many in the industry are marginally profitable. Current management arrangements, which hamstring initiatives to increase production efficiency and a continuation of current weak market conditions will force further structural adjustment.</td>
</tr>
<tr>
<td>Sustainability (economic and environmental)</td>
<td>• Top 30% of fishers (300 enterprises) who produce 80% of industry output are economically and environmentally sustainable. Other producers will have difficulty with economic sustainability.</td>
</tr>
<tr>
<td>Growth or consistent performance</td>
<td>• Consistent output and production value. Gross Value of Production of approx $300 million. The industry is mature. The potential for industry production growth through stock management and stock sustainability is limited.</td>
</tr>
<tr>
<td>Flexibility</td>
<td>• The industry is only moderately flexible. Most fishers are at least 80% reliant on prawns, value added is limited to grading and the industry services a relatively small number of reasonably static markets.</td>
</tr>
<tr>
<td>Reliance on government assistance</td>
<td>• There is no tariff assistance afforded to the Australian wild-catch prawn industry. Domestically there is an expectation that government will provide structural assistance when fishing effort increases and returns fall. Current fishery management arrangements have fuelled this expectation.</td>
</tr>
</tbody>
</table>

Source: Project Analysis

A key point summary of the industry's strengths, weaknesses, opportunities and threats (SWOT) informed by project analysis is provided in the table below.
### Table E2  Industry SWOT

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Well-regarded premium product associated with celebrations and special occasions.</td>
<td>• High cost of production linked to labour, fuel and R&amp;M.</td>
</tr>
<tr>
<td>• Strong focus on exports to a limited number of high paying markets.</td>
<td>• Fisheries management arrangements (input controls) that add to the cost of production.</td>
</tr>
<tr>
<td>• A fecund resource with production at reliable volumes.</td>
<td>• Export value and volume down on historical levels.</td>
</tr>
<tr>
<td>• Increasing consumption fuelled by low cost imports, rising incomes and (potentially) the health benefits of seafood.</td>
<td>• A static production that cannot be expanded to meet additional demand.</td>
</tr>
<tr>
<td>• A geographically diverse and year-round production base.</td>
<td>• Policy dominance by biologists rather than those with commercial/market experience.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>• National representation of the industry to ensure appropriate policy and fisheries management (Major determinant of industry cost structure).</td>
<td>• Import growth that results in further loss of domestic market share and price reductions.</td>
</tr>
<tr>
<td>• Better positioning of the product to possibly capture additional premium prices and protect existing premiums (certification and branding suggested).</td>
<td>• Loss of export market share if the industry does not respond appropriately to emerging environment and contaminant concerns.</td>
</tr>
<tr>
<td>• Change public perception of the industry and educate on its improving environmental management record.</td>
<td>• Further area closures or fishing restrictions linked to community concern for the marine environment.</td>
</tr>
<tr>
<td>• Improved export market access through tariff reductions and more appropriate protocols.</td>
<td>• Potential for imports to result in a repositioning of prawns as an everyday low cost protein (same price point as chicken).</td>
</tr>
<tr>
<td>• Supply chain knowledge and integration.</td>
<td>• Value adding including additional onboard grading and sorting.</td>
</tr>
</tbody>
</table>

Source: Project Analysis
Future Environment

The future environment for the Australian wild-catch prawn industry is likely to incorporate:

1. Ongoing relative decline in market share for Australian wild-catch product. Credible research (FRDC 2005) suggests that Australian wild-catch fish production could, over the next two decades, decline in absolute terms (by 14%) and in relative terms from a market share of 45% to 24%. The market share of Australian wild-catch prawns has declined from 91% of the domestic market in 1996/97 to 62% in 2003/04. Given the relative greater importance of imports and Australian aquaculture production, wild-catch is likely to find higher relative returns from niche and higher value added markets.

2. Prawn consumption will continue to trend upwards as consumers enjoy relative prosperity, the popularity of mid priced casual restaurant eating, lower prices and the health benefits of omega-3 rich prawns. The risk for the wild-catch industry is that prawns become an everyday low cost/low value food.

3. The supermarket chains will increasingly dominate domestic seafood marketing. This raises issues in relation to increasing market power and the need for training of supermarket staff in the handling of premium wild-catch prawns.

4. Internationally the marketing of prawns is more likely to occur through fully integrated supply chains that will lock out opportunistic suppliers and demand the highest levels of product traceability and food safety.

5. Food safety – the importance of testing and traceability will only intensify in the future providing both threats and opportunities for the Australian wild-catch industry. Current EU concerns relating to farmed and wild-catch prawns include sustainable and uncontrolled farming, bycatch and seafloor damage, antibiotic regulation, ethical employment standards, genetically modified feed ingredients, bio-terrorism, fishmeal sustainability, animal welfare, genetics in shrimp breeding, dioxins, polychlorinated bi-phenyls (PCBs), heavy metals (cadmium, mercury, etc), agrochemicals and irradiation. The US and China are closely monitoring developments in the EU.

6. Labelling – will be an essential tool for producers looking to differentiate their product as safe. Customers and consumers in Australia, the EU and US will seek out ‘seal of approval’ style labelling.

7. Post purchase retail vacuum packing – will provide opportunities to increase the convenience of seafood purchase (smells, leaks) and provide product differentiation information on a label – i.e. country of origin, food safety seals of approval, freshness, environmental status of the fishery, the story behind the product, how to prepare it, etc.

8. The sustainable seafood movement will build on its present success. This movement includes the certification of fisheries environmental credentials with branding that is maintained through the chain to retail. The Marine Stewardship Council (MSC) certification program is already
well established internationally and especially in the EU. The Western Australian rock lobster fishery has MSC certification, which an independent review attributes to increased market penetration (see case study 2).

9. Organic seafood – increasing importance to EU, US and no doubt in time with Australian consumers. The certification of Australian wild-catch as organic may be problematic given high background levels of heavy metals in some fisheries and species.

10. Biosecurity – to assume increasing importance, both as a means of assuring imports are safe (e.g. avoiding the introduction of white spot syndrome virus) and ensuring workable protocols are married to market access opportunities (e.g. heavy metal MRLs are appropriate).

11. Future environmental issues – trend analysis confirms the importance of maintenance of both current Australian environmental standards and the need to capitalise and communicate Australian environmental credentials. Trends include sustainability certification, the ‘story behind the meal’ (its environmental, economic and social impact), contaminants, mangrove and seafloor protection, food chain impact, organics, OH&S, and the potential for commercial returns from sustainable production.

12. E-commerce and use of information technology - worldwide leading fishers in high value fisheries are increasingly ‘fishing to market requirements’. IT and e-commerce is used to identify real time prices and the harvest is managed to maximise price. Once caught, product is sold electronically to the range of buyers offering current best prices. Sales are completed before vessels return to the wharf. Leading Australian wild-catch prawn fishers should be investigating this technology and developing support systems for its adoption now.

13. Labour supply and skills – ongoing shortages of both crew and skippers that will require sophisticated representation by industry to ensure additional initiatives and appropriate policies.

14. Exchange rates and fuel prices – both the Australian dollar and fuel prices to remain ‘uncomfortably high’ for the next three to five years.

15. Fisheries management – the Australian government has signalled its intentions to link structural adjustment assistance in the Northern Prawn Fishery to a move from input controls to output controls. Industry needs to be aware of the potential importance of this change.

16. Regulatory environment – future regulation is likely to embrace food safety and traceability (bio-terrorism), labelling (including country of origin labelling) and environmental controls (requirements to further reduce bycatch, reduce damage to benthic species and the seafloor).

17. Outlook for Asian aquaculture – the Asian farmed prawn sector is forecast to grow at 12-15% pa over the next 3 to 5 years despite falling prices and increasing costs associated with competition for feed and the need to meet international standards on product quality and environmental management. Disease management has improved and there is unlikely to be a repeat of mid 1990’s disease induced stock
crashes to provide a respite from current low prices. Longer term (5 to 10 years) Asian domestic consumption will absorb an increasing share of supply.

18. Outlook for Australian aquaculture – only those with substantive scale economies and the capacity to embrace technological innovation that lowers cost of production will survive. The industry is currently investing in initiatives to differentiate its product and improve its marketing.

Industry Capacity

The wild-catch industry has taken an important step toward unification; it has the commitment of both small fishers and, perhaps most importantly, the well resourced larger vertically integrated corporates. It is vital that the industry big players stay committed to the Council and that an appropriate business plan with accountability and KPIs is prepared for its management. As an industry, wild-catch prawns currently lacks leadership capacity and there is a strong need for investment in capacity building. Capacity building activities will need to include training for willing existing players and the nurturing of young potential leaders.

The ‘taking stock and setting directions’ process has revealed a number of strong reasons to support the foundation of a national peak industry body, these include:

- **Representation of the industry nationally:** there is a need for the industry to participate in public policy formulation and present a unified case to government for change that is of benefit to fishers. Nationally, government prefers to work with fishers on this basis. Furthermore, individual fishers operate in multiple fisheries and states. A state based system of representation is not adequate. Fishers need to be represented nationally on resource access, fishery management and policy issues (e.g., labour supply policies);

- **Generate a positive public profile:** the public is concerned by trawl and improvements in environmental impact are currently not being communicated to the Australian public;

- **Fisheries management reform and learning opportunities:** beneficial reform in one fishery creates learning opportunities for other fisheries. For example, self-managed fisheries are working in SA and this could be extended to other states. There is a role for a peak industry body in facilitating this process;

- **Product positioning:** nationally and internationally there is a need for a unified approach to promoting the prawn category. In time this might include Australian aquaculture product;

- **Coordination, industry planning and R&D:** there is a need for industry strategic planning and R&D planning in a time when industry change is preceding at an unprecedented rate. Issues need to be coordinated and managed rather than dealt with on an ad hoc basis. Issues management includes ensuring that the wild-catch prawn industry is
linked into sector initiatives such as seafood promotion and the National Food Industry Strategy;

- **Communication and information exchange**: including regular exchange of information on market trends, seasonal performance of fisheries, import reports, etc; and
- **Industry development activities**: including development of leadership capacity and the reorientation of the industry from ‘biology’ and toward ‘profitability’.

The ACPF will not be able to address even a small number of these issues with current funding.

**Priorities for Industry Strategies**

The review of industry attributes, the enabling environment, the external environment and measures of industry success revealed a number of gaps. These gaps were reviewed with industry through a series of regional workshops and the consensus position on priorities for industry action is:

1. Unity, leadership and the power to influence;
2. A program to address public perception of the industry; and
3. Marketing, branding and wild-catch product positioning.

Key elements of each of these priorities are presented below.

**Unity, leadership and the power to influence**

1. ACPF Board to appoint an independent Chief Executive Officer
2. Develop an agreed vision and common goals for the Council
3. Secure funding from industry, FRDC, DAFF and others
4. Form strategic alliances – ASIC, state organisations, etc
5. Set clear milestones and objectives with timeframes (a strategic plan)
6. Develop a working structure for ACPF – regional and state associations
7. Address industry communication
8. ACPF to be driven by appointed leaders not elected fishers
9. Benchmark and adopt best practice in peak industry bodies

**Outcome**: A single voice that is able to effectively represent the industry in relevant decision-making forums, capacity to set and drive the agenda for issues ranging from R&D to marketing and an avenue through which to influence resource access decision-making.
**A program to address public perception of the industry**

1. Prepare a public perception improvement project brief
2. Seek professional assistance from an appropriate organisation
3. Develop a national identity – who and what is a professional fisher
4. Showcase environmental responsibility
5. Target fishers, consumers, the public, green groups, government, etc
6. Promote the industry to itself to address fisher depression
7. Use appropriate language eg harvest not trawl

*Outcome*: Public support for the wild-catch industry.

**Marketing, branding and wild-catch product positioning**

1. Prepare a marketing, branding, product positioning project brief
2. Seek professional assistance from an appropriate organisation
3. Win back the domestic market first
4. Brand: Australian wild-caught
5. Seek out industry spokespeople
6. Review and learn from APPA's failure
7. Review the relevance of brands such as MSC
8. Story behind the meal/person catching the meal
9. Country of originlabelling – make the most of this opportunity
10. Highlight the omega-3 health benefits of wild-catch prawns

*Outcome*: Additional and higher priced demand for Australian wild-catch prawns.

The above priorities should now form the basis of the industry’s first strategic plan.

**Concluding Comment**

The Australian wild-catch prawn industry has a clear-cut and sustainable competitive advantage. Industry investment is needed to maximise this advantage and secure a profitable future for the industry.

The Australian Council of Prawn Fisheries hopes that all industry stakeholders will read the full text of the report, apply the findings to the operation of their business and contribute to the development of the industry’s first strategic plan. The complete document will serve as a reference resource for the ACPF.
1. Introduction

1.1 Study Purpose

This document is a Situation Assessment (national and international), Strategic Review (completed for the industry by the industry) and Direction Setting report (input into a strategic plan) for the Australian wild-catch prawn industry. It was prepared with the Australian Council of Prawn Fishers (ACPF) and was funded by the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) Industry Partnerships Programme.

Michael Clarke (AgEconPlus Pty), Michael Williams (Michael Williams & Associates), and Rob Gillespie (Gillespie Economics) prepared this report between July 2005 and April 2006.

The project’s aim was to:

1. Undertake an analysis of the Australian wild-catch prawn industry’s current situation and performance. This analysis included strengths, weaknesses, opportunities and threats and industry performance against key operational attributes (e.g. strategic and risk planning, communication and marketing).

2. Identify key challenges and opportunities for the Australian wild-catch prawn industry over the next 5-10 years.

3. Determine the capacity of the Australian wild-catch prawn industry to respond to challenges and take advantage of opportunities.

4. Prioritise key areas that the wild-catch prawn industry can improve.

5. Assist the wild-catch prawn industry sector to determine how it can structure, resource and position itself to respond to priority key areas and improve its profitability, sustainability, competitiveness, resilience and self-reliance.

6. Assist the wild-catch prawn industry sector to develop response strategies for the priority key areas.
1.2 Investigative Method

The study included:

1. Consultation with ACPF to identify an appropriate project steering committee. The committee was to include representation along the seafood value chain and meet prior to project commencement to confirm study approach. A two-day workshop was held in Alice Springs 23-24 October 2005.

2. Review of national and international literature and stakeholder consultation to inform project analysis.

3. Preparation of a draft Taking Stock and Setting Directions report, which was circulated to industry prior to regional workshops.

4. Regional workshops held in centres within reasonable distance of the industry’s major ports i.e. Cairns Qld, Brisbane Qld, Coffs Harbour NSW, Sydney, NSW, Adelaide SA and Fremantle WA.

5. A presentation of situation assessment findings was made to the project steering committee in Canberra in March 2006. Priorities for direction setting were confirmed at this meeting.

6. Steering Committee comment on the complete document was incorporated into the final project report.

The study was part of a larger direction setting exercise that was completed by the ACPF with additional funding from the Fisheries Research and Development Corporation (FRDC).
1.3 Other Industry Projects – Overlap and Complementarity

To ensure the Taking Stock and Setting Directions project ‘broke new ground’ and did not repeat work already underway, stakeholders were asked about current project investigations and their overlap/complementarity with the Industry Partnerships Programme project. The following projects were noted:

- National Food Industry Strategy (NFIS)/Fisheries Research and Development Corporation (FRDC) Seafood Marketing Body foundation research.

- Marketing, Promotion and Branding Australian Seafood – Positioning Australian Seafood as a Premium Product in the minds of our consumers – study for DAFF, ASIC and NAC.

- Cooperative Research Centre for Seafood Value Adding – a proposal.

- Prawn Fishery Self-Management Project – a proposal with FRDC.

- Management of heavy metal/cadmium residues EU market – FRDC.

- National Prawn Industry Conference – Adelaide 2006. The ‘Taking Stock and Setting Directions’ project was to be completed for presentation at this Conference.

- Market Perception and Positioning Australian Farm Prawns – project being completed by Ridge Partners for the Australian Prawn Farmers Association.

- A National Approach to the Development of the Australian Southern Rocklobster Industry – a possible template for prawn industry strategic planning.

To these key initiatives the consultants reviewed a range of relevant reports, analyses and web pages – see study references section of this document.
2. Conceptual Framework

An effective strategic review and situation assessment of the wild-catch Australian prawn industry required a sound analysis framework.

The Industry Partnerships Programme has invested in the development of a framework for assessing industry success (CIE 2005). The fundamentals of this framework are illustrated in Figure 1.

The framework recognises the external environment in which the industry operates, the enabling environment over which the industry has some control and an assessment of the resources that the industry applies to the harvest and marketing of prawns.

**Resources:** At the most fundamental level industries use resources – physical, financial, social, infrastructure, human, technological and issues associated with the property right. Some of these resources are influenced by the industries using them and give rise to issues of economic and environmental sustainability.

**Enabling environment:** The enabling environment embraces the historical development of the industry and its culture, as well as the policy environment governing use of resources, production processes, transport, storage, handling and marketing. The enabling environment includes consideration of the industry’s approach to risk management, its culture, skills and training, strategy, information sharing, communication, organisational structures, use of government subsidies, value chain linkages, R&D, regulation and market access.

**External environment:** The external environment in which the industry operates is inclusive of developments in international markets, domestic macroeconomic policies, weather and changes in other industries (e.g. growth in aquaculture). These are factors over which the industry has no control but are considerations against which industry strategies and investment plans must be tested if they are to achieve success.

The resource use, the enabling environment and external environment interact over time with the defining characteristics of a product and its production processes to produce a set of attributes that characterise a particular industry and drive its ultimate success.
Figure 1: Assessment framework

RESOURCES
- Physical
- Financial
- Social
- Infrastructure
- Human
- Technology

EXTERNAL ENVIRONMENT

Attributes
- Marketing
- Competition
- Price signals
- Scale
- Integrated value chain
- R&D programs
- Capital intensity
- Value adding
- Human capital

ENABLING ENVIRONMENT

Risk management

Culture
- Production orientated
- Business management
- Embrace developments

Training
- Education
- Skills

Industry organisation
- Strategy
- Information
- Communication
- Partnerships
- Other vehicles (R&D)
- Government subsidies
- Value chain linkages (supply and processing)

R&D Investment
- Innovation

Market access

Regulation

Outcomes: ‘success’ of industry
- Criteria for judging success
  - Profitability
  - Sustainability
  - Growth
  - Low government assistance
  - Flexibility

Source: CIE 2005
Industry attributes requiring consideration in a situation assessment of the wild-catch Australian prawn industry are:

- Enterprise characteristics (location, production, number of enterprises, diversification, scale, labour use, investment and production efficiency, financial performance and cost of production);
- Resource use (land, input, capital, water and finance intensity);
- Environmental impact and industry image (including internal and external/community perceptions of the industry);
- Markets and marketing (marketing expenditure, branding, consumption patterns, product differentiation, price competition, price signals, value adding, fresh sales, import competition and integrated value chains);
- Food safety, product quality and disease control;
- R&D programs; and
- Human capital.

Once described and analysed for the wild-catch Australian prawn industry, industry attributes, along with an assessment of both the enabling environment and the external environment, provide a basis for gauging the industry’s success. Industry success can be measured using criteria such as:

- Profitability;
- Sustainability (economic, environmental and social);
- Growth or consistent performance;
- Flexibility; and
- Reliance on government assistance.

Areas where the industry under performs on these success criteria are the ‘gaps’ where needs can be identified and strategies to build capacity developed. Analysis of gaps is mindful of current initiatives to address industry underperformance.

This framework that cascades through – industry attributes/resource use, enabling environment, external environment and success criteria – was employed for completing the strategic review, needs and situational analysis of the wild-catch prawn industry.
3. **Industry Attributes**

This chapter outlines the attributes that characterise the Australian wild-catch prawn industry. It does not include attributes of the farmed/aquaculture sector, only basic information is provided on this sector for comparative purposes.

3.1 **Enterprise Characteristics**

**Value, Location and Production**

The wild-catch prawn industry valued at $300 million pa is second only to rock lobster in terms of fishing gross value of production (GVP). Wild-catch prawn GVP exceeds that of abalone, tuna and pilchards (table below).

**Table 1 Top Five Wild-Catch Species by Value 2003-04 ($’million)**

<table>
<thead>
<tr>
<th>Species</th>
<th>Value ($’million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rock lobster</td>
<td>404</td>
</tr>
<tr>
<td>Prawns</td>
<td>300</td>
</tr>
<tr>
<td>Abalone</td>
<td>189</td>
</tr>
<tr>
<td>Tuna</td>
<td>48</td>
</tr>
<tr>
<td>Pilchards</td>
<td>27</td>
</tr>
<tr>
<td>All other finfish</td>
<td>262</td>
</tr>
<tr>
<td>Other species</td>
<td>26</td>
</tr>
</tbody>
</table>

Source: ABARE 2005

Australian wild-catch prawn production over a three-year period is provided in the following table. Typically, production averages between 20,000t and 25,000t pa.

**Table 2 Wild-Catch Prawn Production and Value**

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume (tonne)</th>
<th>Value ($’000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-02</td>
<td>25,558</td>
<td>363,811</td>
</tr>
<tr>
<td>2002-03</td>
<td>22,740</td>
<td>304,230</td>
</tr>
<tr>
<td>2003-04</td>
<td>23,468</td>
<td>299,850</td>
</tr>
</tbody>
</table>

Source: ABARE 2005

Prawn aquaculture adds a further 3,000t to 4,000t of output to wild-catch production. Farmed prawns are valued at between $50 million and $65 million pa. Some 46% of total industry production (wild-catch plus aquaculture) was exported in 2003/04.

Prawn wild-catch harvesting takes place in 15 major fisheries in five states (see figure and table over page). There is also a small volume fishery in Victorian estuarine waters and prawns are taken in the Commonwealth South East Trawl Fishery and in the Southern Fisheries of WA. The Australian wild-catch prawn industry is primarily based in tropical and subtropical regional rural areas and makes a positive contribution (employment, income and expenditure) to regional economies\(^2\).

\(^2\) The importance of the South Australian industry in temperate waters is noted by the consultants.
Figure 2  Wild-Catch Prawn Trawling Grounds

Table 3  Fishery Location and Prawn Vessels/Fishing Licences

<table>
<thead>
<tr>
<th>Fishery</th>
<th>Vessels/Licences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commonwealth</td>
<td></td>
</tr>
<tr>
<td>Northern Prawn Fishery, Gulf of Carpentaria</td>
<td>96 (v)</td>
</tr>
<tr>
<td>Torres Strait</td>
<td>70 (v)</td>
</tr>
<tr>
<td>South East Trawl Fishery</td>
<td></td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td><strong>166 (v)</strong></td>
</tr>
<tr>
<td>Queensland</td>
<td></td>
</tr>
<tr>
<td>East Coast Trawl Fishery, eastern Cape York to the NSW border</td>
<td>478 (l)</td>
</tr>
<tr>
<td>River and Estuary Trawl including Morton Bay</td>
<td>160 (l)</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td><strong>638 (l)</strong></td>
</tr>
<tr>
<td>NSW</td>
<td></td>
</tr>
<tr>
<td>Estuary Trawl – Clarence, Hunter, Hawkesbury and Pt Jackson#</td>
<td>220 (l)</td>
</tr>
<tr>
<td>Ocean Trawl – north of Barrenjoey Headland out to 80 n. miles</td>
<td>312 (l)</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td><strong>532 (l)</strong></td>
</tr>
<tr>
<td>South Australia</td>
<td></td>
</tr>
<tr>
<td>Spencer Gulf, Port Lincoln</td>
<td>39 (l)</td>
</tr>
<tr>
<td>Gulf St Vincent</td>
<td>10 (l)</td>
</tr>
<tr>
<td>West Coast, west of Spencer Gulf</td>
<td>3 (l)</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td><strong>52 (l)</strong></td>
</tr>
<tr>
<td>Western Australia</td>
<td></td>
</tr>
<tr>
<td>Kimberley</td>
<td>32 (l)</td>
</tr>
<tr>
<td>Broome</td>
<td>5 (l)</td>
</tr>
<tr>
<td>Shark Bay</td>
<td>27 (l)</td>
</tr>
<tr>
<td>Exmouth Gulf</td>
<td>16 (l)</td>
</tr>
<tr>
<td>Nickol Bay</td>
<td>14 (l)</td>
</tr>
<tr>
<td>Onslow</td>
<td>31 (l)</td>
</tr>
<tr>
<td>Southern Fisheries</td>
<td></td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td><strong>125 (l)</strong></td>
</tr>
<tr>
<td>Victoria</td>
<td></td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td><strong>0</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,513</strong></td>
</tr>
</tbody>
</table>

Source: ABARE 2005 and NSW Fisheries Website  # NSW Govt buyout initiated Feb. 2006
ABARE (2005a) forecast a static nominal GVP for both the wild-catch and aquaculture industries and declining real GVP for the period through to 2009/10. Analysis of UN Food and Agriculture Organisation (FAO) data completed by Delgado et al 2004 reveals a consistent Australian wild-catch since the 1950s with losses in estuarine production being offset with expansion in the Northern Prawn Fishery (NPF) and Torres Strait Prawn Fishery (TSPF). In the medium term it is expected that Australian wild-catch prawn production will remain at current levels. The potential for industry production growth through stock management and stock sustainability is limited. With the exception of the Broome prawn fishery of Western Australia, all Australian prawn fisheries were fully exploited in 2002/03.

**Production**

The following tables detail prawn production, wild-catch and aquaculture, by state.

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Australian Prawn Production by State – Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product (t)</td>
<td>NSW</td>
</tr>
<tr>
<td>2001/02</td>
<td></td>
</tr>
<tr>
<td>Wild Catch</td>
<td>1,912</td>
</tr>
<tr>
<td>Aquaculture</td>
<td>346</td>
</tr>
<tr>
<td>Total</td>
<td>2,258</td>
</tr>
<tr>
<td>2002/03</td>
<td></td>
</tr>
<tr>
<td>Wild Catch</td>
<td>2,001</td>
</tr>
<tr>
<td>Aquaculture</td>
<td>409</td>
</tr>
<tr>
<td>Total</td>
<td>2,410</td>
</tr>
<tr>
<td>2003/04</td>
<td></td>
</tr>
<tr>
<td>Wild Catch</td>
<td>1,639</td>
</tr>
<tr>
<td>Aquaculture</td>
<td>363</td>
</tr>
<tr>
<td>Total</td>
<td>2,002</td>
</tr>
</tbody>
</table>

Source: ABARE 2005

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Australian Prawn Production by State – Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value ($000)</td>
<td>NSW</td>
</tr>
<tr>
<td>2001-02</td>
<td></td>
</tr>
<tr>
<td>Wild Catch</td>
<td>$28,501</td>
</tr>
<tr>
<td>Aquaculture</td>
<td>$5,440</td>
</tr>
<tr>
<td>Total</td>
<td>$33,941</td>
</tr>
<tr>
<td>2002-03</td>
<td></td>
</tr>
<tr>
<td>Wild Catch</td>
<td>$31,141</td>
</tr>
<tr>
<td>Aquaculture</td>
<td>$6,178</td>
</tr>
<tr>
<td>Total</td>
<td>$37,319</td>
</tr>
<tr>
<td>2003-04</td>
<td></td>
</tr>
<tr>
<td>Wild Catch</td>
<td>$23,306</td>
</tr>
<tr>
<td>Aquaculture</td>
<td>$4,432</td>
</tr>
<tr>
<td>Total</td>
<td>$27,738</td>
</tr>
</tbody>
</table>

Source: ABARE 2005
These data indicate that Queensland is the most significant producer of wild-catch prawns, followed by the Commonwealth Fisheries in the Gulf of Carpentaria (GOC) and then Western Australia and South Australia. Queensland is also the largest producer of farmed prawns, although farmed prawns are a relatively small part (16%) of total Australian production. Farmed prawns have the potential for rapid volume and value increase with favourable changes in exchange rates, imports and price.

Catch volumes and prices vary considerably from year-to-year and the data in the table below is for different financial and calendar years. Nevertheless, the table gives some indication of the relative size of the different wild-catch prawn fisheries in Australia.

**Table 6  Prawn Production by Fishery - Volume and Value**

<table>
<thead>
<tr>
<th>Fishery</th>
<th>Catch (t)</th>
<th>Value ($’ million)</th>
<th>Date of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Commonwealth</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern Prawn Fishery</td>
<td>5,998</td>
<td>$82.50</td>
<td>2003</td>
</tr>
<tr>
<td>Torres Strait</td>
<td>1,597</td>
<td>$23.50</td>
<td>2003</td>
</tr>
<tr>
<td>South East Trawl Fishery</td>
<td>188</td>
<td>$0.57</td>
<td>1997</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>7,595</td>
<td><strong>$106.00</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Queensland</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Coast Trawl Fishery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moreton Bay Trawl Fishery in Moreton Bay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>8,250</td>
<td><strong>$98.61</strong></td>
<td>2003/04</td>
</tr>
<tr>
<td><strong>NSW</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estuary</td>
<td>469</td>
<td>$4.80</td>
<td>2000/01</td>
</tr>
<tr>
<td>Ocean Trawl</td>
<td>3,411</td>
<td>$32.00</td>
<td>2000/01</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>3,880</td>
<td><strong>$36.80</strong></td>
<td></td>
</tr>
<tr>
<td><strong>South Australia</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spencer Gulf</td>
<td>1,900</td>
<td>$37.40</td>
<td>2002/03</td>
</tr>
<tr>
<td>Gulf St Vincent</td>
<td>232</td>
<td>$4.24</td>
<td>2002/03</td>
</tr>
<tr>
<td>West Coast</td>
<td>29</td>
<td>$0.50</td>
<td>2002/04</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>2,161</td>
<td><strong>$42.14</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Western Australia</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kimberley</td>
<td>390</td>
<td>$4.30</td>
<td>2003</td>
</tr>
<tr>
<td>Broome</td>
<td>201</td>
<td>$1.30</td>
<td>2003</td>
</tr>
<tr>
<td>Shark Bay</td>
<td>1,632</td>
<td>$22.30</td>
<td>2003</td>
</tr>
<tr>
<td>Exmouth Gulf</td>
<td>1,089</td>
<td>$11.90</td>
<td>2003</td>
</tr>
<tr>
<td>Nickol Bay</td>
<td>240</td>
<td>$2.90</td>
<td>2003</td>
</tr>
<tr>
<td>Onslow</td>
<td>193</td>
<td>$2.40</td>
<td>2003</td>
</tr>
<tr>
<td><strong>Southern Fisheries</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>3,745</td>
<td><strong>$45.10</strong></td>
<td>2003/04</td>
</tr>
<tr>
<td><strong>Victoria</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>57</td>
<td>$0.70</td>
<td>2003/04</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>57</td>
<td><strong>$0.70</strong></td>
<td></td>
</tr>
</tbody>
</table>

Sources:
These data confirm the earlier state based analysis, and clearly indicate the significance of the two major Commonwealth prawn fisheries - NPF and Torres; the Queensland East Coast Trawl fishery; Spencer Gulf in South Australia; Shark Bay and Exmouth Gulf in Western Australia and the Ocean Trawl Fishery in NSW.

**Fishery Profile**

A brief bullet point profile of each of the major Australian prawn fisheries is provided in the table below. The table helps inform subsequent analysis of national industry enterprise attributes. Fishery management methods, access trends and resource condition are addressed separately and in greater detail in Section 3.2 ‘Resource Use’.
### Table 7 Fishery Profile and Enterprise Type - Commonwealth

<table>
<thead>
<tr>
<th>Fishery</th>
<th>Features</th>
</tr>
</thead>
</table>
| Northern Prawn Fishery, Commonwealth | • Cape York Qld to Cape Londonderry WA  
• The fishery is fully exploited but not overexploited  
• The fishery is undergoing a stock rebuilding phase  
• Catch is managed through input controls, seasonal closures  
• Max. Economic Yield is the catch target  
• The fleet has decreased from 600 to 85 vessels, including a 25% gear reduction in 2005  
• Fishers trawl for prawns, scampi, bugs, scallops and squid  
• Prawns dominate and production is export oriented  
• TEDs and BRDs are mandatory in this fishery  
• Bycatch is high, between 80% and 90% of net space  
• Mix of independent single boat owners, small fleet owners and corporate operators with between 9 and 12 vessels each  
• Corporate are the majority and account for 2/3 of boats  
• Capital base is approx. $4.2 million per fishing unit  
• Average boat length is 20m  
• Crew that includes a skipper, mates and deck hands  
• Finding crew for this remote fishery is difficult  
• Profitability is under pressure and there is some debt from the recent purchase of fishing entitlements  
• Was very profitable fishery but $A, fuel, imports all hit at once |
| Torres Strait, Commonwealth       | • Cape York Qld to south coast of PNG  
• The fishery effort was over allocated for tiger prawns  
• Input managed plus seasonal closures, change to a unitised input system proposed for 2007  
• Fleet is approximately 70 vessels  
• Target tiger prawns (30%) and endeavour prawns (60%) also bugs, scallops and squid (10%)  
• Vessels also fish Qld East Coast Trawl and NPF  
• TEDs and BRDs are mandatory in this fishery  
• Bycatch is high, between 80% and 90% of net space  
• Management objectives include maximising opportunities for traditional inhabitants (Torres Strait Islanders and the people of PNG) to participate  
• Part of fishery is set aside for PNG but not currently fished  
• Govt announced in July 2005 that 25% of the fishery will be purchased for PNG use  
• No corporate players – max is 3 to 4 boats per operator and most are single vessels  
• Capital base including boat and licence of $1.5 million  
• Max boat length of 20m, max length of nets is 80m and mesh size no larger than 45mm  
• Crew of two – skipper and deck hand  
• Finding crew for this remote fishery is difficult  
• Profitability under pressure, not much debt |
| South East Trawl Fishery, Commonwealth | • Sydney southwards around Tasmania to Kangaroo Island SA  
• Prawns are taken along the length of the NSW coastline  
• Royal red prawn dominates, trawled from depths of 550m  
• Prawns are lower price range lines  
• Minor prawn fishery that includes a range of species and trawl and non trawl techniques |
### Table 8  Fishery Profile and Enterprise Type - Queensland

<table>
<thead>
<tr>
<th>Fishery</th>
<th>Features</th>
</tr>
</thead>
</table>
| **East Coast Trawl, Queensland** | • Includes, in order of economic importance: Eastern King Prawn Fishery; Northern Tiger/Endeavour Fishery; In-shore Banana Prawn Fishery and the Red Spot King Fishery totalling approximately 510 licenses  
• The fishery is fully exploited/catch sustainable current levels  
• Catch is managed through input controls, seasonal closures  
• Prawn trawl in tropical/subtropical waters generates a higher proportion of bycatch than fishing in temperate waters  
• There has been a 40% reduction in catch since 1999 linked to Qld/Commonwealth funded structural adjustment package  
• TEDs and BRDs are mandatory and result in a lower catch  
• US are insisting on larger TEDs for leatherback turtles, officially Qld right to export to US ceased 1 Nov 05  
• Product is both export (King and Tigers) and domestic oriented. A small volume is directed to the US  
• The fishery has been subject to considerable structural adjustment since 1999 and faces a further review in 2006  
• 2006 review will need to look closely at the Eastern King Prawn Fishery, only fishery where effort has not decreased  
• Fishing effort is down from 878 boats fishing 79,900 days in 1988 to 519 boats fishing 66,700 days in 2002  
• In 2002 GBRWHA accounted for 70% of the fisheries effort and 75% of the prawn catch  
• Resource access has decreased as the area of GBRWHA and other Qld MPAs has increased  
• Fishers trawl for prawns, scallops, squid and bugs, 80% of the catch is prawn  
• The fishery includes both family and corporate operations  
• Capital base is < $100k to $2 million plus  
• Smaller vessels are 10m to 14m, larger are 14m to 20m  
• Crew varies from 1 to 2 persons on small vessels to 6 on larger vessels that may stay at sea for months at a time  
• Structural adjustment is favouring large boats over small  
• Profitability has improved post structural adjustment and debt levels have dropped (sale of prawn entitlements)  
• Profit is under pressure this year from fuel price and imports |
| **River and Estuary Trawl Fishery, Queensland** | • Rivers, creeks and a small amount of in-shore trawl along the length of the entire Qld coast, there are 153 licenses  
• Species include Banana, Bay, Greasyback and Tiger prawns  
• The fishery is fully exploited  
• TEDs and BRDs are mandatory  
• Fishers trawl for prawns, other species are negligible  
• The fishery is domestic oriented, also provides bait prawns  
• Moreton Bay, Qld has an EMS pilot taking place  
• Vessels are <9m in length  
• Crews of 1 to 2 people  
• Capital base can be as low as $50,000  
• Profitability is under pressure. |
### Table 9  Fishery Profile and Enterprise Type – NSW

<table>
<thead>
<tr>
<th>Type</th>
<th>Details</th>
</tr>
</thead>
</table>
| **Estuary General and Estuary Prawn Trawl, NSW** | - Estuary General Licence: Wallis Lake, Richmond River, Clarence River, Queens Lake, Lake Illawarra, other NSW south coast lakes. Totalling 350 active fishers  
- Estuary Prawn Trawl: Clarence River, Hunter River, Hawkesbury River and Lake Illawarra. Totalling 130 active fishers.  
- Participate at varying levels – full time trawling for 6 months to as little as a couple of days during the season  
- Catch dominated by school (80%) and king prawns (10%)  
- Very little bycatch, 90% to 95% is prawn  
- Prawns account for 50% to 60% of fisher income. Mullet, crabs also important and caught in the prawn off-season  
- Fishers are very diversified and multi-endorsed  
- NSW prawn fisheries are not as productive as other states  
- Fishery is not sufficiently profitable to attract large corporate activity  
- Capital base including boat and licence of $50k to $100k  
- Crew is typically a skipper and a deck hand (labour shortage)  
- Profit under severe pressure 'industry is doing it really tough' |
| **Ocean Prawn Trawl, NSW** | - All NSW ocean waters and 180 active fishers  
- Fish all year round  
- Catch is dominated by king prawns and school prawns. There is little demand for deep water species such as Royal Red and Scarlet  
- 30% of fishers take 80% of the catch  
- 70% involved in another fishery eg finfish  
- 50% of the catch is prawn, the balance is octopus, squid, bugs and school whiting  
- Family and small corporate operations dominate.  
- Capital base including boat and licence of < $500k  
- Crew is typically a skipper and a deck hand  
- Profit under severe pressure |
### Table 10  Fishery Profile and Enterprise Type – SA

<table>
<thead>
<tr>
<th>Fishery</th>
<th>Features</th>
</tr>
</thead>
</table>
| **Spencer Gulf and West Coast, SA** | • SA Spencer Gulf plus two major pockets further west  
• 39 vessels in Spencer Gulf and 3 in the West Coast  
• Best managed prawn fishery in Australia from both a resource and profitability perspective  
• Fewer efficient operators, major restructure 15 years ago  
• Well organised, low transaction costs  
• Self managed fishery – fishers agree to collectively delay fishing until stock has reached optimal size. This adds $3 million to a harvest valued at around $37 million  
• Decreased effort for the same or greater catch  
• Environmental certification and working on an EMS  
• Capital base including boat and licence of $3.5 million  
• Crew is typically skipper and 4 to 5 deck hands  
• Boats are 22m in length and fish up to 14 nights straight  
• Profitable and buying new boats  
• Profitability currently under pressure from fuel and imports |
| **Gulf of St Vincent, SA**     | • 10 vessels remain after most recent licence buy back  
• Western King Prawn dominates production  
• Larger prawns now targeted (24 per Kg)  
• Target of in order of 36 nights of fishing per year  
• Capital base including boat and licence of $2.1 million  
• Boat length not more than 15.2m and 300 hp main engine  
• Profitability under pressure |
Table 11  Fishery Profile and Enterprise Type – WA

**Kimberley**
- WA between Koolan Island and Cape Londonderry
- The fishery is fully exploited
- 32 boats active in 2003
- Fishery landed 390t in 2003 - 7t King, 47t Tiger, 26t Endeavour and 309t Banana prawn also squid and bugs
- Catch management through limited entry, seasonal closures, gear controls, and restrictions on boat replacements
- Fishery is operated in tandem with NPF
- Bycatch very low – target only Banana prawns in schools

**Broome**
- Designated trawl zone off Broome WA
- The fishery is under exploited
- 5 licenses who also fish the NPF
- Small fishery landing 201t - 73t King, 128t Coral prawn
- Catch management through input controls, seasonal closures
- BRDs fully implemented
- Fishery is open when NPF and Kimberley fishery are closed
- Short season fishery with minimum bycatch impact

**Nickol Bay**
- WA north-west shelf from Dampier to above Port Hedland
- The fishery is fully exploited
- 14 licenses and all active in 2003
- Small fishery landing 248t - 59t King, 21t Tiger, 2t Endeavour and 165t Banana prawn plus bugs, squid, crabs
- Catch management through input controls/seasonal closures
- Bycatch very low – target only banana prawns in schools

**Onslow**
- WA north-west shelf from Onslow to Dampier
- The fishery is fully exploited
- 31 licences and 12 to 15 skippers active in 2003
- Small fishery of 194t - 12t King, 172t Tiger, 9t Endeavour and 1t Banana prawn plus bugs, squid, crabs
- Catch managed through limited entry, seasonal and area closures, gear controls and restrictions on boat size (<23m)
- BRDs fully implemented
- Bycatch to catch ratio of up to 6:1 (considered moderate)

**Exmouth Gulf**
- Mid coast WA
- 16 licenses and 12 skippers in 2003
- Total catch of 1,089t – 633t Tiger, 231t King, 225t Endeavour also coral prawn, crab, cuttlefish, bugs and shark
- Next most efficient after Spencer Gulf, 95% of catch is Kailis
- No mother ship, catch is unloaded next morning
- Bycatch low and use of hoppers (in-water sorting systems) expected to increase bycatch survival rate
- Bycatch estimated at 1:1 was 1:3 or 1:5 pre TEDS and FEDS

**Shark Bay**
- Designated trawl zone off Carnarvon WA
- The fishery is fully exploited
- 27 licences, all boats active in 2003
- Fishery landed 1,632t in 2003 – 1,145t King, 485t Tiger, 3t Endeavour prawns also 84t of coral prawns. There was also a catch of scallops, crab, squid, cuttlefish, tuna and mulloway
- Bycatch to catch ratio of between 4 and 8:1 (moderate)
- BRDs fully implemented
- Third most efficient fishery after Spencer, Exmouth (FRDC)
Enterprise Numbers and Distribution by Size

Detailed data on the nature of individual fisher enterprises is limited. However, there is a correlation between the number of licences, the number of vessels and the number of fishing enterprises.

In some fisheries the number of vessels that actually fish may be less than the total that are allowed to fish. For instance, in the Kimberley fishery 135 boats have access, but only 32 boats operated in the fishery in 2003.

Furthermore, fishers often own endorsements in more than one fishery and move in and out of specific prawn fisheries to maximise catch rate. This is particularly the case for the Commonwealth prawn fisheries, where an individual fisher may hold endorsements in one of more of the Torres Strait Fishery, Northern Prawn Fishery, Queensland East Coast Trawl and some northern WA fisheries such as the Kimberley or Broome.Licences generally entitle each holder to the same levels of effort during prawn fishing seasons. Different licensees hold different entitlements with respect to fishing days and hence catch and size of the operation may vary considerably.

Using licences and vessels as a proxy for enterprise numbers would indicate that the industry consists of approximately 1,513 enterprises plus Victoria, South East Trawl and Southern WA (see Table 3 above).

There is considerable variation in the size of these enterprises both within and between fisheries. Enterprise size varies from single wooden hull vessels operated part time in estuarine waters to large vertically integrated processing and harvest fleets of up to 12 vessels. There is a significant cultural divide between estuarine and ocean trawl and large and small, ocean trawl enterprises. Industry advice is that the largest 400 fishers produce 80% of Australian wild-catch prawns.

Medium sized enterprises are most vulnerable to further structural change i.e. they are at risk of exiting the industry. They are reliant on income earned from prawn harvest and do not have alternative income sources. ABS data on the size distribution of enterprises, measured as enterprise turnover, is shown in the table below. Medium sized enterprises fall within the $100,000 to $1 million turnover band.

3 A strong initial reason why industry organisation should be on a national rather than a state basis.
4 These fishers should be targeted by the fledgling ACPF to ensure its relevance to the industry
Table 12 Range in Size of Australian Wild-Catch Prawn Enterprises

<table>
<thead>
<tr>
<th></th>
<th>$0 - $49 999</th>
<th>$50 000 - $99 999</th>
<th>$100 000 - $1 000 000</th>
<th>$1 000 001 - $19 999 999</th>
<th>$20 million and over</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>n.p.</td>
<td>51</td>
<td>60</td>
<td>n.p.</td>
<td>0</td>
<td>183</td>
</tr>
<tr>
<td>VIC</td>
<td>6</td>
<td>n.p.</td>
<td>n.p.</td>
<td>0</td>
<td>0</td>
<td>n.p.</td>
</tr>
<tr>
<td>QLD</td>
<td>n.p.</td>
<td>141</td>
<td>287</td>
<td>n.p.</td>
<td>0</td>
<td>564</td>
</tr>
<tr>
<td>WA</td>
<td>49</td>
<td>48</td>
<td>65</td>
<td>17</td>
<td>0</td>
<td>179</td>
</tr>
<tr>
<td>NT</td>
<td>n.p.</td>
<td>n.p.</td>
<td>n.p.</td>
<td>0</td>
<td>0</td>
<td>24</td>
</tr>
</tbody>
</table>

Source: ABS Australian Business Register  
n.p indicates data not published in order to preserve individual business identity

The data set is deliberately incomplete so that the ABS can preserve the identity of individual business. Reference to WA, a complete data set, would indicate that 27% of prawn fishing enterprises have a business turnover of less than $50,000. The data for WA also indicates that 10% of enterprises have a turnover in the $1 million to $20 million bracket. This data is thought to be reasonably typical of the national situation.

Diversification

Prawn fishers on the east coast (Queensland and NSW) are general trawl fishers with prawns as the most valuable component of their catch. Parts of WA are also general trawl (eg Shark Bay and Exmouth). Other fisheries have valuable bycatch (including the NPF).

Employment

Employment data for prawn fishers is available from the ABS and is obtained from the population census collected every five years. This may under record employees, through attribution to other industries such as transport and generalised food processing (ABARE & FRDC 2005). Nevertheless, the data gives an indication of the number of jobs associated with prawn fishing as well as aquaculture, fish wholesaling and seafood processing. In relation to the latter three categories it is not possible to identify the number of jobs attributable to prawns.

Table 13 Fishing Employment (ABS, August 2001)

<table>
<thead>
<tr>
<th></th>
<th>NSW</th>
<th>VIC</th>
<th>QLD</th>
<th>WA</th>
<th>SA</th>
<th>TAS</th>
<th>NT</th>
<th>ACT</th>
<th>AUST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prawn fishing</td>
<td>223</td>
<td>6</td>
<td>472</td>
<td>150</td>
<td>109</td>
<td>0</td>
<td>80</td>
<td>0</td>
<td>1,040</td>
</tr>
<tr>
<td>Aquaculture</td>
<td>926</td>
<td>320</td>
<td>592</td>
<td>601</td>
<td>764</td>
<td>846</td>
<td>166</td>
<td>6</td>
<td>4,221</td>
</tr>
<tr>
<td>Wholesaling</td>
<td>1,333</td>
<td>856</td>
<td>1,473</td>
<td>742</td>
<td>283</td>
<td>455</td>
<td>79</td>
<td>19</td>
<td>5,540</td>
</tr>
<tr>
<td>Processing</td>
<td>303</td>
<td>269</td>
<td>377</td>
<td>239</td>
<td>457</td>
<td>545</td>
<td>20</td>
<td>3</td>
<td>2,213</td>
</tr>
</tbody>
</table>

Source: ABS data  
NB: data relates to location of the fisher’s residence rather than the fishery in which they fish.
Wild-catch prawn fishing direct employment totals more than 1,000 jobs. To this total it is appropriate to add that portion of the fishing value chain attributable to wild-catch prawn wholesaling and processing. Indirect activity adds to this total many times over.

Fisher Characteristics – Owners, Skippers and Crew

In some of the larger vertically integrated fishing operations and industry corporates, there is a separation of ownership and vessel skippering. The owner of the vessel is not necessarily the boat’s skipper or principal fisher. Larger vertically integrated firms are operated on modern business lines, with appropriate skilling and access to specialist services. Owners of these businesses report that a shortage of experienced skippers is an issue for their businesses.

In medium sized and smaller enterprises, there is a tendency for self-employed fishers to ‘learn on the job’. In this environment practical fishing skills and experience take precedence over business management and product marketing. A history of favourable industry returns has allowed this culture to perpetuate; the business has taken care of itself. The increasing sophistication of business, environmental and people management responsibilities associated with fishing will make this culture increasingly difficult to maintain.

Fishers in all but the South Australian industry tend to be older individuals and there is reluctance from younger people to join the industry. This situation will not change until the profitability of wild-catch prawn fishing improves.

Crew requirements per boat vary from zero to six. Over time, the skills required of boat crew, like skippers and vessel owners, has increased. Consequently these skills have made prawn fishing crews attractive to alternative, higher paying industries that are able to offer work on a year round basis (tuna farming, mining, tourism, etc). Overtime, the shortening of fishing seasons has exacerbated the part-time nature of crew employment and their attraction to full-time alternatives. The result is that there is a skill shortage in the industry and the cost of labour has increased.

Temporary work visas for foreign nationals and use of Indonesian crews in the northern industry are helping to ease this situation, but the high cost and supply of labour was identified as a major factor reducing wild-catch prawn profitability.

Use of Technology

Technology offers the opportunity to improve the profitability of those in all parts of the supply chain and can help better achieve ecosystem management objectives. Adoption of technology can often give some fishing operations and/or other businesses in the supply chain an advantage over another (ACIL Tasman 2005).
The adoption of technology by this industry is highly variable, the industry ranges from ‘high tech’ fleets to fully depreciated wooden crafts (ABARE pers comm). Older vessels remain in the industry, as there is little opportunity cost of the capital employed (ACIL Tasman 2005). A large amount of technology is forced on wild-catch prawn fishers (eg Turtle Exclusion Devices or TEDS) and the rate of adoption of non-compulsory items varies with the attitude of owners, skippers and their crew. Use of technology is as much a function of personality as capacity to pay.

**Prawn Species Targeted**

The dominant prawn species caught in Australian waters varies by state and within fisheries. Overall king prawns are the dominant prawn catch being 34% of the take in 2003/04. King prawns were caught in all states where prawn fishing takes place, although they are more prevalent in the southern regions. It should be noted that there are a number of king prawn species including:

- In QLD and the Torres Strait, the Northern King Prawn or Red Spot King Prawn (*Penaeus longistylus*) and the Eastern King Prawn (*Penaeus plebejus*) dominate;
- In WA and SA, the Western King Prawn (*Penaeus latisulcatus*) is important; and
- In NSW, the Eastern King Prawn (*Penaeus plebejus*) is the dominant catch;

Tiger Prawns (27%), Banana Prawns (17%) and Endeavour Prawns (11%) are the next most important wild-catch prawn species. These species are more important in the northern prawn fisheries. Naturally the percentage of individual species in the national catch will vary on a year-to-year basis.

**Table 14 Prawn Varieties by State 2003-04 (tonne)**

<table>
<thead>
<tr>
<th></th>
<th>NSW</th>
<th>Vic</th>
<th>Qld</th>
<th>WA</th>
<th>SA</th>
<th>C’wlth</th>
<th>TOTAL</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>King Prawns</td>
<td>849</td>
<td></td>
<td>3,329</td>
<td>1,511</td>
<td>2,126</td>
<td>82</td>
<td>7,897</td>
<td>34%</td>
</tr>
<tr>
<td>School Prawn</td>
<td>635</td>
<td></td>
<td></td>
<td>0</td>
<td>635</td>
<td></td>
<td>1,265</td>
<td>3%</td>
</tr>
<tr>
<td>Other Prawns</td>
<td>155</td>
<td>1,551</td>
<td>153</td>
<td>75</td>
<td>1,934</td>
<td>8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endeavour</td>
<td>1,128</td>
<td>253</td>
<td>1,099</td>
<td>2,480</td>
<td>8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tiger</td>
<td>2,242</td>
<td>1,313</td>
<td>2,816</td>
<td>11%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Banana</td>
<td>459</td>
<td>3,516</td>
<td>3,975</td>
<td>17%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sub-Total</strong></td>
<td>1,639</td>
<td>56</td>
<td>8,250</td>
<td>3,689</td>
<td>2,126</td>
<td>7,588</td>
<td>23,348</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: ABARE and FRDC (2005) adjusted by state data on percentage of catch by species for WA and SA.

The main prawn species and secondary prawn species by individual prawn fishery is summarised in the following table.
Table 15  Prawn Species By Fishery

<table>
<thead>
<tr>
<th>Fishery</th>
<th>Main Prawn Species</th>
<th>Other Prawn Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commonwealth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern Prawn Fishery</td>
<td>Banana, Tiger</td>
<td>Endeavour</td>
</tr>
<tr>
<td>Torres Strait</td>
<td>Tiger, Endeavour</td>
<td>Red Spot King</td>
</tr>
<tr>
<td>Queensland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Coast Otter Trawl Fishery</td>
<td>Red Spot King, Eastern King, Tiger</td>
<td>Endeavour</td>
</tr>
<tr>
<td>River and Estuary Trawl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estuary</td>
<td>School Prawns</td>
<td>School, Royal Red</td>
</tr>
<tr>
<td>Ocean Trawl</td>
<td>Eastern King</td>
<td></td>
</tr>
<tr>
<td>South Australia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spencer Gulf and West Coast</td>
<td>Western King</td>
<td></td>
</tr>
<tr>
<td>Gulf St Vincent</td>
<td>Western King</td>
<td></td>
</tr>
<tr>
<td>Western Australia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broome</td>
<td>Coral, Western King</td>
<td>Tiger, Endeavour, Coral</td>
</tr>
<tr>
<td>Shark Bay;</td>
<td>Western King</td>
<td></td>
</tr>
<tr>
<td>Exmouth Gulf;</td>
<td>Tiger, Western King, Endeavour</td>
<td>Endavour, Tiger</td>
</tr>
<tr>
<td>Nickol Bay;</td>
<td>Banana, Western King</td>
<td>King, Endeavour, Banana</td>
</tr>
<tr>
<td>Onslow;</td>
<td>Tiger</td>
<td></td>
</tr>
<tr>
<td>Kimberley;</td>
<td>Banana</td>
<td>Tiger, Endeavour, Western King</td>
</tr>
</tbody>
</table>

Source: ABARE and FRDC (2005)

Prawns can be classified into four major groups of species, each occupying their own place in the food chain (pers comm. FRDC):

- King and Tiger Prawns - higher order food chain predators, eat protein and live for up to three years. Include the highly sought King prawn species and the widely farmed Black Tiger.
- Inshore School Prawns – omnivores that live for eighteen months, estuary dwellers. School prawns are ‘sweet’ and well regarded eating; they are not exported in any quantity.
- White Prawns – omnivores that include Banana prawns and imported P. vannamei. Sourced through both wild-catch and farming.
- Deep Sea species - such as Royal Red, which are caught at depths of up to 550m. Less well regarded than some species and are sometimes used in the bait industry.

Market prices for each of these categories are reported in Section 3.4 below.
Prawn Fishing Seasons

In a number of Australian prawn fisheries the exact season and length of season varies on an annual basis. Fishing season approximates are shown in the table below.

Table 16 Australian Prawn Fishing Seasons (approximate)

<table>
<thead>
<tr>
<th>Variety</th>
<th>J</th>
<th>F</th>
<th>M</th>
<th>A</th>
<th>M</th>
<th>J</th>
<th>J</th>
<th>A</th>
<th>S</th>
<th>O</th>
<th>N</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPF</td>
<td></td>
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</tr>
<tr>
<td>Torres Strait</td>
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<tr>
<td>Qld EC Trawl - Nth</td>
<td></td>
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<tr>
<td>Qld EC Trawl - Sth</td>
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<tr>
<td>Qld River Trawl#</td>
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<tr>
<td>NSW Estuary</td>
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<tr>
<td>NSW Ocean</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>SA Spencer Gulf</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>SA Gulf St Vincent</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>SA West Coast</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>WA Kimberly</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>WA Broome</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>WA Shark Bay</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>WA Exmouth</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>WA Nickol Bay</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WA Onslow</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Source: various primary and secondary sources # very little fishing in the winter months

The table shows that wild-catch product is sourced on a year round basis and that a number of the northern fisheries can be fished in sequence.

Production Efficiency

Production efficiency refers to the relationship between inputs and outputs. Where a given level of output cannot be achieved without any fewer inputs, production is said to be efficient.

ABARE (2004) in a study of the Northern Prawn Fishery (NPF) found that boat size and engine power restrictions led to substitutions of gear for power and subsequently a decrease in technical fishing efficiency over time. For instance, Kompas, Che and Grafton (2004) found that for the NPF technical efficiency fell from 75.1 per cent in 1994 to 68.2 percent in 2000. The overall effect has been an increase in costs and a decrease in the efficiency of fishing.

Furthermore, ABARE notes that input controls do not impact on productivity evenly. For example a 25% reduction in inputs is more easily managed by a corporate player with multiple vessels and capacity to purchase net units than it is for a small operator managing a single vessel. Input controls are perceived as being inequitable and result in disputes between small and large fishers.
Cost of Production

Cost of production varies considerably between Australian fisheries, Australian aquaculture and international competitors. Available cost of production data is summarised in the table below.

### Table 17 Production Cost – International Data ($US/kg)

<table>
<thead>
<tr>
<th>Country/Fishery</th>
<th>Source</th>
<th>Av Prod Cost (02/03)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Australian Wild-Catch</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry average</td>
<td>Industry Consultation</td>
<td>8.00 to 12.00</td>
</tr>
<tr>
<td><strong>Australian Farmed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small scale</td>
<td>NAC</td>
<td>22.50</td>
</tr>
<tr>
<td>Large scale</td>
<td>NAC</td>
<td>11.25</td>
</tr>
<tr>
<td><strong>International Wild-Catch</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA - wild</td>
<td>Haby 2000*</td>
<td>12.68</td>
</tr>
<tr>
<td><strong>International Farmed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>USITC 04b</td>
<td>6.07</td>
</tr>
<tr>
<td>Ecuador</td>
<td>USITC 04b</td>
<td>6.63</td>
</tr>
<tr>
<td>Thailand</td>
<td>USITC 04b</td>
<td>7.97</td>
</tr>
<tr>
<td>India</td>
<td>USITC 04b</td>
<td>9.19</td>
</tr>
</tbody>
</table>

NB: Australian studies include cash and non-cash costs * indexed for US inflation  
Assumed exchange rate $A=$US0.75  
# Data from ABARE and FRDC 2005

The above table should be interpreted with caution; the data contained in it has been collected from a variety of sources and is not strictly comparable (e.g. ‘prawns’ is likely to describe different classes and qualities of product). The data has also been collected for a variety of purposes, including US prosecution of an antidumping case to support their wild-catch industry. With this said, the consultants believe the data is useful in illustrating a number of broad points, namely:

- The South and Central American industry has the lowest cost of production - $US6.07/kg in Brazil.
- The industry indicates that the Australian wild-catch cost of production is typically between $US8/kg and $US12/kg.
- Australian aquaculture production is relatively high cost. Australian aquaculture – small-scale farming has the highest cost of production ($US22.50/kg).

The Australian wild-catch prawn industry has a clear cost disadvantage to international aquaculture competitors.

Financial Performance

Most prawn fisheries in Australia are of marginal profitability (Rose and Kompas 2004) and are coming under increasing pressure in recent times with increased fuel prices and competition from imports driving down price.

The following financial performance data is available.
ABARE (February 2004d) estimated:

- For the Northern Prawn Fishery smaller boats (i.e. less than 470 net units) generated in 2001/02 total cash receipts per boat of $1.05 million, incurred cash costs of $772,000, has a capital base excluding quota and licences of $876,000 and including quota and licences of $4.2 million. The return on boat capital was 35.2% while their return on full equity was 7.3%. Larger vessels (i.e. those with >470 net units) have a rate of return on full equity of 6.9%. Both rates of return were down on those achieved in 2000/01.

- For the Torres Strait Prawn Fishery, specialist Torres Strait fishers (i.e. those that did not fish in other waters) generated in 2001/02 total cash receipts per boat of $621,000, cash costs of $550,000, had a capital base excluding quota and licences of $540,000 and including quota and licences of $1.53 million. Their return on boat capital was 13.3% while their rate of return on full equity was 4.7% per boat. Those that also fished the Qld East Coast Trawl Fishery and the NPF had a rate of return on full equity of 7.1%. Both rates of return were down on those achieved in 2000/01.

Studies by EconSearch (2004a,b) of the financial performance of prawn fisheries in SA indicated:

- Declining financial performance of the Spencer Gulf and West Coast fishery with an average rate of return to capital of 3.1% per boat in 2002/03, down from 6.8% in 2001/02. The 2002/03 rate of return was achieved from total cash receipts per boat of $616,000, cash costs of $407,000, depreciation of $117,000, a capital base excluding licenses of $1.2 million and including licenses of $3.4 million.

- Declining financial performance of the Gulf St Vincent fishery over time with an average rate of return to total capital of 1.7% per boat in 2002/03, down from 5.3% in 2001/02. The 2002/03 rate of return was achieved from total cash receipts per boat of $430,000, cash costs of $308,000, depreciation of $86,000, a capital base excluding licenses of $313,000 and including licenses of $2.1 million.

No data was available on the financial performance of other prawn fisheries.

Financial data for the two Commonwealth fisheries for 2001/02 are summarised in the table below. From the table it can be seen that labour, fuel and repairs and maintenance costs dominate the total cash costs of fishing. It is important to note that crew costs include estimates for owner operators and family labour not receiving a salary from the business. High R&M costs probably reflect an aging of the wild-catch prawn fleet.
Table 18 Financial Performance - Prawn Boats NPF and Torres Strait (2001/02)

<table>
<thead>
<tr>
<th></th>
<th>Northern Prawn Fishery Small Boats (&lt;470 units)</th>
<th>Torres Strait Prawn Fishery Specialist Boats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prawn receipts</td>
<td>999,052</td>
<td>556,662</td>
</tr>
<tr>
<td>Other fishing receipts</td>
<td>9,567</td>
<td>61,339</td>
</tr>
<tr>
<td>Non fishing receipts</td>
<td>41,684</td>
<td>3,000</td>
</tr>
<tr>
<td><strong>Total cash receipts</strong></td>
<td><strong>1,050,303</strong></td>
<td><strong>621,001</strong></td>
</tr>
<tr>
<td>Administration</td>
<td>13,018</td>
<td>10,873</td>
</tr>
<tr>
<td>Crew costs</td>
<td>277,388</td>
<td>202,404</td>
</tr>
<tr>
<td>Freight and marketing expenses</td>
<td>23,271</td>
<td>11,376</td>
</tr>
<tr>
<td>Fuel</td>
<td>166,981</td>
<td>123,106</td>
</tr>
<tr>
<td>Insurance</td>
<td>25,869</td>
<td>14,757</td>
</tr>
<tr>
<td>Interest paid</td>
<td>17,194</td>
<td>17,642</td>
</tr>
<tr>
<td>Leasing</td>
<td>36,865</td>
<td>0</td>
</tr>
<tr>
<td>Licence fees and levies</td>
<td>21,574</td>
<td>8,863</td>
</tr>
<tr>
<td>Packaging</td>
<td>10,328</td>
<td>11,151</td>
</tr>
<tr>
<td>Repairs and maintenance</td>
<td>140,431</td>
<td>117,631</td>
</tr>
<tr>
<td>Other costs</td>
<td>38,671</td>
<td>32,183</td>
</tr>
<tr>
<td><strong>Total cash costs</strong></td>
<td><strong>771,589</strong></td>
<td><strong>549,986</strong></td>
</tr>
<tr>
<td><strong>Boat cash income</strong></td>
<td>278,714</td>
<td>71,015</td>
</tr>
<tr>
<td>less depreciation</td>
<td>28,228</td>
<td>20,630</td>
</tr>
<tr>
<td><strong>Boat business profit</strong></td>
<td>250,486</td>
<td>50,385</td>
</tr>
<tr>
<td>plus interest, leasing and rent</td>
<td>54,790</td>
<td>21,536</td>
</tr>
<tr>
<td><strong>Profit at full equity</strong></td>
<td><strong>305,277</strong></td>
<td><strong>71,921</strong></td>
</tr>
<tr>
<td>Capital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- excluding quota and licences</td>
<td>867,099</td>
<td>539,958</td>
</tr>
<tr>
<td>- including quota and licences</td>
<td>4,164,874</td>
<td>1,529,376</td>
</tr>
<tr>
<td>Rate of return on boat capital</td>
<td>35.2</td>
<td>13.3</td>
</tr>
<tr>
<td>Rate of return on full equity</td>
<td>7.3</td>
<td>4.7</td>
</tr>
</tbody>
</table>

Source: ABARE (February 2004d)

The cost of labour is highly significant for Australian wild-catch fishers. It is even larger than the cost of fuel. The cost of labour is a major determinant of Australia’s competitiveness as a fishing nation. Australian labour rates alongside those of competing wild-catch prawn fishers are shown in the table below.

Table 19 Daily Crew Labour Cost Major Prawn Fishers ($US)

<table>
<thead>
<tr>
<th>Fishing Country</th>
<th>$US/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>2.50</td>
</tr>
<tr>
<td>Brazil, Ecuador</td>
<td>10.00</td>
</tr>
<tr>
<td>Africa - Mozambique</td>
<td>10.00</td>
</tr>
<tr>
<td>United States</td>
<td>80.00</td>
</tr>
<tr>
<td>Australia</td>
<td>120.00 to 150.00</td>
</tr>
</tbody>
</table>

NB: Prepared from various primary and secondary sources. Attempts to include an allowance for catch sharing with crew.

Australian labour rates are significantly higher than those of alternative suppliers.

A further, measure of the industry’s performance is whether they are investing in new boats and equipment. Anecdotal evidence is that outside the South Australian fisheries, they are not.
Structural Adjustment

The structure of Australian wild-caught prawn fisheries is constantly changing as operators respond to changing economic conditions (such as price fluctuations), environmental conditions (such as stock numbers), and the institutional environment (such as management arrangements).

Over the last 20 years there has been considerable structural adjustment in most prawn fisheries with a corresponding reduction in vessel numbers. For example, vessel numbers have reduced from:

- 172 (in 1992) to 97 (in 2003) in the NPF;
- 1,500 (in 1970s) to 71 (in 2005) in Torres Strait PF; and
- 23 to 12 in Exmouth, WA;

In some instances, vessel number reductions have occurred through natural attrition as fishers retired or become unviable while in other instances Government policy measures were used to facilitate adjustment.

The primary impetus for adjustment programs in Australian wild-caught prawn fisheries has been declining operator returns linked to the existence of excess capacity.

From a stock conservation perspective, excess capacity does not pose any significant threat provided total output of the fishery is constrained to a sustainable level (directly by TAC or indirectly by input controls). However, the existence of excess capacity creates an economic problem in that economic returns generated by operators are lower than they would be otherwise. At the aggregate fishery level, the existence of excess capacity indicates a waste of resources, as, by definition, the same catch could have been taken by fewer vessels, using fewer inputs (Newby et al 2004).

The existence of excess capacity and hence dissipation of profits also makes the industry more vulnerable to adverse resource and economic shocks (Newby et al 2004), for instance the rising fuel prices that have recently been experienced and increased competition from imports.

However, despite ongoing adjustment, including buy-back schemes, wild-catch prawn fisheries in Australia continue to exhibit excess capacity. Newby et al (2004) argues that, where fisheries management is dependent on effort controls any structural adjustment or buyback schemes will only improve stock recovery and economic returns in the short term. Effort creep and race to fish will in the long run dissipate economic returns and managers will be required to constantly adjust total allowable effort in order account for technological change and substitution of uncontrolled inputs for controlled inputs. In the process fishers are denied a return on their investment in measures to increase efficiency.
This is borne out by the experience in the NFP where despite structural adjustment in the 1990s by way of a buy back scheme and repeated review of input controls, effort creep has continued to occur to the extent that ABARE (2004) models of the performance of the NPF indicate that there is still a large excess of effort in the fishery.

As identified by (Newby et al 2004) the fundamental lesson is that capacity problems originally exist due to the historical management regimes and the associated economic incentives they create (race to fish, substitution of uncontrolled inputs for controlled inputs). Unless these underlying incentives to create overcapacity are addressed, any benefits of structural adjustment schemes, on both fish stocks and profitability, will be short lived.

The industry appears to hold two views in relation to excess capacity and structural adjustment. These views are summarised in the table.

Table 20 Industry Views on Structural Adjustment

<table>
<thead>
<tr>
<th>View 1: Large Players</th>
<th>View 2: Smaller Players</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Government should adopt a hands off position in relation to fisheries management.</td>
<td>• Current poor returns are simply a temporary hiccup</td>
</tr>
<tr>
<td>• Allow those with capacity to pay to buy the fishing rights and manage them efficiently.</td>
<td>• Regional economies rely on there being lots of vessels</td>
</tr>
<tr>
<td>• Old vessels that are high in maintenance costs should be retired and the catch per boat allowed to increase.</td>
<td>• Government assistance is needed</td>
</tr>
<tr>
<td>• Industry needs fewer, efficient and probably fully integrated operations</td>
<td>• We need a diverse industry</td>
</tr>
</tbody>
</table>

Source: AgEconPlus consultation

Processing Sector Infrastructure and Efficiency

The processing sector is responsible for receipt of frozen product from fishers, product grading, packaging and marketing. More and more product grading and packaging is completed on boat. Little product transformation (eg pealing, crumbing, etc) takes place in Australia. The industry has rationalised in recent years and much activity now takes place offshore in countries where processing labour is more cost effective. There are approximately six major Australian prawn processors with recognisable trade brands. There are probably a further half dozen minor players. Processing is a capital-intensive business and larger players would typically invest between $5 million to $10 million in facilities and employ 50 people. The sector is highly competitive in both securing product and competing with offshore alternatives.
Summary of Enterprise Attributes

Industry enterprise attributes, consistent with the ‘Strengthening the Industry Partnership Initiative – A Framework’ (CIE 2005) are summarised in the table below.

Table 21 Enterprise Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographic concentration</td>
<td>• 15 major fisheries, effort concentrated in warmer waters.</td>
</tr>
<tr>
<td>Gross value of production, measured at the beach</td>
<td>• Static at approximately $300 million, forecast is for declining real value GVP. Volume growth is not possible - all but one fishery is fully exploited.</td>
</tr>
<tr>
<td>Scale</td>
<td>• Mixed – from small and part time to large integrated multi vessel operations.</td>
</tr>
<tr>
<td>Number of enterprises in the industry and distribution by size</td>
<td>• Approximately 1,000 enterprises in industry of which 300 produce 80% of the product. As many as 25% may have turnovers &lt;$50,000.</td>
</tr>
<tr>
<td>Degree of enterprise level diversification, measured as the share of total enterprise turnover in that activity</td>
<td>• NSW, Qld and some parts of WA are general trawl. The NPF has valuable bycatch.</td>
</tr>
<tr>
<td>Investment – new capital</td>
<td>• Limited outside South Australia</td>
</tr>
<tr>
<td>Profitability</td>
<td>• Under pressure in all prawn fisheries. Some fisheries are not generating a cash surplus let alone an economic return on capital. The impact of higher fuel prices, imports and labour costs is exacerbated by the ruling fisheries management regime.</td>
</tr>
</tbody>
</table>
3.2 Resource Use

The way an industry uses its resources is extremely important and has a large bearing over its success (CIE 2005). The following attributes in resource use are reviewed:

- Nature of the Fishery Property Right
- Fisheries management methods
- Resource condition
- Resource access
- Input intensity
- Infrastructure intensity
- Capital intensity
- Debt to equity ratio

Wild-catch prawn fishery management methods, resource condition and access trends are summarised in the table below. Comment on the table is provided in the accompanying text.

Table 22 Management Methods, Resource Condition, Access Trends

<table>
<thead>
<tr>
<th>Fishery</th>
<th>Resource Use Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Prawn Fishery, Commonwealth</td>
<td><strong>Management Methods</strong></td>
</tr>
<tr>
<td></td>
<td>- Input controls that include limited entry, gear restrictions, daylight closures, and other time and area closures; continual review of management arrangements in line with annual stock assessments and other research</td>
</tr>
<tr>
<td></td>
<td><strong>Resource Condition – BRS 2004</strong></td>
</tr>
<tr>
<td></td>
<td>- Banana prawns are not overfished</td>
</tr>
<tr>
<td></td>
<td>- Tiger prawns and Grooved Tiger prawns are not overfished</td>
</tr>
<tr>
<td></td>
<td>- Endeavour and King prawn status is uncertain</td>
</tr>
<tr>
<td></td>
<td><strong>Resource Condition - Newby 2004 and Rose and Kompas 2004</strong></td>
</tr>
<tr>
<td></td>
<td>- Tiger prawn - stocks are overfished</td>
</tr>
<tr>
<td></td>
<td>- Banana prawn – evidence stock is under pressure</td>
</tr>
<tr>
<td></td>
<td><strong>Access Trends</strong></td>
</tr>
<tr>
<td></td>
<td>- 1999 shortest season for 20 years</td>
</tr>
<tr>
<td></td>
<td>- 2000 switch from input restrictions based on engine size/vessel hull volume to headrope length of fishing nets</td>
</tr>
<tr>
<td></td>
<td>- 2002 the season was again shortened and a 25% reduction in total available headrope length implemented</td>
</tr>
<tr>
<td></td>
<td>- 2003 no change and stock recovery on tiger prawns</td>
</tr>
<tr>
<td></td>
<td>- 2005 Minister announces structural adjustment package conditional on the fishery moving to output (quota) controls</td>
</tr>
<tr>
<td>Fishery</td>
<td>Resource Use Feature</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Torres Strait Prawn, C'wealth</td>
<td>Management Methods</td>
</tr>
<tr>
<td></td>
<td>- Input controls that include limited entry, gear restrictions, area closures and limits on total fishing nights</td>
</tr>
<tr>
<td>Resource Condition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Tiger prawns are not overfished</td>
</tr>
<tr>
<td></td>
<td>- Endeavour prawn uncertain but probably not overfished</td>
</tr>
<tr>
<td></td>
<td>- King prawn status is uncertain</td>
</tr>
<tr>
<td></td>
<td>- Conclusions based on BRS 2004</td>
</tr>
<tr>
<td>Access Trends</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Access restrictions to limit effort among the existing Australian operators were proposed in 2004</td>
</tr>
<tr>
<td></td>
<td>- Minister announced 25% buyback of allocation for PNG in July 2005</td>
</tr>
<tr>
<td></td>
<td>- Minister announced a change to a unitised system in November 2005 – access as a proportion of the sustainable available resource. New system to be developed in 2006 and implemented in 2007. Unitised may mean ‘units of effort’ or output/quota controls</td>
</tr>
<tr>
<td>East Coast Trawl, Queensland</td>
<td>Management Methods</td>
</tr>
<tr>
<td></td>
<td>- Input controls including capping and reduction in fishing effort, limits to fishing gear, maximum engine power of vessels and permanent closures</td>
</tr>
<tr>
<td></td>
<td>- Extensive permanent special closures including GBRMP, Woongarra, Hervey Bay and Moreton Bay Marine Parks</td>
</tr>
<tr>
<td>Resource Condition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 90% of the fishery is lightly fished (&lt;100 days pa)</td>
</tr>
<tr>
<td></td>
<td>- Wildlife Trade Operation Approval granted</td>
</tr>
<tr>
<td>Access Trends</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 1999 intro of new East Coast Trawl Management Plan</td>
</tr>
<tr>
<td></td>
<td>- 2000 buyback of 99 vessels and the capping of effort</td>
</tr>
<tr>
<td></td>
<td>- 2001 legislated requirement for 13% reduction in effort</td>
</tr>
<tr>
<td></td>
<td>- 02 to 04 requirement for an annual 1% reduction in effort</td>
</tr>
<tr>
<td></td>
<td>- 2002 30% of fishery closed to trawl, 49% in GBRWHA closed to trawl (75% of fishery prawns caught in GBRWHA).</td>
</tr>
<tr>
<td></td>
<td>- 2003 decrease in WHA effort and increase in effort E. Coast</td>
</tr>
<tr>
<td></td>
<td>- 2006 review of access/effort; Hervey Bay may become scallop aquaculture area. Prawns access unlikely to change medium term.</td>
</tr>
<tr>
<td>River and Estuary Trawl, Queensland</td>
<td>Management Methods</td>
</tr>
<tr>
<td></td>
<td>- Input controls including capping and reduction in fishing effort, limits to fishing gear, maximum engine power of vessels and permanent closures</td>
</tr>
<tr>
<td>Resource Condition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- A Wildlife Trade Operation approval granted Nov 04 under the Commonwealth Environment Protection &amp; Biodiversity Act 1999 acknowledges the fishery’s management in an ESD manner and allows the continued export of trawl prawn caught in Qld</td>
</tr>
<tr>
<td></td>
<td>- Record catch in 2004</td>
</tr>
<tr>
<td>Access Trends</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 1998 reduction in access associated with the General and Dugong Adjustment Schemes</td>
</tr>
<tr>
<td></td>
<td>- 1999 trawl plan introduced</td>
</tr>
<tr>
<td></td>
<td>- 2000 - 75% reduction in effort in the Hervey Bay area</td>
</tr>
<tr>
<td></td>
<td>- 99 to 04 - 11% reduction in effort in the fishery</td>
</tr>
<tr>
<td>Fishery</td>
<td>Resource Use Feature</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td><strong>Estuary General and Estuary Prawn Trawl, NSW</strong></td>
<td>Management Methods</td>
</tr>
<tr>
<td></td>
<td>- Input controls that include limited entry, engine size and vessel-hull volume restrictions, gear/net restrictions, time and area closures and size limits on prawns</td>
</tr>
<tr>
<td></td>
<td>Resource Condition</td>
</tr>
<tr>
<td></td>
<td>- The fishery is overexploited – too many fishers, dwindling resource</td>
</tr>
<tr>
<td></td>
<td>Access Trends</td>
</tr>
<tr>
<td></td>
<td>- Closure of estuaries to trawl along length of NSW coast including Botany Bay</td>
</tr>
<tr>
<td></td>
<td>- 2005 – ban on harvest of Sydney Harbour prawns associated with adoption of European standards for dioxin MRLs</td>
</tr>
<tr>
<td><strong>Ocean Prawn Trawl, NSW</strong></td>
<td>Management Methods</td>
</tr>
<tr>
<td></td>
<td>- Input controls that include limited entry, engine size and vessel-hull volume restrictions, gear/net restrictions and size limits on prawns</td>
</tr>
<tr>
<td></td>
<td>Resource Condition</td>
</tr>
<tr>
<td></td>
<td>- The fishery is overexploited – too many fishers and a dwindling resource</td>
</tr>
<tr>
<td></td>
<td>Access Trends</td>
</tr>
<tr>
<td></td>
<td>- NSW ocean trawlers would like to implement additional minimum size requirements to prevent stock loss to estuary-based industry. Currently use a count-based system but propose a minimum size for King prawns, which would prevent their taking in estuarine waters (NSW DPI).</td>
</tr>
<tr>
<td><strong>Spencer Gulf and West Coast, SA</strong></td>
<td>Management Methods</td>
</tr>
<tr>
<td></td>
<td>- Input controls on number of vessels, gear and boat capacity</td>
</tr>
<tr>
<td></td>
<td>- Measure of self-management in this fishery – skippers make decisions on catch and government endorses.</td>
</tr>
<tr>
<td></td>
<td>- Only fish for large prawns that command higher market prices</td>
</tr>
<tr>
<td></td>
<td>Resource Condition</td>
</tr>
<tr>
<td></td>
<td>- Resource in good condition</td>
</tr>
<tr>
<td></td>
<td>- All fishery performance indicators, except for the recruitment index, were better than the targets set in the management plan</td>
</tr>
<tr>
<td></td>
<td>- Conclusions based on PIRSA 2003</td>
</tr>
<tr>
<td></td>
<td>Access Trends</td>
</tr>
<tr>
<td></td>
<td>- Major structural adjustment in the late 1970s</td>
</tr>
<tr>
<td></td>
<td>- No reduction in access planned</td>
</tr>
<tr>
<td><strong>Gulf of St Vincent, SA</strong></td>
<td>Management Methods</td>
</tr>
<tr>
<td></td>
<td>- Input controls on number of vessels, gear and boat capacity</td>
</tr>
<tr>
<td></td>
<td>Resource Condition and Access Trends</td>
</tr>
<tr>
<td></td>
<td>- Decline in catch over the last three years corresponding to an increase in fishing effort and power in the fleet</td>
</tr>
<tr>
<td></td>
<td>- Conclusions based on PIRSA 2003</td>
</tr>
<tr>
<td>Fishery</td>
<td>Management Methods</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Kimberley</td>
<td>• Input controlled: limited entry, closed seasons and area, gear restrictions and controls on vessel size and power</td>
</tr>
<tr>
<td></td>
<td>Resource Condition</td>
</tr>
<tr>
<td></td>
<td>Access Trends</td>
</tr>
<tr>
<td>Broome</td>
<td>• Limited entry, seasonal closures and gear controls</td>
</tr>
<tr>
<td></td>
<td>Resource Condition</td>
</tr>
<tr>
<td></td>
<td>Access Trends</td>
</tr>
<tr>
<td>Shark Bay</td>
<td>• Limited entry, seasonal closures, area closures and gear controls</td>
</tr>
<tr>
<td></td>
<td>Resource Condition</td>
</tr>
<tr>
<td></td>
<td>Access Trends</td>
</tr>
<tr>
<td>Exmouth Gulf</td>
<td>• Input controlled: limited entry, closed seasons and area, gear restrictions and controls on vessel size and power</td>
</tr>
<tr>
<td></td>
<td>Resource Condition</td>
</tr>
<tr>
<td></td>
<td>Access Trends</td>
</tr>
<tr>
<td>Nickol Bay</td>
<td>• Limited entry, seasonal and area closures, gear controls and restrictions on boat size</td>
</tr>
<tr>
<td></td>
<td>Resource Condition</td>
</tr>
<tr>
<td></td>
<td>Access Trends</td>
</tr>
</tbody>
</table>
Management arrangements have evolved separately in the Commonwealth and each of the Australian states. Each fishery has largely operated in isolation. There are however a number of common issues running through Australian prawn fishery resource management.

**Nature of the Fishery Property Right**

Key property right attributes critical to fisher confidence in investing in their industry include:

- **Duration** – sometimes annual
- **Flexibility** – mostly low
- **Exclusivity** – medium to high
- **Transferability** – medium
- **Divisibility** – low
- **Quality of title i.e. its certainty and security - low**

Prawn fishers current property rights are generally low on most of these criteria.

**Resource Management Method Trends**

All prawn fisheries in Australia are managed via input controls. These include limited entry, gear restrictions, daylight closures, limits on fishing nights, area closures, limits on boat size and engine power etc. The aim of these input controls is invariably to limit the catch of fishers to those that are considered ecologically sustainable, with this sustainable level of catch varying from year to year based on scientific assessment.

Across other fisheries in Australia there has been some move from input controls to output controls. The table below summarises the extent of adoption of output controls (Individual Transferable Quotas) by fishing method.
Table 23 Range of Australian Fisheries Adopting Output Controls

<table>
<thead>
<tr>
<th>Method</th>
<th>Species/Sector</th>
<th>No. of Licences</th>
<th>Value ($ million 97/98)</th>
<th>No of Fisheries with ITQ by No.</th>
<th>%ITQ by No.</th>
<th>%ITQ by Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diving</td>
<td>Abalone</td>
<td>294</td>
<td>181</td>
<td>7/7</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Line/LL</td>
<td>Snapper/tuna</td>
<td>2,449</td>
<td>131</td>
<td>5/9</td>
<td>56%</td>
<td>59%</td>
</tr>
<tr>
<td>Purse Seine</td>
<td>Pilchards etc</td>
<td>155</td>
<td>33</td>
<td>3/7</td>
<td>43%</td>
<td>23%</td>
</tr>
<tr>
<td>Others</td>
<td>Assorted methods</td>
<td>1,460</td>
<td>50</td>
<td>5/16</td>
<td>31%</td>
<td>63%</td>
</tr>
<tr>
<td>Pots</td>
<td>Rock lobster/crab</td>
<td>2,656</td>
<td>440</td>
<td>6/21</td>
<td>29%</td>
<td>31%</td>
</tr>
<tr>
<td>Trawling</td>
<td>Finfish</td>
<td>2,024</td>
<td>182</td>
<td>2/7</td>
<td>29%</td>
<td>36%</td>
</tr>
<tr>
<td>Nets</td>
<td>Scale/fish</td>
<td>2,603</td>
<td>64</td>
<td>1/21</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>Prawn Trawl</td>
<td>Prawns</td>
<td>2,944</td>
<td>391</td>
<td>0/18</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>14,585</strong></td>
<td><strong>1,473</strong></td>
<td><strong>29/105</strong></td>
<td><strong>28%</strong></td>
<td><strong>22%</strong></td>
</tr>
</tbody>
</table>

Source: McIlgorm and Tsamenyi (1999) LL = long line

Prawn fishers have clearly resisted the adoption of output controls with no Individual Transferable Quotas adopted in any prawn fishery in Australia. A recent meeting of the Torres Strait Prawn Fishers strongly objected to any move towards output controls (July 2005) as has consultation completed as part of Setting Directions for this report (February and March 2006).

Fishers and fisheries managers argue that the life history of the catch, its catch-ability, and the spatial nature if the fishery prevent their application. Other reasons for fisher reluctance to adopt Individual Transferable Quotas include:

- Uncertainty of their position under the new regime against the certainty of their current form of management (McIlgorm and Tsamenyi 1999);
- Association of ITQ with industry structural adjustment rather than rights development (McIlgorm and Tsamenyi 1999);
- Adoption of ITQs would remove the need for an explicit Structural Adjustment Package from government including buy-backs. Since with secure, marketable, rights to catch, operators could be expected to rationalise the extent and structure of fleet capacity through the market (Rose and Kompas 2004). The market price of entitlements may be less than that of a Government administered buy-back;
- Association of ITQs with resource rent taxes;
- Variability of the prawn resource and hence the setting of annual total allowable catches (although this is also and issue in relation to input controls (Rose and Kompas 2004);
- The absence of catch limits under the current management arrangements and hence within the constraints of input restrictions fishers can still catch as much as they can.
- Fishery investment in current arrangements.
Resource Condition Trends

The resource condition of the prawn fisheries of Australia varies considerably as does the quality of science used to support resource assessments. Generally speaking, Commonwealth, WA and SA resource condition assessments are based on sound scientific data. The quality of resource condition data in other fisheries is variable.

Those prawn fisheries where the resource is under most pressure appear to be:

- NSW estuary and ocean prawn fisheries – both considered to be overexploited;
- NPF – excess fishing effort relative to the available stock; and
- Torres Strait Prawn Fishery – excess latent effort is available.

Other prawn fisheries in Australia would appear to be managed at sustainable resource levels. By-in-large wild-catch prawn fisheries are managed for environmental sustainability.

Resource Access Trends

The trend has been for a steep reduction in access to commercial prawn fisheries over time. This reduction in access has arisen because of:

- Continued adjustment to input controls such as seasonal closures, area closures, etc;
- Environmental objectives such as the establishment of marine parks including GBRWHA and state marine parks;
- Resource reallocation between recreational fishers and commercial fishers e.g. permanent closure of NSW estuaries to prawn trawling;
- Resource set aside for indigenous access – Torres Strait fishery in particular; and
- Area set aside for stock replenishment including prawn nurseries.

The result has been a reduction in ‘ground’ available for trawling and an increase in effort, over time, in remaining trawl areas.

In addition to resource access reductions having a direct effect in reducing the area available to fishers in which to make their income, they also have implications for the industry’s capacity to attract finance. Resource access reductions result in increased industry uncertainty and consequently reduced ability to sell allocations and/or attract enterprise finance. A common comment received during consultation was ‘will we still be here next year?’ and ‘what is the government planning to do to us?’ Resource access uncertainty is particularly pertinent along the east coast (Qld and NSW) and the Gulf of Carpentaria. Again, there is a role for ACPF in lobbying identifying decision makers and lobbying for appropriate policy.
Input Intensity

Industry input intensity is high. The ratio of dollars in to dollars out is approximately 1.3. High value inputs include labour, repairs and maintenance and fuel. Industry advice is that it requires between three to four litres of diesel to catch 1 kg of prawn in the NPF and Torres Strait. This situation is in contrast to the US Gulf of Mexico where two litres of diesel are required to catch 1 kg of prawns (Haby 2000).

Infrastructure Intensity

Infrastructure intensity is high, rationalisation of the processing sector has occurred (processing capacity has moved offshore) and the industry requires a high level of management infrastructure (including resource assessment and monitoring).

Capital intensity

Capital intensity is medium. It ranges from less than $50,000 for boat and licence in the NSW and Qld estuaries to multi-millions in the Commonwealth prawn fisheries.

Australian fisheries are characterised by a high number of fully depreciated vessels with low sale value. Fisher expectations of realising a return on these ‘assets’ are a limit on structural adjustment in some fisheries.

Debt to Equity Ratio

A medium score is assigned to this indicator and there is little concrete data on debt in the industry. Industry advice is that there is little debt in most fisheries and that what debt is apparent is associated with purchasing entitlements rather than longer term or structural debt.
Summary of Resource Use Attributes

A summary of resource use attributes for the Australian wild-catch prawn industry is shown in the table.

Table 24 Resource Use Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource management</td>
<td>• Further scope for movement to best practice</td>
</tr>
<tr>
<td>Resource condition</td>
<td>• By and large managed for sustainability.</td>
</tr>
<tr>
<td>Resource access</td>
<td>• Trend toward decreasing access over time. Access reductions linked to both fishery resource management policies and other community objectives.</td>
</tr>
<tr>
<td>Input intensity</td>
<td>• High at approximately 1.3. Major input items include labour, R&amp;M and fuel.</td>
</tr>
<tr>
<td>Infrastructure intensity</td>
<td>High – requirement for extensive processing and fisheries management infrastructure.</td>
</tr>
<tr>
<td>Capital intensity</td>
<td>• Medium - ranges from low cost vessels/licenses (NSW/Qld estuaries) to multi-million dollar asset packages. Some fisheries characterised by a high number of fully depreciated vessels.</td>
</tr>
<tr>
<td>Debt to asset ratio</td>
<td>• Medium - historically profitably industry. Debt associated with purchase of fishing entitlements rather than evidence of long-term structural problems.</td>
</tr>
</tbody>
</table>
Case Study 1 – Resource Self Management, Spencer Gulf SA

The case study is provided to illustrate innovative, sustainable and profitable approaches to resource management in Australian wild-catch prawn fisheries.

Introduction

Stakeholder consensus is that Spencer Gulf SA is the best-managed fishery in Australia from both a resource management and fisher financial perspective.

Worldwide wild-catch prawn fisheries do not enjoy the same level of sophistication and management as Spencer Gulf. Major wild-catch fisheries in South America, Mozambique and West Africa operate under an open access regime, as does the Gulf of Mexico in the USA. Overseas examples are less applicable to Australian resource management conditions than the innovative approach to resource management adopted in Spencer Gulf.

Resource Management Method

A Fisheries Management Committee provides advice to government. The Fisheries Management Committee is made up of eleven members that include seven commercial prawn fishers, an independent chair, a government manager, a government researcher and a recreational fishing representative. An extension officer services the Fisheries Management Committee.

Fisheries management is a partnership between government and industry. The partnership includes a 5-year plan for the fishery and a Government Service Agreement. The Government Service Agreement is funded with fishers licence fees. Licence fees also fund a research program to monitor the prawn stock in the fishery.

Within this framework day-to-day management of operations is delegated to the Committee at Sea.

The fishery consists of 39 vessels with an average annual catch of 2,000t. The resource is fished 55 to 60 nights pa and fishing effort has decreased considerably over time from 300 nights pa for the same or even greater catch.

In turn for the freedom afforded by these management arrangements, the government of SA requires that there is a maximum of 39 vessels in the fishery with a maximum boat length of 22m, engine capacity of less than 365 hp, headline length of 14.63m and mesh of a minimum 45mm. Vessels are double rigged trawlers that are able to fish to a minimum depth of 10m. The fishery is managed using input controls and a single species (prawns) is taken.

5 The consultants note that Gulf of Mexico open access arrangements are currently under review
Resource management decision-making is made through the:

- Management plan – reviewed at 5-yearly intervals;
- Prawn Fishery Management Committee – accountable through an annual report;
- Harvest strategy – decided on a monthly basis; and
- Real time management – nightly decision making.

Real time management decision-making provides for the most up-to-date management of the resource. Fishers have the power to make decisions on the spot and change fishing strategy as needed. Decision-making is based on the measurement of prawns being harvested on the night and when necessary to preserve the resource, areas of the fishery are closed.

Transfer of decision-making power to fishers using real time resource management has resulted in delayed harvest until the prawns have grown to optimal market size. The result is an additional $3 million in gross receipts (in a GVP of $37 million) that is transferred directly to the fishers ‘bottom line’.

Features for Consideration in Other Fisheries

Features that make Spencer Gulf a leading prawn fishery include:

- Industry and government leadership with both vision and passion;
- An appropriate structure, management regime and fisher involvement;
- Fisher/government partnership with shared responsibility for the resource;
- Real time decision-making using appropriate technology;
- Sophisticated knowledge of the biology and ecology of the fishery;
- Industry unity that permits consensus building and a willingness to comply with the management regime and
- A deliberate and proactive succession process for industry leadership positions.

Unique characteristics that would prevent the models simple ‘roll-out’ into other fisheries include:

- A confined geographic area enabling rapid movement and response to real time data (technology may assist in overcoming this barrier in larger fisheries);
- A small number of fishers and fishing nights pa (the product of structural adjustment and an appropriate management regime);
- 100% cooperation between fishers including payment of a levy to fund management;
- A limited fishing season of 50 to 60 nights pa that provides fishers with time to plan and attend meetings; and
• The targeting of a single species without the complexity of a multi-
species fishery.

Further Steps Required to Achieve Best Practice

Additional measures that Spencer Gulf Fisheries Management Committee might like to consider to further enhance their fishery’s performance include:

• Formalising current ‘gentlemen’s agreements’ on fishery outputs and freeing up input controls. This might assist with cost of production and moving the fishery even closer to Maximum Economic Yield;
• The building of knowledge and additional linkages along the supply chain and with ultimate consumers;
• Product marketing initiatives to protect and enhance current price premiums;
• Initiatives to manage issues such as bycatch and the public’s perception of their industry; and
• Greater use of emerging electronic technologies to manage and market their catch – IT and e-commerce solutions.

Spencer Gulf provides an important starting point for consideration of reform in other Australian wild-catch prawn fisheries.

3.3 Environmental Impact, Community Perceptions, Industry Image

The wild-catch sector is dependent on access to resources owned by the Australian public. When governments provide sectors of the industry with access to resources and to some form of security to such access, they need to be confident that their decisions have the support of the general community and seafood consumers (FRDC 2005).

The extent of support by consumers and the community depends on the values they place on seafood and on fisheries resources. Since in many political processes, ‘public perception is the reality’, the fishing industry must maximise its capacity to state its views clearly to governments and the public. The more the industry sectors harmonise the way in which these views are presented the more likely it will be that governments will grant them appropriate access rights (FRDC 2005).

Community Expectations and Perceptions

The community desires a range of services from the Australian fishing industry (ACIL Tasman 2005):

• High quality seafood at competitive prices;
• Innovative products and ways of consuming seafoods;
• Sustainable supplies of fish and seafood products; and
• Protection of fish stocks and marine areas for the future.
Aslin and Byron (2003) in a major community perception study for FRDC found that commercial fishing was generally viewed pessimistically, and seen as unsustainable and dominated by the profit motive. The media were the main source of information about commercial fishing, with environmental issues, bycatch, discarding and illegal fishing in Australian waters by overseas vessels being widely expressed concerns – see Figure 3.

**Figure 3 Attitudes toward the Fishing Industry**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. There should be strong controls on commercial fishing to protect the environment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. It is essential that the community makes sure the government manages the fishing industry well</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. We should not let any foreign fishing vessels at all into Australian waters</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Management of the fishing industry must include greater consultation with the community about what we want</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. There should be more marine protected areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. It’s important to respect the rights of Indigenous Australians in Australian waters</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Overfishing by Australia’s commercial fishers is a significant problem</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Overall, Australia’s fishing industry is well managed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. The wild catch fishing sector does its best to look after the marine environment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Overfishing by Australia’s recreational fishers is a significant problem</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Overfishing by indigenous people is a significant problem</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Aslin and Byron 2003

The Aslin and Byron (2003) study found that 88% of people agreed that strong controls on commercial fishing are needed to protect the environment, and 75% indicated there should be more marine protected areas. Furthermore, there was strong support for a greater community role in fisheries management.

**Environmental Issues**

In prawn harvesting the ‘crop’ has a short life cycle and the population is able to quickly rebuild after harvest. Prawns rapidly increase in size when harvest is delayed. Fecundity is not an issue for this industry. Perceptions of seabed degradation caused by trawl, bycatch and competition with the recreation
sector are issues that the wild-catch prawn industry must address with the Australian community.

The perception of trawling is that heavy materials are used to weigh nets that are dragged across the ocean floor destroying benthic species including ecosystem-supporting seagrass, corals and sponges. QDPI&F (2004) report that trawling over the same ground in areas supporting attached sedentary animals may cause their serial depletion.

According to the industry, the reality is somewhat different. Prawn trawl is a light, less-destructive trawl and most areas harvested have been trawled for a long time.

Bycatch is very high in some prawn fisheries and is as much as 80% to 90% of net content in the Northern Prawn Fishery and Torres Strait Prawn Fishery (ABARE February 2004d). Prawn trawl in tropical/subtropical waters generates a higher proportion of bycatch than fishing in temperate areas.

Seventy-five percent of respondents to Aslin and Byron study (2003) agree with the statement that:

*Dolphins, turtles and other non-target species getting caught in commercial fishing nets and lines is a major problem in Australia*

Bycatch levels concern the Australian community.

Industry has been proactive in dealing with bycatch, especially in the northern fisheries (where the problem is greatest). Bycatch reduction successes and environmental initiatives have occurred in Australian prawn fisheries:

- With the use of TEDS effectively reducing turtle interactions to zero;
- Adoption of Bycatch Reduction Devices (BRDS) in prawn and fish trawl fisheries to reduce bycatch of finfish (FRDC 2005);
- Trials of hoppers – in water sorting systems which improve bycatch survival and prawn product quality (SA and WA prawn trawl fisheries);
- Industry self-banning the taking of shark fins in bycatch in northern waters in 2002; and
- Working with recreational fishing and the Conservation Council of WA to highlight concerns about potential mining runoff in WA in 2005.

TEDS and BRDS work well for turtles, rays and some sharks. BRDS are also used to protect small fish eg square mesh. They are well accepted by the industry and decrease product damage (AFMA pers. comm.). TEDS were a requirement of the US for Australian prawns exporting to this market and the US enforces the use in TEDS in its own domestic waters (“Texas shrimper busted with illegal turtle device” IntraFish 10/8/04). There is still some disputation with the US on the exact form of TEDS used in the Australian industry and their applicability to leatherback turtles. Unresolved this disputation could result in exclusion of supply from some Australian prawn fisheries to the US market.
There is a perception, especially in estuarine fisheries that trawl, including prawn trawl, is in direct and ‘unfair’ competition with recreational anglers. Trawl removes the ‘lion’s share’ of finfish and prawns and disturbs the environment lowering the future catch of recreational anglers. Prawn trawl fishers have been ‘bought out’ of a number of NSW estuaries with funding from recreational licenses. The perception that commercial prawn trawl competes with recreational fishing is less in the more remote northern industry.

Of lesser short-term impact on fisheries ecosystems is the significant consumption of fossil fuel in fishing boats; oil spillage and garbage dumping from vessels; and ghost fishing – the unintended catching of fish in lost fishing gear. Codes of practice are being developed to address these concerns (FRDC 2005).

The wild-catch prawn industry is embracing the concept of environmental management systems (EMS). Seafood Services Australia has developed an eight-part program and an EMS system that includes environmental management, OH&S, food quality and safety, fisheries management, environmental management and animal welfare. Pilots are under development in Spencer Gulf SA and Morton Bay Qld and under consideration in the NPF.

The industry is increasingly adopting the principles of ecologically sustainable development and setting up environmental management systems. It is taking responsibility for an environmentally sustainable harvest. This message is not being communicated to the Australian public or international consumers.

**Industry Image and Communicating Environmental Responsibility**

Industry has significantly improved its environmental performance. However, the message is not getting through to the Australian public. Work is needed, nationally, to communicate the environmental responsibility and environmental initiatives undertaken by this industry. This is an important ‘foundation’ role for the ACPF.
International Environmental Standards and Trends

Questions were raised during consultation about whether Australian fisheries managers were setting the ‘bar too high’ in relation to environmental standards compared to international competitors and what was likely to be the ‘next big trend’ after TEDS in environmental management. The following points are offered after scouring 2005 press articles (IntraFish.com and the world-wide-web):

- **Gulf fishery council undertakes enviro assessment for shrimp plan.** Higher standards of environmental management are being proposed along with further restrictions on fishery access in the Gulf of Mexico.

- **Dioxin levels in Sydney Harbour prawns reported in China Post.** Report of a ban on harvesting Sydney Harbour prawns due to high dioxin levels was reported next day in the Chinese media.

- **Should Maine shrimp go green?** Small-scale fisheries across the globe are finding that establishing and developing niche markets for their products is much easier when consumers know the resource is sustainability looked after. What is needed is a label telling consumers in target markets that this shrimp is sustainable.

- **Indian shrimp farmers go organic.** German based certification agency Naturland is assisting Indian producers to go organic following US market concerns about levels of antibiotics in shrimp.

- **Group want shrimping curtailed in Gulf of California.** Overfishing is pushing the world’s smallest porpoise towards extinction and threatening Californian marine life. Californian residents and green groups are demanding further restrictions on wild shrimp trawling.

- **Sustainable seafood movement transforming the global seafood industry.** Sustainable seafood principles now drive mainstream business plans for consumer giants including Wal-Mart, McDonalds and Unilever.

- **Greenpeace seafood campaign targets UK consumers.** The campaign seeks to get retailers to back off seafood that Greenpeace deems unsustainable including all warm water prawns, both wild and farmed, over bycatch concerns and mangrove impacts.

- **US seafood company introduces ‘low mercury’ label.** New label addresses US consumer concern with the damaging heavy metal.

- **Can we feel good about eating shrimp?** Retail behemoth Wal-Mart has addressed the concerns of the environmental group Conservation International by ensuring that all warm water shrimp sold in their stores are produced in a sustainable way. Third party monitoring of imports will ensure workers are being treated fairly, mangroves are being restored and banned antibiotics are not in the supply chain. Wal-Mart has also signalled its intentions that all seafood it retails will have MSC accreditation by 2009.
• **Scientists: US bycatch a growing problem.** Commercial fisheries in the United States kill four pounds of fish for every pound intentionally caught, jeopardising efforts to restore some struggling stocks. The Gulf of Mexico’s shrimpers, for example, catch 114,000 ton of shrimp a year but discard four times that weight in snappers, mackerel, Atlantic croaker, crabs and porgies. More research and selective fishing gear is needed said the executive director of the Pacific Coast Federation of Fisherman’s Associations.

• **Triple bottom line menus for major seafood restaurant chains.** As an example, a recent menu highlights seafood caught in a small Alaskan town, which allowed customers to learn more about where their dinner came from, how it was caught, and what it meant to the economy and the people of the area where it was produced – the environmental, economic and social impact of the meal.

The above news items would confirm the importance of maintenance of both current Australian environmental standards and the need to capitalise and communicate Australian environmental credentials. Trends include sustainability certification, the ‘story behind the meal’ (its environmental, economic and social impact), contaminants, mangrove and seafloor protection, further bycatch reduction, organics, OH&S, and the potential for commercial returns from sustainable production.

**Community Impact on the Fishing Environment**

Fishing grounds managed for multiple community objectives risk environmental degradation. Estuaries and ocean environments in more populous areas suffer nitrification, biodiversity loss and a reduction in sustainable catch.

Estuaries are particularly susceptible to this type of production loss. The Hawkesbury River, NSW must contend with major reductions in beneficial flows that maintain prawn yield along with discharges of sewage effluent at multiple points in the system.

**Case Study 2 - Promoting Sustainability, WRL Success**

The Western Australian Western Rock Lobster fishery was the first fishery in the world to receive Marine Stewardship Council (MSC) accreditation as a sustainable well-managed fishery and the right to market its lobster under the MSC promoted eco-label.

The MSC is a non-profit international certification organisation, set up as a joint initiative of the World Wide Fund for Nature (WWF) and Unilever, the global fish processor. Based in London, it is dedicated to the long-term sustainability of marine fisheries and related habitats (www.western-rock-lobster.com).

Phillips, Ward and Chaffee (2003) in an independent and academically rigorous assessment of the benefits of MSC certification were able to conclude that the fishery had been able to increase its market penetration and
reportedly, its prices and profits as a result of MSC certification. They concluded that the MSC tag had the most benefit in the EU and US markets where consumers are more concerned with environmental issues. Asian customers generally do not discriminate their purchases in the context of environmental issues.

3.4 Marketing and Markets

Marketing is a key aspect of any industry. It plays an important role in generating demand, while the characteristics of the markets in which an industry operates are also important (CIE 2005).

Under marketing and markets, the following attributes are included:

- Industry marketing expenditure
- Consumption
- Product differentiation
- Branding and labelling
- Eating quality
- Price competition
- Price signals and industry data
- Proportion of production sold as fresh product
- Proportion of production going into value adding
- Import competition
- Integrated value chain
- E-commerce
- Export market diversity and proportion of production being exported
- Export priorities
- The Future

Industry Marketing Expenditure

Marketing activities in the wild-catch prawn industry are largely managed on an individual firm basis.

A compulsory levy under the Primary Industries and Energy Research and Development Act 1989 based on vessel length and a cents per kilogram charge on prawns exported, was overturned by industry plebiscite in 1997. Prior to its cessation the levy funded a body known as the Australian Prawn Promotion Association (APPA). APPA’s charter was to promote Australian wild-caught prawns in overseas markets.

At the time, industry resisted the idea of an export marketing levy arguing that different types of prawns in different markets required a mix of strategies that were best left to individual exporters. Large players were also concerned that strong and effective product differentiation based on private brands would be ‘crowded out’ by industry level activities. At this time, much of the industry was locked into a ‘commodity culture’ and did not support APPA’s activities.

In the absence of industry level marketing, corporates are large enough to invest in their own promotion and achieve an appropriate return. Small fishers are unable to fund promotion and simply resort to selling their product to
processors. Generally speaking, industry is resistant to levies and resents charges imposed by marketing bodies (e.g. fisher questioning of the value associated with SFM percentage based charges).

With this said, Seafood Services Australia (an FRDC and ASIC initiative) has a promotion role, encouraging seafood businesses to value add, target niche markets and develop premium products and brands (see Chapter 4). In addition, the following initiatives are currently underway to enhance Australian wild-catch seafood marketing:

- DAFF has funded a ‘Marketing, Promoting and Branding Australian Seafood’ initiative jointly with ASIC and National Aquaculture Council (NAC);
- A Leadership Group for the Australian seafood industry has formed with the view to progress strategy formulation and establishment of an entity to take responsibility for promotion of Australia’s premium seafood (Seafood Experience Australia). This group is a joint initiative of the National Food Industry Strategy (NFIS), ASIC, NAC and FRDC. One hundred percent of funding was provided by FRDC; and

The broader seafood industry is taking additional responsibility for marketing. However, at the current time industry marketing expenditure remains low by comparative industry standards. For example the beef industry spent $28 million or 0.5% of GVP on generic marketing in 2002/03. Wild-catch prawns have no such equivalent fund.

Consumption

Over time, the consumption of seafood has decreased in the home but has increased in restaurants and cafes where, fortuitously for the industry, better margins can be secured (FRDC 2005).

More than 90 per cent of Australians eat seafood. A survey conducted in Sydney in 1999 showed total seafood consumption of 15.3 kg per person per annum up 13% since 1991 (Ruello & Associates 1999). Average seafood consumption nationally is considered to be lower than this Sydney estimate.

Prawns constitute approximately 10% of total seafood consumption in Australia. Domestic per capita consumption of prawns is shown in the table below. There was a sharp increase in consumption in 2003/04 associated with the availability of low cost imports, especially imported farm prawns from China.
Table 25 Domestic Per Capita Consumption – Prawns (kg)

<table>
<thead>
<tr>
<th>Year</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996/97</td>
<td>1.5</td>
</tr>
<tr>
<td>1997/98</td>
<td>1.6</td>
</tr>
<tr>
<td>1998/99</td>
<td>1.8</td>
</tr>
<tr>
<td>1999/00</td>
<td>1.5</td>
</tr>
<tr>
<td>2000/01</td>
<td>1.7</td>
</tr>
<tr>
<td>2001/02</td>
<td>1.8</td>
</tr>
<tr>
<td>2002/03</td>
<td>1.7</td>
</tr>
<tr>
<td>2003/04</td>
<td>2.0</td>
</tr>
<tr>
<td>Average</td>
<td>1.7</td>
</tr>
</tbody>
</table>

Source: ABARE 2005a – production (wild and farm) less exports plus imports

Australian prawn consumption has averaged 1.7kg per capita over the last eight years. This is low compared to East and South-East Asia but high compared to other developed western economies[6]. The increase in prawn consumption in 2003/04 demonstrates that there is potential to increase Australian prawn consumption through price changes. The potential to increase domestic consumption through promotion is untested.

Seafood is well regarded by Australian consumers. Healthy living trends favour seafood and the previous generation’s concern with cholesterol in crustaceans has been replaced with knowledge about beneficial oils in fish. This trend is likely to intensify into the future. For instance the US Government through the USDA and the National Oceanic and Atmospheric Administration issued the following recommendation (IntraFish 9/12/2005):

‘It is recommended that all Americans, especially pregnant and nursing women and children eat two seafood meals per week rich in omega-3 fatty acids. Appropriate species include wild and farmed salmon, shrimp….’

Residues are Australian consumers major concern with seafood consumption. Ruello & Associates (1999) found that the main concern in regard to consuming seafood were, in priority order:
- Food contamination and safety; and
- Price (a secondary concern).

Lack of product knowledge and concerns with food safety have become key consumer issues in all food classes. These concerns can be expected to intensify into the future.

The consultants raise the question as to whether the availability of low cost prawn imports risk changing this ‘luxury’ product positioning in the minds of consumers. At the current time imported prawns tend to be consumed in cooking. Positioned as a luxury good, prawns compete with bugs, shellfish and even lobster as well as other special occasion proteins such as stake.

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6 For example US per capita consumption has been 1.3 but has increased to 1.6 on the back of increased low cost farmed supplies (FAO 2004).
Anecdotal evidence is that Australian market differentiates prawns using the following hierarchy from most to least willing to pay:
1. Wild ‘fresh’ Australian;
2. Wild ‘frozen’ Australian;
3. Farmed ‘fresh’ Australian;
4. Farmed ‘frozen’ Australian; and
5. Farmed frozen imports.

There may be further scope to sharpen this differentiation and consumers are not yet sophisticated in differentiating species or quality at retail. For example almost anything sells as a ‘king prawn’ and is purchased on size rather than species/quality attributes.

### Product Differentiation

#### Species

The Sydney Fish Markets (SFM) reports catch for 34 separate prawn species and types (i.e. farmed versus wild-catch). Historical data was not available post June 2004 and was not available pre June 2003 for all species/types. Monthly averages, using available data, are reported on a $/kg basis in the table below.

<table>
<thead>
<tr>
<th>Type</th>
<th>Avg</th>
<th>Jul-03</th>
<th>Aug-03</th>
<th>Sep-03</th>
<th>Oct-03</th>
<th>Nov-03</th>
<th>Dec-03</th>
<th>Jan-04</th>
<th>Feb-04</th>
<th>Mar-04</th>
<th>Apr-04</th>
<th>May-04</th>
<th>Jun-04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banana</td>
<td>9.01</td>
<td>11.5</td>
<td>16.79</td>
<td>2.55</td>
<td>7.21</td>
<td>7.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carrid - green</td>
<td>0.99</td>
<td>0.74</td>
<td>1.17</td>
<td>1.12</td>
<td>1.36</td>
<td>0.84</td>
<td>1.13</td>
<td>1.06</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Channel</td>
<td>4.15</td>
<td>1.12</td>
<td>1.36</td>
<td>0.84</td>
<td>1.13</td>
<td>1.06</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultured (school)</td>
<td>1.78</td>
<td>0.84</td>
<td>1.13</td>
<td>1.06</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endeavour</td>
<td>10.06</td>
<td>7.3</td>
<td>12.46</td>
<td>10.87</td>
<td>7.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harbour</td>
<td>14.31</td>
<td>15.7</td>
<td>18.24</td>
<td>20.83</td>
<td>18.34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hunter river</td>
<td>3.73</td>
<td>5.89</td>
<td>2.34</td>
<td>4.64</td>
<td>3.32</td>
<td>2.83</td>
<td>3.34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>King</td>
<td>14.16</td>
<td>16.98</td>
<td>11.76</td>
<td>21.98</td>
<td>15.7</td>
<td>16.15</td>
<td>23.54</td>
<td>9.57</td>
<td>11.16</td>
<td>8.02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lake</td>
<td>5.52</td>
<td>3.31</td>
<td>5.44</td>
<td>5.73</td>
<td>5.82</td>
<td>5.37</td>
<td>2.62</td>
<td>5.5</td>
<td>10.38</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leader tiger</td>
<td>12.70</td>
<td>16.98</td>
<td>14.7</td>
<td>14.7</td>
<td>12.42</td>
<td>9.5</td>
<td>15.5</td>
<td>6.09</td>
<td>9.41</td>
<td>8.21</td>
<td></td>
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</tr>
<tr>
<td>Mantis</td>
<td>5.39</td>
<td>3.61</td>
<td>4.73</td>
<td>6.21</td>
<td>3.98</td>
<td>3.62</td>
<td>6.95</td>
<td>4.89</td>
<td>6.92</td>
<td>5.97</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Royal Red</td>
<td>1.70</td>
<td>1.66</td>
<td>2.73</td>
<td>1.57</td>
<td>1.53</td>
<td>1.21</td>
<td>1.05</td>
<td>1.95</td>
<td>0.69</td>
<td>1.68</td>
<td>2.03</td>
<td>1.98</td>
<td>2.33</td>
</tr>
<tr>
<td>Scarlet</td>
<td>10.13</td>
<td>8.68</td>
<td>12.33</td>
<td>11.44</td>
<td>11.63</td>
<td>11.08</td>
<td>11.74</td>
<td>11.59</td>
<td>11.37</td>
<td>2.94</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>7.95</td>
<td>8.73</td>
<td>10.41</td>
<td>9.4</td>
<td>8.5</td>
<td>13.56</td>
<td>8.97</td>
<td>8.01</td>
<td>2.9</td>
<td>8.11</td>
<td>4.44</td>
<td>6.71</td>
<td>5.66</td>
</tr>
<tr>
<td>School ocean</td>
<td>4.79</td>
<td>1.12</td>
<td>11.26</td>
<td>5.63</td>
<td>4.19</td>
<td>2.9</td>
<td>3.96</td>
<td>4.61</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School river</td>
<td>6.63</td>
<td>10.66</td>
<td>9.77</td>
<td>9.52</td>
<td>7.6</td>
<td>10.18</td>
<td>4.33</td>
<td>2.27</td>
<td>2.25</td>
<td>4.36</td>
<td>4.02</td>
<td>7.95</td>
<td></td>
</tr>
<tr>
<td>Tiger</td>
<td>15.83</td>
<td>23.63</td>
<td>20.69</td>
<td>20.02</td>
<td>18.07</td>
<td>18.05</td>
<td>8.99</td>
<td>8.81</td>
<td>10.19</td>
<td>14.06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vannamei</td>
<td>8.76</td>
<td>7.28</td>
<td>9</td>
<td>10</td>
<td>6.15</td>
<td>7.57</td>
<td>7.86</td>
<td>8.29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Sydney Fish Markets Monthly History Reporting Service
NB: project steering committee notes that ‘channel’ and ‘lake’ are in fact immature king prawns
Product wholesaled through the SFM is differentiated on the basis of size and species/type. The data would indicate that price is highest through winter (July, August, September), and falls away in January after the Christmas/new year peak. Prestige species include king, banana, endeavour, harbour, tiger and scarlet all averaging prices greater than $10/kg wholesale. Lowest cost species include carrid (green), which are often destined for the bait industry.

Ex-vessel prices for prawns vary depending on the type of product and the market forces operating at the time. Generally, average prices received by vessels fishing along the Pilbara coast of WA in 2003 were as follows:

<table>
<thead>
<tr>
<th>Type</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>King prawns</td>
<td>13.20</td>
</tr>
<tr>
<td>Tiger prawns</td>
<td>12.70</td>
</tr>
<tr>
<td>Endeavour prawns</td>
<td>7.00</td>
</tr>
<tr>
<td>Banana prawns</td>
<td>11.00</td>
</tr>
<tr>
<td>Coral prawns</td>
<td>2.50</td>
</tr>
</tbody>
</table>

Source: WA Department of Fisheries 2004

Price received in the Pilbara and in the Sydney Fish Markets was similar for comparable species.

Packaging

Processors receive bulk pack prawns, grade and repack them into ready for use restaurant packs of 500grams and supermarket display ready cooked or uncooked packs of 1kg, 1.5kg, 2kg, 5kg and 10kg packs. Better product is ‘once frozen’. Very little output is fresh i.e. never frozen. Product is often vacuum packed for export. Product differentiation includes katsurei – raw tiger prawn, feelers cut off, fixed count for the Japanese market and a small amount of never frozen produce. A number of processors have experimented with never frozen product and retailers report a positive sales response. The heads of never frozen product tend to go black quickly but as one processor points out, this could be a source of market advantage i.e. demonstration that it was never frozen. The development of MAP packaging for seafood may further assist with this form of product differentiation.

Live Prawns

FRDC has invested in live market for prawns and it is technically feasible to supply product in this form. Further work on supply chain bottlenecks and financial returns may result in a viable new industry. Whether this new industry is more suitable to the aquaculture sector or the wild-catch fisher is unknown.
Branding and Labelling

Brands

At the current time there are no established consumer prawn brands\(^7\). Each of the major processors has their own trade brand or brands. These brands are not retail brands and no attempt is made to promote them to prawn consumers.

It is proposed that, subject to funding, the newly formed Australian Seafood Promotion Council (ASPC) will develop a brand for all Australian seafood. It is further proposed that the brand will build on Australia’s earthborn assets (eg pristine waters), just as nature intended (eg no antibiotics) and first world handling and care (QA, efficient supply chains) (Market Equity, Principals and Bellamy Hayden, undated).

The development of this Australian seafood brand and the ASPC may have relevance to the wild-catch prawn industry.

Labelling in Domestic Markets

Labelling is an important issue for Australian consumers. See Figure 3 below reproduced from Aslin and Byron 2003.

Figure 3 What Factors Would Influence You To Purchase More Seafood

\(^7\) The possible exception is for farmed prawns where the Crystal Bay brand, reportedly, has some consumer recognition.
Aslin and Byron found that:

‘Over half of all survey respondents indicated that labelling and certification to improve consumer confidence about contamination and health risks (65%), freshness (59%), and environmentally friendly production (57%) were likely to influence them to buy more seafood’ (Aslin and Byron 2003).”

Country of origin labelling was not identified as an issue for consumers in this survey.

In October 2005 a Ministerial Directive was issued to Food Standards Australia New Zealand (FSANZ) that paved the way for FSANZ Ministers to reform unpackaged goods labelling. The draft standard requires clear identification of country of origin for unpackaged seafood and packaged seafood with two or less whole food ingredients.

There is also a 1800 telephone number to encourage and facilitate reports of mislabelling of seafood.

Country of origin labelling may be one way for the industry to differentiate its product and persuade consumers to pay more for it. If the industry believes this is the case it will need to drive adoption of country of origin labelling. A recent survey completed by Sydney Fish Markets indicates that retailers do not see benefits for their businesses from this change.

**Labelling in Export Markets**

In export markets country of origin labelling will be less important. In Europe, for example, consumers identified contaminants, food safety, quality and traceability labelling ahead of country of origin or wild and farmed designation labelling in their decision to purchase seafood staples (Ghent University in Belgium, working under the SEAFOODplus program and reported in IntraFish 28/11/2005).

Other studies have shown (eg Phillips et al 2003) that sustainability and eco-credentials are important in the decision to purchase in both Europe and the US, especially for non-staple foods such as prawns. Sustainability and eco-credential labelling is less important in Asia and the Middle East.

Prior to export all wild-catch prawns must obtain an environmental certificate from the Australian Government Department of Environment and Heritage under the Environment Protection and Biodiversity Conservation Act 1999. It is suggested that more could be done to use this certificate as a starting point for differentiation of Australian wild-catch prawns in US and EU markets.

**Labelling Opportunities and Further Differentiation**

Additional labelling provides an opportunity to differentiate and improve the margins on Australian wild-catch prawns. Consequently the industry might
consider a ‘seal of approval’ type label that addresses multiple product attributes including:

1. Safety – first world product handling and care;
2. Contamination free – no antibiotics (watch heavy metals/cadmium);
3. Freshness – especially on the domestic market;
4. Environmental certification – important in western countries;
5. Nutritional benefits – good health from consuming seafood;
6. Country of origin – important to domestic consumers;
7. The story behind the meal – the community who sourced the product;
8. What prawn species for what occasion - as in the potato industry;
9. Acceptable OH&S practices - fair treatment of workers; and

Post purchase retail vacuum packaging is ‘around the corner’ for seafood and this offers an opportunity to create labels that communicate this information to prawn consumers.

In addition, there may also be opportunities to better describe Australian wild-catch prawns using an objective ‘product description’ language.

Lack of consistency in fish names is reported to be an impediment to consumers’ confidence when buying seafood (ACIL Tasman 2005). The Australian wine industry has flourished through additional product description and niche branding. Insufficient volume of Australian wild-catch prawns may limit adoption of niche branding in this industry.

**Eating Quality**

A consistent eating experience is achieved through grading. Processors grade and remove soft or damaged prawns prior to distribution. Some loss in quality is experienced in retail especially through the large chains where product-handling skills may be missing. Perhaps more could be done by the national wild-catch industry to explain differences in eating qualities between different species and educate their consumers to the industry’s advantage. A program along these lines would complement the adoption of a product description language.

**Price Competition**

Increasing availability of low cost prawn imports has placed considerable pressure on prices received for Australian wild-catch prawns. Retail prices for imported farmed *P vannamei* from China are as low as $9.90/kg, placing them in the same price bracket as chicken meat, a low cost meal staple. By way of contrast wild-catch Australian King prawns retail for between $30/kg and $40/kg, Tiger, Banana and Endeavour retail between $18/kg and $25/kg. An informal survey of retailers completed by the consultant revealed that some
retailers are no longer stocking wild-catch product. It is simply not price competitive. In turn this places more importance on servicing and maintaining export markets which are also well supplied with lower cost farmed product. An appreciating Australian dollar has placed further pressure on the price competitiveness of wild-catch exports.

**Price Signals and Industry Data**

Clear and accurate price signals are available to this industry. Larger fishers operating in vertically integrated firms are fully aware of market prices and the system of discounts that operates for quality variations. Small and medium sized independent fishers have access to current prices through market reporting services.

Additional information that might assist industry decision-making would include:

- Seasonal conditions - reporting for each of the major Australian fisheries;
- Import volume and prices trends – provided at regular intervals;
- Market developments – domestic and export market condition reports; and
- Additional price data – the spread of high and low price in market reports can vary by as much as 20%. A better delineation of the reasons for such price variation could help fishers to ‘fish to the market requirements’ (ACIL Tasman 2005).

Facilitation of collection and dissemination of additional market data is a potential role for a well-resourced peak industry body.

**Proportion of the Product Sold as Fresh Product**

The industry is dominated by frozen product and nearly all wild-catch prawns are blast frozen on ship. Fresh product is more prevalent in inshore fisheries where ‘time to market’ is shorter. As previously indicated never frozen product is under consideration by large-scale processors but is difficult to achieve, it requires a major change to supply chain management systems.

Almost all Australian wild-catch prawns are exported green (i.e. uncooked) and approximately 50% of domestic sales are also uncooked. There is better risk management for the product in a green state and it is easier to comply with HACCP requirements. Additional AQIS certification is required for the export of cooked prawns.

**Proportion of the Product Going into Value Adding**

Very little processing of fish products occurs in Australia for either export or domestic consumption (FRDC 2005). The high cost of Australian labour makes the products from this activity non-price competitive. ABARE report that 95% of Australian exports are whole prawn and a further 3% have their head removed.
Some Australian wild-catch prawns are exported to low labour cost Asian countries, value added through head removal, pealing, part pealing, cutlets, crumbing, retail packing, etc and reimported for domestic consumption. In these countries there is sufficient volume of waste for it to be value added. ‘Waste’ from prawns is value added into products as diverse as arthritis treatments (heads and shells contain chitin) and surimi lines (seafood extenders of the same style as crab sticks). There is insufficient volume of prawn waste in Australia for consideration of these products.

The most appealing form of value adding of wild-catch prawns is additional on-vessel grading and packing. Customers prefer smaller well-graded packs of 2kg to 3kg and this activity could be completed on-vessel by crew during quiet nights. The quality of crew labour is an issue and training would be required. Importantly this form of value adding has the potential to increase returns for fishers rather than be lost to others further along the supply chain. Other potential value adding opportunities and trends include ‘organics’ and various certification/labelling options (see section on Branding and Labelling above).

Import Competition

Imports are sourced from a large number of low labour cost, developing Asian and Pacific countries. Thailand, China, Vietnam and India are all major suppliers (see table below). There are no tariffs on prawns imported into Australia.

Imports, relatively stable throughout the late 1990s at around 15,000 tonnes, have grown rapidly in the last few years (see chart below). The increase in imports has been driven by China. In 2003/04 the volume of prawns imported from China (predominantly *P. vannamei*) increased by over 600% to 3,900 tonnes, China’s share of the fresh, chilled or frozen prawn Australian import market increased from 4% in 2002/03 to 21% in 2003/04. Average import prices of these prawns were around $5/kg less than average Australian beach prices (ABS 2004).
### Table 28 Australian Imports of Prawns by Source

<table>
<thead>
<tr>
<th>Fresh, chilled or frozen</th>
<th>2001-02 T</th>
<th>2001-02 $000</th>
<th>2002-03 T</th>
<th>2002-03 $000</th>
<th>2003-04 T</th>
<th>2003-04 $000</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>381</td>
<td>3,362</td>
<td>544</td>
<td>5,704</td>
<td>3,894</td>
<td>28,476</td>
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<tr>
<td>China Taipei</td>
<td>42</td>
<td>626</td>
<td>41</td>
<td>714</td>
<td>102</td>
<td>1,297</td>
</tr>
<tr>
<td>India</td>
<td>2,571</td>
<td>38,963</td>
<td>2,763</td>
<td>39,759</td>
<td>2,920</td>
<td>34,872</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1,526</td>
<td>17,934</td>
<td>1,629</td>
<td>17,501</td>
<td>1,617</td>
<td>13,423</td>
</tr>
<tr>
<td>Malaysia</td>
<td>587</td>
<td>6,321</td>
<td>395</td>
<td>3,889</td>
<td>190</td>
<td>1,783</td>
</tr>
<tr>
<td>Myanmar</td>
<td>716</td>
<td>8,183</td>
<td>644</td>
<td>6,451</td>
<td>564</td>
<td>4,867</td>
</tr>
<tr>
<td>New Caledonia</td>
<td>184</td>
<td>3,128</td>
<td>123</td>
<td>2,044</td>
<td>104</td>
<td>1,571</td>
</tr>
<tr>
<td>PNG</td>
<td>133</td>
<td>1,139</td>
<td>161</td>
<td>1,357</td>
<td>196</td>
<td>1,307</td>
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<tr>
<td>Singapore</td>
<td>91</td>
<td>1,325</td>
<td>141</td>
<td>1,608</td>
<td>211</td>
<td>2,083</td>
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<tr>
<td>Thailand</td>
<td>3,677</td>
<td>51,886</td>
<td>3,597</td>
<td>47,027</td>
<td>4,911</td>
<td>44,250</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>1,840</td>
<td>29,554</td>
<td>2,802</td>
<td>45,441</td>
<td>3,898</td>
<td>47,333</td>
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<tr>
<td>Other</td>
<td>223</td>
<td>2,674</td>
<td>245</td>
<td>2,990</td>
<td>253</td>
<td>2,275</td>
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<tr>
<td><strong>Total</strong></td>
<td>11,972</td>
<td>165,095</td>
<td>13,086</td>
<td>174,484</td>
<td>18,860</td>
<td>183,537</td>
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</table>

### Canned

<table>
<thead>
<tr>
<th>Fresh, chilled or frozen</th>
<th>2001-02 T</th>
<th>2001-02 $000</th>
<th>2002-03 T</th>
<th>2002-03 $000</th>
<th>2003-04 T</th>
<th>2003-04 $000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysia</td>
<td>1,356</td>
<td>12,030</td>
<td>1,202</td>
<td>10,082</td>
<td>1,089</td>
<td>8,072</td>
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<td>Thailand</td>
<td>3,097</td>
<td>33,392</td>
<td>3,064</td>
<td>29,341</td>
<td>3,328</td>
<td>27,035</td>
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<tr>
<td>Vietnam</td>
<td>94</td>
<td>908</td>
<td>167</td>
<td>1,558</td>
<td>319</td>
<td>2,726</td>
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<tr>
<td>Other</td>
<td>885</td>
<td>8,223</td>
<td>599</td>
<td>4,404</td>
<td>848</td>
<td>6,187</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5,432</td>
<td>54,553</td>
<td>5,032</td>
<td>45,386</td>
<td>5,584</td>
<td>44,020</td>
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</table>

### Other

<table>
<thead>
<tr>
<th>Fresh, chilled or frozen</th>
<th>2001-02 T</th>
<th>2001-02 $000</th>
<th>2002-03 T</th>
<th>2002-03 $000</th>
<th>2003-04 T</th>
<th>2003-04 $000</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>3</td>
<td>34</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Malaysia</td>
<td>65</td>
<td>609</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Thailand</td>
<td>85</td>
<td>1,055</td>
<td>26</td>
<td>334</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>2</td>
<td>17</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>66</td>
<td>2</td>
<td>28</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>155</td>
<td>1,782</td>
<td>29</td>
<td>365</td>
<td>5</td>
<td>38</td>
</tr>
</tbody>
</table>

**Total** 17,559 221,430 18,147 220,236 24,448 227,595

Source: ABARE 2005

### Figure 3 Prawn Imports by Volume (kt)

Source: ABARE Australian Commodity Statistics 2004
Integrated Value Chain and Retailing Trends

Integrated Value Chain

Cost competitiveness in the value chain is constantly under pressure from technology; new ways of doing business (such as direct contract to retail); existing or new business taking a view that margins are excessive or that they have a lower cost alternative. Price competition from other food producers and retailers seeking lower prices and/or different products also focuses attention on cost competitiveness (ACIL Tasman 2005).

Links in the generic wild-catch prawn value chain include:

1. Input suppliers – bunkering companies who supply fuel and ice and remove prawns, net manufacturers, professional service providers, etc;
2. Fisher – who catch, rough grade, cook some product, snap freeze and package on the vessel. In more remote fisheries, fishers are serviced with a ‘mother vessel’ that restocks supplies and removes the catch;
3. Processors – who grade, freeze, cook, package and market product;
4. Agent – who market the product and earn a 2% commission;
5. Exporters – some are also processors, some just on-sell, some take packaging product apart and resize and repackage;
6. Domestic distributors and wholesalers – who buy product from processors and channel it to retail. Most wholesalers and distributors do not buy through the auction system; and
7. Domestic retailers – who include large supermarkets, traditional fishmongers and fish & chip shops, specialist seafood markets, food service/catering and alternative outlets such as mobile vans and e-commerce.

There is any number of permutations on this generic value chain and many links are incorporated within single vertically integrated entities.

There are at least two major value chains apparent in the Australian wild-catch prawn industry. The first is a highly integrated and sophisticated supply chain that channels product through single, vertically integrated enterprises with utmost efficiency. Product is sourced from domestic and international producers and managed through sophisticated integrated and food safety conscious marketing channels. Information flows freely to fishers who are part of a single company system.

The alternate channel is characterised by stoppages in information flows. Fishers simply supply cooperatives or processors and accept a price. Detailed market information and feedback is neither sought nor supplied. In this value chain fishers are price taking with many having little interest in marketing activities beyond the port. Opportunities to capture additional margins are missed by this group of prawn fishers. IT and E-Commerce developments may assist this group of fishers to become more integrated with the market.
Retailing Trends

Strong demand for seafood from the catering and restaurant sector over the last 10 years has been a boom to producers, because it has led to increased prices. However, rising prices has added pressure to retailer profit margins as they try to curb the per-kg price of seafood in their windows. The result has been that traditional fishmongers and fish & chip shops are finding it difficult to compete with new shopping malls with large supermarket seafood counters, and new specialist seafood markets (FRDC 2005).

Most enterprises are continuing to adapt to these market signals and to be innovative in addressing the resultant challenges. Ruello & Associates (1999) found that:

- Supermarket sales have risen faster than those of the traditional fish retailers (from a lower base). This trend has intensified over the last six years;
- Traditional fishmongers and fish & chip shop were still selling a greater volume of fish and seafood but loosing market share of the fresh fish businesses to the supermarkets;
- Fishmongers are not so positive about the future of fish retailing;
- Supermarket operators are more confident about the future;
- The (rising) price of fish is the main concern of all retailers;
- Restaurants are losing market share of fish sales to cafes, bistros, clubs and the better fish and chip outlets; and
- There is a shift to more mid priced/more casual eating out.

Informal consultation completed as part of the study would confirm the relevance of these 1999 conclusions in 2006.

Looking into the future it is likely that more seafood will be marketed through supermarkets. This raises issues in relation to increasing market power and the need for training of supermarket staff in the handling of premium wild-catch prawns.

Export Market Diversity and Proportion of Production Exported

Australian prawns are an export-oriented industry and the third largest export fishery in Australia. Most Australian product is exported as whole prawns. In export markets Australia is regarded as a supplier of premium products. Australia is able to out compete many trade competitors on quality and food safety.

Of the $350 million of Australian prawn production in 2003/04 in the order of $161 million or 46% was exported (table below). By way of contrast most Australian horticulture exports between 10% and 20% of production and Australian beef has exported 68% of production over the last three years (CIE 2005).
Of concern is the decrease in both the value and volume of Australian prawn exports over the three years shown in Table 29. The table shows a 20% reduction in volume exported and a loss in value of more than $100 million. Exports in 2003/04 were at their lowest level for at least the last 8 years.

Table 29 Australian Prawn Exports

<table>
<thead>
<tr>
<th></th>
<th>2001-02</th>
<th></th>
<th>2002-03</th>
<th></th>
<th>2003-04</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tonne</td>
<td>$000</td>
<td>Tonne</td>
<td>$000</td>
<td>Tonne</td>
<td>$000</td>
</tr>
<tr>
<td>Headless</td>
<td>785</td>
<td>18,607</td>
<td>580</td>
<td>12,002</td>
<td>307</td>
<td>5,353</td>
</tr>
<tr>
<td>Whole</td>
<td>10,870</td>
<td>239,367</td>
<td>8,739</td>
<td>192,567</td>
<td>8,852</td>
<td>151,488</td>
</tr>
<tr>
<td>Other</td>
<td>270</td>
<td>4,853</td>
<td>213</td>
<td>3,676</td>
<td>237</td>
<td>3,762</td>
</tr>
<tr>
<td>Total</td>
<td>11,925</td>
<td>262,827</td>
<td>9,532</td>
<td>208,245</td>
<td>9,396</td>
<td>160,603</td>
</tr>
</tbody>
</table>

Source: ABARE & FRDC 2005

Australia’s top four prawn export markets by value are Japan, Spain, Hong Kong and China. Together these markets account for 77% of production. A high reliance on East Asia is offset by the growth in exports to Spain (see table below).

Table 30 Prawn Exports by Destination

<table>
<thead>
<tr>
<th></th>
<th>2001-02</th>
<th></th>
<th>2002-03</th>
<th></th>
<th>2003-04</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t</td>
<td>$000</td>
<td>t</td>
<td>$000</td>
<td>t</td>
<td>$000</td>
</tr>
<tr>
<td>Headless</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>18</td>
<td>64</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>China Taipei</td>
<td>12</td>
<td>280</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>24</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>14</td>
<td>310</td>
<td>14</td>
<td>318</td>
<td>3</td>
<td>34</td>
</tr>
<tr>
<td>Japan</td>
<td>539</td>
<td>14,227</td>
<td>428</td>
<td>9,613</td>
<td>179</td>
<td>3,917</td>
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<tr>
<td>Spain</td>
<td>28</td>
<td>375</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>USA</td>
<td>98</td>
<td>2,445</td>
<td>10</td>
<td>298</td>
<td>1</td>
<td>33</td>
</tr>
<tr>
<td>Other</td>
<td>75</td>
<td>906</td>
<td>127</td>
<td>1,773</td>
<td>123</td>
<td>1,345</td>
</tr>
<tr>
<td>Total</td>
<td>785</td>
<td>18,607</td>
<td>580</td>
<td>12,002</td>
<td>307</td>
<td>5,353</td>
</tr>
</tbody>
</table>

|                |         |         |         |         |         |         |
| Whole          |         |         |         |         |         |         |
| China          | 1,414   | 23,262  | 780     | 14,914  | 1,151   | 15,777  |
| China Taipei   | 254     | 5,440   | 219     | 5,153   | 184     | 3,997   |
| Hong Kong      | 1,777   | 32,940  | 1,388   | 26,874  | 925     | 15,985  |
| Japan          | 4,194   | 129,283 | 3,815   | 105,331 | 3,063   | 62,751  |
| Malaysia       | 180     | 3,112   | 214     | 3,890   | 274     | 3,723   |
| New Zealand    | 253     | 3,223   | 237     | 3,365   | 175     | 3,233   |
| Spain          | 915     | 15,549  | 1,223   | 17,214  | 1,697   | 23,069  |
| Thailand       | 1,076   | 15,066  | 90      | 1,102   | 124     | 1,442   |
| Other          | 807     | 11,491  | 773     | 14,724  | 1,259   | 22,431  |
| Total          | 10,870  | 239,367 | 8,739   | 192,567 | 8,852   | 151,488 |

|                |         |         |         |         |         |         |
| Other          |         |         |         |         |         |         |
| China          | 17      | 62      | 0       | 0       | 0       | 0       |
| China Taipei   | 12      | 309     | 8       | 169     | 20      | 372     |
| Japan          | 49      | 1,459   | 15      | 345     | 9       | 181     |
| Singapore      | 19      | 379     | 30      | 556     | 25      | 532     |
| USA            | 11      | 372     | 0       | 0       | 1       | 27      |
| Other          | 161     | 2,271   | 161     | 2,606   | 182     | 2,660   |
| Total          | 270     | 4,853   | 213     | 3,676   | 237     | 3,762   |
| Total Prawns   | 11,925  | 262,827 | 9,532   | 208,245 | 9,396   | 160,603 |

Source: ABARE 2005
Short term, future export success will be driven by movements in the Australian dollar (ABARE 2005a). Longer term the industry will need to explore opportunities for product differentiation and improved market access. Market access priorities are reviewed in Chapter 4. They include the lowering of tariffs, especially in the EU, and non-tariff issues with the potential to derail trade (eg heavy metals in the EU and turtle/marine protection in the US).

**The Future**

Over time competitive pressures will push the Australian fishing industry into higher value markets and potentially value added products (ACIL Tasman 2005). Key flags for future Australian wild-catch prawn markets include:

- Import competition, which intensifies with a strong $A, is in frozen and processed products. This commodity product sets a price ceiling for local product and ensures that strong product differentiation will be required if price premiums are to be enhanced or even maintained.

- Post purchase retail vacuum packing is around the corner, providing opportunities to increase the convenience of seafood purchase (smells, leaks) and provide product differentiation information on a label – i.e. country of origin, contamination/health risk, freshness, environmental status of the fishery, nutritional benefits and information on how to prepare/serve prawns of this type to best advantage.

- Supermarkets – will retail more Australian seafood in the future. This has market power and retailer training implications.

- Processing technology is expanding the uses for seafood. Better measurement technology combined with advances in preparation equipment allows essentially new products to be created. Given the high cost of Australian processing labour it is suggested that Australian processing will need to be done in partnership with other countries.

- E-commerce and use of information technology. Worldwide leading fishers in high value fisheries are increasingly ‘fishing to market requirements’. IT and e-commerce is used to identify real time prices and the harvest is managed to maximise price. Once caught product is sold electronically to the range of buyers offering current best prices. Sales are completed before vessels return to the wharf. Leading Australian wild-catch prawn fishers should be investigating this technology and developing support systems for its adoption now.

- Continued retail emphasis on the ‘experience’, which does not necessarily mean serving in product in a traditional form or meal sizes. The fish component may be ancillary rather than the main portion of the meal. Prawns may become more of a ‘garnish’ or a flavour essence rather than a meal/entrée in their own right. The experience may also include knowledge of the economic, environmental and social story behind the product and the community in which it was caught.

- Organics – organic production systems are highly rated by EU and US consumers. Shrimp aquaculture in India is working toward organic certification and the question is raised to the potential for this form of differentiation in the Australian wild-catch industry.
• Food safety – i.e. freedom from contaminants, will be even more important in the future. Australia must be able to back its clean and green hype with products that meet consumer requirements especially in relation to heavy metals such as cadmium and dioxin. Traceability ‘water to waiter’ is being demanded by international buyers (FAO 2004)

• Some projections suggest a significant relative decline in market share for Australian product. The FRDC Fishing Futures study suggests that Australian wild-catch fish production could, over the next two decades, decline in absolute terms (by 14%) and in relative terms from a market share of 45% to 24%. The market share of Australian wild-catch prawns has declined from 91% in of the domestic market in 1996/97 to 62% in 2003/04. Given the relative greater importance of imports and Australian aquaculture production, wild-catch is likely to find higher relative returns from niche and higher value added markets.

Market Summary

A summary of the key market and marketing attributes of the wild-catch prawn industry is shown in the table below.
### Table 31 Marketing Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry marketing expenditure</td>
<td>- There is no generic marketing budget for prawns at the current time. Marketing is reliant on large private firms advancing their own commercial interests.</td>
</tr>
<tr>
<td>Consumption</td>
<td>- Jump in per capita consumption associated with low cost Chinese imports. Is the product being repositioned ‘downmarket’</td>
</tr>
<tr>
<td>Branding</td>
<td>- Brands belong to large private firms and are trade rather than consumer brands.</td>
</tr>
<tr>
<td></td>
<td>- A national wild-catch seafood brand is under development.</td>
</tr>
<tr>
<td></td>
<td>- Branding and labelling provides opportunities for this industry.</td>
</tr>
<tr>
<td>Product differentiation</td>
<td>- Consumers not very well informed or sophisticated in their decision-making. Product safety, freshness and environmentally friendly production are important points of differentiation.</td>
</tr>
<tr>
<td>Price competition</td>
<td>- Strong pressure on price resulting from very low cost Chinese imports. Some evidence of Chinese supply at less than the cost of production (i.e. dumping).</td>
</tr>
<tr>
<td>Availability of market information</td>
<td>- Useful market data provided on the SFM website. Smaller growers have a low interest in communication along the marketing chain.</td>
</tr>
<tr>
<td>Share of production to value adding</td>
<td>- Further scope for value adding through on-board grading and packaging.</td>
</tr>
<tr>
<td>Share of production sold as fresh product</td>
<td>- All product is frozen – some experimentation with fresh sales. Limited freeze and re-freeze makes for better product.</td>
</tr>
<tr>
<td>Import competition</td>
<td>- High – rapid growth in low cost imports.</td>
</tr>
<tr>
<td>Integrated value chain</td>
<td>- Vertical integration of catching, processing marketing is common. Small specialist fishers less well informed on marketing margins and price signals.</td>
</tr>
<tr>
<td>Export market diversity</td>
<td>- Medium, top three markets account for &lt;70% of total exports. Japan dominates but China, Hong Kong and Spain also important. If China and Hong Kong are treated as a single market total increases to 77%</td>
</tr>
<tr>
<td>Export share of production</td>
<td>- High 46% by value in 03/04 but highly dependent on $A exchange rate and in the longer term on capacity to favourably differentiate Australian product.</td>
</tr>
</tbody>
</table>
3.5 Food Safety, Product Quality and Disease Control

Food safety has become a critical issue for many primary industries. Consumers now expect high standards in food safety and quality, and industries that are not up to standard will inevitably suffer on both the domestic markets and in export markets (CIE 2005). The attributes examined are:

- Food Safety;
- Quality assurance programs; and
- Quarantine risks (some industries are inherently at greater risk to disease outbreaks and subsequent quarantine restrictions than others).

Food Safety

Wild-catch prawns marketed through domestic channels must meet Food Standards Australia New Zealand (FSANZ) requirements for food safety. All wild-catch prawn exports must be certified by AQIS as being fit for the purpose described and consistent with agreed minimum residue levels (MRL).

The EU has an issue with cadmium residues in wild-catch Australian prawns. The industry has responded to this concern with a project to review the MRL and investigate prawn meat versus whole prawn contamination levels. Cadmium is naturally present in sediments in some Australian prawn fisheries and accumulates at a higher rate in the head of the prawn.

To date, Australia has been successful in containing the cadmium issue, arguing successfully to CODEX (international food standards system) that high levels of cadmium in Australian prawns are not an issue for a food that is not consumed as a human staple. Consequently, the cadmium standard has been removed from the CODEX system, and prawns sold for domestic consumption, are no longer tested for cadmium.

Australia has been less successful in arguing this position with the EU, which has its own food safety standards and advice received by the consultants is that if Australia wishes to maintain its ‘clean and green’ image, price premiums and even market access, it should take the testing for cadmium very seriously. A high failure rate is currently occurring for Australian prawns in Europe and Australian prawns feature on the EU Rapid Alert System for Foods and Feeds. Australia should continue to provide evidence to support changed standards (as per the proposed FRDC project) but must, in the interim, commit to the current standard and work to meet customer needs.

During the course of project research, a ban was placed on the commercial harvesting of Sydney Harbour prawns due to their high dioxin levels (NSW Department of Environment and Conservation web site 2 December 2005). Once again the issue was in relation to a tightening of the standard and the use of EU standards rather than a change in the contaminant content of the prawn. The ban was picked up as a news item internationally and reported in China the next day.
Imports of prawns into Australia are subject to a full battery of food safety tests and must comply with all domestic food standards. Tests on imported prawns include:

- Microbiological testing (bacteria, disease, fungus, etc);
- Antibiotic and veterinary medicines testing (residues from farm medicine);
- Sulphur dioxide testing (treatment used in bacteria control); and
- Other food additives.

The most significant potential food safety risks associated with imported prawns are in relation to antibiotic and sulphur dioxide residues. To date, imported prawns have achieved food safety test results that fall within acceptable MRL levels.

In the future, the consultants are advised that microbiological testing, antibiotic testing and sulphur dioxide testing will all assume greater importance in both domestic and export prawn markets. The US press is currently reporting links between antibiotic use in aquaculture and increased risk of cancer in humans (IntraFish 1/3/2005). Press reports also highlight US green group attempts to discredit the health benefits of seafood consumption by warning of high mercury levels (IntraFish 8/12/2005). One US Seafood processor has already moved to introduce a ‘low mercury’ label. Concerns regarding heavy metal contaminants will intensify into the future.

**Quality Assurance and Food Safety Programs**

Australian prawn processors all work to the HACCP system and as export bodies are regulated by AQIS. Processors set food safety and QA program requirements for the fishers that supply their business.

Generally speaking, fishers are highly competent at management of, and working to, food safety programs but have been less enthusiastic in embracing formal QA. Seafood Services Australia EMS pilots for the prawn industry embrace QA along with food safety and environmental management. The industry is hopeful that this may be one way of increasing adoption of formal QA programs.

**Quarantine Risks and Disease/Pest Control**

An Import Risk Assessment (IRA) is currently underway for uncooked imported prawns, which constitute approximately 10% of Australia’s prawn imports. Cooking destroys most diseases and cooked imported prawns are considered to be low risk. The IRA on uncooked prawns is examining the risk to Australian wild-catch, aquaculture and ecosystems from a range of viruses, bacteria, fungi, protozoans and metazoans in imported prawns. Interim conditions have been imposed for the importation of uncooked prawns as part of the IRA:

- Importers are to obtain a permit from AQIS;
A competent authority is to certify that product has been processed in appropriate premises, is free from visible signs of infectious disease, is fit for human consumption, has been peeled to at least the last segment, is breaded or battered, is of a large size (> 18 grams) and is packed in lots of less than 3kg;

Importers must declare that the product will not be used as bait and must not further process the product unless they are part of a compliance agreement with AQIS.

It is also a requirement that imported uncooked prawns be tested for White Spot Syndrome Virus (WSSV). Testing is not currently required for Yellowhead Virus (considered to be a lesser risk). The requirements of the interim import order for testing of WSSV arose as a result of the inadvertent feeding of uncooked imported product to crustacean broodstock.

The risk assessment being completed by Biosecurity Australia is considering the likelihood of pest/disease establishment and impact resulting from the import of prawns. A revised draft IRA ‘will be available shortly’ (DAFF website visited 8 November 2005).

Considered industry opinion is that there is little or no risk from imported prawns. Imports are tested for the full range of pests, diseases (virus, bacteria, etc), environmental residues (e.g. heavy metal) and production residues (e.g. antibiotic).

In addition to import testing, quarantine protection is strengthened with a range of national pest and disease management strategies including:

- Aquaplan - the national approach to the management of aquatic animal health in Australia that includes emergency preparedness and response arrangements; and
- Aquavetplan - a series of technical response plans that describe the proposed Australian approach to an aquatic animal disease emergency event.
- Cost sharing arrangements – that ensure adequate joint funding is available from industry and government to respond to emergencies and compensate those affected.

Changes in import volumes as a result of disease, pest and human health concern issues are not expected in the foreseeable future.

A summary of food safety, product quality and disease control attributes is presented in the table below.
### Table 32 Food Safety Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food safety</td>
<td>• Systems in place and industry compliant. There is a need to be more responsive to export customer concerns regarding cadmium.</td>
</tr>
<tr>
<td>Quality assurance</td>
<td>• Piecemeal and dependent on individual supply chain requirements. Incorporation into EMS pilots are a welcome development.</td>
</tr>
<tr>
<td>Quarantine risks</td>
<td>• IRA on imports currently underway. Emergency response procedures in place.</td>
</tr>
<tr>
<td>Disease control</td>
<td>• No major endemic issues.</td>
</tr>
</tbody>
</table>

#### 3.6 Human Capital

Human capital refers to the labour force of an industry and the education, skills and experience they bring to an industry (CIE 2005). Under human capital, the following attributes are examined:

- Existence of education programs, facilities and extension;
- Age of enterprise owners;
- Supply of industry labour; and
- Skill levels and training.

**Existence of education programs, facilities and extension**

The wild-catch prawn fishing industry is well served with education programs and facilities, these include:

- Australian Maritime College, Launceston – which provides nationally focussed marine training at the 'higher level' (e.g. graduate diplomas) in addition to a scholarship program that is well regarded by industry;
- State based organisations – such as the South Australian based Australian Fisheries Academy with a strong focus on specific industry needs. The Academy is industry owned and operated;
- TAFE – which provides broad-spectrum training in areas of general relevance to prawn fishers; and
- FarmBis training – fisher training has focussed on general business management.

Fishers tend to view training as a cost rather than an investment and costs are shaved as profit margins tighten. Those small to medium fishers with the smallest profit margins are the least likely to participate in skill development activities and are probably those who would benefit most from business and marketing training.
The industry is not well served with extension skills. Limited extension services focus on environmental management (eg DEH funded SeaNet program aimed at bycatch reduction) rather than industry development or adoption of productivity enhancing R&D outcomes.

Age of enterprise owners

There is a general aging of the industry. Potential ‘next generation’ leaders are encouraged in South Australia and this model should be adopted in other states. There is a role for ACPF in encouraging young fishers to adopt industry leadership roles.

Supply of industry labour

There is a national shortage of key skills including skippers, deckhands, engineers, cooks, supply chain labour and administration.

There is a need to make industry ‘feel new’ in order to attract an appropriate supply of labour.

While Australian Government initiatives aimed at easing access to foreign nationals for crew in northern waters have been welcomed by industry, there is scope for further policy development. The tropical fruit industry is developing initiatives aimed at increasing the supply of seasonal labour that may be relevant to fishing. These include the development of websites for those seeking employment and the promotion of the national harvest trail.

Again there is a potential role for a well funded peak industry body in addressing labour supply issues.

Skill levels and training

The following conclusions on skill levels and training are informed by industry consultation, Seafood Training Australia (2003) and ACIL Tasman (2005):

• A shortage of onboard skills and experience including licensed deckhands and skippers with training in OH&S, onboard safety procedures, ISO 9001 quality management systems and ISO 14001 environmental management systems.

• Poor post-harvest handling skills through the chain but especially in the retail level (exacerbated by the ‘casualisation’ of the supermarket workforce). In addition, reliance on inexperienced or under-skilled crews means that there is a risk of damage to the catch.

• Training and educational standards for certificates that are considered to be inappropriate of the needs of the fisheries. Standards and certificates need to recognise the differences in skill set requirements and training time needed for estuary and offshore trawl fishing.

• Contemporary relevance and coverage of some training courses for fishing operators and deckhands. Examples sighted included a strong
emphasis on charts and manual navigation systems when skills in these areas have been superseded with GPS technology.

- Business skills of some small and medium operators were limited. The limitations are becoming more apparent as the complexity of the regulatory and business environment has increased and profit margins in the industry have decreased.

- Fisher training priorities – stronger interest in developing fishing skills, less interest in developing business management and marketing skills.

- Conducting effective skill development and training courses for fishing operators presented a range of challenges. The main problem relates to time spent fishing, in some cases with vessels spending weeks at sea.

- Women in fishing were an undervalued and under-trained resource. In small to medium operations it is often the women who manage the business issues of record management, compliance, taxation and finance. Additional training and support that targets this group was suggested.

- People management skills – play a role in attracting and retaining suitable crew. Little emphasis is placed on developing these skills in this industry.

- Leadership skills and capacity to contribute to ‘big picture’ issues such as fisheries management and policy development. Additional leadership skills are needed if the industry is to secure its best possible future.

A summary of human capital attributes is presented in the table below.

**Table 33 Human Capital Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education programs</td>
<td>- Industry is well supplied with training programs</td>
</tr>
<tr>
<td></td>
<td>- Those in most need least likely to attend</td>
</tr>
<tr>
<td></td>
<td>- Shortage of respected extension skills</td>
</tr>
<tr>
<td>Age profile of labour force</td>
<td>- Ageing industry</td>
</tr>
<tr>
<td></td>
<td>- Fewer young fishers and potential industry leaders.</td>
</tr>
<tr>
<td></td>
<td>- Industry is highly reliant on casual labour.</td>
</tr>
<tr>
<td></td>
<td>- Further initiatives needed to secure future labour supply</td>
</tr>
<tr>
<td>Skill level</td>
<td>- Missing onboard skills, post harvest handling, business management, people management and industry leadership</td>
</tr>
<tr>
<td></td>
<td>- Interest in developing fishing skills, less interest in developing business management and marketing skills</td>
</tr>
</tbody>
</table>
Industry culture is such that it perceives training as a cost rather than an investment. In turn this means that a low level of industry expenditure on skill development and training is further eroded during periods of low profitability. Fishers are interested in training and skills development relevant to catching fish, skillig in areas such as business and human resource management or even product marketing and supply chain efficiency have limited appeal.

3.7 Indigenous Issues

Indigenous peoples are relevant to the wild-catch catch prawn fishing industry, especially in the northern industry, in relation to:

- The proposal to set aside 25% of the fishing effort in the Torres Strait prawn fishery for the people of PNG. In addition three Australian licences are reserved exclusively for Torres Strait Islander participation (ABARE February 2004);
- Torres Strait Islander concern about the environmental impacts of trawling – trawling is alleged to effect turtle and dugong catch; and
- Labour – indigenous people are potentially an important source of labour in a skill short industry. The consultant’s acknowledge difficulties with management of indigenous labour but also point to Government preparedness to assist in this area.

3.8 Research and Development

Most industries participate in R&D to some degree. Industry organisations play a significant role in R&D, both in running programs and in the overall attitude of the industry to R&D (CIE 2005). The following attributes are examined:

- R&D expenditure as a proportion of industry GVP, by industry government and other sources;
- Average adoption rate of R&D outcomes; and
- Level of information sharing with other organisational bodies.

R&D in the wild-catch prawn industry is undertaken through FRDC in cooperation with Fish Research Advisory Bodies. FRDC’s primary revenue source is (FRDC 2005):

- The Australian Government providing unmatched funds equivalent to 0.5% of the average gross value of Australian fisheries production for the three preceding years (AGVP);
- Fishers and aquaculturalists providing contributions of at least 0.25% of AGVP;

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8 The management levy attached to Commonwealth fisheries also includes an R&D component private corporates and the Australian states also invest in R&D.
• The Australian Government matching contributions by fishers and aquaculturalists up to a maximum of 0.25% of AGVP

There is no compulsory R&D levy specifically targeting the prawn industry. FRDC investment in wild-catch prawn R&D has averaged $1.4 million over the last seven years (see table below), or 0.47% of industry GVP.

By way of contrast, the prawn aquaculture industry has received investment totalling 0.9% of GVP and the beef industry has invested 0.8% of GVP in R&D over the same period. It would appear that wild-catch prawns are under-investing in R&D relative to aquaculture and an alternative protein source such as beef. It is noted that this total ignores private sector R&D for all three industries (wild-catch, aquaculture and beef).

Table 34  R&D Investment in Wild-Catch Prawns ($’million)

<table>
<thead>
<tr>
<th>Year</th>
<th>FRDC Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>1.830</td>
</tr>
<tr>
<td>2000</td>
<td>1.148</td>
</tr>
<tr>
<td>2001</td>
<td>1.560</td>
</tr>
<tr>
<td>2002</td>
<td>1.281</td>
</tr>
<tr>
<td>2003</td>
<td>1.799</td>
</tr>
<tr>
<td>2004</td>
<td>1.025</td>
</tr>
<tr>
<td>2005</td>
<td>1.446</td>
</tr>
</tbody>
</table>

7-year Average 1.44

Source: FRDC data

Wild-catch prawn R&D has strongly focussed on projects to enhance fishery sustainability. R&D projects have addressed bycatch, gear modifications and EMS. A more balanced R&D program might have included additional projects addressing production efficiency and the high cost of Australian wild-catch prawn production.

Smallridge (2004) notes that there is a lack of integration of R&D and other work across stakeholders, states and the nation and that this is in part because the wild-catch industry does not have a strategy with clearly defined R&D needs and priorities to guide investment activity. R&D priority identification, strategy development, implementation and monitoring are potential roles for the ACPF. FRDC is looking to bodies like the ACPF to guide R&D priority setting (pers comm. FRDC).

The wild-catch prawn industry has a good record of adoption of technology to enhance the efficiency of fish catch or reduce environmental damage. The industry does not have access to an industry development officer network or extension staff network with responsibility for R&D adoption.

R&D information sharing is managed through FRDC, SSA and ASIC websites and newsletters. Fishers contacted received relevant information on a regular basis.
Table 35 R&D Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R&amp;D expenditure</td>
<td>• Low – under-investment compared to prawn aquaculture and alternative protein sources</td>
</tr>
<tr>
<td>Average adoption rate</td>
<td>• Medium – innovations to improve fishing efficiency are quickly adopted</td>
</tr>
<tr>
<td>Information sharing</td>
<td>• Medium – information distributed electronically and by newsletter by FRDC, SSA and ASIC. No Industry development officer network or extension network focussed on R&amp;D adoption.</td>
</tr>
</tbody>
</table>

3.9 Summary of Industry Attributes

A summary of industry attributes, values where appropriate, and subjective ranking are shown in the table below.

The wild-catch prawn industry has been assigned a number between 1 and 5 for each attribute. The number 1 being of little or no presence of the attribute, 5 being high presence. An attribute ranking of <3 indicates an area for industry attention.
## Table 36  Attributes of the Wild-Catch Prawn Industry

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Measure</th>
<th>Value</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enterprise characteristics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross value of production</td>
<td>$ million GVP</td>
<td>300</td>
<td>3</td>
</tr>
<tr>
<td>Degree of enterprise diversification</td>
<td>% of total turnover is prawn</td>
<td>80</td>
<td>3</td>
</tr>
<tr>
<td>Geographical concentration</td>
<td>Viable fisheries</td>
<td>18</td>
<td>4</td>
</tr>
<tr>
<td>Number of enterprises in the industry</td>
<td>Number</td>
<td>1,061</td>
<td>2</td>
</tr>
<tr>
<td>Distribution of production by ent. size</td>
<td>% output by top 20% fishers</td>
<td>70</td>
<td>4</td>
</tr>
<tr>
<td><strong>Resource use</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource management</td>
<td>Best practice</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Resource condition</td>
<td>Sustainable catch</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Resource access</td>
<td>Downward long term trend</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Input intensity</td>
<td>$ input per $ output</td>
<td>1.3</td>
<td>4</td>
</tr>
<tr>
<td>Debt to asset ratio</td>
<td>%</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Enviro impact and industry image</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Impact</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Industry image</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Marketing and markets</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry marketing expenditure</td>
<td>% of GVP</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Consumption</td>
<td>Kg per capita</td>
<td>1.7</td>
<td>4</td>
</tr>
<tr>
<td>Branding and labelling</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Product differentiation</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Price competition</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Availability of market information</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Value adding</td>
<td>Value adding % of turnover</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Production sold fresh</td>
<td>% of production</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Import competition</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Integrated value chain</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Export share of production</td>
<td>% of production exported</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Export market diversity</td>
<td>% of exports to top 3 destinations</td>
<td>77</td>
<td>3</td>
</tr>
<tr>
<td><strong>Food safety and QA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food safety</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Quality assurance</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Disease control</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Quarantine risks</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td><strong>Human capital</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education programs</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Age of enterprise owners</td>
<td>Years of age</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Skill intensity</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Skill level</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Research</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry R&amp;D expenditure</td>
<td>% of GVP</td>
<td>0.4</td>
<td>1</td>
</tr>
<tr>
<td>R&amp;D adoption rates</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Information sharing</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Relevance of R&amp;D program</td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>
4. Enabling Environment

The enabling environment encapsulates the organisation, structural and social environment within which the wild-catch prawn industry operates. A part of this enabling environment is the industry organisation. The ultimate function of the enabling environment is the optimal use of resources, whilst managing the risks of the external environment, to achieve the necessary industry attributes that drive industry success (CIE 2005).

4.1 Industry Culture and Leadership

Culture

An industry’s culture is often a reflection of the history of the industry, its experiences and the communities that it operates within. Factors such as whether or not fishers are production or marketing orientated and willing to embrace new developments and technology play a key role in determining how industry organisations operate. Conversely, industry organisations can and should seek to influence culture to foster conditions that promote success such as flexibility (CIE 2005).

Industry culture is often described as ‘the way things are done around here’ (FRDC 2003).

The Australian wild-catch prawn industry is production driven rather than market focussed. It is an adopter of new technology when it will increase the efficiency of fishing or it is imposed for environmental protection. It does not seek out training unless it relates to fishing efficiency. Players are strongly individualistic and independent and this is probably a reflection of the nature of the enterprise (self sufficient and self reliant) and the historically high levels of profit that were available to successful individuals. As profit margins have contracted some fishers have remained in the industry for lifestyle reasons – a portion of the industry is accepting of low industry returns and there is an expectation of government structural adjustment assistance. Industry comes together on a fishery basis and a large number of structures have been established to consult with fishers on management issues. There is little coordination of the management of meetings. Meetings tend to focus on biology rather than the economics of the catch. The economics of production and making money would be a useful overarching objective for all activities addressed by the ACPF.

The Australian wild-catch prawn industry divides along the following fault lines:

- **Large versus small**: Large vertically integrated corporate operations with a preference for less government involvement in the fishery and small family units more likely to seek government intervention;
- **Ocean versus estuary**: Ocean trawl operators blame estuary fishers for lower catch levels. This fault line is more significant in NSW and Qld;
- **Wild-catch versus aquaculture**: both sectors see themselves as competing for the same market. This study was commissioned to
examine only wild-catch issues. Industry institutions, like FRDC, have a preference for working as a single prawn industry; and

- **State and fishery boundaries**: Fishers focus on local rather than national issues and organise by fishery or state. Increasingly issues will have a national agenda (public perception, exports, imports, labour supply, etc) and require national responses.

In November 2004 the wild-catch prawn industry held its first national conference since 1973. The meeting sought unification of wild-catch fishers and exclusion, at this time, of the prawn aquaculture industry.

**Leadership**

The wild-catch industry has taken an important step toward unification; it has a capable interim chair and the commitment of both small fishers and, perhaps most importantly, the well resourced larger vertically integrated corporates. However, as an industry it currently lacks leadership capacity and there is a strong need for investment in capacity building. Capacity building activities will need to include training for willing existing players and the nurturing of young potential leaders.

**Case Study 3 – Fishing Industry Cultural Change**

The Fishing Industry Partnership Programme (embracing the Eastern Tuna and Billfish Fishery, the South East Trawl Fishery and the Gillnet, Hook and Trap Fishery), resolved that there was a strong need for a re-orientation in the culture of their industry with the economics of the fisheries to become the central tenant. Members of the Fishing Industry Partnership Programme Steering Committee, which included fishers and fishery managers, resolved that (March 2005):

- Industry economics, defined as the capacity of the industry to generate an acceptable financial return for its members, was the highest priority;
- For too long social and cultural issues had dominated industry decision making and that lifestyle issues had dictated the decision to remain in the industry;
- There was a need to re-orientate the industry and set directions that recognised the primacy of industry profitability;
- The whole notion of ‘industry’ should be defined around its capacity to make money; and
- Industry learning should focus on its ability to create business managers.

A culture that supports the making of money is a similar priority for the wild-catch prawn industry.
4.2 Industry Associations

**Australian Council of Prawn Fisheries**

At the wild-catch prawn industry’s first national meeting in November 2004 participants resolved to form a national prawn industry association – the Australian Council of Prawn Fisheries (ACPF). A Working Group was established with a brief to ratify a Terms of Reference and a Workplan for a national association (Smallridge 2004).

The objective of the ACPF is to provide the Australian Wild Caught Prawn Fisheries with a strong and united voice on issues of common interest and concern (Smallridge 2004).

Terms of reference for the ACPF are:

1. Ensure that Australia’s wild caught prawn fisheries are adequately and appropriately involved in national initiatives including (but not limited to) the National Food Industry Strategy (and associated projects), the Australian Seafood Industry Council, the National Aquaculture Council marketing program and Seafood Services Australia;

2. Ensure that Australian prawns are appropriately positioned in the domestic and international marketplace to provide for increased profitability of all members of the supply chain;

3. To develop an initiative to change public perception in relation to the environmental sustainability and community contribution of Australian Wild Caught Prawn Fisheries;

4. To develop an operating structure that efficiently and effectively coordinates the industry’s plans;

5. To develop and maintain an appropriate relationship with organisations such as FRDC and the National Aquaculture Council (NAC); and

6. To develop an appropriate relationship with the Australian Prawn Aquaculture Industry.

Within the confines of the above, the organisation is to develop a strategic plan for the Australian Prawn Industry, inclusive of all wild fisheries and the post-harvest sector, and manage implementation of the plan. The outputs of this ‘taking stock and setting directions’ study will be inputs into the industries strategic plan.

This ‘taking stock and setting directions’ project identifies the following reasons for supporting the foundation of the ACPF.

- **Representation of the industry nationally**: there is a need for the industry to participate in public policy formulation and present a unified case to government for change that is of benefit to fishers. Nationally, government prefers to work with fishers on this basis. Furthermore, individual fishers operate in multiple fisheries and states. A state based system of representation is not adequate. Fishers need to be
represented nationally on resource access, fishery management and policy issues (eg labour supply):

- **Generate a positive public profile**: the public is concerned by trawl and improvements in environmental impact are currently not being communicated to the Australian public;

- **Fisheries management reform and learning opportunities**: beneficial reform in one fishery creates learning opportunities for other fisheries. For example, self-managed fisheries are working in SA and this could be extended to other states. There is a role for a peak industry body in facilitating this process;

- **Product positioning**: nationally and internationally there is a need for a unified approach to promoting the prawn category. In time this might include Australian aquaculture product;

- **Coordination, industry planning and R&D**: there is a need for industry strategic planning and R&D planning in a time when industry change is preceding at an unprecedented rate. Issues need to be coordinated and managed rather than dealt with on an ad hoc basis. Issues management includes ensuring that the wild-catch prawn industry is linked into sector initiatives such as seafood promotion and the National Food Industry Strategy;

- **Communication and information exchange**: including regular exchange of information on market trends, seasonal performance of fisheries, import reports, etc; and

- **Industry development activities**: including development of leadership capacity and the reorientation of the industry from ‘biology’ and toward ‘profitability’.

The Working Group for the establishment of the ACPF set itself the following tasks for delivery by September 2005 (Smallridge 2005):

- Established itself as a national entity;

- Develop a regular communication mechanism with all prawn fisheries and other stakeholders;

- Become a full member of ASIC from 1 July 2005;

- Have formal involvement in the NFIS Seafood Enterprise Alliance program;

- Commissioned and have completed a Strategic and Business Plan inclusive of market development and communication strategies;

- Established a program of regular media releases on industry initiatives;

- Have established an on-going funding stream.

FRDC, Australian Seafood Industry Council (ASIC) and Government support the foundation of the ACPF. Outstanding issues relate to its development of a sustainable funding source and the related matters of adequate human resources and representative structures.
Australian Seafood Industry Council

The Australian Seafood Industry Council (ASIC) is the peak body representing the commercial wild harvest, aquaculture and post harvest seafood industries of Australia (DAFF 2003).

ASIC’s mission is: Through industry leadership and representation, provide a single united voice for all sectors of the Australian seafood industry on national issues of importance to the industry.

This is why ASIC is located in Canberra, close to the seat of the Australian Government and the decision-makers. However, it remains responsive to the interests of state, territory and Commonwealth waters fishing operators and aquaculturalists, as well as the vital post-harvest sector (DAFF 2003).

Over the years ASIC has found it difficult to establish and maintain an appropriate funding base for its activities. Commencing in 2004/05 the Australian Government has agreed to provide a four-year package of assistance to ASIC to increase the industry’s capacity to contribute to policy formulation. The package includes the funding of a full time policy officer position. Difficulty in securing and maintaining a funding base in the fishing industry at the national level is an important flag for ACPF.

ASIC members are:

- East Coast Tuna Boat Owners Association
- Tuna Boat Owners Association of South Australia
- Northern Territory Seafood Council
- NSW Seafood Industry Council
- Qld Seafood Industry Association
- Seafood Council South Australia
- Tasmanian Fishing Industry Council
- Seafood Industry Victoria
- WA Fishing Industry Council
- South East Trawl Fishing Industry Association
- Northern Prawn Fishing Industry Organisations
- Master Fish Merchants Association of Australia
- Sydney Fish Market
- Commonwealth Fisheries Association (affiliate)
- National Aquaculture Council (observer)

ASIC is undergoing a process of reform. A recent review of the organisation recommended that sectoral interests be established. To date an Abalone Council and a Southern Rock Lobster Council have been established and a Finfish and Prawn (ACPFI) organisations are underway. This structure will complement ASIC’s state based representation.
State and Commonwealth Associations

State based organisations have responsibility for addressing state and local issues as well as providing direction and resources to the national peak industry body. The state based organisations representing wild-catch prawns include, but are not limited to:

- Queensland Industry Trawl Association
- Torres Strait Prawn Entitlement Holders Association
- Northern Prawn Fishery Management Advisory Committee (NORMAC)
- Torres Strait Prawn Working Group
- Qld Seafood Industry Association
- Commonwealth Fisheries Association
- Spencer Gulf and West Coast Prawn Fishermen’s Association, SA
- Seafood Council of South Australia
- NSW Seafood Industry Council
- Seafood Industry Victoria
- Northern Territory Seafood Council
- WA Fishing Industry Council
- Shark Bay Prawn Trawl Association
- Exmouth Prawn Trawl Association

The best of these organisations provide a wide range of services including training, extension and political representation. Generally speaking the state based organisations representing wild-catch prawns are robust and have good communication links with fishers. Consistent with the national associations (ASIC and ACPF) position, the state based organisations are short of funds with which to serve their constituents.

It is hoped that the existing state based industry organisations will assist the formulation of the wild-catch prawn industry strategic plan by providing executive support, administration and communications (Smallridge 2004).

Women in Seafood (WINSC)

The Women in Seafood Network Industry Community (WINSC) is a non-profit, independent, non-government organisation whose mission is to assist the development and growth of all seafood women members in pursuit of their personal or business goals. Its aims are to foster a sense of pride, tradition and unity within women working in the seafood industry and to develop and improve the skills, knowledge and attitudes of the seafood industry so that the industry can become more competitive and reach its full potential. The board of WINSC is made up of representatives from each State and Territory, plus three directors at large.

WINSC has provided a valuable support network for women working in the wild-catch prawn industry. Some stakeholders have expressed concern that WINSC risks creating a parallel policy environment and undermined other peak industry bodies. It is suggested that WINSC be included in ACPF foundation activities.
4.3 Fisheries Research and Development Corporation

The FRDC is the national organisation responsible for planning, funding and managing R&D for Australian fisheries and aquaculture research and development. FRDC identifies R&D needs and then plans how best these needs can be addressed. It works in partnership with industry advisory committees (eg WAFRAB) and peak industry bodies such as ACPF.

The FRDC Research and Development Plan 2005 to 2010 is guided by five strategic challenges (FRDC 2005):

1. *Natural resource sustainability* – maintain and improve the management and use of aquatic natural resources to ensure their sustainability.

2. *Resource access and resource allocation* – optimise resource access, resource allocation and opportunities for each sector of the fishing industry, within a rights-based framework.

3. *Respond to demand; profitability* – respond to, and take advantage of, increased demand for seafood and for recreational and customary fishing experiences. Enhance the profitability of the fishing industry.

4. *People development* – develop people who will help the fishing industry to meet its future needs.

5. *Community and consumer support* – increase community and consumer support for the benefits of the three main sectors of the fishing industry.

In recent years FRDC has invested more heavily in prawn aquaculture and the environmental aspects of wild-catch – see Section 3.8 Research and Development of this report. FRDC anticipate that the new ACPF will guide R&D investment towards prawn species based projects that enhance fishery profitability such as innovation to reduce the cost of fishing. Additional projects might address fisheries management reform and best practice resource management. Through chain efficiency, market research and understanding customer needs are also priorities for future R&D investment. A wild-catch prawn R&D sub-program is suggested.

Industry consultation reveals a high level of satisfaction with FRDC.

4.4 Seafood Services Australia

SSA is a not-for-profit company established as a catalyst for sustainable development of the seafood industry. SSA’s founding members are the Fisheries Research and Development Corporation and the Australian Seafood Industry Council. SSA’s constitution focuses the company on helping the industry to overcome impediments to its development that exist because of ‘market’ or institutional’ failure (DAFF 2003).

SSA helps seafood businesses and organisations become more competitive in domestic and global markets that are increasingly challenging and
sophisticated. It also helps seafood businesses and fisheries to follow sustainable, responsible environmental practices, and to demonstrate this clearly to the community (DAFF 2003).

SSA initiatives include:
- Seafood supply chain development (‘water to waiter’)
- Environmental management systems
- Seafood safety and quality
- Trade and market development
- Seafood industry OH&S
- Networks to make the most of business opportunities
- The Australian Seafood Industry Portal

SSA is an invaluable part of the wild-catch prawn enabling environment. It is hoped that ACPF will develop strong links with this organisation to enhance the promotion and differentiation of its product.

4.5 National Aquaculture Council

The National Aquaculture Council is the peak industry body representing the aquaculture industry across Australia. Within the NAC the Australian Prawn Farmers Association represents the interests of farmed prawns. The NAC is a member of Seafood Experience Australia (SEA) and the ACPF has a role in developing and maintaining appropriate relationships with the NAC and the Australian Prawn Farmers Association for both industries mutual representation and benefit.

4.6 Government

Government is a major influencer of an industry’s enabling environment. The ‘taking stock and setting directions’ review considers:
- Trade policy
- Australian government policy and support – DAFF, DEH and others
- State government support and local government policy

Government’s View of the Industry

Consultation revealed a high level of uncertainty in industry about Government’s long-term strategic views in relation to prawn fishing ‘do they want an industry’ was an often-heard refrain. The best response to this refrain also came from the setting directions workshops – it is up to industry to set the strategic path for its own industry and work with government to deliver it. Perhaps unkindly the point was made that government is in many instances reactive rather than proactive and will work with industry to deliver a well-considered program when one is provided.

Within this broader context it is noted that government-fishing policy is extremely dynamic and policies for access are changing quickly. Government has agreed through the Ministerial Council to a system of representative marine protected areas and this policy is in conflict with resource access for industry.
Trade Policy

Nationally, there is bipartisan support (government and opposition) for removal of trade barriers on both imports and exports. The cost to industry of imports, including those supplied at less than the cost of production, must be balanced against the benefit to consumers of lower prices. As a small open economy reliant on international trade, Australia is poorly placed when it comes to imposing punitive trade barriers such as anti-dumping measures.

Australian Government Dept of Agriculture, Fisheries and Forestry

DAFF has the dual roles of providing customer service to the agriculture, food, fisheries and forestry industries, and addressing the challenges of natural resource management. It also helps to build and promote the whole food and fibre chain from paddock to plate for domestic and international markets.

The Fisheries and Aquaculture Branch (FAB) within DAFF coordinates policy for Commonwealth fisheries. The FAB is responsible for developing policy and providing advice to the Australian Government on Commonwealth fisheries issues, including international and domestic fisheries, marine pests, sustainable fishing, aquaculture and trade. The consultant's note that FAB deals with both wild-catch and aquaculture and has a preference for a single prawn representative body.

Assistance available to the wild-catch prawn industry is channelled through the Australian Government’s major agricultural package Agriculture – Advancing Australia (AAA). AAA includes the following Australian Government programs, which are administered by the Rural Policy and Innovation Branch (RPIB):

- Industry Partnerships – the program under which this project has been funded.
- FarmBis - FarmBis assists primary producers participate in business and natural resource management training to improve the viability and profitability of their business enterprises. The wild-catch prawn industry has received FarmBis funding support for a range of business planning and management activities.
- Farm Help - provides short-term income support to low-income farm families, while they take action to improve their farm enterprise, find alternative sources of income or re-establishing outside farming. It includes income support, advice and training grants and financial assistance to re-establish out of farming.
- Rural Financial Counselling Service – decision support assistance targeting those who need advice on whether to remain or exit the industry.
- Industry leadership – including rural leaders course, young people’s rural development awards, export market development training course and young people’s/rural women’s corporate governance scholarships.
Some use has been made of these programs by the wild-catch prawn industry.

Other Australian Government Departments provide assistance and grants for business enhancement and value adding.

Biosecurity Australia, a group within DAFF, has responsibility for assessing the quarantine risk associated with commodity imports and undertaking technical negotiations on export market access with overseas counterpart agencies.

Bureau of Rural Sciences (BRS) is a scientific research agency within DAFF. It provides scientific advice to government in support of more profitable, competitive and sustainable primary industries. BRS is responsible for reports on community attitudes to fishing (Aslin and Byron 2003) and the Commonwealth Fishery Status Reports relied on in the Resource Use section of this report.

ABARE is an economic research agency. It provides information about the economics of the fishing industry and forecasts the outlook for major Australian commodities. ABARE publishes a range of research reports as well as regular reports such as Australian Fisheries Statistics.

Australian Fisheries Management Authority

The Australian Fisheries Management Authority (AFMA) is the Australian Government statutory authority responsible for the efficient management of Commonwealth fisheries resources for the Australian community and key stakeholders. In doing so, AFMA provides management advisory compliance and licensing services, and implements appropriate fisheries management arrangements.

Great Barrier Reef Marine Park Authority

The Great Barrier Reef Marine Park Authority (GBRMPA) is the principal advisor to the Australian Government on the care and development of the Great Barrier Reef Marine Park. The authority undertakes a variety of activities, including developing and implementing zoning and management plans and environmental impact assessments.

National Oceans Office

National Oceans Office (NOO) provides secretariat and technical support to the National Oceans Ministerial Board, the National Oceans Advisory Group and the Marine Plan Steering Committees. Its relevance to the wild-catch prawn industry includes its role in coordinating the development of Regional Marine Plans.
Department of the Environment and Heritage

The Department advises the Australian Government on policies and programs for the protection and conservation of the environment, including natural and cultural heritage places. The Department administers environmental laws, including the *Environmental Protection and Biodiversity Conservation Act 1999* that, amongst other things, requires the certification of the sustainability of wild-catch prawns prior to their export.

Australian Quarantine Inspection Service

Australian Quarantine Inspection Service (AQIS) protects Australia’s animal, plant and human health status, and maintains market access through the delivery of quarantine and export services. AQIS relevance to the wild-catch prawn industry includes its role in inspecting and certifying food products for export, providing advice to exporters through export facilitation officers and inspecting imported foods, plant and animal products.

State and Local Government Departments

There State Departments of Primary Industry are responsible for fisheries management policy in fifteen of the eighteen Australian prawn fisheries. Expertise, resourcing and innovation are highly variable between states. South Australia and Western Australia are generally regarded as providing superior management services and appropriate, if high cost, fishery assessment resources. State governments have been responsible for major changes in marine resource allocation in recent years. Most have, or are in the process, of establishing marine protected areas that further restrict commercial fishing grounds. In addition, State Government Departments provide varying levels of regulatory and contract research support to the prawn industry. Fishers comment that regulatory demands originating from state governments for issues such as OH&S fees, charges and inspections have increased substantially in recent years.

Local government interactions with the wild-catch prawn industry are relatively minor and confine them selves to port management/interactions and local planning requirements.

4.7 Regulations and Government Policy

Government regulations play a significant role in determining how an industry operates. Health and safety standards, work force regulations and laws pertaining to the appropriate use of chemicals are just a few examples of regulations that influence how an industry operates — ultimately impacting — both positively and negatively — on the success of an industry. For example, industry organisations have an important role lobbying to influence regulations targeted at environmental outcomes so that they also promote best management practices and efficient use of resources aimed at delivering a sustainable and profitable outcome. Many industries take an active role in regulations that govern the marketing of their product (CIE 2005).
Regulatory/policy priorities for the wild-catch Australian prawn industry are:

- Fisheries management and access policy – ensuring the costs of current fishery management practice are understood by all stakeholders and the long-term benefits of reform are understood by fishers.
- Labour and immigration policy – continued improvements in access to overseas short-term labour and the supply and skill of Australian labour are required.
- Trade policy – aimed at securing export market access for Australian exports, delivering workable import protocols, managing food safety issues and reducing tariff and non-tariff barriers.
- Quarantine policy – including the maintenance of effective quarantine barriers to ensure the prohibition of any unsafe imports.
- OH&S issues – ensuring regulations are workable and practical.
- Drought policy – the drought of the mid 2000s has effected prawn catch and the industry maybe eligible for ‘Exceptional Circumstances’ assistance.
- Macroeconomic policy – including interest and exchange rates.

ASIC and the state associations are generally acknowledged as contributing to industry beneficial outcomes in relation to regulation and policy. A well-resourced ACPF will only enhance positive regulatory outcomes.

**Next Wave of Policy and Regulatory Requirements**

Fishers requested advice on the next wave of policy and regulatory changes their industry was likely to face. New AQIS regulations affecting Australian prawn exports are proposed for 2007. Other apparent regulatory trends include:

- Food safety and traceability – additional controls and lower MRLs on heavy metals, food preservatives/self-life extenders (Co2 and sodium nitrate) and antibiotics (aquaculture only). As well as additional measures and regulations to prevent acts of bio-terrorism;
- Labelling – additional requirements for country of origin labelling that are potentially beneficial to the wild-catch prawn industry. Environmental labelling that may also assist early adopters to shape perceptions of their product (non–regulatory envisaged); and
- Environment – the public is very concerned about bycatch and trawl related damage to benthic species and the seafloor. Expect regulation that also addresses animal welfare and rare species such as seahorses and sea snakes.

A cohesive and well-reasoned industry voice will be required to ensure future policy and regulatory outcomes are least disruptive to fishers.
4.8 Market Access

Market access is critical to the survival and continued growth of Australia’s primary industries. Australia is a mature market for most primary products. As a result, exports offer the main opportunity for industry growth. Industry organisations have a key role to play in fighting for improved market access to better serve their industry (CIE 2005).

Fishery products are one of the most internationally traded of all foodstuffs, with about 35-40% of fisheries products traded annually. To optimise access for Australian commodities into overseas markets, and to ensure its trade interests are protected, Australia engages in international forums such as the WTO, APEC and the OECD. WTO agreements have been ratified by a large majority of the world’s trading nations. Essentially they are contracts that guarantee member counties important trade rights and bind them to keep their trade policies within agreed limits (FRDC 2005).

Tariff barriers are an impediment to efficient trading in seafood that affects Australian exporters. However, the majority of Australian seafood exports are subject to non-tariff barriers, such as:

- Import quotas;
- Food safety regulations;
- Quarantine regulations;
- Subsidies on domestic producers; and
- Delays in clearing and forwarding imported goods.

Meeting increasingly strict food safety and quarantine import requirements from countries also adds to the cost of exporting and reduces market access.

Other forms of non-tariff barrier include certification and traceability, which might cover particular fishing practices used (for example, the US in relation to the use of turtle exclusion devices) before access can be gained to their markets (FRDC 2005).

The Australian Government has a policy of encouraging FTAs. The industry must understand their implications.

Given the difficulty in quantifying non-tariff barriers, it is difficult to estimate the extent to which Australian prawn exports are impeded.

Market access priorities for wild-catch prawns identified by industry are:

- EU tariffs - reduction in tariffs on prawn imports from their current level of 12%;
- EU minimum residue levels (MRLs) – relaxation of MRLs in relation to heavy metal contaminants and cadmium in particular; and

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9 FRDC note that seafood is a possible exception – per capita consumption is still not two meals per week.
- China MRLs – which currently stand at lower levels than the troublesome EU requirements.

In addition to these market access priorities the consultants note that Japan has provisions that allow it to impose a 100% tariff on prawn imports at short notice, that Taiwan has protectionist measures and China has just introduced a new value tax.

4.9 Strategy – Information – Communication

These three elements provide the link between an industry organisation, the programs conducted and the production end of the industry (the farmers). Strategies should result in the sourcing, analysis and dissemination of useful information which given functioning lines of communication can then be adopted by farmers and other industry stakeholders to the betterment of the overall industry. Communication functions on numerous levels, both up and down the production and marketing chain. Firstly, communication of market information is essential to driving efficient allocation of resources. Secondly the industry has a responsibility to communicate to the market place about the industry and its product offering. Thirdly, outputs from industry programs and research have to be effectively communicated to the enterprise level so that they can be adopted. Finally, communication must run from the fishers to the industry organisation so that strategies are based on achieving the desired objectives, hence enabling the industry organisation to function to the maximum benefit of its primary stakeholders — the producers (CIE 2005).

The formation of a national peak industry body for wild-catch prawn fishers (ACPF); the development of appropriate funding and staffing arrangements to support the ACPF; preparation of an ‘industry led’ strategic plan; and communication of industry requirements and association initiatives will be a major step forward for this industry. However, realisation of this vision is not guaranteed.

4.10 Risk Management

Risk management can be undertaken at an enterprise and an industry level. It involves being aware of and planning for potential detrimental shocks that may occur. Events such as drought, insect or disease infestations, changes in market access and declines in market prices for products are all potential shocks. An industry with strategically sound risk management strategies in place is more likely to be able to assist its members (CIE 2005).

Industry risk management plans need to focus on export market closures, unrestrained import growth (dumping), further fishing area closures, the potential for imports to reposition prawns as an everyday low cost protein source and the need for more fishery knowledge to maximise sustainable resource use. Appropriate risk management plans are not in-place. The development of an industry strategic plan provides opportunity to change this.
4.11 Summary of Enabling Environment

A summary of industry enabling environment performance using a subjective score of 1 to 5 is shown in the table below (5 is highest).

Table 37 Enabling Environment of the Wild-Catch Prawn Industry

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry Culture</td>
<td></td>
</tr>
<tr>
<td>Market focus</td>
<td>2 (SA = 4, East Coast = 1)</td>
</tr>
<tr>
<td>Information sharing</td>
<td>2 (SA, WA, NPF = 4, East Coast = 1)</td>
</tr>
<tr>
<td>Receptiveness to new ideas</td>
<td>2 to 4 (variable)</td>
</tr>
<tr>
<td>Leadership</td>
<td>2 (East Coast = 4)</td>
</tr>
<tr>
<td>Industry Associations</td>
<td></td>
</tr>
<tr>
<td>ACPF</td>
<td>2</td>
</tr>
<tr>
<td>ASIC and the State organisations</td>
<td>2</td>
</tr>
<tr>
<td>FRDC</td>
<td>3</td>
</tr>
<tr>
<td>Government and Regulations</td>
<td></td>
</tr>
<tr>
<td>Fisheries management policy</td>
<td>1 (WA/SA = 4)</td>
</tr>
<tr>
<td>Labour and immigration policy</td>
<td>3</td>
</tr>
<tr>
<td>Market Access</td>
<td></td>
</tr>
<tr>
<td>Appropriate representation</td>
<td>3</td>
</tr>
<tr>
<td>Strategy – Information - Communication</td>
<td></td>
</tr>
<tr>
<td>Strategy development and implementation</td>
<td>1</td>
</tr>
<tr>
<td>Communication – market information</td>
<td>3</td>
</tr>
<tr>
<td>Risk Management</td>
<td></td>
</tr>
<tr>
<td>Industry level</td>
<td>2</td>
</tr>
</tbody>
</table>
5. External Environment

The external environment is the uncontrollable external influences that impact on the prawn industry. This includes factors such as climate and exogenous shifts in consumer preferences, producers in other countries and hence market demand and prices for Australian production. The external environment is a given, however it is important to consider it when evaluating an industry’s performance. Furthermore, an industry’s capacity to respond to external factors is an important attribute of industry (CIE 2005).

5.1 Exchange Rate and the Australian Dollar

The Australian dollar – US dollar exchange rate is also a major determinant of industry performance. The US$ is the trading currency for most of Australia’s competitors. Widespread comment received during consultation indicated that if the Australian dollar would only return to year 2000 levels, the industry would right itself through increased exports and lower imports. It is worth noting that year 2000 exchange rates only existed for a period of two years in the last twenty and is not a sound assumption for future business planning. On the positive side the long-term trend would appear to be a lowering of the $A against the $US. See graph below sourced through the Australian Parliament website.

Table 38 Historical Exchange Rate – US cents per $A

Source: Parliament of Australia Parliamentary Library

5.2 Fuel Price Forecast

The cost of fuel is a major impost on the fishing industry accounting for more than 20% of total cash costs in some fisheries. The price of diesel has climbed steeply over the past four years and is up 20% over the twelve-month period to the end of 2005. Fishing is a major consumer of diesel fuels and remote fisheries such as the NPF are disadvantaged relative to the East Coast Trawl.

ABARE (2005a) forecast a peak in world crude oil prices in 2005 in the absence of future shocks. This forecast includes the most recent increase in
the world oil price to mid-2005. The figure below shows the real West Texas Intermediate price of oil in constant 2003 US Dollars. The figure shows that the real West Texas Intermediate price declines only gradually, reflecting strong growth in oil consumption, particularly in China, together with capacity constraints associated with low investment earlier this decade.

Table 39 Oil Price - Historical and Forecast Through to 2015

![Graph showing oil price history from 1985 to 2015](image)

Source ABARE 2005a

The consultants note industry’s concern that the diesel rebate is not adjusted for CPI inflation.

5.3 Alternative Energy Use

Project consultation revealed the importance that industry places on alternative fuel sources, including bio-diesel and gas, and investment in fuel efficiency research. In one particular workshop, alternative fuels and fuel efficiency research were identified as the most important strategic issue for the industry and the ACPF to address. This area is suggested for further research and as a possible joint initiative across Research and Development Corporations. This issue is obviously important to all primary production.

5.4 Climate Variability and Drought

There is a strong positive relationship between rainfall and prawn wild-catch. For example the WA Department of Fisheries (2005) has graphed the relationship between Nickol Bay banana prawn landings and rainfall between December and March for the years 1966 to 2003 (R squared value 0.5992).

Long periods of drought (climate variability) and longer-term climate change are likely to adversely affect wild-catch prawn harvest. Industry is yet to address climate change in its planning processes.
5.5  Prawn Aquaculture Industry - Australia

Prawn farming is the fifth largest aquaculture sector in Australia producing 3,563 tonnes of product valued at $55.9 million in 2003/04 (ABARE and FRDC 2005). Some 90% of product originates from Queensland. The balance is from NSW. Trends in Queensland prawn production since 1990/91 are shown in the figure below.

Table 40  Farmed Prawn Production – Queensland (tonnes)

<table>
<thead>
<tr>
<th>Year</th>
<th>Production (tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>90/91</td>
<td></td>
</tr>
<tr>
<td>91/92</td>
<td></td>
</tr>
<tr>
<td>92/93</td>
<td></td>
</tr>
<tr>
<td>93/94</td>
<td></td>
</tr>
<tr>
<td>94/95</td>
<td></td>
</tr>
<tr>
<td>95/96</td>
<td></td>
</tr>
<tr>
<td>96/97</td>
<td></td>
</tr>
<tr>
<td>97/98</td>
<td></td>
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<tr>
<td>98/99</td>
<td></td>
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<td>99/00</td>
<td></td>
</tr>
<tr>
<td>00/01</td>
<td></td>
</tr>
<tr>
<td>01/02</td>
<td></td>
</tr>
<tr>
<td>02/03</td>
<td></td>
</tr>
<tr>
<td>03/04</td>
<td></td>
</tr>
</tbody>
</table>

Source: APFA and QDPI&F (2005)

The figure shows that Queensland production peaked in 2001/02 at 3,411 tonnes. Increasing volumes of low cost imported prawns, especially *P. vannamei* from China, has curtailed further industry growth. Future industry production will depend on Australian dollar exchange rates and policy in Asian production areas. ABARE (2005a) notes that with their short production cycle, farmed prawns are able to respond quickly to changes in product price and market opportunity.

APFA and QDPI&F (2005) Industry Action Plan identifies the following priorities for the Australian farmed prawn industry:

1. Broodstock fishing – work to identify new fishing grounds and develop management guidelines for remaining grounds;
2. Broodstock quality – workshop best management practice, disease management and lobby Aquaplan/FRDC for funding;
3. Domestication of prawn broodstock – improve communication on current R&D and investigate other options (eg stud farms);
4. Production – establish industry production and supply chain benchmarks and develop and implement a communication strategy;
5. Training and education – design of appropriate courses and investigate financial assistance options;
6. Marketing – review existing strategies, support country of origin labelling and adoption of ISO 14001 or ISO 9000; and

7. Government – investigate options for government support and work with the Australian government to review and revise the IRA process for green prawns.

APFA commissioned a consultancy in late 2005 that has as its goal the repositioning of Australian farmed prawns to differentiate this product from low cost imported product. The consultant understands that in February 2006 the industry agreed to work towards a $0.10/kg levy for promotion.

The Australian farmed prawn industry has a lot in common with the wild-catch prawn industry, including:

- Strong competition from low cost imports;
- A high cost production base including first world labour costs;
- Small volume boutique production;
- The need to differentiate their product;
- Low levels of profit and pressure to adjust;
- Loss of fishing/broodstock capture grounds to marine protected areas;
- Merging technologies including use of farmed stock to boost wild-catch;
- Environmental regulations.

The Australian farmed prawn sector is doing it very tough at the moment and would welcome the opportunity to work more closely with the wild-catch industry (APFA pers. comm. 2005).

5.6 Prawn Aquaculture Industry - International

Situation and Outlook

The growth of aquaculture production (all types) in the Asia Pacific region has been very strong for the last 10 years, owing largely to the production from China, with an annual growth rate of 13.8%. China was estimated in 2001 to produce 71% of world aquaculture. While China has experienced significant growth in aquaculture production, South Asia and South-East Asia have both doubled production since 1990. Growth in Penaeid shrimp production, the genus to which all Australian wild-catch prawns belong, is estimated from various sources and shown in the figure below.
Penaeid Shrimp Production – 1990 to 2003

By 2001 world aquaculture production of prawns had reached 1.2 million tonnes, the equivalent of 40% of total shrimp landings. By 2002 it had reached 1.5 million tonnes or half of total shrimp production. Aquaculture production of prawns, is dominated by China, Thailand, Indonesia and India (see table below). The two major production species were *Penaeus monodon* (black tiger prawn) and *Penaeus chinensis* (the fleshy prawn). The production of both species incurred setbacks in China, South-East Asia and India in the mid 1990s with major incursions of viral diseases (typically WSSV). Loss of production due to viral outbreaks has caused the Asian industry to switch to a hardy South/Central American native (*Penaeus vannamei*). *Penaeus vannamei* production has given Asian aquaculture prawn production a major shot in the arm.

Table 42 Penaeid Shrimp Top Ten Producers, Total Production (2001)

<table>
<thead>
<tr>
<th>Country</th>
<th>Tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>304,182</td>
</tr>
<tr>
<td>Thailand</td>
<td>280,000</td>
</tr>
<tr>
<td>Indonesia</td>
<td>148,558</td>
</tr>
<tr>
<td>India</td>
<td>102,930</td>
</tr>
<tr>
<td>Vietnam</td>
<td>67,500</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>60,000</td>
</tr>
<tr>
<td>Philippines</td>
<td>42,390</td>
</tr>
<tr>
<td>Malaysia</td>
<td>27,014</td>
</tr>
<tr>
<td>Taiwan</td>
<td>8,878</td>
</tr>
<tr>
<td>Iran</td>
<td>7,607</td>
</tr>
<tr>
<td><strong>Total Production</strong></td>
<td><strong>1,200,000</strong></td>
</tr>
</tbody>
</table>

Source: Network of Aquaculture Centres in Asia Pacific and FAO (2004)

China now has a large and flourishing industry for *Penaeus vannamei* with production of more than 270 thousand metric tonnes in 2002 and an estimated 300 thousand metric tonnes (71% of total shrimp production) in
2003. Other Asian countries with developing industries for this species include Thailand (estimated production of 120 thousand metric tonnes in 2003), Vietnam and Indonesia (30 thousand metric tonnes each), Taiwan, the Philippines, Malaysia and India (thousands of tonnes each).

Total production of *Penaeus vannamei* in Asia was approximately 316 thousand metric tonnes in 2002, and has been estimated that this will increase to nearly 500 thousand metric tonnes in 2003.10

There are problems associated with this dramatic increase in the production of *Penaeus vannamei* in terms of the marketing of the product. With so many countries now producing essentially the same product (a relatively small white shrimp), global prices dropped dramatically during 2002-03. This has also had follow-on effects regarding the actual value of the production sold and disagreements regarding possible “dumping” of shrimp onto markets (Network of Aquaculture Centres in Asia – Pacific and Food and Agriculture Organisation of United Nations 2004).

The impact of the growth of *Penaeus vannamei* on world prawn prices can be seen in the figures below – average volume and unit value of shrimp imported into the USA, the world’s largest shrimp market. Shortly after this analysis was completed the US government instituted anti-dumping provisions against six countries supplying the US (China, Thailand, Vietnam, India, Brazil and Ecuador).

### Table 43 US Imports of Shrimp – Volume & Value 1994 to 2002

<table>
<thead>
<tr>
<th>Year</th>
<th>China</th>
<th>Ecuador</th>
<th>Thailand</th>
<th>All Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td></td>
<td></td>
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<td>1996</td>
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<tr>
<td>2001</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


---

10 It is worth noting at this point that total Australian prawn production, wild-catch plus aquaculture is typically something less than 30,000 tonnes.
The rapid growth in shrimp production and trade with a corresponding reduction in prices is forecast to continue into the future (Briggs, et al 2004):

Projections estimate that the world’s shrimp culture industry will continue to grow at 12-15% pa, although prices in the US market have been steadily decreasing by 4% pa from $10/kg to $US8/kg since 1997. The increasing oversupply of P. vannamei from first Mainland China and soon other Asian countries, as well as Brazil and other South and Central American countries, will probably lead to a continuation in declining prices. This is compounded by the slow growth rate of the world’s largest shrimp market, the USA (importing 430,000t in 2002), the slow European market (300,000t in 2002) and the declining Japanese market (250,000t in 2002). Costs have also increased as the industry adjusts to increasing international standards on product quality and the environment, putting huge pressures on the majority of the world’s shrimp producers.

Factors working against the continued growth of shrimp aquaculture production include competition in Asia for aquaculture feedstuffs – prawn production must compete with cattle production for fishmeal - and the risk of a major disease outbreak – the prawn aquaculture industry has become much more sophisticated in managing this eventuality. The consultants note that recently there has been a surge in the supply of a new, farmed product originating in Saudi Arabia – *P Indicus* (the red legged banana prawn). On balance it would seem that current competition levels for Australian wild-catch prawn fishers will not ease, rather they will intensify in the next three to five years. There will be no recovery in prices received for imported aquaculture prawns.
Mounting an Anti-Dumping Case

To prove an anti-dumping case, there must be proof of dumped imports, material injury to a domestic industry, and a causal link between the two. Once a nation proves a case, it may levy a compensatory duty to bring the price of the imports up to the domestic level (www.cid.harvard.edu).

While the US industry has enjoyed some success in imposing anti-dumping duties on aquaculture prawn imports and there is some (limited) evidence of imports selling below the cost of production in Australia, there is a low probability that the Australian Government would pursue similar measures on behalf of the Australian industry. The pursuit of anti-dumping measures is a distraction from other industry priorities.
5.7 International Wild-Catch Industry

Situation and Outlook

The international wild-catch industry is centred in the tropical third world (Asia, the Indian Sub-Continent and Latin America). The five largest wild-catch producers of prawns are China, India, Thailand, Indonesia and Vietnam. Top 30 producers 2003, are shown in the table below. The table, assembled from FAO data includes product from the cold northern hemisphere (UK, Greenland, Iceland, etc), which is sourced from species outside the Penaeus genus.

Table 44 World Wild-Catch Prawn Production – Top 30 Countries (t)

<table>
<thead>
<tr>
<th>Country</th>
<th>Production of Wild-Catch Shrimp and Prawn 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>53,308</td>
</tr>
<tr>
<td>Australia</td>
<td>23,824</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>56,503</td>
</tr>
<tr>
<td>Brazil</td>
<td>117,247</td>
</tr>
<tr>
<td>Cambodia</td>
<td>7,720</td>
</tr>
<tr>
<td>Canada</td>
<td>120,547</td>
</tr>
<tr>
<td>Chile</td>
<td>4,203</td>
</tr>
<tr>
<td>China</td>
<td>1,969,939</td>
</tr>
<tr>
<td>Greenland</td>
<td>142,137</td>
</tr>
<tr>
<td>Iceland</td>
<td>28,770</td>
</tr>
<tr>
<td>India</td>
<td>516,564</td>
</tr>
<tr>
<td>Indonesia</td>
<td>457,128</td>
</tr>
<tr>
<td>Japan</td>
<td>27,484</td>
</tr>
<tr>
<td>Korea - South</td>
<td>33,441</td>
</tr>
<tr>
<td>Malaysia</td>
<td>99,377</td>
</tr>
<tr>
<td>Mexico</td>
<td>100,453</td>
</tr>
<tr>
<td>Myanmar</td>
<td>52,181</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1</td>
</tr>
<tr>
<td>Norway</td>
<td>67,025</td>
</tr>
<tr>
<td>Pakistan</td>
<td>24,411</td>
</tr>
<tr>
<td>PNG</td>
<td>1,547</td>
</tr>
<tr>
<td>Peru</td>
<td>7,799</td>
</tr>
<tr>
<td>Philippines</td>
<td>73,623</td>
</tr>
<tr>
<td>Singapore</td>
<td>268</td>
</tr>
<tr>
<td>South Africa</td>
<td>150</td>
</tr>
<tr>
<td>Spain</td>
<td>14,356</td>
</tr>
<tr>
<td>Thailand</td>
<td>381,050</td>
</tr>
<tr>
<td>UK</td>
<td>1,217</td>
</tr>
<tr>
<td>USA</td>
<td>146,838</td>
</tr>
<tr>
<td>Vietnam</td>
<td>309,717</td>
</tr>
</tbody>
</table>

Wild-catch dominates world prawn production and trade. The forecast for world crustacean production – most of which is marine shrimp (Delgado et al 2003), is:

- Wild-catch: 1.4% annual growth 1997 to 2020; and
- Aquaculture: 3.2% annual growth 1997 to 2020.

These estimates are best available as at the time the research was completed.

**Major Markets and International Competitors**

Exports of crustaceans are dominated by the tropical third world - see table below.

**Table 45 Net Exports of Crustaceans, 1973-97 and 2020 (‘000 tonne)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>77</td>
<td>125</td>
<td>65</td>
<td>-570</td>
<td>-60</td>
<td>-635</td>
</tr>
<tr>
<td>SE Asia</td>
<td>116</td>
<td>245</td>
<td>534</td>
<td>770</td>
<td>289</td>
<td>236</td>
</tr>
<tr>
<td>India</td>
<td>67</td>
<td>93</td>
<td>160</td>
<td>120</td>
<td>67</td>
<td>-40</td>
</tr>
<tr>
<td>Other South Asia</td>
<td>20</td>
<td>45</td>
<td>52</td>
<td>87</td>
<td>7</td>
<td>35</td>
</tr>
<tr>
<td>Latin America</td>
<td>159</td>
<td>249</td>
<td>446</td>
<td>695</td>
<td>197</td>
<td>249</td>
</tr>
<tr>
<td>W. Asia, Nth Africa</td>
<td>17</td>
<td>26</td>
<td>57</td>
<td>68</td>
<td>31</td>
<td>11</td>
</tr>
<tr>
<td>USA</td>
<td>-187</td>
<td>-271</td>
<td>-432</td>
<td>-539</td>
<td>-161</td>
<td>-107</td>
</tr>
<tr>
<td>Japan</td>
<td>-159</td>
<td>-371</td>
<td>-712</td>
<td>-629</td>
<td>-341</td>
<td>83</td>
</tr>
<tr>
<td>EU 15</td>
<td>-151</td>
<td>-293</td>
<td>-518</td>
<td>-432</td>
<td>-225</td>
<td>86</td>
</tr>
<tr>
<td>E Europe/ ex USSR</td>
<td>18</td>
<td>24</td>
<td>36</td>
<td>48</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Other Developed</td>
<td>7</td>
<td>41</td>
<td>252</td>
<td>363</td>
<td>211</td>
<td>111</td>
</tr>
<tr>
<td>Developing World</td>
<td>472</td>
<td>870</td>
<td>1,374</td>
<td>1,188</td>
<td>504</td>
<td>-186</td>
</tr>
<tr>
<td>Developed World</td>
<td>-472</td>
<td>-870</td>
<td>-1,374</td>
<td>-1,188</td>
<td>-504</td>
<td>186</td>
</tr>
</tbody>
</table>

Source: Delgado et al 2003

From the table it can be seen that South-East Asia, India and Latin America are all large net exporters of crustaceans. The US, Japan and the EU are major net importers. Importantly, the forecasts shown in the table indicate that by 2020, China will switch from being a net exporter of crustaceans (65,000 t in 1997) to a major net importer (570 t in 2020). This has significant implications for world supply and demand and, if correct will account for almost half the world’s net trade in crustaceans.

Key points in relation to the three current major prawn markets are summarised in the table below.
Table 46  Major Prawn Markets – Key Point Summary

<table>
<thead>
<tr>
<th>Market</th>
<th>Attribute</th>
</tr>
</thead>
</table>
| USA    | • Very large shrimp market  
|        | • Shrimp is the number one seafood consumed in the USA  
|        | • Market growing at 7% pa but currently saturated with low cost imports  
|        | • Imports meet 88% of total US demand  
|        | • Significant domestic wild-catch industry, especially in the Gulf of Mexico and Gulf of California  
|        | • Most imports sourced from Asia (65%), Latin America (30%) is also important  
|        | • Australian supply meets <1% of demand  
|        | • Anti-dumping measures instigated in late 2004 against Asian and Latin American imports  
|        | • Monitoring EU concerns about food safety and traceability in imports  
| Japan  | • Market has contracted due to poor economic conditions  
|        | • Most imports sourced from Asia (75%), Latin America (20%) is also important  
|        | • Australian supply meets approximately 1% of demand  
|        | • Other suppliers include wild-catch sourced by Russia, Greenland, Canada and Argentina  
| EU     | • EU market is characterised by high tariffs and being very particular in its requirements  
|        | • Current concerns include sustainable and uncontrolled farming, antibiotic regulation, ethical employment standards, traceability, genetically modified feed ingredients, fishmeal sustainability, animal welfare, genetics in shrimp breeding, dioxins, polychlorinated bi-phenyls (PCBs), heavy metals, agrochemicals and irradiation  
|        | • A combination of these concerns (but particularly antibiotic residues) has led to recent restrictions on importation of farmed shrimp from many Asian counties  
|        | • Concerns with high levels of cadmium in Australian prawns have resulted in rejection of shipments and placing Australia on a EU 'high alert' list. An alternative protocol is under negotiation December 2005  
|        | • Australian supply meets approximately 1% of demand  


Australia is a minor source of wild-catch prawns. On international markets Australian wild-catch prawns compete with low cost aquaculture (major competitor) and wild-catch sourced from countries such as West Papua, Argentina, Madagascar and Mozambique (secondary competitor). Given the differences in operating environment and input costs experienced by these wild-catch competitors, trends in the US wild-catch shrimp industry, which experiences similar first world business and environmental compliance costs, are explored in the case study below.
Case Study 4 – US Wild-Catch Shrimp – Issues Mirror Australia

Review of the situation in the US wild-catch shrimp industry reveals a set of issues immediately recognisable by the Australian industry – imports, fuel cost, labour supply, country of origin labelling and dissatisfaction with Government policy, see table below. The US industry has dealt with these issues through promotion and by campaigning for and achieving tariffs on low cost/dumped shrimp imports. While this latter strategy is unlikely to be successful in Australia, it does show the importance of a unified national voice in achieving industry goals.

Table 47 US Wild Catch Industry Issues – August 2004 to Dec 2005

<table>
<thead>
<tr>
<th>Date</th>
<th>Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>13/12/05</td>
<td>Gulf Fisheries Consider Move to Quota</td>
</tr>
<tr>
<td></td>
<td>Red snapper, grouper and possibly shrimp may move to quota in the Gulf of Mexico as current management controls prove ineffective for both fishers and environmentalists.</td>
</tr>
<tr>
<td>7/7/05</td>
<td>Texas, Louisiana shrimpers find profit margins shrinking</td>
</tr>
<tr>
<td></td>
<td>With shrimp prices the lowest some shrimpers have seen – large shrimp bringing in about $US3.50 a pound ($A9.60/kg) and small ones going for less than $US1 and fuel costs running at $1.75 a gallon, shrimpers say profit margins are narrow, if they exist.</td>
</tr>
<tr>
<td>3/5/05</td>
<td>Texas wild shrimpers blame government for industry’s woes</td>
</tr>
<tr>
<td>26/4/05</td>
<td>Indian shrimpers hopeful ITC review will eliminate US antidumping tariff</td>
</tr>
<tr>
<td>7/12/04</td>
<td>Are foreign shrimp suppliers simply better at their job?</td>
</tr>
<tr>
<td>7/12/04</td>
<td>Wal-mart domestic shrimp sales jump 60%</td>
</tr>
<tr>
<td>30/11/04</td>
<td>Southern Shrimpers hail decision in antidumping cases</td>
</tr>
<tr>
<td></td>
<td>Shrimpers from the southern US that initiated the charges that led to Tuesday’s final tariff decision regarding imported shrimp from China and Vietnam praised the Action of the US Department of Commerce, saying the tariffs level the market place playing field.</td>
</tr>
<tr>
<td>22/11/04</td>
<td>Mississippi processor: Shrimpers are taking a beating</td>
</tr>
<tr>
<td>26/10/04</td>
<td>High fuel prices hit Gulf shrimpers</td>
</tr>
<tr>
<td></td>
<td>Record-high diesel prices – which are effecting the cost of everything from building supplies to groceries to airline fares – will soon sideline many of the shrimp boats based at Fort Myers Beach, Fla.</td>
</tr>
<tr>
<td>19/10/04</td>
<td>Gulf shrimpers need workers</td>
</tr>
<tr>
<td></td>
<td>Add labour woes to the problems affecting Gulf of Mexico shrimp boat operators. Already fighting lower prices because of cheaper foreign shrimp imports and ever rising fuel prices, boat operators along the Gulf also are complaining about the lack of workers caused by a lack of visas to allow in workers from Mexico and Central America.</td>
</tr>
<tr>
<td>1/10/04</td>
<td>Seafood industry given six months to comply with Country of Origin Law</td>
</tr>
<tr>
<td></td>
<td>Maine, USA: The long anticipated rules of the US Department of Agriculture's seafood only, mandatory country of origin labelling regulation published Thursday afternoon say enforcement will kick in six months not a year, as rumoured – from the date of publication in the Federal register.</td>
</tr>
<tr>
<td>8/9/04</td>
<td>Texas shrimp farmers battle disease, inflation, imports.</td>
</tr>
<tr>
<td></td>
<td>When a rare disease hit his ponds this year Fritz Jaenike feared he disease might wipe out the crop as it did in many south Texas farms in 1995.</td>
</tr>
<tr>
<td>10/8/04</td>
<td>Texas shrimper busted with illegal turtle device</td>
</tr>
<tr>
<td></td>
<td>A shrimp boat crew off Texas forfeited its catch after the Coast Guard found turtle excluder devices sown shut.</td>
</tr>
<tr>
<td>30/6/04</td>
<td>Chinese shrimp farmers feel pain of US trade war</td>
</tr>
<tr>
<td>19/4/04</td>
<td>Repo man targeting more US shrimp vessels</td>
</tr>
</tbody>
</table>

Source: IntraFish Media Group
In other Australian industries, the national industry association provides a weekly news service in the format of the above table for its members. This service is suggested for the ACPF.

Case Study 5 – Canada Coldwater Shrimp in Trouble

The US and Australian wild-catch industries would also find a familiar scenario if visiting the Canadian coldwater wild-catch industry. Skyrocketing fuel costs, soft market conditions and an abundance of cheaper farm-raised alternatives have forced the Canadian industry into increasing their catch and consolidating their industry. IntraFish December 2005 reports that innovative solutions are in short supply. Some believe that longer term new markets might emerge in Eastern Europe or that multinational chains like McDonalds might pick-up their relatively low cost product.

While further rationalisation is possible in Australia, the Australian industry does not have the Canadian industry’s luxury of increasing production from an historically under-exploited resource.

Supply and Demand Trends

World supply and demand trends through to 2020 include:

- Increasing per capita consumption in the developing world, especially amongst the growing middle classes. Prawn consumption per capita to increase from a developing world average of 1kg pa to 2 kg pa by 2020;
- Tariff relaxation increasing opportunities for additional trade, current trend toward bilateral agreements to continue;
- Imposition of non-tariff barriers, making it increasingly difficult for poorer countries to contribute to export growth (QA systems, traceability, environmental management, etc); and
- Overfishing in marine areas to remain a huge concern – sustainability-motivated environmental regulations and institutions will rapidly become more prominent, shaping first the developed world’s demand for prawns and then spilling over to developing countries.

Against these broad supply and demand trends a number of specific changes to the international business environment are forecast – see section below.

5.8 Changes in the International Business Environment

The Australian wild-catch prawn industry is part of the food industry. To manage profitably into the future it must consider the big picture forces shaping global food markets.

Several key factors set in train the beginning of a pattern of globalisation in food and beverage retailing that has been intensifying since the 1970s. But the principal element amongst these factors has been increasing consolidation of food retailing in Western Europe and the USA and now Asia.
leading to the emergence of a number of major players with global ambitions. These retailers include Walmart, Tesco, Royal Ahold, and Carrefour (FRDC 2003).

The broader agrifood supply chain and market place is undergoing a transformation. New networks of modern food retail and food service outlets and giant shopping malls are creating their own supply chains and distribution systems (FRDC 2003). This trend is increasingly apparent in Asia and parts of the Indian Sub Continent.

To survive in this new market reality, knowledge of both the restructuring process and international ‘through chain’ alliances will be required. The Australian seafood industry has in part been insulated from these trends. However, this new market reality will shape future export plans and is already evident in the thinking of the two major Australian supermarket chains. The best of the Australian fishing, processing and marketing industry has already manoeuvred to take advantage of these changes.

5.9 Summary of External Environment

A summary of industry external environment performance using a subjective ranking of 1 to 5 is shown in the table below.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange Rate, Fuel Prices and Climate Change</td>
<td></td>
</tr>
<tr>
<td>Australian dollar US dollar rate (current and forecast)</td>
<td>2</td>
</tr>
<tr>
<td>Fuel prices medium term</td>
<td>1</td>
</tr>
<tr>
<td>Climate change preparation</td>
<td>2</td>
</tr>
<tr>
<td>Competitors – Domestic and International</td>
<td></td>
</tr>
<tr>
<td>Links with the Australian prawn aquaculture industry</td>
<td>1</td>
</tr>
<tr>
<td>International prawn aquaculture, production increase</td>
<td>1</td>
</tr>
<tr>
<td>Support for an Australian anti-dumping case</td>
<td>1</td>
</tr>
<tr>
<td>International wild-catch growth is limited</td>
<td>4</td>
</tr>
<tr>
<td>Consumer preference trends – favourable</td>
<td>4</td>
</tr>
</tbody>
</table>
6. Measuring Industry Success

6.1 Criteria for a Successful Industry

What defines success depends on one’s point of view. Ideally, criteria are objective and measurable. The importance assigned to relative performance within the industry, as distinct from the overall performance at industry level needs to be considered (CIE 2005).

Does one consider an industry with a few profitable large fishers dominating production as successful, while the vast majority of enterprises are being run at a loss? To this end and where possible, mean and median estimates are necessary to measure success criteria. Another method is to judge the ‘distribution’ of industry performance by comparing the top 20th percentile with the mean. It is essential to take a relative performance approach, as the Industry Partnership Programme is more likely to deal with the under performing majority than the more ‘successful’ minority that have scale and the know how to help themselves (CIE 2005).

The criteria for industry success identified in this framework are:

- Profitability;
- Sustainability;
- Growth;
- Flexibility; and
- Self-reliance.

This mix reflects both performance outcomes and capacity to deal with an uncertain and changing environment (CIE 2005).

Prawn industry performance against these criteria is detailed in the section below.

6.2 Profitability

Profitability is generally regarded as the ultimate barometer of an industry’s success. While it is usually apparent when an industry is profitable, and conversely when it is not, it is more difficult to find a reliable and readily available qualitative measure of profitability (CIE 2005).

From the data available to this study it would seem that many fishers are of marginal profitability and under increasing pressure in recent times. General comments on profitability by enterprise size and the number of enterprises that might be ‘vulnerable’ to structural adjustment pressure is shown in the table.
Table 49 Profitability by Enterprise Size ($ turnover)

<table>
<thead>
<tr>
<th>Enterprise Turnover ($)</th>
<th>Approximate Number of Enterprises</th>
<th>Profitability</th>
</tr>
</thead>
</table>
| < $100,000              | 482                              | • Enterprises in this category are not profitable. Fishers who operate them are reliant on other sources of income.  
• Likely to survive future structural adjustment processes, typified by ‘lifestyle’ operations. |
| $100,000 to $1 million  | 478                              | • Larger enterprises marginally profitable at the current time.  
• Most vulnerable to increasing costs and poor market conditions. Reliant on prawn income. |
| > $1 million            | 101                              | • Currently profitable.  
• May come unstuck if carrying high debt or have ‘unfocussed’ marketing strategies i.e. simply sell commodity to processors. |

Source: ABS turnover and distribution data, AgEconPlus conclusions

The industry is marginally profitable. Current management arrangements, which hamstring initiatives to increase production efficiency and a continuation of current weak market conditions will force further structural adjustment.

6.3 Sustainability and the Triple Bottom Line

Sustainability generally refers to an industry’s ability to continue to operate profitably ‘indefinitely’. Sustainability has three distinct yet related components: economic, environmental and social sustainability. Economic sustainability is subject to resource threats such as resource access and management arrangements and market threats such as export competition and product viability. Environmental sustainability refers to the actual and perceived impact of an industry on the environment. Factors relating to environmental sustainability include resource access, resource management and public perceptions of the industry. Social sustainability includes the ability of the industry to sustain the community on which it is based.

The wild-catch prawn industry is dependent on access to public resources. While it fishers at mostly sustainable levels, it is vulnerable to issues associated with bycatch and degradation of the seafloor. The industry has been proactive in investing in this area and adopting the outcomes from R&D programs. Unfortunately, the industry has not been able to communicate these advances to the community, which has a poor image of wild-catch prawn trawling as an environmental manager.
The top 30% of fishers (300 enterprises) who produce 80% of industry output are economically and environmentally sustainable. Other producers will have difficulty with economic sustainability.

Social sustainability will be of concern in some wild-catch prawn production regions if small and medium sized growers falter. As the number of fishing enterprises in a district declines it can lead to a downsizing of the associated communities, resulting in reduced access to labour (already problematic with shorter fishing seasons and competition from other industries) and reduced access to other services, such as input suppliers (net mending, fuel, ice, etc) and the expertise provided by their retailers.

6.4 Growth

Increases in output at the enterprise level must translate to growth in either domestic or export consumption. It is important to consider growth in both quantity and value terms (CIE 2005).

Wild-catch prawn production has remained static since the 1950s with losses in estuarine production being offset with expansion in the NPF and Torres Strait Prawn Fishery. In the medium term it is expected that Australian wild-catch prawn production will remain at current levels. The potential for industry production growth through stock management and stock sustainability is limited. Australian wild-catch prawn exports grew through the late 1990s/early 2000s on the back of a lower $A, a rising $A has seen them drop back to historical levels. Improvements in domestic marketing and product differentiation offer the industry the opportunity to achieve growth through increases in unit value.

6.5 Flexibility

Responsiveness to change in the external environment, enabling environment or in the access to resources is a critical component of a successful industry. Flexibility can be measured by observing historical factors such as industry’s output and profitability in relation to external shocks, and through evaluating an industry’s relevant attributes that provide the capacity to adjust. The difficulty is in picking up on the many ways that adjustment to external changes can occur. There are three potential responses to change, which provide an industry with flexibility, these are: switching products, product transformation and changing markets (CIE 2005).

Comment on the wild-catch prawn industry’s perceived capacity to respond to change using these three indicators of flexibility are shown in the table below.
Table 50 Industry Flexibility

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switching products</td>
<td>• The industry is highly reliant on prawn fishing. While there are individuals and some fisheries that are multi endorsed and diversified, most fishers are dependent on wild-catch prawns.</td>
</tr>
<tr>
<td>Product transformation i.e. value adding</td>
<td>• Value adding is practiced through well-graded and specified product. There is little product transformation (e.g., pealing and crumbing) in Australia. Potentially more could be done with on-board value adding during crew down time.</td>
</tr>
<tr>
<td>Changing Markets</td>
<td>• The industry has been reliant on East Asian export markets. The EU has been developed as an alternative in recent years. Domestically the industry has been increasing its reliance on the two major supermarket chains.</td>
</tr>
</tbody>
</table>

The industry is not flexible. Generally speaking, it is reliant on a single product, value adding is limited to grading and it serves a small number of reasonably static markets. The exception is the development of sales to the highly exacting EU market.

While the industry lacks flexibility as measured through switching products, product transformation and changing markets, the industry is resilient. The industry has been able to survive with major changes to access, cost of production and prices received.

6.6 Self-Reliance

Generally industries that rely heavily on government assistance are not successful. The most appropriate measure of government assistance is the effective rate of protection, which measures assistance on outputs as well as inputs (CIE 2005).

There is no tariff protection afforded to the Australian wild-catch prawn industry from imported prawns. The industry faces tariff barriers in a number of its major markets. Domestically, there is an expectation in parts of the wild-catch prawn industry that government will provide structural adjustment assistance at regular intervals when fishing effort increases and returns fall. Reliance on input controls with their periodic need for further restrictions has created this expectation.

In addition there is scope for the industry to take control of its strategic planning and R&D and ‘run its own agenda’ in the future. Historically the industry has under performed in this area.
6.7 Summary of Industry Success

A summary of industry success using a subjective ranking of 1 to 5 is shown in the table below.

Table 51 Criteria for Judging Success in the Wild-catch Prawn Industry

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Profitability</strong></td>
<td></td>
</tr>
<tr>
<td>Return on Assets</td>
<td>2</td>
</tr>
<tr>
<td>Net Enterprise Income</td>
<td>2</td>
</tr>
<tr>
<td><strong>Sustainability</strong></td>
<td></td>
</tr>
<tr>
<td>Consistent catch</td>
<td>4</td>
</tr>
<tr>
<td>Programs addressing environmental issues</td>
<td>4</td>
</tr>
<tr>
<td>Public image as environmental managers</td>
<td>1</td>
</tr>
<tr>
<td>Economic sustainability (input controls stop productivity gains)</td>
<td>2</td>
</tr>
<tr>
<td>Social sustainability (some communities under pressure)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Growth</strong></td>
<td></td>
</tr>
<tr>
<td>Production volume and value</td>
<td>3</td>
</tr>
<tr>
<td>Export volume and value</td>
<td>3</td>
</tr>
<tr>
<td><strong>Flexibility</strong></td>
<td></td>
</tr>
<tr>
<td>Switching products</td>
<td>2</td>
</tr>
<tr>
<td>Industry culture</td>
<td>2</td>
</tr>
<tr>
<td>Changing markets</td>
<td>3</td>
</tr>
<tr>
<td>Resilience</td>
<td>4</td>
</tr>
<tr>
<td><strong>Self Reliance/Government assistance</strong></td>
<td></td>
</tr>
<tr>
<td>Tariff protection</td>
<td>5</td>
</tr>
<tr>
<td>Expectation of periodic structural adjustment help</td>
<td>1</td>
</tr>
<tr>
<td>Industry Planning and Implementation</td>
<td>1</td>
</tr>
</tbody>
</table>
7. Strategic Priorities

7.1 Gaps in Current Wild-Catch Prawn Industry Performance

A review of industry attributes, the enabling environment, the external environment and measures of industry success reveals the following ‘gaps’ in the industry’s current performance:

Industry Attributes
- Number of fishers in the industry – too many marginal enterprises
- Labour – supply and cost issues
- Human capital – reluctance to invest in business and marketing skills
- Resource management – use of input controls that impede efficiency
- Resource access – downward long-term access trend
- Environmental impact – bycatch and seafloor damage
- Industry image – poorly perceived by the Australian community
- Industry marketing expenditure – none at the current time
- Branding and labelling – more needed to differentiate Aust wild-catch
- Price competition – very strong competition from low cost imports
- Value adding – further scope in both domestic and export markets
- Integrated marketing chain – small fishers miss value chain info flows
- Food safety – perceived problems in the EU risk spill over to other markets
- Industry R&D – low level of expenditure, overemphasis on environment

Enabling Environment
- Culture – production (not market) and fishery (not national) focus
- Leadership – capacity building required for youth and existing players
- ACPF – sustainable funding source, HR and structures required
- Government fisheries management policy – reorientate from biology to profit
- Industry strategic plan – missing at the current time
- Risk management – to be incorporated into industry strategic plan

External Environment
- Exchange rate – unlikely to return to historical lows
- Fuel price – will remain high in the medium term
- Climate change preparation – industry is exposed and under prepared
- Australian prawn aquaculture links – common issues not explored
- International prawn aquaculture – production will continue to increase
- Australian Government Support for anti-dumping case - low

Industry Success
- Profitability – marginal
- Sustainability – poor public image as environmental managers
- Self-reliance – expectation of periodic adjustment assistance
- Self-reliance – Little or no industry planning
7.2 Industry Setting Directions

The above gaps in wild-catch prawn industry performance were reviewed with industry in February and March 2006 through a series of regional workshops (see Attachment 1). Through the workshops a consensus emerged that industry resources should be marshalled to focus on:

1. Unity, leadership and the power to influence;
2. A program to address public perception of the industry; and
3. Marketing, branding and wild-catch product positioning.

Key elements of each of these priorities are presented below along with an anticipated outcome on their completion.

Unity, leadership and the power to influence

1. ACPF Board to appoint an independent Chief Executive Officer
2. Develop an agreed vision and common goals for the Council
3. Secure funding from industry, FRDC, DAFF and others
4. Form strategic alliances – ASIC, state organisations, etc
5. Set clear milestones and objectives with timeframes (a strategic plan)
6. Develop a working structure for ACPF – regional and state associations
7. Address industry communication
8. ACPF to be driven by appointed leaders not elected fishers
9. Benchmark and adopt best practice in peak industry bodies

Outcome: A single voice that is able to effectively represent the industry in relevant decision-making forums, capacity to set and drive the agenda for issues ranging from R&D to marketing and an avenue through which to influence resource access decision-making.

A program to address public perception of the industry

1. Prepare a public perception improvement project brief
2. Seek professional assistance from an appropriate organisation
3. Develop a national identity – who and what is a professional fisher
4. Showcase environmental responsibility
5. Target fishers, consumers, the public, green groups, government, etc
6. Promote the industry to itself to address fisher depression
7. Use appropriate language eg harvest not trawl

Outcome: Public support for the wild-catch industry.
**Marketing, branding and wild-catch product positioning**

1. Prepare a marketing, branding, product positioning project brief
2. Seek professional assistance from an appropriate organisation
3. Win back the domestic market first
4. Brand: Australian wild-caught
5. Seek out industry spokespeople
6. Review and learn from APPA’s failure
7. Review the relevance of brands such as MSC
8. Story behind the meal/person catching the meal
9. Country of origin labelling – make the most of this opportunity
10. Highlight the omega-3 health benefits of wild-catch prawns

*Outcome*: Additional and higher priced demand for Australian wild-catch prawns.

### 7.3 Case Study 6 – Southern Rock Lobster Strategic Plan

The Australian Southern Rocklobster Industry Strategic Plan (FRDC 2003) is a potential blueprint for industry planning in the wild-catch prawn industry. The Southern Rocklobster Industry has founded a new peak industry body (The Southern Rocklobster Council) prepared a long-term industry strategic plan, a business case, formulated appropriate investment budgets and is already ‘kicking goals’ for their industry. Southern Rocklobster was awarded a prestigious United Nations (Association of Australia) 2005 World Environment Day Award in June. But it wasn’t always this way.

Prior to the formulation of the industry’s first strategic plan in 2003 the industry was characterised by:

**Fishers**

- Limited enterprise commitment to joint industry development;
- Complacency in dealing with market issues;
- A policy environment dominated by resource managers and technologists rather than those with commercial and market experience;
- A hunter-gatherer culture oriented through exploitation of a wild resource, accessible on a seasonal basis;
- No control on beach price, which, fostered a commodity culture, that was technology and catch productivity driven; and
- Supply chain with a low level of trust.
Processor/Exports

- The culture of processor/exporters was more food industry driven than fishers, but still reflected the wild origins of the industry;
- Many processors had limited integration to the supply base and excess processing capacity constrains returns in some regions;
- The culture of many was driven by commodity opportunism in an environment where currency risk was high, supply processing contracts did not exist, beach trading rules encouraged short term planning, stock holding and value adding opportunities were said to be limited and volume growth was not possible.

Prior to the preparation of its first strategic plan, the Australian Southern Rocklobster industry was without an appropriate peak body structure and had limited sectoral or peak body strategic planning and agri-political influence.

Many of these fisher, processor/exporter and enabling environment attributes are common to the Australian Wild-Catch Prawn Industry.

To address these issues the Southern Rocklobster industry founded the Southern Rock Lobster Council to provide representation and prepare a plan for industry.

The Southern Rock Lobster industry’s 2003 strategic plan resulted in a sea change in the industry. The strategic plan has eight key investment platforms:

1. Profitability
2. Organisation and management
3. Market planning and development
4. Fish culture and grow out
5. E-commerce and communication
6. Training
7. Sustainability and environment
8. New Zealand alliance

This framework is also relevant to the Australian Wild-Catch Prawn Industry.

7.4 Concluding Comments

The Australian wild-catch prawn industry has a clear-cut and sustainable competitive advantage. Industry investment is needed to maximise this advantage and secure a profitable future for the industry. The above priorities should now for the basis for the industry’s first strategic plan.
Regional Workshop Reports

Attachment 1 provides short summaries of each of the regional Taking Stock and Setting Directions workshops held with industry in February and March 2006. A list of workshop attendees is provided as Attachment 2.

Brisbane 13 February 2006

Introduction
- Industry representatives from East Coast and Estuary Fisheries together with a good cross section of large and small processor/exporters and industry representatives.

Comments on Draft Taking Stock
- Our situation is well known by us but do government understand
- Need to understand who is the customer and the market
- Food safety has moved beyond regulation to a supermarket requirement
- Change in consumption – demand in Japan has been declining
- Imports are highly inspected
- Government needs a Peak Industry Body to communicate with industry
- Resources are not allocated to industries with infighting

Key Strategies
- Three key strategies are
  1. Promotion and marketing the product
  2. Public Perception
  3. Environmental management
  4. Fisheries management
  5. Industry capacity
- Promotion and marketing the product
  - Brand: Australian wild-caught product
  - US case study shows power of brands
  - This will assist with public perception of the industry
  - Adds to our building of a unified voice
  - Best for domestic market
  - Tackles Marketing + PR + Self Image
  - Needs to be supported with research on who our consumer is
  - Need regional/micro scale information on who our consumer is
  - Consumer education and retailer education on product differences
  - New markets for new species
  - Mechanism for gaining more of the margin for producers
  - Need a whole of industry approach
  - Too many bodies responsible for marketing
  - Industry driven and funded
  - Need government support (financial and other)
  - Covering all sectors
  - National grading and quality system
  - Create alliances for ‘share journeys’ – wine/tourism and seafood
  - Need an influential spokesperson
• Public Perception
  o National view about prawn trawling is needed
  o Availability of industry information in retailers – as with health information
  o National identity – who/what is a professional fisher
  o Education kits for schools
  o Independent third party support for industry
  o Differentiate ourselves from aquaculture
  o Environmental impact from wild-catch – our positive we are renewable and sustainable
  o Target: government, public/community and customers
  o ‘Processed in Aust’ gives a clean/green and fresh image

• Environmental Management
  o Encourage and reward innovation in practices
  o National policy and industry position on habitat protection (include water quantity and quality) and rehabilitation
  o Relates back to MSC (or similar) certification
  o Independent certification of industry enviro performance (MSC?)
  o Best practice management – get it written and then into the industry
  o Consult with other industries impacting the fisheries
  o Get state and federal government agencies talking to each other on common issues
  o Self-management of EMS requirements

• Fisheries Management
  o Secure access and property rights
  o Greater ability for the industry to self adjust and self manage
  o Return flexibility to the industry – can some regulations be removed without compromising sustainability?
  o Provide a framework that enables diversity of producers
  o ‘Single Shop’ for management or self-management
  o ACPF to drive the debate – peak body to facilitate discussion
  o Explore alternatives to current model in consultation with industry
  o Best practice guidelines for regulation prepared by ACPF
  o A ‘How to Guide’ for self management

• Industry Capacity
  o Leadership
  o Cultural change
  o Look at existing infrastructure and don’t reinvent the wheel
  o Improve industry communication
  o Industry is time poor which leads to problems in developing capacity
  o Vision for the future of the industry – shared industry vision
Cairns 14 February 2006

Introduction
- Industry representatives from East Coast, Torres Strait and Northern Prawn Fishery. Large and small fishers present at meeting as well as through chain representatives

Strengths
- Environmentally sustainable – ‘we have jumped through the hoops’
- Stocks in good shape
- Reputation for good quality seafood from a clean environment
- QA and food safety systems in place
- Industry contribution to its communities eg employment
- Consumption of prawns is good for your health

Weaknesses
- Lack leadership skills and drive to make a difference
- ACPF Directors have been in the industry too long – fixed positions
- ACPF Directors have a conflict of interest – they import prawns
- Industry is becoming older, few young ones want to stay in industry
- Government does not appear to want to understand our business
- Current fisheries management holds our industry back
- Insufficient generic promotion of the category
- High cost base – fuel, wages, repairs and maintenance
- Crew shortages – crew are required to be at sea three months at a time
- An aging fleet means high maintenance costs
- To many fishers in the fishery and not enough places left to fish
- Commodity culture and reward system – many still pack in bulk, random weight cartons and receive the same money as those who pack for market

Opportunities
- Expanding Asian market
- Potential to secure resource access
- Development of alternative fuel technology i.e. hydrogen
- Change in the balance of fisheries management from ‘green’ to economics
- Potential downturn in Asian aquaculture (remote)
- Creating niche markets eg organic seafood

Threats
- Imported product competes very successfully with wild-catch Australian
- Market changes eg older Japanese prepared to pay $35/kg for wedding banquet prawns, younger Japanese say $18/kg product is fine
- High fuel price likely to be sustained in foreseeable future
- Tariffs and Non-tariff barriers eg heavy metals in the European Union
- Illegal fishing in Australian waters
- Loss of fishing grounds from marine parks/great barrier reef expansion
Comments on Draft Taking Stock
- Report is a reasonable situation and direction setting assessment
- Report has good depth
- Labour cost estimates understate the northern situation – costs $800 to fly a crew member into the Gulf of Carpentaria and they might not work out
- Labour is not a straight employee cost, it is paid as a percentage of catch
- Country of Origin Labelling is relevant
- Having prawns retail at same price as chicken meat is OK as long as we can command a premium, we need to be the ‘corn fed chicken’
- We need good knowledge on what is in our product so we can head off customer concerns eg residues
- EC concerns about heavy metals are political rather than trade issues
- Output controls will not work for multi species
- Output controls will result in small prawns being thrown over the side

Key Strategies
- Hard to identify things we can improve
- Hard to secure industry funding for development of strategies
- Need to address industry unity in order to secure funding
- Need to bring on young leaders – DAFF can help with this
- Generic promotion would be good but it is expensive
- Need to tackle cost of production to remain in business
- Need to address marketing strategies e.g. there are better days to sell
- Must work on through chain solutions, everybody can benefit
- Fisheries management and regulation adds to our cost of production
- Need a public relations campaign – win the hearts and minds, keep access to the resource
- In summary strategies should be:
  1. Marketing the industry i.e. public relations (high)
  2. Marketing the product (high)
  3. Strengthen leadership so that we can implement strategies (high)
  4. Cost reduction

1. Public Relations, potential strategy detail:
   - Positioning
   - Environmental responsibility
   - Story behind the meal/person catching the meal
   - Public relations needs to run through whole chain
   - Must address industry moral as well as consumer perceptions
   - PR to improve self image/pride in being a fisher
   - South Aust industry start their presentations with pictures of family and their community
   - Need PR based on professional analysis, locals have the story and the personalities
   - Unity and industry capacity is a barrier to communicating good news stories. Build unity and leaders first
   - Need to sell the industry to the industry before anything can happen
   - FarmBis has money for leadership development
2. Marketing the Product:
- Communicating effective messages to the consumer
- Can not increase supply so must increase price
- Consumers must ask for our product
- Strategy based on branding Australian wild-catch
- Target the domestic market in the first instance – CoOL appeal
- Branding is possibly the unifying project for the ACPF ie flag bearer
- FRDC provided $100,000 to Southern Rock Lobster: ’Find the markets where branding Australian wild-catch will increase price and target those markets’
- Are prawns too different for this too work ie too much variation
- No! – lamb industry has made it work, US Shrimp is working
- Base on ‘story behind the meal – the wild-caught prawn meal story’
- Wild-caught is the brand and this is the key to the strategy!!

3. Leadership Capacity and Unity
- Together with branding this is the key!
- Need to attract the best directors
- A strategic plan is needed – critical and essential
- Role for the ACPF is to embrace those who embrace the future
- ACPF should not be about popularist support
- Role for ACPF in helping fishers to recognise they are part of a supply chain and share the risk with others in the chain
- Training is the key invest in business thinking

- Summary
  - What: The focus is the vision i.e. the big picture for industry
  - How: ‘Story behind the meal – the wild-catch meal story’
  - Benefits: Product differentiation, better PR for industry and those who work in it
  - Investment: capacity building and leadership (training!)
  - Delivery: regional fishing organisation are members of the ACPF (Question: what capacity do regional organisations have?)
Introduction

- Fishers present were from the Hawkesbury River estuary trawl
- Catch king prawn, school prawn and squid

Strengths

- Strong product differentiation and premium prices achieved
- Market as Hawkesbury River prawns or even Wisemans Ferry prawns
- Product well regarded in market for both human consumption and bait
- Imports are not a major threat

Weaknesses

- Latent effort in fishery, 30 boats active, 60 licensed
- Displaced Sydney Harbour fishers may buy latent effort (threat)
- Lower value greasy back prawns are an increasing percentage of catch
- Little knowledge of the industry’s actual environmental impact
- In NSW the industry association is just a shell
- Hawkesbury Trawl Association represents 18 of 30 active fishers
- NSW DPI culture – will not come on boats
- Very high levels of uncertainty regarding future of estuary trawl in NSW
- Regulatory uncertainty is major industry weakness
- Moral is at an all time low

Opportunities

- More effective representation in political decision making
- Opportunity to influence public opinion on trawl impact and sustainability
- Visual images to place trawl impact in context (trawl tracks equivalent to area of road in a rural valley)
- MSC certification is being examined by Hawkesbury trawl fishes
- MSC certification is generating communication between prawn fisheries
- ‘Story behind the meal’ opportunities for Hawkesbury

Threats

- Fishery managed for water supply rather than sustainable fishing
- Weed problem is a function of insufficient inflow and sewerage effluent
- Fisheries managers do not seem to influence environmental agenda
- ‘Sea-changers’ and marine parks may further restrict resource access
- Low community confidence in the safety of estuary prawns (dioxin alert).

Comments on Draft Taking Stock

- Fisheries too complex to manage for output controls
- Fishers have money invested in input controls
- Our prawn supply volume is not consistent
- Taking stock findings need to be presented to Government
Key Strategies

- Industry is looking for an organisation to provide leadership
- Fishers need representation with politicians and an indication of their ongoing commitment to the industry. If they want us out tell us now.
- We need a consistent message and someone to tell it on our behalf
- We need facts to back our message
- Fishers are not the best people to deliver messages to government or each other
- The ACPF needs to get its language right – don’t talk in terms of ‘seafloor damage’ use terms like ‘seafloor modification’
- Cairns Nov 04 strategies are appropriate
- ACPF must develop communication links through estuary based prawn fisheries and the cooperatives
- ACPF need to consider Royal Red prawn fisheries, non-trawl professional fishers

Coffs Harbour 22 February 2006

Introduction
- NSW ocean and estuary fishers from the Hawkesbury to the Clarence. Strong representation from NSW Cooperatives, which represent fishing interests as well as acting as fish receivers. The NSW industry has been affected by area closures, drought and poor financial returns.

Strengths
- Sustainable, resilient and unique product that can not be replicated
- Quality product
- Marketability – Australian produced
- Healthy product
- Enthusiastic people and a developing business culture
- Heritage, community and regional links
- A great lifestyle
- We are ‘canary in coal mine’ – indicator of environment health

Weaknesses
- Lack of unity
- Aging industry with fewer opportunities for young people, no career path
- Poor community recognition
- Poor political support and understanding at a departmental level (seemingly)
- Poor industry moral
- Lack of direction, no strategic planning
- Industry is uninformed on the big picture
- Lack of self determination/regulatory opportunity
- Hard for fishers to find time to lead
- Middlemen in marketing – making margins and withholding information
- Fewer buyers – concentration of marketing power
- High operating costs
Threats
- Imports
- Lack of resource access security
- Pressure on resource access from recreation sector and habitat destruction
- Lack of understanding between fishers and managers - poor consultation
- All regulatory departments working independently of each other
- Ongoing fee and license increases
- Insufficient buyout to secure resource future
- Continuing high fuel prices
- Marine pollution

Opportunities
- Improve regulatory relationships
- Fisheries management reform/self-regulation
- Branding/MSC
- Niche marketing
- Education of the public and get the consumer onside
- Unification of the industry/speak with one voice/ACPF
- Buyout funding that is properly resourced
- Bulk-buying – fuel equipment, gear
- Bring on next generation with training
- Alternative fuels
- Duty on imports/ anti dumping measures

Comments on Draft Taking Stock
- Report comments on too many boats is very relevant to NSW
- We have a problem with efficiency
- We want this report presented to government
- We feel powerless to influence our environment
- Our environment is in bad shape we want this noted in the report
- Don’t denigrate imports it just drags all seafood down
- You can have cask wine and premium labels, we need to get into the fashion industry.
Key strategies

- **Four key areas:**
  1. Leadership, vision and industry unity
  2. Influence public perception
  3. Marketing strategy/branding
  4. Fisheries management/sustainable fisheries

- **Leadership, vision and industry unity**
  - Difficult stuff
  - Goal is 100% membership for ACPF
  - Staged unification is needed, region first, then build to the state level
  - Need dedicated resources, people, materials and paid positions
  - ACPF is a step in the right direction, now we need the right people to step up
  - ACPF could be a building block for industry self-regulation (NZ has done)
  - Use local meetings for ACPF communications
  - There are plenty of vehicles in NSW – Co-operatives Association, Catchers Trust, SFM – they just need teeth
  - Need to establish and clearly articulate a vision
  - Need leadership succession planning and training for future leaders
  - Appoint ACPF leaders rather than rely on elections
  - Set achievable goals and get runs on the board quickly (help with unity)
  - Do not include Australian prawn aquaculture in ACPF

- **Public relations**
  - Need paid professionals this is not something fishers can do
  - Need to target – fishers, consumers, the public
  - Promote the industry to itself – the good things to stop industry depression
  - Inform public on the real impact of the industry (small)
  - Promote through universities – catch the future fisheries managers

- **Marketing strategy/branding**
  - The brand is Australian Wild-Catch
  - Highlight the benefits of Australian Wild-Catch
  - Media campaign, POS, brochures, video, etc
  - Visual tools showing area of the seabed (relative to total) that trawl operate
  - Keep media informed and up to date
  - Target prominent opinion leaders and have open days

- **Fisheries management/sustainable fisheries**
  - Self-management is on the agenda in NSW
  - Other people’s impact on the marine environment needs communicating
Adelaide 24 February 2006

Introduction
- Representatives from Spencer Gulf and Gulf of St Vincent fisheries along with a representative from SARDI

Strengths
- Unity in South Australia
- Leadership
- Industry passion
- Outstanding product
- Sea-caught clean product
- Product associated with good health
- Superior fisheries management
- Biological knowledge
- Crews who are well paid and loyal
- Issues that are shared with prawn fisheries nationally (bycatch, marketing)

Weaknesses
- Diverse product without selling the benefits of the difference
- Too many fishers
- Competitive marketing
- Lack of product labelling
- Lack of understanding of the supply chain
- Lack of representation to government
- Lack of industry unity
- Geographically isolated industry
- A history of failed marketing with APPA
- Price takers not makers

Threats
- Imports
- Poor public perception/lack of education
- Misinformation about fishers and their activities
- Pollution eg bilge water containing viruses
- Tariffs and non-tariff barriers
- Australian trade policy based in free trade
- Seemingly unsympathetic export bureaucracy
Opportunities
- National unity
- Coordinated marketing
- Product branding and differentiation eg MSC
- Building domestic market share w.r.t imports
- Opportunities to educate the public in what we do
- Develop a skilled labour force
- National voice with contacts and seen as a political force
- Engage with the community
- Opportunities to join forces with other industries eg wine, tourism, etc
- Anti-dumping legislation

Comments on Draft Taking Stock
- Output controls – need for balance on this issue in AgEconPlus report

Key Strategies
- Capacity Building
  1. Strategic plan – gives a rationale for FRDC/DAFF funding
  2. Vision for the industry
  3. Identification of leaders
  4. Levy – the final step when ACPF has runs on the board
- Marketing based on branding and promotion
  1. Product differentiation: Wild-Catch Australian Prawns
  2. Target market: Win back domestic market share first
  3. Target niche markets and conduct research on niche markets
  4. Secure appropriate funding – FRDC will fund market research
  5. Get on-board a figurehead – industry leader with personality/passion
  6. Learn from the experiences of APPA
  7. Source professional marketing expertise and input
  8. Professional marketing expertise might highlight/recommend
    o Health benefits
    o MSC accreditation
    o ‘Story behind the meal’
    o Media and supportive personalities (chefs)
    o Product sustainability attributes
  9. Ensure national campaign adds value to local/shipre strategies
  10. Make the most of new national Country of Origin Marketing Laws
  11. Develop clear measures of performance for marketing investment
Fremantle 3 March 2006

Introduction
- Workshop represented fishers from WA and Commonwealth waters as well as larger integrated operations. Representation included regional fishing organisations, WA Fisheries, FRDC and food technology research.
- Key theme for the day was ‘Lack of unit leaves us sitting ducks’

Strengths
- Sustainable, in most fisheries
- Wild-caught product
- Quality product with traceability
- Australian product (brand Australia) is well regarded internationally
- Good fisheries management in WA – includes input from fishers
- Innovative people

Weaknesses
- Disunity, lack of vision (key)
- Missing a national voice and leadership (key)
- Not focused on fish business – ‘we catch fish’ not ‘we are business people’
- We are in the food industry but only think in terms of ‘selling prawns’
- We never look outside our industry for ideas/trends
- Poor understanding of regulatory trends
- Poor labeling, currently no Country of Origin Labelling
- Increasing compliance costs
- Succession planning is missing
- Geographic location – we are isolated and dispersed
- Age of fleet – we are twenty plus years old
- Complacency in the face of a worsening situation

Threats
- Rising fuel and operating costs (key)
- Competition from farmed shrimp on both domestic and world markets
- Tariffs (key)
- Labour shortage
- Public perception and the concerns of environmentalists (key)
- Disease including introduction of exotics like white spot syndrome virus
- Cadmium and other non-tariff barriers (key)
- Trawl identified as a threatening process
- Health scares associated with our product
- Finance sector loses faith – this trend is emerging
- Capital is in non tangibles eg licenses
Opportunities
- Product promotion - domestic and export (key)
- Differentiation based on wild-catch and environmental credibility (key)
- Public awareness of the qualities of the wild-catch prawn (key)
- Restructure to reduce cost of production (key)
- Move from inputs to outputs based management
- Demand is increasing
- Labelling
- Stock enhancement
- A product that offers a mad cow/bird flu alternative
- Healthy product
- Identify new technology overseas (fishing efficiency, fisheries management)
- Close to emerging markets – China and India
- Get boats built offshore
- As global demand increases, wild-catch share of total supply will decrease

Comments on Draft Taking Stock
- Succinct and accurate
- This is an informed audience and the analysis is consistent with our understanding
- Need to look at the history of our industry – why promo and coop failed in past

Past Failures and APPA
- Divisions developed between states, fishers and processors
- Concentrated on promotion for exports
- Individual agendas were allowed to rule at expense of industry
- Just Gulf of Carpentaria coverage
- Label on a box was all there was to show for APPA

Key strategies
1. Unity/Leadership/Power to Influence
2. Public perception of your industry
3. Marketing/Branding/Product Positioning

Unity/Leadership/Power to Influence
1. Appoint an independent CEO
2. Develop common agreed goals
3. Secure funding
4. Form strategic alliances
5. Set clear milestones and objectives with timeframe
Organisation to be
- Independent and representative
- Based on leaders not powerbrokers
- Include outsiders – professionals in media, marketing, economics
- Proactive
- Benchmark against effective peak industry bodies (PIBs) eg MLA
- Use current best practices for PIBs
- Be clear about who we are representing
- Have learned lessons from APPA
- Funded from industry, FRDC, DAFF and others
- Make use of the SRL funding model
- Consider Farmed Prawn funding, $0.10/kg would yield $1.5 million
- Need to sell benefits of Council
- Watch free riders – need a strategy for this

Public Perception
- Combine recipe cards with environmental message
- Don’t talk ‘trawl’ talk harvest
- Get environmental groups as advocates
- Eco-branding
### Stakeholders Contacted

**Table 52 Stakeholders Contacted**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position &amp; Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>David Crichton</td>
<td>A Raptis &amp; Sons, Harvesting / Processing Company Qld</td>
</tr>
<tr>
<td>Neal Harris</td>
<td>Global Seafood Processor, Queensland</td>
</tr>
<tr>
<td>Les Lowe</td>
<td>Fisher / Gulf Net Mending</td>
</tr>
<tr>
<td>Adam Knapp</td>
<td>SSA (EMS and QA)</td>
</tr>
<tr>
<td>Scott Walter</td>
<td>Chief Executive Officer Aust Prawn Farmers Association</td>
</tr>
<tr>
<td>Andrew Walls</td>
<td>Aquaculture Policy, QDPI&amp;F (contact for farming action plan)</td>
</tr>
<tr>
<td>Phil Gaffney</td>
<td>Wild-catch Prawns, QDPI&amp;F</td>
</tr>
<tr>
<td>Mark Lightowler</td>
<td>QDPI&amp;F Acting Fisheries Resource Manager (Trawl Fish)</td>
</tr>
<tr>
<td>Kerrod Beattie</td>
<td>Prawn Aquaculture, QDPI&amp;F</td>
</tr>
<tr>
<td>Stephen Hood</td>
<td>MG Kailis Group, Harvesting / Processing, WA</td>
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<tr>
<td>Darren Ward</td>
<td>Fisher Coffs Harbour</td>
</tr>
<tr>
<td>Darren Hale</td>
<td>NSW DPI Prawns McLean</td>
</tr>
<tr>
<td>Martin Smallridge</td>
<td>General Manager, Australian Council of Prawn Fisheries</td>
</tr>
<tr>
<td>Gig Bailey</td>
<td>Bight Seafood, Processing Company, SA</td>
</tr>
<tr>
<td>Barry Evans</td>
<td>Spencer Gulf &amp; West Coast Prawn Fishermen’s Assoc, SA</td>
</tr>
<tr>
<td>Samara Miller</td>
<td>Executive Officer SGWCPF Association</td>
</tr>
<tr>
<td>Peter Gooday</td>
<td>ABARE</td>
</tr>
<tr>
<td>Dana Hannah</td>
<td>ABARE Torres Strait</td>
</tr>
<tr>
<td>David Galeano</td>
<td>ABARE NPF</td>
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<tr>
<td>Patrick Hone</td>
<td>FRDC</td>
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<tr>
<td>John Wilson</td>
<td>FRDC</td>
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<tr>
<td>Crispin Ashby</td>
<td>FRDC Program Manager</td>
</tr>
<tr>
<td>Kevin McLoughlin</td>
<td>BRS</td>
</tr>
<tr>
<td>Wade Whitelaw</td>
<td>AFMA NPF</td>
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<tr>
<td>Dave Johnson</td>
<td>AFMA</td>
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<tr>
<td>Adrianne Burke</td>
<td>AFMA</td>
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<tr>
<td>Mick George</td>
<td>AFMA</td>
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<tr>
<td>Ross Ord</td>
<td>ASIC Training and EMS</td>
</tr>
<tr>
<td>Neil Garbutt</td>
<td>DAFF, Northern Prawn Fishery, Domestic Fisheries</td>
</tr>
<tr>
<td>Jonathon Barker</td>
<td>DAFF, Torres Strait Prawn Fishery</td>
</tr>
<tr>
<td>Britt Maxwell</td>
<td>DAFF International Fisheries</td>
</tr>
<tr>
<td>Simon Bennison</td>
<td>CEO National Aquaculture Council</td>
</tr>
<tr>
<td>Alexandra Bagara</td>
<td>Communications Officer National Aquaculture Council</td>
</tr>
<tr>
<td>Eileen Gosling</td>
<td>AQIS manages fish export eating standards</td>
</tr>
<tr>
<td>Peter Franklin</td>
<td>Commonwealth Fisheries Association</td>
</tr>
<tr>
<td>Warren Vant</td>
<td>Biosecurity Australia (Monica contact)</td>
</tr>
<tr>
<td>Ramesh Perera</td>
<td>Biosecurity Australia (Monica contact)</td>
</tr>
<tr>
<td>Slava Zeman (Ms)</td>
<td>AQIS Certification/Testing Australian Exports (WV contact)</td>
</tr>
<tr>
<td>Fay Stenhouse (Ms)</td>
<td>AQIS Certification/Testing Australian Exports (WV contact)</td>
</tr>
<tr>
<td>Simon Funge-Smith</td>
<td>FAO Regional Office for Asia and the Pacific</td>
</tr>
</tbody>
</table>
**Table 53 Workshop Attendees**

**Brisbane 13 February 2006**
- David Crichton – A Raptis & Sons/ACPF Director
- Clarry McGibbon
- David Stirling – research
- Duncan Leadbitter – Marine Stewardship Council
- Ros Garett – Fisher
- Joe McCloud
- John Johnston- Sunfish Queensland
- Kellie Williams
- Chris – Morton Bay Seafoods
- Kevin Reibel – Fisher
- Lisa McKenzie – fish exports
- Martin Perkins – Seafood Marketers Association and Consultant
- Michael Moloney - – Global Seafood Australia
- Monica Staines – DAFF
- Neal Harris – Global Seafood Australia/Director ACPF
- Paul Farmer – Fisher
- Paul Williams
- Shona Symes
- Stephani Kratzmann – FarmBis
- Terry McAndrew - Fisher
- Trudy Sainty – Fisher
- Vicki Burnett – Fisher and Association Representative
- Ted Loveday – Seafood Services Australia

**Cairns 14 February 2006**
- Marshall Belzel – Trawler Supply Agent
- Sandra Posar – Fisher
- Alison Newbold – Fisher
- Rusty Crettenden – Fisher
- Denis Ballam – Ocean Watch
- Colleen Kelly – MG Kailis
- Jim Fogerty – Industry Representative
- Brett Arlidge – MG Kailis

**Sydney 21 February 2006**
- Duncan Leadbitter – Marine Stewardship Council
- Gary Howard – Fisher Hawkesbury River
- Jeff and Margaret Rose – Fishers Hawkesbury River
Coffs Harbour 22 February 2006
David Bretts – Fisher
Tony Puglisi – Fisher
Tony Elford - Fisher
Gordon Farrell – Fisher
John McGuren – Fisher
Jim Rutherford
Graham Williams
Don Johnson – Fisher
Russell Kerr - Fisher
Wayne Kerr – Fisher
Barry Kason- Fisher
Mary Howard - Fisher
Dave Cranston – Sea Net
Russell Kerr – Fisher
John Wake – Wallis Lake Cooperative
Bill Hoskin – NSW DPI
Jason Gibson – NSW DPI
Shane Geary – Cooperative
Jeff Blackburn - Fisher
Darren Ward – Fisher/ACPF Director
John Wilson – FRDC

Adelaide 24 February 2006
Cameron Dixon, SARDI
Trevor Simms – Fisher
Louise Smith SeaMac
Barry Evans – Fisher
Morris Palmer – Fisher
Greg Palmer – Fisher
Colin Sims - Fisher
Jack Davies – Fisher
Robert “Gig” Bailey – Fisher
Samara Miller – Executive Officer
Drew Winter – DAFF
Paul Walsh – Fisher
Barry Ellis - Fisher
References

AFMA (2005) Northern Prawn Fishery 2005 Operational Information
ABARE (2005a) Australian Commodities Forecasts and Issues, March Quarter 2005
ABARE (2004b) Australian Aquaculture Statistics Information Sources for Status and Trends Reporting
ABARE (2004c) Management Options for the Australian Northern Prawn Fishery an Economic Assessment
ABARE (February 2004d) Australian Fish Surveys Report 2003
ABARE (2005a) Impact of Oil Prices on Trade in the APEC Region, October 2005
ABARE and FRDC (2005) Australian Fisheries Statistics 2004
BRS (2004) Fishery Status Reports 2004, Status of Fish Stocks Managed by the Australian Government
CIE (2005) Strengthening the Industry Partnership Initiative – A Framework prepared for the Australian Government Department of Agriculture, Fisheries and Forestry
EconSearch (2004a) Economic Indicators for the Spencer Gulf and West Coast Prawn Fishery 2002/03 prepared for PIRSA

EconSearch (2004b) Economic Indicators for the Gulf of St Vincent Prawn Fishery 2002/03 prepared for PIRSA


Market Equity, Principals and Bellamy Hayden (undated) Marketing, Promoting and Branding Australian Seafood – Positioning Australian Seafood as a Premium Product in the minds of our consumers for DAFF, ASIC, NAC


Smallridge and Palmer (2004) Spencer Gulf and West Coast Prawn Fishing Association Presentation on Spencer Gulf Management Arrangements


USITC (2004b) Preliminary Determinations in the Antidumping Duty Investigations on Certain Frozen and Canned Warm Water Shrimp from Brazil, Ecuador, India and Thailand


Web Sites

www.seafoodservices.net.au - Australian market and training facilitator

www.frdc.com.au - Australian R&D Corporation

http://faostat.fao.org/faostat/ - United Nations research agency

www.intrafish.no - fishing news website

www.ifpri.org - International Food Policy Research Institute

www.cid.harvard.edu - technical papers on WTO antidumping laws


www.msc.org/html/content_458.htm - Marine Stewardship Council - certification of a fishery’s environmental sustainability

www.seafoodpromotion.com/news/ - new organisation to promote Australian Seafood


www.western-rock-lobster.com - information on environmental certification