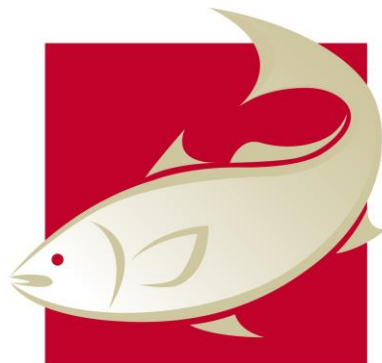


**Identification of the core leadership group and
network structure of East Coast Trawl to
develop, implement and evaluate strategic
opportunities**

Dr Vikki Schaffer

Project No. 2010/777



**AUSTRALIAN
SEAFOOD
COOPERATIVE
RESEARCH CENTRE**

July 2014

This project was conducted by University of the Sunshine Coast

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Non-Technical Summary

PROJECT TITLE: Identification of the core leadership group and network structure of East Coast Trawl to develop, implement and evaluate strategic opportunities

PROJECT NUMBER: [2010/777]

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PROJECT OBJECTIVES:

1. To identify a core leadership group for East Coast Trawl Fishery and gain a better understanding of the East Coast Trawl Fishery networks.
2. To attain agreement and commitment from East Coast Trawl Fishery to work co-operatively to pursue a viable market strategy and once implemented, evaluate the effectiveness of the agreed market development strategy, leadership group and networks.

OUTCOMES ACHIEVED

1. The investigation of leadership within the fishery and an understanding of the current industry network structure as a platform for building the social capital and associated network to improve collaboration, information and resource dissemination and informed decision making.
2. Evaluation of a fishery wide market opportunity. This provided insight into the fishery network, stakeholder interaction, communication and the effectiveness of fishery members to work collaboratively and co-operatively to achieve positive outcomes.

LIST OF OUTPUTS PRODUCED

The project has delivered the following outputs:

- A solid understanding of the fishery structure
- An appreciation of the formal and informal 'leaders'
- A Marketing Audit for the Wild Caught Prawns of the East Coast Trawl Fishery
- A Marketing Audit for the Wild Caught Prawns of the Moreton Bay Trawl Fishery
- The Moreton Bay Prawns Facebook page
- The Moreton Bay Seafood Industry Association (MBSIA) website (Prawns)
- A Communication Tool

ACKNOWLEDGEMENTS

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1. Introduction and Background

This report presents the findings within the research project titled 'Identification of the core leadership group and network structure of East Coast Trawl to develop, implement and evaluate strategic opportunities' (2010/777).

The East Coast Trawl Fishery (ECTF) is spread over a large geographical area (from the Torres Strait to the Queensland – New South Wales border), and comprises a large number of small independent fishers. Importantly, it is one of Australia's largest fisheries and has an annual volume of 10000 tonnes with a value of around \$110 million a year (Department of Agriculture, Fisheries and Forestry [DAFF], 2013). Due to the uniqueness of the ECTF, it was proposed that an independent project be developed to meet the specific requirements of the ECTF. It was anticipated that the results from 'Optimising Quality and Value in Domestic Prawn Value Chains' would provide valuable insight throughout the project.

The project aimed to empirically investigate the current structure and process of the ECTF network. It was proposed that examining network structure and processes (in the context of social capital theory) was critical in identifying opportunities for both the ECTF network and individual fishers. This project intended to use social capital theory and network analysis to inform the industry with the aim of:

- i. obtaining an empirically tested analysis of the processes, strengths and weaknesses of current network structure, and
- ii. developing strategies to realise potential opportunities and identifying further opportunities for industry expansion.

Organisation for Economic Co-Operation and Development (OECD, 2001) defines social capital as networks, together with shared norms, values and understandings which facilitate co-operation within or among groups. Social capital emerges from social interactions that are external to the individual, and includes the nature and extent of relationships and networks within and between groups. Social capital resides in relations rather than individuals and is a resource that may be mobilized to generate a stream of benefits for industries and communities over time (Bourdieu, 1986; OECD, 2001; Walker, Kogut & Shan, 1997). In this research, social capital is defined as the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships. It has been found that effective networks increase the efficiency of information diffusion and actions between people while reducing transaction costs and potential opportunistic activities by stakeholders (Putnam, 1993). High-functioning networks are more transparent with stakeholders informed of fishery happenings, feature effective relationships between stakeholders and a sense of equity or fairness in relation to opportunities and risks. In competitive business environments, networks are viewed as critical facilitators for accessing knowledge, resources, markets and technology (Scott, Baggio & Cooper, 2008). A more detailed review of the literature can be found in Appendix 1.

The project had the support of the Australian Council of Prawn Fishers (ACPF) and had been discussed with CRC Program Leader, Jayne Gallagher. The project concept was supported by the Seafood CRC Board and the FRDC Board. The project was to be a collaborative effort between the ACPF, East Coast Trawl, and the University of the Sunshine Coast. In particular, the work relating to the Moreton Bay fishery would involve collaborative discussions with Dr Janet Howieson, PI of 'Optimising quality and value in domestic prawn value chains'.

1.1. Need

Those working within the ECTF include fishers, agents and/or wholesalers, processors, various industry and government organisations and retailers. The lengthy coastline, the distances between trawl areas and being a multi species fishery, has resulted in the fishery becoming (i) a production focused industry and (ii) location oriented rather than whole of fishery oriented. Consequently, intense competition exists throughout the supply and value chains. Over the five years preceding the project, the intense competition had been exacerbated by the decline in the value of Queensland prawn production caused by record high fuel costs; labour shortages; competition from imported product and the strong Australian dollar. Furthermore, the ACPF identified a whole of industry approach as a research priority with an objective to identify a specific opportunity/strategy to pursue, not as individual fishers, but as a collective fishery. This project aimed to develop a framework and to identify the leadership and levels of co-operation, collaboration and engagement within the ECTF. A market opportunity/strategy to assess the leadership and the fishery network's structure and function was to be implemented.

This project was based on an industry identified and agreed need to assess collaboration within the fishery to leverage existing and future market opportunities. The understanding of industry social capital was seen as fundamental to achieving this aim.

1.2. Objectives

1. To identify a core leadership group for East Coast Trawl Fishery and gain a better understanding of the East Coast Trawl Fishery networks.
2. To attain agreement and commitment from East Coast Trawl Fishery to work co-operatively to pursue a viable market strategy and once implemented, evaluate the effectiveness of the agreed market development strategy, leadership and networks.

2. Methods

A multiple method, action research approach was employed to address the project objectives. The ECTF was examined as a whole fishery. In addition, the Moreton Bay trawl fishery was assessed as a case study location within the broader ECTF. The research methodology included in-depth interviews, qualitative and quantitative surveys, and observations. The research was undertaken between July 2011 and June 2014.

The project focused on three key tasks, a flowchart of the project can be found in Appendix 2.

2.1. Task 1: Identification of Industry Leadership Group and ECTF Network Analysis (utilising a social capital theoretical framework).

Social network analysis was undertaken involving stakeholders throughout the value chain (e.g. fishers, agents and/or wholesalers, processors and retailers) to clarify participant involvement, formal leaders, peer nominated leaders, and the strengths and weaknesses the networks provide, in the context of social capital.

Task 1 was sub-divided into two parts.

2.1.1. Identify a leadership group

Between August 2011 and April 2012 87 in-depth face-to-face or telephone interviews were undertaken with ECTF and Moreton Bay Fishery stakeholders. Semi-structured questionnaires (Appendices 3 and 4) were used within a qualitative based, in-depth interview strategy to identify a leadership group. Focal questions requested participants to –

- identify those whom they go to for information;

- the name/s of those within the ECTF who may not necessarily be high profile people but who are influential, opinionated, interested, someone who may be considered a 'quiet achiever', someone who others listen to, regarding fishery issues, challenges, happenings and activities; and
- those who would support and champion a market opportunity, and engage the fishery to work towards achieving a positive outcome.

2.1.2. Network analysis of the ECTF

This project viewed the network as a system of interrelated actors. Responses were assessed (using UCINET data analysis software) and analysed. Utilising social capital frameworks, an understanding of fishery relationships and an appreciation of what facilitated or impeded information and resource flows within the ECTF was gained.

2.2. Task 2: Trialling of a Market Strategy Identification and Implementation

Task 2 focused on developing and implementing a market opportunity. The identification of suitable market opportunities was followed by a presentation to fishery stakeholders. These stakeholders voted on a market opportunity they wanted to implement. By trialling the identified market opportunity, the ECTF network could be further analysed to identify network co-operation and collaboration.

Task 2 included three key activities.

2.2.1. Market audit report

An investigation was undertaken to identify fishery resources, capabilities and issues within the current environment from the perspective of prawn wholesalers. Fifteen interviews were conducted over a two month period in October and November 2011, each interview took between 45 minutes and 3 hours, a case protocol was used (Appendix 5).

These results were compared and collated with those within the broader data collection process.

2.2.2. Development of market strategy

ECTF: Three market opportunities were identified for the ECTF and were initially presented at a workshop in Townsville in February 2013. Following the presentation, it was determined by attendees that there was not enough collaboration or co-operation between industry stakeholders to implement a market opportunity at that time. Attendees suggested social activities would be started to re-engage fishery members. The researchers monitored this process. To date, limited activity has been undertaken.

Moreton Bay: Three market opportunities were developed for the ECTF and presented to Moreton Bay prawn industry stakeholders in July 2012. One market opportunity was identified, however due to unforeseen circumstances progress was halted. A further three market opportunities were identified and presented at workshops in February and March 2013.

2.2.3. Implementation of market strategy

This focus of the project was not on the success or otherwise of the different market opportunities undertaken. These opportunities were conduits for the evaluation of the network and leadership.

Overall, in the course of the project a number of strategies were developed however various industry challenges that are creating uncertainty within the ECTF and Moreton Bay fisheries, together with operational and communication difficulties and the current status of the industry social capital, leadership and network, constrained the implementation of the developed strategies.

ECTF: A whole of fishery opportunity was sought. Discussions with researchers, the ACPF and SCRC highlighted that the National Prawn Strategy (NPS) was in the process of being implemented. As this strategy required involvement from the whole fishery (nationally), the NPS was the market opportunity included in the project to evaluate the ECTF network.

Moreton Bay: A social media strategy was the identified market opportunity. Workshops were held to create and commence monitoring a Facebook page (Moreton Bay Prawns).

In addition, the ECTF project worked in conjunction with the Value Chain project (2008/793.10) to facilitate an opportunity for fishery members to collaborate and co-operate via the development of a prawn section on the Moreton Bay Seafood Industry Association (MBSIA) website and the Regional Flavours food event in Brisbane.

2.3. Task 3: Final Evaluation of ECTF Network

ECTF: A final evaluation of the fishery network following the implementation of the market opportunity was undertaken via 49 in-depth interviews with ECTF stakeholders (Appendix 6). The evaluation of the fishery wide market opportunity provided insight into the fishery network, stakeholder interaction, communication, levels of trust, and whether fishery members worked collaboratively and co-operatively to achieve positive outcomes.

Moreton Bay: The evaluation of the Moreton Bay fishery market opportunity and additional activities (Facebook page, website activities and Regional Flavours event) provided insight into stakeholder interaction, communication, levels of trust and whether fishery members worked collaboratively and co-operatively to achieve positive outcomes. Eleven Moreton Bay specific, in-depth interviews with fishery stakeholders were completed (Appendix 7).

3. Results

3.1. Industry challenges

Eleven semi-structured questions sought to gain an appreciation of the challenges facing the prawn trawl industry. Participants ($n=87$) highlighted various issues facing and impacting upon the fishery. In addition, findings from marketing audits for wild caught prawns in the ECTF and Moreton Bay, conducted within the project, focused on 15 wholesalers (Appendices 8 and 9 respectively).

The industry is facing challenging times and this is reflected in the uncertainty expressed by participants towards the future of the industry.

Overwhelmingly, participants felt restrictions and changing regulations negatively impacted upon fishery activities. It was indicated that for the most part decision makers did not seem to understand the industry and the opinions of those working in the fishery were not respected. Despite being “at the forefront of technology regarding by-catch reduction devices”, participants suggested closures prevented access to “some of the most productive marine food resource areas” that can be fished in a sustainable manner. In addition, participants suggested a low return on investment, lack of support for the industry, a reduction in the number of younger people entering the fishery, difficulties in securing, training and keeping employees, lack of industry control and insecurity about personal and industry futures, funding inequities, limited decision making power, loss of bargaining power for prices due to fewer wholesalers, competition from imports, and fishery restrictions and regulations were all issues of concern. Furthermore, participants stated that the lack of consumer education has resulted in misunderstandings about trawl fishing and the seafood industry.

Fishing industries are resource dependent and as such a unique relationship between the resource (prawns) and users (commercial fishermen and those along the supply chain) exists (Marshall, Fenton, Marshall & Sutton, 2009). Marshall et al (2009) in their study of the commercial fishing industry in North Queensland highlighted that 'changing the nature of the relationship between users and a resource can inadvertently compromise human prosperity and affect the ability of social and ecological systems to be resilient'. Further detail about industry identified challenges can be found in Appendices 10 and 11.

To gain further appreciation of the issues and challenges, levels of satisfaction with various aspects were assessed. The average satisfaction score was 1.89 indicative of overall levels of dissatisfaction. Participants expressed satisfaction with the challenge (3.91) and worthwhile accomplishment received from working in trawl fishing (3.57) (Table 1). Levels of dissatisfaction were expressed towards the rules set by government (1.65), amount of control over decision making and support from local government (2.19 respectively).

Table 1: Levels of satisfaction within the ECTF

Satisfaction Statement	Results	
	Av	SD
Challenge in my work	3.91	1.102
Feeling of worthwhile accomplishment from fishing work	3.57	1.258
Support and guidance from others working in prawn fishing	3.36	1.080
Job security	2.88	1.414
Time spent working to make a living	2.82	1.430
Receipt of fair income from fishing	2.68	1.472
Level of support from industry bodies	2.61	1.190
Level of support from community bodies	2.47	1.210
The long-term viability of working in fishing	2.44	1.241
Amount of control over decisions affecting how I undertake fishing	2.19	1.308
Level of support from local government	2.19	1.136
Rules set by government on how fishers can operate	1.65	0.929

5 point scale: 1 = very dissatisfied to 5 = very satisfied

Over one third (36%) of participants suggested that finding and keeping reliable staff was difficult. Comments revealed participants recognise industry sustainability relies on young people entering the industry. Yet, 68 percent stated "No" when asked if they encourage young people to enter the industry. Reasons for this response included the seasonal nature of the work and the uncertain future of the industry. Participants also expressed a love for the work with one participant stating "it is hard work but it provides a good lifestyle".

Relationships were explored in various ways to gain insights about trust. As trust potentially influences social capital, networks and leadership, which in turn influences co-operation and collective action, it was deemed that these results should be placed within this section.

Not all participants chose to provide responses to all questions. When asked about trust in general, participants gave overall positive responses. Participants moderately (27%, $n=13$) to strongly agreed (24%, $n=12$) with the statement, *I trust people I know well*. Moderate agreement was also given to the statements *most people can be trusted* (18%, $n=9$) and *I neither trust nor distrust* (16%, $n=8$). Participants stated that most of the time, people involved in the prawn trawl fishing industry do help

but they also want something in return (78%, $n=32$). This was not perceived as a negative characteristic but relationship reciprocity.

Levels of trust varied depending on the stakeholder group (Figure 1). Overall, moderate to high levels of trust were said to exist with people within the participants bonded circles (e.g. fellow fishers, neighbourhoods and social groups). Levels of trust with those with whom participants did business reflected that *high levels of trust exist* (moderate to high). With the groups that would elicit linking social capital (government, environmental and recreational fishing groups), responses varied indicating limited levels or no trust exists.

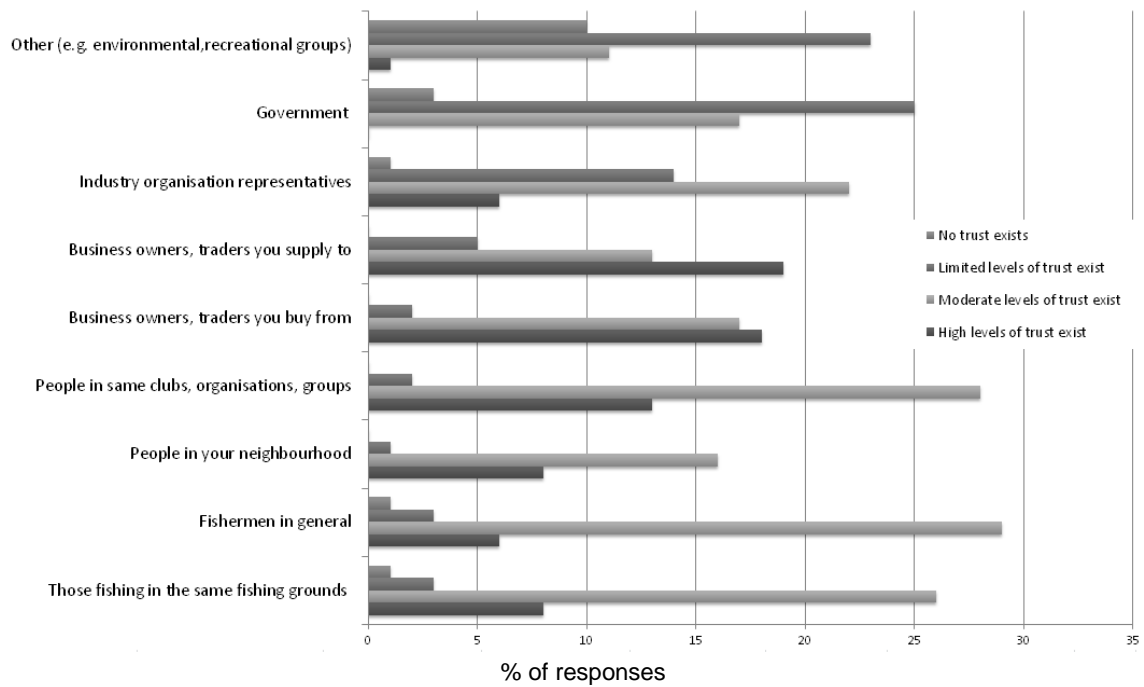


Figure 1: Levels of trust with various groups

Over three quarters (82%, $n=71$) of participants provided comments about trust. Although aspects of trust were measured, several participants also wanted to discuss levels of distrust. As both trust and distrust are acknowledged to be important in co-operative efforts (Falcone, Singh and Tan, 2001) these comments warranted further exploration. Falcone et al. (2001) highlight the variances in how trust and distrust are viewed with some theorists postulating that trust and distrust are opposites. Others (e.g. Lewicki, 1998; Worchel, 1979) suggest trust and distrust are separate and can co-exist. This is how these concepts were described by participants. When asking about trust, participants indicated they had levels of trust and distrust with the same groups and these were context specific. Participants may have to depend on another fishery stakeholder to undertake business even though the outcome may be uncertain or negative. Similarly, there is trust and distrust with fellow fishers. There may be levels of distrust relating to how business is done but simultaneously, out at sea, trust is implicit.

These issues provide context for the results that follow.

3.2. Social capital and network structure of fishery

Results revealed there is limited multi-level focused or directed engagement that seeks to build, access and/or capitalise on fishery social capital. To examine this, each of the three social capital components were evaluated: bonding, bridging and linking social capital.

Small and medium sized food producers make a significant contribution to the economic prosperity of many regions (Lamprinopoulou, Tregear & Ness, 2006). Research suggests the greater the social cohesiveness, and the more advanced the level of collaboration (Sammorra & Biggiero, 2001), the more effective is the establishment, strength and utility of social capital. To achieve this, a balance between the three types of social capital is ideal. Bonding social capital appears to be the most prevalent form of social capital within the ECTF.

Bonding social capital was examined by assessing the generational nature of the fishery, who people go to for information, levels of trust, resource sharing, how people learned work related skills, and the number of friends within the fishing industry. Bonding social capital was shown to exist particularly between those within close geographic proximity, family and friends. Bonding social capital was evident as connections with family and friends were identified as key relationships for those in the fisher and business groups, with 42 percent ($n=37$) stating that 50 percent or more of their friends worked in the industry. Eighty-seven participants provided an indication of the how many of their friends work in the fishing industry. These were friends that participants currently socialised with. Forty-two per cent stated 50% or more of their friends worked in the industry with the majority having a social circle consisting of between 80% and 100% of friends who worked in fishing.

Within fishers ($n=66$), 12 percent ($n=8$) were third generation fishers while 40 percent ($n=26$) were second generation. When seeking information about the fishery/fishing, most fishers rely on themselves or family and friends (76%, $n=50$). For the most part, information was exchanged out of necessity, personal interest or to achieve specific goals. When asking where people learn the skills and knowledge to undertake fishing, the majority stated they were self-taught (76%, $n=50$) or learned from other fishermen (59%, $n=39$), family (47%, $n=31$) or formal education (23%, $n=15$). It was repeatedly stated that fishing is a solitary industry that requires high levels of self-reliance.

Resources are sometimes shared and although varying levels of trust exist, it is mostly between family: “we pretty much keep to ourselves” and “[I] really only trust my family”. Comments also highlighted levels of trust varied according the context: participants suggested that higher levels of trust exist with fellow fishers while at sea i.e. “if you are in trouble out at sea, you can trust other fishermen will help you” and “we look out for each other when we are out”.

Bridging social capital was assessed by examining levels of trust, the variety and number of groups/organisations that participants were members of, the type of interaction and membership rates, and perceptions regarding community contribution. Trust was on average at moderate levels with industry organisations.

Diversity of membership was evident with participants holding memberships in a variety of industry and community groups (66%, $n=57$). Although participants held membership within 17 different groups, committees, associations and organisations, over one third of participants did not currently hold any such membership (34%, $n=19$). Memberships were held in community based groups/organisations, such as the RSL, Chamber of Commerce, country club, sport, social, religious or school related groups and committees, community choirs, scouts, Freemasons, political parties, Surf Life Saving, Society of Naval Architects and Marine Engineers. Participants who did not currently hold any membership stated they had chosen “recently” or within the “last six months” not to renew their industry-related memberships. The main reason for not holding or renewing memberships was a lack of time (58%, $n=11$).

These connections can facilitate bridging social capital. Diversity of intercommunity ties can introduce new ideas, information and skills that place people and industries in a stronger position to confront problems and take advantage of economic opportunities. However, effort is required to build this capital and to sustain it over time. Bridging social capital was shown to exist between fishers and

businesses. These connections tend to feature looser, individualistic links necessitated by the need to undertake specific commercial activity and may not be enhanced or utilised for longer term, widespread, industry benefits.

Ninety-one percent of participants ($n=79$) indicated activities relating to the ECTF, such as employment, vessel maintenance, and the provision of numerous supporting goods and services, contributed to local economies. Comments highlighted this was “most noticeable in the smaller ports that lack other significant industries”, while it was also suggested that this was “under-estimated by many”. A few participants acknowledged that their contributions to local communities (e.g. providing funds or product for raffles) had diminished due to lack of time and resources, further reducing the opportunity to enhance and extend bridging capital.

Linking social capital refers to the connections across disparate groups and at different hierarchies such as those between fishery regulators, managers and other government agencies. These links provide access to those in positions of power and those who are involved in decision making regarding the fishery. In this instance, this group extends to environmental (e.g. WWF) and recreational fishing groups (e.g. Sunfish) who held positions on the stakeholder advisory groups, the Technical Advisory Group (TAG) and Scientific Advisory Group (SAG). There is some connectivity between the various stakeholder groups but the perceived value of these links is uncertain. These loose, weak links also appear to be necessitated by need and may not result in longer term collaboration.

Linking social capital was investigated by assessing the level of engagement in fishery related organisations, contribution to decision making, the maintaining of stakeholders relationships and perceptions of proactivity.

Looking at links between stakeholder groups provides insights into how important these relationships are with regard to information transfer (one-way) and exchange (two-way). Those who said they connected with Industry Organisations also stated the information they received was *very important*. Comments reveal that the information received from Government was considered *important*. Fishery stakeholders contact Government to seek specific information (e.g. regulation changes). Participants indicated information transfer occurred. However the exchange of information was considered inconsistent, as although information was provided to Government, participants did not feel they were necessarily listened to or that the information provided was used to aid effective decision making. Participants indicated information was disseminated (transferred) by Government and Industry Organisations pre-and-post decisions being made.

Lower levels of trust negatively impact the ability to build, sustain and draw upon any existing or potential bridging or linking social capital. A variety of aspects influenced linking social capital:

- 16 percent of participants ($n=11$) believed relationships with other stakeholders were useful;
- Participants believe that governments are thought to act proactively *sometimes*, *occasionally* or *never*. It should be noted that a small percentage (5%, $n=4$) of comments highlighted that governments “do more than people think”;
- Industry organisations were said to act proactively *sometimes* or *occasionally* (67%, $n=57$), with eight percent of participants stating industry organisations *always* act proactively.

There was widespread interest in being involved in decisions about the fishery. Several (13%, $n=11$) participants stated they had travelled to be part of government sponsored meetings giving up their personal and business/fishing time to do so. Twenty-three percent ($n=20$) indicated they believed they mostly contributed while only two percent said they believe they contributed. However, the majority of participants felt they were not able to contribute to decisions made about the fishery.

Effective decision making requires collaborative processes. However, although 87 percent ($n=76$) of participants said information was distributed and meetings were held, 69 percent ($n=60$) indicated decision making was not collaborative. This was supported in open ended comments such as "decision making is not collaborative, consultative but definitely not collaborative". Decision making required the consideration of the divergent agendas of various stakeholder groups such as government, commercial fishers, recreational fishers and environmental groups, and thus, this process was described at times to be "mission impossible".

Interviews revealed that individual participants are focused on economic success, or for many, the economic viability needed to subsist. Many participants indicated they are achieving some financial gains, or at least "surviving". However, long-term success and industry sustainability is potentially compromised as although stakeholders are exchanging information, they do so sporadically, out of necessity, personal interest or to achieve specific goals.

Field (2003:1-2) states 'relationships matter' and central to this is that 'social networks are a valuable asset'. The culture of an industry influences social capital. Overall, results show the culture within the ECTF does not favour widespread co-operative behaviour, shared vision or the unity required for collective action, and thus utilisation or creation of potential social capital. This is also evident in the expressed levels trust and confidence between stakeholder groups. Some individuals possess extensive human capital in the form of skill and knowledge but as this is not actively shared it has limited contribution to social capital and although, of value, does not become a resource that the fishery can draw upon.

Further detail about the social capital and the structure of the fishery networks can be found in Appendices 12 and 13.

The fishery network density was analysed. Density is a characteristic of the whole network. The more dense the links between the stakeholders/groups the more likely there will be agreement on what are legitimate or acceptable actions and more efficient the communication. Cohesive or densely embedded networks can be advantageous as they are closed, allowing for consolidation of thinking and action (Walker et al., 1997). However, highly dense networks are less resilient and less able to search out new information, ideas, knowledge and resources (Granovetter, 2005). Less dense or cohesive networks can be useful therefore for achieving innovation. A density score of 1 reflects a very dense network while a score of 0, is a sparse network. The ECTF network had a density score of 0.102, indicating a looser, less cohesive network.

Structured networks exist (industry and government initiated stakeholder and membership groups) but are limited in their ability to widely disseminate information or facilitate broad collective action. This is reflected in overall low, and reducing, membership numbers within Industry Organisations (e.g. QSIA). Informal networks dominated and were typically geographically located. As the nature of the industry involves travelling within and beyond various fishing grounds and ports, informal connections span across the whole fishery. However, these are haphazard, lack purpose and direction.

Informal networks are solidified episodically at various times such as festivals and events (Hervey Bay Seafood Festival) or to address fishery issues (e.g. establishment or changes to marine parks, closures and fishery regulatory changes). Informal networks were used to exchange information, catch up and "gossip". These informal networks are important, providing links, albeit temporary, to structured networks and homogenous (close knit) networks.

3.3. Leadership within the fishery

Leaders were identified by reviewing secondary sources such as industry reports and websites (formal leaders such as Association board members), and within interviews with fishery stakeholders

(peer nominated leaders). Various comments were provided in response to the questions ranging from “no comment” to “there [are] a lot of fishermen that are all doing as much as they can to keep this industry going - too many to name”. Seventy responses provided 45 different names from throughout the ECTF and from the various stakeholder groups. Most were nominated only once (66%, $n=30$) while, the remainder received two nominations. This reflects the broad geographic range and complexity of the fishery.

All identified leaders were invited to take part in a project-related leadership group. Only two people agreed to participate. Four others asked to be kept updated and offered to assist if they could but stated they would not formally participate. Time and financial pressures were noted as barriers to accepting active leadership responsibilities required to undertake these roles.

Comments such as “it’s the same people who step up all the time” suggest heroic leadership exists within the fishery. Heroic leadership describes those individuals who sacrifice to pursue positive outcomes for all (Pearce & Manz, 2005). Heroic leadership is often done in isolation with the leaders becoming disconnected in their endeavour to afford change and frustrated by the lack of perceived stakeholder support. This type of leadership consumes people, and there is a risk of high levels of stress and anxiety (Crevani, Lindgren & Packendorff, 2007) as expressed by past and present formal and informal fishery leaders. It was observed that heroic leadership did not necessarily create a legacy or long term benefits for the fishery. Once this type of leader leaves, the potential benefits dissipate.

Interviews revealed that once a person is placed in a position of power they often lose the support of other stakeholders. Stakeholders who had taken leadership roles talked about being “burned out”, “frustrated” and “overwhelmed” at having to deal with the logistics of getting stakeholder group members to work together consistently and with purpose. An attitude of free-riding, complacency and individual agendas makes achieving strategic goals and objectives extremely challenging.

Although a formal leadership group was not established, informal leaders were identified. This suggested the development of a leadership group required a different approach. Informal leaders may be most useful as ‘champions’ for fishery issues and projects, information dissemination, the identification and sharing of a collective vision, and actively pursuing the creation of social capital and a fishery network encompassing the whole fishery. This may be possible as the nominated individuals reside/work throughout the ECTF.

3.4. Evaluating the effectiveness of the leadership and networks

During August and September 2013, a final evaluation of the ECTF and Moreton Bay fishery networks was undertaken. A total of 49 in-depth interviews were conducted with stakeholders from all sectors of the ECTF (11 interviews were undertaken with Moreton Bay fishery stakeholders).

The leadership and networks were evaluated by asking participants about their connectedness within the fishery and within their local community. They were also asked a series of questions relating to their awareness of and involvement with the various market opportunities that had been implemented. The agreed market opportunities were as follows:

- ECTF – the National Prawn Marketing Campaign (NPMC), and
- Moreton Bay – Moreton Bay Facebook Page (MBFP), prawn pages for the MBSIA website and Regional Flavours Food Festival.

Those who were aware of the market opportunities were asked to nominate how they found out about it, whether they had shared the information with others and whom they had shared the information with. Involvement in the market opportunity was assessed through meeting attendance, and through

collaboration and co-operation in the implementation of the strategy. Keast and Mandell (2011) argue there is a transition through a continuum from co-operation to co-ordination followed by collaboration.

Co-operation tends to be somewhat unstable, consist of shorter term activity with informal, voluntary relations featuring lower levels of trust, relational intensity and risk (Cigler, 2001 in Keast and Mandell, 2011; Hogue, 1994). In contrast, collaboration is more stable with higher levels of connectivity featuring denser, longer term relationships and reciprocity with higher levels of intensity and risk (Cigler, 2001 in Keast and Mandell, 2011; Gray, 1989; Mandell, 1999).

3.4.1. ECTF

Participants were from various sections of the fishery e.g. fishers and industry-related organisations and associations.

Connection: Participants were asked how connected they were to the prawn trawl industry and their local community using a five point scale where 1 relates to being *highly connected*.

Participants felt they were more connected to the industry (mean 1.73, Std. D 1.04) than to their local community (mean 2.45, Std. D 1.04).participants.

Awareness: Ninety four percent of participants ($n=45$) had heard of the NPMC. Just under half had heard about it from one or more sources (45%, $n=22$ respectively). Similarly, participants (46%, $n=19$) had shared information about the NPMC with others, in particular, the sharing of information with other fishers (79%, $n=15$).

Involvement: Just under 20 percent (19.5%, $n=8$) of participants had attended meetings about the NPMC. Most of the meetings attended had been hosted by industry organisations/associations (67%, $n=6$).

Approximately fifteen percent (14.6%, $n=6$) stated that they had co-operated with others regarding the NPMC. Co-operation included attendance at meetings, having discussions with others about the NPMC and keeping an open mind.

Nine participants (22%) stated they had worked collaboratively with others in connection with the NPMC. Collaboration included holding positions on the steering committee, actively disseminating information and opinions, and advocating by actively encouraging others to become involved.

Of those who were asked about their future intentions, only 20 percent ($n=10$) of participants indicated they would co-operate regarding the NPMC and only 17 percent ($n=7$) of participants suggested they would collaborate. Despite this 59 percent considered that the NPMC was a suitable strategy for the industry, however, there was confusion regarding the implementation with participants saying they needed to know more about it and that it was too early to tell if it would be effective.

The results suggest co-operation and collaboration from ECTF stakeholders was limited in respect to the NPMC. An evaluation of secondary sources supports these findings which indicate lower levels of involvement by ECTF stakeholders in the NPMC.

3.4.2. Moreton Bay

Moreton Bay Facebook Page (MBFP)

There are approximately 40 active licenses in the Moreton Bay fishery. Eleven responses were recorded. Participants were from various sections of the fishery e.g. fishers, industry organisations and government. The Moreton Bay Facebook page was set up on the 22nd May 2013. The total number of monthly active Facebook users was 1,310,000,000 (as at 1 January 2014, Source: Facebook). Globally, commercial fishing businesses, organisations and associations are using social media. The managing body for the Moreton Bay fishery is Fisheries Queensland who utilise social media tools to inform people about happenings within Queensland's fisheries. Moreton Bay stakeholders determined the Facebook page would be directed towards fishery stakeholders rather than consumers.

Awareness: All 11 participants were aware of the MBFP with 64 percent ($n=7$) having heard about it from more than one source. Participants shared information about the MBFP with others, for example an industry organisation representative (55%, $n=6$).

Involvement: With regard to attending meetings about the MBFP, 36 percent ($n=4$) had attended a research hosted meeting. This is confirmed in observational results.

Five participants (46%) stated they had worked co-operatively and/or collaboratively with others on the MBFP. Co-operation focused on the sharing of information and engaging with the page (e.g. providing comments, linking with the page via LIKES). Collaboration included meeting attendance, supplying page content, actively trying to engage others and undertaking page administrative roles (2 participants) and supportive roles (1 participant).

One stakeholder (an industry organisation representative) took a clear leadership role and actively drove the activities related to the opportunity.

Overall, co-operation and collaboration was low with respect to those taking an active role. Involvement can be formal or informal, direct or indirect and encompasses a wide variety of interactions ranged from information sharing to active participation. Additional information and Page statistics can be found in Appendices 14, 15 and 16.

Moreton Bay Seafood Industry Association (MBSIA) Website – prawn pages

In conjunction with the Value Chain project (2008/793.8), five individuals, from different stakeholder groups including fishers, conservation organisation and an industry organisation representative, came together to develop the prawn pages for the MBSIA website. Other people co-operated by providing textual and video content for the pages. One industry person took a leadership role and was instrumental in driving the task forward. On completion of the project co-operation around the website was discontinued.

Regional Flavours

Regional Flavours is a food and wine festival held annually within the South Bank Parklands, Brisbane, Queensland. The event features free entertainment, celebrity chefs, industry experts and fresh produce from more than 100 of Queensland's best providers (www.regionalflavours.com.au). There were several reasons for Moreton Bay stakeholders to take part in this event including creating

awareness and educating consumers. For this project, it was an opportunity to assess levels of awareness, involvement, co-operation and collaboration of Moreton Bay trawl stakeholders.

All 11 participants were aware of the Regional Flavours Festival, 36 percent ($n=4$) had heard about it from one or more sources. The most common source of the information was from an industry representative (73%, $n=8$).

Involvement: There were eight interviewed participants (73%) with 14 fishery stakeholders observed at the event who were actively engaged over the two days of the festival stall. Of these, three were prawn trawl specific fishery members. Interviews revealed other stakeholders were involved in the supply of product. There were two key stakeholders who undertook clear leadership roles. One of these was directly connected to the Moreton Bay (prawn) trawl fishery (an industry organisation representative); this person actively drove the activities related to the opportunity.

Almost three quarters of those interviewed (73%, $n=8$) had shared information about Regional Flavours with others. The most frequently nominated group, with whom people shared information, was other fishers (71%, $n=5$) (Table 2). Five participants (46%) indicated they had shared the information with more than one group.

Table 2: With whom participants shared information about the Regional Flavours Festival.

Who information was shared with	n (%)
Other fishers	5 (71)
An industry organisation representative	4 (57)
Retailers	2 (29)
Government representatives	1 (14)
General public	1 (14)
Researchers	1 (14)

(multiple responses possible)

With regard to attending meetings about Regional Flavours, 64 percent ($n=7$) had attended at least one meeting, with 57 percent of those ($n=4$) attending multiple meetings. Meetings were either hosted by an industry organisation representative, a local retailer or on the wharf arranged by the fishers.

Eight participants (73%) had worked either co-operatively or collaboratively with others for Regional Flavours. Co-operative activities included sharing information, providing product, storing and providing containers, and working at the event on the day. Collaboration had occurred in activities such as planning, managing, organising, and making a video. Some individuals fulfilled more than one role. For some of these participants this was their second food-related festival and it marked a shift in how the fishery chose to undertake marketing, promotion and engagement.

Participants indicated they had co-operated/collaborated with industry organisation representatives (100%, $n=8$), fishers (75%, $n=6$), and a government representative (25%, $n=2$). Three quarters (75%, $n=6$) of those who had co-operated did so with more than one stakeholder group.

Results suggest the Moreton Bay fishery had an active but small core network that was drawn together for this event. This network incorporated a variety of stakeholders including fishers (trawl and fish), government and industry organisation representatives, and local businesses. Once the event activities were completed the network dissipated.

4. Discussion

Social capital can be built up and drawn upon, it is linked to economic and community development and to the long term health of communities (people, profits and environments). Previous studies have highlighted the effectiveness of networks for increasing information diffusion and actions between stakeholders, while reducing transaction costs and potential opportunistic activities such as 'free-riding' (Putnam, 1993). High-functioning networks are said to be more transparent, with stakeholders being better informed of fishery happenings, and facilitate a sense of unity, equity or fairness in relation to opportunities and risks. In competitive business environments, networks are viewed as critical for accessing knowledge, resources, markets and technology (Scott et al., 2008).

Co-operative networks, in which participants share information and/or expertise, require less involvement and aim to get participants to work together more efficiently (Keast and Mandell, 2011) such as with participation in festivals. Collaborative networks are used when there is a need for participants to come together to address complex problems (Keast and Mandell, 2011) such as buy backs, a fishery management plan (Trawl Plan) or changes to marine park boundaries. In order to address the challenges facing the industry, participants must be willing to develop new ways of thinking, form new types of relationships and make changes in existing systems (Keast and Mandell, 2011). This requires high participant involvement, inhibited within the ECTF (and Moreton Bay fishery) by time constraints and the culture within the fishery.

Results identified co-operative behaviours. Co-operation is suited to an industry that features individualistically focused, small businesses like trawl fishing (as described by Keast and Mandell, 2011). In contrast, collaborative decision making does not focus on any single individual but actively and purposefully identifies, assesses, selects and implements a course of action that is best suited to the collective. This is a challenging approach for the ECTF but in fishery management in other global locations has been shown to be effective. Participants said collaboration was limited with the majority stating it does not occur. At times of crisis, industry members have come together, for example when closures have been proposed. The approach tends towards reaction rather than being proactive.

Studies show that social capital is a viable precursor for a large range of industry collaboration (Adler and Kwon, 2002). Consultation and engagement of stakeholders in decision making influences collaboration. To date, industry consultation has been described as a process undertaken because it had to be, rather than a process to achieve good governance and the facilitation of open, fair and constructive dialogue. Collaborative activities in the fishery should involve interactions and open discussions between businesses (including fishers, wholesalers, retailers and other related businesses), industry organisations and government. Consultation should be a process of listening, engaging and prioritising to create true collaborative decision making within and throughout the fishery.

Consultation is sought by the managing agents. The issues highlighted by fishers, businesses and organisation groups (e.g. a broad geographically located and diverse fishery, differing and potentially opposing agendas etc) were also highlighted by those participants from Government. The gap between what is desired and what is realised needs to be addressed. It is not suitable to undertake consultation without considering the requirement of the work being undertaken in the industry (e.g. time away, seasonality) and the resources needed by managers to undertake effective consultation. Developing a constructive, effective model is essential to ensure the process is relevant and useful and not just rhetoric (Brown & Keast, 2003; Keast, Brown & Mandell, 2007).

Although not yet fully understood, there is value in applying a social capital oriented perspective to leadership development within primary industries such as prawn trawl fishing. This perspective acknowledges leadership as an ongoing, relational, and socially embedded process that occurs between organisational members, whether they have formal leadership positions or not (Balkundi & Kilduff, 2006).

To determine a suitable approach to leadership, contextual components such as social and historical experience, need to be considered (Avery, 2004; Drath, 2001; Yukl, 1999).

These are not new problems. What is needed is new ways of looking at them and utilising the resources available.

The results have provided some valuable insight into leaders, leadership, the importance of informal leaders, how to interact with them and the support required. It was found that a network of informal leaders or champions exists. Informal leadership may provide an opportunity to facilitate effective communication dissemination, co-operation and collaboration.

Informal leaders, who have personal power rather than official power, are often afforded this role by their peers (Etzioni 1961). The informal leader may be charismatic and outgoing; people listen to them because they are easy to talk to, or exhibit certain knowledge and ideas that seem useful. They may seek a leadership role or it may come naturally. In this fishery, those who sought leadership roles were not always embraced or supported.

Informal leaders can shape the perceptions and expectations of the groups, have a level of power vested in them by their peers and have access to, and potential influence upon, the structured managerial decision making processes within the fishery. They can be exceedingly valuable to the fishery, and to the success of formal leaders, to direct collective action and effect change. In addition to the leadership available in formal structured groups, the recognition of informal leaders may aid in developing engagement processes to encourage broad fishery input to decision making and facilitate the development of bridging social capital (Butler, 2005). However, care needs to be taken as pressuring informal leaders to take on more dominant or formal roles could result in the person withdrawing.

Trust is a fundamental component in building social capital, networks, stakeholder co-operation and effective fishery management. Fishery co-management models highlight the need for a satisfactory spokesperson or 'champion' to help build trust and strong foundation (Neville, 2008). Fishing is associated with additional physical and emotional challenges such as working in isolation at sea. In industries with inherent physical risks, trust has different meanings.

To support leadership and facilitate co-operation and collaboration, communication needs to flow, be shared and be disseminated. Due to the distinctiveness of the ECTF, external challenges, independent nature of the industry, network disconnection and lack of perceived unity, the need for greater and more effective communication between key stakeholder groups is vital. Finite resources and the need to resolve challenging social problems within the fishery and determine ways of engaging those who could or should have input into decision-making has become particularly relevant in uncertain economic times. This is made more complicated by the eclectic range of fishery stakeholder (e.g. fishers to environmental groups, government, business, suppliers) who have or believe they have, legitimate reasons to participate in decision making (Beach, Brown and Keast, 2010).

'It's not that we don't know what needs to be done in the oceans, we know what needs to be done, but we are not able to do it because we have not figured out how to do collective leadership'
(Voegele, nd).

Research results identified the need for improved communication within the industry to help achieve the aims and aspirations of individuals and the industry. Effective communication 'demands that people work together to ensure that the meaning created is the same for all. There must be a sharing of meaning.' (Fielding, 2006, p11) and rarely is the message received the same as the one sent (Fielding, 2006). This is further compounded when participants are disengaged and participation is sporadic and selective. Major barriers to effective communication include the perceived credibility and role of the speaker, selective perception, language used and agenda differences (Fielding, 2006). In this case, communication is further challenged by differing rules and regulations, differing fishery closures, licensing and management. As has been found in previous studies, the lack of effective communication 'has led to adversarial relations and tensions among various stakeholders and between the government sector and fishing community, in particular', it is a serious impediment to effective fishery management, unity and the ability to be resilient, and adapt to change (Kaplan & McCay, 2004, p257). Additional information about communication and the Communication Tool developed from within this project is located in Appendix 17.

To further enhance fishery-related activities and management it is suggested that an approach focusing more on accessing the skills and knowledge embedded in the industry, be undertaken. Rather than a vertical (top down or bottom up approach) approach, a horizontal view of leadership and management may be more effective. Using a sporting analogy, strategy reveals the issues to be faced in impending games and seasons. Each player is selected for the skills imperative to the overall success of the team. The problem is not the focus but how it is to be dealt with. Fisheries could consider taking the issues, short and long term, and then identifying within the fishery, the required skills for addressing each one. Rather than expecting people to step up and offer their services, actively seek the required skills. People want to be valued. This approach values people by recognising their skills.

The fishery has been repeatedly described as having an uncertain future. The recommended approach can facilitate entrepreneurial activity while also supporting collective growth and unity within the fishery, and the industry as a whole, to build a more economically, socially and environmentally sustainable future.

5. Benefits and Adoption

This project highlighted the current situation with regard to the social capital and associated network within the ECTF. It has emphasized the need for the strengthening of the fishery network and sub-networks. This is a geographically dispersed fishery. Having geographically located fishery sub-networks that also connect with each other would facilitate and reinforce co-operation and collaboration.

The findings have supported activities within the National Prawn Marketing Campaign and the 'Love Australia Prawns' activities. This project identified the need to improve fishery communication particularly between stakeholder groups. An industry that features a working environment that results in many being away from home and even the mainland for extended periods makes communication difficult. For a guide on how to address and engage effectively with the ECTF, a 'how to' Communication Tool has been developed, <http://eastcoasttrawlfishery.onlinemarketingcollective.com/> (at the time of this report the Tool has not been activated online). This Communication Tool was developed not as a website but as a tool to enhance communication with the ECTF. The Communication Tool will be viewable on all web enabled devices (e.g. desktop, tablet and mobiles). Those seeking to engage with ECTF stakeholders (e.g. Fishers, Suppliers, Industry Organisations and Government), can gain an appreciation of the factors needed to be considered such as timing (periods at sea or closures of fishing grounds, peak trading times, etc.) and challenges including remote locations and the multiple roles undertaken (e.g. Those undertaking roles in industry

organisations volunteer to do so). The Tool is intentionally simple to use with enough but not too much information. Questions are posed to encourage users to think and to choose a provided response.

6. Further Development

In the short term, identifying suitable leaders as fishery champions may provide a platform from which fishery social capital might be extended. This platform could aid the industry in a number of ways including the dissemination of information, sharing the collective vision and actively building social capital and a fishery network that encompasses the whole fishery.

In the longer term, building a robust network will aid in identifying future opportunities and effectively respond to industry challenges. Establishing and supporting leadership, whether formal or informal, to champion fishery issues and to effectively utilise the formal and informal networks, can improve the industry's ability to act proactively, respond to, and pursue, positive socio-economic outcomes. Building or extending social capital and its associated network offers the benefit of improved resource dissemination and decision making.

7. Planned Outcomes

The primary planned outcome was for the identification of a core leadership group, and an understanding of the fishery social capital and network structure. The project has had the following outcomes.

- **Economic impact:** The trialled and evaluated market opportunities have provided the ECTF stakeholders with the opportunity to increase the awareness of their product and educate consumers, and other stakeholders within the value chain, about the uniqueness of the wild caught domestic prawn product. This has the potential for increased demand for the product and the possibility of achieving improved returns.
- **Educational impact:** The project has provided an increased understanding of the fishery network structure, social capital, leadership and communication challenges. A communication strategy report and an online Communication Tool have been developed; the strategy also has informed activities in other projects connected to the ECTF. They also have the potential to enhance communication, and increase knowledge and understanding between all sectors of the fishery and the wider industry. Further, the trialled market opportunities provided openings for stakeholder co-operation, collaboration and communication, while also facilitating raising the awareness and education of consumers.
- **Social impact:** Identifying the social capital within the industry network has highlighted the importance and need for social interaction between fishery stakeholders, and with local communities. The three fundamental components of social capital (bridging, bonding and linking capital) provide the opportunity for enhancing and supporting shared decision making. Understanding and actively building a balance between the three components can positively impact the health and well-being of stakeholders through increased confidence, knowledge sharing, social and community interaction, and engagement.

The aim of the project was to achieve a better understanding of the ECTF networks and identify a leadership group. Thereafter the aim was to attain agreement and commitment from the ECTF to work co-operatively in pursuing a viable market strategy and evaluate the effectiveness of the strategy, the leadership and the networks. These aims have been met in part. A better understanding of the ECTF and Moreton Bay fishery networks has been realised, the leadership and networks having been evaluated through the implementation of market opportunities. Whereas formal

leadership within the fisheries studied may prove more difficult to achieve, informal leadership through industry champions may offer an acceptable and viable alternative.

7.1. Public Benefit Outcomes

Public benefit outcomes are illustrated in the educational and social impacts nominated above; more knowledgeable and better educated end consumers and increased understanding of the ECTF fishery through enhanced communication channels between fishery stakeholders, and both their local and the wider community.

7.2. Private Benefit Outcomes

Private benefit outcomes are indicated in the economic, educational and social impact areas. The potential of increasing demand for domestic wild caught prawns enhances the possibility of achieving a better economic return; improved communication allows the extension of knowledge and understanding between individuals and throughout all sectors of the fishery and industry; and an awareness of the social capital provides opportunities for a supportive foundation for facilitating a positive impact on the future of the fishery.

7.3. Linkages with CRC Milestone Outcomes

The Identification of the core leadership group and network structure of East Coast Trawl to develop, implement and evaluate strategic opportunities project has successfully contributed to the following CRC Output and Milestone Outcomes:

CRC Output: 2.7 - Removal or reduction of barriers to seafood consumption

CRC Milestone: 2.7.2 - Individually tailored approaches to overcoming barriers trialled and evaluated in at least two new domestic or overseas consumer groups annually

8. Conclusion

The purpose of this project was to identify a core leadership group for the ECTF, gain a better understanding of the fishery network and evaluate the leadership group within the networks through the implementation of an agreed market opportunity.

Social capital plays an important role in sustainable fisheries management. Fishery resources are a collective good, and as such it is difficult to separate people from the resource (Jentoft, McCay & Wilson, 1998). Small scale fishery businesses are economically and socially dependent on the resource for survival and, as such, less flexible in adapting to change (Marshall & Marshall, 2007). Changing consumer demands, increasing environmental regulations, and restructuring of the global food systems due to globalisation and technological innovations, have placed significant pressure on small fishery operators in recent years (Camarinha-Matos, Afsarmanesh & Boucher, 2010). The pressure of increasing public scrutiny and misinformation about fishery activities has changed public perceptions of commercial fishing contributing 'to a loss of self-esteem in fishing families' (Leadbitter, Gomez & McGilvray, 2006:663). It is increasingly recognised that social interaction, co-operative management and the involvement of fishery stakeholders is necessary for effective policy formulation and implementation, and the enforcement of laws and regulations (de Vos & van Tatenhove, 2011; Gutiérrez, Hilborn & Defeo, 2011; Jentoft et al., 1998). This suggests a way forward for those involved in fisheries to organise themselves, undertake collective action to solve problems and overcome challenges. Without cohesion it is more difficult to make significant changes.

To move forward the building and maintaining of a robust informal network, to aid the identification of future opportunities and assist in effectively responding to industry challenges, needs to become a

normal part of the fisheries day-to-day activity. As reported, the project has taken steps to generate a better understanding of the ECTF and Moreton Bay fishery networks. Acknowledgement of the role of informal leadership as industry champions offers a potentially acceptable and viable approach for identifying and supporting the whole and sub-networks. The realising of a web-based tool for assisting communication with and between fishery stakeholders is a positive and useful outcome.

Publications. The research data gathered throughout this project has provided the basis for the three refereed conference publications listed in Appendix 18.

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10. Appendices

10.1. Appendix 1 - Review of Literature

The East Coast Trawl Fishery (ECTF) is a dynamic network of businesses and small independent fishers harvesting, processing, marketing and selling some of the world's finest seafood. The ECTF consists of otter and beam trawlers that harvest species including prawns, scallops, bugs and squid as well as various by-product species (Department of Primary Industries and Fisheries [DPI], 2006). The fishery is spread over a broad geographical area (from the Torres Strait to the Queensland – New South Wales border). It is one of Australia's largest fisheries in terms of volume with a total commercial harvest of 9000 tonnes and a retail value of around AUD\$100million a year (DPI, 2006) and offers direct and indirect employment to numerous Queenslanders. However, it is estimated that for a variety of reasons the prawn harvests will stabilise between 5500 tonnes and 7000 tonnes over the next few years (DPI, 2011). The GVP of the Queensland-based commercial fishing in 2010–11 was approximately AU\$269million.

One of the reasons for the possible stabilisation of harvests is the reduction in the number of licenses to trawl in Queensland over the past four decades. Due to changes in southern fisheries, the number of trawlers licensed to operate in Queensland almost tripled to 1400 between 1970 and 1982 despite a freeze being placed on the number of vessel licenses in 1979 (Courtney, Pascoe & Braccini, 2011). By 1993 the number of vessels licensed to trawl in the ECTF had declined to 952 (Glaister, Pond & Storey, 1993) before halving following the implementation of the 2000 Queensland Trawl Fishery Management Plan, approximately 450 otter trawl vessels were operating in 2009 (Courtney et al., 2011). Boat numbers at present are approximately 330 otter trawlers and 80 beam trawlers (DPI, 2011) with the mean number of days fished per boat approximately 115 days.

The main legislative mandate for the management of the fishery is the Queensland Fisheries Act 1994. The managing agent is Fisheries Queensland, a business group within Queensland Primary Industries and Fisheries which is part of the Department of Employment, Economic Development and Innovation (DEEDI) (Department of Employment, Economic Development and Innovation [DEEDI], 2009). The Queensland Fisheries Strategy (2009-2014) states:

Over many years Queensland's fisheries management has developed a vast legislative framework of regulations, procedures, practices, rules, limits and permit conditions. While this system has developed with the best intentions of government and industry, it has resulted in a relatively inflexible system that can be slow to respond and may now be less effective in terms of achieving the goals for which it was originally developed (DEEDI, 2009).

Management systems to control or limit fishing effort, including the permit system (1970) and unitisation policy (1985) were introduced with varying degrees of success (Glaister et al., 1993).

Australian fisheries have undergone significant management changes over the past two decades and are recognised as world leaders in product quality and environmental management. However the fluctuating Australian dollar has resulted in a reduction in the export of Queensland prawns and a reduction in the price of imported product into Australia (DPI, 2011).

Fisheries management is challenging and even in ideal situations, has often been somewhat unsuccessful (Beddington, Agnew & Clark, 2007). Whether a fishery is government managed or self-managing, social capital provides a useful way to understand collective action (Ostrom & Ahn, 2003). Social capital is the lens through which this project has been viewed.

Social capital

Ecologically sustainable development is defined as 'using, conserving and enhancing the community's fishery resources and fish habitats so that: (a) the ecological processes on which life depends are maintained (b) the total quality of life, both now and in the future, can be improved' (DEEDI, 2009). As in other industries, environment impact assessments have increased in prevalence and volume. Extensive research into the economic impacts of fishing industries has been conducted. Social sustainability and social impacts have been the last of the three components to be investigated but are also now coming into increasing focus. Ecosystem-based fisheries management considers the impact fisheries have on all components including communities (DEEDI, 2009).

Social capital refers to the bank of resources built up through interpersonal networks and associations, the building of resources through collective, mutually beneficial interactions and accomplishments and the relationships between people that facilitate co-ordination and co-operation (Cox, 1995; Kawachi, Kennedy & Glass, 1999; Macbeth, Carson & Northcote, 2004; Prakash & Selle, 2001; Pretty & Ward, 2001; Putnam, 2000; Putnam, Leonardi & Nanetti, 1993; Taug & Roberts, 2002). Bourdieu (1986:248) defined social capital as: 'the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition – or in other words, to memberships in a group – which provides each of its members with the backing of the collectively-owned capital...'. More simply, the Organisation for Economic Co-Operation and Development (OECD, 2001) defines social capital as networks, together with shared norms, values and understandings which facilitate co-operation within or among groups, resides in relations rather than individuals and is a resource that may be mobilized to generate a stream of benefits for industries and communities over time (Bourdieu, 1986; OECD, 2001; Walker, Kogut & Shan, 1997). Social, unlike economic capital, is only converted into fiscal gain if there is uptake and collaboration by group (industry) members (Bourdieu, 1986) and the investing of the time and effort that facilitate collective action (OECD, 2001). This form of capital can increase with use, but, also decrease if not used.

Social capital, in a broader concept, can be referred to as relational wealth (McCallum & O'Connell, 2009). The potential for building a competitive advantage exists by the advancement of industry performance, reduction in transaction costs, knowledge creation, organisational stability, shared understanding and the prospect of generating above-average financial returns (McCallum & O'Connell, 2009). These potential opportunities can occur through connectedness and active engagement with others. However, this requires more than just connecting with those with mutual interests, close friends and colleagues. The bridging, or engagement with those outside the bonded network, and the pursuit of connections with a variety of stakeholders, aids in the creation of more balanced social capital.

Relating to fisheries, those with high levels of social capital are potentially better able to respond to and deal with change. Fletcher et al (2002:47) suggested that if a significant reduction in access to a fishery resource occurs, the fishing community 'with good social capital is likely to be able to pull together to find ways to rebuild'. A fishing community faced with the same situation but with low levels of social capital, may not be able to overcome the challenges faced (Fletcher et al., 2002).

Brooks (2010:672) states that when gaining an appreciation of the structure of the fishery 'social capital is fundamental to understanding their capacities to, not only absorb change but to grow and prosper'. For future industry longevity, it is becoming increasingly important for those working within the ECT fishery to adapt, change and focus their efforts on developing competitive advantage (Hamel & Valikangas, 2003). These outcomes can be achieved through interactions with other stakeholders, particularly those with complementary and/or required skills and resources (Hattori & Lapidus, 2004; Horn, 2005). Working together allows diverse individuals with different experiences

and perspectives the opportunity to generate new and adaptive ideas and collaborations for solving difficult industry challenges (Agranoff, 2003). Social capital and social network/s are the theoretical foundations for examining the fishery.

Networks

Social networks are formed as individuals and groups form linkages to facilitate action and to build social capital (Adler & Kwon, 2002; Bullen & Onyx, 2005). It has been found that effective networks increase the efficiency of information diffusion and actions between actors while reducing transaction costs and potential opportunistic activities by stakeholders (Putnam 1993). High-functioning networks are more transparent and stakeholders are better informed of fishery happenings, feature effective relationships between stakeholders and a sense of equity or fairness in relation to opportunities and risks. In competitive business environments, networks are viewed as critical facilitators for accessing knowledge, resources, markets and technology (Scott, Baggio & Cooper, 2008).

Networks are formed consciously or unconsciously relative to business, cultural, social, historical interests, personal and professional similarities and geographic proximity (Adamic & Adar, 2005). With a broad geographic region like the ECTF, some people may be unaware of their involvement in an extended network or of the behaviour of the whole network as they are primarily focussed on their immediate relationship (Adamic & Adar, 2005) and only reacting to locally available information (Baggio, Scott & Cooper, 2010). Stakeholders can form deliberate but temporary networks to achieve specific projects or task oriented goals, selecting those individuals and organisations that will assist them to achieve desired outcomes and boost operational profitability (Morrison, Lynch & Johns, 2004).

Fishery activities including fishery management comprise businesses from throughout the supply and value chains, multi-level government agencies, environmental, recreational and community groups. The connections that do or do not exist between industry players can expedite or impede collective actions that influence the industry, fishery stakeholders and local communities.

Leadership

Gutiérrez, Hilborn and Defeo (2011) conducted a study of 130 co-managed global fisheries in which they identified robust social capital and strong leadership as the most important attributes contributing to success. Organisations increasingly recognise leadership as a source of competitive advantage, leading to increased investment in leadership development (Bilhuber-Galli & Güller-Stewens, 2011; Daily, McDougall, Covin & Dalton, 2002; Yukl, 1989). During challenging economic times effective leaders can provide strategic thinking, build trust, support and empowerment, and efficiently use and disseminate embedded knowledge, skill and resources for improved decision making.

Collective leadership is defined as 'a dynamic leadership process in which a defined leader, or set of leaders, selectively utilise skills and expertise within a network, effectively distributing elements of the leadership role as the situation or problem at hand requires' (Friedrich, Vessey, Schuelke, Ruark & Mumford, 2009:933). Collective leadership situations feature multiple leaders who do not lead in isolation (O'Reilly, Caldwell, Chatman, Lapiz & Self, 2010) and therefore, leadership efficacy may depend on the quality of the associated social network (Balkundi & Kilduff, 2006).

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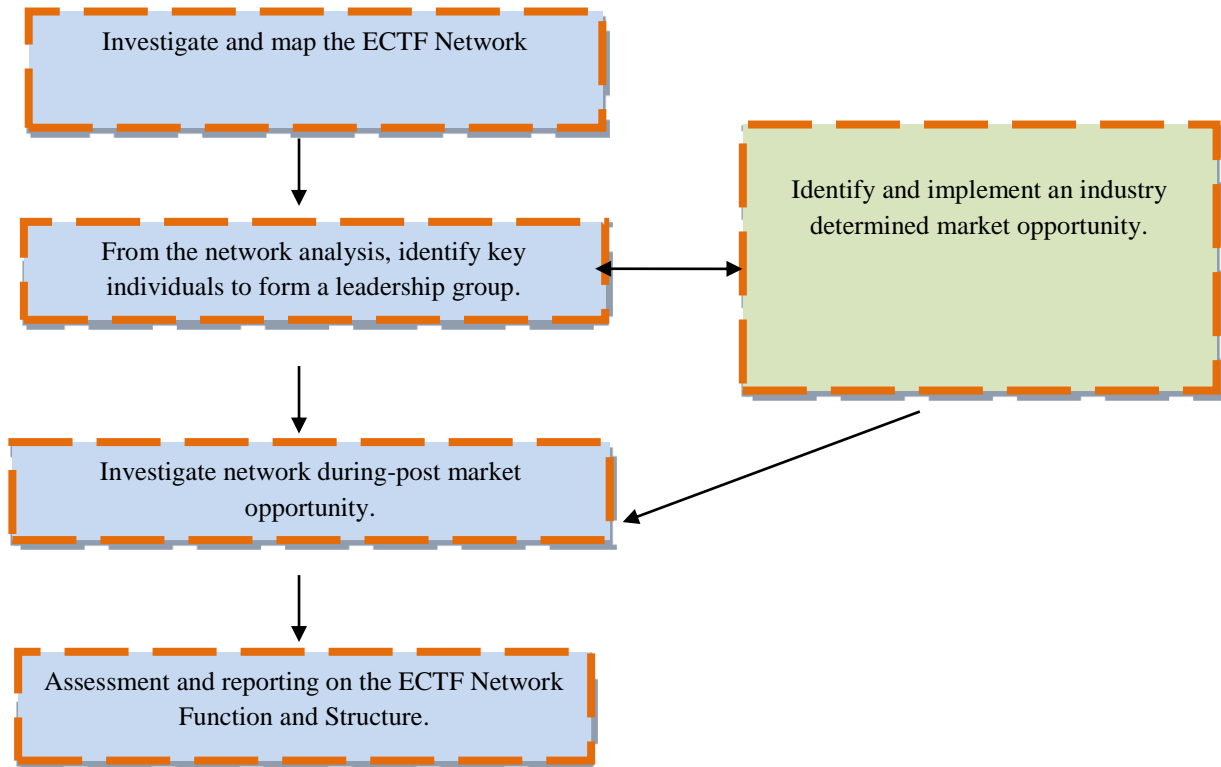
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10.2. Appendix 2 – Flowchart of the Project



Flowchart outline of key tasks in the ECTF (and Moreton Bay) project

10.3. Appendix 3 - Interview Protocol for the Initial Investigation of the ECTF Fisher Network

PROJECT TITLE: "Identification of the core leadership group and network structure of East Coast (Prawn) Trawl to develop, implement and evaluate strategic opportunities" referred to as the "East Coast (Prawn) Trawl Fishery (ECTF) Project"



East Coast (Prawn) Trawl Fishery (ECTF) Project

To help us better understand the characteristics of the East Coast Trawl Fishery, please complete the following questions. These responses will allow us to understand the ECTF members and the structure and function of the fishery network.

PERSONAL INFORMATION

- 1a. What year were you born?
1b. What is your gender?

Male Female

- 1c. How many children do you have?
1d. How many of your children are financially dependent on you?
1e. How many other people, not counting your dependent children, are financially dependent on you?

No of children: _____

1f. Please tick which of the following best describes you at present:

- | | |
|--|----------------------------------|
| <input type="checkbox"/> Currently married or de facto | <input type="checkbox"/> Single |
| <input type="checkbox"/> Separated/divorced | <input type="checkbox"/> Widowed |

1g. From the following list, please tick the highest formal education level you have achieved:

- | | |
|---|--|
| <input type="checkbox"/> Primary school (To year 7) | <input type="checkbox"/> TAFE diploma (post high-school) |
| <input type="checkbox"/> Year 10 junior high school | <input type="checkbox"/> University degree |
| <input type="checkbox"/> Year 12 | |
| <input type="checkbox"/> Year 8 or Year 9 | <input type="checkbox"/> Postgraduate degree |

QUALITY OF LIFE

2a. How satisfied are you with each of the following aspects of your work in commercial fishing?

(Please Tick only one box for each statement)

Statement	Very dissatisfied	Somewhat dissatisfied	Neither satisfied or dissatisfied	Somewhat satisfied	Very satisfied
Challenge in my work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Job security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Amount of control I have over decisions affecting how I can undertake my fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling of worthwhile accomplishment I get from my work in fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How much time I have to spend	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

working to make a living					
Degree to which I receive a fair income from my fishing work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rules set by government on how fishers can operate in the ECT fishery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The viability of working in fishing in the long-term	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The amount of support and guidance I receive from other people working in prawn fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The level of support received from local government	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The level of support received from fishery bodies (e.g. FDRC, QSIA, MBSIA, QSMA, etc)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The level of support received from other community bodies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.1 Challenges and future of commercial prawn fishing

2.1a. **Q2.1a. Would you encourage young people to enter the ECT Fishery?** YES / NO
If not, why not. Please briefly explain your answer.

-

-

2.1b. What challenges do you see the fishery facing in the future?

-

3. SOCIAL CONTEXT

Fishing activities

3.1a. **Is the fishery business you work in your own business?** YES / NO

3.1b. **Are you a member of any fishery related associations/organisations/committees?** YES / NO

If yes, please fill in the details of the associations/organisations/committees below

If no, please move on to the next question

Name of fishery related association/organisation/committee	Have you held an office bearing position in the last year?	Your Role	Time spent on association/organisation related activities/meetings (hours per month)
	YES / NO		
	YES / NO		
	YES / NO		
	YES / NO		
Other	YES / NO		
Please list other organisations you are a member of			

3.1c. How often do you meet or communicate on a one on one basis with the other members in these associations?

(Whether Face to face, by phone or direct emails or other media sources such as Twitter, Skype, Facebook etc)

<input type="checkbox"/> 1 or 2 times a week	<input type="checkbox"/> 3 or 4 times a week
<input type="checkbox"/> 5 to 7 times a week	<input type="checkbox"/> Once or twice a month
<input type="checkbox"/> Once every 2 to 6 months	<input type="checkbox"/> Never
<input type="checkbox"/> Other (specify)	

3.1d. Do you feel the relationships you have formed with the other members in these groups/organisations and the ideas you are exposed to, are useful to you in your day to day business life? YES / NO

If YES, please list some benefits or ideas you've gained and how they have assisted your business

3.1e. Please indicate how often you use information/ideas you receive from your connection with these groups/organisations.

<input type="checkbox"/> Regularly	<input type="checkbox"/> Rarely	<input type="checkbox"/> Occasionally	<input type="checkbox"/> No, never
------------------------------------	---------------------------------	---------------------------------------	------------------------------------

3.1f. How did you learn the skills you use in your work in the EC Trawl Fishery? (Tick all that apply)

<input type="checkbox"/> Self taught	<input type="checkbox"/> Taught by family member
<input type="checkbox"/> Worked in fishing business not run by family	<input type="checkbox"/> Learned from other fishers (not family)
<input type="checkbox"/> Formal training through a training course	<input type="checkbox"/> Other (specify).....

4. CONTACTS

4.1a. Where do you go for general information about the EC Trawl Fishery and the fishing industry? (Tick all that apply)

<input type="checkbox"/> ACPF	<input type="checkbox"/> QSMA
<input type="checkbox"/> Industry Newsletter	<input type="checkbox"/> DEEDI
<input type="checkbox"/> QSIA	<input type="checkbox"/> Other EC Trawl Fishermen
<input type="checkbox"/> MBSIA	<input type="checkbox"/> Other (specify).....

Q4.2a	Many times	A few times	Once	Never	
During the 2010/11 fishing season were you in contact with a <u>QLD industry body representative</u> (e.g. QSIA) about issues in the fishery?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Q4.2b	Many times	A few times	Once	Never	
During the 2010/11 fishing season were you in contact with a <u>government representative</u> about issues in the fishery?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Q4.2c	Always	Sometimes	Occasionally	Never	
During the 2010/11 fishing season were the <u>industry bodies</u> (e.g. QSIA) proactive in addressing any issues that you or others might have raised about the fishery?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Q4.2d	Always	Sometimes	Occasionally	Never	
During the 2010/11 fishing season were the <u>government departments</u> (e.g. DEEDI) proactive in addressing any issues that you or others might have raised about the fishery?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Q4.2e	Totally	Mostly	Don't know	Not much	Not at all
Do you feel you have a level of power to contribute to changes concerning the management of the EC Trawl fishery?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q4.2f	Many times	A few times	Once	Never	
During the 2010/11 fishing season how often did you	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

attended meetings or briefings about the future of the EC Trawl fishery?

Please indicate who hosted these meetings

<input type="checkbox"/>	ACPF	<input type="checkbox"/>	QSMA
<input type="checkbox"/>	QSIA	<input type="checkbox"/>	DEEDI
<input type="checkbox"/>	MBSIA	<input type="checkbox"/>	Other

Q4.3a. Who do you most frequently contact for information concerning the fishery?

Please provide: Persons Name	What is your relationship to each person listed? Please tick the most appropriate response					
	Spouse/ Partner	Business Partner	Industry Representative	Fellow Fisherman	Employer	Other Please specify
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

For each contact person, please indicate the importance of this relationship. Also at the end of the table, please indicate if the relationship is an exchange (where you gain and give information to/from the person stated) or a transfer (information is only given or received but not exchanged) Please tick the most appropriate response

Please provide: Person listed above	What is your relationship to each person listed?					Information flow
	Very important	Somewhat important	Of average importance	Somewhat unimportant	Very unimportant	
a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Transfer <input type="checkbox"/> Exchange <input type="checkbox"/>
b)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Transfer <input type="checkbox"/> Exchange <input type="checkbox"/>
c)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Transfer <input type="checkbox"/> Exchange <input type="checkbox"/>
d)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Transfer <input type="checkbox"/> Exchange <input type="checkbox"/>
e)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Transfer <input type="checkbox"/> Exchange <input type="checkbox"/>
f)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Transfer <input type="checkbox"/> Exchange <input type="checkbox"/>

**Q4.3b. Who do you contact for information concerning the fishery from within government?
Please state:**

Persons Name	The government department they are employed in

Perceptions

	Very negatively	Negatively	Neutral	Positively	Very positively
Q5a. How do you believe most people in your local community perceive commercial prawn trawl fishing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q5b. How do you believe most people in Queensland perceive commercial prawn trawl fishing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Your local community

Q6a. What postcode do you live in?

Q6b. How many years have you lived in your local community?

(Defined as the postcode you live in).

Q6c. Do you expect to be living in the same place 5 years from now?

Q6e. Do you expect to be working in the same industry 5 years from now?

____ - ____ - ____ - ____
 _____ years

YES / NO

YES / NO

Please provide a brief explanation of your response

Q6.1a. Please indicate which, if any, of the following local groups and organisations you are a member of:

Type of group	Member	Have you held an office bearing position in the last year?	Time spent on group related activities (hours per month)
Sports group/club	<input type="checkbox"/>	YES / NO	
Civic group (Lions, Rotary)	<input type="checkbox"/>	YES / NO	
Religious group	<input type="checkbox"/>	YES / NO	
Cultural association	<input type="checkbox"/>	YES / NO	
School committee	<input type="checkbox"/>	YES / NO	
Neighbourhood watch	<input type="checkbox"/>	YES / NO	
Hobby group	<input type="checkbox"/>	YES / NO	
Emergency services (CFS/Air-Sea Rescue)	<input type="checkbox"/>	YES / NO	
Environmental/conservation group	<input type="checkbox"/>	YES / NO	
Other (specify)		YES / NO	
Other (specify)		YES / NO	

Q6.1b. Of these, how often do you meet or communicate on a one on one basis with the other members in these associations? (Face to face, by phone or direct one on one, emails or other media sources such as Twitter, Skype, Facebook etc)

<input type="checkbox"/> 1 or 2 times a week	<input type="checkbox"/> 3 or 4 times a week	<input type="checkbox"/> Never
<input type="checkbox"/> 5 to 7 times a week	<input type="checkbox"/> Once or twice a month	<input type="checkbox"/> Other (specify)
<input type="checkbox"/> Once every 2 to 6 months		

Family and friends

The following questions ask about your family and friends

	None	Very few (1)	Few (<8)	About half	Most	Almost all
Q7a. How many of your immediate family (parents, siblings, children) work in commercial fishing or fishing-related jobs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q7b. How many of your extended family (cousins, aunts/uncles, grandparents, nieces/nephews) work in	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

commercial fishing or fishing related jobs?

Q7c.

How many of your friends work in commercial fishing or fishing related jobs?

8. Your fishing history

- 8a. How many years have you worked in commercial fishing?
- 8b. How many years have you worked in the EC Trawl Fishery?
- 8c. How many generations of your family have worked in commercial fishing?
(If you are the only member of your family, please write 'one')
- 8d. What percent of your annual household gross income was from commercial fishing in 2010/11?

_____ years
 _____ years
 _____ generations
 _____ %

9. your Fishing business

Q9a What is the name of your homeport? _____

Q9b. Which fishing regions did you fish during 2010/11?

Please specify _____ -
 _____ -
 _____ -

Q9.1a. In 2010/11, how many people worked (paid or unpaid) in your fishing business?

(Including yourself, paid employees and unpaid family helpers involved in running the fishing business, whether they are involved in actual fishing time, maintenance of fishing equipment, or the management of the fishing operations)

	Number working full-time		Number Part – time / Casual		Average number of hours worked per week
	Male	Female	Male	Female	
Yourself					
Paid employees					
Unpaid family members					
Unpaid other employees					

Q9.1b. Which family members are employed in your fishing business?

(Treat those associated by a de facto relationship, as family)

<input type="checkbox"/>	Spouse	<input type="checkbox"/>	Children
<input type="checkbox"/>	Brothers and/or Sisters	<input type="checkbox"/>	Parents
<input type="checkbox"/>	Uncles and Aunts	<input type="checkbox"/>	In Laws
<input type="checkbox"/>	Other (specify)		

Q10. IMPORTANT

Can you tell me the name/s of those within the EC Trawl Fishery who may not necessarily be a high profile person but who is influential, interested in the future of the fishery, someone who may be considered a 'quiet achiever', someone who others listen to regarding EC fishery issues, challenges, happenings and activities?

11. Other comments

Do you have any other comments about any of the topics covered in the survey, or other social aspects of the EC Trawl Fishery? Any comments you make will be recorded and considered.

Thank you

We really appreciate the time you have spent answering these questions.

10.4. Appendix 4 - Interview Protocol for the Initial Investigation of the ECTF Business/Government/Industry Organisation Network



Ethics Number: A/11/316

East Coast (Prawn) Trawl Fishery (ECTF) Project

Business

Interview Number: B

Date:

Time Commenced:

Time ended:

Was this a face-to-face phone interview (circle appropriate response)

PERSONAL INFORMATION

1a. What year were you born?

1b. What is your gender?

Male Female

1c. How many children do you have?

1d. How many of your children are financially dependent on you?

1e. How many other people, not counting your dependent children, are financially dependent on you?

No of children: _____

1f. Please tick which of the following best describes you at present:

<input type="checkbox"/> Currently married or de facto	<input type="checkbox"/> Single
<input type="checkbox"/> Separated/divorced	<input type="checkbox"/> Widowed

1g. From the following list, please tick the highest formal education level you have achieved:

<input type="checkbox"/> Primary school (To year 7)	<input type="checkbox"/> TAFE diploma (post high-school)
<input type="checkbox"/> Year 10 junior high school	<input type="checkbox"/> University degree
<input type="checkbox"/> Year 8 or Year 9	<input type="checkbox"/> Postgraduate degree

QUALITY OF LIFE

2a. How **satisfied** are you with each of the following aspects of your work in **commercial fishing**?

(Please Tick only one box for each statement)

Statement	Very dissatisfied	Somewhat dissatisfied	Neither satisfied or dissatisfied	Somewhat at satisfied	Very satisfied
Challenge in my work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Job security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Amount of control I have over decisions affecting how I can undertake my fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling of worthwhile accomplishment I get from my work in fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How much time I have to spend working to make a living	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Degree to which I receive a fair income from my fishing work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rules set by government on how fishers can operate in the ECT fishery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The viability of working in fishing in the long-term	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The amount of support and guidance I receive from other people working in prawn fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The level of support received from local government	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The level of support received from fishery bodies (e.g. FDRRC, QSIA, MBSIA, QSMA, etc)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The level of support received from other community bodies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.1 Challenges and future of commercial prawn fishing

2.1a. **Q2.1a. Would you encourage young people to enter the ECT Fishery? If not, why not. Please briefly explain your answer.** YES / NO

-

-

2.1b. What challenges do you see the fishery facing in the future?

-

2.2 FOR Wholesalers and Retailers

2.2a Where/from whom do you buy your prawns? Region

Fishermen _____ (Other) wholesalers

2.2b How often do you purchase prawns? Daily Weekly Fortnightly Monthly

2.2c. Is this a trusted source? Y N Please explain

Wholesalers

2.2d. Who do you sell to? Other wholesalers Retailers (Please state which ones) _____

Background

Name of the Business you represent

What position do you hold in this Business?

How many years have you worked for this Business?

<1 year 1-2 years 3-5 years 6-10 year >10 years

3.4

Please tell me about your business (role, responsibilities, how it fits into the prawn trawl industry, years it has been in operation, location, is it membership based or government directed, aims and objectives)?

Do you reside in an ECT fishery region? Yes No What postcode do you live in? ___ ___
___ ___

How many years have you lived in your local community? (Defined as the postcode you live in). <1 year 1-2 years 3-5 years 6-10 year >10 years

Do you expect to be living in the same place 5 years from now? Yes No

Do you expect to be working in the same position 5 years from now? Yes No

Please provide a brief explanation of your response

Leadership

4.1 How many people within the business have acquired the capability and qualities to be effective leaders (defined as persons who lead or command a group, are trusted, listened to) within the Trawl Fishing industry?

No one possesses these qualities Few (1 to 3) Some (4 to 6) Many (more than 6)

With regards to the following, how would you characterise the leadership provided by the business you work for, in relation to assisting the Prawn Trawl Industry, in terms of -

a. Education/training 1 2 3 4 5 b. Dynamism/vision 1 2 3 4 5

c. Professionalism/skills 1 2 3 4 5 d. Honesty/transparency 1 2 3 4 5

5= Excellent 4 = Good 3 = Adequate 2= Inadequate 1 = Deficient

4.3 With regards to the following, how would you characterise the leadership provided by industry organisations in relation to assisting the Prawn Trawl Industry, in terms of -

a. Education/training 1 2 3 4 5 b. Dynamism/vision 1 2 3 4 5

c. Professionalism/skills 1 2 3 4 5 d. Honesty/transparency 1 2 3 4 5

= Excellent 4 = Good 3 = Adequate 2= Inadequate 1 = Deficient

4.4 With regards to the following, how would you characterise the leadership provided by relevant government departments in relation to assisting the Prawn Trawl Industry, in terms of -

a. Education/training 1 2 3 4 5 b. Dynamism/vision 1 2 3 4 5

c. Professionalism/skills 1 2 3 4 5 d. Honesty/transparency 1 2 3 4 5

5= Excellent 4 = Good 3 = Adequate 2= Inadequate 1 = Deficient

4.5 How would you characterise the relationship between the business you work for, and the wider fishery (including other industry organisations/departments, wholesalers, retailers and fishers)?

Excellent, functions well 5 Harmonious, without major problems 4

Coexisting, with occasional rivalries 3 Conflictive, with many problems 2

Dysfunctional, without communication or coordination 1

How would you characterise the relationship between the various industry organisation and the wider fishery (including other industry organisations/departments, wholesalers, retailers and fishers)?

Excellent, functions well 5 Harmonious, without major problems 4

Coexisting, with occasional rivalries 3 Conflictive, with many problems 2

Dysfunctional, without communication or coordination 1

How would you characterise the relationship between the various relevant government departments and the wider fishery (including other industry organisations/departments, wholesalers, retailers and fishers)?

Excellent, functions well 5 Harmonious, without major problems 4

Coexisting, with occasional rivalries 3 Conflictive, with many problems 2

Dysfunctional, without communication or coordination 1

Participation in Decision-making

5.1 Do you think that decision making about the Fishery is a collaborative process? Please explain your response. Yes [] No []

In the past year, what have been the two most important decisions made by the organisation/department/business that have influenced the Fishery?

Decision # 1: _____

Decision # 2: _____

Thinking about these decisions, did any of the following take place?

Please indicate:

Topic	Decision #1		Decision #2	
a. Prior dissemination of information	Yes []	No []	Yes []	No []
b. Opportunity for informal discussion	Yes []	No []	Yes []	No []
c. Consultation with grassroots		Yes []	No []	Yes []
				No []
d. Widespread debate, opposing opinions, and frank discussion	Yes []	No []	Yes []	No []
e. Dissemination of results		Yes []	No []	Yes []
				No []

To what degree do you believe the industry organisations truly represent members/the industry?

Highly representative [] 1 Somewhat representative [] 2
Slightly representative [] 3 Not representative at all [] 4

How many stakeholder groups are typically included in the decision making process involving the Fishery? Few (1 to 3) [] Some (4 to 6) [] Many (more than 6) []

Provide an example of three stakeholder groups that were consulted in the decision making process each for decision #1 and #2

What is the businesses capacity to:

Please rate as follows –

5 [] Excellent 4 [] Good 3 [] Average 2 [] Adequate 1 [] Deficient N/A

- a. Carry out its specialised tasks
- b. Respond in a timely fashion to changes that affect the fishery
- c. Develop specific plans for the future (instead of reacting to external opportunities as they present themselves)?
- d. Reflect upon and learn from experience (build an institutional memory)?
- e. Resolve problems or conflicts with members, industry groups, other organisations or social actors?

5.7 What groups/organisations or sub-groups/sub-organisations are you a member of relating to the prawn trawl fishing? (tick all that apply)

<input type="checkbox"/> ACPF	<input type="checkbox"/> QSMA
<input type="checkbox"/> QSIA	<input type="checkbox"/> DEEDI
<input type="checkbox"/> Other Marine Fishers Association	<input type="checkbox"/> FDRC
<input type="checkbox"/> MBSIA	
<input type="checkbox"/> GRMPA	<input type="checkbox"/> Other (specify).....

Many times (> once a month)	Many times	A few times	Once	Never
A few times (twice – three times a year)				
During 2010/11 how often did you meet with this group/organisation/s?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Repeat the above frequency question for each response.

5.8 Where do you go for information when making decisions about the Fishery and the prawn trawl fishing industry in general? (tick all that apply)

<input type="checkbox"/> ACPF	<input type="checkbox"/> QSMA
<input type="checkbox"/> QSIA	<input type="checkbox"/> Qld Maritime Services
<input type="checkbox"/> Qld Fisheries	<input type="checkbox"/> Internet

<input type="checkbox"/> Industry Newsletter (State which)	<input type="checkbox"/> DEEDI			
<input type="checkbox"/> Other Marine Fishers Association	<input type="checkbox"/> Other EC Trawl Fishers			
<input type="checkbox"/> MBSIA	<input type="checkbox"/> FDRC			
<input type="checkbox"/> GRMPA	<input type="checkbox"/> Other (specify).....			
Many times (> once a month)	Many times	A few times	Once	Never
A few times (twice – three times a year)				
During 2010/11 were you in contact with industry body representative about issues in the EC Trawl fishery?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Many times	A few times	Once	Never
During 2010/11 were you in contact with a government representative about issues in the EC Trawl fishery?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Always	Sometimes	Occasionally	Never
During 2010/11 were industry bodies proactive in addressing any issues raised about the EC Trawl fishery?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Many times (> once a month)	Many times	A few times	Once	Never
A few times (twice – three times a year)				
During 2010/11 how often did you hold meetings or briefings about the future of the EC Trawl fishery?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5.9a Who do you most frequently contact for information concerning the fishery?

Please state individual's name: _____

What is your relationship to this person/s?

Colleague Other Government Department Industry Representative Fisher

Industry Organisation Members Employer Employee

Other: (please specify) _____

5.9b How often do you contact that person to discuss fishery ideas/issues? (Face to face, by phone or direct one on one, emails or other media sources such as Twitter, Skype, Facebook etc) [This will be extended if more than 3 responses are provided]

	Most days	Weekly	Monthly	Quarterly	6 Monthly	Never
Frequency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**** For each ASK –**

5.9c Strength of connection: How would you rate the importance of this connection?

1 = very unimportant 2 = unimportant 3 = average importance 4 = important 5 = very important

1 2 3 4 5

5.9d You have indicated that you go to this person *for* information. Do you also provide this person *with* information? Y N

Would you describe the connection as one in which information is transferred (one way) or an exchange (where information is both given and provided)?

Transfer Exchange

REPEATED

Please state individual's name: _____

What is your relationship to this person/s?

Colleague Other Government Department Industry Representative Fisher

Industry Organisation Members Employer Employee

Other: (please specify) _____

	Most days	Weekly	Monthly	Quarterly	6 Monthly	Never
Frequency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Strength of connection: How would you rate the importance of this connection?

1 = very unimportant 2 = unimportant 3 = average importance 4 = important 5 = very important

1 2 3 4 5

You have indicated that you go to this person *for* information. Do you also provide this person *with* information? Y N

Would you describe the connection as one in which information is transferred (one way) or an exchange (where information is both given and provided)?

Transfer Exchange

Please state individual's name: _____

What is your relationship to this person/s?

Colleague Other Government Department Industry Representative Fisher

Industry Organisation Members Employer Employee

Other: (please specify) _____

	Most days	Weekly	Monthly	Quarterly	6 Monthly	Never
Frequency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Strength of connection: How would you rate the importance of this connection?

1 = very unimportant 2 = unimportant 3 = average importance 4 = important 5 = very important

1 2 3 4 5

You have indicated that you go to this person *for* information. Do you also provide this person *with* information? Y N

Would you describe the connection as one in which information is transferred (one way) or an exchange (where information is both given and provided)?

Transfer Exchange

6.0 PERCEPTIONS

Please select the most appropriate response

	Very negatively	Negatively	Neutral	Positively	Very positively
6.1 How do you believe most people in <u>your local community</u> perceive the commercial prawn trawl fishing industry?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.2 How do you believe most people in <u>Queensland</u> perceive the commercial prawn trawl industry?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In your opinion, has the operation of the EC Trawl Fishery (and the employment the fishery generates and the households it maintains) contributed to the provision, maintenance, and/or expansion of any local or regional services or businesses. Please specify

Service	Location	Fishery Contribution

IMPORTANT QUESTIONS

Can you tell me the name/s of those within the EC Trawl Fishery who may not necessarily be a high profile person but who is influential, opinionated, interested, someone who may be considered a 'quiet achiever', someone who others listen to, regarding EC fishery issues, challenges, happenings and activities?

7.2 If you were going to introduce a market opportunity into the EC fishery who would you recommend as being able to support and champion the opportunity, and engage the fishery to work towards achieving a positive outcome?

Thank you: The time you have spent answering these questions is much appreciated.

10.5. Appendix 5 - Interview Protocol for Market Audit Investigation

Briefing the Respondent

Thank you for agreeing to participate in this research. This interview is part of a project being conducted by Sunshine Coast University for East Coast Trawl. The project "Identification of the core leadership and network structure of East Coast Trawl, to develop, implement and evaluate strategic Opportunities" focuses on identifying a core leadership network to inform the development, implementation and evaluation of a strategic opportunity. Thus the findings of this research will assist East Coast Trawl members, like yourself to build on the opportunities available.

Ethical considerations are important to us. This research is confidential and your firm will not be identified in the research project. I would like to tape the interview in order to assist with the data analysis process. If you agree to this, you are welcome, at points during the taping, to ask me to cease taping or to push the pause button yourself at any time during the interview. May I have permission to tape the interview?

This protocol is not a questionnaire but provides a framework for the interview.



Case Details Internal Audit

Case Number:

Date:

Time Commenced:

Time ended:

Name of organisation:

Interviewee's name and position in organisation:

1. Tell us the story of your organisation?

2. Tell us about the current situation within the prawn industry?
 - a. What do you believe are the challenges to this industry?

 - b. What are the opportunities for the industry?

3. Within your organisation:
 - a. What is your current goals and objectives?

 - b. What marketing program do you currently have in place?

 - c. What marketing issues are you currently facing?

 - d. Where do you see the opportunities lie for your organisation?

4. In relation to your organisation:

- a. Please outline your product range and availability?
- b. What is the percentage split between sales of your products to markets, foodservice and retail?
- c. Please comment on growth expectations for your products over the next two years?
- d. Outline the functions carried out by your organisation in terms of processing, packaging, cool storage and marketing?
- e. Please detail your supply chain to market?
- f. What are the capabilities and constraints within your organisation to achieve your objectives?
- g. Do you have export experience? If so, please detail.

5. In terms of relationships:

- a. Have you worked collaboratively across the industry to achieve objectives? If so, please detail (including success or failure of venture).
- b. Have you built relationships within the supply channel to achieve objectives? If so, please detail.

6. In summary what do you believe are the core strengths and weaknesses of this organisation?

7. Background Information:

- a. Age of organisation?
- b. Years respondent has been with organisation?
- c. Number of employees?
- d. Number of years experience in
 - i. Marketing?
 - ii. Prawn industry?
- e. Total Turnover in financial year?
 - i. Under .5 \$ million
 - ii. 1 – 5 \$ million
 - iii. Over 5 million.

Thank-you for your participation in this research.

10.6. Appendix 6 – Interview Protocol for Final Evaluation of the ECTF Network

Ethics Number: A/11/316

East Coast (Prawn) Trawl Fishery (ECTF) Project (Online)

To help us better understand the characteristics of the East Coast Trawl Fishery, please complete the following questions. These responses will allow us to understand the ECTF members and the structure and function of the fishery network.

PERSONAL INFORMATION

1a. In what year were you born? [Text response]

1b. Are you [check boxes] Male Female

1c. Please indicate which of the following best describes you at present: [check boxes]

Currently married or de facto Single Separated/divorced Widowed

1d. From the following list, please indicate the highest formal education level you have achieved: [drop down box]

Primary school (To year 7) Year 8 or Year 9 Year 10/Junior high school Year 12/Senior high school

TAFE diploma (post high-school) University degree Other _____

BACKGROUND

3a. Is the prawn trawl business you work in, your own? [check boxes] Y N

3b. If no, what position do you hold in this Business? [check boxes] Manager Skipper Deckhand Cook Other, please specify

3c. How many years have you owned or worked for this Business? [drop down box]

<1 year 1-2 years 3-5 years 6-10 year >10 years Please specify _____

3e. Do you expect to be working in the same position 5 years from now? [check boxes] Y N

Please provide a brief explanation of your response [Text response]

3f. On average, how often do you undertake prawn trawl fishing? Please select the most appropriate response. [drop down box] Between 1 and 4 weeks/yr between 5-12 weeks/yr between 13-26 weeks/yr between 27-36 weeks/yr more than 37 weeks/yr

3g. What is the location of your home port? [Text response]

3. CONNECTEDNESS

3a. Relating to prawn trawl fishing, what groups/organisations or sub-groups/sub-organisations are you a member of? [multiple choice check boxes]

ACPF QSMA QSIA FDRC MBSIA Other Marine Fishers Association Other, please specify

3b. During 2012/13 how often did you meet with these groups/organisations?

Many times (more than once a month) A few times (twice – three times a year) Once Never

Q3c. Who do you most frequently contact for information concerning the fishery? Please nominate the three people you most often turn to for information.

Persons Name	What is your relationship to each person listed? Please tick the most appropriate response					
	Spouse/ Partner	Business Partner	Industry Representative	Fellow Fisherman	Employer	Other Please specify
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Connectedness in the next two questions is defined as the following: being united or linked; having a notable or obvious connection with and linked coherently; having social or industry relationships. *[check boxes]*

3d. How connected to your local community are you?

No connection Limited connection Somewhat connected Moderately connected Highly connected

3e. How connected to the prawn trawl industry are you?

No connection Limited connection Somewhat connected Moderately connected Highly connected

COLLECTIVE ACTION AND COOPERATION - ABILITY OF PEOPLE TO WORK TOGETHER

Focusing on the National Prawn Strategy

4a. Are you aware of the National Prawn Strategy? *[check boxes]* Y N

If no, would you like more information about the NPS? *[If yes, please contact the researcher, Vikki Schaffer v.schaffer@usc.edu.au]*

4b. If yes, how did you find out about the National Prawn Strategy? *[multiple response check boxes]*

1. I heard about it from another fishermen
2. I heard about from an industry organisation representative
3. I received an invitation from an industry organisation (email or postal)
4. I attended a workshop/presentation about the National Prawn Strategy
5. I heard about it in the media
6. Other, please specify

4c. Have you shared information about the National Prawn Strategy with others? *[check boxes]* Y N

If yes, with whom did you share information about the National Prawn Strategy? *[multiple response check boxes]*

1. With another fishermen
2. With an industry organisation representative
3. At a workshop/presentation about the National Prawn Strategy
4. In the media
5. Other, please specify

4d Who have you talked to most about the National Prawn Strategy? Please nominate the person/s you most frequently talked to about the National Prawn Strategy.

Please provide:		What is your relationship to each person listed?					
Persons Name		Please tick the most appropriate response					
		Spouse/ Partner	Business Partner	Industry Representative	Fellow Fisherman	Employer	Other Please specify
1.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

4e. Did you attend any meetings about the National Prawn Strategy? Please state the number of meetings attended *[drop down box]*

4f. Who hosted these meetings? *[multiple choice check boxes]* FRDC QSIA Fishermen
 Researchers Other, please specify *[multiple choice check boxes]*

4g. Where were these meetings located? [multiple choice check boxes] Cairns Townsville Mackay Gladstone Bundaberg Hervey Bay Sunshine Coast Brisbane Gold Coast Other, please specify

Collaboration occurs when individuals work together for a common purpose; is the action of working with someone to produce something. For example: a group of fishermen collaborate to produce the documentation for an environmental strategy statement (EMS).

4h. Generally speaking, do you think your local fishery members collaborate with each other to achieve a common purpose? Y N [check boxes].

Please specify a common purpose in which the local fishery members have collaborated.

4i. Generally speaking, do you think the wider fishery members collaborate with each other to achieve a common purpose? Y N [check boxes]

Please specify a common purpose in which the wider fishery members have collaborated.

4j. Have you worked collaboratively with others regarding the National Prawn Strategy? Y N [check boxes]

4k. If yes, in what ways have you collaborated? [text response]

4l. With who have you collaborated? [multiple choice drop down]

Suppliers Retailers Wholesalers Industry Representative Fellow Fishermen Other, please specify

4m. Do you intend to collaborate with others in activities involving the National Prawn Strategy? Y N [check boxes] Please briefly explain your response. [text response]

Co-operation is a voluntarily arrangement in which two or more entities engage in a mutually beneficial exchange instead of competing. For example: fishermen and other stakeholders such as retailers come together to organise a stall at an event such as regional flavours.

4o. Have you worked co-operatively with other fishery members in the past? Y N [check boxes].

Please briefly describe an example of co-operative actions you have participated in.

Please specify a common purpose in which the local fishery members have co-operated.

4p. Generally speaking, do you think the wider fishery members co-operate with each other to achieve a common purpose? Y N [check boxes]

Please specify a common purpose in which the wider fishery members have co-operated.

Have you worked co-operatively with others regarding the National Prawn Strategy? Y N [check boxes]

4q. If yes, in what ways have you co-operated? [text response]

4r. With who have you co-operated? [multiple choice drop down]

Suppliers Retailers Wholesalers Industry Representative Fellow Fishermen Other, please specify

4s. Do you intend to co-operate with others in activities involving the National Prawn Strategy? Y N [check boxes] Please briefly explain your response. [text response]

5. SUITABILITY OF THE NATIONAL PRAWN STRATEGY

Please complete the following with the most appropriate response.

5a. The National Prawn strategy is:

1. An unsuitable strategy for the prawn trawl industry
2. A suitable strategy for the prawn trawl industry

5b. The National Prawn strategy is:

1. An unsuitable strategy for my business
2. A suitable strategy for my business

5c. Have you, or do you intend to sign up to the National Prawn Strategy? [check boxes] Y N

5d. If no, please state the main reason/s why you will not become involved. [text response]

5e. In your opinion, what are the main benefits for you and your business of being involved in the National Prawn Strategy? [text response]

6. TRUSTWORTHINESS

The next sets of questions are about trust. Tighter levels of trust (thick trust) are embedded in personal relationships with friends and associates such as those between family and closer friends and with whom you may have more frequent contact. Looser levels of trust (thin trust) extend to strangers, like new acquaintance and associates with whom you may not have frequent contact.

6a. What type of trust do you have with [check boxes] Do not trust limited trust thin trust thick trust
Fellow fishermen
Industry related organisations/committees
Fishery related government departments

Please respond to the following questions using this scale – Strongly disagree moderately disagree somewhat disagree somewhat agree moderately agree Strongly agree [Check boxes]

6b. Generally speaking, which one of these statements would you agree with

- 1. Most people can't be trusted**
- 2. You can't be too careful in dealing with people**
- 3. I neither trust nor distrust people**
- 4. I trust the people I know well**
- 5. Most people can be trusted**

6c. Would you say that most of the time people involved in the prawn trawl fishing industry are [Check boxes] Only one choice

- 1. Just looking out for themselves**
- 2. They take part in activities but only to help themselves**
- 3. Although people do help they also want something in return**
- 4. Mostly people try to be helpful**
- 5. People are really helpful and do so for no return benefit**

6d. Looking at the level of trust you have for different groups, how much do you feel you can trust:
[scale boxes - 1 = No trust exists 2 = limited levels of trust exist 3 = moderate levels of trust exist 4 = high levels of trust exist 5 = very high levels of trust exist]

- 1. The people who fish in the same fishing grounds as you?**
- 2. Fishermen in general?**
- 3. People in your neighbourhood?**
- 4. People who belong to the same clubs, organisations, or groups as you?**
- 5. The business owners and traders you buy goods/services from?**
- 6. The business owners and traders you supply to?**
- 7. Industry organisation representatives?**
- 8. Government representatives?**
- 9. Other fishery stakeholders such as environmental groups and recreational fishing groups?**

INDUSTRY STRENGTHS AND WEAKNESSES

7a. What do you see as the key strengths of the prawn trawl industry in general? [text response]

7b. What do you see as the key strengths of the prawn trawl industry in your home port? [text response]

7c. What do you see as the key weaknesses of the prawn trawl industry in general? [text response]

7d. What do you see as the key weaknesses of the prawn trawl industry in your home port? [text response]

7e. What do you see as the key opportunities of the prawn trawl industry in general? [text response]

7f. What do you see as the key opportunities of the prawn trawl industry in your home port? [text response]

7g. What do you see as the key threats of the prawn trawl industry in general? [text response]

7h. What do you see as the key threats of the prawn trawl industry in your home port? [text response]

OTHER COMMENTS

8a. Do you have any other comments about the NPS or other social aspects of the EC Trawl Fishery? [text response]

THANK YOU: The time you have spent answering these questions is much appreciated.

10.7. Appendix 7 – Interview Protocol for Final Evaluation of Moreton Bay Network

Ethics Number: A/11/316

East Coast (Prawn) Trawl Fishery (ECTF) Project (Mbay)

To help us better understand the characteristics of the East Coast Trawl – Moreton Bay Fishery, please respond to the following questions. These responses will allow us to understand the structure and function of the fishery network when a collaborative activity has been undertaken.

What is your connection or relationship to the Moreton Bay Prawn Trawl fishery?

Q3c. Who do you most frequently contact for information concerning the fishery? Please nominate the three people you most often turn to for information.

Please provide:		What is your relationship to each person listed? Please tick the most appropriate response				
Persons Name	Spouse/ Partner	Business Partner	Industry Representative	Fellow Fisherman	Employer	Other Please specify
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Connectedness in the next two questions is defined as the following: being united or linked; having a notable or obvious connection with and linked coherently; having social or industry relationships.

3d. How connected are you to your local community?

No connection Limited connection Somewhat connected Moderately connected Highly connected

3e. How connected to the prawn trawl industry are you?

No connection Limited connection Somewhat connected Moderately connected Highly connected

COLLECTIVE ACTION AND COOPERATION - ABILITY OF PEOPLE TO WORK TOGETHER

Focusing on the Moreton Bay Prawns Facebook Page (MBFB)

4a. Are you aware of the MBFB? [check boxes] Y N (if no, skip to Q6)

4b. If yes, how did you find out about the MBFB? [multiple response check boxes]

1. I heard about it from another fishermen
2. I heard about it from an industry organisation representative
3. I received an invitation from an industry organisation (email or postal)
4. I attended a workshop/presentation about the MBFB
5. I heard about it in the media
6. Other, please specify

4c. Have you shared information about the MBFB with others? [check boxes] Y N

If yes, with whom did you share information about the MBFB? [multiple response check boxes]

1. With one or more other fishermen
2. With an industry organisation representative
3. At a workshop/presentation about the MBFB
4. In the media
5. Other, please specify

4d Specifically, who within the MBay fishery have you talked to most about the MBFB? Please nominate the person/s you most frequently talked to about the MBFB.

Please provide:		What is your relationship to each person listed?				
Persons Name	Please tick the most appropriate response					Other Please specify
	Spouse/ Partner	Business Partner	Industry Representative	Fellow Fisherman	Employer	
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

4e. Did you attend any meetings about the MBFB? Please state the number of meetings attended [drop down box]

4f. Who hosted these meetings? [multiple choice] Researchers Fishermen Other, please specify

Collaboration occurs when individuals work together for a common purpose; is the action of working with someone to produce something. For example: a group of fishermen collaborate to produce the documentation for an environmental strategy statement (EMS).

4h. Generally speaking, do you think the MBay fishery members collaborate with each other to achieve a common purpose? Y N

Please briefly explain your response.

Please specify a common purpose in which the local fishery members have collaborated.

4p. Generally speaking, do you think the wider fishery members collaborate with each other to achieve a common purpose? Y N

Please briefly explain your response Please specify a common purpose in which the wider fishery members have collaborated.

4j. Have you worked collaboratively with others regarding the MBFB? Y N

4k. If yes, in what ways have you collaborated? [text response]

4l. With whom have you collaborated? [multiple choice drop down]

Suppliers Retailers Wholesalers Industry Representative Fellow Fishermen Other, please specify

Co-operation is a voluntary arrangement in which two or more entities engage in a mutually beneficial exchange instead of competing. For example: fishermen and other stakeholders such as retailers come together to organise a stall at an event such as regional flavours.

4o. Have you worked co-operatively with other fishery members in the past? Y N

Please briefly describe an example of co-operative actions you have participated in.

Please specify a common purpose in which the local fishery members have co-operated.

4s. Do you intend to co-operate with others in activities involving the National Prawn Strategy? Y N [check boxes] Please briefly explain your response. [text response]

4z. What role did you take in the MBFB market opportunity?

COLLECTIVE ACTION AND COOPERATION - ABILITY OF PEOPLE TO WORK TOGETHER

Focusing on the Regional Flavours (RF)

4a. Are you aware of RF? [check boxes] Y N (if no, skip to Q6)

4b. If yes, how did you find out about RF? [multiple response check boxes]

1. I heard about it from another fishermen
2. I heard about from an industry organisation representative
3. I received an invitation from an industry organisation (email or postal)
4. I attended a workshop/presentation about the RF
5. I heard about it in the media
6. Other, please specify

4c. Have you shared information about RF? [check boxes] Y N

If yes, with whom did you share information about RF? [multiple response check boxes]

1. With another fishermen
2. With an industry organisation representative
3. At a workshop/presentations involving RF
4. In the media
5. Other, please specify

4d Who have you talked to most about the RF? Please nominate the person/s you most frequently talked to about the RF.

Please provide:		What is your relationship to each person listed? Please tick the most appropriate response				
Persons Name	Spouse/ Partner	Business Partner	Industry Representative	Fellow Fisherman	Employer	Other Please specify
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

4e. Did you attend any meetings about RF? Please state the number of meetings attended [drop down box]

4f. Who hosted these meetings? [multiple choice check boxes] Fishermen Researchers Other, please specify [multiple choice check boxes]

4g. Where were these meetings located? [multiple choice check boxes]

Collaboration occurs when individuals work together for a common purpose; is the action of working with someone to produce something. For example: a group of fishermen collaborate to produce the documentation for an environmental strategy statement (EMS).

4j. Have you worked collaboratively with others regarding the RF? Y N

4k. If yes, in what ways have you collaborated? [text response]

4l. With who have you collaborated regarding RF? [multiple choice drop down]

Suppliers Retailers Wholesalers Industry Representative Fellow Fishermen Other, please specify

4z. What role did you take in RF event?

5. SUITABILITY OF THE MBFB AND RF

Please complete the following with the most appropriate response.

5a. The MBFB is:

1. An unsuitable strategy for the prawn trawl industry
2. A suitable strategy for the prawn trawl industry

5B. The RF is:

1. An unsuitable strategy for the prawn trawl industry
2. A suitable strategy for the prawn trawl industry

4a. Are you aware of the National Prawn Strategy? [check boxes] Y N

If no, would you like more information about the NPS? [If yes, please contact the researcher, Vikki Schaffer
v.schaffer@usc.edu.au]

4b. If yes, how did you find out about the National Prawn Strategy? [multiple response check boxes]

1. I heard about it from another fishermen
2. I heard about from an industry organisation representative
3. I received an invitation from an industry organisation (email or postal)
4. I attended a workshop/presentation about the National Prawn Strategy
5. I heard about it in the media
6. Other, please specify

6. TRUSTWORTHINESS

The next sets of questions are about trust. Tighter levels of trust (thick trust) are embedded in personal relationships with friends and associates such as those between family and closer friends and with whom you may have more frequent contact. Looser levels of trust (thin trust) extend to strangers, like new acquaintance and associates with whom you may not have frequent contact.

6a. What type of trust do you have with [check boxes]

Do not trust limited trust thin trust thick trust

Fellow fishermen

Industry related organisations/committees

Fishery related government departments

Please respond to the following questions using this scale –

Strongly disagree moderately disagree somewhat disagree somewhat agree moderately agree Strongly agree

6b. Generally speaking, which of these statements would you agree with

1. Most people can't be trusted
2. You can't be too careful in dealing with people
3. I neither trust nor distrust people
4. I trust the people I know well

5. Most people can be trusted

6c. Would you say that most of the time people involved in the prawn trawl fishing industry are [Check boxes] Only one choice

- 1. Just looking out for themselves**
- 2. They take part in activities but only to help themselves**
- 3. Although people do help they also want something in return**
- 4. Mostly people try to be helpful**
- 5. People are really helpful and do so for no return benefit**

6d. Looking at the level of trust you have for different groups, how much do you feel you can trust: [scale boxes - 1 = No trust exists 2 = limited levels of trust exist 3 = moderate levels of trust exist 4 = high levels of trust exist 5 = very high levels of trust exist]

- 1. The people who fish in the same fishing grounds as you?**
- 2. Fishermen in general?**
- 3. People in your neighbourhood?**
- 4. People who belong to the same clubs, organisations, or groups as you?**
- 5. The business owners and traders you buy goods/services from?**
- 6. The business owners and traders you supply to?**
- 7. Industry organisation representatives?**
- 8. Government representatives?**
- 9. Other fishery stakeholders such as environmental groups and recreational fishing groups?**

7. INDUSTRY STRENGTHS AND WEAKNESSES

7a. What do you see as the key strengths of the prawn trawl industry in general? [text response]

7b. What do you see as the key strengths of the prawn trawl industry in Moreton Bay? [text response]

7c. What do you see as the key weaknesses of the prawn trawl industry in general? [text response]

7d. What do you see as the key weaknesses of the prawn trawl industry in MBay? [text response]

7e. What do you see as the key opportunities of the prawn trawl industry in general? [text response]

7f. What do you see as the key opportunities of the prawn trawl industry in Mbay? [text response]

7g. What do you see as the key threats of the prawn trawl industry in general? [text response]

7h. What do you see as the key threats of the prawn trawl industry in MBay? [text response]

THANK YOU: The time you have spent answering these questions is much appreciated.

10.8. Appendix 8 – Marketing Audit for the Wild Caught Prawns of the East Coast Trawl Fishery



2011

Marketing Audit for the Wild Caught
Prawns of the East Coast
Trawl Fishery



Dr Kathy Hastings
Xylem International Pty Ltd
12/12/2011

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Marketing Audit for the Wild Caught Prawns of the East Coast Trawl Fishery

1. Introduction

This research reports on the first stage findings of the marketing audit within the research project "Identification of the core leadership group and network structure of East Coast Trawl to develop, implement and evaluate strategic opportunities". This is a collaborative project between University of Sunshine Coast (USC), Australian Seafood CRC and East Coast Trawl.

The research investigates how the strengths, weaknesses, opportunities and threats were perceived by wholesalers in the wild caught prawn sector. To conduct this research 15 wholesalers were interviewed using a case study methodology. Their answers to a set protocol has been analysed and presented in this report.

The next stage for this research is the evaluation of the identified areas of opportunity. These opportunities will then be offered to the core leadership group for evaluation and trial implementation.

2. Background

East Coast Trawl Fishery is a very large fishery that is adjusting to major structural change and changes in its external environment. The East Coast Trawl Fishery extends from the Cape York along the east coast to the border of NSW and Queensland. Most of the catch is taken with otter trawl (about 95 per cent of the trawl harvest). In addition to the Fisheries (East Coast Trawl) Management Plan 1999, the fishery has been constrained by zoning plans of the Great Barrier Reef Marine Park and the development of marine parks in areas such as the Great Sandy Strait and Moreton Bay.

The fishery has 422 licences listed in 2009/10 for Tiger, Banana, King, Endeavour and Bay Prawns, Scallops and Moreton Bay Bugs. Although it is thought that the number of working boats is closer to half that number. (3,5,6)

Actual fishing production figures (Table 1) show increases in catch for all species since 2007. However, this has not increased profitability within the sector. This is due

to increased competition from two main areas; aquaculture and imports. Since 2007 the production of farmed prawns in Queensland has grown by 81%. This growth is in the production of Banana and Tiger prawns. These prawns are meeting the market needs of consistency and availability as they have control over volume produced and the ability to grow all year round (ABARE 2010).

Table 1 - Fishing Production Queensland

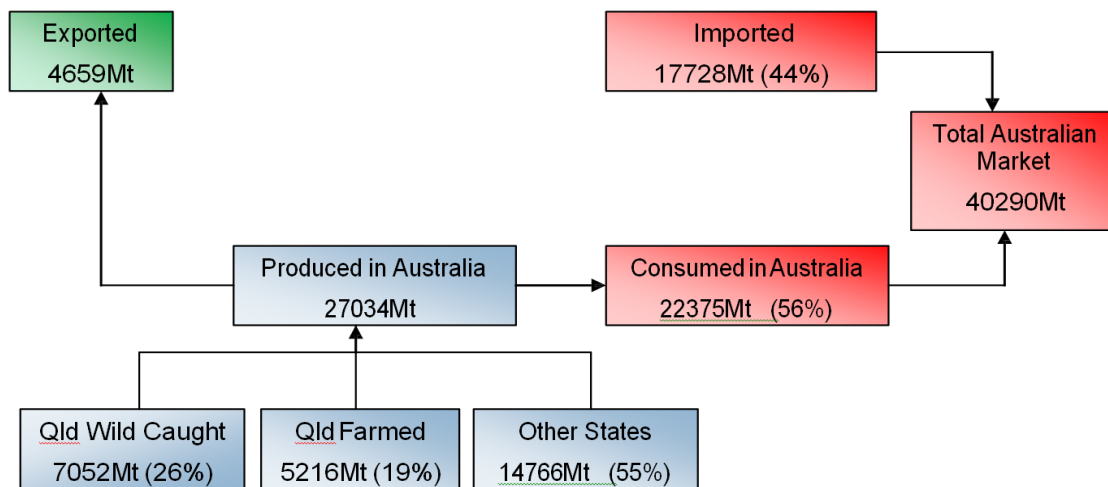
Prawns (tonnes)	2007-08	2008-09	2009-10
Banana	577	895	808
Endeavour	491	665	580
King	2784	3008	3646
Tiger	745	1307	1216
Other	424	439	802
Total	5021	6314	7052
Aquaculture	2888	3821	5216

ABARE 2011

Competition is also coming from imports of chilled, fresh and frozen prawns, the majority being frozen. Australia imported 17728 tonnes of fresh, chilled or frozen prawns in the 2009/10 period, representing 44% of the domestic market for prawns. Of this amount 5719 tonnes came from China, 5033 from Thailand and 2504 from Vietnam.

Over the same time frame Australian exports of prawns have dropped by 500 tonnes. Australia exported 4659 tonnes of prawns in 2009/10. The main export destination for prawns is Japan who imported 1821 tonnes of prawns in 2009/10 period from Australia. This is followed by China (543 tonnes) and Hong Kong (518 tonnes). This decline is largely attributed to the high value of the Australian Dollar. Future forecasts suggest that the appreciation of the Australian dollar against the currencies of major trading partners in 2010/11 will most likely keep the value of Australia's fishery product export value stable, at around \$1.3 billion. (ABARE 2010). Figure 1 provides a graphical overview of the total Australian prawn market, domestic catch, imports and exports.

Figure 1: Overview of Australian Prawn Market



Wild caught prawns are subject to seasonality as can be seen in Table 2. This prawn seasonality chart identifies peak and limited availability periods during the year for each species. Seasonality affects the ability to supply the product consistently across the year. Weather also impacts on the catch with last year’s floods and cyclones predicted to cause a 6% decline on production figures for the 2011 season. (ABARE 2010)

Table 2 – Queensland Prawns Seasonality Chart

Prawn	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Banana farmed	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available
Banana Prawns Wild	Available	Available	Available	Peak Availability	Peak Availability	Available	Available	Available	Available	Available	Available	Available
Bay Prawns	Peak Availability	Peak Availability	Available	Available	Limited Availability	Limited Availability	Limited Availability	Available	Available	Peak Availability	Peak Availability	Peak Availability
Endeavour Prawns	Available	Available	Peak Availability	Peak Availability	Peak Availability	Peak Availability	Available	Available	Available	Available	Available	Available
King Prawns	Available	Available	Available	Available	Peak Availability	Peak Availability	Peak Availability	Available	Available	Available	Available	Limited Availability
Tiger Farmed	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available
Tiger Prawns Wild	Limited Availability	Limited Availability	Peak Availability	Peak Availability	Peak Availability	Peak Availability	Peak Availability	Available	Available	Available	Available	Limited Availability

Legend	Limited Availability
	Available
	Peak Availability

Source: Department of Employment, Economic Development and Innovation, 2011

It is from this background of coping with change that this project is entering the industry to identify market opportunities for East Coast Trawl. These opportunities

need to meet the criteria of being able to assist the majority of Trawl members and enable members to collaborate more closely by engaging in the process.

3. Methodology

The methodology used in this research was case study. In-depth interviews were conducted with wholesalers across the length of East Coast Trawl. Due to the very large distances associated with East Coast Trawl the research was organized on the basis that Wholesalers should show variation in:

- financial volume
- number of employees
- geographic location
- volume of prawns handled
- species of prawns handled

There were 15 in-depth interviews conducted over a two month period in October and November of 2011. Each interview took between 45 minutes and 3 hours depending on the willingness of the respondents to participate. These interviews were supported by expert interviews on the background and history of the East Coast Trawl Fishery. The interviews were conducted using a case protocol as outlined in Appendix 1. The protocol was designed to answer the following research question:

RQ1: How do Wholesalers perceive the strengths and weaknesses, opportunities and threats to the wild caught prawn sector?

By answering this research question, a picture on the opportunities available to the industry can be developed. These opportunities will be investigated further in the next stage of this research.

4. Results

4.1 Current Situation

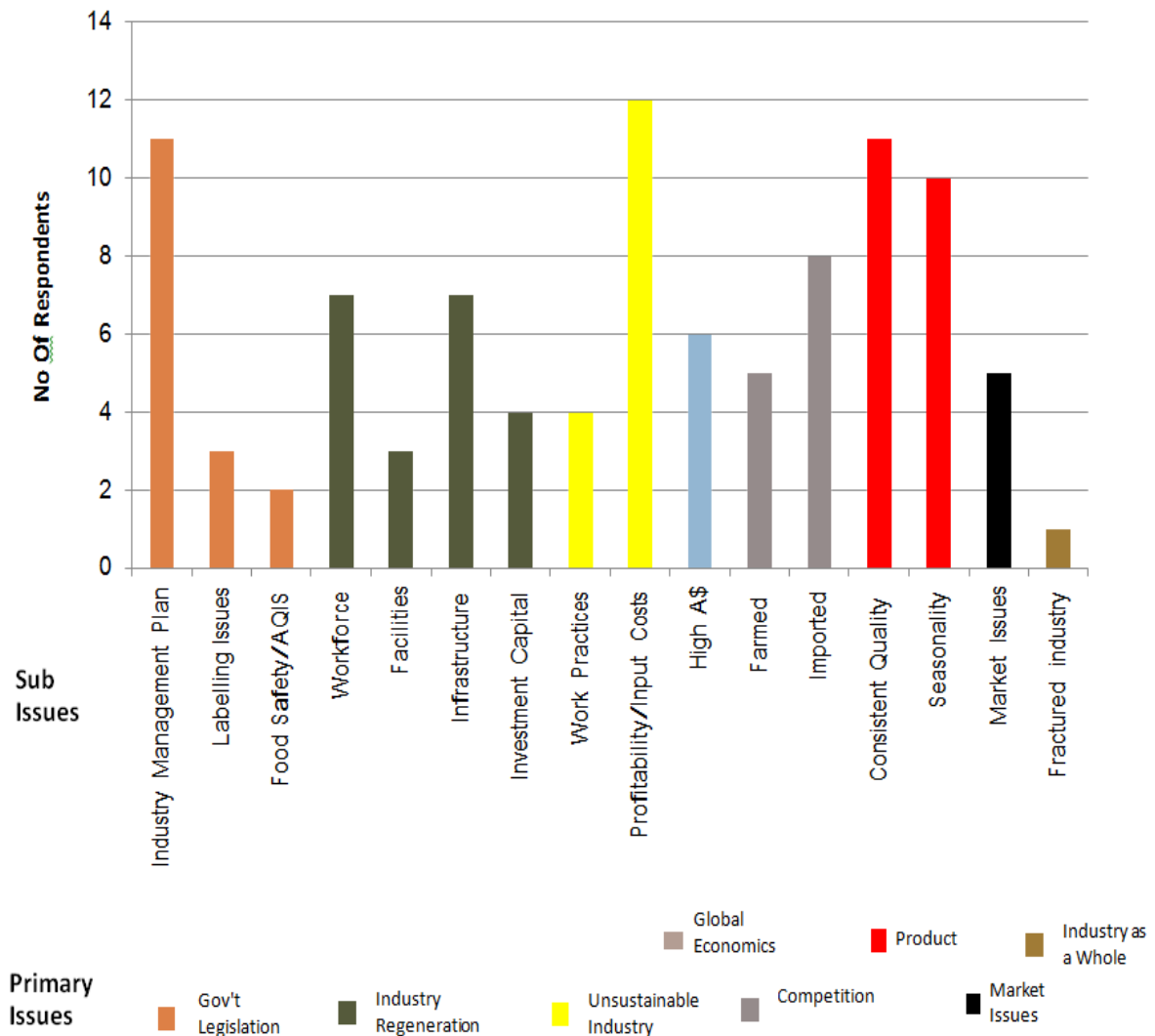
Respondents feel that the wild caught prawn Industry is facing the “perfect storm” of factors that are impacting severely on the industry. Each factor taken individually could be absorbed but together these factors are combining to have a major negative impact on the industry. Comments such as “...it is dying” and “it” s in death throes” illustrate the level of negativity regarding the outlook for this industry. The one factor most concerning to the Wholesalers is the lack of profitability in the sector. However, as illustrated in Figure 2, numerous factors go to make up the current situation and many of these directly impact on the profitability issue. For example, lower profitability is inversely proportional to higher input costs that are being experienced by all respondents. Fuel cost was specifically named as one of the major concerns for this sector together with utility costs such as electricity and water, and the cost of labour. Unfortunately the impact has not only been felt financially on the industry, livelihoods and family security are being eroded under the strain of financial hardship. “We have seen guys tie up their boats and walk away...”(5), “The human cost so far has been huge in marriage breakdowns, mental issues and suicide....”(12).

Some 78% of respondents viewed the Industry Management Plan as a major contributing factor to the industry” s current state. Lack of clarity on issues such as effort units buy-back, marine closures and high cost structures for permits and compliance fees have led to a critical negative perception of the overall management of the fishery. This issue does pose a constraint on stakeholders being able to strategically plan for the future. “I feel we can” t cope with constant new regulations and the corresponding shifting of the goal posts...you don” t know where you will be”(13).

External factors influencing the industry include the high Australian dollar which has had a detrimental effect on exports due to the inability to remain price competitive in the global marketplace. The majority of wholesalers interviewed have export experience but are currently shipping minimum orders due to this issue of being uncompetitive on price. In the same timeframe we have seen a significant increase in aquaculture, or farmed prawns being produced in Australia (81% increase since 2007) and imports of chilled and frozen prawns primarily from Asia (currently comprise 44% of all prawns consumed in Australia). These factors are also undermining the profitability of the sector, as lucrative export markets

have become unviable at the same time domestic markets are experiencing a high degree of competition.

Figure 2: Current Situation



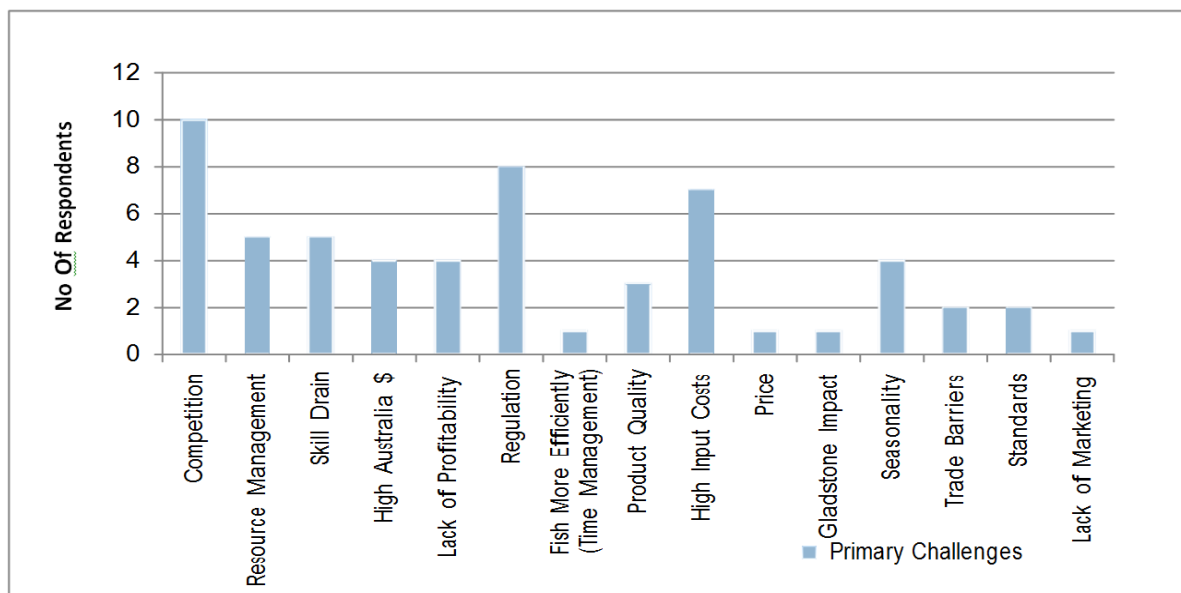
The respondents suggest this season (2011/12) has shown good catches of Banana and Tiger Prawns but King Prawn catches have been severely reduced. It was suggested that the flooding in South-East Queensland and Cyclone Yasi in the North could be the primary causes of this reduction. This seasonal variability impacts significantly on potential catch volumes and product quality. The majority of Wholesalers cite being able to source good quality prawns consistently as a real issue.

Finally there is a widespread concern across all respondents on the lack of regeneration in the industry. It is recognized that this issue is directly related and is a natural flow on from the lack of profitability that has occurred in the sector. What Wholesalers are now identifying is that there is a lack of capital coming into the industry in terms of finance, infrastructure, facilities and workforce. This means new facilities are not being built, new boats are not being commissioned, expansion plans are not being financed and the workforce is aging. There is concern that the industry is losing its skill base with young workers being attracted to more lucrative industries such as mining and the older experienced workers leaving due to the inability to create a livelihood, or that they are at retirement age. The skills and knowledge built over generations in the fishing industry are not being passed on and face the prospect of being lost forever.

4.2 Industry Challenges

Respondents identified there are a number of major challenges for the industry to overcome in order to achieve success (Figure 3). The highest priority was given to competition and much of the discussion on this topic revolved around “truth in labeling”. Regulation of country of origin packaging is available at a retail level but many Wholesalers would like this to be carried through to the food service sector. Respondents feel that by giving clarity to what is an Australian product will allow them to compete more effectively in the market place (3).

Figure 3: Industry Challenges



Fifty-seven percent of respondents cited regulations imposed by all levels of government as a significant industry challenge that needs to be overcome in order to

achieve success. The concern is the flow-on effect that changes in compliance and legislation is having to their cost base. Examples provided by respondents include water dispersal and rates , occupational health and safety compliance, work conditions and fishery management in terms of licenses, renewal of boats and equipment and environmental considerations. Of single most concern was licensing, with the current value of licenses having depreciated significantly over the last three years. Positive comments were offered regarding the regulation and management of South Australian Fisheries and the industry respondents are positive this could also be made applicable to Queensland (3,1,12).

High input costs were the third most prominent challenge listed with respondents, citing rising costs in utilities of electricity and water as already having an impact. However it was the increased cost of fuel that creates the most concern as it is considered as a fixed cost, unrelated to volume of catch. "Whether I catch 1kg or 400kg I still have the same fuel costs – I have to steam out to the same area to fish"(12). Creative solutions to the fuel costs included forming a buyers group which would provide sufficient scale to negotiate lower overall fuel prices for each member. This strategy may have merit if linked with the peak associations involved with the Prawn industry.

4.3 Marketing Strategies of Respondent Organizations

This study examined the marketing programs of respondent organizations, in terms of goals and objectives, branding and positioning, issues faced and opportunities that are available to them.

Maintaining their current goals and objectives was the overall aim of the majority of the respondents. This reflects the uncertainty in the sector with many waiting for further clarity before making any strategic decisions. Where we did see diversification was in trying to stabilize the business. For example, farmed or imported product may be used at a wholesale level to compensate for a seasonal downturn in prawn catch. All wholesalers carry a variety of seafood products and do not specialize in prawns. Retail expansion in the form of their own fresh seafood shops was also cited by two respondents. Retail outlets have been a financially successful venture for wholesalers who have integrated their business to include this option.

The most surprising finding in this sector was that 85% of the wholesalers did not have a formal marketing strategy and further 92% conducted only local or no advertising regarding their products. The most common form of marketing for the wholesalers is word of mouth. However supplying the same clients figured strongly as the majority of wholesalers have been in business in excess of ten years and have a very established clientele.

The data revealed that the wholesalers use the same positioning based on the concepts of local, fresh and high quality prawns. Yet little is done to support this position in terms of marketing. While most wholesalers have a brand; the full potential of branding in terms of creating value for the product has not been realized. Further, while aquaculture farmers are taking control of their marketing and building brands, the same cannot be observed in the wild caught sector. All respondents stated that the wild caught product is of very good quality and is capable of taking a premium position in the market. This is a marketing opportunity that is not being utilized.

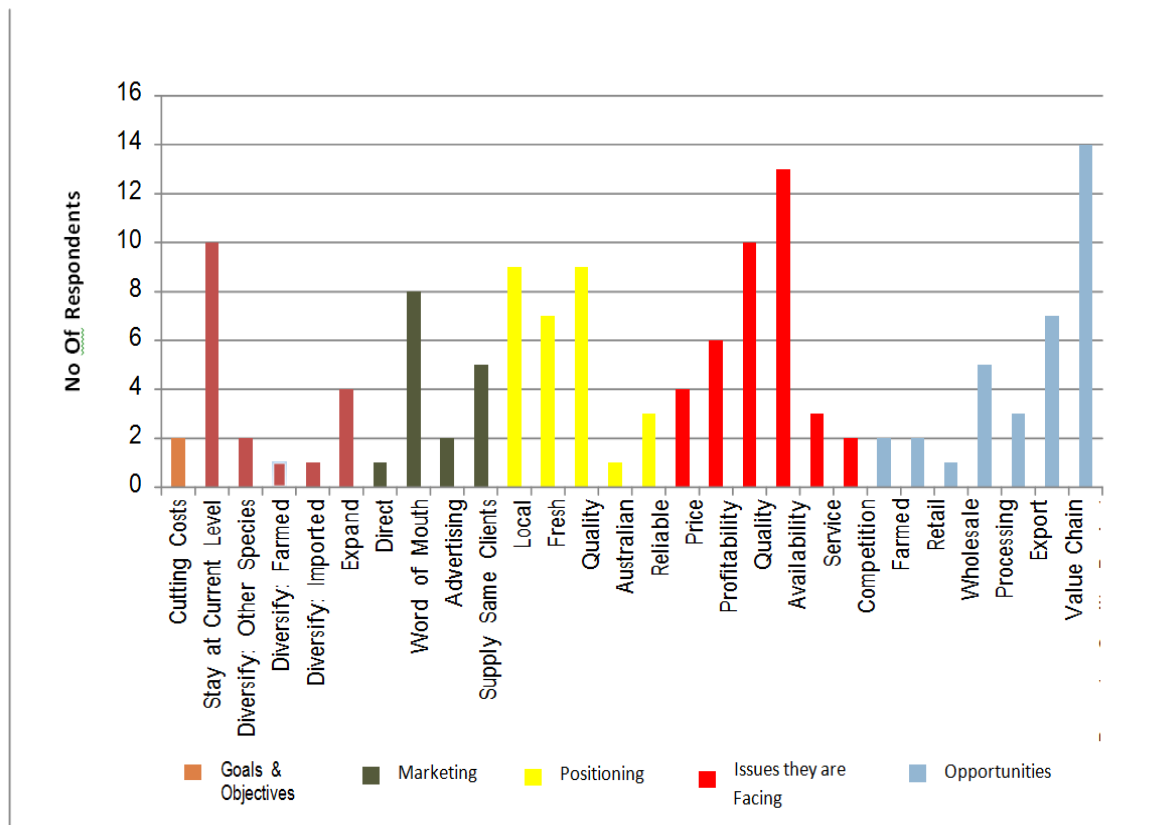
Current marketing issues being faced by wholesalers include product availability and quality. As shown in Table 2, the peak availability of prawns (with the exception of Bay) is over the winter months, however the peak selling season for prawns is the exact opposite being November to February to correspond with Christmas and the summer holidays. The incongruence of this situation translates into low prices during winter when there are bulk prawns and little demand and high prices at Christmas when there is shortage of supply. Wholesalers with freezing capacity have the ability of holding prawns caught late in the peak harvest season as frozen products, to sell over the Christmas period. However smaller wholesalers and fishermen who do not have the freezing infrastructure and the financial capacity to hold for four or five months are not in a position to take advantage of this opportunity.

The situation is further complicated by the variability of the product caught. Wholesalers state that there is still large variance in product standards from different boats. While it was generally agreed that the quality had improved with the introduction of freezing capacity on the boats, there were still concerns regarding product specifications and the ability of boats to produce to that level on a consistent basis. Although each wholesaler stated they have specification sheets, most tend to stay with fishermen that they have built relationships with over time. They buy from these boats in winter and then the fishermen sells to them in summer. This system over recent times has fallen into disarray with fisherman now offering their catch to multiple buyers and favoured wholesalers now only being offered a portion of the catch. Cases of fisherman offering discounts for their catch by going direct to market are also common. This practice has the end result of driving the „beach price“ down for the whole product and compounding the problems of profitability for the industry.

When asked where do they see the opportunities within their businesses, the majority identified having a quality product to market is the key opportunity. To this end, marketing providence together with quality standards will enable this opportunity to be exploited. Being able to identify their products as „Wild Caught“ and „Queensland“ , would allow the fishery to position itself more securely in the market and to capitalize on the opportunities available.

Other opportunities were the ability to value-add the product through further processing and adding export or further wholesaling functions to their business. About 50% of the respondents saw opportunities for improvement within the value chain as it is currently fracturing and becoming more combative. This makes it harder to guarantee clients of the quantity and quality of the products.

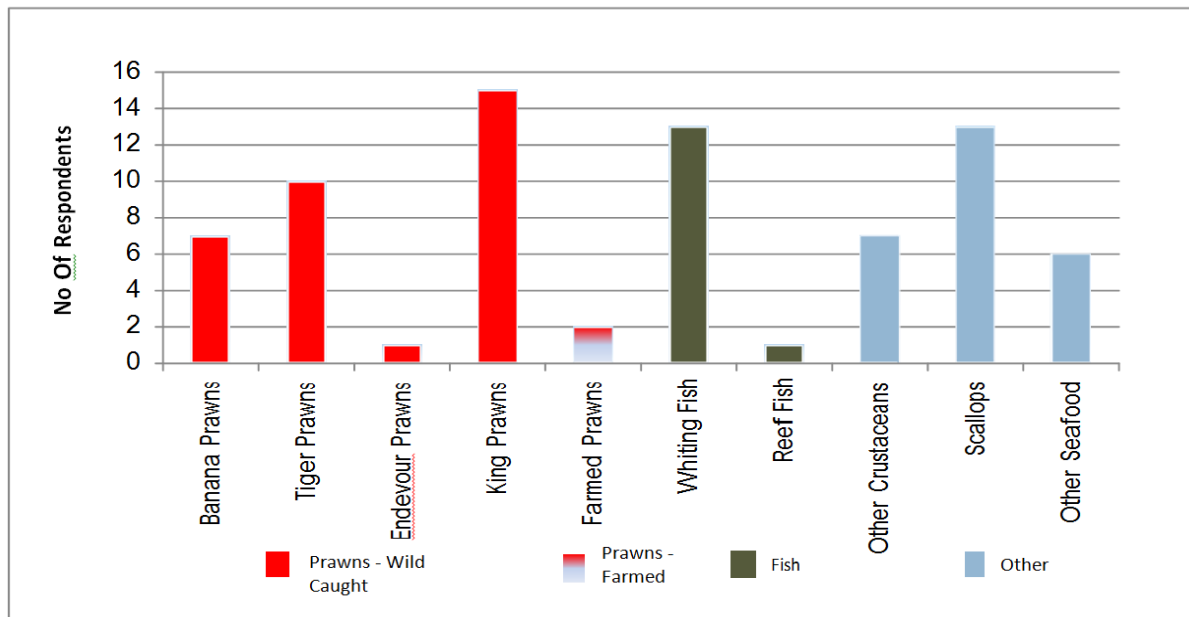
Figure 4: Marketing Strategies by Individual Respondents



5. Product

The data identifies that while respondents may have a core product such as whiting fillets, scallops or tuna, they all cover a range of products as shown in Figure 5. The three most common products were King Prawns, Whiting and Scallops but Wholesalers stock reef fish, fin fish, other crustaceans, other prawns including in some cases farmed, and imported products to fulfill their clients requirements. This diversification process has enabled the organizations to keep customers and minimize risk to their businesses through diversification.

Figure 5: Product Range



The most common product used across all wholesalers is King Prawns. This is supported by the statistics (Table 3) which indicate that Queensland dominates the production of King Prawns. While some King Prawns may be found in the Western Australian and South Australian fisheries (ABARE does not have breakdown of Prawn species for those States) the dominance of Queensland is clear with this species. Within the Queensland prawn industry, King Prawns make up 52% of the total production. King Prawns are East Coast Trawl's flagship product.

Table 3: Production of Prawn Species by State 2009/10 (Mt)

Prawns Species	NSW	VIC	WA	SA	C'wealth Fisheries	QLD
King	466				6	3646
School	600					
Other	35	130	2790	2669	1	802
Banana					5771	808
Tiger					1274	1216
Endeavour					355	580

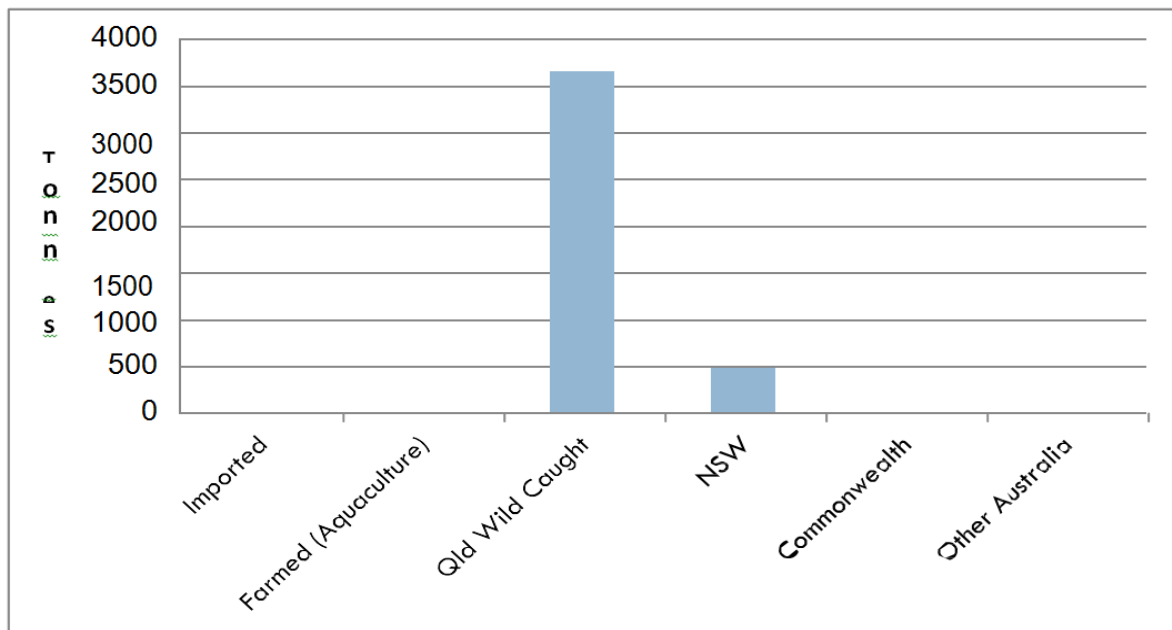
ABARE 2010

Further investigation on King Prawns reveals several aspects that make this product unique;

1. Unlike most other prawn species, King Prawns (comprised of several species including Eastern and Red Spot) are indigenous to Eastern Australia (<http://queenslandprawns.com>).
2. These indigenous prawns have no competition from imports
3. King prawns are not being farmed in aquaculture operations.

These simple facts mean that King Prawns are in a unique market position. They are a high quality, 100% wild caught product with unique characteristics for positioning. In fact they have market dominance in Queensland and significant influence on the Australian prawn market (Figure 6). Currently there is no market campaign for King Prawns at an industry level and no marketing support at a wholesale level. This is a significant opportunity for East Coast Trawl that is currently being overlooked.

Figure 6. Queensland Wild Caught King Prawns Dominance



6. Distribution

The products sold through wholesalers are distributed through a variety of channels. Table 4 shows the percentage of product sales into each distribution channel. Most notable is the strong use of wholesalers. Two respondents send 100% of their produce to a second wholesaler and a further two respondents send 80% of their produce to a second wholesaler. Commentary within the industry suggests the use of three or four wholesalers in the one chain is not uncommon. While most wholesalers have the ability to export, currently only two respondents are exporting any significant volumes. This may change if the value of the Australian Dollar decreases.

Nine of the respondents supply the food service industry. This involves first stage processing of the seafood such as filleting, splitting shells of scallops and in the case of prawns peeling, and deveining. Seven of the respondents do second stage processing of prawns that involves crumbing, battering or marinating the prawns for products such as Cutlets, Tempura Prawns and Garlic Prawns. The value-adding of prawns is subject to competition from imported products and is therefore price competitive but wholesalers are still able to find some market niches based on technology used in their factories and quality of the Australian products and in several cases, off-shore processing.

Eight of the wholesalers had their own retail outlet. Two of these respondents earn at least 75% of their income from their retail outlets. Shops were seen as being “hard work” and a lot of effort is needed in presentation and providing meal solutions for customers. Some wholesalers are hiring staff to especially prepare the meal solution areas of their shops. The shops are seen as providing good cash flow and enable the wholesalers to take a wider variety of catch from the fishers. Location seems to be critical to this type of operation, with those in more isolated industrial locations not gaining the same customer patronage as those in mixed precincts with eating areas, water views, parks and other food outlets.

Table 4: Respondents Sales by Distribution Channel

Product Category	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Wholesale		80	40	20	100	30	80	70	100	50	40			20	
Food Service	10		50	80		10		15		10	40	30	75		
Retail - Own Shop	70	20	10			10				40	20		25	80	
Retail Supermarket						40									
Retail - Fish & Chip Shops	20					10		15							100
Export							20					70			

Supermarkets are not well represented across these wholesalers. The reason being that traditionally supermarkets have not had the knowledge or facilities to handle seafood effectively. Further, supermarkets have offered a low price point for prawns thus creating an opening for imported product, as the local product was not deemed price competitive. Recently however, we have seen the major supermarkets offering a wider range of prawn products and are taking Australian prawns as part of this new format (Keith, 2011). Supermarkets work with preferred suppliers who can offer quantity and consistency. An example of this is the new arrangements between Woolworths and Northern Fisheries (Keith, 2011). Those wholesalers supplying supermarkets have done a lot of work on packaging, presentation and logistics to assist the supermarkets in selling seafood within their operations (6). Several wholesalers are resistant to selling to supermarkets as they have had negative experiences in the past and prefer to work in food service (9,8). While it is difficult to enter the market through the major supermarkets, opportunities do exist with the smaller independent players who are much more focused on local, fresh produce.

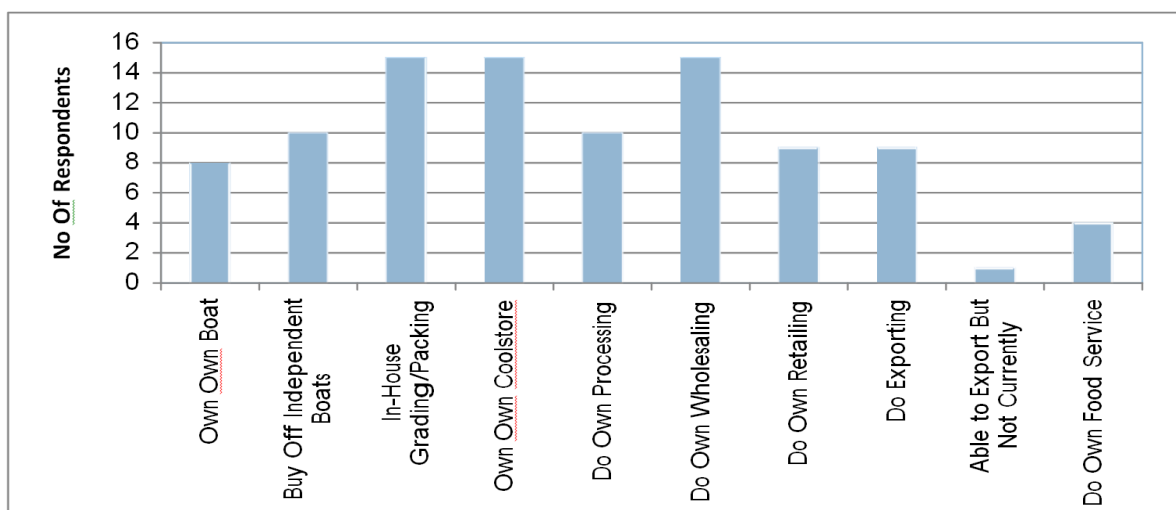
From the data it is difficult to gain a strong picture of what is happening with the smaller local Fish and Chip shops. Four respondents are selling into this category and one wholesaler specializes in this sector. However across Queensland there are thousands of Fish and Chip shops so while individually small the volume overall may be significant. Wholesalers state that many in this category are very price conscious and not willing to pay for the products (8,9). An opportunity does exist for

Wholesalers to work more closely with those who are local to them, promoting their brand of fresh, local products in each locality.

7. Supply Chains

The supply chain for wild caught prawns is multi-layered and complex. It is dominated by wholesalers and it is possible for prawns to go through multiple wholesalers, especially when moving interstate. As Figure 7 shows prawns are caught by the Boats owned by the Wholesalers or independent Boat owners up and down the Queensland coast. The catch is typically cooked and frozen on-board, then brought into harbour. From the harbour the catch is transported to the Wholesalers premises. Most have premises at the wharf but some are situated in Industrial Areas and the catch needs to be transported to their facilities. Several of the Wholesalers have in excess of 50 independent boats catching for them along the coast. Their catch is also transported to the wholesaler's facilities. Once at the premises the prawns are graded and packed and placed in cool stores. Depending on their operations these prawns may be further processed in-house or sold at this point. The wholesaler can sell to other wholesalers who again may further process or sell them on to their clients. Wholesalers also have the option to supply Food Service, Retail outlets or Export and many customize their offerings to suit the client's needs. Three of the respondents are vertically integrated having restaurants or dining facilities to cook and serve their seafood. Figure 7 illustrates the main functions carried out by Wholesalers, which include grading, packing, cool store activities and wholesaling functions.

Figure 7: Supply Chains of Respondents



Such a complex system does lend itself to opportunities to create value in the chain and exploit new opportunities that are not possible under the current system.

8. Relationships

The perception of the industry is that it is fractured, competitive and lacks communication. This perception was challenged in this study by asking the respondents who within the industry do they have relationships with. The respondent was not prompted and the data collected simply reflects comments offered by choice. While table 5 is not the complete picture of the relationships that are maintained by each wholesaler, it does challenge the idea that the wholesalers do not communicate or have strong working relationship across the industry and down the supply chain. What the data revealed is that each Wholesaler has built a „Buddy System“ into their operation. The “Buddy” is another Wholesaler who they can work with to back themselves up in the case of not being able to supply and also acts as a support system of being able to move products quickly when necessary. In some cases there may be two or three “Buddies” and three of these clusters were geographically located together. Table 5 identifies the relationships between the respondents as well as with other wholesalers, retailers, fishers and broader industry.

Relationships were also noted along the supply chain, with independent fishers having strategic alliances with certain fishers for their products. These relationships are long-standing and although benefits flow both ways, the power in the relationship was with the Wholesaler as he was acting in some cases as a bank, having access to the wharf and storage facilities. Without these benefits, the independent fisher would find it very difficult to conduct his operation. In recent times this relationship has become less comfortable with a trend of Fishers pursuing the highest dollar for their catch and selling to the highest bidder rather than the Wholesaler. This works well in periods of high demand but has the opposite effect in the winter months when prawns are in surplus. Wholesalers believe the practice of cutting the Wholesaler out and going directly to second stage processors has the overall effect of depressing the „beach price“ of prawns and is really a case of „short term gain for long term pain“ (8,9).

Table 5: Level of Cooperation Between Respondents

Respondent Relationship	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Other W'salers	Other Retailers	Food Service	Broader Industry	Other Trawlers
1																✓	✓	✓		
2																				✓
3				✓															✓	✓
4			✓													✓			✓	
5		✓														✓			✓	
6																✓	✓	✓	✓	✓
7		✓	✓	✓	✓											✓				✓
8										✓						✓				✓
9					✓											✓				✓
10								✓								✓				✓
11	✓									✓		✓					✓	✓		
12		✓								✓	✓					✓		✓		
13											✓	✓				✓		✓		
14																✓		✓		✓
15						✓												✓	✓	

9. Background Information

The background information on the organization shows the wealth of experience available to this industry. Average years of experience for the respondents in this study is 31 years. They have been with their current organizations for an average of 13 years, well above national averages in this area. The organizations themselves are very established (average 21 years) and employ a significant amount of labour to conduct their business. On average these organizations hire 47 people which rises during the peak periods. These wholesalers tend to have significant turnover, averaging in excess of \$5million per annum. A major weakness to these organizations is being able to hold their quality staff and train younger staff so the wealth of experience can be passed on from those managers who are nearing retirement age.

Table 6: Background Information

Background	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Avg
Age of Organisation (yrs)	2.5	9	31	19	27	57	9	23	61	25	10	10	1	25	2	21
Respondents Time at Organisation (yrs)	2.5	9	13	19	14	10	9	23	35	25	10	10	1	5	2	13
Number of Employees	23	40	40	105	22	200	4	50	19	150	11	10	8	25	2	47
			75-80 (peak)	5FT 100PT			2FT 2PT									
Years experience in Industry	30	45	25	19	27	25	30	40	35	25	32	51	40	5	35	31
Financial Turnover (\$million)	>5	>5	>5	1-5	>5	1-5	>10	>10	>5	>5	1-5	1-5	1-5	>5	1-5	>5
Volume of Prawns per Year (tonnes)	200	400	400	100	350	2500	100	300	200	100	100	100	100	100	<100	361

10. Recommendations

This study posed the research question of “How do Wholesalers perceive the strengths, weaknesses, threats and opportunities to the wild caught prawn industry”? The answer to that question has been outlined in the results section of this report and is summarized in Figure 8. Internally, the industry has found strength in that wild caught prawns are a good quality product, across the industry there is a wealth of experience invested in the people and their businesses have been established for a long-time with good infrastructure available. Most of the businesses have the capability of exporting but are not using that option to capacity, due primarily to macro economic factors.

External forces have impacted throughout in the industry, resulting in erosion of market share and higher input costs, which has had the effect of severely lowering profitability across the board. Recognised weaknesses are; complex and cumbersome supply chains together with a lack of regeneration in the industry in terms of capital, infrastructure and workforce. This has left the industry somewhat inflexible and unable to adapt quickly to changes forced upon them. There is genuine need for improved marketing skills across the industry with many organizations not realizing the potential that can be found in their own positioning and branding.

The external threats have and still are impacting heavily on this industry. The plight of the industry has been largely influenced by a “perfect storm of factors” including government policy and global economic factors that has seen the Australia dollar increase in the wake of the Global financial crisis. A high Australian dollar has contributed to a slump in exports of prawns. Further, the sector has experienced

strong competition on the domestic market from farmed prawns and fresh, chilled and frozen imports.

This report has identified several strong opportunities for this industry. Wild caught prawns hold a premium market position and should be marketed with this in mind. Providence branding of both “Wild Caught” and “Queensland” would be beneficial to the overall positioning of Queensland Wild Caught. Providence branding has to be introduced with product standards so it is clear what Queensland Wild Caught is, in terms of product quality and consistency. It is important that product specifications are adopted and implemented diligently.

There is scope within the supply chain to investigate the food service and supermarkets sectors for new opportunities. As outlined in this report there are further opportunities that could be realized in creating further value in these supply chains. At present these supply chains are very long and complex and opportunities exist to make these chains work as an integrated whole.

Another opportunity exist in smoothing out the prawn production cycle by finding a market for winter production. This will ease the boom, bust pricing cycle currently in existence.

East Coast Trawl has the ability to export large volumes of prawns. Export opportunities may be difficult in the current environment however opportunities do exist. Even for the current markets of Japan, China and Singapore who are currently buying prawns in this environment further penetration is available as we are currently sending relatively small shipments.

Finally, King prawns are the unrecognized flagship product of East Coast Trawl. King prawns cannot be imported or farmed. King prawns are considered high quality products and have the ability to be positioned as a premium and unique product. The opportunity of marketing king prawns is significant and would provide wide benefits to East Coast Trawl, as this species dominates its annual catch at approximately 52%. Figure 8 summarises the SWOT analysis for East Coast Trawl Wild Caught Prawns.

Figure 8: -SWOT Analysis East Coast Trawl Wild Caught Prawns

<p>Strengths</p> <ul style="list-style-type: none"> • Good Product • Very experienced Personnel • Well established wholesalers • Latent export capabilities 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Complex Supply chains • Lack of Marketing skills and implementation • Lack of young people entering the industry • Lack of Profitability • Increase in input costs • High degree of government compliance • Lack of capital investment • Gap between peak demand supply
<p>Opportunities</p> <ul style="list-style-type: none"> • Marketing of Providence Branding – “Wild Caught Queensland” • Product Standards – Quality and consistency • Flagship Product – King Prawns • Export Opportunities • Supply Chain Opportunities – Independent Supermarkets and Food Service. 	<p>Threats</p> <ul style="list-style-type: none"> • High Australian \$ • Further Government Regulation • Seasonality of the product • Competition from Aquaculture • Competition from Imports • Global Macro Economics

The next stage of this study will evaluate the identified opportunities and develop marketing strategies around those opportunities deemed most likely to succeed commercially. Current projects within the Seafood CRC are already investigating the value chain and product standards for prawns, so these areas will not be carried forward in this project.

It is therefore recommended that stage two of this marketing strategy investigates four areas of opportunity for wild caught Queensland prawns;

1. Providence marketing of “Wild Caught Queensland”
2. New Independent Supermarket Opportunities
3. Marketing of King Prawns
4. Opportunities for Peak Supply Periods

References:

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Queensland Seafood Industry Association, Moreton Bay Seafood Association, Queensland Seafood Marketers Association, Fisheries Queensland (DEEDI) (2010), East Coast Trawl Industry Development Plan 2010-13.

Queensland Seafood Marketing Association website:
<http://queenslandseafoodmarketers.com.au/>, viewed 1/12/2011

Queensland Catch website: <http://queenslandcatch.com.au/>, viewed 24/11/2011.

Interview Protocol: Market Audit – Internal/External

Briefing the Respondent

Thank you for agreeing to participate in this research. This interview is part of a project being conducted by Sunshine Coast University for East Coast Trawl. The project “Identification of the core leadership and network structure of East Coast Trawl, to develop, implement and evaluate strategic Opportunities” focuses on identifying a core leadership network to inform the development, implementation and evaluation of a strategic opportunity. Thus the findings of this research will assist East Coast Trawl members, like yourself to build on the opportunities available.

Ethical considerations are important to us. This research is confidential and your firm will not be identified in the research project. I would like to tape the interview in order to assist with the data analysis process. If you agree to this, you are welcome, at points during the taping, to ask me to cease taping or to push the pause button yourself at any time during the interview. May I have permission to tape the interview?

This protocol is not a questionnaire but provides a framework for the interview.

Case Details Internal Audit Case Number:

Date:

Time Commenced: Time ended: Name of organisation:

Interviewee’s name and position in organisation:

1. Tell us the story of your organisation?

2. Tell us about the current situation within the prawn industry?
 - a. What do you believe are the challenges to this industry?

 - b. What are the opportunities for the industry?

3. Within your organisation:
 - a. What is your current goals and objectives?

 - b. What marketing program do you currently have in place?

 - c. What marketing issues are you currently facing?

 - d. Where do you see the opportunities lie for your organisation?

4. In relation to your organisation:
 - a. Please outline your product range and availability?

 - b. What is the percentage split between sales of your products to markets, foodservice and retail?

 - c. Please comment on growth expectations for your products over the next two years?

 - d. Outline the functions carried out by your organisation in terms of processing, packaging, cool storage and marketing?

 - e. Please detail your supply chain to market?

 - f. What are the capabilities and constraints within your organisation to achieve your objectives?

 - g. Do you have export experience? If so, please detail.

5. In terms of relationships:
 - a. Have you worked collaboratively across the industry to achieve objectives? If so, please detail (including success or failure of venture).

 - b. Have you built relationships within the supply channel to achieve objectives? If so, please detail.

6. In summary what do you believe are the core strengths and weaknesses of this organisation?

7. Background Information:
 - a. Age of organisation?
 - b. Years respondent has been with organisation?
 - c. Number of employees?
 - d. Number of years experience in
 - i. Marketing?
 - ii. Prawn industry?
 - e. Total Turnover in financial year?
 - i. Under .5 \$ million
 - ii. 1 – 5 \$ million
 - iii. Over 5 million.

Thank-you for your participation in this research.

10.9. Appendix 9 - Marketing Audit for the Wild Caught Prawns of the Moreton Bay Trawl Fishery



2012

Marketing Audit for the Wild Caught
Prawns of the Moreton Bay
Trawl Fishery



Dr Kathy Hastings
Xylem International Pty Ltd
10/4/2012

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Marketing Audit for the Wild Caught Prawns of the Moreton Bay Trawl Fishery

1. Introduction

This research reports on the first stage findings of the marketing audit within the research project ‘Identification of the core leadership group and network structure of Moreton Bay Trawl to develop, implement and evaluate strategic opportunities’. This is a collaborative project between University of Sunshine Coast (USC), Australian Seafood CRC, Fisheries Research and Development Corporation (FRDC), Moreton Bay Seafood Industry Association (MBSIA) and Moreton Bay Trawl

The research investigates how the strengths, weaknesses, opportunities and threats were perceived by wholesalers in the wild caught prawn sector. To conduct this research 10 wholesalers were interviewed using a case study methodology together with 4 government/industry association interviews. Their answers to a set protocol has been analysed and presented in this report.

The next stage for this research is the evaluation of the identified areas of opportunity. These opportunities will then be offered to the core leadership group for evaluation and trial implementation.

2. Background

Moreton Bay lies at the mouth of the Brisbane River and is approximately 100km long. The bay is bounded by the sand islands of North and South Stradbroke and Moreton Island. The Bay ranges in width from 1km in the south to 30 km in the north and supports a productive commercial and recreational fishery for prawns, crabs, finfish and squid among others. (Courtney et al, 2011).

Moreton Bay Trawl belongs to the Moreton Bay Otter Trawl Fishery. This Fishery is facing a number of challenges that are distinct from the much larger East Coast Trawl Fishery and it necessitates further investigation to identify specific market opportunities for Moreton Bay.

Moreton Bay produced 441 tonnes of Prawns in 2011. This production is made up of 164 tonnes of Bay Prawns (37%), and 180 tonnes of Tiger Prawns (41%). The remainder being made up of Banana and Endeavour Prawns. (DEEDI 2012)

Table 1 – Production of Prawns for Moreton Bay 2006 – 2010 (kg)

Data	2006	2007	2008	2009	2010
Sum of Bay Prawn	107,580	118,674	96,012	162,124	164,970
Sum of Tiger Prawn	263,125	197,258	124,946	171,175	180,960
Sum of Banana Prawn	28,378	13,645	7,963	30,382	50,264
Sum of Endeavour	18,598	17,361	12,701	10,739	11,335
Sum of Ocean Kings	67,770	48,886	69,148	44,579	34,275
Total	485,450	395,824	310,770	418,999	441,804
% Bay Prawn	22%	30%	31%	39%	37%
% Tiger Prawn	54%	50%	40%	41%	41%
% Banana Prawn	4%	4%	4%	3%	3%
% Endeavour	4%	4%	4%	3%	3%
% Ocean Kings	14%	12%	22%	11%	8%

Source: DEEDI 2012

Otter Trawl fishing effort in Moreton Bay has declined markedly from a peak of 13,365 boat days in 1999 to 1631 in 2008, an 87% reduction. This represents a fall in vessel numbers from approximately 120 to 45 in the same period (Courtney 2011). Since that time there have been further reductions in vessel numbers that currently stand at approximately 35 vessels. (E1, 2, 3 &4)

This reduction has occurred for four main reasons. Firstly, the application of licensing changes and regulation aimed at recognizing Moreton Bay as a marine park area and maintaining sustainability of fishing stock. Secondly, competition from both imports and Australian aquaculture. The third reason is the seasonality of the product and finally the lack of infrastructure available across the industry.

The changes to licensing and regulation in Moreton Bay include limits on operating time, restricted or prohibited zoning, boat size restrictions, net size restrictions and licensing. These changes are listed in Table 2.

The impact on the Moreton Bay Fishery has been the closure of some of the Tiger Prawn fishing areas thus affecting the volume available for capture and the amount of time spent fishing with restrictions placed on Saturday and Sunday. This also decreased the volume of prawns caught (E4, 3).

Table 2 – Regulations in place for Commercial Prawn Trawling in Moreton Bay.

Regulation	Application in Moreton Bay
Limits on operating time	There are weekend closures for trawling in Moreton Bay (no trawling on Friday or Saturday nights).
Restricted or Prohibited zones	There are a number of areas through Moreton Bay where trawling is prohibited or restricted. These areas are declared for a number of reasons including habitat and nursery protection, maintenance of brood stock and by-catch reduction. In addition, there are a number of areas that are closed to trawling due to conservation or marine park zone.
Boat size restrictions	The size of boats in each fishery is restricted to regulate fishing effort. Moreton Bay has a 14 metre restriction for the Otter Trawl fishery
Net Size Restrictions	Otter and beam trawl nets are also regulated by total length and mesh size. These regulations manage the total amount of 'swept area' in the fishery and minimise the impact on non-permitted species. The net head rope length restriction is 16m.
Licensing	Within Moreton Bay the fisher must have a commercial fishing licence and the boat must also be licensed. The licence must be endorsed by the particular fishery. Moreton Bay has two classes of licences. The T1/M1 vessels are permitted to trawl in Moreton Bay and the other Queensland trawl fishing areas outside of the Bay and the M2 vessels that are only allowed to trawl in the Bay. M2 vessels are not allocated effort units.

Source: DEEDI 2012

Since 2007 the production of farmed prawns in Queensland has grown by 81%. This growth is in the production of Banana and Tiger prawns. These prawns are meeting the market needs of consistency and availability as they have control over volume produced and the ability to grow all year round (ABARE 2010). These prawns are in direct competition with wild caught Tiger Prawns which are available seasonally from the Bay. Table 3 indicates the growth in Aquaculture as a component on prawn production in Queensland.

Table 3 - Prawn Production Queensland showing growth of Aquaculture.

Prawns (tonnes)	2007-08	2008-09	2009-10
Banana	577	895	808
Endeavour	491	665	580
King	2784	3008	3646
Tiger	745	1307	1216
Other	424	439	802
Total	5021	6314	7052
Aquaculture	2888	3821	5216

ABARE 2011

Competition is also coming from imports of frozen prawns. Australia imported 17728 tonnes of frozen prawns in the 2009/10 period, representing 44% of the domestic market for prawns. Of this amount 5719 tonnes came from China, 5033 from Thailand and 2504 from Vietnam. The Vannamei component of this amount is approximately 50% (some 8864 tonnes) of total imports, however the amount is

heavily weighted to cooked prawns with some 80% of cooked imports being Vannamei (sourced using Walsh 2007 ratios and Fish Stats 2012).

The Vannamei, which has transformed the global industry since being farmed in Latin America in the 1990s is now being farmed across Asia and production of this prawn has exploded (Stevenson 2004). It is now a major player in the Australian market. In fact, imports of Vannamei are higher than the total production from East Coast Trawl Prawn Fishery.

What makes the Vannamei such a wonder to produce is that it is largely vegetarian, eats almost anything and grows faster than any other prawn. "Back in 2001 there was hardly a Vannamei to be seen in Asia," Dr Preston said. "In 2002 it rose to 27 per cent of production and in 2003 it was 38 per cent of Asian production." With labor costs low - and support of governments and international aid organizations - the Vannamei undercuts all other prawns on the world market.

Stevenson, Andrew (2004), "The Prawn Cocktail ready to explode", Sydney Morning Herald.

The importation of Vannamei into Australia commenced in 2003 and since that time it has severely impacted the Moreton Bay Fishery (3). Vannamei has largely replaced the Bay prawn market and is severe competition for Bay Tiger prawns as it offers wholesalers and retailers higher margins than the local product. It is a larger prawn than the Bay and offers both volume and consistency. Food service and Supermarkets are now largely supplied with the Vannamei product. This precipitated the collapse of the Bay Prawn market which was reflected in prices back to the fishermen dropping more than 50% (9,10). With a reduced market to sell to, the glut of prawns left without a market started competing for the bait market driving the bait prices down by approximately 50%. This result left the fishermen struggling to be commercially viable (9, 1, and 10).

The retail market has recently seen improved access for Australian goods through correct country of origin labelling which has allowed Australian goods to compete against imports due to consumer support (1, E2). While the Bay prawns and bait market has stabilised at approximately 25% less than pre-import days it is now a very different market. Consumers are demanding a higher quality product and it is much smaller market that this product is capable of competing in. In this competitive environment product quality and reliability are paramount.

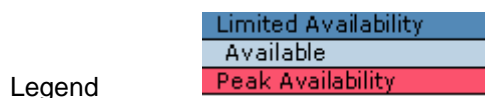
This situation has been further complicated by the demise of necessary infrastructure within the Bay including the closure of Sandgate Co-op and the loss of moorings at this facility and the loss of moorings across the Bay due to public liability insurance concerns (E1). Currently Moreton Bay boats are moored in a variety of situations from marinas through to creek banks and geographically dispersed along the length of the Bay.

Wild caught prawns are subject to seasonality as can be seen in Table 4. This prawn seasonality chart identifies peak and limited availability periods during the year for each species. Seasonality affects the ability to supply the product consistently across

the year. In Moreton Bay the Bay prawns are available from October to February while the Tigers are from March to July. Fishermen need both varieties to earn income over the year. Weather also impacts on the catch with last year's floods and cyclones predicted to cause a 6% decline on production figures for the 2011 season. (ABARE 2010)

Table 4 – Queensland Prawns Seasonality Chart

Prawn	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Banana farmed	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available
Banana Prawns Wild	Available	Available	Available	Peak Availability	Peak Availability	Available	Available	Available	Available	Available	Available	Available
Bay Prawns	Peak Availability	Peak Availability	Available	Available	Limited Availability	Limited Availability	Limited Availability	Available	Available	Peak Availability	Peak Availability	Peak Availability
Endeavour Prawns	Available	Available	Peak Availability	Peak Availability	Peak Availability	Peak Availability	Available	Available	Available	Available	Available	Available
King Prawns	Available	Available	Available	Available	Peak Availability	Peak Availability	Peak Availability	Available	Available	Available	Available	Limited Availability
Tiger Farmed	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available
Tiger Prawns Wild	Limited Availability	Limited Availability	Peak Availability	Peak Availability	Peak Availability	Peak Availability	Peak Availability	Available	Available	Available	Available	Limited Availability



Source: Department of Employment, Economic Development and Innovation, 2011

It is from this history of coping with structural and environmental change that this project is entering the industry to identify market opportunities for Moreton Bay Trawl. These opportunities need to meet the criteria of being able to assist the majority of Trawl members and enable members to collaborate more closely by engaging in the process.

3. Methodology

The methodology used in this research was case study. In-depth interviews were conducted with wholesalers across Moreton Bay. Due to the fragmentation of Moreton Bay Fishery the research was organized on the basis that Wholesalers should show variation in:

- financial volume
- number of employees
- volume of prawns handled
- species of prawns handled

There were 10 in-depth interviews conducted between October 2011 and April of 2012. Each interview took between 45 minutes and 3 hours depending on the

willingness of the respondents to participate. These interviews were supported by expert interviews on the background and history of the Moreton Bay Trawl Fishery. The interviews were conducted using a case protocol as outlined in Appendix 2. The protocol was designed to answer the following research question:

RQ1: How do Wholesalers perceive the strengths and weaknesses, opportunities and threats to the wild caught prawn sector?

By answering this research question, a picture on the opportunities available to the industry can be developed. These opportunities will be investigated further in the next stage of this research.

4. Results

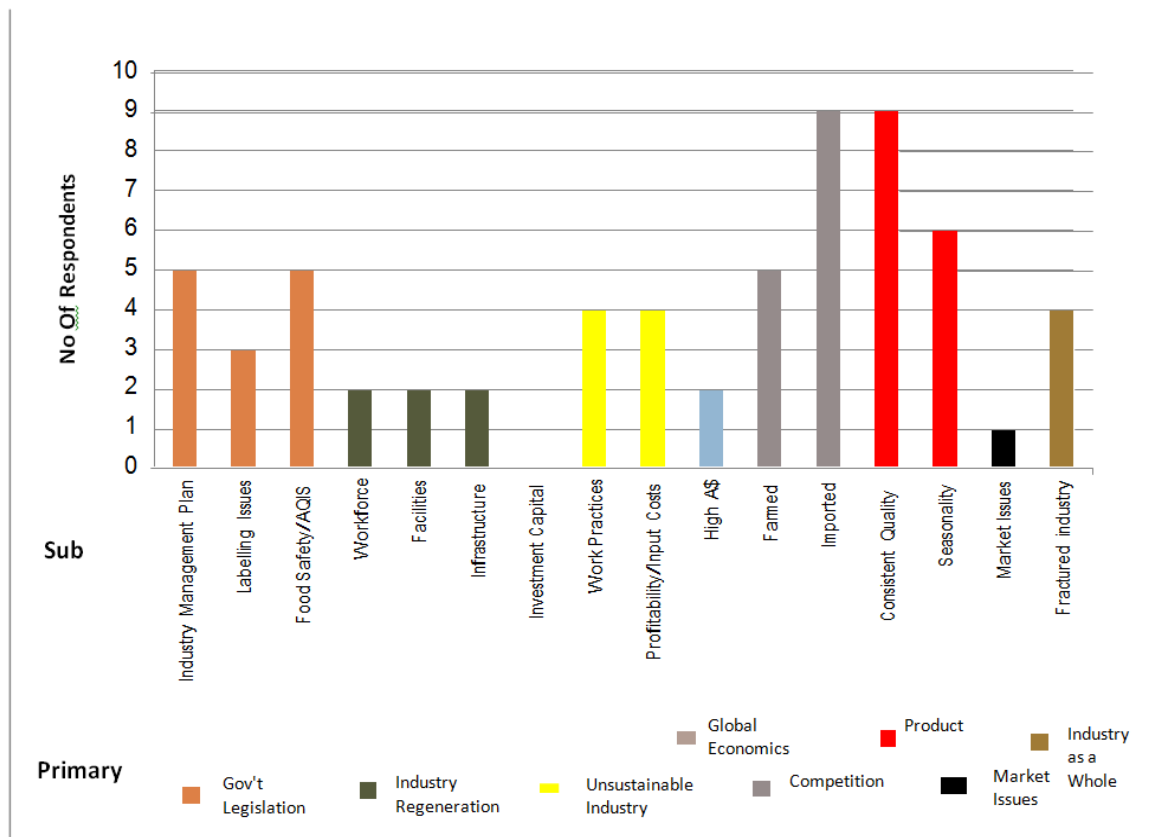
4.1 Current Situation

The biggest issues mentioned by the respondents are product issues of quality (90%) and seasonality (60%) as shown in Figure 1. Moreton Bay is in a unique situation with the majority of boats fishing the bay being “wet” boats not “freezer” boats. This means that the prawns caught are placed in an ice slurry and kept chilled until they are bought back to land. The advantage of this system is that you have a product that is regarded as “fresh”, which is marketing ‘gold’ and should be exploited in the market place. However the disadvantage is that ‘fresh’ is linked to high quality in the consumers’ minds. In the case of Moreton Bay the product is difficult to do well all the time. There are many variables in the wet boat process that affects the quality of the product including time spent at sea, handling and grading, cooking and unloading. The over-riding perception amongst wholesalers is that there is too much variance in product quality across the boats and the product is quite often unreliable and lacking in quality.

A further complication is seasonality. Bay prawns are basically all year but most plentiful in summer and Tigers are from March to July however the seasons vary and the natural disasters such as cyclones and flooding impact significantly on potential catch volumes and product quality (E1). The majority of Wholesalers cite being able to source good quality prawns consistently as a real issue.

We have seen a significant increase in aquaculture, or farmed prawns being produced in Australia (81% increase since 2007) and imports of chilled and frozen prawns primarily from Asia (currently comprise 44% of all prawns consumed in Australia). *“The Greasies are considered same as Vannamei – they are in the same market place and it is now devalued”* (1). *“Imported product is the ruination of this industry. In the late 80’s I could move 70 tonnes of mixed prawn since Vannamei I move 5 tonnes”* (10). These factors are also undermining the profitability of the sector, as lucrative exports have become unviable at the same time domestic markets are experiencing a high degree of competition. *“Don’t underestimate the impact of the Northern Fishery prawns on the domestic market – those prawns used to go to Japan but now are competing back here and with the sheer volume it causes problems”* (10).

Figure 1: Current Situation



The situation for Moreton Bay Prawns is it's now a hard product for wholesalers to market. There isn't strong demand for the product, the product quality is variable and the supply is inconsistent. It offers low margins and not supplied in a format (brine crates) that is easy for wholesalers to handle. The research found that of the 10 wholesalers interviewed only 2 were actively wholesaling Bay product. One was only selling his own catch and another buying in Bay product from a wholesaler. Sixty per cent of the wholesalers refuse to accept Moreton Bay "wet" product into their businesses.

The area of government legislation is a major issue to wholesalers. Their concern is based on the ability of the fishery to remain viable given the constraints of the Fishery Management Plan together with increased input costs. The particular areas of AQIS cost and Food Safe compliance was cited as examples of high input costs. On the other side of the argument, it is felt that the Government could do more in the areas of truth in labeling and weights and measures on imported products. *"We always check any imported goods coming in and very rarely do they meet the weight and measures indicated"* (3). *"It would be helpful to have country of origin right through food service"*(3).

Finally there is a widespread concern across all respondents on the lack of regeneration in the industry. It is recognized that this issue is directly related and is a

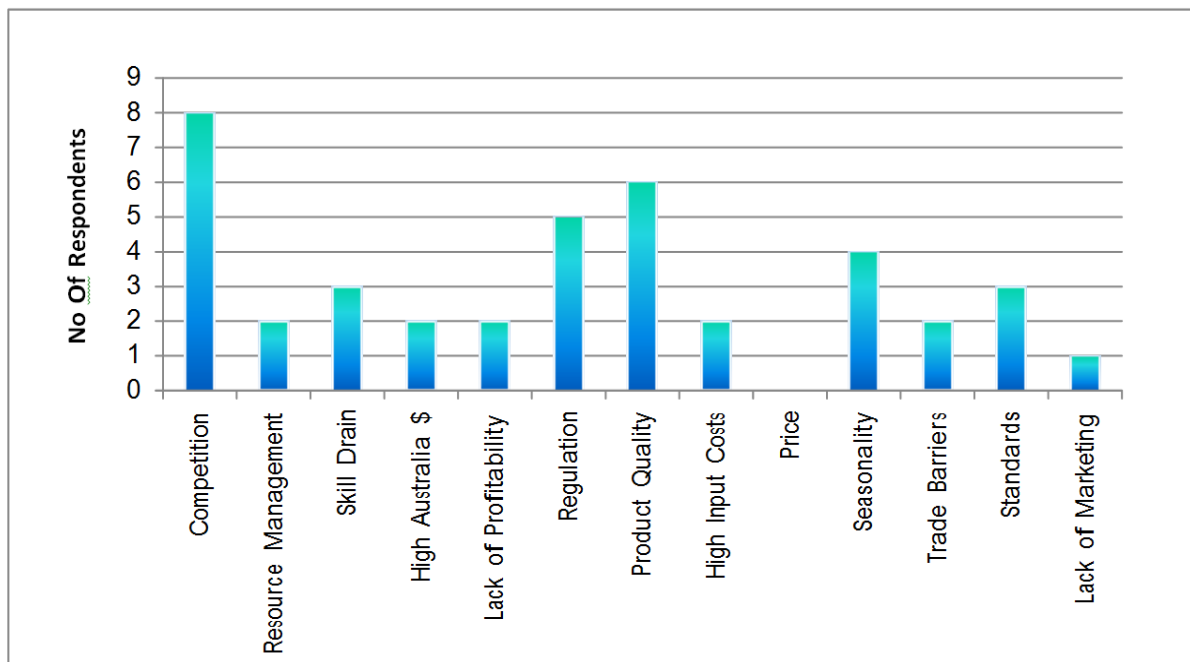
natural flow on from the lack of profitability that has occurred in the sector. What Wholesalers are now identifying is that there is a lack of capital coming into the industry in terms of finance, infrastructure, facilities and workforce. This means new facilities are not being built, new boats are not being commissioned, expansion plans are not being financed and the workforce is aging. There is concern that the industry is losing its skill base with young workers being attracted to more lucrative industries such as mining and the older experienced workers leaving due to the inability to create a livelihood, or that they are at retirement age. The skills and knowledge built over generations in the fishing industry are not being passed on and face the prospect of being lost forever (1). *"We actually can't get young people to work for us ...the staff we have are my age we are all reaching retirement"* (10). *"My son would be a third generation fisherman but he is not working in the industry anymore"* (4).

4.2 Industry Challenges

Respondents identified there are a number of major challenges for the industry to overcome in order to achieve success (Figure 3). The highest priority was given to competition and much of the discussion on this topic revolved around how Moreton Bay can compete in such a competitive market. This challenge is linked to the next most cited challenge of product quality. The wholesalers recognize that Moreton Bay cannot gain traction in this market without increasing product quality. Sixty per cent of the wholesalers stated that product specifications and standards are needed within the Moreton Bay fishery to enable it to compete in the market. *"It's a real battle to get and keep any market ...the fishermen are their own worst enemy, they need to handle and present the product to the best possible"* (5).

Bay Prawns have been known by a number of names over the years. The Fish Name Standard lists emerald shrimp; greasy-back; greasyback bay prawn; greasyback prawn; greentail prawn; greentail shrimp; inshore greasyback prawn; river prawn as obsolete names for Bay prawns (E4). However, in industry it is still common to hear Bay Prawns labeled as "Greasy Back Prawns". The name itself together with the product issues has placed this prawn in a negative market position. Wholesalers stated that perhaps remarketing and competing under another label (such as Green Tails) (E2) or only using "Bay" as has been done here in this report would also help the prawns in this market.

Figure 2: Industry Challenges



Fifty percent of respondents cited regulations imposed by all levels of government as a significant industry challenge that needs to be overcome in order to achieve success. The marine closures have meant approximately 37% of the Bay is off limits to fishing which has had an impact on catch volume. However there is further concern on the flow-on effect that changes in compliance and legislation is having to their cost base. Examples provided by respondents include water dispersal and rates, occupational health and safety compliance, work conditions and fishery management in terms of licenses, renewal of boats and equipment and environmental considerations (4). *“We are hugely over regulated and this goes to our cost base”* (6).

Wholesalers stated that it is difficult to value-add and compete with imports. Those who are value adding serve the upper end of the market in the Food Service Sector and the upper end of the consumer market in quality Fish Mongers. Twenty per cent of wholesalers are sending their products overseas for processing where lower production costs allow this option to be economically viable. Suggestions of stronger policing on imports in the processed seafood sector was strong with wholesalers believing there are transgressions in terms of weights and measures and in terms of the import guidelines for marinated products (4).

4.3 Marketing Strategies of Respondent Organizations

This study examined the marketing programs of respondent organizations, in terms of goals and objectives, branding and positioning, issues faced and opportunities that are available to them.

Maintaining their current goals and objectives was the overall aim of the majority of the respondents as shown in Figure 3. This reflects the uncertainty in the sector with many waiting for further clarity before making any strategic decisions. In fact 20% of the respondents are closing down parts of their businesses this year and only maintaining core business. Two wholesalers specialize in prawns with the remainder handling a variety of seafood products.

The most surprising finding in this sector was that 100% of the wholesalers did not have a formal marketing strategy and further they conducted only local or no advertising regarding their products. The most common form of marketing for the wholesalers is word of mouth. However supplying the same clients figured strongly as the majority of wholesalers have been in business in excess of ten years and have a very established clientele.

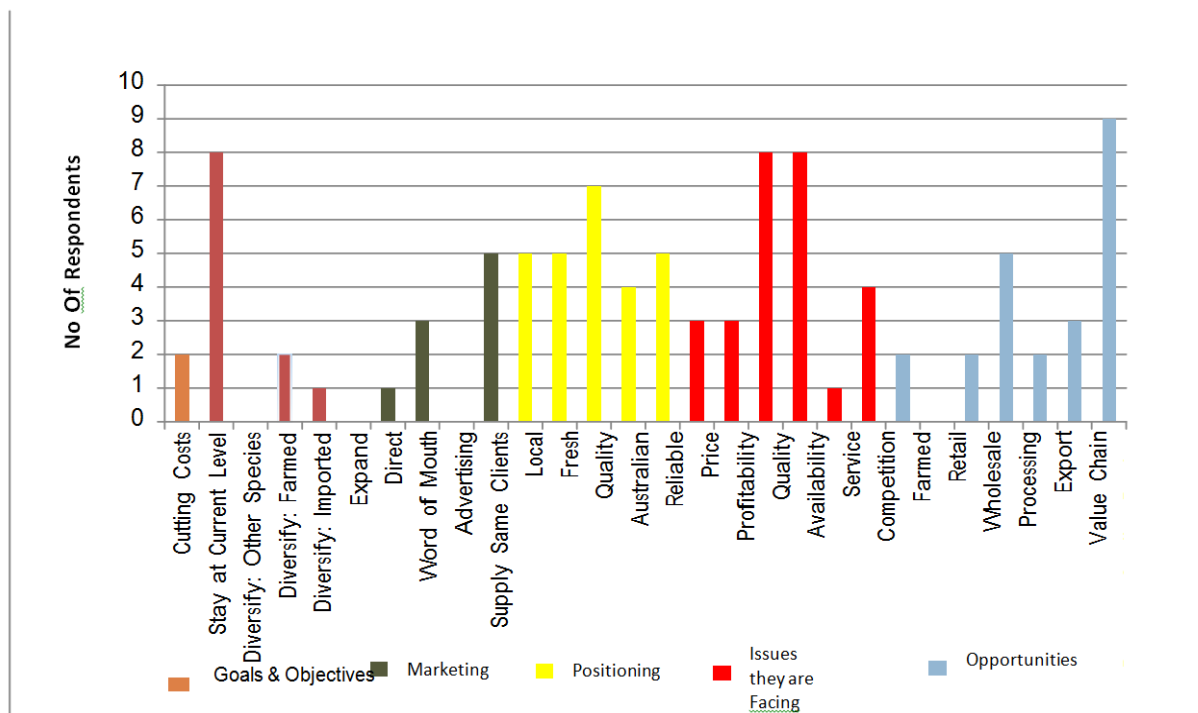
The data revealed that the wholesalers use the same positioning based on the concepts of local, fresh and high quality prawns. Yet little is done to support this position in terms of marketing. While most wholesalers have a brand; the full potential of branding in terms of creating value for the product has not been realized. Further, while aquaculture farmers are taking control of their marketing and building brands, the same cannot be observed in the wild caught sector. All respondents stated that the wild caught product is a good product and is capable of taking a premium position in the market. This is a marketing opportunity that is not being utilized. Further the marketing opportunity offered by the 'Fresh' option available within Moreton Bay is not being exploited at all. In fact, due to product issues on reliability and consistency Moreton Bay is actually being excluded from many of the opportunities offered by mainstream wholesalers.

Current marketing issues being faced by wholesalers include product availability and quality. As shown in Table 2, Moreton Bay Prawns are available for 10 months of the year however the amount and quality over these 10 months is variable. The complication within the Bay is that the chilled product cannot be frozen successfully at a later date. This leaves the product with a very short shelf life as wholesalers must clear the product within two to three days of being received. This fact adds to reasons why wholesalers find it difficult to work with the Bay product.

The situation is further complicated by the variability of the product caught. Wholesalers state that there is still large variance in product standards from different boats. Although each wholesaler stated they have specification sheets, most tend to stay with fishermen that they have built relationships with over time. They buy from these boats consistently over the year. This system over recent times has fallen into disarray with fisherman now offering their catch to multiple buyers and favoured wholesalers now only being offered a portion of the catch. Cases of fisherman

offering discounts for their catch by going direct to market are also common. Fishermen selling from their trawlers and in Farmer markets at discounted prices are now common place. This practice has the end result of driving the 'beach price' down for the whole product and compounding the problems of profitability for the industry. *"Too many people wholesaling without good facilities...quality and price suffer"* (3). *"You can't count on how much volume you are going to get at times of peak demand it is really difficult to plan ahead"* (4).

Figure 3: Marketing Strategies by Individual Respondents



When asked where they see the opportunities within their businesses, the majority (90%) identified having a quality product to market is the key opportunity. To this end, marketing providence together with quality standards will enable this opportunity to be exploited. Being able to identify their products as 'Wild Caught' and fresh local Moreton Bay, would allow the fishery to position itself more securely in the market and to capitalize on the opportunities available.

5. Distribution

The products sold through wholesalers are distributed through a variety of channels. Table 5 shows the percentage of product sales into each distribution channel. Most notable is the strong use of wholesalers. One respondent sends 100% of their

produce to a second wholesaler and a further two respondents send 80% or more of their produce to a second wholesaler. Commentary within the industry suggests the use of three or four wholesalers in the one chain is not uncommon. Most wholesalers have the ability to export, currently four respondents are exporting any volume of prawns. This may change if the value of the Australian Dollar decreases.

Table 5: Respondents Sales by Distribution Channel

Product Category	1	2	3	4	5	6	7	8	9	10
Wholesale	30	70	100	50	40		50	90	80	45
Food Service	10	15		10	40	75	50			
Retail - Own Shop	10			30	20	25				25
Retail Supermarket	40									
Retail - Fish & Chip Shops	10	15								20
Bait				10					20	10
Direct								10		

Six of the respondents supply the food service industry. This involves first stage processing of the seafood such as filleting, splitting shells of scallops and in the case of prawns peeling, and deveining. Seven of the respondents do second stage processing of prawns that involves crumbing, battering or marinating the prawns for products such as Cutlets, Tempura Prawns and Garlic Prawns. The value-adding of prawns is subject to competition from imported products and is therefore price competitive but wholesalers are still able to find some market niches based on technology used in their factories and quality of the Australian products and in several cases, off-shore processing.

Five of the wholesalers had their own retail outlet. Shops were seen as being “hard work” and a lot of effort is needed in presentation and providing meal solutions for customers. Some wholesalers are hiring staff to especially prepare the meal solution areas of their shops. The shops are seen as providing good cash flow and enable the wholesalers to take a wider variety of catch from the fishermen. Location seems to be critical to this type of operation, with those in more isolated industrial locations not gaining the same customer patronage as those in mixed precincts with eating areas, water views, parks and other food outlets.

Supermarkets are not well represented across these wholesalers. Traditionally supermarkets have not had the knowledge or facilities to handle seafood effectively. Further, supermarkets have offered a low price point for prawns thus creating an opening for imported product, as the local product was not deemed price competitive. Recently however, we have seen the major supermarkets offering a wider range of prawn products and are taking Australian prawns as part of this new format (Keith, 2011). Those wholesalers supplying supermarkets have done a lot of work on packaging, presentation and logistics to assist the supermarkets in selling

seafood within their operations (1). Several wholesalers are resistant to selling to supermarkets as they have had negative experiences in the past and prefer to work in food service (2, 3). While it is difficult to enter the market through the major supermarkets, opportunities do exist with the smaller independent players who are much more focused on local, fresh produce.

From the data it is difficult to gain a strong picture of what is happening with the smaller local Fish and Chip shops. Three respondents are selling into this category and one wholesaler specializes in this sector. However across Queensland there are thousands of Fish and Chip shops so while individually small the volume overall may be significant. Wholesalers state that many in this category are very price conscious and not willing to pay for the products (2, 3). An opportunity does exist for Wholesalers to work more closely with those who are local to them, promoting their brand of fresh, local products in each locality.

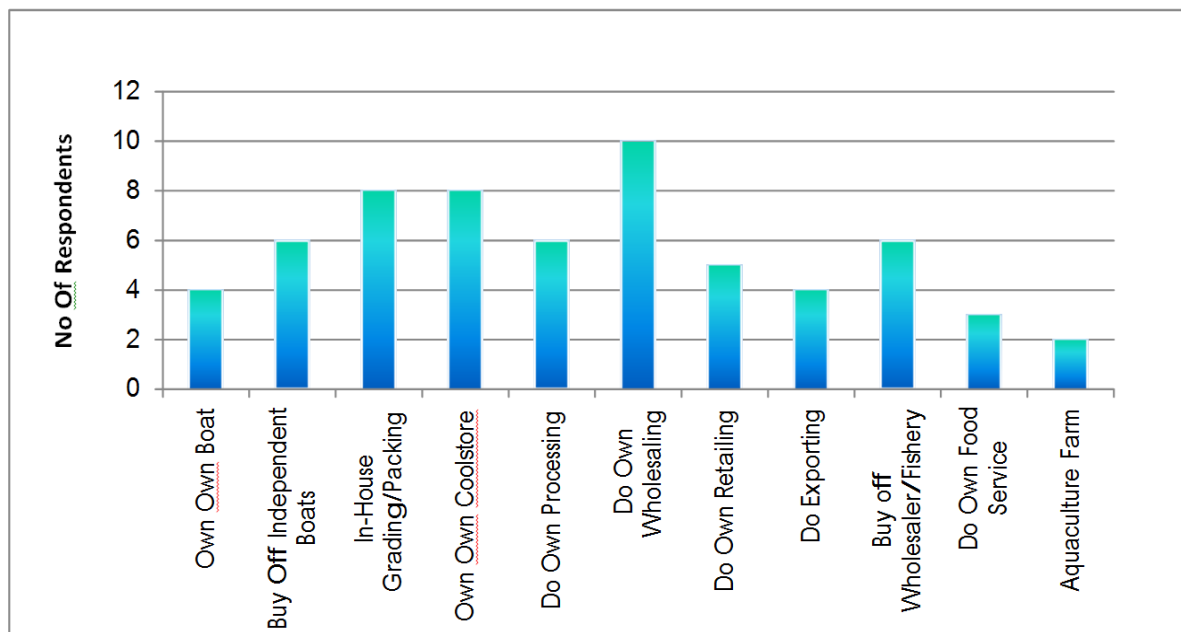
Two of the respondents are supplying the Bait market with prawns. This market actually requires a quality product as the bait needs to stay on the hook and attract fish. However the price offered for bait is lower than the wholesale market for prawns. The two wholesalers involved are actually taking second grade for prawns by grading out first and second grade and paying fishermen accordingly. There are further opportunities available in the bait market but the price received renders this option as sustainable (10, 9).

One of the respondents is selling direct from the Trawler to customers. This option is more prevalent in Moreton Bay than across East Coast Trawl where access to wholesalers is more readily available. Moreton Bay fishermen are using this distribution channel in a bid to receive higher margins for themselves. However as noted previously in this report it does tend to drive the beach price of prawns down overall which further exacerbates the problem. The next section of the supply chain for prawns will investigate this further.

6. Supply Chains

As Figure 5 shows prawns are caught by the Boats owned by the Wholesalers or independent Boat owners in Moreton Bay. The catch is typically cooked and then brought into harbour in an ice slurry. From the boat the catch is transported to the Wholesalers premises.

Figure 5: Supply Chains of Respondents



Once at the premises the prawns are graded and packed and placed in cool stores. Depending on their operations these prawns may be further processed in-house or sold at this point. The wholesaler can sell to other wholesalers who again may further process or sell them on to their clients. Wholesalers also have the option to supply Food Service, Retail outlets or Export and many customize their offerings to suit the client's needs. Three of the respondents are vertically integrated having restaurants or dining facilities to cook and serve their seafood. Figure 5 illustrates the main functions carried out by Wholesalers, which include grading, packing, cool store activities and wholesaling functions.

The data for the supply chains for Wholesalers within Moreton Bay only reveals a hint of the problem in this area for Moreton Bay Fishery. Although these wholesalers are based in Brisbane, sixty per cent of them are not handling Moreton Bay produce at all and of the remaining 40% only about 25% earn more than 50% of their income from Moreton Bay produce. In summary Moreton Bay prawns are not being carried by the majority of wholesalers through the main stream channels. So what is happening in Moreton Bay?

Moreton Bay is made up of some 35 fishing vessels, approximately 18-20 of these vessels are moored within wholesaler facilities or own moorings and unload directly to a wholesaler (E1). The remainder of the vessels are at temporary moorings in creeks and controls their own marketing efforts through a variety of methods from stalls at the trawler site, farmers markets, mobile vans and some direct sales to fish and chip shops or pubs and clubs. The very nature of their product means that if the entire product is not sold with two to three days the product is lost as the Trawler has to return to fishing and the shelf life for the prawns have been reached (9). Consequently the prices are reduced as the deadline becomes closer and boats need to return to the Bay. This happens on a weekly cycle and goes to inform the market on the value of these prawns which is bargain basement pricing. There is a

need for better infrastructure for these remaining boats and for a wholesaling function to co-ordinate and organize this fishing effort to achieve better quality and quantity across the whole industry.

Further opportunities to change the boats from chilled to chilled/frozen may assist the supply glut for the fishery and ease the boom/bust pricing cycles. With the option of freezing the first two days catch and putting the last two days on slurry. This gives the fisherman further choice on when they sell and how much is sold each week. It also addresses some of the product quality issues that have been cited in this research (9, 10).

Finally the biggest opportunity for improvement for Moreton Prawns will come from the introduction of product quality standards across the Fishery. If these standards are adopted more opportunities will be able to be exploited for Moreton Bay. The standards will need to cover not only size, colour, texture but process detail such as refrigeration, cooking and handling.

7. Relationships

The perception of the industry is that it is fractured, competitive and lacks communication. This perception was challenged in this study by asking the respondents who within the industry they have relationships with. The respondent was not prompted and the data collected simply reflects comments offered by choice. While table 6 is not the complete picture of the relationships that are maintained by each wholesaler, it does show that the wholesalers do have relationships up and down the supply chain including other wholesalers as there are multiple levels of wholesalers within the chain. It must be noted however that Moreton Bay does not have the same level of relationships that were noted within East Coast Trawl and it appears to be more fragmented and individual in their efforts when compared to the strategic alliances found within East Coast Trawl. More relationships were found up and down the chain than across the industry as shown in Table 6.

Table 6: Level of Cooperation between Respondents

Respondent Relationship	1	2	3	4	5	6	7	8	9	10	Other W'salers	Other Retailers	Food Service	Broader Industry	Other Trawlers
1											√	√	√	√	√
2				√							√				√
3											√				√
4		√									√				√
5				√								√	√		
6					√						√		√		
7											√	√		√	
8												√		√	√
9											√		√		
10	√		√								√	√			√

8. Background Information

The background information on the organization shows the wealth of experience available to this industry as shown in Table 7. Average years of experience for the respondents in this study are 33 years. They have been with their current organizations for an average of 20 years, well above national averages in this area. The organizations themselves are very established (average 28 years) and employ a significant amount of labour to conduct their business. On average these organizations hire 48 people which rise during the peak periods. These wholesalers tend to have significant turnover, averaging in excess of \$1 - 5million per annum. A major weakness to these organizations is being able to hold their quality staff and train younger staff so the wealth of experience can be passed on from those managers who are nearing retirement age. *“We are losing workers to the mines – who can blame them – its big money”* (6).

Table 7: Background Information

Background	1	2	3	4	5	6	7	8	9	10	Avg
Age of Organisation (yrs)	5	23	61	25	10	1	11	56	35	3	28
Respondents Time at Organisation (yrs)	10	23	35	25	10	1		56	35	3	20
Number of Employees	200	50	19	150	11	8	35	1	1	5	48
Years experience in Industry	2	40	35	25	32	40	22	56	35	20	33
Financial Turnover (\$ million)	1-5	>10	>5	>5	1-5	1-5	>10	1-5	>5	1-5	1-5
Volume of Prawns per Year (tonnes)	2500	300	200	100	100	100	40	100	300	300	404

9.Recommendations

This study posed the research question of “How do Wholesalers perceive the strengths, weaknesses, threats and opportunities to the wild caught prawn industry”? The answer to this question has been outlined in the results section of this report and is summarized in Figure 6. Internally, the industry has found strength in that wild caught prawns are a good product, and uniquely in the Bay the public has access to a chilled fresh product. Across the industry there is a wealth of experience invested in the people and their businesses have been established for a long-time. Most of the businesses have the capability of exporting but are not using that option to capacity, due primarily to macro-economic factors.

The external threats have and still are impacting heavily on this industry. The plight of the industry has been largely influenced by the impact of strong competition and government policy that has seen both market share and volume caught erode. At the same time the high Australian dollar has made exporting difficult and natural disasters such as flooding has caused a decline in volume caught.

Moreton Bay has a number of inherent weaknesses that must be overcome to achieve long term sustainability. These weaknesses include product quality and consistency issues, barriers to main stream supply chains including limited access to wholesale functions, lack of mooring infrastructure and a failure to position and market the product in a competitive market.

This report has identified several strong opportunities for this industry. Wild caught prawns hold a premium market position and should be marketed with this in mind. Tiger Prawns comprise 41% of the Moreton Bay catch and should be positioned as a high quality product for local consumers. Bay prawns account for 38% of the Moreton Bay's annual production. Bay prawns have a solid market amongst the older population who have been eating them since they were children. This target market is price sensitive but they do have product loyalty and will support the Bay prawn product in the market place if encouraged to do so (10).

Providence branding of "Wild Caught", "Fresh" and "Moreton Bay" would be beneficial to the overall positioning of Moreton Bay Wild Caught. Providence branding has to be introduced with product standards so it is clear what Moreton Bay Wild Caught is, in terms of product quality and consistency. It is important that product specifications are adopted and implemented diligently. Further Moreton Bay's ability to supply fresh product is unique. Fresh and quality is totally linked in the consumers mind and the product offered must have both attributes.

Figure 6: SWOT Analysis Moreton Bay Wild Caught Prawns

<p>Strengths</p> <ul style="list-style-type: none"> • Ability to provide Fresh, chilled product • Product capable of being good quality wild caught prawns • Very experienced Personnel • Well established wholesalers 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Lack of infrastructure • Lack of product standards – current product inconsistent in volume and quality • Lack of Marketing skills and implementation • Lack of young people entering the industry • Lack of Profitability • Increase in input costs • High degree of government compliance • Lack of capital investment • Barriers to main stream supply chains
<p>Opportunities</p> <ul style="list-style-type: none"> • Marketing of Providence Branding – “Fresh Local Moreton Bay” • Marketing Wild Caught Tigers • Product Standards – Quality and consistency • Value Added – Prawn Cakes or Sticks • Supply Chain Opportunities Independent Supermarkets and Food Service. • Segment market to Local demographics 	<p>Threats</p> <ul style="list-style-type: none"> • High Australian \$ • Further Government Regulation • Seasonality of the product • Competition from Aquaculture • Competition from Imports • Global Macro Economics

Another opportunity exists in smoothing out the prawn production cycle by finding a market for the oversupply during the summer months. This will ease the boom, bust pricing cycle currently in existence. Value adding of these prawns into products that can be processed (such as prawn cakes or prawn sticks) and frozen will extend the selling window and smooth the production cycle. Figure 6 summarises the SWOT analysis for Moreton Bay Wild Caught Prawns.

The next stage of this study will evaluate the identified opportunities and develop marketing strategies around those opportunities deemed most likely to succeed commercially. Current projects within the Seafood CRC are already investigating the value chain and product standards for prawns, so these areas will not be carried forward in this project.

However it must be noted that these areas of investigation are dependent on having product specifications in place to enable strategies that are reliant on a high quality

product. It is therefore recommended that stage two of this marketing strategy investigates four areas of opportunity for wild caught Moreton Bay prawns;

1. Supply Chain improvements to gain wholesale/retail access
2. Marketing of high end market Wild Caught Moreton Tigers
3. Marketing to the Older target market for Bay Prawns
4. Opportunities for Peak Supply Period such as value-adding including new technologies and processes.

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Interview Protocol: Market Audit – Internal/External

Briefing the Respondent

Thank you for agreeing to participate in this research. This interview is part of a project being conducted by Sunshine Coast University for East Coast Trawl. The project “Identification of the core leadership and network structure of East Coast Trawl, to develop, implement and evaluate strategic Opportunities” focuses on identifying a core leadership network to inform the development, implementation and evaluation of a strategic opportunity. Thus the findings of this research will assist East Coast Trawl members, like yourself to build on the opportunities available.

Ethical considerations are important to us. This research is confidential and your firm will not be identified in the research project. I would like to tape the interview in order to assist with the data analysis process. If you agree to this, you are welcome, at points during the taping, to ask me to cease taping or to push the pause button yourself at any time during the interview. May I have permission to tape the interview?

This protocol is not a questionnaire but provides a framework for the interview.

Case Details Internal Audit Case Number:

Date:

Time Commenced: Time ended: Name of organisation:

Interviewee’s name and position in organisation:

1. Tell us the story of your organisation?

2. Tell us about the current situation within the prawn industry?

- a. What do you believe are the challenges to this industry?
- b. What are the opportunities for the industry?
3. Within your organisation:
 - a. What is your current goals and objectives?
 - b. What marketing program do you currently have in place?
 - c. What marketing issues are you currently facing?
 - d. Where do you see the opportunities lie for your organisation?
4. In relation to your organisation:
 - a. Please outline your product range and availability?
 - b. What is the percentage split between sales of your products to markets, foodservice and retail?
 - c. Please comment on growth expectations for your products over the next two years?
 - d. Outline the functions carried out by your organisation in terms of processing, packaging, cool storage and marketing?

- e. Please detail your supply chain to market?

- f. What are the capabilities and constraints within your organisation to achieve your objectives?

- g. Do you have export experience? If so, please detail.

- 5. In terms of relationships:
 - a. Have you worked collaboratively across the industry to achieve objectives? If so, please detail (including success or failure of venture).

 - b. Have you built relationships within the supply channel to achieve objectives? If so, please detail.

- 6. In summary what do you believe are the core strengths and weaknesses of this organisation?

- 7. Background Information:
 - a. Age of organisation?
 - b. Years respondent has been with organisation?
 - c. Number of employees?
 - d. Number of years experience in
 - i. Marketing?
 - ii. Prawn industry?
 - e. Total Turnover in financial year?
 - i. Under .5 \$ million
 - ii. 1 – 5 \$ million
 - iii. Over 5 million.

Thank-you for your participation in this research.

Identification of the core leadership group and network structure of East Coast Trawl to develop, implement and evaluate strategic opportunities
2010/777



Core Leadership Group

Dr Vikki Schaffer
University of the Sunshine Coast



Schaffer 2011

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1.0 Introduction

This report presents the preliminary findings within the research project entitled “Identification of the core leadership group and network structure of East Coast Trawl to develop, implement and evaluate strategic opportunities” (2010/777). This research evolved from the industry identified and agreed upon need to develop collaboration within the fishery to leverage existing and future market opportunities. The understanding and building of industry social capital to support internal leadership through a network analysis is seen as fundamental to the development, coordination and implementation of a market approach for the industry. The following addresses the initial stage which focuses on the identification of a core leadership group. This is a collaborative project between University of Sunshine Coast (USC), Australian Seafood Co-operative Research Centre (SCRC) and East Coast Trawl Fishery (ECTF).

2.0 Background

The East Coast Trawl Fishery (ECTF) is a dynamic network of businesses and small independent fishers harvesting, processing, marketing and selling some of the world’s finest seafood. The ECTF consists of otter and beam trawlers that harvest species including prawns, scallops, bugs and squid as well as various by-product species (DPI 2006). The fishery is spread over a broad geographical area (from the Torres Strait to the Queensland – New South Wales border). It is one of Australia's largest fisheries in terms of volume with a total commercial harvest of 9000 tonnes and a retail value of around AUD\$100million a year (DPI 2006) and offers direct and indirect employment to numerous Queenslanders. This makes ECTF a vital contributor to the State’s economy (QSIA 2011). However, it is estimated that for a variety of reasons the prawn harvests will stabilise between 5500 tonnes and 7000 tonnes over the next few years (DPI 2011). The GVP of the Queensland-based commercial fishing in 2010–11 was approximately AU\$269million.

One of the reasons for the possible stabilisation of harvests is the reduction in the number of licenses to trawl in Queensland over the past four decades. Due to changes in southern fisheries, the number of trawlers licensed to operate in Queensland almost tripled to 1400 between 1970 to 1982 despite a freeze being placed on the number of vessel licenses in

1979 (Courtney et al. 2011). The number of vessels licensed to trawl in the ECTF declined to 952 (1993) (Glaister et al. 1993) before halving following the implementation of the 2000 Queensland Trawl Fishery Management Plan (approximately 450 otter trawl vessels in 2009) (Courtney et al. 2011). Boat numbers at present are approximately 330 active otter trawlers and 80 beam trawlers (DPI 2011) with the mean number of days fished per boat approximately 115 days.

The main legislative mandate for the management of the fishery is the Queensland Fisheries Act 1994. The managing agent is Fisheries Queensland, a business group within Queensland Primary Industries and Fisheries which is part of the Department of Employment, Economic Development and Innovation (DEEDI) (DEEDI 2009). The Queensland Fisheries Strategy (2009-2014) states:

Over many years Queensland's fisheries management has developed a vast legislative framework of regulations, procedures, practices, rules, limits and permit conditions. While this system has developed with the best intentions of government and industry, it has resulted in a relatively inflexible system that can be slow to respond and may now be less effective in terms of achieving the goals for which it was originally developed (DEEDI 2009)

These restrictions include limits on operating time (effort quotas), area closures, boat and net size restrictions, catch limits, expensive penalties, gear modifications (such as turtle exclusion devices and by-catch reduction devices) monitoring and reporting.

Due to the uniqueness of ECTF, external challenges, network and stakeholder disillusionment, and perceived lack of unity, it was proposed that a project focussing on fishery related social capital and social network be undertaken (Figure 1). As prawns make up about 80 percent of the total trawl harvest by weight and GVP of which king prawns providing about 50 percent of the otter trawl prawn harvest and tiger prawns, about 15 percent of the total prawn harvest, the project focuses on the ECTF wild caught prawn sector (DPI 2006; DPI 2011). Commercial fishing in this sector is generally small to medium owner-operator ventures.

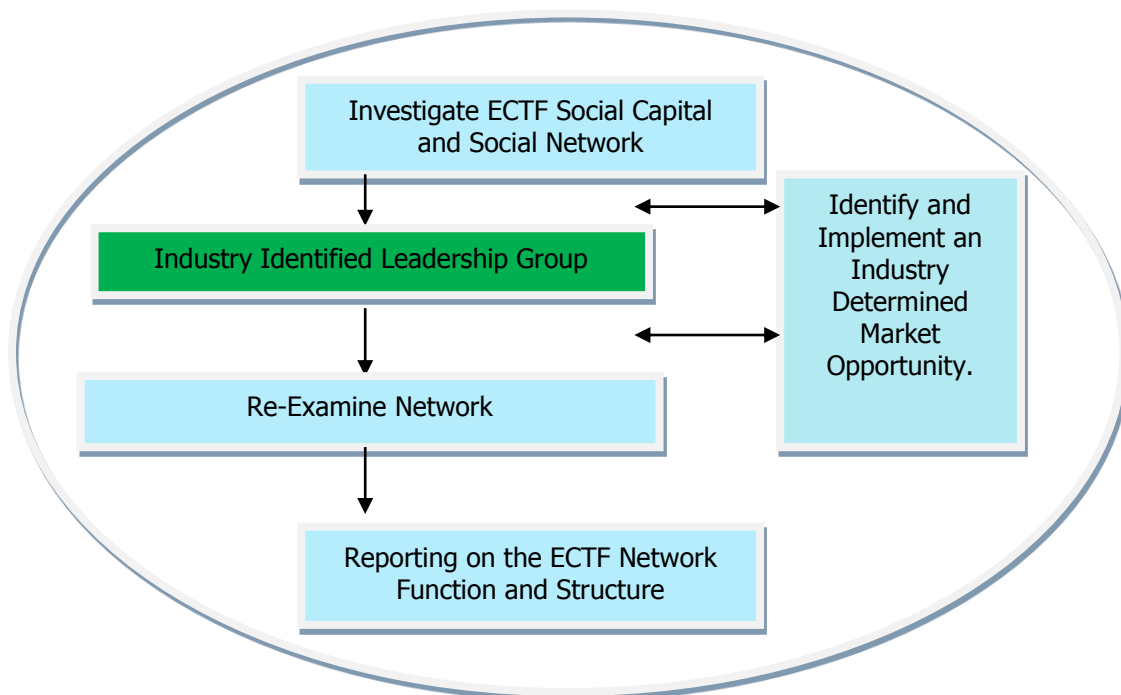


Figure 1: Outline of key task in the ECTF Project

It is from this background that this part of the ECTF project is positioned. This first stage report focuses on the industry identified core leadership group, highlighted in green in Figure 1. To appreciate the relevance of this stage, a theoretical discussion of the context, social capital and social networks is provided next.

3.0 Social Capital and Social Networks Leadership

Ecologically sustainable development is defined as “using, conserving and enhancing the community’s fishery resources and fish habitats so that: (a) the ecological processes on which life depends are maintained (b) the total quality of life, both now and in the future, can be improved” (DEEDI 2009). Research into the economic impacts of fishing industries has been conducted. As in other industries, environment impact assessments have increased in importance, prevalence and number. Social sustainability and social impacts have been the last of the three pillars to be investigated but are also now coming into increasing focus. Ecosystem-based fisheries management considers the impact fisheries have on all components of sustainability including communities (DEEDI 2009).

Field (2003:1-2) states “relationships matter” and central to this is that “social networks are a valuable asset”. The Organisation for Economic Co-Operation and Development (OECD 2001) defines social capital as networks, together with shared norms, values and understandings which facilitate cooperation within or among groups. Social capital emerges from social interactions that are external to the individual, including the nature and extent of relationships and networks within and between groups. Social capital resides in relations rather than individuals and is a resource that may be mobilized to generate a stream of benefits for industries and communities over time (OECD 2001). Furthermore, social capital is being utilised to understand social sustainability as it can be built up and drawn upon later, is linked to economic and community development and to the long term health of communities (people, profits and places). In this research, social capital is defined as the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships within the ECTF.

It has been found that effective networks increase the efficiency of information diffusion and actions between stakeholders, while reducing transaction costs and potential opportunistic activities (Putnam 1993). High-functioning networks are more transparent with stakeholders informed of fishery happenings, feature effective relationships between stakeholders and a sense of unity, equity or fairness in relation to opportunities and risks. In competitive business environments, networks are viewed as critical facilitators for accessing knowledge, resources, markets and technology (Scott et al. 2008). Social ties are important for collective action and co-operative management.

Social capital - the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by individual and social units – within the ECTF.

Cooperative management between stakeholders including fishery managers, supply chain members and scientists can result in sustainable fisheries (Gutie’rrez et al. 2011). Gutie’rrez et al (2011) conducted a study of 130 co-managed global fisheries in which they identified strong leadership and robust social capital as the most important attributes contributing to success.

To manage is to accomplish and master activities, while to lead is to influence others and create visions for change (Northouse 2006). Businesses, organisations and industries all

need good leadership. Organisations increasingly recognise leadership as a source of competitive advantage, which has led to increased investment in leadership development (Yukl 1989; Daily et al. 2002; Bilhuber Galli and Güller-Stewens 2011). During challenging economic and environmental times, effective leaders can provide strategic thinking, build trust, support and empowerment, and efficiently use and disseminate embedded knowledge, skills and resources which can improve decision making.

Much of the research focuses on organisations and the individual leaders within them. The ECTF, like large organisations and other industry sectors, comprises synergies between multiple, various sized and structured, businesses. Cross-business synergies have been defined as “the value that is created over time by the sum of the businesses together relative to what their value would be separately” (Martin and Eisenhardt 2001:3). This collective leadership is defined as “a dynamic leadership process in which a defined leader, or set of leaders, selectively utilise skills and expertise within a network, effectively distributing elements of the leadership role as the situation or problem at hand requires” (Friedrich et al. 2009:933). Collective leadership situations feature multiple leaders who do not lead in isolation (O'Reilly et al. 2010) and therefore, leadership efficacy may depend on the quality of the associated social network (Balkundi and Kilduff 2006). This suggests strategic tasks should assist to manage, even enhance, collaborative activities and relationships across the sector to build a shared meaning, strength and resilience (Bilhuber Galli and Güller-Stewens 2011).

The first step in a leadership development program is to identify potential leaders. This can be done by listing the individuals who have already expressed interest in taking on a leadership position, by observing individuals within the fishery and asking others to suggest people whom they feel display leadership traits. Once identified, they need to be encouraged and supported by all within the fishery. However, they should not hold these positions for extended periods as “the function of leadership is to produce more leaders, not more followers” (Ralph Nader in MGR Consulting, 2006).

4.0 Methodology

Within a case study methodology, face-to-face, telephone and online questionnaires were administered to fishermen, wholesalers, retailers, government departments and industry organisations within the ECTF.

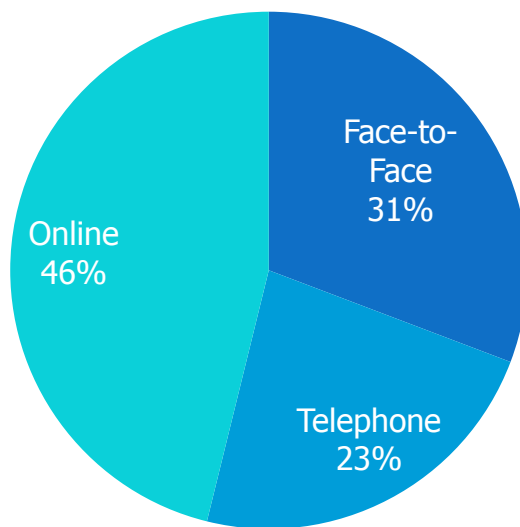


Figure 2: Percentage of Responses Collected
Via the Data Collection Methods

A total of 65 responses were collected between October and December 2011 (Figure 2).

Thirty-five responses were collected using in-depth, face-to-face or telephone interviews.

Each interview took on average 60 minutes to complete.

Each of the 30 online

5.0 Preliminary Results

Background data for context is provided including demographic information, decision making within the fishery and industry, and challenges faced by respondents. This is followed by the results relating to the aim of this report – to identify peer-nominated individuals for a core leadership group.

5.1 Contextual Results

Demographic data: Responses were provided by individuals within various ECTF connected groups, businesses and organisations including Industry Organisations (3%), Government

agencies (3%), Wholesalers (6%), Retailers (6%), Fishermen (78%) and Other Businesses (3%) (Figure 3). Although fishermen are business owners, this group has been separated within the analysis for clarity and understanding.

Overall, respondents were predominantly male (97%), with a high school (years 8-12) or higher level of education (TAFE and University) (77%). The average period of time respondents have worked in activities connected to commercial fishing was 24.7 years, with an average 22.1 years spent in activities connected to commercial fishing within the ECTF.

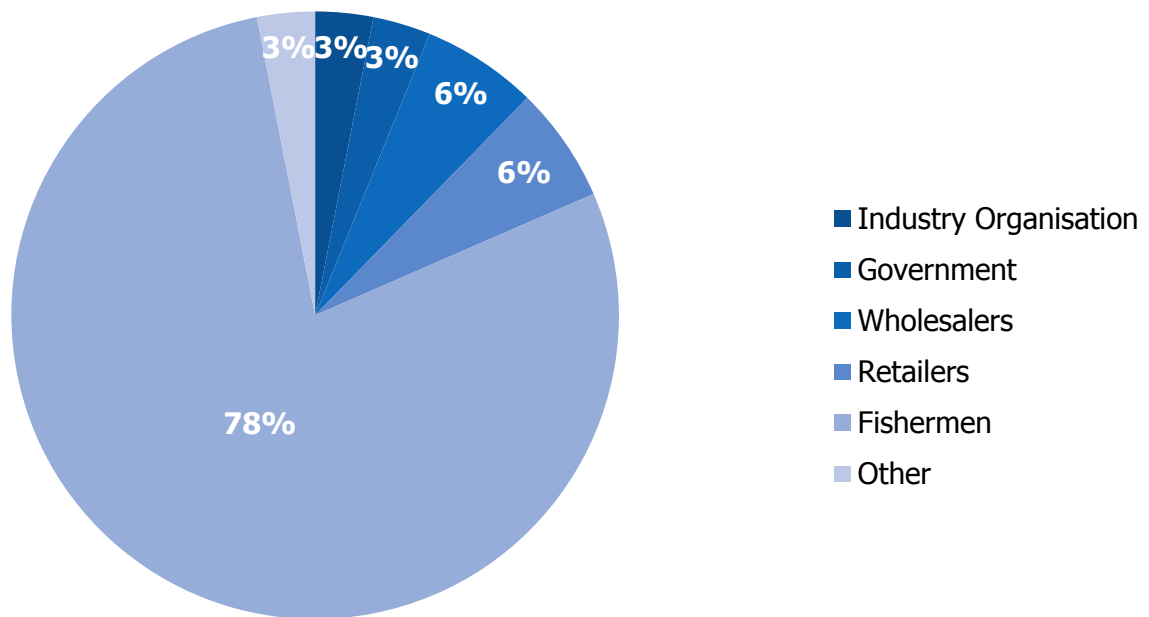


Figure 3: Percentage of Respondents per Stakeholder Group

Respondents came from throughout, and outside, the fishery covering Southport, Brisbane, Moreton Bay, Sunshine Coast, Hervey Bay, Tin Can Bay, Bundaberg, Gladstone, Townsville, Cairns and Adelaide.

Although approximately 39 percent of respondents indicated they would like to leave the industry, the remaining 61 percent indicated satisfaction with and a desire to continue to work in the industry. However, 82 percent also expressed uncertainty about the future of the industry. Interview responses and observations revealed the existence of entrepreneurial activities associated with product and marketing innovations.

Challenges: Respondents highlighted various issues facing and impacting upon the fishery. These responses support those outlined in "Marketing Audit for the Wild Caught Prawns of the East Coast Trawl Fishery" a related ECTF project report compiled by Dr Hastings. Despite being "*at the forefront of technology regarding by-catch reduction devices*" (2.3), organisations, businesses and fishermen say closures have prevented access to "*some of the most productive marine food resource areas*" (12) that can be fished in a sustainable manner. In addition, respondents suggested a low return on investment, lack of support for the industry, the lack of younger people entering the fishery, the difficulty in securing and training employees, the lack of control and insecurity about personal and industry futures, funding inequities, limited decision making power, loss of bargaining power for prices due to fewer wholesalers, competition from imports, fishery restrictions and regulations as all issues of concern. Furthermore, respondents stated that the lack of consumer education has resulted in misunderstandings about trawl fishing and the seafood industry.

Overwhelmingly, Businesses, Organisations and Fishermen felt the restrictions and changing regulations are negatively impacting upon the fishery. It was indicated that for the most part decision makers did not seem to understand the industry and the opinions of those working in the fishery were not respected.

Fishing industries are resource dependent and as such a unique relationship between the resource (prawns) and users (commercial fishermen and those further along the supply chain) exists (Marshall et al. 2009). Marshall et al (2009) in their study of the commercial fishing industry in North Queensland highlight that "changing the nature of the relationship between users and a resource can inadvertently compromise human prosperity and affect the ability of social and ecological systems to be resilient". Responses highlight the changes faced by the operators in the ECTF are impacting the industry, environment and communities.

Extractive industries with older operators are less able and more resistant to change (Marshall et al 2009). The average age of respondents in this ECTF study is 51 years. Comments reveal there is some difficulty coping with the changes within the fishery but they also suggest this is due to the high number, restrictive nature and continuity of these changes [*"the changes go on and on... restrictions and regulations affect industry stability and create uncertainty"* (20) and "*we were supportive of the initial closures but there are so many changes...it's all too much*" (25)].

Ninety-eight percent of respondents indicated the fishery makes a positive contribution to regional communities, stating that trawl fishing provides employment opportunities “*both directly through employment on vessels and indirectly through fish processing factories and vessel maintenance, onshore cold storage etc*” (3) and this is “*most noticeable in the smaller ports that lack other significant industries*” (3). However, it is important to remember that decisions made in the fishery have flow on effects right to the community level. The reduction in catch and closure of various fishing grounds for environmental and political reasons do not just affect fishermen. Wholesalers, retailers and the wider community are also impacted. Respondents said they were no longer able to provide resources to local community groups stating that “*where once we regularly supported local schools and sporting teams with product for raffles etc, we can no longer keep doing this*” (7).

98% of respondents indicated the industry makes a positive contribution to the regional communities

Decision making: Thirty-one percent of fishermen stated they were very dissatisfied with the amount of control they have over decisions affecting how they can undertake their fishing. In contrast, only six percent of fishermen indicated a level of satisfaction with the level of control over these types of decisions. Overall, the average response score was 1.89 (on a five point scale - (1) very dissatisfied to (5) very satisfied) indicative of an overall level of dissatisfaction. Of the responding government, business and industry organisations 73 percent stated *NO*, when asked if decision making about the Fishery was a collaborative process. Although all respondents stated information was disseminated and opportunities for informal discussion existed, it “*seemed decisions were pre-determined and consultation was undertaken because it had to be rather than to be collaborative*” (6).

5.2 Milestone Specific Results

Within the full interview protocol, questions were included to show who respondents most frequently went to for information. Other questions were included to identify those individuals within the ECTF who may not necessarily be high profile people but who are influential, interested in the future of the fishery, someone who others listen to regarding fishery issues, challenges, happenings, activities, and/or someone who may be considered a ‘quiet achiever’.

Sources of information: To understand who respondents most frequently went to for information, respondents were asked *who do you most frequently go to for information regarding the fishery?* Over half (52%) of respondents most frequently approached an Industry Organisations such as QSIA and Marine Safety Queensland for information (Figure 4). Eleven percent of responses stated *No one*, further commenting they trust their own judgement or search the internet for information. A similar number of respondents sought information from Spouses/Family and Fellow Fishermen (5% respectively) with three percent going to a Government agency. However, it should also be noted not all respondents chose to answer this question (16%).

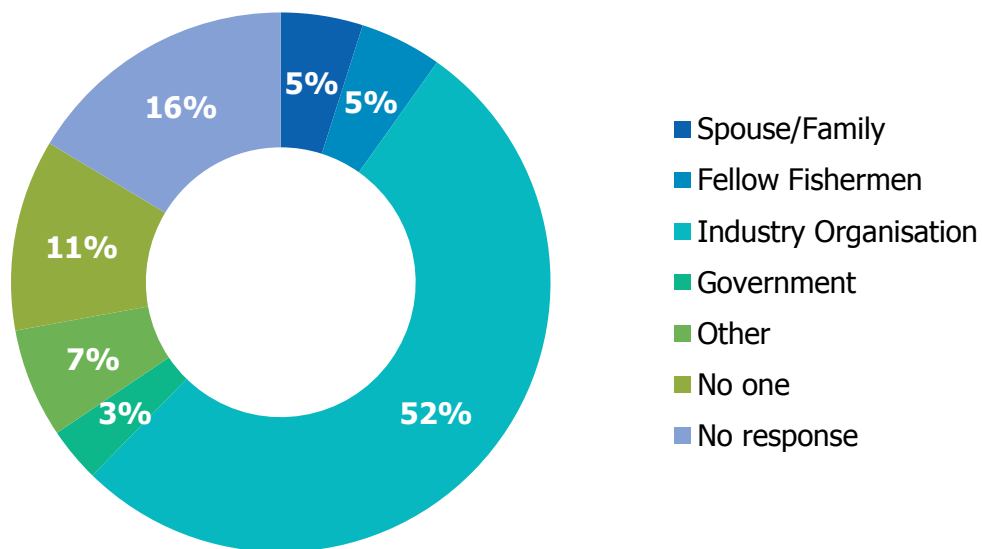


Figure 4: Sources from Which Respondents Seek Information (Percentages %)

Leaders: Various comments were provided in response to the request for the names of possible 'leaders' ranging from "*no comment*" (4) to "*there [are] a lot of fishermen and [wives] that are all doing as much as they can to keep this industry going - too many to name*" (2.4). Seventy responses provided 45 different names from throughout the supply chain. Most of the names provided received only one nomination (66%) while, 23 percent of names received two nominations (Table 1). The provision of multiple responses provides a talent pool with wider reach for potentially enhancing network efficiency and network longevity. If only one/few leaders exist, the network may disband should one or more of these people leave the network.

Table 1: Number of Responses for Leadership Group

No. of Responses Received by Individual Names	No. of People Receiving that No. of Responses	Percentage
1	29	66%
2	10	23%
3	2	5%
4	2	5%
5	0	0%
6	1	2%

The characteristics of these individuals reveal 60 percent are fishermen, 11 percent organisational representatives, with nine percent from businesses. Overlap between groups exists with some fishermen holding positions within various industry organisations. The individuals' key role determined which category they were placed in. The nominated individuals reside and/or work around Brisbane, Moreton Bay, Sunshine Coast, Hervey Bay, Tin Can Bay, Bundaberg, Gladstone, Townsville and Cairns.

Interviews revealed that once a person is placed in a position of power they often seem to lose the support and respect of other stakeholders. So although these individuals in this study were identified by their peers it may be worthwhile to approach the core leadership group differently to existing structured committees and groups. It may be a more effective approach for this group to take a more informal role. As such, they may not have to meet as a formal group nor be designated with official title. This group may be most useful as 'champions' for fishery issues and projects including the market opportunity identified in this project, to aid in the dissemination of information, in sharing the collective vision and actively pursuing the creation of social capital and a fishery network that encompasses the whole fishery. This may be possible given these individuals reside/work throughout the fishery. The list of names will be submitted to the steering committee for further action.

6.0 Discussion

The "Identification of the core leadership group and network structure of East Coast Trawl to develop, implement and evaluate strategic opportunities" project (2010/777) evolved from the industry identifying and agreeing there is a need to develop collaboration within

the fishery to leverage existing and future market opportunities. The understanding and building of industry social capital to support internal leadership through a network analysis is seen as fundamental to the development, coordination and implementation of a market approach for the industry. This final section discusses the results and presents recommendations ensuing from the early stage analysis which focused on the identification of a core leadership group.

Although not yet been fully understood, there is value in applying a social capital oriented perspective to leadership development within primary industries such as prawn trawl fishing. This perspective acknowledges leadership as an ongoing, relational, and socially embedded process that occurs between organisational members, whether they have formal leadership positions or not (Balkundi and Kilduff 2006). Studies show that social capital is a viable precursor for a large range of industry cross-collaboration activities (Adler and Kwon, 2002). To date, industry consultation has been described as a process undertaken because it has to be, rather than a process to achieve good governance and the facilitation of open, fair and constructive dialogue. Cross-collaborative activities in the fishery should involve interactions and open discussions between businesses (including fishermen, wholesalers, retailers and other related businesses), industry organisations and government intended to listen, engage and prioritise to create true collaborative decision making within and throughout the fishery (Figure 5).

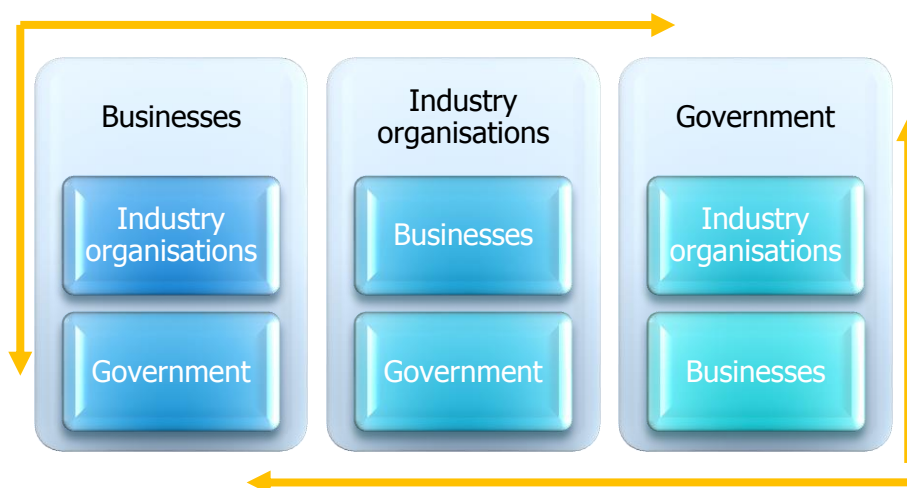


Figure 5: Cross-Collaborative Fishery Activities Between Key Stakeholder Groups

An effective communication network that utilises formal and informal nodes (core leaders), will aid the dissemination of information and identification of strategic opportunities for improving financial resource use, and provide a collectively derived, single voice and vision. There is significant depth and scope of experience, knowledge and skill within the ECTF. Effective communication increases the utilisation and development of this valuable expertise.

Furthermore, a social capital perspective encourages a collective capacity to leadership roles and processes to build fishery stakeholders (at the individual and group levels) capacity “to learn their way out of problems” (Day 2000:582). Day (2000:585) suggests social capital oriented leadership development focuses “on building networked relationships among individuals that enhance cooperation and resource exchange in creating [fishery] value” with an emphasis on building and using interrelated support and collaboration, team orientation, and conflict management. It should also be noted that to improve these outcomes the mentoring of network members in leadership roles and providing access to leadership training courses aid these individuals to learn and develop the skills to effectively lead. Such courses are available through various government departments and industry organisations e.g. FDRC.

A further discussion of informal leadership is important as this is the type of leadership recommended for consideration in the ECTF. Informal leaders who have personal power rather than official power, referred to as workers of influence, are often bestowed this role by their peers (Etzioni 1961). The informal leader may arise because they are charismatic and outgoing; people want to listen to them because they are easy to talk to, or exhibit certain knowledge and ideas that seem useful to the group. They may seek a leadership role or it may come naturally.

Informal leaders shape the perceptions and expectations of the groups they lead from two perspectives: 1) they have a level of power vested in them by their peers and 2) have access to, and potential influence upon, the structured managerial decision making processes within the fishery. They can be exceedingly valuable to the fishery and to the success of formal leaders to direct collective action and effect change. In addition to the leadership available in formal structured groups, the recognition of informal leaders may aid in developing engagement processes to encourage broad fishery input to decision making and facilitate the development of bridging social capital (Butler 2005). The various forms of capital will be discussed in more depth in future ECTF project reports. However, to gain

further appreciation of the possible value of an informal group for ECTF, a brief description of the relevant capital (bridging) is provided.

Bridging social capital refers to relations between mixed stakeholder groups, and it strengthens ties across such groups (Productivity Commission 2003), and encompasses more distant ties e.g. loose friendships and colleagues (Woolcock 2001). Bridging capital tends to be better for connecting to external assets, resources and for information diffusion. Formal leaders can show characteristics of bonding capital, or group think, in which decisions are made in isolation, disenfranchised from the rest of the fishery. Active and engaged informal leaders can improve decision making by introducing opinions, ideas, opportunities and threats that more effectively reflect those being experienced by the wider fishery.

The suggestion of an informal approach to the establishment of a core leadership group is not to encourage more dissent by creating more leaders to confuse and disrupt the fisheries ability to work together, or reduce personal control over the future of individual businesses. The fishery needs help. It has been repeatedly described as having a very uncertain future. The recommended approach can facilitate entrepreneurial activity while also supporting collective growth and unity within the fishery and industry to build a more economically, socially and environmentally sustainable future.

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10.11. Appendix 11 – Challenges faced by Moreton Bay fishery



Schaffer 2011

Identification of the core leadership group and network structure of East Coast Trawl to develop, implement and evaluate strategic opportunities

2010-777

Core Leadership Group
Moreton Bay

Dr Vikki Schaffer
University of the Sunshine Coast



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1.0 Introduction

This report presents the preliminary findings within the research project “Identification of the core leadership group and network structure of East Coast Trawl to develop, implement and evaluate strategic opportunities” (2010/777). The following addresses the identification of the core leadership group for Moreton Bay Fishery (MBF). This is a collaborative project between University of Sunshine Coast (USC), Australian Seafood Co-operative Research Centre (SCRC), East Coast Trawl Fishery (ECTF) and MBSIA (Moreton Bay Seafood Industry Association).

2.0 Background

Australian fisheries have undergone significant management changes over the past two decades and are recognised as world leaders in product quality and environmental management. East Coast Trawl Fishery (ECTF) is a dynamic network of businesses and small independent fishers harvesting, processing, marketing and selling some of the world’s finest seafood. However, as the Australian dollar is hovering around parity with the US dollar, there is likely to be a reduction in the export of Queensland prawns while, reducing the price for imported product into Australia (DPI 2011). The MBF is located within the broader ECTF. Moreton Bay is approximately 100 km long and supports productive commercial and recreational fishing of prawns, crabs, finfish, squid and several other species (Courtney et al. 2011). Ruello (1975) suggests commercial prawn fishing in Queensland probably commenced in the 1840s in the Brisbane River. The Brisbane River flows out into Moreton Bay. Today, commercial prawn fishing generally consists of small business, owner–operator ventures.

Management systems to control or limit fishing effort including the permit system (1970) and unitisation policy (1985) were introduced with varying success (Glaister et al. 1993). Fisheries management is challenging and even in ideal situations, fisheries management has often been unsuccessful (Beddington et al. 2007). Management of the MBF includes vessel length limit (<14 m), total head rope length (~16 m), weekend closures and license type (e.g. T1 M1 M2) (DEEDI 2011). In the MBF, further reductions in licenses resulted from the Queensland State Governments 2009 buy-back scheme whereby the government bought-back 119 fishing licenses under the Moreton Bay Structural Adjustment Package (QSG

2009). Queensland Government Minister Mr McNamara stated that “buying back more licenses retains a viable commercial fishing industry in Moreton Bay and negates the impact that new zoning in the marine park would have on commercial fishers” (QSG 2009).

Due to the uniqueness of the Moreton Bay fishery and the challenges faced, it was proposed that an independent project focussing on the Moreton Bay fishery relating to social capital and social network be undertaken (Figure 1). The project focuses on the wild caught prawn sector as prawns are the species most caught in the fishery (approx. 500 tonnes in 2010) (DEEDI 2011). The three main commercially important species are the inshore greasyback prawn (*Metapenaeus bennettiae*), the eastern king prawn (*Melicertus plebejus*) and the brown tiger prawn (*Penaeus esculentus*) (Courtney et al. 2011).

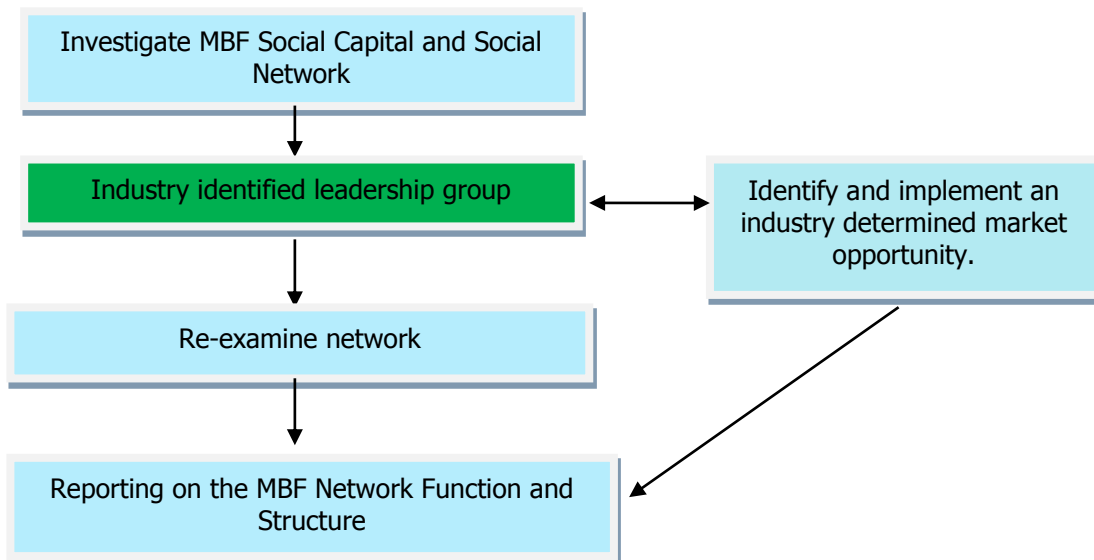


Figure 1: Flowchart outline key task in the ECTF-MBF project

It is from this background that this part of the Moreton Bay Fishery project is positioned. This first stage report focuses on the identification of an industry leadership group, highlighted in green in Figure 1. To appreciate the relevance of this stage, a theoretical discussion of the context, social capital and social networks, is provided next.

3.0 Social Capital and Social Networks Leadership

Ecologically sustainable development is defined as “using, conserving and enhancing the community’s fishery resources and fish habitats so that: (a) the ecological processes on which life depends are maintained (b) the total quality of life, both now and in the future, can be improved” (DEEDI 2009). Extensive research into the economic impacts of fishing industries has been conducted. As in other industries, environment impact assessments have increased in prevalence and volume. Social sustainability and social impacts have been the last of the three pillars to be investigated but are also now coming into increasing focus. Ecosystem-based fisheries management considers the impact fisheries have on all components including communities (DEEDI 2009).

Organisation for Economic Co-Operation and Development (OECD 2004) defines social capital as networks, together with shared norms, values and understandings which facilitate cooperation within or among groups. Social capital emerges from social interactions that are external to the individual, including the nature and extent of relationships and networks within and between groups. Social capital resides in relations rather than individuals and is a resource that may be mobilized to generate a stream of benefits for industries and communities over time (OECD 2001). Furthermore, social capital is being utilised to understand social sustainability as it can be built up and drawn upon later, is linked to economic and community development and to the health of communities (people, profits and environments). In this research, social capital is defined as the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships.

It has been found that effective networks increase the efficiency of information diffusion and actions between actors, while reducing transaction costs and potential opportunistic activities by stakeholders (Putnam 1993). High-functioning networks are more transparent with stakeholders informed of fishery happenings, feature effective relationships between stakeholders and a sense of equity or fairness in relation to opportunities and risks. In competitive business environments, networks are viewed as critical facilitators for accessing knowledge, resources, markets and technology (Scott et al 2008). Social ties are important for collective action and co-operative management. Cooperative management between stakeholders including fishery managers, supply chain members and scientists can result in sustainable fisheries (Gutiérrez et al. 2011). Gutiérrez et al (2011) conducted a study of 130 co-managed global fisheries in which they identified strong leadership and robust social capital as the most important attributes contributing to success.

Effective networks increase the efficiency of information diffusion and actions between actors, while reducing transaction costs and potential opportunistic activities by stakeholders (Putnam 1993).

Robust social capital refers to the ability of a community or industry to adapt to change. Relating this to fisheries, a fishery with high levels of social capital is better able to respond to and deal with change. Fletcher et al (2002:47) suggested that if a significant reduction in access to a fishery resource occurs, the fishing community "with good social capital is likely to be able to pull together to find ways to rebuild". The reverse, a fishing community faced with the same situation but with low levels of social capital, may not be able to overcome the challenges (Fletcher et al. 2002). For a smaller fishery such as Moreton Bay it is therefore important to investigate the current status of social capital and social networks. If strong, recognition could aid in building on the strengths and opportunities for further collaboration. If the fishery's social capital is weak or unbalanced, actions can be directed towards addressing them, thus aiding the fishery to become more robust and resilient.

Businesses, organisations and industries all need good leadership. Organisations increasingly recognise leadership as a source of competitive advantage, which has led to increased investment in leadership development (Yukl 1989; Daily et al. 2002; Bilhuber Galli and Güller-Stewens 2011). During challenging economic times effective leaders can provide strategic thinking, build trust, support and empowerment, and efficiently use and disseminate embedded knowledge, skill and resources which can improve decision making.

The MBF comprises synergies between multiple, various sized and structured, businesses and stakeholder groups. Synergies between these stakeholder groups can create value "by the sum of the businesses together relative to what their value would be separately" (Martin and Eisenhardt 2001:3) and can be enhanced by collective leadership. Collective leadership is defined as "a dynamic leadership process in which a defined leader, or set of leaders, selectively utilise skills and expertise within a network, effectively distributing elements of the leadership role as the situation or problem at hand requires" (Friedrich et al. 2009:933). Collective leadership situations feature multiple leaders who do not lead in isolation (O'Reilly et al. 2010) and therefore, leadership efficacy may depend on the quality of the associated social network (Balkundi and Kilduff 2006). This suggests strategic tasks can enhance collaboration activities and relationships across the sector to build shared meaning, strength and resilience (Bilhuber Galli and Güller-Stewens 2011).

The first step in a leadership development program is to identify potential leaders. This can be done by identifying the individuals who have expressed interest in taking on a leadership position, by observing individuals within the fishery and asking others to suggest people whom they feel display leadership traits. Once identified, they need to be encouraged and supported from within the fishery. Formal leadership roles should be rotated and have a fixed term as "the function of leadership is to produce more leaders, not more followers" (Ralph Nader in MGR Consulting 2006).

4.0 Methodology

Within a case study methodology, face-to-face, telephone and online questionnaires were administered to fishermen, wholesalers, retailers, government departments and industry organisations associated with the MBF. Some of these are also associated with the broader ECTF. A total of 29 responses were collected between October and December 2011. Twenty-three responses were collected using in-depth, face-to-face (21 responses) or telephone interviews (2 responses). Each interview took between 30 and 60 minutes to complete. Six online responses were received.

5.0 Preliminary Results

The focus of this report is the identification of a peer-nominated, core leadership group within the MBF. Additional contextual data analysis is provided including respondent characteristics, challenges faced by respondents and fishery related decision making.

5.1 Contextual Results

Those interviewed enthusiastically supplied information revealing a real depth and scope of experience, knowledge and skill within this fishery.

Respondent characteristics: Responses were provided by individuals directly connected to the supply chain within MBF including Wholesalers, Retailers and Fishermen as well as relevant Government and Industry Organisations. Overall, respondents were predominantly male (98%), with an average age of 51 years, an average of two children, 68 percent were married, with various education levels attained including primary school (six: 21%), high school (19: 64%), TAFE and University (four: 14%). The average period of time respondents have worked in activities connected to commercial fishing was 31 years, with an average 25.4 years spent in activities connected to the MBF. Respondents came from throughout the fishery including Bribie Island, Scarborough, Cabbage Tree Creek, Doboy Creek, Redcliffe, Shorncliffe and Brisbane.

Seventy-two percent of respondents were satisfied with their work in fishing (an average score of 3.64 on a 5 point scale). When asked about their level of satisfaction with the degree to which respondents received a fair income from fishing, mixed responses (20% = very dissatisfied to 28% = very satisfied) were provided (Figure 2).

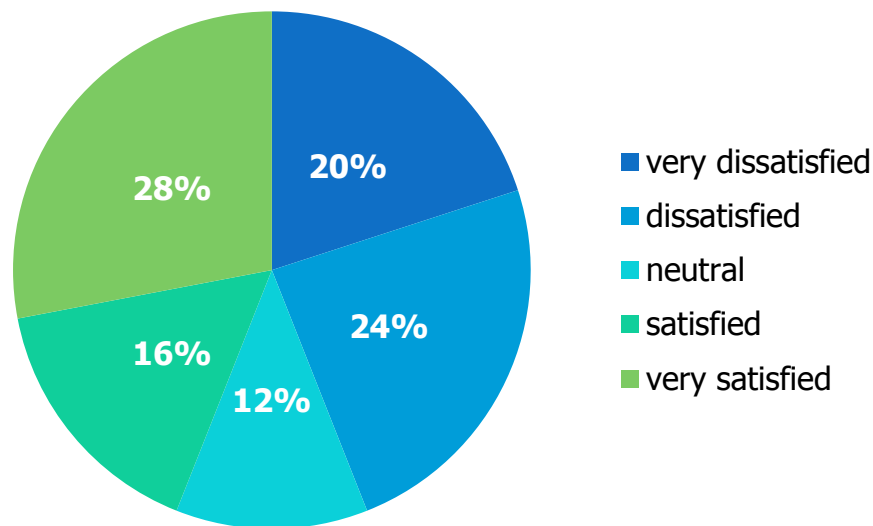


Figure 2: Levels of Satisfaction with the Degree to Which Respondents Felt They Received a Fair Income from Fishing

Challenges. The GVP of the Queensland-based commercial fishing in 2010–11 was about AU\$269million. “Declining terms of trade for fishing businesses, difficult and complex access arrangements in a range of fisheries and a strong Australian dollar that reduces both import prices of seafood and fuel prices, appear to make life difficult for many sectors in the commercial fishing industry” (DPI 2011:51). Respondents highlighted various issues facing and impacting upon their activities within the fishery that support and elaborate on this statement. These included high fuel costs (98%), lack of collaborative marketing and strategic activities (32%), reduction in infrastructure supporting the fishery (e.g. moorings) (55%), poor prices received for product (despite maintenance of high quality product) (96%), lack of competition between the few available wholesalers (65%), inconsistency in supply (32%), competition imports (73%) and restrictive rules and regulations (98%). Fuel prices jumped from an average Queensland per litre price of AU\$0.94 in 2004 to AU\$1.44 in 2011 (ABS 2011). For a vessel with a 4000L fuel capacity that equated to an increase of AU\$2000 each time the tank is filled. Respondents also said the price of prawns has not increased for over a decade (DPI 2011; 2, 5, 11, 14, 18, 26). The additional costs of compliance with various government regulations, increased fuel and other costs are predominantly absorbed by producers. When asked to state their level of satisfaction with the rules set by government on how businesses can operate in the fishery, respondents indicated they were very dissatisfied, providing a mean score of 1.8 (on a five point scale, 1 = very dissatisfied: 5 = very satisfied).

Approximately 48 percent of respondents indicated they expect to be working in the fishery in the next five years (Figure 3). This result is supported by respondent comments such as “*I love this industry, it’s in my blood. I wouldn’t want to do anything else*” (6) and “*There are challenges, sure. The selling of product is challenging. The work is hard but yes, I am very satisfied with my work in the industry*” (22). In contrast,

31 percent felt uncertain they would still be working in the fishery while 21 percent wanted to leave the industry but felt they could not do so with one respondent stating “*I can’t really afford to stay but I can’t afford to get out either*” (12). The degree of uncertainty was also reflected in responses to whether working in the fishing in the long-term was viable (3.16 on a 5 point scale). Thirty-two percent indicated a neutral score while 28 percent provided negative responses (a long-term future was not viable) and 40 percent positive responses suggesting a viable future. Interviews and observations revealed entrepreneurial activities associated with product and marketing innovations by individual fishermen, retail and wholesale businesses.

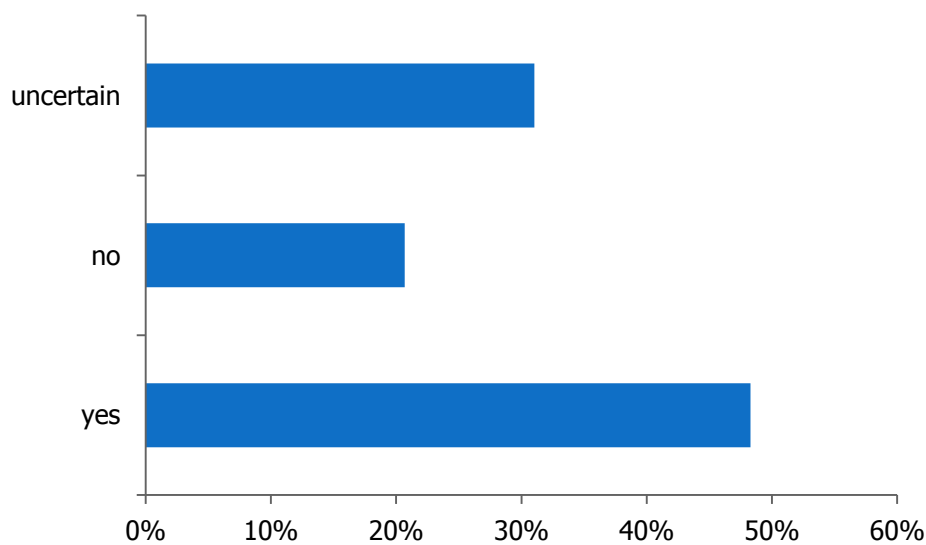


Figure 3: Percentage of Respondents who Believe They will be Working in MBF in Five Years

Responses highlight the changes and challenges faced by the operators in the MBF. Research suggests extractive industries such as fishing, with older operators, are less able to cope with and are more resistant to change (Marshall et al. 2009). The average age of respondents in this MBF study is 51 years. Comments reveal there is some difficulty coping with change within the fishery but they also suggest this is due to the high number, restrictive nature and continuity of government imposed changes and regulations. Respondents indicated they were not against all the implemented management changes for example the weekend closures. Opinion amongst respondents was that this change was beneficial to the operators and the environment. However, other changes have been expensive and ineffective while “*not adding any real value to the function or sustainability of the fishery*” (16).

Decision making: Sixty-six percent of fishermen stated they were either very dissatisfied (28%) or dissatisfied (38%) with the amount of control they have over decisions affecting how they can undertake their fishing. In contrast, only six percent (two) indicated they were either satisfied or very satisfied with the level of control over these types of decisions. Overall, the average response score was 2.04 suggesting on average respondents were dissatisfied (on a five point scale - (1) very dissatisfied to (5) very satisfied). When asked if respondents thought decision making was a collaborative process, the majority stated that although information was disseminated and there were opportunities for informal discussion even at the grassroots, this process “*was done with what seemed like pre-determined decisions*” (19) and “*the process was undertaken but not really in a manner that could be called collaboration*” (4).

Collaboration and consultation generally involve government agencies asking for public input via meetings or forums to outline specific management issues or draft management plans. It is the government’s decision whether or not to use the information obtained from these sessions to modify management plans or proposals (McPhee 2008). McPhee (2008:108) states that “in some instances, consultation is undertaken as a genuine part of attempting to improve the management regime, while in others it is a symbolic or public relations exercise that will not alter the proposed management response or draft plan”.

5.2 Milestone Specific Results

Leadership: Within the full interview protocol, questions were included to identify those individuals within the MBF who may not necessarily be a high profile but who are influential, interested in the future of the fishery, someone who others listen to regarding fishery issues, challenges, happenings, activities, someone who may be considered a ‘quiet achiever’. An additional question sought to understand to whom respondents most frequently went to for fishery related information.

To aid in understanding where respondents most frequently go for information, respondents were directly asked *who do you most frequently go to for information?* Multiple responses were permitted. Forty-four responses were provided (Figure 4). One third of respondents stated they went to the Moreton Bay Seafood Industry Association (MBSIA) (13:30%) while one fifth (9:20%) sought information from fellow fishermen. Other sources of information sought out by MBF stakeholders included Queensland government agencies the Department of Employment, Economic Development and Innovation (DEEDI) (7:16%) and Maritime Safety Queensland (MSQ) (5:11%).

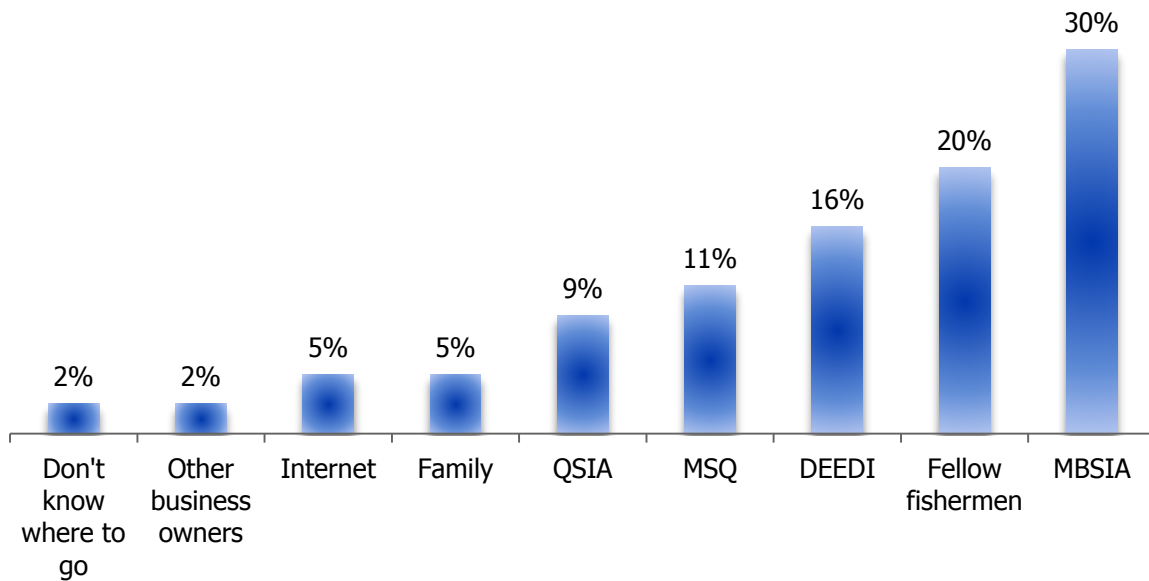


Figure 4: Sources from Which Respondents Seek Information

Various comments were provided in response to the request for the names of possible leaders. Twelve responses provided seven different names from throughout the supply chain. The characteristics of these individuals show that seventy-one percent (five) were members and/or position holders within MBSIA; seventy-one percent (five) were fishermen: while one nominee was a wholesale/retail business owner.

The provision of multiple nominees facilitates provides a talent pool with wider reach for potentially enhancing network efficiency and network longevity. If only one leader was identified, the success of the network is limited as if this individual leaves the industry/fishery the network may be disbanded.

It should be noted that 62 percent of respondents chose to not to provide a response or said *NO* they could/would not nominate anyone. One respondent said they could not think of anyone in particular but these roles should be held by "*fellow fishermen in Moreton Bay*" (28). Respondents also suggested that once a person is placed in an official position of power they often lose the support of other stakeholders.

The list of names will be submitted to the steering committee for further action.

6.0 Discussion

Within a social capital oriented perspective, leadership as an ongoing, relational, and socially embedded process occurring between organisational members, whether within formal leadership positions or not

(Balkundi and Kilduff 2006; Storberg-Walker 2007). Studies show that social capital is a viable precursor for a large range of cross-collaboration activities (Adler and Kwon 2002). Cross-collaborative activities in the fishery should involve interactions and open discussion between businesses (including fishermen, wholesalers, retailers and other related businesses), industry organisations and government agencies. An effective communication network that utilises key nodes (for example those in the core leadership group) will aid the dissemination of information for the identification of strategic opportunities for improving resource use, addressing challenges and decision making. Effective communication increases the utilisation and development of this valuable expertise.

Furthermore, a social capital perspective encourages a collective capacity to leadership roles and processes to build fishery stakeholders (at the individual and group levels) capacity "to learn their way out of problems" (Day 2000:582). Day (2000:585) suggests social capital oriented leadership development focuses "on building networked relationships among individuals that enhance cooperation and resource exchange in creating [fishery] value" with an emphasis on building and using interrelated support and collaboration, team orientation, and conflict management. Currently, individuals within the fishery are undertaking successful businesses activities. Many express that this is quite challenging. There is potential for collaborative activities but there needs to be a shared vision, directed, strategic collective action, coupled with effective leadership. This approach allows for entrepreneurial activity of the individual but also growth, support and strength within the fishery and industry. To improve these outcomes, mentoring network members in leadership roles and providing access to training courses for developing effective leadership skills are required.

There are two approaches for establishing a core leadership group within the MBF. These involve establishing either, formal or informal positions. Formal positions provide nominees with a level of power and responsibility. To agree to undertake this role would involve regularly scheduled meetings and structured communication with various stakeholders. Communication channels within formal groups follow organisational structure and hierarchy. Formal groups currently exist and respondents suggest they can be quite rigid and ineffective at gaining the true opinions of the wider fishery.

As there is a structured leadership group (MBSIA) within the MBF, it may be worthwhile to approach the core leadership group differently. To improve co-operation and collaboration, build greater social capital and strengthen and extend the MBF network, it may be more effective to take an informal approach allowing leaders to interact in more natural settings and situations. This can encourage freedom of expression and an easier flow of information. This could mean the role is more attractive to nominees as they may not need to meet regularly nor be designated with unwanted official title, rules and responsibilities. The core leadership group may be more useful as 'champions' for fishery issues and projects including the market opportunity that will be identified in this project. Champions can aid in the

dissemination of information, in sharing the collective vision and actively pursuing the creation of social capital and a strong fishery network encompassing the whole fishery. As nominees reside/work throughout and outside the fishery, wider information dissemination is possible.

Informal leaders shape the perceptions and expectations of the groups they lead from two perspectives: 1) they have a level of power vested in them by their peers and 2) have access to, and potential influence upon, the structured managerial decision making processes within the fishery. They can be exceedingly valuable to the fishery and to the success of formal leaders to direct collective action and effect change. In addition to the leadership available in formal structured groups, the recognition of informal leaders may aid in developing engagement processes to encourage broad fishery input to decision making and facilitate the development of bridging social capital (Butler 2005). The various forms of capital will be discussed in more depth in future ECTF project reports. At this early stage it is appropriate to briefly describe bonding and bridging social capital.

Formal leaders can show characteristics of bonding social capital, or group think, in which decisions are made in isolation, disenfranchised from the rest of the fishery. Bridging social capital refers to relations between mixed stakeholder groups. Its benefit lies in its ability to strengthen ties across such groups (Productivity Commission 2003), while encompassing more distant ties e.g. loose friendships and colleagues (Woolcock 2001). Bridging capital tends to be better for connecting to external assets, resources and for information diffusion. Active and engaged informal leaders can improve decision making by introducing opinions, ideas, opportunities and threats that more effectively reflect those being experienced by the wider fishery.

The recommendation is not to encourage more dissent by creating more leaders to confuse and disrupt the fisheries ability to work together, or reduce personal control over the future of individual businesses. The fishery has been repeatedly described as having a very uncertain future. The recommended approach may facilitate entrepreneurial activity while also supporting collective growth and unity within the fishery and industry to build a more economically, socially and environmentally sustainable future.

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10.12. Appendix 12 – Social Capital and structure of the ECTF

1. Introduction

A series of social, economic and political forces have influenced the ECTF. Previous project reports have highlighted the challenges and issues facing the ECTF. Brooks (2010:672) states that gaining an appreciation of the structure of the fishery “social capital is fundamental to understanding their capacities to, not only absorb change but to grow and prosper”. For future industry longevity, it is becoming increasingly important for those working within the ECT fishery to adapt, change and focus their efforts on developing competitive advantage (Hamel & Valikkangas, 2003). These outcomes can be achieved through interactions with other stakeholders, particularly those with complementary and/or required skills and resources (Hattori & Lapidus, 2004; Horn, 2005). Working together can bring diverse players together to generate new and adaptive ideas and collaborations for solving difficult industry challenges (Agranoff, 2003). Social capital and social network/s are the theoretical foundations for investigating the fishery.

2. Social Capital and Social Networks

2.1 Social Capital

Social capital refers to the bank of resources built up through interpersonal networks and associations, the building of resources through collective, mutually beneficial interactions and accomplishments and the relationships between people that facilitate co-ordination and co-operation for mutual benefit (Cox, 1995; Kawachi, Kennedy & Glass, 1999; Macbeth, Carson & Northcote, 2004; Prakash & Selle, 2001; Pretty & Ward, 2001; Putnam, 2000; Putnam, Leonardi & Nanetti, 1993; Taug & Roberts, 2002). Bourdieu (1986:248) defined social capital as:

“...the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition – or in other words, to memberships in a group – which provides each of its members with the backing of the collectively-owned capital...”.

Social capital, unlike economic capital, is only converted into fiscal gain if there is uptake and collaboration by group (industry) members (Bourdieu, 1986). Organisation for Economic Co-Operation and Development (OECD) (2001) suggests that social capital is indirectly produced by societal investments of time and effort that can give rise to collective action. Social capital differs from other forms of capital as it can increase when it is used, but, can also decrease if it is not used; takes positive effort to slowly build, but can quickly diminish.

Social capital has been referred to, in a broader concept, as relational wealth by potentially building a competitive advantage by advancing industry performance, reducing transaction costs, knowledge creation, organisational stability, shared understanding and the potential to generate above-average financial returns (McCallum & O'Connell, 2009). However, social capital creation requires more than just connecting to those with mutual interests, close friends and colleagues. The bridging, or engagement with those outside the bonded network, and the pursuit of connections with a variety of stakeholders, aids in the creation of more balanced social capital.

Social capital can function on three levels: as an asset that can be used for bonding, bridging (Woolcock & Narayan, 2000) and linking (Woolcock, 2001). Bonding results when strong intra-community connections give people a sense of identity and common purpose. Bridging social capital results from more diverse inter-industry/community connections that can aid problem solving and the uptake of economic opportunities. Linking social capital results when connections are made with those in positions of power and increase access to decision-makers, such as government agencies. Connections between stakeholders responsible for the management and regulation of fisheries should be strengthened to facilitate effective management approaches.

Typically, individuals have a narrow focus that zeros in on economic success. By broadening ones scope to aim for longer term, sustainable success can be gained by individuals and industries through networking. Short-term financial success can be achieved with a singular focus on economic variables, but long-term success can result from engaging people on multiple levels: economically and socially (Rezac, 2005).

Two sub-divisions of social capital are social norms (informal rules that condition behaviour in various circumstances such as tolerance, honest behaviour and helping others) and social networks (interconnected groups of people who have an attribute in common) (OECD, 2001; Portes, 1998; Putnam, 1993; Woolcock, 1998).

Social norms: Social norms revolve around what people think they should do, are expected to do, what they perceive their behaviour should be (Homans, 1958 in Calhoun, Moody, Pfaff & Virk, 2007). These perceptions are influenced by cultural and community cohesion, social stability, available services and facilities, political systems, personal and community health and wellbeing, personal fears and aspirations (Burdge & Vanclay, 1996; Vanclay, 2002; Vanclay, 2003). Norms are often the foundation upon which networks function.

Social networks: Social networks are formed by the connections between individuals and groups to facilitate action and to build social capital (Adler & Kwon, 2002; Bullen & Onyx, 2005). Social networks are formed consciously or unconsciously relative to business, cultural, social, historical interests, personal and professional similarities and geographic proximity (Adamic & Adar, 2005). Social networks are formally and informally created by individuals seeking advice, collaboration (Coleman, 1988), social connections or friendships (Haythornthwaite, 1996). However, some people within the network may be unaware of their involvement in the extended network or of the behaviour of the whole network, only focussing on the immediate relationship (Adamic & Adar, 2005) and only reacting to locally available information (Baggio, Scott & Cooper, 2010). Stakeholders can form deliberate networks to achieve specific project or task oriented goals, selecting those individuals and organisations that will assist them to achieve desired outcomes and boost operational profitability (Morrison, Lynch & Johns, 2004).

Fishery and fishery management activities draw together businesses from throughout the supply chain, government agencies and community groups. The connections between these industry players create networks. The relationships and interactions between these stakeholder groups expedite or impede collective action which can make an important contribution to industry stakeholders and local communities.

3. Methodology

Based on an industry identified lack of collaboration and production activities between fishery stakeholders, the diverse location orientation of the fishery and the existence of intense competition, it was determined that the potential for identifying and implementing a market opportunity, without addressing these research questions, would be reduced.

Research Questions:

RQ1: What are the social capital characteristics within the East Coast Trawl Fishery?

RQ2: What is the structure of the East Coast Trawl Fishery network?

Semi-structured questionnaires were used within a qualitative based, in-depth interview strategy to collect and analyse data from ECTF stakeholders. Network research was employed to examine the structural network properties. The structure of relationships and the position of individual actors within the network have consequences for the individual and the network as a whole (Knoke & Kuklinkski, 1982). The application of network analysis to further understand the social capital of the ECTF is relevant and logical for gaining useful information about how inter-organisational relationships in different regions are structured (Scott, Baggio & Cooper, 2008).

It is important to note that not all respondents answered all the same questions.

4. Results

4.1 Participant Profile

Data was collected from 87 stakeholders connected to the ECTF. These stakeholders were fishermen, businesses (retail and wholesale), government representatives, industry associations and fishery-related community and other organisations (Figure 1). These stakeholders were working within the fishery supply chain or involved in decision making. Participants were geographically dispersed along the east coast of Queensland. The response rate for

fishermen was 31% of the estimated total of 422 licences (2009/10) although, it is suggested by respondents that the number of active boats is closer to half this figure.

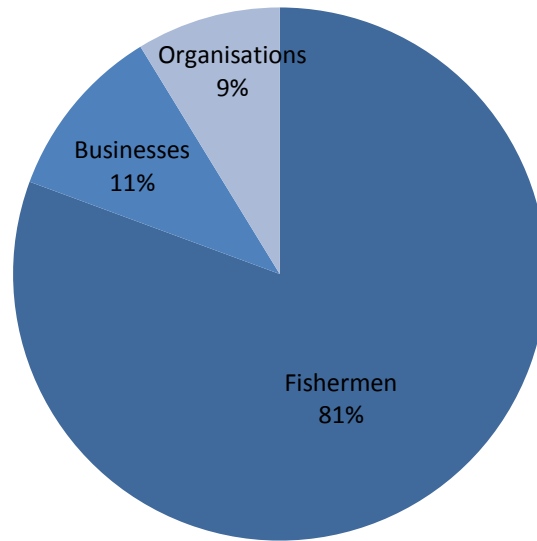


Figure 1: Participants Percentages

4.2 Quality of Life and Perceptions

Using a 5-point scale of very dissatisfied (1) to very satisfied (5), to reflect levels of satisfaction, results indicate satisfaction is experienced with the challenge of their work (3.80), a feeling of accomplishment from prawn fishing (3.43) and the amount of support and guidance received from other people working in fishing (3.47) (Figure 2). However, there was a general sense of dissatisfaction from fishermen and businesses with various aspects of their work in commercial prawn fishing within the ECTF. The rules set by government (1.55), the amount of support from local government (2.05) and the viability of the ECTF in the long term (2.06) all reveal levels of dissatisfaction. Within the fishermen and business groups, fishery related activities (fishing, wholesale and retail) accounted for most (>80%) of their household income.

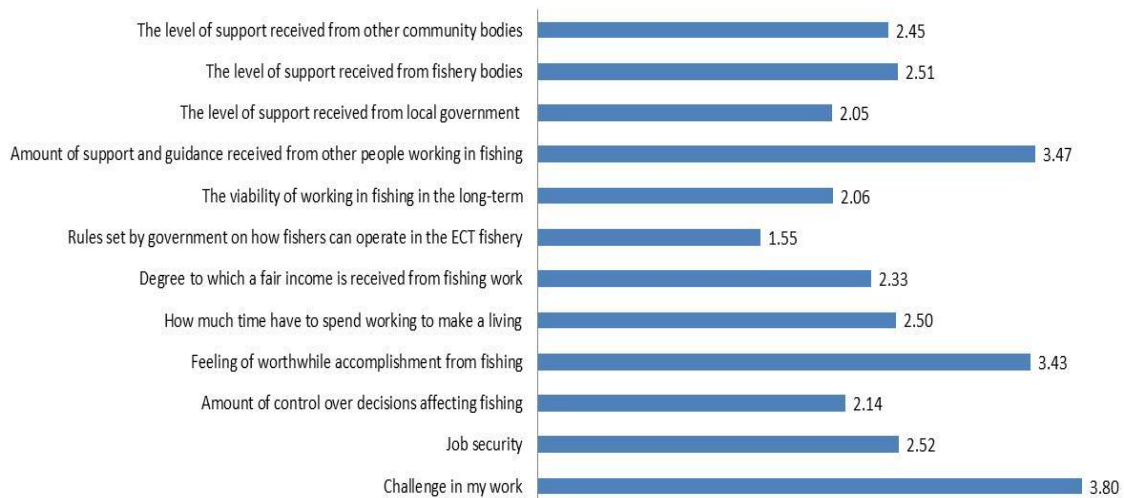


Figure 2: Average Satisfaction Scores from ECTF Fishermen and Businesses

The majority of respondents indicated the perceptions the general community has regarding commercial fishing (prawn) were negative. Two questions asked respondents how most people in the local community perceive the commercial prawn trawl fishing industry. A score of 2.81 on a 5-point scale suggests the overall belief was that the community held negative to neutral perceptions. A second question asked respondents how most people in Queensland perceive the commercial prawn trawl industry. Similarly, with a score of 2.47, respondents believed perceptions were negative to neutral. Open ended responses suggest this is because of a “*lack of understanding of the industry*” but also that “*it is going to depend on the locality and whether there are local issues with the trawl fishery [in the region]*”.

It is also important to assess the frequency of the responses as this provides additional insight. The first question regarding the local community’s perceptions, 44% of respondents indicated they believed perceptions were negative to very negative and 40% believed perceptions were positive. However, the question regarding the perceptions of Queenslanders towards commercial fishing suggested higher levels of negativity. Sixty per cent of respondents suggested perceptions were negative to very negative, while only 40% believed perceptions were positive.

Community connection can provide a sense of belonging. Respondents stated they had lived in their local community (the one they currently live in) for an average of 29.94 years. Respondents within the business and fishermen respondent groups also stated they actively provided goods and services to community groups such as prawns for raffles at school and sporting club fetes and special events (62.43%). However, 22% (32) indicated that over the last five years, they were no longer able to provide goods and services, or no longer did so as often, due to financial and time constraints.

Interviews revealed that individual respondents are focused on economic success, or for many, the economic viability needed to subsist. Many respondents indicated they are achieving financial gains, or at least “*surviving*”. However, long-term success and industry sustainability is potentially compromised as although stakeholders are exchanging information, they do so out of necessity, personal interest or to achieve specific goals. There is limited multi-level focused and directed engagement that seeks to access and capitalise on social capital. To investigate the research questions, the results will focus on the structure of social capital and the network of the ECTF commencing with *RQ1: What is the social capital structure within the East Coast Trawl Fishery?*

4.3 Bonding Social Capital

Bonding social capital relates to a sense of belonging and trust and a willingness to work together (Woolcock, 2001). Bonding frequently includes networks within, often between family and friends and like-minded individuals which are often considered as homogeneous. Bonding social capital can be examined by assessing how long respondents have been involved in the prawn fishing industry including generational history, business ownership, the employment of family and others in the businesses and how many of their friends are involved in the fishing industry.

Industry longevity and generational history: The average length of time respondents have worked in the industry is 24.91 years. Fifty-three per cent of respondents have been working in the industry for more than 20 years. With regards to the fishermen group of respondents, 12% were the third generation of their family to participate in the industry while 40% were the second generation of fishermen in their family.

Business ownership: Of the fishermen and business respondent groups, 95% owned their fishing-related business. Two per cent were owned by two generations (parents and children).

Employees: The employment of family is quite common. On average, businesses employed three additional staff on a part or full time capacity with seasonality influencing employment. Thirty-five per cent of respondents in this group employ family members including spouses/partners, fathers, brothers and children. Of those assisting the businesses but not receiving a specific wage, spouses/partners made up the majority of this group. Spouses and partners predominantly undertook unpaid activities related to paperwork and account keeping.

Comments revealed the employee pool is shrinking. It is recognised that fewer young people are entering the fishing industry. When asked about whether respondents would encourage young people to enter prawn trawl fishing, the overall theme of responses suggest yes, they would like to see younger people enter the industry but there is very little confidence in the future of the industry. An indicative comment that encompasses the overall theme: *“Yes and no, I would like to see young people coming through as there is still money to be made if you work hard, but really can't guarantee a future”*.

Friends: Social relationships can be an indicator of bonding. Woolcock (2001) suggests bonding refers to the relations among family members and social groups. Eighty-seven respondents provided an indication of how many of their friends are also working in the fishing industry. These were friends that respondents currently socialised with. Forty-two per cent stated 50% or more of their friends worked in the industry. Of these, the majority had a social circle consisting of between 80% and 100% of friends who worked in fishing.

These variables provide an indication of the bonded capital that may exist in the ECTF. Results suggest that bonding social capital exists. Relationships with family and friends are key. When asked who respondents went to for information, fishermen responded they relied mostly on themselves. However, the next two most frequently provided responses were *“Family”* and *“Fellow Fishermen”*. Resources are shared, trust exists but mostly with family: *“we pretty much keep to ourselves”* and *“I can really only trust my family”*. Where people learn the skills and knowledge to undertake fishing also support these findings. The three most frequently stated sources were formal education (23%), from family (47%) and from other fishers (59%). However, the majority stated they were self-taught (76%).

4.4 Bridging Social Capital

Bridging social capital refers to the ties between heterogeneous groups outside our immediate, bonded circle but that may be part of the same industry. They can link different types of fishermen, the various individuals and groups through the supply chain, and community groups with a connection to the industry. Bridging social capital was assessed by examining the variety of the groups and number, type of interaction, and membership to the various groups by respondents.

Industry connectivity: Respondents held membership within 17 different groups, committees or organisations (Figure 3). However, over one third of respondents were not currently members of any groups or associations (34%). Of the remaining 66%, the majority (32%) were members of the Queensland Seafood Industry Association (QSIA). Several respondents, who did not currently hold any membership, also stated they had *“recently”* or within the *“last 6 months”*, chosen not to renew their membership to QSIA. The remaining 16 identified groups, committees or organisations had between one and eight members amongst the respondents. Some of the respondents also held positions of responsibility including President, Chairperson, Treasurer, Director, Project Officer, Deputy Assistant, Trawl Committee Representative and Shareholder.

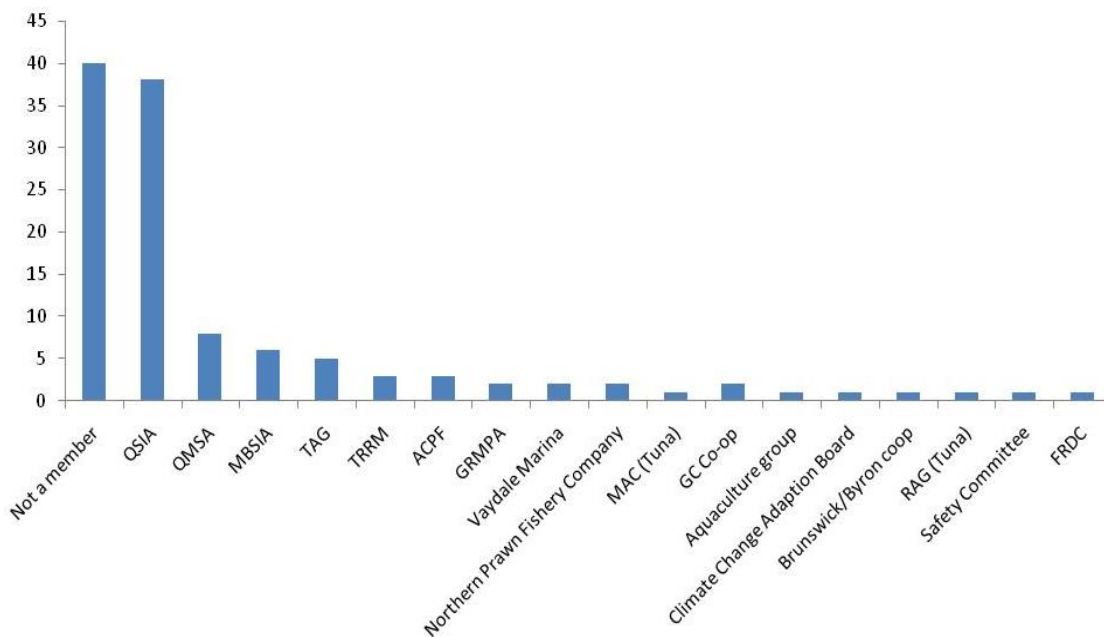


Figure 3: Groups, committees or organisations and the number of members

Community connectivity: Fifteen per cent said they were once members of community based groups but no longer were. Thirty-eight per cent stated they were members of community based groups such as the RSL, Chamber of Commerce, country club, religious or school related groups or committees, were in community choirs, sporting and social clubs, scouts, Freemasons, political parties, Surf Life Saving, Society of Naval Architects and Marine Engineers and children’s soccer clubs. Several held positions of responsibility such as President, Secretary or Board representative. The time they spent with these groups and organisations varied from daily to weekly, monthly, bi-annually and annually. However, the majority of those who responded, 44%, indicated they were not members of any community groups. Of these, 21% said the main reason was a lack of time.

When asked if the ECTF (and the employment the fishery generates and the households it maintains) contributed to the provision, maintenance, and/or expansion of any local or regional services or businesses, respondents overwhelming stated “Yes”. Several believed this contribution is “*under-estimated by many*” but a few suggested it has “*diminished in the past few years*”. This may be due to the overall reduction in fishermen and fishing activities.

There exists diversity of membership which can facilitate bridging social capital. Diversity of inter-communities can place people and industries in a stronger position to confront problems and take advantage of economic opportunities. However, as mentioned earlier, effort is required to build this capital up and to sustain it over time. The links appear to exist but the capital may not be being accessed to gain benefits. The industry is facing challenging times but there appears to be a sense of desperation, despondency and disillusionment in the future of the fishery. It should be noted that people are working very hard, many love the fishing life but the uncertainty about the future is taking a toll.

4.5 Linking Social Capital

This refers to links across disparate groups, which are also at different hierarchies such as the connections between a fishery’s regulators, managers or other government agencies and fishermen and businesses. These links provide access to those in positions of power and those who are instrumental in decision making regarding the fishery. In this instance, this group extends to environmental (e.g. WWF) and other fishing groups (e.g. Sunfish) who may influence fishery-related decisions.

Seventy-five per cent of respondents stated they were not able to contribute to decisions made about the fishery. Twenty-three per cent indicated they believed they ‘*Mostly*’ contributed while 1% said ‘*Yes*’ they could contribute. When asked what contributed to this response, it was suggested that excessive and continual changes to

management rules, regulations, fees, permits, equipment requirements, closures etc. have taken much of this decision making power away from those working to generate a livelihood from the fishery.

Effective decision making requires collaborative decision making processes. Collaborative decision making is a process of engagement in which stakeholders work together, using research and historical based information and communication technologies to understand issues and determine the best course of action. This varies from just sharing or disseminating information. Although the majority of respondents said there was dissemination of information and meetings were held, it was also repeatedly stated (69%) that “*decision making is not collaborative*”, “*consultative but definitely not collaborative*” and with differing agendas is suggested to be “*mission impossible*”.

To examine this further, the frequency with which respondents attended meetings concerning the future of the fishery was requested. The majority said they ‘*Never*’ attended such meetings (43%) (Figure 4). Of those who did attend, 26% did so ‘*A few times*’, 24% ‘*Many*’ times and 15% did so ‘*Once*’. From those who attended meetings, it was revealed that these meetings were hosted by QSIA, MBSIA, Queensland Fisheries, and DEEDI.

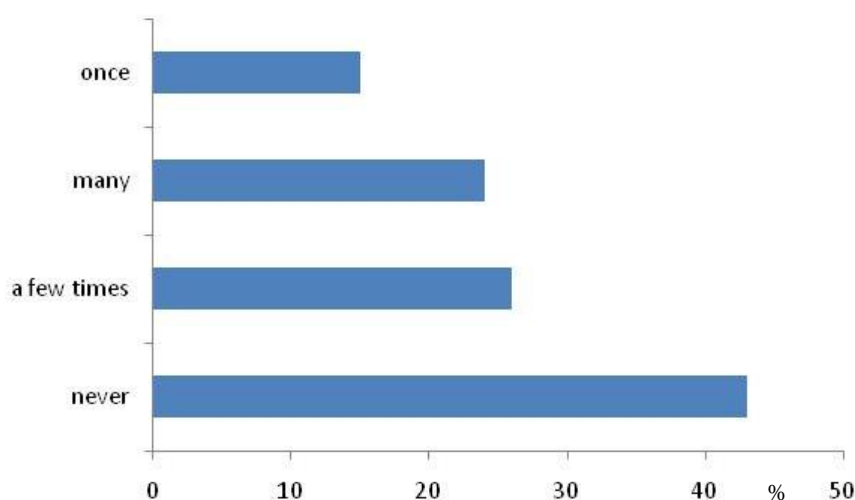


Figure 4: Frequency Meetings Attendance Concerning the Future of the Fishery (%)

The results show there is some connectivity between the various stakeholder groups but the perceived value of these links is questionable. Only 16% of respondents in the business and fishermen groups believed relationships with other stakeholders were useful. Further, when looking at the levels of perceived pro-activity by industry and governments, it is revealed that most respondents believe that governments are only thought to act this way sometimes/occasionally/never. Industry was perceived to be more proactive with 8% believing they do so always. Additional comments state that governments “*do more than people think*” while industry groups face funding challenges and decreasing membership which inhibits what they are able to achieve and how fast they can act.

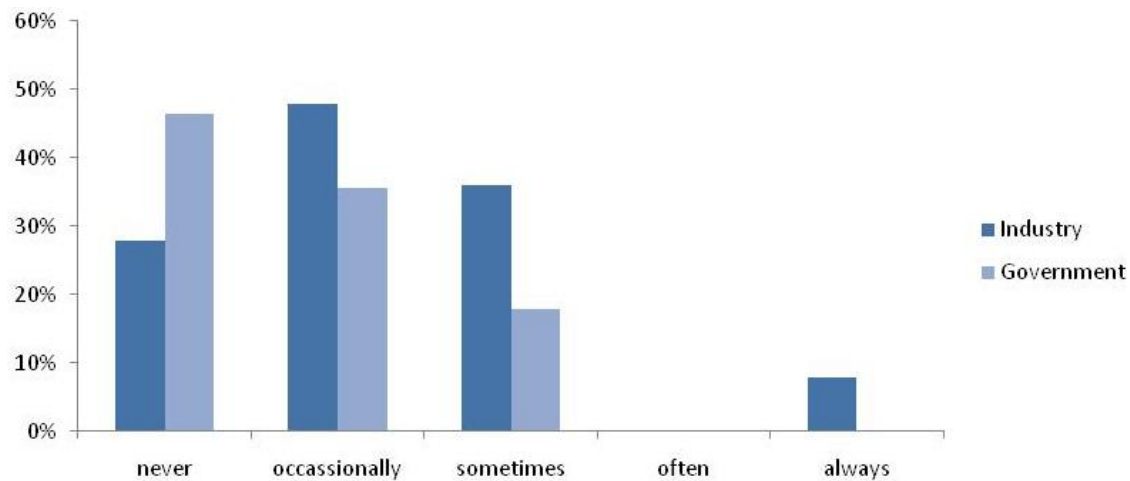


Figure 5: Perceived Frequency with which Governments and Industry Groups are Proactive

Small and medium sized (SMEs) food oriented producers make a significant contribution to the economic prosperity of many regions (Lamprinopoulou, Tregear & Ness, 2006). Research suggests the greater the social cohesiveness, the more advanced the level of collaboration (Sammorra & Biggiero, 2001) and effective establishment, strength and utility of social capital. A balance between the three types of social capital is ideal. Bonding capital appears to be the most prevalent form of social capital. Stakeholders possess advanced skills and knowledge in the various areas. Organisations (Industry, environmental and recreational) state there is high levels of skill and knowledge about the fishery. Government representatives have worked in fishery related departments for several years and state they have fishery experience and knowledge.

Some respondents said they interact with others *“as little as possible”*, are not members of any industry or community groups or organisations, and *“want to be left alone to do my fishing”*. The individuals possess human capital but as it is not shared it contributes little to social capital. The culture of an industry influences social capital. Results show that the culture within the ECTF does not favour the widespread co-operative behaviour, shared vision and unity for collective action and thus utilisation of existing or potential social capital.

There is positivity reflected in the links between stakeholders group. There are connections between groups - Bridging and Linking. However, the low levels of trust in the bridging and linking connections, negatively impacts the ability to build, sustain and draw upon any existing social capital. The reduction in the strength of ties in Bonding, Bridging and Linking is matched by an increase in decision making power (Figure 6).

The links within the various types of social capital vary. The Business group tend to feature looser links. These are links of necessity related to the need to undertake commercial activity and *“keep an eye on each other. That’s the nature of fishing”*.

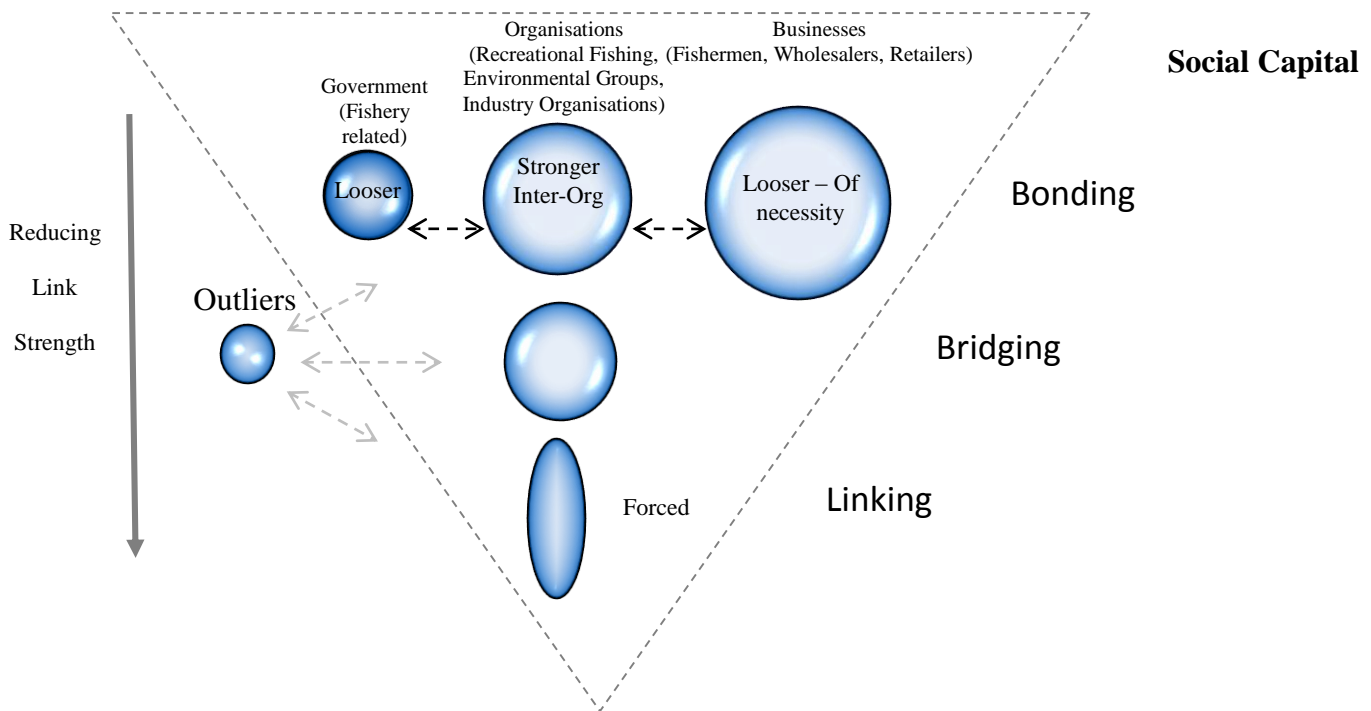


Figure 6: The relationship between stakeholders and the three types of social capital

5. Discussion

There is general understanding amongst scholars that social capital requires advanced and sustained investment by network members to generate and maintain any useful asset. The ECTF is fragmented by geography, fishing, boat and/or license type, site specific issues and closures and available resources. This has created sub-fisheries in various locations such as Southport, Moreton Bay, Mooloolaba, Hervey Bay, Bundaberg, Gladstone, Innisfail, Cairns, and Townsville. Moreton Bay is an example of a sub-set of the wider ECTF. Interestingly, it also features fragmentation (Doboy Creek, Manly, Sandgate, Scarborough, and Bribe Island) for some of the reasons mentioned. Instead of being able to benefit from the multiplier effect of access to resources, support, and ideas to generate innovation for a competitive, resilient industry, the fishery is segmented into smaller and smaller groups. These sub-grouping are further sub-dividing, further reducing the possibilities for the individual, the fishery and the wider industry. This insulation creates silos, confining people to their geographic and functional fishing areas. Silo can occur when individuals are disengaged and when stakeholders do not actively seek meaningful co-operation and collaboration.

A lot of discussion has occurred around the value and importance of working together. Keast and Mandell (2011) assembled a description of these relationships referred to as the 3C's: co-operation, co-ordination and collaboration. Ideally, the three relationships or network types would cycle individually depending on the circumstances and need, but also support each other and progressing the fishery towards a potentially more sustainable future.

Applying this to the ECTF, it would appear the fishery utilises relationships involving co-operation. Co-operation features loose relationships, autonomous goals and information sharing (Keast and Mandell, 2011), all of which are evident in the ECTF networks. Co-operation is an important process and has resulted in the achieving of some positive outcomes within and between stakeholder groups. However, frequently the fishery utilises repeated, independent cycles of co-operation that only occasionally, and in an unsustainable manner, progress to the achievement of co-ordination or collaboration relationship networks (Keast and Mandell, 2011). In some instances, cycles of co-operation are established but once the purpose for cooperating is achieved, stakeholders lose interest. Excessive input is required or frustration levels become too high, resulting in individuals disconnecting from the relationship so it is either too fragmented to be effective or is completely abandoned.

As the results show, there are times when stakeholders effectively come together, instances where individuals connect for specific outcomes, and situations when individuals or groups 'step up', investing significant time and effort into networking activities before having to abandon them after a few months/years. Stakeholders who had taken leadership

roles talked about being “burned out”, “frustrated” and “overwhelmed” at having to deal with the logistics of getting stakeholder group members to work together consistently and with purpose. An attitude of free-riding, complacency and individual agendas make achieving strategic goals and objectives extremely challenging.

More than 75% of the stakeholders interviewed believed the ECTF is a viable, sustainable fishery in terms of the availability and quality of product. Alexander (2012) supports this stating “our [Queensland] prawns are renowned for their quality”. Over 57% of commercial fishermen and business respondents wanted to continue to work in the industry citing a love for the lifestyle and the work. Every stakeholder group has a vested interest in working together. A failure to do so will have repercussions for the fishery and the wider community.

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10.13. Appendix 13 – Social Capital and structure of the Moreton Bay fishery

1. Introduction

A series of social, economic and political forces have influenced the Moreton Bay Fishery. Previous project reports have highlighted the challenges and issues facing the Moreton Bay fishery. Brooks (2010:672) states that in gaining an appreciation of the structure of the fishery “social capital is fundamental to understanding their capacities to, not only absorb change but to grow and prosper”. For future industry longevity, it is becoming increasingly important for those working within the Moreton Bay fishery (and wider ECTF) to adapt, change and focus their efforts on developing competitive advantage (Hamel & Valikkangas, 2003). These outcomes can be achieved through interactions between stakeholders, particularly those with complementary and/or required skills and resources (Hattori & Lapidus, 2004; Horn, 2005). Working together can bring diverse players together to generate new and adaptive ideas and collaborations for solving difficult industry challenges (Agranoff, 2003). Social capital and network analysis are the theoretical and methodological foundations for examining the fishery.

2. Social Capital and Networks

2.1 Social Capital

Social capital refers to the bank of resources built up through interpersonal networks and associations; the building of resources through collective, mutually beneficial interactions and accomplishments and the relationships between people that facilitate co-ordination and co-operation for mutual benefit (Cox, 1995; Kawachi, Kennedy & Glass, 1999; Macbeth, Carson & Northcote, 2004; Prakash & Selle, 2001; Pretty & Ward, 2001; Putnam, 2000; Putnam, Leonardi & Nanetti, 1993; Taug & Roberts, 2002) (Figure 1). Bourdieu (1986:248) defined social capital as:

“...the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition – or in other words, to memberships in a group – which provides each of its members with the backing of the collectively-owned capital...”

Social capital, unlike economic capital, is only converted into fiscal gain if there is uptake and collaboration by group (industry) members (Bourdieu, 1986). OECD (2001) suggests that social capital is indirectly produced by societal investments of time and effort that can give rise to collective action. Social capital differs from other forms of capital as it can increase when it is used, but, can also decrease if it is not used; takes positive effort to slowly build, but can quickly diminish.

Social Capital
(relational competencies)
social awareness
self-management
forging commitments
fostering cooperation/
coordination/networks
giving feedback
establishing trust, goodwill, &
reciprocity

Figure 1: Characteristics of Social Capital (McCallum & O'Connell, 2009)

Social capital has been referred to, in a broader concept, as relational wealth by potentially building a competitive advantage by advancing industry performance, reducing transaction costs, knowledge creation, organisational stability and shared understanding and the potential to generate above-average financial returns (McCallum & O'Connell, 2009). However, social capital creation requires more than just the connecting with those with mutual interests, close friends and colleagues. The bridging, or engagement with those outside the bonded network, and the pursuit of connections with a variety of stakeholders, aids in the creation of more balanced social capital.

Social capital can function on three levels: as an asset that can be used for bonding, bridging (Woolcock & Narayan, 2000) and linking (Woolcock, 2001). Bonding results when strong intra-community connections give people a sense of identity and common purpose. Bridging social capital results from more diverse inter-industry/community connections that can aid problem solving and the uptake of economic opportunities. Linking social capital results when connections are made with those in positions of power and increase access to decision-makers, such as government agencies. Connections between stakeholders responsible for the management and regulation of fisheries should be strengthened to facilitate effective management approaches.

Typically, individuals have a narrow focus that zeroes in on economic success. By broadening one's scope to aim for longer term, sustainable success can be gained by individuals and industries through networking. Short-term financial success can be achieved with a singular focus on economic variables, but long-term success can result from engaging people on multiple levels: economically and socially (Rezac, 2005).

Two sub-divisions of social capital are social norms (informal rules that condition behaviour in various circumstances such as tolerance, honest behaviour and helping others) and social networks (interconnected groups of people who have an attribute in common) (OECD, 2001; Portes, 1998; Putnam, 1993; Woolcock, 1998).

Social norms: Social norms revolve around what people think they should do, are expected to do, what they perceive their behaviour should be (Homans, 1958 in Calhoun, Moody, Pfaff & Virk, 2007). These perceptions are influenced by cultural and community cohesion, social stability, available services and facilities, political systems, personal and community health and wellbeing, personal fears and aspirations (Burdge & Vanclay, 1996; Vanclay, 2002; Vanclay, 2003). Norms are often the foundation upon which networks function.

Social networks: Social networks are formed by the connections between individuals and groups to facilitate action and to build social capital (Adler & Kwon, 2002; Bullen and Onyx, 2005). Social networks are formed consciously or unconsciously relative to business, cultural, social, historical interests, personal and professional similarities and geographic proximity (Adamic & Adar, 2005). Social networks are formally and informally created by individuals seeking advice, collaboration (Coleman, 1988), social connections or friendships (Haythornthwaite, 1996). However, some people within the network may be unaware of their involvement in the extended network or of the behaviour of the whole network, only focussing on the immediate relationship (Adamic & Adar, 2005) and only reacting to locally available information (Baggio, Scott & Cooper, 2010). Stakeholders can form deliberate networks to achieve specific project or task oriented goals, selecting those individuals and organisations that will assist them to achieve desired outcomes and boost operational profitability (Morrison, Lynch & Johns, 2004).

Fishery and fishery management activities draw together businesses from throughout the supply chain, government agencies and community groups. The connections between these industry players create networks. The relationships and interactions between these stakeholder groups expedite or impede collective action which can make an important contribution to industry stakeholders and local communities.

3. Methodology

Based on an industry identified lack of collaboration and production activities between fishery stakeholders, the diverse location orientation of the fishery and the existence of intense competition, it is determined that the potential for identifying and implementing a market opportunity, without addressing these research questions, would be reduced.

Research Questions:

RQ1: What is the social capital related structure within the Moreton Bay Fishery?

RQ2: What is the structure of the Moreton Bay Fishery network?

Semi-structured questionnaires were used within a qualitative based, in-depth interview strategy to collect, and analyse data from Moreton Bay Fishery stakeholders. Network research was employed to examine the structural network properties. The structure of relationships and the position of individual actors within the network have consequences for the individual and the network as a whole (Knoke & Kuklinski, 1982). The application of network analysis to further understand the social capital of the Moreton Bay fishery is relevant and logical for gaining useful

information about how inter-organisational relationships in different regions are structured (Scott, Baggio & Cooper, 2008).

It is important to note that not all respondents answered all the same questions. Some questions were more pertinent for different stakeholder group and to the aims of the data collection. Other stakeholders chose not to provide a response. In contrast to the ECTF, the Moreton Bay fishery is geographically bounded, the numbers of stakeholders are less and the rules and regulations are site specific. Their fishing groups are geographically clustered primarily around Scarborough, Sandgate, Bribie Island, Dobby Creek and Hemmant.

4. Results

Data was collected from 55 stakeholders connected to the Moreton Bay fishery. These stakeholders were fishermen, businesses (retail and wholesale), government management representatives, industry organisation representatives and fishery-related community groups such as environmental and recreational fishing groups.

There was a general sense of dissatisfaction from fishermen and businesses with various aspects of their work in commercial prawn fishing. Respondents indicated the perceptions the general community has regarding commercial fishing (prawn) to be mixed. Two questions asked respondents how most people in the local community perceive the commercial prawn trawl fishing industry. Figure 2 shows that 42% of respondents believed the local community were positive towards commercial fishing perceptions while 28% believed they held negative perceptions. Open ended responses suggest that on one hand people are “*are more educated*” which provides a positive response but also that “*due to lack of knowledge about the industry*” a negative perception can be created.

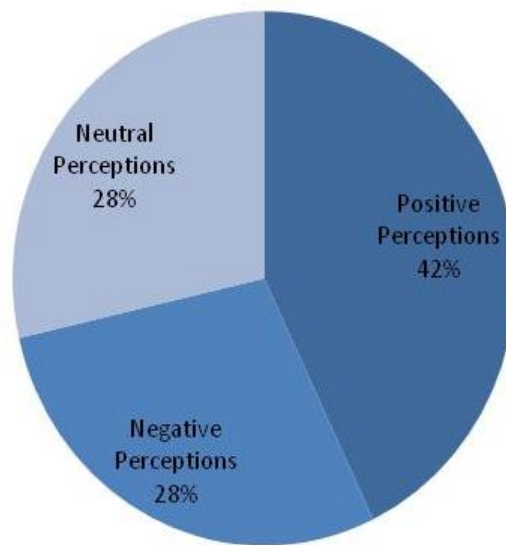


Figure 2: Perception of Commercial Fishing in Moreton Bay

To investigate the research questions, the results will focus on the structure of social capital and the network of the Fishery, collaboration and co-operation, and communication and information flow within the Fishery.

RQ1: What is the social capital structure within the Moreton Bay Fishery?

Bonding social capital includes links within, often between family and friends and like-minded individuals. Bonding social capital can be examined by assessing how long respondents have been involved in the prawn fishing industry including generational history, business ownership, the employment of family and others in the businesses and how many of their friends are involved in the fishing industry.

Industry longevity and generational history: The average length of time respondents have worked in the industry is 25.4 years. Fifty-eight per cent of respondents have been working in the industry for more than 20 years. With regards

to the fishermen group of respondents, 5% were the third generation of their family to participate in the industry while 22% were the second generation of fishermen in their family.

Business ownership: Of the fishermen and business respondent groups, 48% owned their fishing-related business. Of the respondents who received income from fishery-related activities 92% stated this income constituted >50% of their total household income.

Employees: The employment of family is not as common in the Moreton Bay fishery as it is in the wider ECTF. Only 18% employed between one and four family members. Overwhelmingly, those employed were male (89%).

As with the wider ECTF, comments highlighted the reduction in young people entering the industry. When asked about whether respondents would encourage young people to enter prawn trawl fishing, responses were mixed but the majority said “No” (52%). Comments suggest the reason for this was young people can receive “better money elsewhere [in the mines]”, that the seasonal nature of the industry “is hard” and there is “no future, no security”. Thirty-five per cent stated “Yes”, they would encourage young people to enter the industry stating that fishing “gives you a good lifestyle”. Further, 12% said “Yes and no” believing that “there is not enough support for someone new to come into the fishery; but new people are definitely needed”.

Friends: Respondents were asked how many of their friends were also in fishing. Thirty-eight per cent had more than half of their friends also working in the industry. Eighteen per cent stated none of their friends worked in fishing.

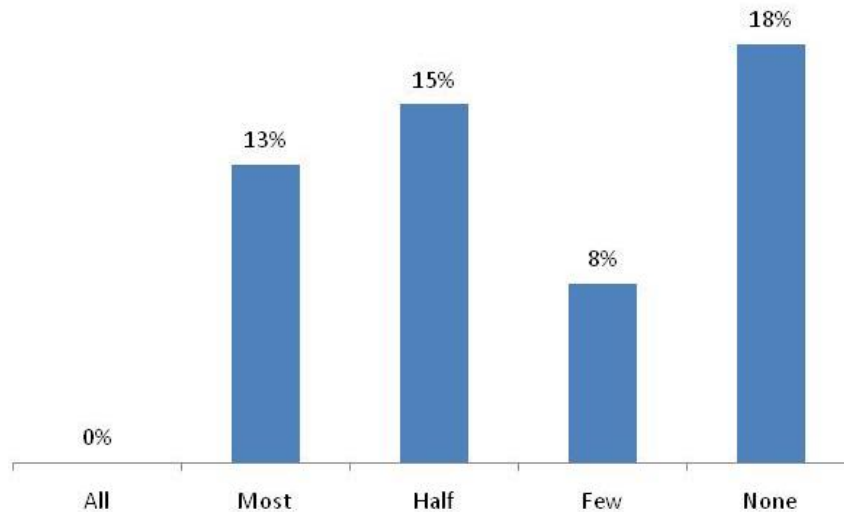


Figure 3: Friends working in the Fishing Industry

These variables provide an indication of the bonded capital that may exist in the Moreton Bay fishery. Results suggest that bonding social capital is limited. Fishermen stated they relied mostly on themselves and trust is low between stakeholder groups. Many of the fishing and business respondents indicate they rely very much on themselves or their immediate family. The majority of respondents in the stakeholder groups stated they were self-taught (89%) supporting this idea of self-reliance. As respondents could provide more than one answer, the two other ways respondents learned about the industry were from family (50%) and from other fishers (44%).

Bridging social capital links different types of fishermen, the various individuals and groups through the supply chain and community groups with a connection to the industry. Bridging social capital was assessed by examining the variety of the groups, group numbers, type of interaction and membership to community and industry groups and organisations.

Community and Industry connectivity: Respondents held membership within seven different groups, committees or organisations. Groups included local RSL, country clubs, boating, sporting, leagues and church clubs/groups. However, over half of respondents were not currently members of any groups or associations (64%). Membership in the industry-related organisations was very limited with only 15% being members of either/and/or QSIA, QSMA and

MBSIA. Of the respondents who did currently hold any membership, when asked how frequently they interacted with these groups/organisations, 72% stated “Never” and “Rarely”. Only three respondents said they held a position of responsibility.

Bridging social capital is also very limited. The industry is facing challenging times and there appears to be a sense of desperation, despondency and disillusionment in the future of the fishery but also a real sense that fishing is viable and when managed well would provide benefits to the fishing industry and the wider community. However, rather than turn to each other to build collaboration and co-operation, most respondents were choosing to go it alone.

Linking social capital refers to links across disparate groups at different hierarchical levels that provide access to those in positions of power and those who are instrumental in decision making regarding the fishery. In this instance, this group extends to environmental and other fishing groups who contribute to fishery-related decisions. Only 10% of respondents stated they were able to contribute to decisions made about the fishery with 24% indicating they believed they could ‘Mostly’ contribute. The majority, 66%, felt they had no power to contribute to decisions made regarding the fishery.

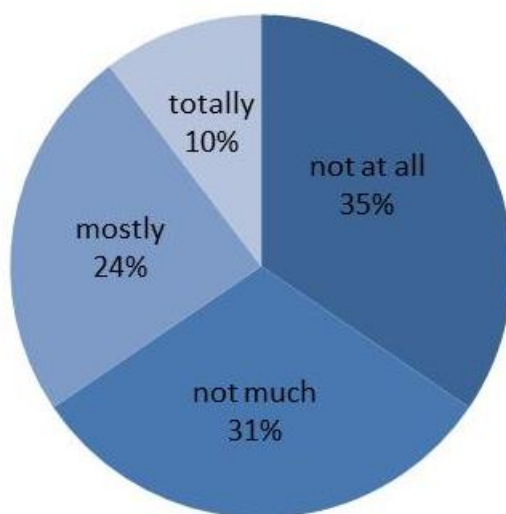


Figure 4: Contribution to Decision Making Regarding the Fishery

Collaborative decision making does not focus on any single individual/group. Stakeholders, despite their varying agendas, actively and purposefully choose a course of action that is best for the collective. Contributions are sought and alternatives assessed. This is a challenging approach but in fishery management has been shown in other global locations to be effective (e.g. India). The majority of respondents said there was dissemination of information and meetings were held, however, it was also repeatedly stated that decision making was not considered a collaborative process.

Although, it was generally expressed that there was little faith that opinions would be heard, the majority still tried to attend meetings a few times per year (39%) and 22% attended many meetings. However, 17% said they ‘Never’ attended such meetings. Meetings that were attended were hosted by QSIA, MBSIA, Queensland Fisheries, and DEEDI.

The results show there are some links between the various stakeholder groups. Despite being a small group, 11% of respondents believed the information they received was useful and they used it either ‘Occasionally’ or ‘Often’. Further, 6% stated they found the relationships formed with the others and the ideas they were exposed to, were useful in their day to day fishing-related business. It should be noted that most respondents chose not to answer this question.

Respondents stated that governments are only thought to act proactively ‘Sometimes’ (24%), ‘Occasionally’ (38%) and ‘Never’ (38%) (Figure 5). Industry was perceived to be more proactive with 11% believing they did so ‘Always’ while 16% responded ‘Never’.

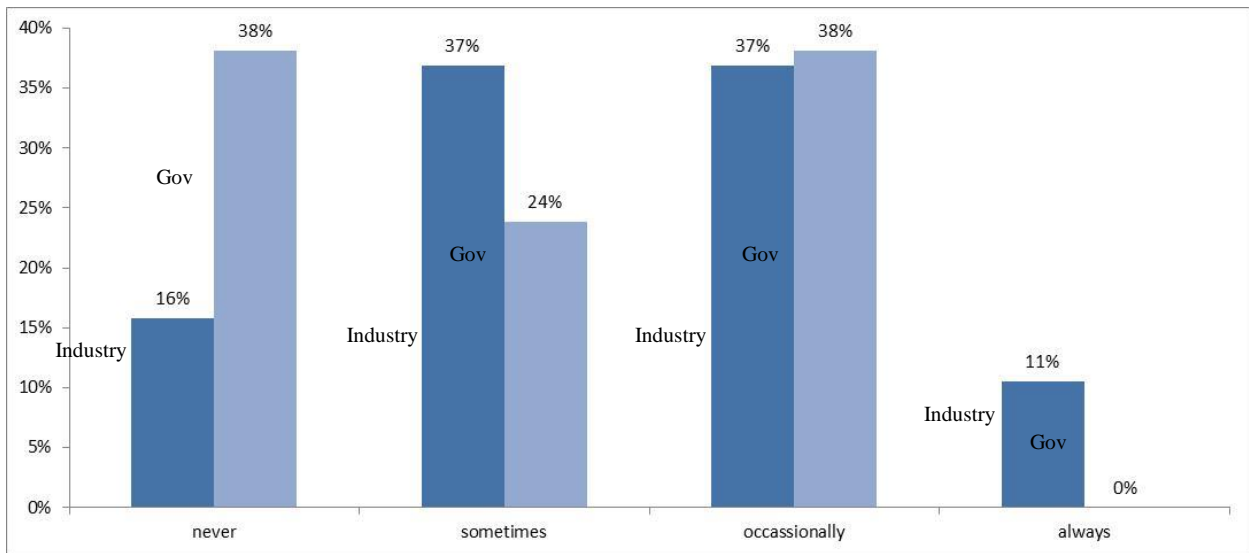


Figure 5: Proactivity

As with the wider ECTF, some Moreton Bay fishery respondents said they want to be able to just “*get on with business*”. Years of accumulated skill and knowledge is embedded in individuals within the fishery. However, it is not actively or purposefully utilised to build and access social capital. Results suggest most stakeholders would be more likely to act independently than as a group. Respondents expressed limited trust or confidence within and between stakeholder groups, particularly with government. There are connections within (bonding) and between groups (bridging) and vertically (linking) but these also tend to be for convenience. Convenience-only links tend to be created to satisfy a specific purpose then the link is not maintained (Figure 6).

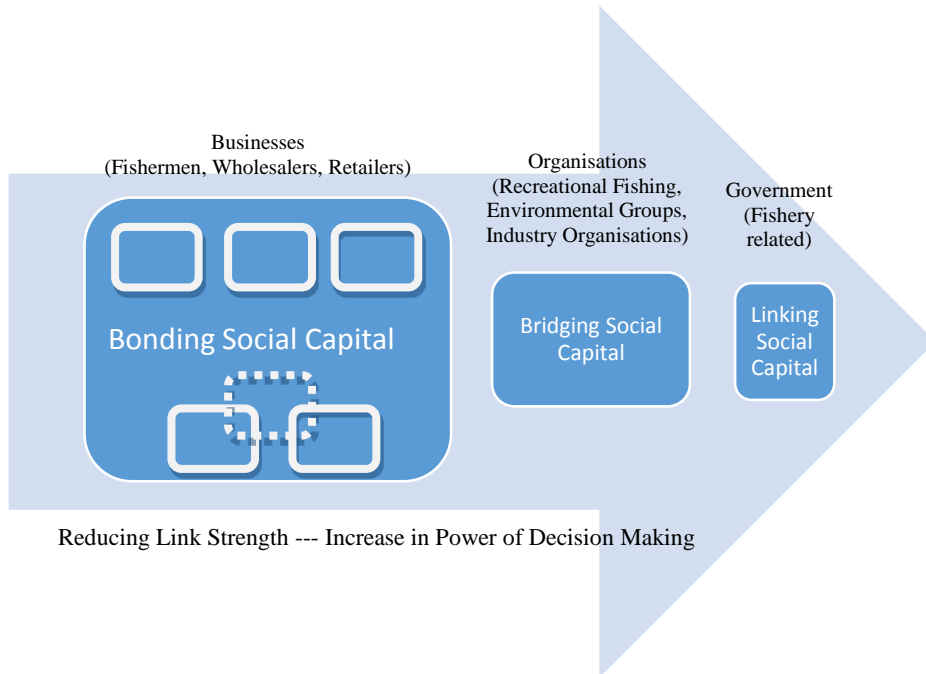


Figure 6: The relationship between stakeholders and the three types of social capital

Leadership skills are necessary in order to add value to the community, but they are not sufficient to do the job. According to Putnam, "bridging social capital" is also required. Bridging social capital takes an extended network, and a certain savvy to use it. It takes a broader network than what a fire chief, mayor or governor, operating exclusively

within his or her silo, would use. Bridging social capital results in a network crossing functional, departmental and jurisdictional lines and leaders using their networking skills to build trust (Rezac, 2005).

RQ2: What is the structure of the Moreton Bay Fishery network?

The effectiveness with which groups and networks fulfil their roles depends on many aspects of these groups, reflecting their structure, membership and the way they function. The fishing industry involves businesses and organisations that are affected by decisions made about the fishery. Network theory is about people making connections (Mandell, 1999) and emphasises that groups and organisations are embedded in a social context of relationships with history that influences actions, responses and decisions (Granovetter, 2005). However, it should be noted that a network study is only a snapshot that illustrates and describes the interactions at a specific point in time (Madhavan, Koka, & Prescott, 1998). This is a whole of network analysis where the fishery network is viewed as a single functioning unit. The focus here is not on ego-nets (those of the individual) but of the various stakeholder groups. There would be others with whom stakeholders would connect such as suppliers of goods and services. This network focuses on the key stakeholders involved in decision making as identified by respondents.

Looking at links (ties) between stakeholder groups provide insights into how important these relationships are with regard to information transfer and exchange. Scores varied from slightly important to very unimportant. Those who said they connected with Industry Organisations also stated the information they received was very important. Comments reveal that the information received from Government was important but the exchange of information was inconsistent, stating they provided information to Government but did not feel they were necessarily listened to or that the information provided was used to aid effective decision making.

To investigate the fishery network, density and centrality measures will be analysed. Density is a characteristic of the whole network. The more dense the links between the stakeholder groups the more likely there will be agreement on what are legitimate or acceptable actions and more efficient the communication. Cohesive or densely embedded networks can be advantageous as they are closed, allowing for consolidation of thinking and action (Walker, Kogut & Shan, 1997). However, highly dense networks are less resilient and less able to search out new information, ideas, knowledge and resources (Granovetter, 2005). A density score of 1 reflects a very dense network while a score of 0, is a sparse network. The ECTF network had a density score of 0.102, indicating a looser, less cohesive network. Less dense or cohesive networks can be useful therefore for achieving innovation.

Centrality refers to the position within the network that an individual organisation has. The more central the stakeholder, the greater the potential prominence or power (Brass & Burkhardt, 1993; Rowley, 1997) it will have in the network's co-ordination functions. In turn, centrality can give organisations access to more information.

The exchange of information and knowledge: When asked about decision making, respondents did indicate information was disseminated pre-and-post decisions being made. Respondents were asked to state recent decisions that were made about the fishery. The majority provided x and x as decisions.

5. Discussion

The following includes both the larger ECTF and the Moreton Bay fishery as the synergies between the results make the discussion pertinent to both. The ECTF is fragmented by geography, fishing, boat and/or license type, site specific issues and closures and available resources. This has created sub-fisheries in various locations such as Southport, Moreton Bay, Mooloolaba, Hervey Bay, Bundaberg, Gladstone, Innisfail, Cairns, and Townsville. Moreton Bay is an example of a sub-set of the wider ECTF. Interestingly, it also features fragmentation (Doboy Creek, Manly, Sandgate, Scarborough, and Bribie Island) for some of the reasons mentioned. Instead of being able to benefit from the multiplier effect of access to resources, support, and ideas to generate innovation for a competitive, resilient industry, the fishery is segmented into smaller and smaller groups. These sub-grouping are further sub-dividing, further reducing the possibilities for the individual, the fishery and the wider industry. This insulation provides protective silos effectively confining people to their functional areas of responsibility.

There is general commitment amongst scholars that social capital requires advanced and sustained investment by network members to generate and maintain any useful asset. However, an individualistic approach creates silos. Silo syndrome is the product of a disengaged society resulting from stakeholders including government agencies, not actively seeking to participate in meaningful networking or co-operation.

A lot of discussion has occurred around the value and importance of working together. Keast and Mandell (2011) assembled a description of these relationships referred to as the 3C's: co-operation, co-ordination and collaboration. Ideally, the three relationships or network types would cycle individually depending on the circumstances and need, but also support each other, to progress the fishery towards a potentially more sustainable future over time.

Applying this to the ECTF and the Moreton Bay fishery, it would appear the fishery utilises relationships involving co-operation. Co-operation features loose relationships, autonomous goals and information sharing, all of which are evident in the fishery's networks. Co-operation is an important process and has resulted in the achieving of some positive outcomes within and between stakeholder groups. However, frequently the fishery utilises repeated, independent cycles of co-operation that only occasionally, and in an unsustainable manner, progress to the achievement of co-ordination or collaboration relationship networks. In some instances, cycles of co-operation are established but once the purpose for cooperating is achieved, stakeholders lose interest. Excessive input is required or frustration levels become too high, resulting in individuals disconnecting from the relationship so it is either too fragmented to be effective or is completely abandoned.

As the results show, there are times when stakeholders effectively come together, instances where individuals connect for specific outcomes, and situations when individuals or groups 'step up', investing significant time and effort into networking activities before having to abandon them after a few months/years. Stakeholders who had taken leadership roles talked about being "burned out", "frustrated" and "overwhelmed" at having to deal with the logistics of getting stakeholder group members to work together consistently and with purpose. An attitude of free-riding, complacency and individual agendas make achieving strategic goals and objectives extremely challenging.

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10.14. Appendix 14 - Moreton Bay Facebook Page Update 1

Project Title: "Identification of the core leadership group and network structure of Moreton Bay Trawl to develop implement and evaluate core strategic opportunities".

Market Opportunity 2

In order to assess the Moreton Bay fishery network, a market opportunity was undertaken. This opportunity involved the development of the Moreton Bay Prawns Facebook page. After two workshops, fishery members opened and have been managing the Moreton Bay Prawns Facebook page. These are the preliminary results from the Facebook page.



Data for Moreton Bay Prawns Facebook Page

With more than 11 million Australian users Facebook is a cost effective platform for engaging with audiences. The data presented in this report was taken from the information available on the Moreton Bay Prawns Facebook page (MBP) insights.

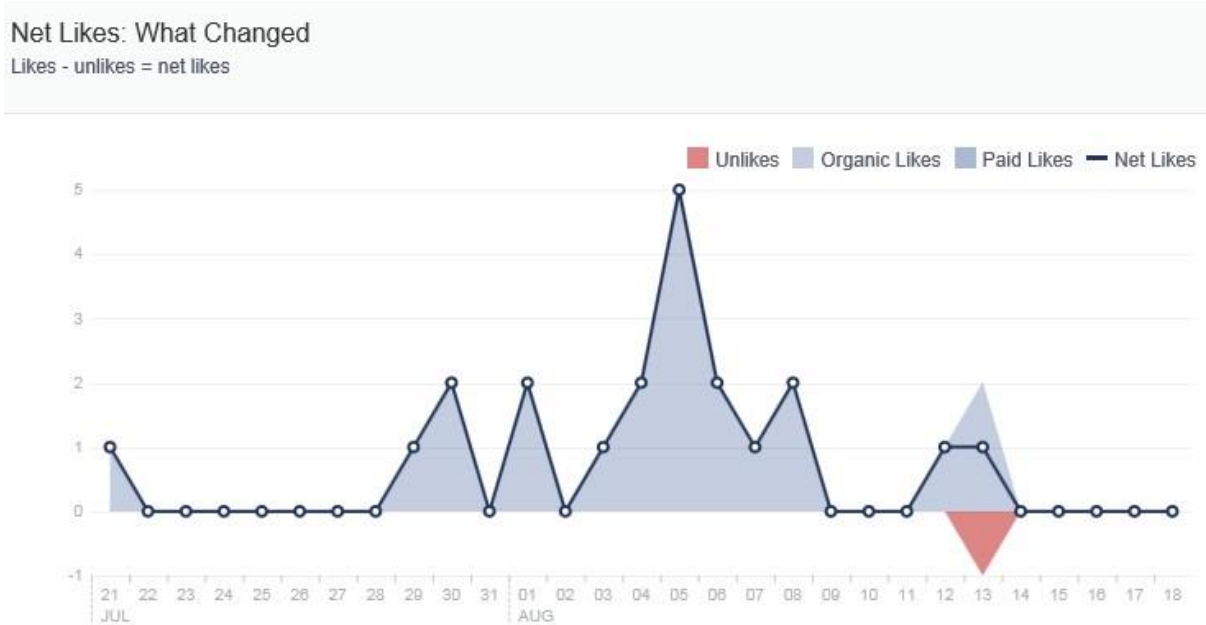
The Moreton Bay Facebook page was started on May 22nd, 2013. Data was collected between the start date and the 18th August, 2013.

Overall, an analysis of the high levels of engagement of recent page posts suggests the information posted was attractive to those inside the fishery/industry. The initial aim of the MBP was to engage with fishery members. Results suggest this has been achieved

Weekly information can be taken from insights. For the week 12/08/2013 - 18/08/2013 reveals the page has 78 'LIKES'. This has been slowly increasing each week since the page was started. This is a broad group with some fishery and non-fishery-related individuals.

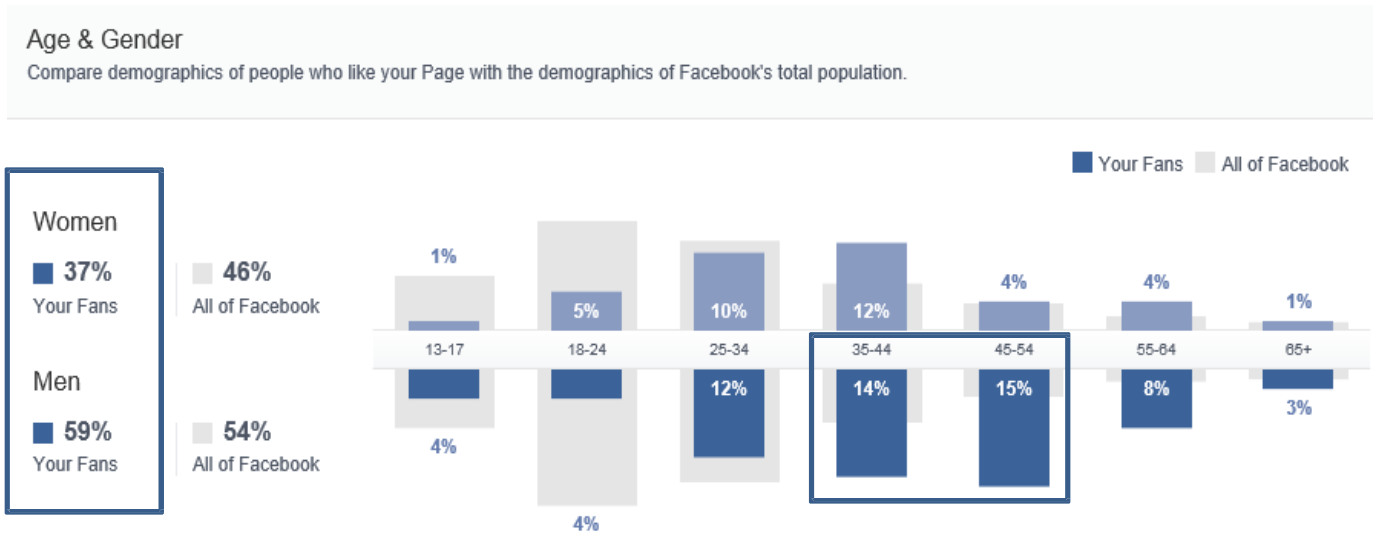


Organic promotion refers to the News Feed stories automatically generated from the actions taken by people on the MBF Page or Page posts. For example, when someone likes something you post to your Page, their friends may see a story about in their News Feeds. Organic 'LIKES' were the most common type of 'LIKES' with a spike around the 5th August.



Assessing the demographics of those liking the page can determine the audience that is being engaged.

The majority of those who 'LIKE' the MBP page are male (59%) this is higher than the average percentage of all males on Facebook (54%). Twenty-nine per cent of fans (those who 'LIKE' the page), were aged between 35-54 years. This correlates with the results of studies that show there are more males working in the east coast trawl fishery with the average age at 53 years of age.



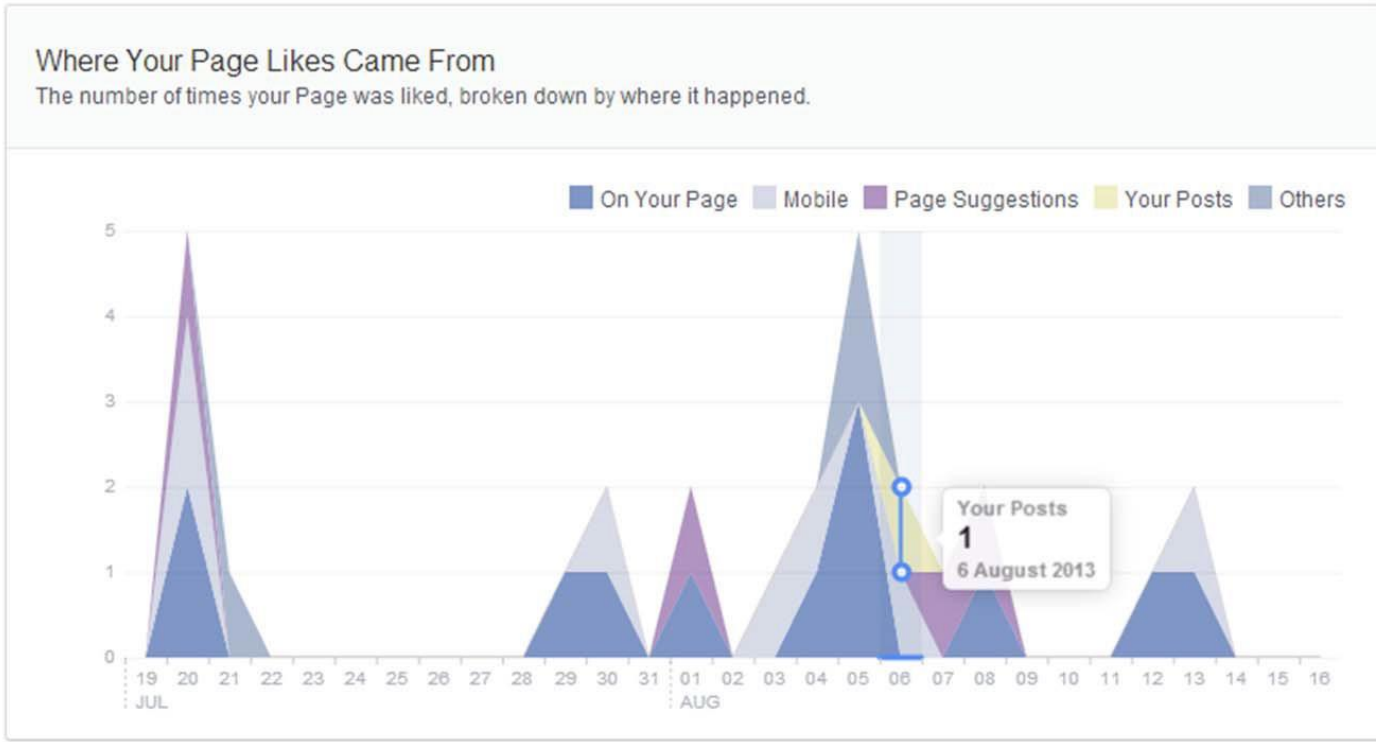
*The % for gender does not add up to 100% as some of the activity has been provided by organisations/business and thus will not have a gender; some users may not have provided this information.

Fans are predominantly from Australia with one from Taiwan. Within Australia fans came from Queensland, New South Wales, Victoria and Tasmania. The majority of fans are from the city of Brisbane, Queensland.

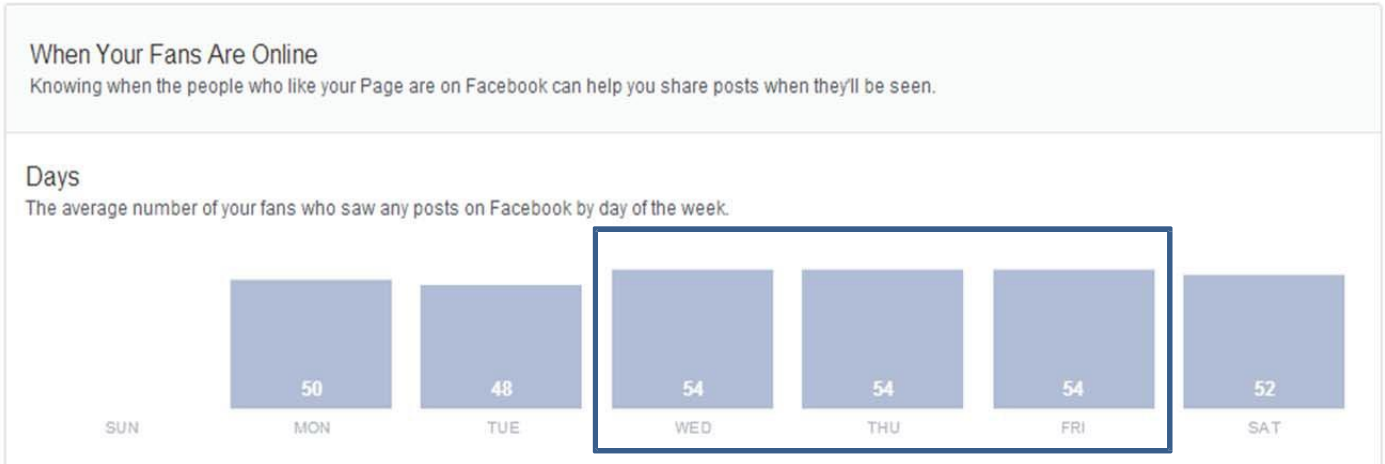
City	Number of Fans
Brisbane, QLD, Australia	41
Sydney, NSW, Australia	4
Mooloolaba, QLD, Australia	2
Caloundra, QLD, Australia	2
Gold Coast, QLD, Australia	2
Cairns, QLD, Australia	1
Hamilton, QLD, Australia	1
Noosa Heads, QLD, Austr...	1
Seaford, VIC, Australia	1
Penrith, NSW, Australia	1

Country	Number of Fans
Australia	77
Taiwan	1

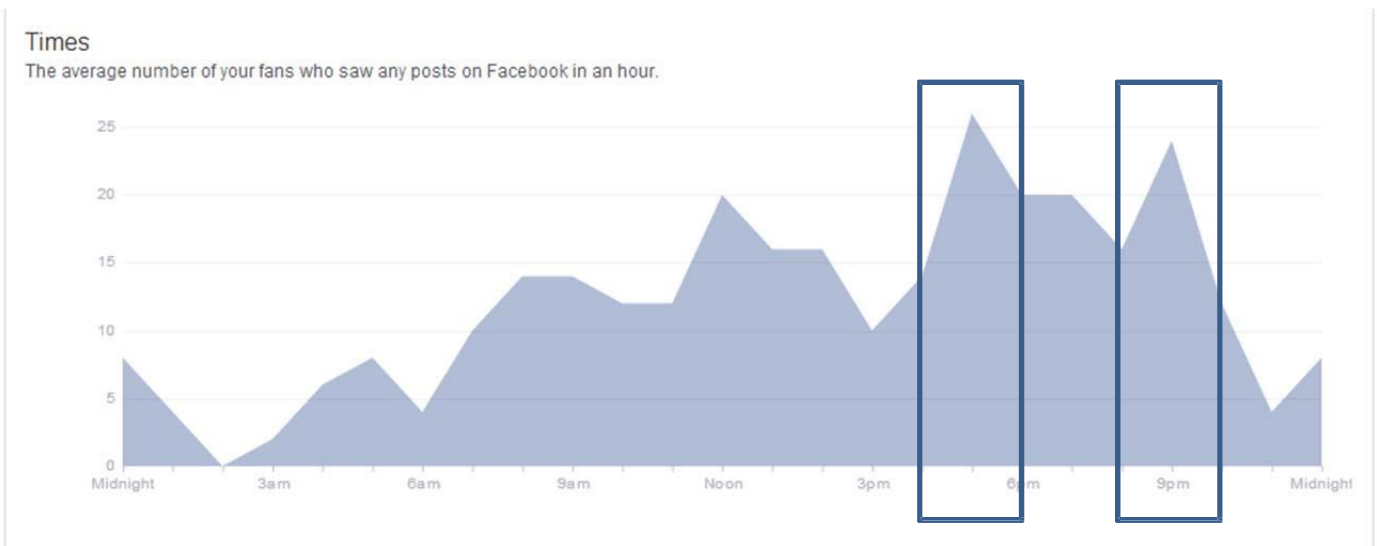
Analysis of how fans accessed the MBP page shows most used their PCs or mobile devices, or as a result of a page suggestion from a friend. Interestingly, only one 'LIKE' resulted from a post on the MBP page.



The following results show when fans (those that 'LIKE' your page) are online. This helps determine the best days/times to post content on the page. Whilst there is very little difference, if administrators were only posting once or a few times per week, results suggest the best days to post are Wednesday, Thursday and/or Friday.



If posting is undertaken once a day, 5pm or 9pm are the times the audience was engaging with the page. Therefore it is suggested that information should be posted at 4pm and 8pm in order to have the content there when the audience arrives on the page. If posting twice a day, a mid-morning post may be viewed by the lunch time traffic. These times are also fairly consistent with regular web traffic statistics.



The key metrics presented and discussed are *Reach* and *Engagement*. Reach tells you how many people have potentially seen your content; engagement is the number of people who have interacted with your content.

Reach

Reach refers to the number of unique (individual) people who have seen any content associated with your Page (including any Ads or Sponsored Stories pointing to the Page). The post counts as having reached someone when it is loaded and shown in the News Feed.

Reach can be split into *Organic*, *Paid* and *Viral*.


- *Organic reach* is the number of unique people who saw MBP posts in News Feed, ticker or on the MBP Page.
 - Organic reach highlights those people who like a page stumble upon the post organically, like by scrolling through their News Feed or visiting a page. The organic reach metrics can help identify ways to improve the content's organic visibility. Organic reach includes fans and non-fans (viral).
- *Viral reach* refers to the number of unique people who saw a post from a story published by a friend. These stories can include liking, commenting or sharing the MBP posts, answering a question or responding to an event.
 - Viral reach is an extension of organic reach. This occurs when you commented on a post, then one of the MBP 'LIKES' sees a post about a comment and then they click on the MBP page.
 - It is viral reach, as it is circulated as a result of the original comment.
- *Paid reach* - the number of unique people who saw a post through a paid Facebook advertisement.

Engagement

Engagement refers to the number of people who clicked anywhere on a MBP post including includes liking, commenting and sharing; video views or clicks on links and photos. Engagement also includes people who have clicked on a commenter's name, liked a comment, clicked on the MBP Page name.

Engagement Rate is a combination of reach and engagement which highlights the number of people who saw MBP posts, and the percentage who then engaged with it in some way. It is the percentage of people who have liked, commented, clicked or shared MBP posts after having seen them. This is useful for benchmarking the quality of the posts. The 'you have to be quick' post was the most popular MBP post. This post has had the highest organic reach and engagement. Importantly, this post also had the highest engagement percentage, with 23% of people engaging with the post in some way (liking, clicking, commenting or sharing).

Moreton Bay Prawns
 You have to be quick! Ray, owner/skipper of FV Moonshine at Cabbage Tree Creek, was sold out by 9.45am this morning. That's because many people know that he's in from fishing every morning at 8.00am to sell his fresh catch. This morning he had a reasonable haul of Bananas and a few Bays. He plans to work all next week, starting from Sunday night.



about a month ago

Like Comment Share 14 Likes 1 Share

317 people saw this post Boost Post

317 People Reached

33 Likes, Comments & Shares

FROM YOUR PAGE AND POSTS
 14 Likes 0 Comments 1 Shares

FROM SHARES OF THIS POST
 13 Likes 3 Comments 2 Shares

TOTAL
 27 Likes 3 Comments 3 Shares









95 Post Clicks
 43 Photo views 20 Link clicks 32 Other Clicks

NEGATIVE FEEDBACK
 0 Hide Post 0 Hide All Posts
 0 Report as Spam 0 Unlike Page

The following results present the MBP page posts with the highest activity and revealed a good reach and an excellent engagement rate has been achieved. The top eight posts all include text and a photo. Facebook is a personal medium. Using photos can assist to create an emotional connection with fishers, the fishery (environment) and prawns.

All Posts Published
 22 May 2013 to 19 August 2013


Reach: Fans/Non-Fans Engagement Rate


Published	Post	Type	Targeting	Reach	Engagement
06/07/2013 00:09	 You have to be quick! Ray, owner/skipper of FV Moonshine at Cabbage Tree Creek, was sold out by 9.45am this morning. That's because man	Public	Public	317	23%
22/07/2013 11:51	 Huge congratulations to the Team at Regional Flavours Moreton Bay S eafood stall on the weekend. The prawns and fish were so delicious ev	Public	Public	119	21%
05/07/2013 23:52	 Wayne and Matt on FV Remark from Scarborough specialise on catchi ng Tigers. Last night they snooped around a few spots and caught a g	Public	Public	151	17%
13/07/2013 16:07	 Get to know your locals at Regional Flavours 2013; on all next weekend at South Bank. Moreton Bay Fresh (at stall 37) will be featuring Popcorn	Public	Public	180	14%
13/07/2013 14:54	 These are the local prawns produced during the year from Moreton bay . The trawler operators who unload Moreton Bay Fresh prawns are pro	Public	Public	88	14%
27/06/2013 14:17	 Remember tossing a line off the jetty, having fish and chips by the bay on a winters day under the Moreton Bay Figs? Mmmm... the fresh, swe	Public	Public	61	21%
28/06/2013 19:09	 Meanwhile White and the girls at Florence St Seafood, Wynnum, have scored a load of green and cooked Banana prawns for the weekend fro	Public	Public	37	19%
05/07/2013 23:42	 Fairly quite this morning at Scarborough trawler berths. Only a few boat s worked last night to scoop a few good prawns from their favourite run	Public	Public	52	17%

The 'MBP added a video post' did not make the list above as the engagement rate was lower however the video achieved the second highest reach (269 people saw this post). Video content is an effective way to engage the audience. This video was watched 53 times. It is these views that would have created the high reach as friends of fans were able to see their friends had viewed the video.

The lower relative engagement rate may be explained by the extra effort required to watch a video as opposed to simply clicking on a photo.

Post Details

 **Moreton Bay Prawns** added a video from **18 July 2013** to their Timeline.
Our popcorn prawns are made from super sweet Bay prawns. Check out here how Paul on the Evelyn B from Scarborough professionally produces a good catch of Bays. And see Jim on the Rolinda unload a very large haul at Cabbage Tree Creek during the peak of the season to Whitie, owner of Florence Street Seafood in Wynnum.



Jul 18, 2013 12:40am
01:21

about a month ago

Like Comment Share 9 Likes

269 people saw this post [Boost Post](#)

269 People Reached

19 Likes, Comments & Shares

FROM YOUR PAGE AND POSTS		
9	0	0
Likes	Comments	Shares

FROM SHARES OF THIS POST		
6	1	3
Likes	Comments	Shares

TOTAL		
15	1	3
Likes	Comments	Shares

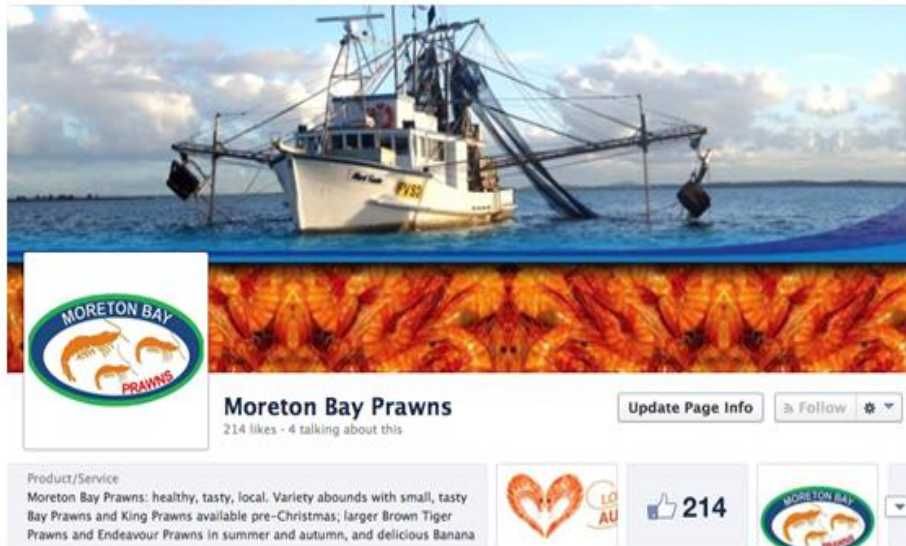
54 Post Clicks

53	0	1
Video plays	Link clicks	Other Clicks

NEGATIVE FEEDBACK

0 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

10.15. Appendix 15 – Results from the Moreton Bay Prawns Facebook Page ‘Love Australian Prawns’ Campaign Posts



The Moreton Bay Prawns (MBP) Facebook page has featured three (3) ‘Love Australian Prawns’ related posts:

- 1. ‘The Love Australian Prawns campaign’ link + photo - Thursday November 7th 2013**
- 2. ‘What is your favourite way to eat Aussie prawns’ status - Friday December 27th 2013**
- 3. ‘Love Australian Prawns for Valentine’s Day’ status + photo - Monday 10th February 2014.**

1. The ‘Love Australian Prawns campaign’ post was shared from the Australian Made Campaign’s Facebook page. The MBP post, a link + picture, was seen by 102 people of which 11 were LIKES (an engagement rate of 10.8% of the total reach).

Post Details

You might like Moreton Bay Prawns. Hide

Moreton Bay Prawns
 What is your favourite way to eat Aussie prawns?
 about 2 months ago

Like Comment Share 1 Like 7 Comments

137 people saw this post Boost Post

137 People Reached

8 Likes, Comments & Shares

FROM YOUR PAGE AND POSTS		
1 Likes	7 Comments	0 Shares

FROM LIKES, COMMENTS & SHARES		
0 Likes	0 Comments	0 Shares

TOTAL

1 Likes	7 Comments	0 Shares
---------	------------	----------

11 Post Clicks

0 Photo Views	0 Link Clicks	11 Other Clicks
---------------	---------------	-----------------

NEGATIVE FEEDBACK

0 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

2. The 'What is your favourite way to eat Aussie prawns' status reached 137 people; 119 (87%) of the total reach were fans, whilst the post reached 18 non-fans (13%). Of these 18 who engaged with the post: 11 were post clicks while 1 LIKE received 7 comments.

Post Details

Moreton Bay Prawns
 Kings for your princess?
 Love Australian Prawns for Valentines Day.
 Is there anything more romantic than grabbing a kilo of prawns, a fresh bread stick, simple dipping sauce and taking off with that someone special to the park, water or beach? When you look at the Love Australian Prawns logo, it's pretty clear, the prawn is the crustacean of love.



last Monday

Like Comment Share 6 Likes 1 Share

231 people saw this post Boost Post

231 People Reached

16 Likes, Comments & Shares

FROM YOUR PAGE AND POSTS		
6 Likes	0 Comments	1 Shares

FROM LIKES, COMMENTS & SHARES		
7 Likes	0 Comments	2 Shares

TOTAL

13 Likes	0 Comments	3 Shares
----------	------------	----------

18 Post Clicks

18 Photo Views	0 Link Clicks	0 Other Clicks
----------------	---------------	----------------

NEGATIVE FEEDBACK

0 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

3. The 'Love Australian Prawns for Valentine's Day' was a status post featuring a picture. The reach was 231 people. Of these, 34 people (14.7% of the total reached) engaged with the page (13 LIKES, 3 shared and 18 clicked on the post). Of those who saw the post, 80 were page fans (35%) and 151 were non-fans (65%). This suggests the page content is extending to people beyond those directly connected to the page.

The key metrics presented and discussed are *Reach* and *Engagement*. *Reach* is the number of unique (individual) people who have seen any content associated with the Page (counts as having reached someone when it is loaded and shown in the News Feed). *Engagement* is the number of people who have interacted with the posted content - clicked anywhere on a post, liked, commented, shared, viewed video or clicked on links and photos. Engagement also includes people who have clicked on a commenter's name, liked a comment or clicked on the MBP Page name. *Engagement Rate* is a combination of reach and engagement, which highlights the number of people who saw MBP posts and the percentage that then engaged with it in some way. It is the percentage of people who have liked, commented, clicked or shared MBP posts after having seen them. This is useful for benchmarking the quality of posts.

10.16. Appendix 16 – Moreton Bay Facebook Page Update 3

Project Title: “Identification of the core leadership group and network structure of Moreton Bay Trawl to develop implement and evaluate core strategic opportunities”.

Market Opportunity 2- Update 3

As part of this project, the development of the Moreton Bay Prawns Facebook page was undertaken in May 2013. The Moreton Bay Prawns Facebook page has been managed for over 12 months and these are the latest results from the Facebook page.

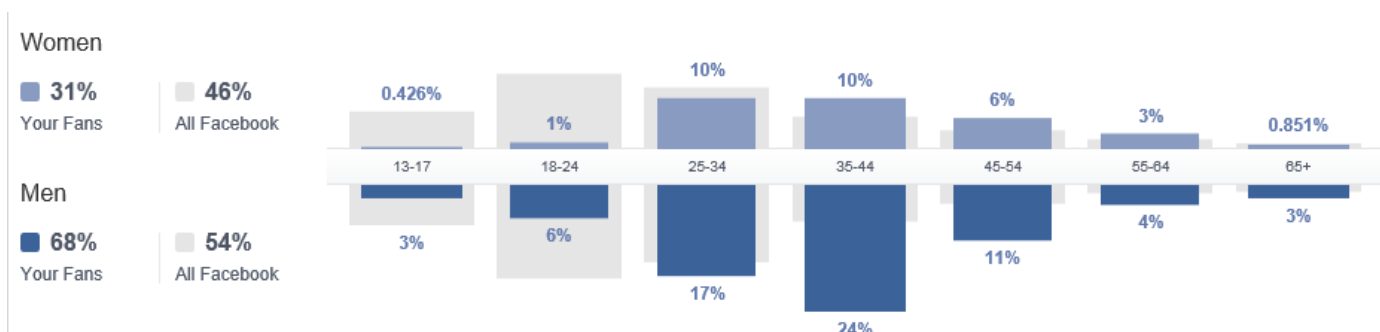


Data for Moreton Bay Prawns Facebook Page

The data presented in this report was taken from the information available on the Moreton Bay Prawns Facebook page (MBP) insights to the 13th July 2014.

The initial aim of the MBP was to engage with fishery members. Overall, an analysis of the high levels of engagement of recent page posts suggests the information posted was attractive to those associated with the fishery/industry. These results suggest this has been achieved. In February 2014 the Page had 203 ‘LIKES’, a 160% increase from the previous update (78 ‘LIKES’ in August 2013). Currently, the Page has 236, predominantly fishery-related, ‘LIKES’.

Assessing the demographics of those liking the page can determine the audience that is being engaged.

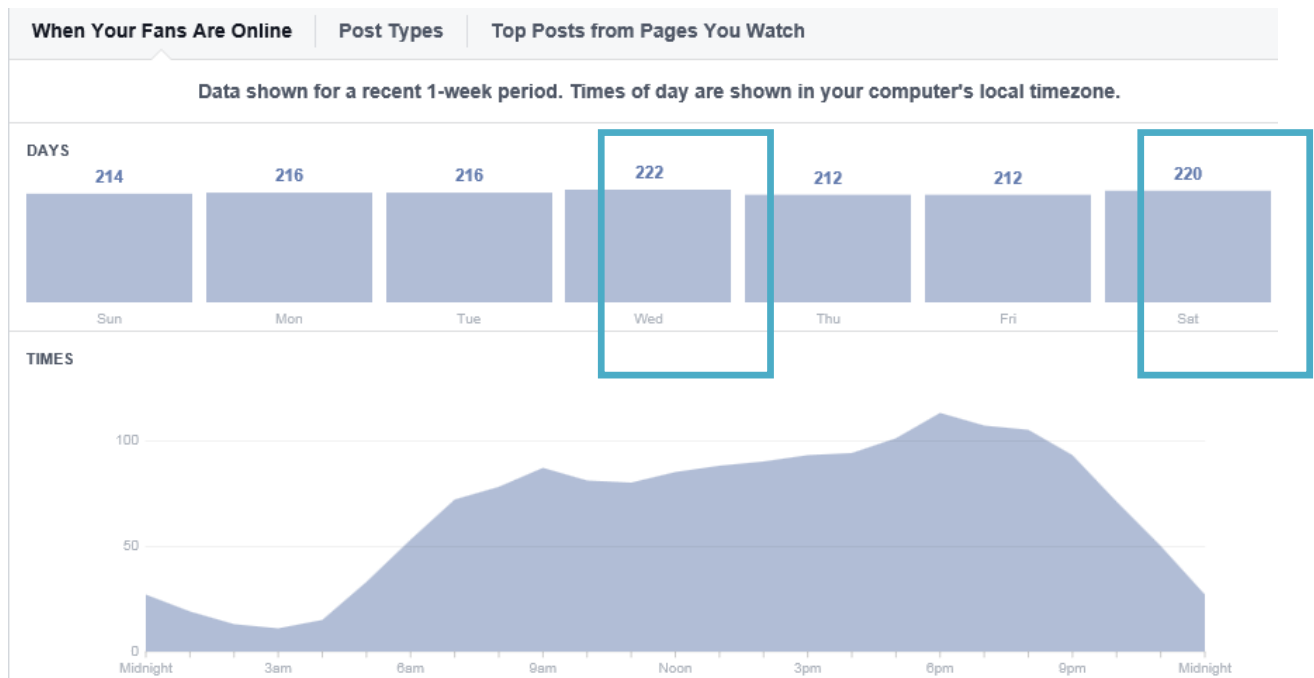


The majority of those who ‘LIKE’ the MBP page are male (68%). The percentage of males on the MBP Page is higher than the average percentage of all males on Facebook (54%). Twenty-four percent of fans (those

who 'LIKE' the page), were aged between 35-54 years. The next highest group of fans belongs to the males aged 25-34 years (17%) and those aged 45-54 years (11%). This correlates with the results of studies that show there are more males working in the east coast trawl fishery with the average age at 53 years of age.

Fans are predominantly Australians (233) from Queensland (183) with the majority of fans are from the city of Brisbane (125).

Knowing when your fans are online can aid in managing Page activity such as best days/times to post content. Whilst there is very little difference between the days that are best for posting, if administrators were only posting once or a few times per week, results suggest the best days to post are Wednesday and/or Saturday. The times vary throughout the day with a peak after 3.30pm and before 9pm. Posting before or after this time may improve visibility.



Assessing the Posts:

The key metrics presented and discussed are *Reach* and *Engagement*. Reach tells you how many people have potentially seen posted content; engagement is the number of people who have interacted with posted content.

Reach refers to the number of unique (individual) people who have seen any content associated with your Page (including any Ads or Sponsored Stories pointing to the Page). The post counts as having reached someone when it is loaded and shown in the News Feed.

Reach can be split into *Organic*, *Paid* and *Viral*.

- *Organic reach* is the number of unique people who saw MBP posts in News Feed or on the MBP Page. Organic reach highlights those people who like a page stumble upon the post organically, like by scrolling through their News Feed or visiting a page. The organic reach metrics can help identify ways to improve

the content's organic visibility. Organic reach includes fans and non-fans (viral). Organic 'LIKES' were the most common type of 'LIKES'

- *Viral reach* refers to the number of unique people who saw a post from a story published by a friend. These stories can include liking, commenting or sharing the MBP posts, answering a question or responding to an event.

Viral reach is an extension of organic reach. This occurs when you commented on a post, then one of the MBP 'LIKES' sees a post about a comment and then they click on the MBP page. It is viral reach, as it is circulated as a result of the original comment.

- *Paid reach* - the number of unique people who saw a post through a paid Facebook advertisement. No paid advertising has been undertaken on the MBP Page.

Engagement refers to the number of people who clicked anywhere on a MBP post including includes liking, commenting and sharing; video views or clicks on links and photos. Engagement also includes people who have clicked on a commenter's name, liked a comment, clicked on the MBP Page name.

Engagement Rate is a combination of reach and engagement, which highlights the number of people who saw MBP posts, and the percentage that then engaged with it in some way. It is the percentage of people who have liked, commented, clicked or shared MBP posts after having seen them. This is useful for benchmarking the quality of the posts.

The majority of posts are reaching over 50 people. In July 2014, the 'Local Prawns!' post was the most popular MBP post with a reach of 1471 people. This post has had the highest organic and viral reach of all posts, ever. This post also had the highest engagement percentage, with 138 people engaging with the post in some way (liking, clicking, commenting or sharing). There was a total an organic reach of 1.5 million. When the people who interacted with this post were reviewed, the vast majority were industry related.

Moreton Bay Prawns
July 4 at 7:00am · 🌐

Local Prawns!

**SHOP LOCAL
EAT LOCAL
SPEND LOCAL
ENJOY LOCAL**

START THE TREND!

SUPPORT THE LOCAL
BUSINESSES WHO SUPPORT
THE AREA WHERE YOU LIVE,
WORK AND PLAY.

1,471 people reached Boost Post ▾

Like · Comment · Share · 📌 7 ↻ 25

1,471 People Reached

138 Likes, Comments & Shares

110 Likes	7 On Post	103 On Shares
3 Comments	0 On Post	3 On Shares
25 Shares	25 On Post	0 On Shares




25 Post Clicks

25 Photo Views	0 Link Clicks	0 Other Clicks 📌
--------------------------	-------------------------	----------------------------

NEGATIVE FEEDBACK

0 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unlike Page

■ Reach: Organic / Paid
 ■ Post Clicks
 ■ Likes, Comments & Shares

Published	Post	Type	Targeting	Reach	Engagement
07/04/2014 7:00 am	 Local Prawns!			1.5K ■	25 ■ 138 ■

This Page was set up to engage fishery stakeholders. To date, this has been achieved.

Communicating with Industry: East Coast Trawl Fishery Project



July
2014

Dr Vikki Schaffer
University of the Sunshine Coast

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Communicating with Industry: East Coast Trawl Fishery Project

INTRODUCTION

Communication is a critical element in personal and professional aspects of human interaction; it encompasses the transfer of a message from a sender through a medium to a receiver. Essentially, the basic elements of communication are used to send a unidirectional (one-way) or multi-directional (two-way or through a network) message for a specific purpose. Aristotle (350 B C) identified the three elements that are still the foundation of communication today: the speaker, the speech and the audience. The seminal work by Lasswell (1948) outlined a linear or transmission model for communication involving the Who ... says what ... in which channel ... to whom ... with what effect. More complex interactive and transactional models have been developed to include meaning, perspectives, relationships, language, attributes and images (Foulgar, 2004). Effective communication requires the use of a medium that is common to both the sender and the recipient; however it is not only about the medium but also about the process of communicating to the recipient/s.

For communication to be effective and productive it must be at least two-way as one-way communication does not allow the sender to know if the communication has been received at all, let alone in the manner in which it was intended (Gupta, 2008). Ineffective communication creates confusion, conflict, stress and tension (Hagar & Haythornthwaite, 2005). Achieving affective communication, that which meets specified outcomes, requires that people work together to ensure that the meaning created is interpreted and received as intended (Fielding, 2006, p.11). Effective communication is the 'transmission of meaning from one person to another, as it was intended by the first person' (Maznevski & DiStefano, 2000, p.199), in other words that the meaning the sender ascribed to the message is fully understood by the recipient (Winbow, 2002). Two-way and multi-directional communication allows participants the opportunity to acknowledge receipt of information, provide feedback and share ideas (Gupta, 2008).

Communicating effectively hinges on 'the degree to which the participants attach similar meanings to the messages exchanged' (Gudykunst, 1998, p.27) therefore it is essential that misunderstandings in the logical semantics of the communication between sender and receivers are minimised. In reality effective communication is hampered by the fact that different people attach different meanings to the same word; the meaning of a message constructed and transmitted by the sender may not be replicated in the understanding of the meaning that is attached to the message by the receivers (Gudykunst, 1998). It is essential to negate or minimise message disruption in order to achieve effective communication. Multi-modal communication utilising verbal, written and visual communication can alleviate this and progress towards achieving the flow-on benefits such as enhanced co-operation and collaboration.

Effective communication contributes obvious benefits that enhance many areas of day to day life including the fostering of collaboration, cooperation and decision making whether in a personal or business situation. Improved communication can result in the building of relationships and increased cooperation amongst all key players (Kaplan & McCay, 2004). Developing effective communication between all community or industry

stakeholders to build social capital in order to build sustainable societies creates mutual benefits. Botan and Hazelton (1989) and Grunig and Grunig (1992) point to the value of on-going stakeholder engagement via processes of dialogic and two-way symmetrical communication to invite stakeholder input into organisational decision-making (Sinclair, 2011).

Communication has been described as one of the seven basic components of collaboration (Liu, Spencer, Du & Chi, 2011). In addition, coordination, another basic component, facilitates communication and interaction between participants (Lui et al., 2011). Successful communication coordination assists in expediting clearer communication that 'crowds out' the noise generated by imperfect information (Bulíř, Čihák & Šmídková, 2013 p.52) to enhance the flow on benefits.

It could be argued that with the advent of Web 2.0, the variety of available tools for communicating has evolved and communication has never been easier but this may not be the case. If the aim is to inform and engage to better understand the needs of members, to facilitate learning and/or elicit participation, collaboration and cooperation, additional aspects need to be considered to ensure the most effective communication methods are employed. What constitutes the best communication method may vary between situations and intended audiences (Berkes, Mahon, McConney, Pollnac & Pomeroy, 2001).

While technology has influenced the way communication can and does happen, no matter which method of communication is used, both the sender and receiver may have different perceptions. To ensure effective communication, the onus is on the sender to recognise and be aware of these differences (Fielding, 2006). Major barriers to effective communication include the perceived credibility and roles of the speaker, selective perception, insensitive use of language and cultural differences (Fielding, 2006).

THE NEED

The East Coast Trawl Fishery (ECTF) consists of small businesses and independent fishers involved in harvesting, processing, marketing and selling some of the world's finest wild caught seafood. It is a complex, dynamic fishery in which communication is challenged by the vast stretch of geographically dispersed, diverse coastline (from the Torres Strait to the Queensland – New South Wales border) featuring equally differing and unique communities; the nature of the industry that requires periods at sea (varying from a few days to a few months); availability of, and skill level with, new technologies; varying boat and license types; species caught; fishery management rules and regulations, closures and challenges; and limited engagement with, and membership of, industry bodies or associations. The fragmented nature of the fishery, both in terms of geography and networks, impacts on the level of communication that is achieved. The ECTF is one of Australia's largest fisheries with a total commercial harvest of 10,000 tonnes and a retail value of around AUD\$110 million a year (Department of Agriculture, Fisheries and Forestry (DAFF), 2013). The number of vessels licensed to trawl in the ECTF has reduced dramatically in the last 30 years. The Department of Primary Industries (DPI) (2011) suggests boat numbers appear to have stabilised at about 330 active otter trawlers and 80 beam trawlers. Estimates suggest this figure would be closer to 200-250 (*pers comm.* Murphy 22 July 2014).

The ECTF involves fishers, agents and/or wholesalers, various industry and government organisations, and retailers all of whom need to communicate effectively to increase cooperation and collaboration between stakeholders. An effective communication network that utilises formal and informal stakeholder groups, will aid the dissemination of information and identification of strategic opportunities for improving financial resource use, and provide a collectively derived, single voice and vision.

Effective communication within the ECTF is challenged as the audience is heterogeneous on so many levels: geographic dispersion, isolation (being out at seas for varying lengths of time), the availability and proficiency of use of technology and so on. Clear and effective communication can be particularly difficult to achieve where participants are isolated. A lack of effective communication “has led to adversarial relations and tensions among various stakeholders and between the government sector and fishing community, in particular”, a serious impediment to effective fishery management (Kaplan & McCay, 2004, p.257).

There is significant depth and scope of experience, knowledge and skill within the ECTF. Effective communication can increase the utilisation and development of this valuable expertise and create the capacity for those involved “to learn their way out of problems” (Day, 2000, p.582). Day (2000) recommends facilitating networked relationships that enhance cooperation and resource exchange to create value with an emphasis on creating collaboration, team orientation, and effective conflict management.

The stakeholders of the ECTF are:

Fishers - Fishers within the ECTF are predominantly male. The average age of respondents in this study was 52.7 years. Those surveyed within the project have worked in activities connected to commercial fishing for an average of 24.7 years, with an average of 22.1 years spent within the ECTF. Furthermore 12 percent of fishers are the third generation of their family to work in the industry and 40 percent are from the second generation. Processing generally starts on board the vessels. In some locations, prawns can be purchased dockside, off the boats.

Suppliers – This group includes wholesalers, retailers, and those whose role has both of these functions. Suppliers are located throughout the fishery and range from store fronts to refrigerated vehicles. These businesses may focus on prawns but many sell a variety of seafood.

Government - The managing agent for the ECTF is Fisheries Queensland, a business group within the Department of Agriculture, Fisheries and Forestry (DAFF). The main legislative mandate for the management of the fishery is the Queensland’s Fisheries Act 1994. The Queensland Government is undertaking a review of trawl fishery management arrangements, the current trawl management arrangements are based on the Fisheries (East Coast Trawl) Management Plan 2010.

Industry Organisations – There are a number of industry organisations and associations that represent as well as provide advice and/or support to various aspects of the fishery. These include the Queensland Seafood Industry Association (QSIA), the Australian Council of Prawn Fisheries (ACPF), the Queensland Seafood Marketing Association (QSMA), and Moreton Bay Seafood Industry Association (MBSIA).

Effective communication within the industry is essential to build trust, to create awareness about industry issues, to inform industry stakeholders of events, opportunities, and outcomes, and to engage industry members to participate in discussion, decision making and activities. Maintaining and building social capital is dependent on the ability of the stakeholders to communicate with each other, with others external to the industry and with members within the fishery network/s (World Bank, 2011).

For example:



To create awareness about:

- upcoming campaigns/events to promote the industry and increase (own) business value.
- strategic opportunities available to the industry.
- opportunities to air opinions and share knowledge.
- changes that affect the operating procedures of various segments of the industry.

To inform industry members:

- of events/activities/promotions that are planned within the industry.
- of opportunities to contribute to decision making processes.
- of the opportunity to provide feedback on the outcomes of events/activities/promotions.
- of the outcomes of events/activities/promotions.

To engage industry members:

- in discussion that has the opportunity to further the industry.
- in decision making to ensure that all sectors of the industry are taken into consideration.
- in activities that promote the industry and educate the consumer.
- in providing feedback on events/activities/promotions to do with the industry.

Stakeholders within the industry harbor both levels of trust (safety and assistance at sea) and distrust simultaneously. Past experience, e.g. the majority of industry members have been involved for many years, plays into the levels of trust. When communicating, in order to build trust, it is important to listen, to state clearly what is required and to answer questions truthfully and fully.

Various research projects have investigated communication media in fishery management. It has been established that one-way communications are most often employed but developing effective, engaged, two-way communication that may result in cooperation and collaboration requires effort and a specific strategy. A pilot Oyster Consortium project (SCRC) explored the use of new technologies for one-way communication channels. Key findings indicated that participants (owners, managers or employees in the oyster industry) preferred email (73%) for receiving information (Ham, Madigan, Mantilla & King, 2009). It was determined that traditional forms of receiving communication (i.e. hard copy newsletters and reports) were less effective while employing a multi-method was a more effective approach (Ham et al., 2009). Two-way communication methods indicate face to face communication was advantageous for engaging individuals to share and receive important information (Briggs, 2013). When communicating with the fishing industry, a variety of approaches have been assessed with varying degrees of success (Table 1). Cost, penetration and outcomes have been discussed highlighting the potential need for a multi-modal approach.

Table 1: Communication methods used within the fishing industry

Communication Method	Comment
Face-to-face Meetings	<ul style="list-style-type: none"> • Face to face meetings allow the full use of all aspects in the communication process (body language, gestures and other non-verbal cues such as intonation) • Clarification and feedback can be sought and provided and the sender knows the message has been received (Briggs, 2013) • Deeper connections can be established • Time consuming and can be costly (Schaffer, 2013)
Print and Post	<ul style="list-style-type: none"> • Labour-intensive compared with newer technologies • Mailing out information still considered highly effective especially amongst individuals who do not have access to digital technology (Briggs, 2013) • High cost
Phone calls to Landlines, Mobiles and Satellites	<ul style="list-style-type: none"> • Considered a personal approach to communication • Allows two-way communication in real time • Allows the full use of all aspects in the communication process (body language, gestures and other non-verbal cues such as intonation) • Clarification and feedback can be sought and provided, and the sender knows the message has been received (Briggs, 2013) • Deeper connections can be established • Time consuming and can be costly
Email	<ul style="list-style-type: none"> • Allows bulk communication • Economical • Fast • Caution is required not to over-estimate their ability to successfully communicate a message, as intended (Parker & Zhi-Wen, 2005)
Text Messages	<ul style="list-style-type: none"> • Half of all Australian adults own a smartphone (Australian Communications and Media Authority, 2012) • Mobile coverage intermittent out at sea (http://www.telstra.com.au/mobile-phones/coverage-networks/our-coverage/).
Fax	<ul style="list-style-type: none"> • Faxing was still widely used by Australian fishers (Briggs, 2013)
Social Media and Web Portals	<ul style="list-style-type: none"> • Utilized more frequently (Briggs, 2013). • Access, availability and competency varies widely

Currently, one of the major issues in communications within the fishery is the inconsistency with which information is delivered (Figure 1).

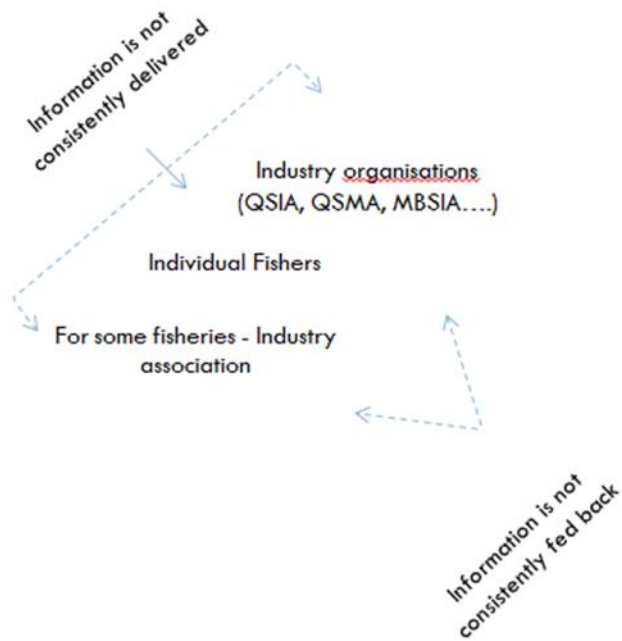


Figure 1: Current communication issue of inconsistent information delivery.

Using Lasswell's (1948) transmission model for communication, a linear approach to communications detailing the senders role, how the message is framed, the channel, the audience and the purpose of the communication can be carefully considered (Figure 2).

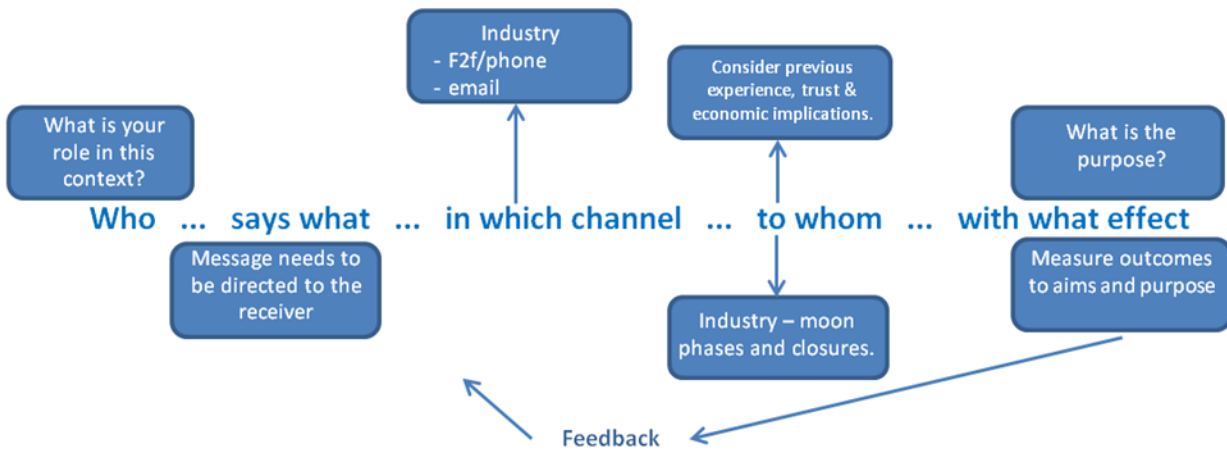


Figure 2: Linear approach to communication using Lasswell's (1948) transmission model for communication.

RESULTS

During the research project assessing the structure of the fishery network, it was determined ineffective communication was an important component inhibiting networking, co-operation and collaboration. To examine communication specifically, relevant results in the surveys (quantitative and qualitative) were extracted and additional observations were recorded to identify the number, type and outcomes of communications related to project activities (e.g. workshops, meetings etc). Fishers were asked to identify their preferred medium of communication. Multiple selections were permitted. Eighty-one fishers indicated their preferred medium of communications were email (58), phone and text (48; 46 respectively) and face to face (27). These were then used to communicate with stakeholders.

Throughout the project, the individual communications undertaken to inform (share general project information), update (project activity updates) or engage (invitations or other calls to action to gain participation in activities) industry participants were recorded. The various communication methods employed within the fishery with varying degrees of success were email, fax, postal mail and phone calls.

A total of 813 communications resulted in 94 responses (4 emails, 90 telephone calls). Of these 813 communications, 412 (243 email; 169 phone) were invitations that resulted in a total of 71 attendees at seven workshops/meeting in three locations (53 unique individuals) (Table 2). It should be noted that these stakeholders also received email and text reminders, and updates from industry organisations, these figures are not reportable. In all cases numerous individual emails were required to gain an outcome.

Table 2: Email communications sent and the resulting outcome (attendance at workshops/meetings)

Stakeholder Group	No. emails sent	Workshops/meetings attendance
Fishers	128	51 (40%)
Government, Industry	42	11 (26%)
Wholesalers	41	7 (17%)
Retailers	32	2 (6%)
Total	243	71 (29%)

Further in the dissemination of information about the national prawn marketing campaign the activities listed resulted in limited responses from Fishers (license holders). Additional activities were required to increase the dissemination of information and improve awareness and engagement (Table 3).

Table 3: Dissemination of information about the national prawn marketing campaign

Purpose of Communication: Awareness and Engagement			
Purpose	Medium	Audience	Outcome
ECTF project (NPMC market opportunity workshops - Moreton Bay, Townsville)	Email (invitation)	Industry organisations (Fishers) License holders	Low to moderate response to communications
	Phone calls some license holders		
	Face to face (workshop)	License holders	Moderate engagement in Moreton Bay Low engagement in Townsville
	Multi-medium approach Face-to-face Phone Email	Industry organisations Industry representatives (e.g. co-op reps) Research groups (FRDC, Universities)	High response to communications - awareness was gained with these audiences.
Email Newsletter		Industry organisations Industry representatives (e.g. co-op reps) License holders	Moderate to low response to communications – moderate to low awareness was gained with these audiences
Launches		Industry organisations*	*Moderate to high response to communications –awareness was gained with these audiences
Email invitations		Industry representatives (e.g. co-op reps)* Government* Research groups (FRDC, Universities)* License holders**	**Moderate to low response to communications – low awareness was gained with these audiences
Ports Visit (1) (August 2013)	Phone Email	Industry organisations License holders	Low response to communications
	Face to face at the ports	License holders	Low engagement with low to moderate response to communications – low awareness was gained with these audiences

Purpose of Communication: Awareness and Engagement			
Purpose	Medium	Audience	Outcome
			Attendance notes: Mackay - 6 people attended, 4 x licence holders (David from Mackay Reef Fish Supplies); Cairns – 4 attendees (including J. Fogarty); Innisfail – 3; T'ville – meeting KC
Withdraw invoices	Postal service (mail)	License holders	Low response to communications Low levels of engagement
Port visits (2) (October 2013)	Phone	Industry organisations representatives	Low response to communications
	Emails	License holders	
	Face to face at the ports	License holders	Moderate to low levels of engagement Moderate response to communications -moderate awareness was gained with these audiences -low engagement was gained with these audiences 8 Oct – Southport, following Southport Co-op AGM; 9 Oct – Scarborough 10 Oct – Mooloolaba; 11 Oct – Tin Can Bay; 12 Oct – Hervey Bay; 13 Oct – Bundaberg; 14 Oct – Gladstone; 15 Oct – Townsville
Sending of invoices to those requesting one	Email	License holders	Low levels of engagement (approx. 25% response)

Results from the project showed that 94 percent of respondents ($n=45$) had heard of the national prawn marketing campaign with as many hearing about it from more than once source (45%, $n=22$). Just under half of the respondents (46%, $n=19$) had shared information about the national prawn strategy with others, most had shared the information with other fishers (79%, $n=15$). Just under 20 percent (19.5%, $n=8$) of respondents had attended meetings about the national prawn strategy.

Table 4: Support data *How did you hear about the NPMC*

Industry Organisation/Association	29	35%
Postal Service	11	13%
SCRC/FRDC	11	13%
Forum/Launch	10	12%
Email	7	9%
Port Visit	5	6%
Other Fisherman	3	4%
Social And Other Media	2	2%
Researcher	2	2%
Not Sure	2	2%
Total	82	100%

(multiple responses possible)

There were some media reports in regional newspapers re: NPMC. One published in Townsville garnered considerable discussion between fishers via email and telephone.

It is not just about the medium used but also the process of communicating for the audience. A QSIA project (E. Perez - Promoting profitability and sustainable seafood presented at the QLD Seafood Climate Change Conference in 2011 – Climate Change and Fisheries Partnership) used an industry body led and a champions led approach to getting the Queensland seafood industry involved in “Strategies that can build the resilience of the GBR to climate change and help fishers adjust to changing conditions are essential for the long-term sustainability of fishing”.

Two results are of relevance: where key messages were delivered by industry peak body (web-based, email and trade magazine) “some degree (human element absent)” was realised. The aspect “Industry peak body led approach was at the core of the message” was found to have “some effect”. In comparison, when industry champions were employed to deliver key messages it was found that “yes, industry seems to be more willing to listen to someone who knows what it means to be a fisher”. Where the required issues (Climate change) were discussed informally between an industry peak body representative and commercial fishers it was revealed that “yes, the approach has continued to work”. Overall, it was found that

- “a bottom-up approach used getting industry to share their stories is more powerful;

- Information technology is not the sole method for delivering messages to fishers;
- It's a people business; fishers want an opportunity to air their opinions and share their knowledge;
- Top-down approaches will not work in a topic area that has polarised the Australian community;
- Industry champions are critical; need a fisher to sell the message from an industry perspective”.

Further, Briggs (2013) found that seafood industry organisation members value trustworthiness, transparency, mutual respect, timeliness and access to decision makers. The acknowledgement of feedback is also important. To assist with this and as an extension of the ECTF project, the Communication Tool was developed.

Assessing communication in isolation does not aid in understanding how to improve communication outcomes. Further evaluation of the results highlighted some factors that were influencing communication within the fishery related to the macro and micro environments, the historic relationships within the fishery and issues with trust/distrust.

Historically, the fishery has experienced great highs and also lows. The independent nature of fishing provides a lifestyle that stakeholder's value. Macro environmental analysis focuses on the environment external to a business/industry including technological, economic, and regulatory forces that cannot be controlled. The micro environment involves the factors within the fishery's immediate area of operations that affect performance and decision-making freedom.

As previously stated, the ECTF is fragmented by geography, fishing boat and/or license type, fuel price increases, a fluctuating Australian dollar, and inconsistencies in demand and supply. Fragmentation reduces not only communication but the ability to take advantage of the benefits associated with economies of scale, resource access, support and ideas to generate innovation for a competitive industry.

The majority of respondents said with fishery management, distribution of information was undertaken and meetings were held, however, it was also repeatedly stated that decision making was not considered a truly collaborative process. Collaborative decision making should not focus on any single individual/group agenda but on decisions that actively and purposefully aim to identify a course of action most suitable to the collective. Past experiences relating to fishery management have influenced levels of trust. This in turn influences the desire to communicate, cooperate and collaborate.

As previously indicated, stakeholders within the industry harbour both levels of trust (e.g. trust they will receive assistance at sea) and distrust (although people do help they also want something in return). Results reveal respondents would prefer to act independently than as a cohesive group. Respondents indicated they interact with others “as little as

possible”, are not members of any industry associations, community groups or organisations, and want to be left alone to get on with the job. Respondents expressed limited trust or confidence with other stakeholder groups, particularly with government.

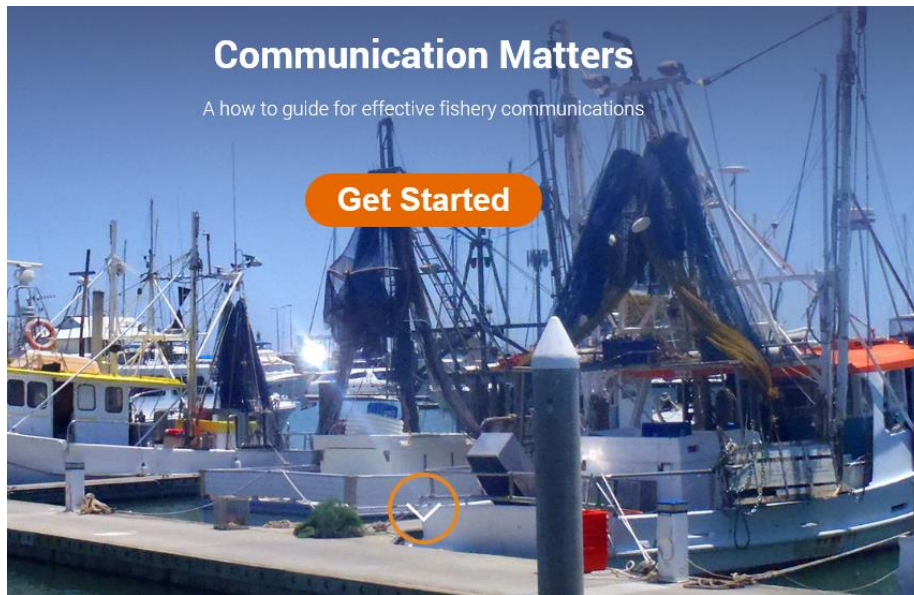
Perceived importance of communications influences stakeholder engagement with regard to information transfer (one-way) and exchange (two-way). Respondents were asked to assess the importance of information they received using a five point scale from very important to very unimportant. Information received from Industry Organisations and Government was considered very important. Comments reveal that the information received from Government was very important however, the exchange of information was inconsistent. It was suggested that information shared with Government “may not necessarily be listened to” or be “used to aid effective decision making”.

EFFECTIVE COMMUNICATION

A Communication Tool was developed not as a website but as a tool to enhance communication with the ECTF. The Communication Tool is viewable on all web enabled devices (e.g. desktop, tablet and mobiles).

The link to the communication tool (currently offline)
<http://eastcoasttrawlfishery.onlinemarketingcollective.com/>

Those seeking to engage with ECTF stakeholders (e.g. Fishers, Suppliers, Industry Organisations and Government), can gain an appreciation of the factors needed to be considered such as timing (periods at sea or closures of fishing grounds, peak trading times, etc.) and challenges including remote locations and the multiple roles undertaken (e.g. volunteers often undertake roles in industry organisations). It is intentionally simple to use with enough but not too much information. Questions are posed to encourage users to think and to choose a provided response.

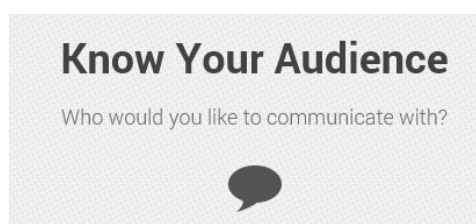


The Communication Tool is intended to assist communication with and between ECTF stakeholders but could have a wider industry benefit. The information provided is based on research project results associated with the ECTF.

Effective communication within the industry is essential to build trust, to create awareness, to inform industry stakeholders, and to engage industry members to take part in discussion, decision making and fishery-related activities.

Key requirements for effective communication:

Know your audience.



Know your message

Know the preferred medium

Monitor outcomes

Adjust and respond

Important considerations for effective communication:

- Know the audience. The audiences and their support networks are quite different. Fishers from the various ports are different.

- Those represented by an association may or may not be better informed and more positive.
- Where there is no association or the membership to the association is not high enough to garner influence, the situation of generating awareness and eliciting engagement is more difficult. These are for the most part, independent fishers who have been “going it alone” and “want to be left alone to get on with the job”. History and experience play a part in decision making which is very relevant with Fishers. For the most part, collaboration has not been the approach to doing business.
- Connect with the audience. Provide information. Be clear and concise about the information you are passing on or want to collect.

Knowing when and how to communicate with fishery stakeholders is influenced by a number of factors such as the peak harvesting periods for the various prawn species and the timing of fishery closures. A multi-medium approach is the most effective way to communicate with fishery stakeholders e.g. the sending of an email followed up with a telephone call.



Each stakeholder group has preferential forms of contact method.

Fishers – It is essential to use a mix of media methods to achieve effective communication with fishers. The preferred forms of communication are face-to-face, telephone, email and text (Table 5). There are a number of considerations that must be taken into account when communicating with fishers, the most important relating to time. Timing is an important issue as there are specific periods when fishing grounds are closed and whereas some fishers may remain onshore, others travel to different fishing grounds and fish for different species. Fishing requires periods at sea that vary from a few days to a few months and during this time fishers may be located in remote areas, out of telephone and internet range. Fishers may come into port for the period between the full moon and the last quarter or for a couple of days either side of the full moon, this provides an opportunity for communication while fishers are within communication reception range. Although direct personal contact is preferred, arranging times to meet is challenged by the issues mentioned.

Suppliers – The preferred form of communication is telephone contact and email (Table 5). Within a related project, it was found that retailers required an average of 3.7

telephone calls to gain feedback. Consideration should be given to the time of day, day of the week, and availability of the key contact person. When communicating with wholesalers and retailers by telephone it is important to avoid peak periods such as lunch time and early evenings. Peak sales periods should be considered e.g. mid-December (pre-Christmas), January (Australia Day) and March/April (Easter). An examination of email communication shows that open and click rates may decrease over time with regard to one-way awareness and informing communication. To avoid recipient fatigue consideration should be given to the volume of the content of the message.

Government – The preferred forms of communication are telephone, email, face-to-face and postal mail (Table 5). It is best to contact those that work within government between 9am and 5pm however many are not purely office based and may be working in a more remote area.

Industry Organisation Representatives – The preferred forms of communication are telephone, email, face-to-face and text (Table 5). The best time to contact those working within industry organisations is between 9am and 5pm. Some individuals who work for industry organisations also have other roles within the industry and as such are not always office based, they may also be working in remote locations.

Table 5: Preferred Communication Methods

Role	Preferred Communication Methods
Fishers	Face-to-face, Telephone, Email and Text
Suppliers	Telephone and Email
Government	Telephone, Email, Face-to-face, Postal mail
Industry Organisation Representatives	Telephone, Email, Face-to-face, Text

In communication there are two basic considerations:

Listening - is the ability to effectively interpret and respond. Listening requires the applying of what we know, to what we hear, and our understanding of the meaning of what is being said. Listening is not a passive but an active process. Mendelsohn (1998) suggests that in the communication process listening takes up 40-50% of the total time spent communicating (speaking 25-30%; reading 11-16%; writing 9%).

Responding – When you are expressing an opinion, making an observation, or asking a question the basic rule is to keep messages simple, clear and positive. Whether sending an email, calling or meeting face to face, use short statements or questions, be specific, use common terminology and avoid strong emotional statements. To respond effectively, be sure to allow enough time to compose what you want to address, and time to present, listen, understand and respond.

COMMUNICATION METHODS



Email is a valuable Communication Tool due to its widespread use. Miscommunication can easily occur if people have different expectations about the message being sent and received. E-mail is a useful communication medium to communicate with people who are difficult to contact via telephone. Although sending an e-mail is instantaneous, there should not be an expectation that a reply will also be instantaneous. Consider your audience, as if emailing a government department or organisation that keeps office hours a response is more likely to be sent during these times. Unless otherwise specified, it may take a few days to get a response. Email communications are also a useful medium for sharing e.g. invitations, documents, spreadsheet and videos, and for communicating with a large number of people quickly.

Three steps when writing an email:

1. Think - about the message you want to share.
2. Reflect - on the words chosen, context, style and the tone of your message. Is the type easy to read? It is appropriate to use bold face to highlight key dates or locations but it is not appropriate to use capital letters (this is perceived as shouting).
3. Strive – to be clear and concise.

Text messaging is a very easy medium for short communications such as alerts, meeting reminders, invitations. One important detail of text messaging is language. Due to the limited number of characters in one message, users use various adaptations and abbreviations. These are not useful if the receiver does not know what the abbreviations mean. Prepare the message and work with the words chosen to ensure a clear message.

Three steps when writing a text message:

1. Think - about the message you want to share.
2. Reflect - on the words chosen, context, style and the tone of your message. Is the type easy to read? It is not appropriate to use capital letters (this is perceived as shouting).
3. Strive – to be clear and concise.

Telephone is a personal form of communication. Before making a call – prepare. Consider what you want to communicate about, who you want to communicate with and why. Make a list of the topics/content you want to address. Consider your introduction. How will you introduce yourself? To develop the conversation, clearly explain what it is you want to share. Cover each topic separately. Allow time for the recipient to respond. Listen to the response. Pause and make sure you understand what has been said, before replying. Once all topics have been addressed, the conversation can be closed. Confirm any agreed actions such as the day/time for a follow up call. Provide a farewell, thanking the person for their time.

Face to face is a personal form of communication. Consider what you want to communicate about, who you want to communicate with and why. Make a list of the topics/content you want to address. To prepare for a meeting, call or email to arrange a time and place. Consider your greeting. How will you introduce yourself? To develop the conversation, clearly explain what it is you want to discuss. Cover each topic separately. Allow time for the recipient to respond. Listen to the response. Pause and make sure you understand what has been said, before replying. Once all topics have been addressed, the conversation can be closed. Confirm any agreed actions such as the day/time for a follow up call. Provide a farewell, thanking the person for their time. Be respectful of time and keep within an agreed meeting time.

RECOMMENDATIONS

Eight people directly or indirectly connected to the ECTF provided feedback on the Communication Tool. Many suggestions were addressed immediately to improve the tool. Other recommendations and suggestions that were not immediately addressed have been listed for future consideration:

- Overall, the Communication Tool was thought to work quite well and contained some useful and interesting information.
- In the About (Fishery) section more information regarding the fishery e.g. history, could be included.
- The inclusion of a link to the contact details for representatives within the various audiences e.g. specific suppliers or government departments. It should be noted that this would require monitoring as these names and details may change over time.
- The current Research page outlines the research directly associated with the Communication Tool. This page could also contain related or relevant research results and reports e.g. current statistics, ECOT Status Reports and the reports mentioned in the Communication Tool report.

The website looks great, fresh and uncluttered.
(Industry feedback, July 2014)

Additional recommendations include:

- The stories of different stakeholders within the fishery could be included to put a face to the fishery and the industry. This could be on the ECTF page with the map. In addition, the history and characteristics of the various ports could be included on the map to further highlight the diversity.
- A tool such as this needs ownership. It is recommended that the ECTF stakeholders be given the tool to further develop and utilise. There are several industry champions who could monitor this tool and a key industry organisation who could also link the tool to their website. It is designed to not require continuous updating.
- The Feedback page, if it were to remain in the tool, will need to have a contact person who is willing to respond. Ideally, this would be an industry organisation or association with the fishery. This section could be useful in gaining feedback from users on ways to improve communication.

*Loved the map and the
information attached to each
prawn, nice touch!*
(Industry feedback, July 2014)

CONCLUSION

The information provided is based on research project results associated with the ECTF (SCRC project 2010/777). Effective communication within the ECTF is challenged by the heterogeneity of the stakeholders, geographic dispersion, isolation (being out at seas for varying lengths of time), and the availability and proficiency of use of technology. Clear and effective communication is needed to ensure the required information is effectively disseminated. By highlighting the audiences, methods, timing and challenges, this Communication Tool aims to assist communication with and between ECTF stakeholders. This tool could also have wider industry benefit.

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10.18. Appendix 18 - List of Publications from this Project

Refereed Conference Papers

Schaffer, V. (2013). Social sustainability: Investigating social capital within a large Australian prawn trawl fishery. *Science in Society Conference*, 21-22 November 2013, Warsaw, Poland.

Schaffer, V. (2013). Exploring small business leadership through a network lens: The case of the East Coast Trawl fishery. Accepted. *SEANZ Conference*, July 2013. Sydney, Australia.

Schaffer, V. (2013). Social capital and seafood: Balancing industry and community linkages. *Balanced/Unbalanced Conference*. May 2013. Noosa, Australia.