

# Developing quality standards for the Queensland Trawl industry as part of a pathway towards an integrated clean and green promotional strategy

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**Empowering Industry R&D: Developing quality standards  
for the Queensland Trawl industry as part of the pathway  
towards an integrated clean and green promotional strategy**

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## Non Technical Summary

<b>2008/205</b>	<b>Empowering Industry R&amp;D: Developing quality standards for the Queensland Trawl industry as part of the pathway towards an integrated clean and green promotional strategy</b>
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**OBJECTIVES**

1. To conduct a gap analysis of existing work practices against premium product standards with an emphasis on food safety, product quality, environmental sustainability and occupational health and safety.
2. To develop a business plan based on identified costs and benefits for implementation of the Clean Green integrated product management system.
3. To assess the viability of the business plan through consultation with the Queensland wild catch prawn sector.

#### **OUTCOMES ACHIEVED TO DATE**

The primary outputs of the business plan and implementation strategy will be used to achieve the expected outcome of increased prices paid for certified Clean Green Queensland wild prawns. This outcome will be achieved over an expected 8 year time frame allowing for brand development supported by certified Clean Green fishers, processors and distributors.

Leveraging market opportunities developed with the support of FRDC will be an important path to adoption of the desired price building strategy. Notably, super premium markets established in the USA with funding from FRDC and from the Seafood CRC will provide valuable pathways for certified Queensland wild prawns (once the current import ban is lifted as expected).

The Queensland East Coast otter trawl fishery targets a range of species, but the most important commercial species are several species of prawns particularly Eastern King prawns and Tiger prawns. Like many commercial fisheries in Australia, prawn fisheries in Queensland are facing a cost/price squeeze with rising operating costs (particularly fuel) and decreasing returns as large volumes of cheap farmed prawns compete with wild caught prawns on Australian and international markets. With comparatively low volumes of potentially high quality product, Queensland wild-caught prawns present an opportunity for super premium niche marketing. Queensland wild prawns can be differentiated (against cheap imports) with a guaranteed offer of wild caught, sustainable, high quality prawns. This strategy has been successfully adopted with Clean Green Southern Rocklobster™ where auditable attributes of sustainability, environmental management, product quality, food safety, workplace safety and animal welfare offer a demonstrably superior value proposition and consequent higher prices than non-Clean Green branded product. This project aimed to assess the viability of transferring the successful Clean Green product management system to the Queensland East coast fishery, particularly to prawns. A gap analysis revealed that product attributes of sustainability, environmental management, product quality, food safety, and workplace safety could all be supported by work place standards capturing existing best practice in the fishery. A business plan and implementation strategy, drawing on some ten years of research and development to establish the Clean Green system, demonstrated positive returns and substantially increased profits to Queensland fishermen. This plan is based on the key assumption that a differentiated product

commands a significant price premium of between \$3 and \$10 per kilogram. Market surveys for Australian seafood in key premium markets (e.g. USA) reveal that consumers will pay more for wild caught, superior quality product. The implementation program for Queensland wild prawns includes the development of appropriate workplace standards, accreditation of workplace standards (by JAS-ANZ) for independent audit (against an ISO-65 product certification system), development and application of training programs, pre-audit and audit of participating fishers, processors, and distributors. Potential savings on consolidating related audits (e.g. AQIS Approved Arrangements, safe food Queensland) and improved supply chain management will also contribute to increased profitability. An essential component of the product differentiation, brand development, and supply chain management strategy is an ongoing integrated marketing program. The marketing program aims to build brand awareness (Queensland wild-caught, sustainable, high quality prawns), build demand (in both domestic and international markets) and build price. This program would be financially supported by industry. Various management options were evaluated (for managing the Queensland Clean Green program). A favoured option was for industry to manage the process with a Queensland-based manager coordinating the program across the supply chain. The business plan and implementation strategy were both well received by Queensland east coast trawl participants as a price building opportunity. As an alternative, the status quo offers continued trending of the price to that of imported farmed product ultimately rendering the Queensland commercial fishery unviable.

**KEYWORDS: Queensland, wild caught, product management system, clean green, supply chain management, profitability, marketing.**

## ACKNOWLEDGMENTS

This project benefited from the FRDC Empowering Industry project with input into proposal development and participation by appropriate experts. This is an industry project developed by the industry (QSIA) for the industry (Queensland east coast prawn fishery). Perspectives on seafood supply chain management, and general operation of the Queensland prawn fishery were offered by fishermen, processors, distributors, marketers, and agents at various port meetings conducted as part of the project. We thank all for their input but Robin Hansen was particularly helpful in coordinating industry participation and for promoting a shared vision for industry profitability built on the Clean Green program. For ready access to Clean Green intellectual property, we thank Southern Rocklobster ltd. Thanks also to Heidi Wilson, and Winston Harris at the QSIA office, especially for the hospitality shown to our southern consultants (Paul McShane and Roger Edwards) and for transport, venue organisation, and general administration of the project.



## BACKGROUND

This project has been developed in response to industry requests to develop a system that demonstrates the Queensland Trawl Fishery is committed to delivering an exclusive and safe ('clean') food product of the highest quality to customers through to best practice ('green') in dealing with sustainability of the marine environment in its broadest context. The Queensland trawl fishery also values the delivery of a safe working environment for industry participants measurable in improved safety standards aboard its vessels and in its processing facilities.

The prawn trawl fisheries in Australia are struggling to compete in commodity seafood markets. The rising costs of fuel, the high Australian dollar and fierce competition from cheap imported products are eroding profitability and affecting the viability of the Queensland prawn industry (among other Australian seafood industries). More generally, this situation is measurable as declining gross value of product. The industry has little power to change global factors, however differentiating Queensland wild-caught prawns in the marketplace and addressing community concerns about the fishery would significantly increase market demand for this product and assist in positioning Queensland prawns in super premium niche markets.

There is an increasing trend by seafood purchasers to buy and consume seafood that can demonstrate that it is harvested sustainably (wild caught) and complies with quality control measures (a guaranteed and consistent offer of quality). This project draws on the successful template developed for rocklobster (Clean Green rocklobster™) with similar aspirations to develop and maintain premium niche markets based on a defensible value proposition.

The Clean Green project aims to address all these issues through improving supply chain management and developing proactive work practices from the point of capture (net) to the point of consumption (plate). In so branding the product as "Clean Green" underpinned by a fully integrated product management system, there will be a potent point of differentiation from cheap imported prawns increasingly sold on Australian and international markets.

## NEED

Australia cannot successfully compete on national or international commodity seafood markets. Imported prawns (among other seafood products) are favoured by Australian consumers because they are cheap compared with local product (which costs more to catch and process than the low-cost farmed product). Yet Australia produces demonstrably superior seafood from sustainably managed wild fisheries compliant with principles of ecological sustainable development. There is an opportunity and indeed a need to develop and maintain premium niche markets reflecting a defensible value proposition of quality, safety, and sustainability. There is a need to improve supply chain management to improve product quality and to capture greater efficiency thereby leading to increased profitability. There is a clear need to improve profitability to maintain the viability of the Queensland (and Australian) prawn industry: a need which can be addressed by improving margins and by clearly differentiating Queensland wild-caught prawns against similar commodity products (imported farmed prawns).

In following the template established by the Clean Green rocklobster program, a clear route to adoption is presented. In the case of Clean Green rocklobster™, research and development activities leading to successful premium market penetration took some ten years. This project builds on this successful integrated product management system. It presents strategies for the development of auditable workplace standards and reinforcement of existing best practice throughout the supply chain to position Queensland wild-caught prawns as demonstrably superior. In this way a proactive approach to building consumer awareness of the quality of Queensland prawns will yield the desired economic and social outcomes.

This project relates to identified FRDC strategies of incorporating a whole of supply chain approach, including a consumer perspective, to improve value, quality and perceptions. Importantly, the project also targets industry profitably by improving market access and competing more effectively in global seafood markets.

## OBJECTIVES

1. To conduct a gap analysis of existing work practices against premium product standards with an emphasis on food safety, product quality, environmental sustainability and occupational health and safety.
2. To develop a business plan based on identified costs and benefits for implementation of the Clean Green integrated product management system.
3. To assess the viability of the business plan through consultation with the Queensland wild catch prawn sector.

## METHODS

The general approach was to assess the viability of adapting a successful integrated product management system developed for southern rocklobster (Clean Green rocklobster™) to the Queensland wild-catch prawn industry. This approach drew on some ten years of research and development activity leading to a successful system which has improved the competitiveness of the South Australian, Victorian and Tasmanian rocklobster industries. Thus the principal developers of the Clean Green system (Paul McShane and Roger Edwards) were engaged to consult with the Queensland prawn industry to determine the most cost-effective way of realising the benefits of the Clean Green template. The success of the Clean Green rocklobster program was in a large part due to the ownership developed by industry participants, by recognising and reinforcing existing best practice, and by adopting a bottom-up approach to product management. This strategy was followed in the present project with close consultation with the industry (catching and processing sectors) supported by the Queensland Seafood Industry Association (QSIA).

### GAP ANALYSIS

Conformance to applicable state and federal legislation forms the basis for identification and adoption of desired work practices aligned to defensible standards of sustainability, product quality, food safety, environmental management, and occupational health and safety. Work practices were examined in the catching (vessel), processing (factory), distribution, and retail sectors to determine gaps between existing and desired work practices (to conform to super premium market standards).

The following product attributes were addressed:

- sustainability. The strategic assessment completed under the requirements of Section 10 (Part 13/13A) of the *Environmental Protection and Biodiversity Conservation (EPBC) Act 1999* forms the basis for assessing work practices applicable to sustainability.

Sustainability applies to the target prawn stocks, to by-product, to by-catch, and to animals which interact with the fishery (e.g. dolphins and seabirds).

- product quality. This is particularly important in positioning and maintaining product in super premium niche markets. Work practices to ensure consistent product quality across the supply chain were identified in consultation with the industry. Furthermore, the traceability system developed and adopted by the Clean Green rocklobster program was assessed for applicability to Queensland wild-caught prawns. Responsibility for maintenance of product quality among supply chain participants has been a key factor in the success of the Clean Green rocklobster program and instrumental in attracting higher profit margins.
- food safety. Although compliance with internationally recognised food safety standards is a pre-requisite, improvements in safety can be made by developing and applying appropriate work place standards across the supply chain. For example, work place standards applicable to personal hygiene and product handling demonstrate conformance to the highest standards (e.g. European Union Council directives).
- environmental management. Strategies to manage risks to the environment (e.g. oil spills, plastics, wastes) have been successfully developed and applied for Clean Green rocklobster (e.g. port-based oil recycling depots, minimal use of plastics, recyclable containers and packaging). These strategies were assessed for applicability in the prawn industry including the potential inclusion of reduced carbon emissions as part of a proactive response to environmental management and to accordingly present an improved community image for the Queensland commercial prawn fishery.
- occupational health and safety. Improvements to occupational health and safety are best assessed in consultation with industry participants (aboard vessels, in factories). Particular attention was paid to identification and management of risks including: heavy machinery, knives, ropes, sun burn, lifting, drug and alcohol consumption. The comprehensive template and work practices developed as part of the Clean Green rocklobster program was assessed for adaptation to Queensland prawns.

## DEVELOP A BUSINESS PLAN

Based on the gap analysis the costs of implementation of a fully integrated product management system embracing the premium product attributes described above were estimated. Particular attention was given to:

- costs of developing work place standards aligned to an accreditation system (in consultation with JAS-ANZ);
- costs of developing manuals and training materials for participants in the Queensland prawn industry;
- costs of training participants in the work place standards including the catching and processing sectors;
- costs of audit and maintenance of the Clean Green program;
- costs of adapting full traceability of product from the point of capture to the point of consumption;
- an evaluation of management options for adapting the Clean Green system including recognition of any residual intellectual property issues (with southern rocklobster limited);
- barriers to implementation including supply chain issues and international trade issues (including the current import ban imposed by the USA on Queensland prawns);
- assessment of branding and product positioning options;
- assessing market benefits including evaluation of the fisher direct model as applied to prawns;
- forecast revenues based on likely returns from super premium fine dining market segments;
- development of a targeted market program based on a guaranteed offer reflecting the Clean Green attributes;
- presentation of a model for implementation.

## ASSESS THE VIABILITY OF THE BUSINESS PLAN

A synopsis of the business plan and implementation strategy was presented to Industry in port tours (Brisbane, Gold Coast, Hervey Bay, Mooloolaba and Cairns). Based on feedback from participants, the business plan and implementation strategy was refined. An implementation strategy, developed with the support of the Queensland prawn industry, is presented below following endorsement of the business plan by Industry representatives.

## RESULTS/DISCUSSION

### GAP ANALYSIS

#### INTRODUCTION

The Clean Green rocklobster program is a comprehensive product management system underpinned by auditable workplace standards providing defensible evidence of sustainability, product quality, food safety, occupational health and safety, environmental management, and animal welfare. Accredited by JAS-ANZ under an ISO-65 quality assurance program, the Clean Green program is the first integrated product management system applicable to a commercial fishery throughout its entire supply chain. Adaptation of the Clean Green program to other Australian fisheries is attractive as many fisheries are struggling to differentiate their products from cheaper inferior imported seafood. This is particularly the case for Australian wild-caught prawns. Many of the workplace standards developed for Clean Green rocklobster may be applicable to other seafood (for example standards applicable to food safety, environmental management, and occupational health and safety).

Here, a gap analysis is undertaken, comparing existing workplace standards, and current legislation and regulations, applicable to Clean Green rocklobster with potential standards applicable to the East Coast Otter trawl fishery (Queensland). Identification of gaps will assist in the development of a business plan for adaptation of the Clean Green program to the East Coast fishery.

## THE FISHERY

The Queensland East Coast trawl fishery comprises the East Coast Otter trawl fishery, the Moreton Bay trawl fishery, and the River and Inshore Beam trawl fishery. The fishery is managed under the provisions of the Fisheries (East Coast Trawl) Management Plan 1999 (Qld). The objectives of the plan are to:

- manage the fishery in a way that gives optimal, but sustainable community benefit;
- ensure fisheries resources taken in the fishery are taken in an ecological sustainable manner;
- ensure the sustainability of the fisheries ecological systems;
- provide for an economically viable, but ecological sustainable, trawl fishery;
- provide for fair access to fisheries resources taken in the fishery, on a sustainable basis;
- among commercial fishers, recreational fishers, Aboriginal and Torres Strait Islander fishers, and other users of the fisheries resources.

Within the East Coast trawl fishery there are many target species including several species of prawns, scallops, bugs, squid, and various fin fish species. For the purposes of this project, prawns were examined in the context of potential adaptation of the Clean Green product management system (the Clean Green program). Prawn prices are currently low because cheaper imported farmed prawns undercut local wild-caught product. Prawns offer potential

niche market development opportunities, particularly the relatively large prawns landed in the East Coast fishery (tigers and western kings). Furthermore, prawns are the most valuable component of the east coast fishery. Niche marketing of Queensland prawns has already been undertaken with Endeavour prawns (*Metapenaeus endeavouri*) (see [www.endeavourprawns.com.au](http://www.endeavourprawns.com.au)) but this campaign coincided with an accumulation of stored product and has since been discontinued.

The species composition of the East Coast prawn catch includes: Eastern King prawns (*Peneaus plebejus*) (approximately 35%) and Tiger prawns (*Peneaus esculentus*) (approximately 25%). Most of the prawn catch (of the above species) comes from offshore waters along the Queensland coast (from Cairns south to the Gold coast).

The gap analysis presented here examines and compares work practices (with current Clean Green standards) currently undertaken by prawn fishers targeting eastern king prawns and tiger prawns.

#### APPLICABLE LEGISLATION

The legislation governing commercial fisheries in Queensland includes:

*Queensland Fisheries Act 1994*

*Queensland Fisheries Regulation 1995*

*Queensland Marine Parks Act 2004*

*Environment Protection and Biodiversity Conservation Act 1999 (EPBC)*

*Workplace Health and Safety Act 1995*

*Food Production (Safety) Act 2000*

*Environment Protection Act 1994*

*Transport Operations (Marine Pollution) Act 1995 and Transport Operations (Marine Safety) Act 1994*

*Coastal Protection and Management Act 1995*

#### CURRENT ISSUES

##### *WORKPLACE SAFETY*

Under the *Workplace Health and Safety Act 1995* there is an obligation for fishers and processors to ensure the workplace health and safety of:

- all workers carrying out work for the business (e.g. deckhands);
- volunteers who perform work activities for the business or undertaking (e.g. research staff on fishing vessels);
- all other people including customers, visitors to the workplace, passers by and neighbours (e.g. observers, customers at the wharf);
- themselves.

Meeting workplace health and safety obligations involves:

- providing and maintaining a safe and healthy work environment;
- providing and maintaining a safe plant;
- ensuring the safe use, handling, storage and transport of substances;
- ensuring safe systems of work;
- providing information, instruction, training and supervision to ensure health and safety.

Obligations include assessing and managing risk including the taking of reasonable precautions and exercising due diligence. At present, there are no formal requirements for workplace safety audits for Queensland fishing vessels but such requirements are likely to be introduced as concerns regarding at-sea safety are realised.

#### *FOOD SAFETY*

In order to export, land-based establishments and vessels which undertake processing, as defined in the *Export Control (Fish and Fish Products) Orders 2005* are required to be registered with AQIS as per the *Export Control (Prescribed Goods - General) Order 2005*. It is a condition of registration that the establishment has an AQIS approved quality assurance system in place, called an Approved Arrangement (AA), which meets the requirements of the *Export Control (Fish and Fish Products) Orders 2005*. Not all vessels in the Queensland East Coast trawl fleet are registered under AA.

The AA replaces the Food Processing Accreditation (FPA) and Approved Quality Assurance (AQA) systems of inspection provided for under old legislation.

Safe Food Production Queensland (SFPQ) is proposing to implement a food safety scheme for seafood. The major element of the scheme will be the implementation of the National Primary Production and Processing Standard for Seafood (Standard 4.2.1) in the Australia New Zealand Food Standards Code at a State level.

The Seafood Scheme will adopt a preventative approach to food safety management. It will also provide the necessary regulatory framework to respond to potential food safety incidents (e.g.



natural disasters, oil spills) including proactive measures to contain implicated product while issues associated with an incident are investigated. It will also assure consumers and markets of the safety, suitability and quality of seafood in Queensland.

The scheme will:

- enable the identification of businesses producing seafood so that seafood product can be traced;
- facilitate coordinated and consistent responses to food safety incidents with measures that define, monitor and control the extent of the associated risks;
- take action to maintain and, if necessary, restore confidence in the food supply chain and to enhance market access matters.

The proposed Seafood Scheme will seek to adopt a preventative approach to food safety management, as well as providing the necessary means to respond to, and investigate potential food safety matters. These elements are key components of the Clean Green program which would ensure that work place standards are at least aligned to the requirements of the Seafood Scheme.

In this respect, the Seafood Scheme would need to:

- enable authorities to be aware of businesses producing food so that these businesses could be contacted or consulted during an incident and if necessary, provided with assistance;
- allow authorities access to places to investigate potentially unsafe practices, including the taking of samples;
- provide sufficient powers to authorities to protect public health and safety, including containment and management of product while issues are being investigated and resolved;
- facilitate coordinated and consistent responses to an incident with measures that define, monitor and control the extent of the risks associated with the incident;
- provide for action to maintain and, if necessary, restore confidence in the food supply to ensure market access.

#### *ENVIRONMENTAL MANAGEMENT*

The *Environmental Protection Act 1994* aims to protect Queensland's environment while allowing ecological sustainable development of natural resources. Transport legislation, including the *Transport Operations (Marine Pollution) Act 1995* and the *Transport Operations (Marine Safety) Act 1994* aim to protect Queensland's marine and coastal environment from ship-sourced pollutants (e.g. oil) into coastal waters.

The *Coastal Protection and Management Act 1995* (the Coastal Act) recognises the diverse range of coastal resources and values in the coastal zone and provides a comprehensive framework for their coordinated management. Fundamental tools to implement the Coastal Act are the State Coastal Management Plan and regional coastal management plans.

These acts relate to sustainable management of coastal waters in Queensland by regulating users against pollution (e.g. plastics, oil, harmful chemicals).

Waste oil management stations are not required in Queensland ports. Provision for recycling is not mandatory. The rocklobster industry of South Australia successfully sought funding to establish waste oil recycling depots in each of the major fishing ports in that state as part of the Clean Green program. Proactive measures such as this present a powerful public image providing a visible response to combating marine pollution. They also present a cost-effective and convenient means of waste management including the recycling of waste oil and plastics.

## THE CLEAN GREEN PROGRAM

The Clean Green program is an integrated product management accredited by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ) for third party audit and certification (under an ISO 65 product certification quality assurance program). It provides for work place standards applicable to the catching, handling, processing, distributing, and retailing of rocklobsters (*Jasus edwardsii*). Product attributes certified under the Clean Green program include:

- food safety;
- sustainability (of the stock, bycatch, byproduct, and the environment);
- environmental management;
- product quality;
- occupational health and safety (OH&S);
- animal welfare.

Auditable workplace standards relate to these product attributes. The workplace standards conform to, or exceed, applicable laws and regulations.

The Clean Green program provides for a globally registered trademark (Clean Green rocklobster™) and only participants who have completed the mandatory training program and have been certified against the standards are entitled to market product with the Clean Green logo.

The program is supported by relevant documentation, training, audit, and independent certification (currently SAI Global Ltd).

The availability of a comprehensive product management system and a guarantee of offer (reflecting the product attributes above) presents obvious market opportunities and Clean Green certified product commands a price premium in super premium niche markets in the USA and in Australia. This could be considered as part of the price building strategy aimed at improving the market price of Queensland prawns as discussed in the business plan and implementation strategy (see below).

Workplace standards apply to the supply chain including catching, handling, processing, distribution and retailing. The following are elements of the Clean Green program against which a gap analysis for Queensland prawns was undertaken:

- stock sustainability;
- sustainability of bycatch and byproduct;
- interaction with protected, endangered or threatened species;
- sustainability of the marine environment;
- general hygiene and good manufacturing practice (GMP);
- on-board GMP induction and safety plan;
- waste management plan;
- cleaning and sanitation plan;
- maintenance plan;
- OH&S code of practice;
- Vessel's safety procedure;
- Vessel's hazard analysis;
- Industry analysis of workplace safety hazards;
- Industry hazard management plan;
- Crew safety induction;
- Visitor safety induction;
- Daily workplace safety responsibilities;
- training register;
- auditors check list.

## GAP ANALYSIS

Conformance to applicable state and federal legislation will form the basis for identification and adoption of desired work practices aligned to defensible standards of sustainability, product quality, food safety, environmental management, and occupational health and safety. Work practices were examined in the catching (vessel), processing (factory), distribution, and retail sectors to determine gaps between existing and desired work practices (to conform to super premium market standards).

## *SUSTAINABILITY*

The strategic assessment completed under the requirements of Section 10 (Part 13/13A) of the *EPBC Act* form the basis for assessing work practices applicable to sustainability. Sustainability will apply to the target prawn stocks, to by-product (e.g. crabs, cuttlefish) and by catch, and to protected, endangered and threatened animals which interact with the fishery (e.g. sea snakes, turtles, dolphins and seabirds). The assessment also evaluates sustainability of the marine environment (e.g. potential trawl damage to the seafloor communities).

The East Coast Otter Trawl fishery has recently been assessed under the strategic assessment of fisheries provision of the *EPBC Act* (Part 13) (November 2007). The management arrangements applicable to the fishery (and in particular to the prawn species considered here) are deemed to comply with the sustainability provisions as they apply to the target stock, the by-catch, by-product, and listed species protection. The government department responsible for administering the *EPBC Act* (the Commonwealth Department of Environment and Water (DEW)) considers that the applicable management regime ensures that fishing is conducted in a manner that does not lead to over-fishing and for fishing operations to be managed in way that minimizes their impact on the structure, productivity, function and biological diversity of the ecosystem. Furthermore, DEW is satisfied that the fishery does not, or is not likely to, adversely affect populations of protected, listed, or endangered species. The fishery is subject to the provisions of a Wildlife Trade Operation (WTO) which requires annual reporting against the sustainability provisions of the Act including a status report on the target stock; by-catch; by-product; protected, listed or endangered species; and the impact on the environment more generally.

Further to the DEW assessment there is a management plan applicable to the fishery: the Queensland Fisheries (East Coast Trawl) Management Plan). Both documents can provide evidence to auditors of sustainable fisheries management including:

- stock sustainability;

- sustainability of by catch and by product;
- interaction with protected, endangered or threatened species; and
- sustainability of the marine environment.

### *FOOD SAFETY*

Although compliance with internationally-recognised food safety standards is a pre-requisite, improvements in safety can be made by developing and applying appropriate work place standards across the supply chain. For example, work place standards applicable to personal hygiene and product handling demonstrate conformance to the highest standards (e.g. European Union Council directives).

A major gap between the food safety standards developed for the Clean Green program and as needed for East Coast trawl is the availability of cooked product. Clean Green rocklobster applies to live product whereas East Coast trawl sometimes involves cooking (both on vessel and on shore) and specific food safety standards will need to be developed for application in East Coast Trawl quality assurance program. Even so, some vessels in the fishery are accredited under AQIS AA which is a comprehensive management system with an emphasis on food safety.

The AQIS AA system encompasses management commitment, good manufacturing practices, process control and through-chain traceability. Compliance with AA should therefore address food safety gaps identified above for cooked product.

The AA will:

- Enhance the food safety system to meet importing country requirements and better align with international standards;
- Be flexible and easy to upgrade/change to meet changing overseas requirements;
- Assist in meeting new domestic requirements;
- Provide customised training material for new and existing staff.

In particular the AA system aligns to the food standards component of the Clean Green program (vessel, processor, distributor) in providing documented and auditable evidence of:

- General hygiene and good manufacturing practice (GMP);
- on-board GMP induction and safety plan;

- waste management plan;
- cleaning and sanitation plan;
- maintenance plan (vessel and processing facilities);
- HACCP;
- Standard operating procedures for product handling (including cooking of product);
- product traceability;
- Crew training procedures.

Incorporation of the AA standards and procedures into the Clean Green program will address issues applicable to cooked product and to food safety issues more generally.

### *PRODUCT QUALITY*

An issue affecting consumer perception of Queensland wild-caught prawns is inconsistent product quality. These issues include; excessive storage as frozen product, black spot, broken or damaged prawns, and poor grading. These affect appearance, taste and texture and negatively affect quality. Consistent quality (reflecting the applicable standards) is an essential pre-requisite for premium markets. The AA standard operating procedures also apply to product quality. Thus, auditable standard operating procedures (SOPs) apply to landing, sorting, washing, cooking, dipping (to control black spot), grading, cooling, freezing, and packing. These SOPs can be applied to ensure optimum product quality aligned to market needs (e.g. colour, texture, appearance, flavour, size).

The AA standards are comprehensive, detailed, identify corrective action, and documented in a way that is amenable to third party audit. These standards, as they apply to prawns, could form the basis of a Clean Green program.

Prawns differ from Clean Green rocklobsters in that they are not individually tagged (and it is not practical or cost effective to do so). Current export procedures involve packaging standards and provision for traceability from source (vessel). These elements are part of the Clean Green program and adaptation of current AA SOPs to the fishery more generally will reinforce traceability provisions. Batches of prawns, traceable to the producer (vessel) can be indentified on packs (e.g. cartons). Traceability is an important component of the Clean Green program reinforcing a guaranteed offer to the consumer.

### *ENVIRONMENTAL MANAGEMENT*

Strategies to manage risks to the environment (e.g. oil spills, plastics, wastes) have been successfully developed and applied for Clean Green rocklobster (e.g. port-based oil recycling depots, minimal use of plastics, recyclable containers and packaging). These strategies will be assessed for applicability in the prawn industry including the potential inclusion of reduced carbon emissions as part of a proactive response to environmental management and to accordingly present an improved community image.

Consultation with representatives of the Queensland prawn fishery revealed no uniform procedures for waste management (such as the presence of waste oil recycling facilities in the main ports). Such procedures will need to be developed and applied to the fishery to present a comprehensive response to applicable legislation and to reinforce “Clean Green” work practices (as described above).

#### *OCCUPATIONAL HEALTH AND SAFETY*

Improvements to occupational health and safety are best assessed in consultation with industry participants (aboard vessels, in factories). Particular attention will be paid to identification and management of risk including: heavy machinery, knives, ropes, sun burn, lifting, drug and alcohol consumption. The comprehensive template and work practices developed as part of the Clean Green rocklobster program should be readily adaptable to Queensland prawns.

Specific issues not covered in the Clean Green program include:

- working with booms and trawl gear (including boards);
- hazardous animals (stingrays, sea-snakes, spiky fish);
- processing at sea (e.g. cooking).

Standards to address these potential hazards will need to be developed (in collaboration with the Industry) as part of a risk assessment and management process. Even so, most elements of occupational health and safety (OH&S) will be covered under existing Clean Green standards including:

- OH&S code of practice;
- Vessel safety procedures;
- Vessel hazard analysis;
- Industry analysis of workplace safety hazards (processor, distributor);
- Industry hazard management plan;
- Visitor safety induction;
- Daily workplace safety responsibilities.

## TRAINING

The Clean Green training program has been an important driver in developing industry awareness and reinforcing Industry best practice among participants and the general community. There is already awareness of environmental issues among participants in the Queensland East Coast fishery with the Environmental Management System (EMS) initiative. Clean Green embraces an EMS in embracing a continuous improvement component. It also reinforces the EMS with auditable product quality standards. Importantly, training ensures that Industry participants (fishers, processors) conform to the standards. The Clean Green training program includes four stages:

1. Information session of the Clean Green standard and audit protocol, outlining the requirements for conforming to the Clean Green Standard;
2. Delivery of training (practical demonstration and class room learning) to train participants to the Clean Green standard, focusing on product quality, environmental and workplace safety issues. The training covers the following areas:
  - a. outline the management system to the catching sector (licence holders and deckhands) detailing the holistic practices (e.g. ESD, sustainable fishing practices (EMS)), performance indicators, public perception and interaction;
  - b. provide training on boats and in ports to develop understanding and competency in application of the work practices required to meet the standards (e.g. sustaining the fishery, by-catch handling, waste management, product handling);
  - c. provide training in first aid and workplace health and safety targeted particularly to on-vessel application;
  - d. provide training to fishers and processors including storage and product handling protocols, HACCP procedures, food safety issues, product quality issues.
3. Individually recognized current competency and bring participants to “audit ready”. This involves conducting a self assessment of the vessel and fishing practices and compiling certificates, licences and the vessel log book.
4. Undertake 3<sup>rd</sup> party auditing by the industry certification body (e.g. SAI Global).

Some competencies applicable to the Clean Green program already exist in Queensland (e.g. awareness of EMS, AQIS AA, first aid). However, a detailed program tailored to the operation of the East Coast trawl industry should be developed. Similarly, training materials applicable to the work place standards identified for the Clean Green program will need to be developed for



the Queensland prawn fishery. A register of all participants who have successfully completed training and demonstrated competency in the applicable work practices should be maintained.

#### GAP ANALYSIS SUMMARY

<b>Standard</b>	<b>Available information</b>	<b>Complies</b>
stock sustainability	✓	✓
sustainability of bycatch and byproduct	✓	✓
interaction with protected, endangered or threatened species	✓	✓
sustainability of the marine environment	✓	✓
general hygiene and good manufacturing practice (GMP)	✓	AA
on-board GMP induction and safety plan	✓	AA
waste management plan	✓	AA
cleaning and sanitation plan	✓	AA
maintenance plan	✓	✗
HACCP	✓	AA
Standard operating procedures for handling product (including cooking)	✓	AA

Product quality	✓	AA
Product traceability	✓	AA
Environmental management	✓	✗
OH&S code of practice	✓	✗
Vessel's safety procedure	✓	✗
Vessel's hazard analysis	✓	✗
Industry analysis of workplace safety hazards	✓	✗
Industry hazard management plan	✓	✗
Crew safety induction	✓	✗
Visitor safety induction	✓	✗
Daily workplace safety responsibilities	✓	✗
Training program	✓	✗
Training materials	✗	✗
training register	✗	✗

## BUSINESS PLAN AND IMPLEMENTATION STRATEGY

### *EXECUTIVE SUMMARY*

The Clean Green program is a Southern Rocklobster (SRL) product certification program based on auditable standards of environmental and ecological sustainability, food safety, product quality, work place safety, and animal welfare.

The SRL Clean Green program has been used to establish a market development program aimed at generating premiums in new markets through differentiation through branding based on the Clean Green product certification program.

This plan assesses the prospects and requirements for successfully adapting the Southern Rocklobster Clean Green Program to the Queensland Wild Prawn industry.

The major underpinning assumption which has not been tested, is that branded Wild Queensland prawns, marketed and supplied consistently on the basis certified quality, environmental/sustainability, "Wild" and/or "being Queensland" brand values, can attract and sustain price premiums in the order of \$7.5/kg - \$10/kg.

The Queensland Wild Prawn Clean Green Program would have 7 elements as follows:

1. Developing on auditable industry operating standard;
2. Designing a product certification program based on the standard;

3. Implementation of an Industry Program to train industry to meet the standard and achieve certification;
4. Establishing supply chain structures to handle Certified Clean Green Queensland Wild Prawns ;
5. Market Development program to build demand;
6. Overall Program management;
7. Funding arrangements

Information is provided about each of these elements while noting full detail about elements 4 and 5 are outside the scope of this report.

The benefits expected from adapting and adopting a Clean Green program can be classified as follows:

1. Price;
2. Product image enhanced;
3. Cost savings;
4. Infrastructure established;
5. Industry capacity developed;
6. Responsive industry culture developed;
7. Industry image enhanced.

The annual costs estimated for the first 3 years of start up are:

<b>Summary Annual Total Costs</b>	
Funding package	\$38,500
Year 1 - Set Up & Implementation	\$1,080,750
Year 2 - Implementation	\$1,431,900
Year 3 - Ongoing	\$1,968,550

The total ongoing costs for year 3 and beyond are indicated as follows:

<b>Ongoing Costs</b>	
Certification Program Management - boats	\$98,550
Market Development (inc chain logistics)	\$1,870,000
<b>Total Costs Ongoing</b>	<b>\$1,968,550</b>

It should be noted that these costs are indicative only and the final cost will be determined when the detailed market program is developed in the set up phase.

Drawing on the SRL intellectual property offers considerable economies of scale in terms of setup saving and timing. The set up costs are estimated at \$120,000 for the certification program compared to the SRL investment of approximately \$580,000.

In addition the SRL program required 7 years from concept to implementation, while it is expected that by drawing on the SRL intellectual property and team members a Queensland program can be ready for launch within 12 months.

Other economies in ongoing management costs may be achievable depending on the management structure adopted

An economic model to test a wide range of scenarios has been developed which includes the following:

- Certification set up costs;
- Certification implementation costs;
- Certification ongoing management costs;
- Market development set up costs;
- Market development ongoing management costs;
- Volume scenarios;
- Price premium scenarios.

A summary of the economic analysis for a range of scenarios is presented below:

<b>Net Value Scenarios</b>			
	<b>Tonnes</b>	<b>Premium</b>	<b>Value</b>
<b>Best Case</b>	3000	\$10.00	\$84m
<b>Best Case</b>	3000	\$7.50	\$60m
<b>Best Case</b>	3000	\$5.00	\$35m
<b>Best Bet</b>	2000	\$10.00	\$55m
<b>Best Bet</b>	2000	\$7.50	\$38m
<b>Best Bet</b>	2000	\$5.00	\$20m
<b>Worst Case</b>	1000	\$10.00	\$22m
<b>Worst Case</b>	1000	\$7.50	\$13m
<b>Worst Case</b>	1000	\$5.00	\$4m
<b>Break Even</b>	3000	\$0.90	\$0 approx
<b>Break Even</b>	2000	\$1.25	\$0 approx
<b>Break Even</b>	1000	\$2.50	\$0 approx

The scenarios test impact of tonnes presented to the market at a premium price and the “Value” result indicated the net return over a 10 year period in today’s dollars of the scenario after the costs and income are taken in to account for the program as budgeted above.

There several preconditions for success in developing and implementing a Clean Green Queensland Wild Prawn Program. These are:

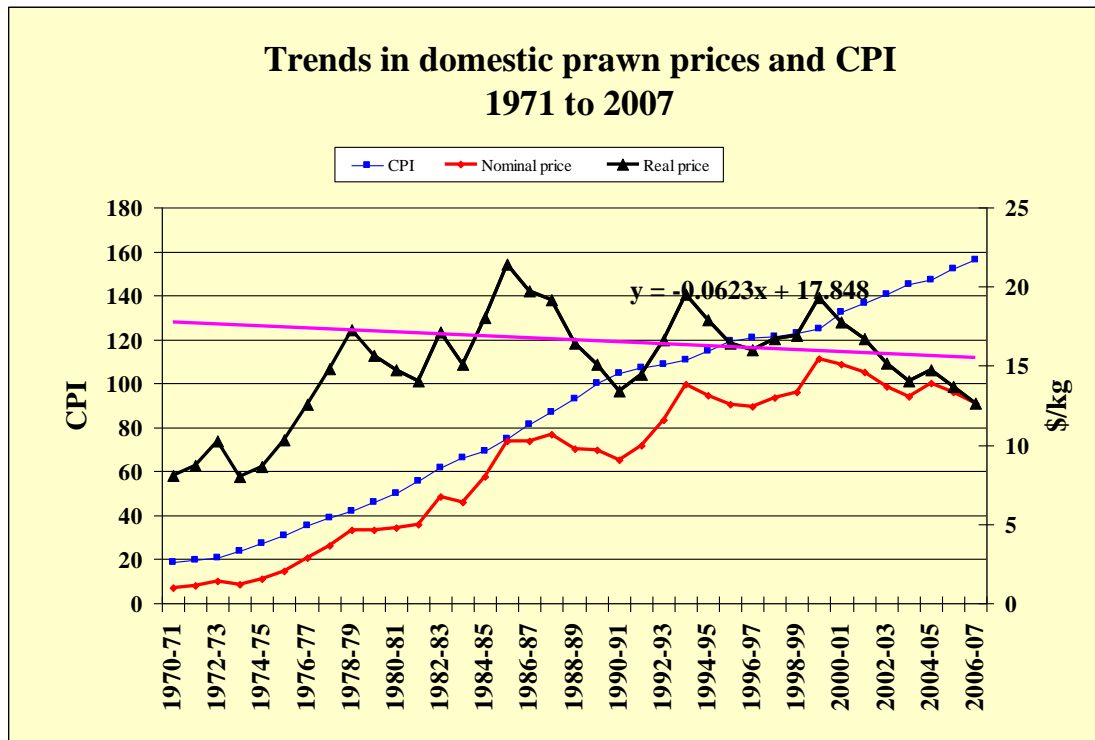
Pre condition	Tick here
<b>Willing licence holders</b> – industry majority support to take action	
<b>Industry acceptance of key assumptions underpinning the strategy.</b>	
<b>Industry agreement to implement key program elements - certification and market programs</b>	
<b>Industry drivers</b> - participants who will support, drive and guide delivery by contractors	
<b>Industry commitment to a marketing levy of 25c/kg.</b>	
<b>State Government recognition of the standard across relevant departments</b> - avoid duplication and save costs. Provides support and encouragement for success	
<b>AQIS recognition of the standard</b> – avoids duplication and save costs.	
<b>FRDC funding</b> - 2 years covering implementation and program management.	
<b>QDPI funding</b> - 2 years covering market development program set up and implementation.	
<b>. Access to SRL Intellectual property</b>	
<b>. Access to SRL Resources</b>	
<b>. Other?</b>	

Substantial external Government funding will be essential as detailed below.

## INTRODUCTION

The Queensland prawn trawl industry is facing a classic cost price squeeze with costs, in particular fuel, increasing sharply and prices decreasing. Figure 1 shows domestic prawn price trends from 1970.

Figure 1 Domestic Prawn Price Trends 1970-2007



Source: QSIA

The Australian prawn industry strategic analysis released in 2006 "Taking Stock and Setting Directions" reported that the Australian Wild Catch Prawn industry is characterized as follows:

1. Many fisheries are of marginal profitability and are under increasing pressure in recent times;
2. Wild-catch prawn competes with other special occasion seafood categories, farmed Australian prawns and imported farmed prawns;
3. Imported prawns are increasing in volume and landed at low cost;
4. On a world scale Australia is a boutique industry that supplies high priced quality products;

5. Industry profit will need to be generated by lowering cost or better marketing this limited supply;
6. Australian wild-catch production costs of production (\$US8/kg to \$US12/kg);
7. Integrated value chain - margins available to small/part time operators who disengage from the value chain are handed over to other parts of the industry;
8. Promotion is needed to educate consumers and reduce the risk of prawns becoming a single low cost commodity;
9. Currently there is insufficient differentiation between wild-catch and low cost farmed imported prawns;
10. Whether promotion is capable of lifting price in these markets or only protecting existing premiums is unknown.<sup>1</sup>

The report establishes the follow relevant strategic priorities:

1. A program to address public perceptions; and
2. Marketing, branding and wild catch product positioning.<sup>2</sup>

#### *THE SOUTHERN ROCKLOBSTER CLEAN GREEN PROGRAM*

The Clean Green program is an integrated product management system incorporating “pot to plate” sustainability, environmental management, work place safety, food safety, quality and animal welfare standards for the Australian Southern Rocklobster Industry. The Program’s product certification standards allow evaluation to be carried out by Conformity Assessment Bodies (CAB), which are accredited against the ISO/IEC Guide 65:1996 and JAS-ANZ Procedure 15.

The Southern Rocklobster industry developed and implemented the Clean Green program over the last 10 years. Initially the aim was to deal with emerging community and government adverse perceptions and requirements to address environmental interactions, sustainability, food safety/quality, animal welfare and work place safety.

The industry saw the need for a simple, practical fisher friendly approach to dealing with these emerging challenges in a way that was credible to both Government and the public.

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<sup>1</sup> Taking Stock and Setting Directions” AgEcon Plus 2006 pp9-12

<sup>2</sup> “p18

Importantly the industry did not want separate programs for each element e.g. environment and workplace safety, the preference being for an integrated “one-stop-shop”. In addition, the industry decided to move beyond codes of practice which were viewed as weak or not credible in the public eye, preferring independent certification.

In the late 1990s the industry undertook research into the options and determined that no “off the shelf” system (e.g. Marine Stewardship Council Fish for the Future ecolabel) existed that met industry needs. It was decided that a tailor-made approach offered a practical “sea grass roots” fisher- driven process and control of the program within the industry.

The “Clean Green” program was subsequently designed, tested, refined over a 6 year period and then implemented by the industry in 2004.

The program has achieved relatively high levels of uptake with more than 50% participation being achieved by 2008. The program has been judged by others achieving the following recognition:

#### **ENVIRONMENTAL**

- June 2005: United Nations (Association of Australia) 2005 World Environment Day Award: 1st place: **Business Enterprise Awards section – Environmental Best Practice Program.**
- September 2005: Certificate of Merit in the 2005 – 2006 South Australian Landcare Awards under the Australian Government’s Coastcare Community Award.
- December 2005: KESAB Tidy Towns Award: 1<sup>st</sup> Place: **Eco-Sustainability Award** under the **Waste Management & Resource Recovery** award category.
- The Environmental Protection Authority SA is negotiating to recognize certified members in their code of practice for vessel and facility management: marine and inland waters.



#### **WORKPLACE SAFETY**

- The Clean Green program was awarded first place in the National Safety Council of Australia’s Awards of Excellence – **Occupational Health, Safety and Environment Award.**





- The program also received the prestigious accolade of the **NSCA/Telstra award for excellence in Occupational Health and Safety 2005.**
- Clean Green certified fishers insured through the JLT (SEPFA) Discretionary Trust will receive a 7.5% discount on their hull premiums and 8% discount on protection and indemnity premiums due to the decreased risk to the underwriter.

## **FOOD SAFETY**

- The Clean Green Standard has been assessed against standard 4.2.1 Primary Production & Processing Standard for Seafood in which the Clean Green meets and exceeds this standard.
- As of 1<sup>st</sup> July, 2007 AQIS will require each Southern Rocklobster exporter to have an Approved Arrangement (AA). The AA requires that rocklobster is sourced from registered catcher vessels. AQIS in SA have advised that they will accept Clean Green certified vessels as meeting the requirements of a registered catcher vessel.

The Clean Green program has met the initial aim of dealing with community and Government perceptions and requirements, but in response to a 50% price collapse due to SARS in 2004, the program has been further developed to become central to an industry market development program.

The Clean Green logo has been registered as a trade mark and a supply chain supporting fisheries supply direct to customers has been established.

In 2007 the industry launched the Clean Green brand in the United States of America (USA) and domestically, as part of a global market development program. The program is aimed at developing the market for lower value large lobster (greater than 2 kilograms).

Only product from certified Clean Green rocklobster fishers is provided to the program and lobster carrying the Clean Green brand is now being marketed to new customers at premium prices.

In effect the industry has established an international brand with values based on an independently certified EMS with product delivered to new customers at premium prices through a “fisher direct” supply chain. The program is managed by the licence-holder owned industry body SRL.

SRL has agreed, for a concessional fee, to release intellectual property about the program and assist other industry groups adapt the program to their needs such that it suits other industry purposes.

### *UNDERPINNING ASSUMPTIONS*

This business plan draws heavily on the findings of the above report and it is assumed that:

1. sustainable and reliable supply is not an issue in the Queensland prawn fishery fishery;
2. the Queensland industry fits the characteristics outlined in the “Taking Stock and Setting Directions” report (as summarised above);
3. since the release of the report in 2006, prices of wild-caught prawns received at the beach have continued to decline trending towards import parity, and costs, primarily fuel, have increased by about 50%;
4. the industry is facing an economic collapse driven by this cost price squeeze
5. a beach price in the order of \$15-\$20 is needed to cover costs and return the industry to profitability;
6. The major underpinning assumption (which has not been met) is that branded wild Queensland prawns, marketed and supplied consistently on the basis of a value proposition of certified quality, environmental/sustainability, “Wild” and/or “being Queensland”, can attract and sustain price premiums above imported farmed product.

### *QUEENSLAND WILD PRAWN CLEAN GREEN PROGRAM*

Adaptation of the Clean Green program to the Queensland wild prawn industry is a means to establishing credible and certifiable brand values which can be central to a market campaign aimed at differentiating the product and achieving price premiums. A “Clean Green” program standing alone, in the absence of a market development program and a coordinated supply to deliver the “offer”, will not solve the price issue.

The balance of this business plan provides information about establishing the “Queensland wild prawn” Clean Green program. Such a program can go part way to meeting the broader strategic priorities for the Queensland wild prawn industry as suggested in the 2006 “Taking Stock and Setting Directions” report.

The proposed Queensland wild prawn Clean Green Program involves 7 key elements:

1. Developing an auditable industry operating standard;
2. Designing a product certification program based on the standard;

3. Implementation of an industry-designed program to train licence holders and crew to meet the standard and achieve certification;
4. Establish supply chain structures to handle certified Queensland wild prawns from harvest to identified target markets;
5. Development and implementation of a targeted market development program;
6. Development and implementation of an overall program management structure;
7. Identification of, and targeted application to, applicable funding sources.

It should be noted that design of elements 3 and 4 are beyond the scope of this project, but information and options derived from the Southern Rocklobster Limited program experience has been presented as part of the implementation strategy (below) to provide some guidance to industry.

Outputs from developing and implementing the program will include:

Document
Clean Green Standard
Clean Green Audit Protocol
Certification Mark and Licence Agreement
Clean Green Convictions Policy
Clean Green Program Management Manual
Clean Green Best Practice Folders & Associated Training Materials (Clean Green Record / Log, DVD, CD Rom, Stickers)
Clean Green Management Database

#### *AUDITABLE INDUSTRY STANDARD*

It is proposed that an integrated product management system will be developed to detail industry operating standards that can be audited by an independent Conformance Assessment Body (CAB) or auditor. Development of this system will draw from the Southern Rocklobster Clean Green Program framework and adapt it to the Queensland wild prawn industry. Elements of the system to be incorporated include:

1. Fishery sustainability - drawing on the Commonwealth Department of Environment and Water's strategic assessment under the *EPBC Act (2008)* and Queensland Prawn Fishery Management Plan (s);
2. Carbon minimisation - a new and unique feature to establish national operating standards aimed at minimising carbon emissions;

3. Environmental interactions - this element will draw on work completed in Queensland with EMS programs and in other prawn fisheries e.g. Spencer Gulf (SA) to establish credible environmental standards to direct fisher behaviour such that environmental impacts are minimised;
4. Food safety and quality - the existing AQIS Approved Arrangement process will be incorporated to avoid duplication. Any relevant State legislative requirements will also be incorporated as required (as presented in the gap analysis above);
5. Workplace safety - generic work completed by as part of a national FRDC funded project will be upgraded and adapted specifically to the industry standard. This is an industry-focused program which has been well received by fishers in South Australia, Tasmania, and Victoria.

The Clean Green wild prawn program will address emerging challenges in the market, community and Government at all levels of the supply chain. The program will cover the following broad areas:

- the need to address current environmental legislation and policy;
- the need to address current workplace health and safety issues;
- harmonization of food safety standards;
- the need to address food safety legislation (state, Commonwealth, and international);
- the need to build awareness of, foster pride and develop a positive responsive culture in, the Queensland wild prawn industry;
- the opportunity to promote existing best practice in the industry to the wider community and;
- the opportunity to build a certified Queensland wild prawn brand based on values that reflect world's best practice from the 'net-to-plate' delivering the ultimate offer and guarantee to the marketplace.

It should be noted that the program can be expanded as required to cover the practices of industry processors and other supply chain partners.

The final Clean Green program, as applied to wild-caught prawns, will incorporate the following components:

- Fishery sustainability/environmental requirements;
- Carbon emission minimisation strategy;

- Environmental interactions policy;
- Food safety and product quality requirements;
- Workplace safety Requirements.

The applicable standard components, at the 'basic' boat level, are detailed as follows:

<b>Supply Chain</b>	<b>Obligations / Relevant Standard Component</b>
<b>Net</b>	Sustainability
	Carbon Minimisation
	By-Catch
	Environmental Interactions
<b>Deck</b>	Food Safety
	Food Quality
	Environmental Interactions
	Carbon Minimisation
	Workplace Health & Safety
<b>Deck to Processor</b>	Food Safety
	Food Quality
	Carbon Minimisation
	Workplace Health & Safety

Development of these specific components should be guided by these fundamental steps:

1. Industry consultation on work place standards;
2. Adaptation of any existing operating procedures/practices e.g. trawl specific O,H&S standards, Spencer Gulf & West Coast Prawn Fishermen's Assoc (SA) existing environmental standards, AQIS AA and food safety practices;

3. Consultation with relevant Government agencies regarding meeting legislative requirements;
4. Consultation with industry regarding practicality of draft workplace standard development - change as required (within legislative bounds);
5. Consultation with Joint Accreditation System of Australia and New Zealand (JAS-ANZ) regarding standard credibility and development of audit protocols;
6. Consultation with chosen CAB regarding standard credibility and development of audit protocols and audit checklist;
7. Move to have workplace standards formalised in an integrated product management system.

### *PRODUCT CERTIFICATION*

It is proposed that the Queensland wild prawn Clean Green program:

- be a product certification program based on auditable standards of environmental and ecological sustainability, food safety, product quality and work place safety, on the boat and throughout the supply chain;
- adapt the existing southern Rocklobster Clean Green certification framework;
- is based on standards that are accredited as an auditable product standard through JAS-ANZ, and independently audited by a CAB such as SAI Global Ltd.

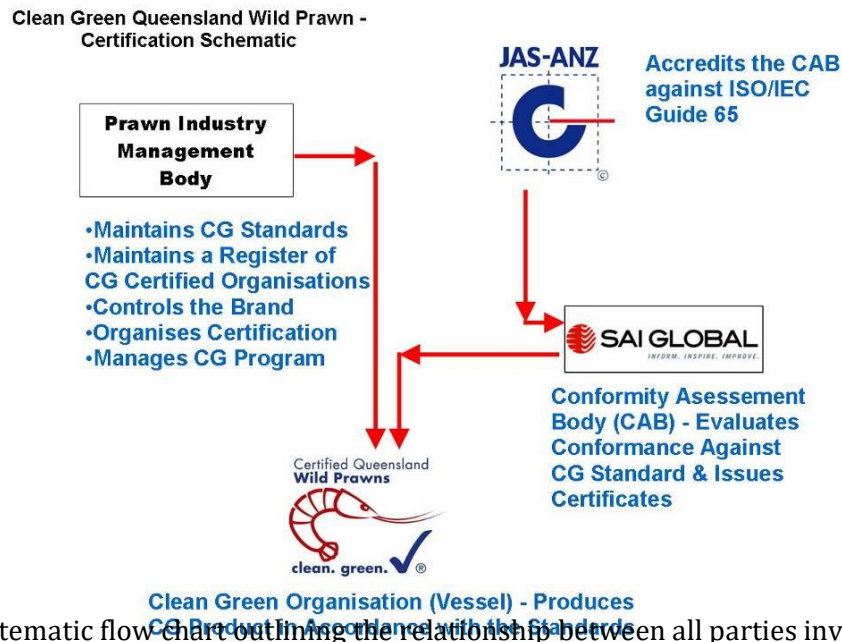
Establishing product certification involves the following steps:

1. Consultation with JAS-ANZ regarding the product standards and suitability for accredited certification;
2. Pending approval from JAS-ANZ, a CAB shall be selected;
3. Pilot audits shall be conducted in conjunction with industry members and the CAB in accordance with the developed audit protocol;
4. Audit protocol adjusted as required;
5. Audit protocol is agreed and audit checklist finalised;
6. JAS-ANZ shall conduct an audit of the CAB's practices in line with the audit protocol;
7. CAB accredited by JAS-ANZ;
8. CAB conducts initial certification audits and ongoing surveillance audit program.

The Clean Green certified Queensland wild prawn product certification scheme shall cover entities within the prawn supply chain including catching vessels, transport vehicles, processing

facilities, distributors and retailers. These entities are certified for conformance by 3<sup>rd</sup> party CABs.

The audit protocol shall provide the specific requirements for those CABs involved with audit against the Clean Green certified Queensland wild prawn standards (Figure 1).



**Figure 1.** A systematic flow chart outlining the relationship between all parties involved in the Clean Green Certification program. The duties of each body are briefly outlined below.

### *IMPLEMENTATION OF THE PROGRAM WITH INDUSTRY*

The Clean Green training program is structured as follows:

1. 2-day face-to-face Clean Green training program with licence holders, skippers and crew will be conducted regionally as required. The main objective of the training is to familiarise participants with the workplace standards and the expected operating requirements. Participants are also familiarised with the Clean Green on-boat induction manual and associated training materials.

Program elements addressed in the face-to-face training are:

- Environment:
  - a. Sustainability;
  - b. Ecological interactions (particularly by-catch management);
  - c. Waste management;
  - d. Carbon emission requirements.
- OH&S / workplace Safety;

- Food safety and product quality.

The Clean Green certified Queensland wild prawn program will ensure that fishers participating in the face-to-face training session are trained according to applicable units of competency from the National Seafood Industry Training Package (Certificate II/III). Training will be delivered by qualified workplace trainers and assessors (Certificate IV level).

2. All participating fishers will attend and be accredited through a senior first aid course (St Johns first aid is the training provider of choice for this component). It is a requirement of the program that at least one participant per vessel shall hold a current senior first aid qualification for that vessel to achieve Clean Green certification.

Participant time requirement: 2 days.

3. On-boat pre-audit training (1/2 day) - familiarisation of participants with the audit process and requirements to attain certification.
4. On-boat certification audit (1/2 day)
5. On-going membership and participation in the random surveillance audit program - annual membership renewal.

## *MARKET DEVELOPMENT PROGRAM*

### *THE OFFER*

A Clean Green program standing alone, in the absence of a market development program and a coordinated supply to deliver the “offer”, will not solve the price problem. Development of a Clean Green program to the Queensland wild prawn industry offers limited tangible benefits that will revive the current economic situation in the absence of a dedicated market development program aimed at differentiating the product and achieving price premiums.

A Clean Green program can form a key building block for a market campaign in the form of brand values based on certifiable industry operating standards just as it has been successfully applied to attract significant price premiums for Southern Rock Lobster.

While detailing a market development program is beyond the scope of this report, the following is offered as a starting point. Information is presented so that the industry to understand the potential breadth and cost of the program.

In order to achieve target prices in the range required, it is assumed that the target markets will be the higher end food service sector both domestic and export (i.e. super premium fine dining).



Servicing this sector can be demanding and will require investment in resources and programs to effectively service the needs of this market segment. Importantly, to re-position Queensland wild prawns, industry will need to deliver on the following:

1. Quality and brand consistency – to be achieved through the Clean Green standards and audit programs. Industry freezing, cooking, storage, handling, grading and packing practices will be a key factor determining capacity to command a premium price;
2. Supply guarantees – Guaranteed supply, with logistics solutions in response to the market development program, will need to be established as part of the program (see below);
3. Communication/education – A comprehensive and ongoing communication and education campaign, to differentiate the product and build wider consumer awareness and demand, will be essential. In addition a campaign awareness raising among high-profile chefs about the Clean Green offer will be needed to stimulate demand.

Importantly, recent market research undertaken in the USA by SRL suggests that the “sustainability” values embedded in the Clean Green program were less important to high profile chefs than “premium quality” and “wild caught”. The customers associated wild caught with premium quality. Equally important, with the limited number of domestic high end customers at the time, the interest in the detail of Clean Green program, and the commitment to enter into long-term purchase arrangements with the program was high.

To date the most effective method identified by SRL to influence super premium markets is through the direct training and education of restaurant management and wait-staff about the product and the Clean Green credentials. The training method has involved a restaurant visit by Clean Green managers to undertake a presentation, product demonstration and a face to face briefing.

Hence the Clean Green program will need to produce messages and programs that differentiate Queensland wild prawns to consumers and customers alike from all other competing product. The message may be primarily about quality and wild caught, but the marketing program can be tailored and reinforced through information about certification through the Clean Green program.

The supply chain may also need to be managed, with full traceability, to ensure that the Clean Green certification standards are maintained.

It is proposed that the certified Queensland wild prawns logo be registered as the program trade mark for use on packs of product that meet quality and other criteria.



The Clean Green mark can be utilised to distinguish the product for the end user and throughout the market development program. The “Clean Green” product certification program, registered trade mark and branding will be central to the strategy. This brand management strategy can be used to reinforce (and not replace) existing local brands (e.g. Mooloolaba prawns). Thus, the Clean Green mark can be used in conjunction with individual company brands that conform to the standards.

The market development program will include the following:

Phase 1 – Target market and chain research and program planning;

Phase 2 - Establishing and maintaining market development assets – product, place mats, business cards, chef fact sheets, industry news, recipes, information packs, web site and so on;

Phase 3 – Implementation (domestic): focus on consumers and chefs via advertising, communication, training, events and sales activities and linking with like programs with other sectors if appropriate. Supply chain linkages are an important component as is traceability (from net to plate);

Phase 4 – Implementation (international if appropriate) linking to like programs with other sectors in target markets if possible (e.g. SRL Clean Green in the USA).

*SUPPLY CHAIN LINKAGES.*

Importantly the program will need to link through the supply chain through to certified fishers with product traceability (facilitated by marks/bar codes on packs). Capacity to deal with supply chains issues and linkages will need to be embedded in the program through a traceability and data management program. This can be adapted from the successful system used by Clean Green rocklobster. An indicative budget covering Phases 1 & 2 (set up) is set out below:

<b>Market Development Program - set up</b>	
Chain & target market research	\$50,000
Program Design	\$50,000
Material Design & Production	\$50,000
Web site (e-commerce)	\$20,000
Product trials	\$10,000
Promotion trials	\$10,000

An indicative long term ongoing budget for Phases 2 and 3 is set out below:

<b>YEAR 3: Market Development</b>	
<b>Project 3.2 Market Development Program Ongoing</b>	
Program Redevelopment	\$20,000
Material Production	\$100,000
Product tastings, events promotions	\$200,000
Promotions/trade shows/events	\$150,000
Advertising	\$500,000
Sales support & incentives	\$500,000
Supply Chain Management - 1 fte	\$150,000
Program Management	\$150,000
Travel operating	\$100,000
<b>Total Market Development</b>	<b>\$1,870,000</b>

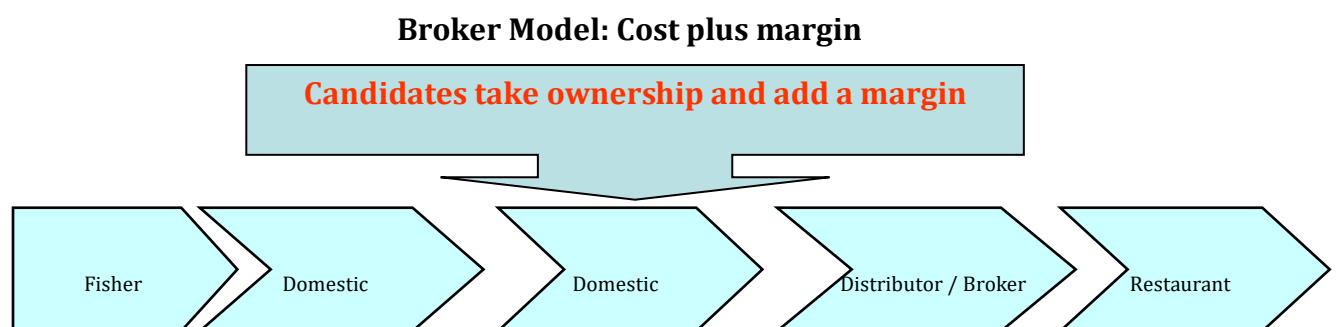
### *SUPPLY CHAIN STRUCTURES*

Although outside the scope of this project, supply chain structures to support delivery of the certified Clean Green Queensland wild prawns to customers in response to a market development program, may need to be understood, agreed, adjusted and managed as part of the wider program. The options and potential costs need to be understood to assess the overall returns from the program. Going forward, so that the benefits from any price premiums achieved are captured by the licence holders, licence holders will fund the program in the long term.

Numerous supply chain structure options exist ranging from status quo to a full “boat direct” model where ownership of the product is maintained through to the customers by the licence holder. The standard Australian seafood model is the “broker” model whereby the product is sold along the supply chain with each service provider on-selling the product at cost plus a

margin. Service providers in this model own the product and therefore are responsible for the “marketing or “selling” to the next level of the chain. Their return comes from the product being “pushed” along the value chain and often the transaction is on the basis of lowest price.

The licence holders accept the price offered and have limited or no risk, but have no control of the market being developed and are totally dependent on the chain service providers who promote the product and build demand and price i.e. the licence holders are price takers and not price makers.



A number of variations of this model potentially apply to Queensland prawns, with a number of organizations vertically integrated through the chain operating under their own company brands (e.g. Mooloolaba prawns).

An equivalent “boat direct” model, the “fisher direct” model, has been adopted by the Clean Green southern rocklobster licence holders, involving a fully contracted supply chain model to supply domestic and export premium markets. Hence the budget proposed for establishing the market development program (see above) includes provisions for supply chain research and development. In addition to this, a provision for the costs of supply management has been made in the business plan for long-term ongoing management.

Some additional information about potential model options is provided below.

### **Option 1 – Current Processor Distribution Model**

The existing group of processor/distributors will be critical to the success of the Clean Green program. After all, Clean Green product must be stored, handled, and transported to customers. In an industry where margins are under pressure, it makes no sense to re-invest in additional infrastructure and capacity.

Furthermore, the current harvest is being provided to an existing group of customers that play an important role in establishing demand and therefore the price of prawns. If this group of customers were overlooked then the price would collapse further. Ideally, the preferred starting point should be for Clean Green licence holders to work with the existing processors/distributor networks to achieve premiums as a result of the quality, branding and marketing programs under the Clean Green program.

All Clean Green product is caught, packed and labelled to specification on board the certified vessels and frozen and delivered to, or is landed and processed in, a central place. The supply chain needs to be secure so that only the only certified product is supplied under the Clean Green brand.

To deliver premiums to the licence holders this model relies on:

1. the market development program building demand for Queensland Wild Prawns;
2. processors and distributors meeting Clean Green handling standards;
3. connection between customers via the market development program and processors holding certified Queensland wild prawns;
4. avoiding substitution of certified Queensland wild prawns with non-certified Queensland wild prawns (or other prawn product such as imported farmed prawns);
5. quality assurance;
6. supply assurance;
7. processors passing premiums achieved to licence holders; and
8. overall industry direction of the market development and certification programs.

The strength of this model is that, all things being equal, the current volumes being handled by the processing sector need not change and hence profitability of this sector of the industry would not be disrupted.

### **Option 2 – Selected Processor/Distributors**

The experience in the Southern rocklobster industry has been that not all processors have embraced the Clean Green Program. However sufficient willing participants have been engaged to allow the “fisher direct” model to be launched. Accordingly, if the approach proposed in Option 1 is adopted, the likely outcome will be Clean Green licence holders working through a selected group of existing processors/distributors to achieve premiums as a result of the quality, branding and marketing programs under the Clean Green program brand.

All branded product is caught and packed to specification on board the certified vessels and frozen, or is landed and processed, in a central place. Again, the supply chain needs to be secure so that only the appointed distributors can supply the certified Clean Green branded product.

To deliver premiums to the licence holders this model relies on:

1. the market development program building demand for Queensland wild prawns;
2. connection between customers via the market development program and processors holding certified Queensland wild prawns;
3. processor participants with a whole of fishery geographic spread i.e. Queensland;
4. Avoiding substitution of certified Queensland wild prawns with non-certified product;
5. quality assurance;
6. supply assurance;
7. processors passing premiums achieved to licence holders; and
8. overall industry direction of the market development, certification and chain relationships program.

### **Option 3 – “Boat Direct” Model**

This model represents a major structural change for catchers and processors.

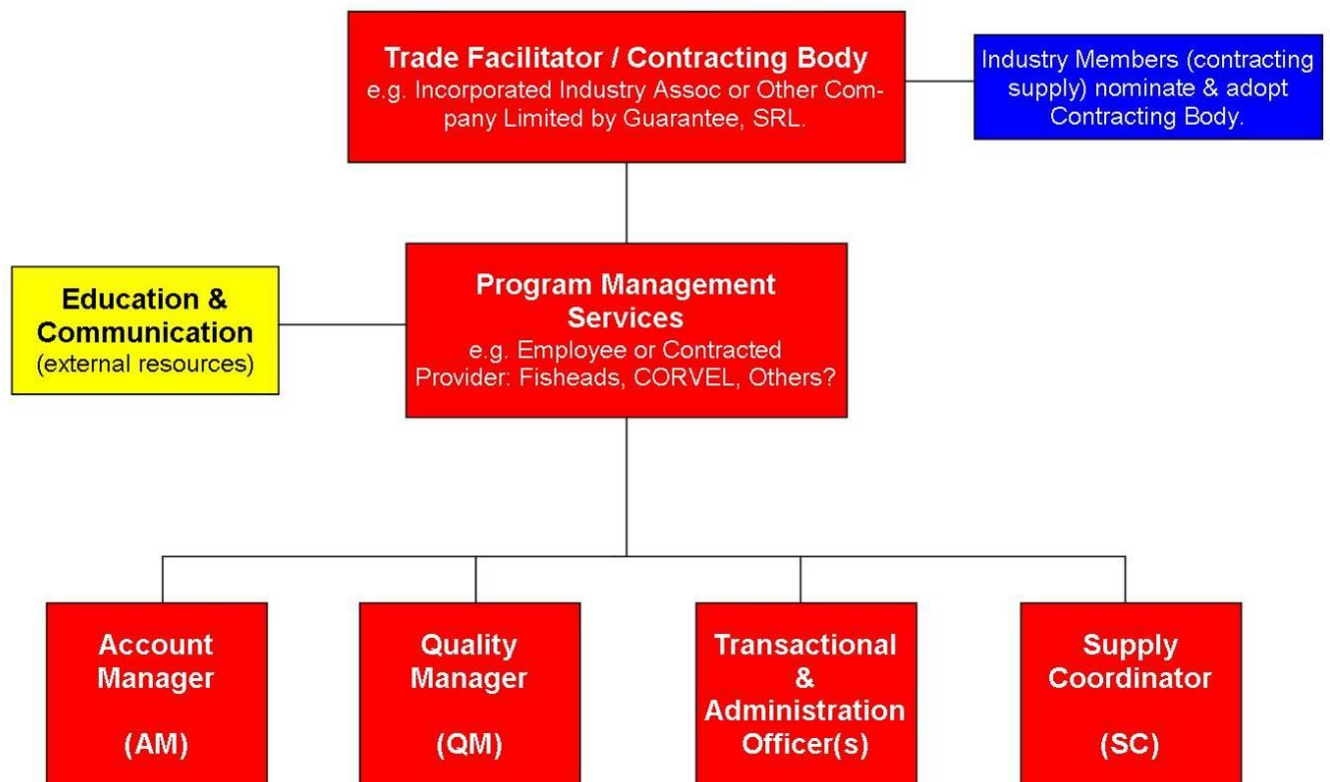
Under this option Clean Green licence holders retain ownership of the prawns working through existing processors/distributors to supply customers established through the market development program. The supply chain is coordinated by a facilitator (funded by the program participants) who works with fishers, processors, the sales team and customers. A number (or all) processor/distributors operate for a fee or commission to handle, hold and provide logistical support for the “branded product” to domestic and export markets. All branded product is caught and packed to specification on board the certified vessels and frozen, or is landed and processed, in a central place. Again the supply chain needs to be secure so that only the appointed distributors can handle the certified Clean Green branded product.

To deliver premiums to the licence holders, this model relies on:

1. the market development program building demand for Queensland wild prawns;
2. connection between customers and fishers via a supply chain facilitator;
3. fishers carrying the debtors;
4. a contractual and administrative system to cover finance, risk management;

5. cash flow and funding support during start and long term;
6. processor participants with a whole of fishery geographic spread i.e. Queensland;
7. avoiding substitution of certified Queensland wild prawns with non-certified product;
8. quality assurance;
9. supply assurance;
10. processors passing premiums achieved to licence holders; and
11. direct industry facilitation and management of the program.

The resources required to manage the “Boat Direct” supply chain model are indicated below:



#### Option 4 - Industry Commercial Entity

Options 1-3 rely on an industry group/committee/Association taking the lead, either directing the whole program or, with Option 3, retaining the resources to directly manage the process. A variation on Option 3 is for a commercial entity to be established with Clean Green licence holders as the shareholders, and that entity undertakes the role of management of the program.

Such an entity could take full responsibility for all aspects of the certification, supply chain management, and market development programs. In this case, the product ownership, finance,

risk management, and resourcing would be the responsibility of the company and may involve a mix of the features described in Options 1-3.

If all licence holders were provided with a low cost entry or zero entry to the entity, and the entity could secure funding to establish and implement the program, such a model would place the program on a commercial foundation from the outset. This is possibly the preferable arrangement.

### *OVERALL PROGRAM MANAGEMENT*

#### *QUEENSLAND MANAGEMENT OPTIONS*

Development and implementation the Queensland wild prawn program will require management both across the entire program and within the key areas of the certified Clean Green program and the market development program.

The function of program management can be housed in a number of existing organisations for example:

1. National Prawn Industry Council which is based in Brisbane. This may be outside their charter;
2. Queensland Seafood Industry Association. The QSIA has existing infrastructure and capacity;
3. Queensland prawn industry development committee as a sub-committee of QSIA. Subcommittees (trawl and marketing) already exist and could take on a management role. This offers relatively low cost and would be industry owned and driven;
4. Queensland prawn industry development committee as a subcommittee of Queensland Department of Primary Industry. This offers relatively low cost, industry-driven with a partnership with Government;
5. Southern Rocklobster Limited. SRL has existing infrastructure and capacity and would expect involvement in start up, but would have limited involvement in ongoing management long term.

The ideal situation in the long term is expected to be a Queensland wild prawn entity e.g. an Association or company which is responsible for managing the Clean Green program long term. It would be logical, if Option 4 above is adopted, that the resultant commercial entity undertakes the Clean Green program management role.

While the cost of personal and direct operating costs for program management have been accounted for as part of the program development and implementation budget, the overheads



associated with housing the management function have not. These costs have not been included in the benefit cost analysis of the program provided below. If the overhead costs are not covered by housing the program and personnel in an existing organization, additional costs (about \$50,000 - \$75,000 per annum) can be expected.

#### *CLEAN GREEN CERTIFICATION PROGRAM MANAGEMENT.*

To develop and implement the certification component of the Clean Green program a management structure is required involving the prawn Industry. The management entity or structure would engage dedicated, industry resources to manage the development of the Clean Green certification program for Queensland wild prawns.

Requirements for management of the Clean Green certification program include:

1. Development of an integrated product management system.
  - To be completed in conjunction with JAS-ANZ, selected CAB, industry and Government.
2. Development of an audit protocol and audit checklist.
  - To be developed in conjunction with JAS-ANZ and the selected CAB.
3. Development of a suitable training program - qualified trainers utilised for implementation.
4. Development of suitable training materials.
  - On-boat Induction manual, DVD, CD, stickers.
5. Implementation of industry training, pre-audits and certification audits.
6. Development of a suitable legal agreement for use of the Clean Green mark / logo and participation in the program.
7. Development of a Clean Green management database. The database shall be used to track and monitor the following program requirements:
  - fisher/processor details and contacts;
  - membership fee payments and program budgeting requirements;
  - those fishers who have returned legal agreements and been issued with the Clean Green certificate.

- the annual surveillance audit program (20% of program member vessels to be audited randomly each year);
  - management of corrective action requests (CARs) issued as part of either the initial certification audit process or as part of the annual surveillance audit process;
  - certification details (certification numbers issued by the CAB).
8. Development of a process for management of, and vessel selection in, the annual surveillance audit process (20% of vessels randomly / year).
  9. Development of an annual refresher / industry consultation process as required. This ensures that program members are updated on changes to workplace standards according to changes in legislative requirements. Program members are issued with new materials as required as part of this process.
  10. A system to manage CARs (have they been 'closed out' and/or have they been raised from minor to critical) and ongoing certification of members according to membership fee payments.
  11. Development and implementation of a Clean Green convictions policy to deal with non-conformance of members against the program standards.
  12. A document version control system. Documents/materials to be controlled will include:
    - integrated product standard;
    - audit protocol and audit checklist;
    - training materials, particularly the on-boat induction manual, DVD and CD Rom;
    - program management manual;
    - fisher certification certificates;
    - Clean Green convictions policy;
    - Clean Green communications/extension program and policy;
    - the Clean Green management database.

Documents should be reviewed on a bi-annual basis in conjunction with the CAB, JAS-ANZ and program members.

13. A continuous improvement cycle should be entered into and administered regularly. This process should be bi-annual and driven by the requirements of 9 and 12 above.

All of the above elements should be incorporated into an overarching 'Clean Green program management manual' to ensure that the program can be managed effectively in the event of changes in program management resources.

### *MARKET DEVELOPMENT PROGRAM MANAGEMENT*

The market development component of the program requires additional capacity (over the Clean Green program management). The elements of the program are listed below:

Phase 1 – Target market and chain research and program planning;

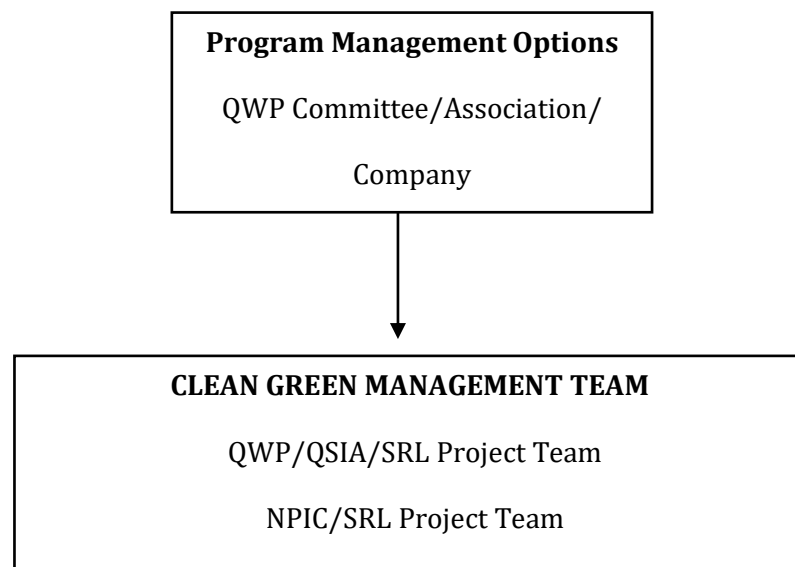
Phase 2 - Establishing and maintaining market development assets – product, place mats, business cards, chef fact sheets, industry news, recipes, information packs, web site;

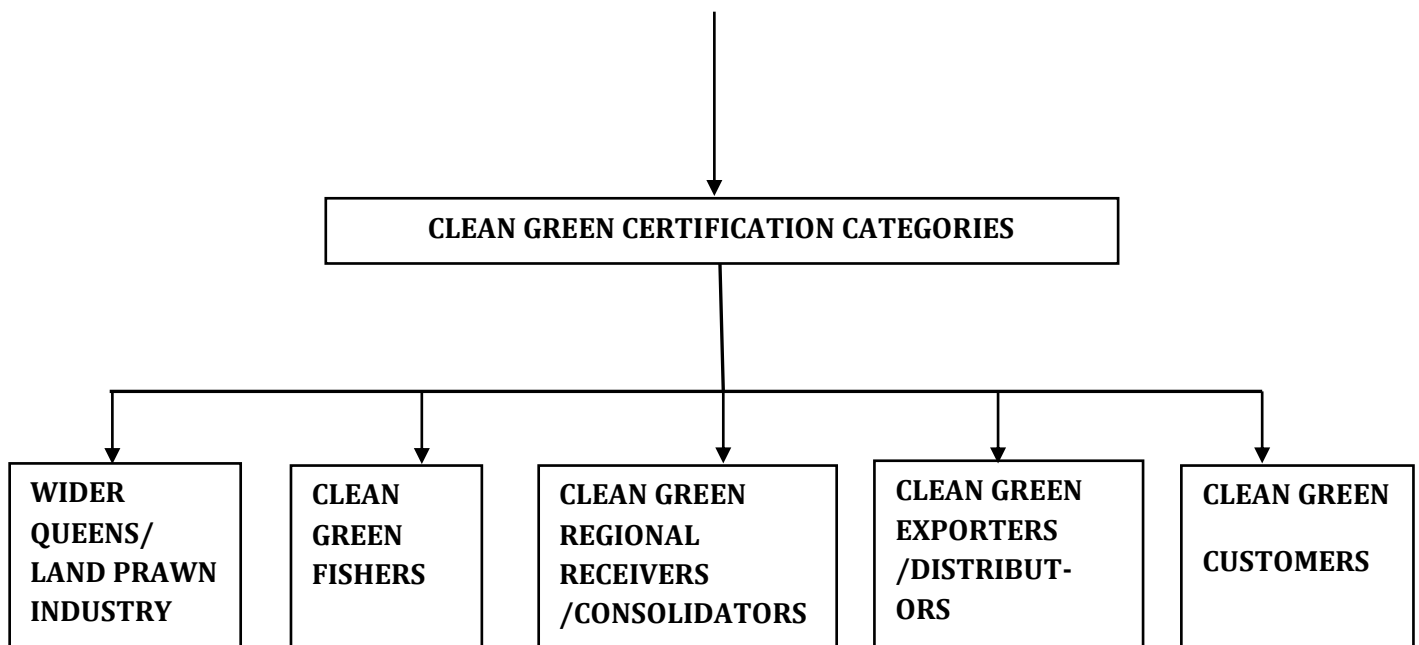
Phase 3 – Implementation (domestic). Concentrating on consumers and chefs via advertising, communication, training, events and sales activities and linking with like programs with other sectors if appropriate. Supply chain linkages will be important in developing and maintaining relationships with key markets.

Phase 4 – Implementation (international if appropriate) linking to like programs with other sectors in targets if possible (e.g. Clean Green rocklobster in the USA). Supply chain linkages will be important in developing and maintaining relationships with key markets.

Strong project management capacity for each of these phases will be required. The chart below shares the breadth of management responsibility.

## **Organisational Flow**





### *QUEENSLAND CLEAN GREEN BENEFITS*

The Clean Green program has the potential to generate both tangible and intangible benefits at both the industry and individual operator levels. The tangible benefits are in the form of price improvement and/or time savings, while other less tangible benefits are possible in terms of Government and community perceptions, market positioning, and infrastructure/capacity development.

The benefits expected to accrue from establishing the Queensland wild prawn Clean Green program include the following:

1. price premiums;
2. product image enhancement;
3. cost savings;
4. infrastructure established;
5. industry capacity developed;
6. industry image enhanced;
7. positive and responsive industry culture developed.

### *PRICE*

The primary purpose of establishing the Clean Green program is to create a value proposition which differentiates Queensland wild prawns based on certifiable industry standards which

will attract significant price premiums. A “Clean Green” brand is only a building block in a proposed broader market development program and a coordinated supply chain aimed at delivering certified Clean Green Queensland wild prawns to premium markets.

A “Clean Green” program standing alone, in the absence of a market development program and a coordinated supply program will not solve the price problem. Equally, a market development program without product that has a guaranteed offer consistent with the desired market requirements will not sustain price premiums. Accordingly, the key assumption is that *branded wild Queensland prawns, marketed and supplied consistently on the basis certified quality, environmental/sustainability, “wild” and/or “being Queensland” brand values, can attract and sustain price premiums.*

Without detailed economic analysis it is not possible to project future price premiums from implementing the project. However, it is useful to test a range of price scenarios to gain a feel for the premium required to break even on the investment and costs over time, or to generate substantial returns above the costs. Such scenarios are tested below.

The successful SRL Clean Green program has served to do two things which influence price, namely reduce supply in the traditional market and increase demand at higher prices in new markets. Specifically, Clean Green program participants have achieved a premium of 20%-40% for 2kg + certified Clean Green lobster. This is a powerful incentive for non-program participants to join the program. It is important to note that only certified participants can attract any price premium through the supply chain.

Of course, for Queensland prawns, the combined impact of implementing the program and other market conditions will determine the ultimate result, but a beach price above \$15/kg is required for sustained profitability in the industry.

#### *PRODUCT IMAGE ENHANCED*

As part of the market development program, information would be provided to the food service sector and consumers about the features and benefits of the Queensland Clean Green prawn product. Over time, assuming the quality and service offer remain in place, the market image of the product will improve and become differentiated from other competing products particularly farmed imported prawns. This will stimulate demand for Clean Green branded prawns and, because wild prawns have a limited supply (compared with imports) prices will rise with increased demand.

An objective will be to elevate the Queensland prawn into the premium product category over time where price, while a consideration, becomes secondary to the package “offer” of quality, sustainability, carbon sensitive, wild harvest, & Queensland.

### *COST SAVINGS*

Although further investigation and considerable negotiation with various Government agencies is required, cost savings are anticipated from implementing the Clean Green program. The first and most tangible cost saving is for audit costs where the Southern Rocklobster experience has shown that the requirements for AQIS approved arrangements can be met through the Clean Green audit. Thus, substantial savings of costs and time have been generated and these savings would need to be assessed for the Queensland Prawn industry.

The second area is that of insurances. For Clean Green rock lobster, at least one insurer has offered discounts to the participants in the Clean Green program reflecting a demonstrable reduction in safety and public liability risk. These cost savings are in excess of annual costs for the Clean Green program to individual fishers.

While no assumptions have been made about these savings in the benefit costs analysis (below), these are important tangible considerations on offer to the industry.

### *INFRASTRUCTURE ESTABLISHED*

The program will see a range of resources and systems developed as long-term assets for the industry including:

- market development assets;
- auditable operating standard;
- operating manuals;
- product certification system;
- operational framework for the industry to deal with future or emerging challenges in the following areas:
  - environment;
  - stock sustainability;
  - by-catch and by-product sustainability;
  - food safety;
  - workplace safety; and
  - carbon and fuel miles.

These assets will maintain long-term value for the industry regardless of the market outcomes.

### *INDUSTRY CAPACITY DEVELOPED*

The program will be truly industry owned and operated and, in order to do so, industry leaders and managers will need to acquire new skills and knowledge about matters such as certification, auditing, supply chain and market development.

The industry, in building and implementing the program, will establish capacity at all levels to “self manage” key operating challenges.

### *INDUSTRY IMAGE ENHANCED*

Positive community perceptions are generated with the Clean Green program as a result of:

- increased waste oil recycling;
- less plastics at sea;
- less rubbish disposed of at sea;
- increased reporting of marine mammal interactions;
- recording of other marine life;
- safer work environments.

Accordingly, the Clean Green program presents to the wider community demonstrable credentials in the areas of environmental and sustainability of the industry.

### *COSTS*

The development and implementation of a Clean Green Queensland Wild Prawn program will involve the following phases:

- Phase 1 - set up/development;
- Phase 2 - implementation; and
- Phase 3 - ongoing management.

These costs will be both cash and in-kind. The cash cost component is dealt with below for the two major elements of the complete Clean Green program namely:

- Clean Green certification system, and
- market development program.

### *CERTIFICATION SYSTEM COSTS*

Developing and implementing the Queensland wild prawn Clean Green certification will involve costs in each phase as follows:

1. Certification system set up

- research, consultation and documentation of workplace standards across carbon, environment, sustainability, food safety, product quality, and work place safety issues;
- design, trial and documentation of an audit and accreditation program;
- design and production of program manuals;
- design and production of training materials and programs;
- legal issues (e.g. trade mark registration, corporate structures if necessary).

The indicative costs for the Clean Green Certification system are as follows:

<b>YEAR 1: Clean Green System Development</b>			
<b>Project 1.2 Standard Development</b>			
<b>Item</b>	<b>Days / No of Units</b>	<b>Rate / Unit Cost</b>	<b>Cost</b>
Carbon Assessment and Strategy Development	10	\$1,500	\$15,000
Environment - Incl Carbon Strategy (adapt existing EMS)	15	\$850	\$12,750
Food Safety & Quality - Utilise Existing Vessel AAs (AQIS)	10	\$850	\$8,500
OH&S - Transfer Existing Generic Trawl Standards (National FRDC Project - Tanya Adams)	10	\$850	\$8,500
Standard Compilation & Checking	15	\$850	\$12,750
Development of Audit Protocol & System in Conjunction with JAS-ANZ	15	\$850	\$12,750
Operating - phone, post, print, JASANZ fee \$12k			\$13,000
Travel			\$3,000
<b>Total - Standard Development</b>			<b>\$86,250</b>

<b>YEAR 1: Clean Green System Development</b>			
<b>Project 1.3 Training Material Development</b>			
<b>Item</b>	<b>Days / No of Units</b>	<b>Rate / Unit Cost</b>	<b>Cost</b>



Development of Training Materials (DVD, CD, Flip Cards, Stickers, Manual Content & Layout)	20	\$1,250	\$25,000
Training Materials (Manuals) Design Cost - Photography, Graphic Design, Filming & Production			\$35,000
Operating - phone, post, print etc			\$1,000
Travel			\$3,000
<b>Total - Training Material Development</b>			<b>\$64,000</b>

2. Clean Green certification system implementation costs:

- program launch, marketing, media and industry communication and materials;
- training program;
- initial audit.

Indicative implementation costs for the Clean Green certification system are as follows:

<b>YEAR 1: Clean Green Implementation</b>			
<b>Project 1.4 Clean Green Industry Program</b>			
<b>Item</b>	<b>Days / No of Units</b>	<b>Rate / Unit Cost</b>	<b>Cost</b>
Training Implementation / No of Courses - 30 Vessels per Course @ \$500/vessel (Refer to Training Budget for Detailed Cost Breakdown)	5	\$15,000	\$75,000
Training Program FarmBis or Equiv / No of Courses - 30 Vessels per Course (Refer Appendix 2) Est 120 vessels	5	\$105,000	\$525,000
<b>Total - Industry Program</b>			<b>\$600,000</b>

<b>YEAR 2: Clean Green Implementation</b>			
<b>Project 2.1 Clean Green Industry Program</b>			
<b>Item</b>	<b>Days / No of Units</b>	<b>Rate / Unit Cost</b>	<b>Cost</b>
Industry Training Program / No of Courses - 30 Vessels per Course - \$500/licence	3	\$15,000	\$45,000

Training Program FarmBis or Equiv / No of Courses - 30 Vessels per Course (Refer Appendix 2) Est 60 vessels	3	\$105,000	\$315,000
<b>Total - Industry Program</b>			<b>\$360,000</b>

3. Clean Green certification system ongoing program management or running costs include:

- database creation and management;
- administration;
- member communication;
- random audit;
- royalty (to SRL).

It is important to note here that a royalty payment to SRL in exchange for full access to the SRL program materials, systems and personnel will be charged. This is proposed to be \$5,000 per annum for 5 years.

<b>YEAR 1: Clean Green Program Management</b>			
<b>Project 1.5 Project Management</b>			
Database Management	5	\$850	\$4,250
Funding Application Management	5	\$850	\$4,250
Communications, Audit & Non-Compliance Management	10	\$850	\$8,500
Program Launch, Marketing, Media & Industry Communication,. Overall Management. (1/day/wk) & materials (\$5k)	50	\$850	\$47,500
Post, Phone & Printing			\$3,000
Legal Expenses			\$5,000
Royalty - Southern Rocklobster Limited			\$5,000
Travel			\$3,000
<b>Total - Clean Green Program Management (Yr 1)</b>			<b>\$80,500</b>

<b>YEAR 2: Clean Green Program Management</b>			
<b>Project 2.1 Clean Green Project Management</b>			
<b>Item</b>	<b>Days / No of Units</b>	<b>Rate / Unit Cost</b>	<b>Cost</b>
Database Management	5	\$850	\$4,250
Funding Management	2	\$850	\$1,700
Communications, Audit & Non-Compliance Management	7	\$850	\$5,950

Program Marketing, Media & Industry Communication,. Overall Management. (1/day/wk)	50	\$850	\$42,500
Marketing, Media & Comms Materials			\$2,500
Manual Updates			\$2,500
Post, Phone & Printing			\$2,500
Legal / Standard Adjustment Costs			\$5,000
Royalty - Southern Rocklobster Limited			\$5,000
Surveillance Audits (Random) 20% of Year 1 Participating Vessels (36 Vessels) - Approx Cost Only			\$20,000
<b>Total - Program Management (Yr 2)</b>			<b>\$91,900</b>

<b>YEAR 3: Clean Green Program Management</b>			
<b>Project 3.1 Clean Green Project Management</b>			
<b>Item</b>	<b>Days / No of Units</b>	<b>Rate / Unit Cost</b>	<b>Cost</b>
Database Management	5	\$850	\$4,250
Levy Management & reporting	3	\$850	\$2,550
Communications, Audit & Non-Compliance Management	5	\$850	\$4,250
Program Marketing, Media & Industry Communication,. Overall Management. (1/day/wk)	50	\$850	\$42,500
Updates - Standard, Legal & Materials			\$2,500
Manual Updates			\$2,500
Post, Phone & Printing			\$2,500
Legal / Standard Adjustment Costs			\$2,500
Royalty - Southern Rocklobster Limited			\$5,000
Surveillance Audits (Random) 20% of Year 1 & 2 Participating Vessels (Estimate retain 150 vessels from 210 certified) Approx Cost Only			\$30,000
<b>Total - Program Management (yr3)</b>			<b>\$98,550</b>

#### *MARKET DEVELOPMENT PROGRAM COSTS*

Developing and implementing the Queensland wild prawn Clean Green market development program will involve indicative costs in each phase as follows:

1. The market development program set up costs include the following:
  - research, consultation and documentation of market requirements;
  - research, consultation and documentation of supply chain model;

- design of overall market development program;
- design and development of communication tools;
- legal costs;
- project management.

<b>Market Development Program - set up</b>	
Chain & target market research	\$50,000
Program Design	\$50,000
Material Design & Production	\$50,000
Web site (e-commerce)	\$20,000
Product trials	\$10,000
Promotion trials	\$10,000
Project Management	\$50,000
Travel operating	\$10,000
<b>Total Market Development</b>	<b>\$250,000</b>

2. System implementation and ongoing costs. Indicative costs include the following:

- program redesign;
- activities, events, tastings and communication activity;
- sales activity;
- management of the supply chain;
- design and development of communication tools;
- project management.

<b>YEAR 2: Market Development</b>	
<b>Project 2.3 Implement Market Development Program</b>	
Program Redevelopment	\$10,000
Material Production	\$50,000
Product tastings, events promotions	\$50,000
Promotions/trade shows/events	\$150,000
Advertising	\$200,000
Sales support & incentives	\$240,000
Supply Chain Management - 1 fte	\$120,000
Program Management	\$120,000
Travel operating	\$40,000
<b>Total Market Development</b>	<b>\$980,000</b>

<b>YEAR 3: Market Development</b>	
<b>Project 3.2 Market Development Program Ongoing</b>	
Program Redevelopment	\$20,000
Material Production	\$100,000
Product tastings, events promotions	\$200,000
Promotions/trade shows/events	\$150,000
Advertising	\$500,000
Sales support & incentives	\$500,000
Supply Chain Management - 1 fte	\$150,000
Program Management	\$150,000
Travel operating	\$100,000
<b>Total Market Development</b>	<b>\$1,870,000</b>

*SUMMARY COSTS*

The set up, implementation and management costs for the Clean Green certification component of the program are summarised as follows:

<b>Clean Green Certification Summary</b>	
<b>Year 1</b>	
Project 1.2 - Standard Development	\$86,250
Project 1.3 - Training Material Development	\$64,000
Project 1.4 - Industry Program (150 vessels)	\$600,000
Project 1.5 - Program Management	\$80,500
<b>Total Year 1</b>	<b>\$830,750</b>
<b>Year 2</b>	
Project 2.1 Industry Program (90 vessels)	\$360,000
Project 2.2 Program Management	\$91,900
<b>Total Year 2</b>	<b>\$451,900</b>
<b>Year 3</b>	
Industry Program (subject to Yr 1 & 2)	
Project 3.1 Program Management	\$98,550
<b>Total Year 3</b>	<b>\$98,550</b>

The setup, implementation and management costs for the market development component of the program are summarised as follows:

<b>Market Development Program - Summary</b>
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Project 1.6 Design Program	\$250,000
Project 2.3 Implement Market Program	\$980,000
Project 3.2 Market Program Ongoing	\$1,870,000

The annual costs for the first 3 years of start up are:

<b>Summary Annual Total Costs</b>	
Funding package	\$38,500
Year 1 - Set Up & Implementation	\$1,080,750
Year 2 - Implementation	\$1,431,900
Year 3 - Ongoing	\$1,968,550

The total ongoing costs for year 3 and beyond are indicated as follows:

<b>Ongoing Costs Year 3 Onwards</b>	
Certification Program Management - boats	\$98,550
Market Development (inc chain logistics)	\$1,870,000
<b>Total Costs Ongoing</b>	<b>\$1,968,550</b>

It should be noted that these costs are indicative only and the final cost will be determined when the detailed market program is developed in the set up phase.

### *ECONOMIES OF SCALE*

Drawing on the SRL intellectual property offers considerable economies of scale in terms of time and costs for establishing the Clean Green program. SRL has invested more than \$1 million in research and development resulting in a fully integrated product management system amenable to third party audit and certification. Clean Green branded product is fully traceable through the supply chain from the point of capture to the point of consumption. This research and development occurred over ten years. In contrast, it is estimated that adapting the Clean Green program to Queensland wild prawns will be in the order of \$120,000 (see below).

Importantly, development of the SRL Clean Green program commenced in 1997 and was launched some seven years later in 2004. By drawing on the SRL intellectual property, and on the expertise of SRL team members, it is anticipated that the Queensland program will be ready for launch within 12 months. Other economies in ongoing management costs may be achievable depending on the management structure adopted.

### *NET RETURNS*

To fully evaluate a potential Clean Green Queensland wild prawn program, the measurable benefits against the costs need to be assessed.

This is difficult because:

1. The size of any price premiums that may be created are not known;
2. The volume of certified product which will deliver the price premiums is not known;
3. The timing of when price premiums (and volumes traded) under the program will occur is not known;
4. The sustainability of higher price premiums is not known;
5. The number of fishers that participate in the Clean Green program, and hence the costs of set up, is not known, and
6. A market development program needs to be established as part of the set up process.

Thus there are numerous uncertainties involved. Nonetheless, without a price-building strategy, the future viability of the east coast trawl fishery is threatened.

In order to gain a feel for potential net returns from investing in the Clean Green program, a discounted cash flow analysis presents the net present value of investment under a range of scenarios.

These scenarios include the following:

- certification establishment costs;
- certification implementation cost;
- certification ongoing management costs;
- market development set up costs;
- market development ongoing management costs;
- volume scenarios;
- price premium scenarios.

The model uses economic analysis based on a discount rate (after allowing for inflation) of 5% and a ten year time frame for volume and premium to be achieved.

The cost information has been presented above and the details of the volume scenarios (each rising to the peak in year 8) are shown below.

The scenarios are referred to as:

- Best Case;
- Best Bet;
- Worst Case; and
- Break even.

<b>Volume Scenarios (tonnes)</b>										
<b>Year</b>	1	2	3	4	5	6	7	8	9	10
<b>Worst Case t</b>		50	100	200	400	600	800	1,000	1,000	1,000
<b>Best Case t</b>		50	250	500	1,000	1,500	2,000	3,000	3,000	3,000
<b>Best Bet t</b>		50	250	500	750	1,000	1,500	2,000	2,000	2,000

The premiums used are \$5/kg, \$7.5/kg and \$10/kg, as it assumed that premiums of \$7.5/kg and above are required to bring industry returns to the \$15/kg-\$20/kg required for sustained profitability. Note that the scenarios volumes and prices are arbitrary and need to be adjusted at the direction of the industry.

A summary of the economic analysis for a range of scenarios is presented below:

<b>Net Value Scenarios</b>			
	<b>Tonnes</b>	<b>Premium</b>	<b>Value</b>
<b>Best Case</b>	3000	\$10.00	\$84m
<b>Best Case</b>	3000	\$7.50	\$60m
<b>Best Case</b>	3000	\$5.00	\$35m
<b>Best Bet</b>	2000	\$10.00	\$55m
<b>Best Bet</b>	2000	\$7.50	\$38m
<b>Best Bet</b>	2000	\$5.00	\$20m
<b>Worst Case</b>	1000	\$10.00	\$22m
<b>Worst Case</b>	1000	\$7.50	\$13m
<b>Worst Case</b>	1000	\$5.00	\$4m
<b>Break Even</b>	3000	\$1.40	\$0 approx
<b>Break Even</b>	2000	\$2.00	\$0 approx
<b>Break Even</b>	1000	\$3.90	\$0 approx

The scenarios test impact of tonnes by premium and the “Value” result indicated the net return over a 10 year period in today’s dollars of the scenario after the costs and income are taken into account from the Clean Green program as budgeted above.

### *FUNDING OPTIONS*

The industry is facing serious economic conditions and has limited capacity to fund a major program of as detailed here. Considerable external assistance is required in the set up and implementation phases of years 1 and 2 for success.



Potential external support funding sources include:

1. Fisheries Research and Development Corporation;
2. Australian Seafood Cooperative Research Centre;
3. Department of Agriculture Forestry & Fisheries – Industry and carbon programs;
4. Queensland Department of Primary Industries.

It is proposed that the funding requirements for set up and implementation in years 1 & 2 between FRDC, DAFF and QDPI according to the table below.

It is further proposed that in year 3, industry assume full funding of the ongoing program via a mix of a compulsory levy in the order of \$0.50/kg across all prawns caught in the fishery to fund the market development program, and a direct charge in the order of \$300/vessel to maintain the Clean Green certification program.

Year 1	Funding Source						
	Year 1	FRDC	AS CRC	DAFF	QDPI	Industry	Levy
	Item						
	Project 1.1 Funding inc Ind Levy	\$38,500					
	Project 1.2 Standard/Certific. Prog.			\$86,250			
	Project 1.3 Training Materials			\$64,000			
	Project 1.4 Industry Program	\$75,000		\$525,000			
	Project 1.5 Program Management	\$80,500					
	Project 1.6 Design & Test Market Prog.		\$250,000				
<b>Total</b>		<b>\$1,119,250</b>	<b>\$194,000</b>	<b>\$250,000</b>	<b>\$675,250</b>	<b>\$0</b>	<b>\$0</b>

Year 2	Funding Source						
	Year 2	FRDC	AS CRC	DAFF	QDPI	Industry	Levy
	Item						
	Project 2.1 Industry Program	\$45,000		\$315,000			
	Project 2.2 Program Management	\$91,900					
	Project 2.3 Implement Market Prog.	\$230,000	\$0	\$250,000	\$500,000		
<b>Total</b>		<b>\$1,431,900</b>	<b>\$366,900</b>	<b>\$565,000</b>	<b>\$500,000</b>	<b>\$0</b>	<b>\$0</b>

Year 3	Funding Source						
	Year 3 Onwards	FRDC	AS CRC	DAFF	QDPI	Industry	Levy
	Item						
	Industry Program					\$0	
	Program Management					\$98,550	
	Market Development				\$0		\$1,870,000
<b>Total</b>		<b>\$1,968,550</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$98,550</b>	<b>\$1,870,000</b>

Considerable industry and Government consultation and negotiation will be needed to establish the funding program.

*PRECONDITIONS FOR SUCCESS*

There are several preconditions for success in developing and implementing a Clean Green Queensland wild prawn program. In terms of development of the program, clear, immediate and substantial benefits in the areas of either market price, cost savings or avoiding duplication in government audits must be delivered

Support from all levels of government in recognising and promoting the Clean Green program as the preferred approach to meeting existing legislative requirements, is seen as the key to building the program. Specifically, State and Commonwealth Government acceptance of the program as meeting Government audit requirements and Government auditing with full cost recovery for licence holders without a recognised equivalent Clean Green program will be important. Such an approach will present licence holders with a clear choice: namely paying the costs of and dealing with impacts of Government audits and charges, participation in the Clean Green program, or setting up their own arrangements. Participation in the Clean Green program would be compelling. Finally, and equally important in this case, is substantial funding support at start up from a range of Government agencies together with longer-term industry commitments.

The following is a checklist to be completed (this follows from the previous pre-conditions presented):

Pre condition	Tick here
. <b>Willing licence holders</b> – industry majority support to take action	
. <b>Industry acceptance of key assumptions underpinning the strategy.</b>	
. <b>Industry agreement to implement key program elements - certification and market programs</b>	
. <b>Industry drivers</b> - participants who will support, drive and guide delivery by contactors	
. <b>Industry commitment to a marketing levy of 25c/kg.</b>	
. <b>State Government recognition of the standard across relevant departments</b> - avoid duplication and save costs. Provides support and encouragement for success	
. <b>AQIS recognition of the standard</b> – avoids duplication and save costs.	
. <b>FRDC funding</b> - 2 years covering implementation and program management.	

. <b>QDPI funding</b> - 2 years covering market development program set up and implementation.	
. <b>Access to SRL Intellectual property</b>	
. <b>Access to SRL Resources</b>	
. <b>Other?</b>	

## BENEFITS AND ADOPTION

This project was undertaken for the benefit of the Queensland east coast otter trawl fishery; specifically the prawn fishery. It was led by the Queensland Seafood Industry Association and was responsive to the declining profitability in the trawl sector. This industry led and industry developed project was made possible by the Empowering Industry project which allowed the development of industry ideas and capacity in addressing industry needs. This allows for seamless adoption of the research outcomes (principally an acceptable business plan and implementation strategy). The results of this project also have implications for other fishery sectors struggling with declining revenues (falling prices associated with competing cheap imported seafood) and rising costs (particularly fuel). All this is made worse with prevailing adverse attitudes of the community based on uninformed opinions and perceptions of environmental damage perpetrated by commercial fishing (particularly trawling). Evidence of the social and economic impact of such perceptions translated into government action can be shown with the green zones applied in Queensland waters where more than 30% of waters prohibit commercial fishing. The proactive environmental management strategies presented in this project will assist in better informing the community and governments which are responsive to community concerns.

## FURTHER DEVELOPMENT

A funding package supporting the adoption of the Clean Green rocklobster program to Queensland wild prawns will be developed including funding support for the development and accreditation of workplace standards, training, audit, and certification. Significantly, training protocols will include awareness of carbon emissions, mitigation, and offsets leading to the development of strategies to reduce or offset carbon emissions in the fishing industry. This important initiative will be an evolution of the proactive environmental management embodied in the Clean Green program. Importantly, the funding package will link to and leverage an ongoing industry fund (at least \$1 million annually) for a major market development program. The price building strategy presented and accepted in this project necessarily links premium brand development to marketing. The market development program will concentrate on

building awareness in super premium fine dining markets both domestic and international thereby increasing demand for an exclusive wild-caught product. The next steps are to present the funding package to the industry and to secure an ongoing commitment to the marketing program.

## CONCLUSIONS

- The current cost/price squeeze is threatening the economic viability of the Queensland prawn fishery;
- a gap analysis has shown that existing best practice in the Queensland prawn fishery is compliant with premium market expectations including:
  - sustainability;
  - food safety;
  - product quality;
  - environmental management;
  - occupational health and safety and potentially:
  - carbon emissions.
- the Clean Green rocklobster™ program has shown that significant price premiums can be generated above non-branded product by providing auditable evidence of product quality.
- a business plan assuming that price premiums can be generated (by increasing demand for certified product) demonstrates increased profitability with Clean Green wild prawns differentiated against cheap imported farmed prawns.
- an implementation strategy includes adoption of the successful Clean Green rocklobster program to Queensland prawns with consequent savings in costs and time (to adoption).
- implementation will occur over two years and will include development and accreditation of appropriate workplace standards, training of industry participants, and audit/certification by independent third parties (under a JAS-ANZ accredited product certification system – ISO 65).

- an essential adjunct to implementation is the development and application of an ongoing major marketing program financially supported by industry commencing year 3.
- management of the Clean Green Queensland wild prawn program will be by the Industry (e.g. facilitated by existing structural arrangements through QSIA) and potentially could include a fisher-direct model in which fishers determine the price and control the supply chain.

## APPENDIX 1 INTELLECTUAL PROPERTY

The implementation strategy presented in this report draws on the intellectual property of Southern Rock Lobster Ltd. They control the Clean Green trademark and the integrated product management system applicable to the Clean Green program. They have expressed a willingness to share this intellectual property in return for a modest and limited royalty as detailed in this report. Other FRDC supported intellectual property include safety management materials

developed for the Spencer Gulf prawn fishery. These materials could be adapted for use in the Queensland prawn fishery as described above. Apart from these issues, the intellectual property contained in this report reflects FRDC policy.

## **APPENDIX 2. STAFF**

Mr Martin Hicks (QSIA): principal investigator and industry liaison;

Mr Winston Harris (QSIA): industry liaison, port meetings (Cairns);

Ms Heidi Wilson (QSIA): project administration/accounts;

Mr Roger Edwards (Corvel Marketing and Management): co-investigator, business planning, implementation strategy;

Dr Paul McShane (Global Marine Resource Management): consultant, project management, gap analysis, report writing.