COMMERCIAL FISHING IN LOCAL COMMUNITIES – BENEFITS, CHALLENGES AND A WAY FORWARD

M Voyer[1], K Barclay[1], A McIlgorm[2], N Mazur[3]
[1]University of Technology, Sydney, Sydney, NSW
[2]University of Wollongong, Wollongong, NSW
[3]EnVision Environmental Consulting

Abstract

Many of the towns dotted along the NSW coast grew out of fishing communities and still identify with their commercial fishing heritage. While numbers of commercial fishers have declined across the state seafood remains an important feature of the tourism experience of the NSW coast. Yet the commercial fishing industry remains largely 'behind the scenes' in the towns in which they live. When they reach the public eye they are often represented as a 'problem', including through conflict with other users, concerns over practices or techniques and overarching questions around sustainability. Our two year study into the contributions of commercial fishing has so far revealed that in fact there are a raft of 'good news' stories about the role commercial fishing plays in NSW coastal communities, including their active role on the water as environmental stewards and an unrecognised and unofficial arm of the communities' marine rescue capabilities. Our interviews have revealed an often untapped wealth of knowledge and expertise on issues around water quality, estuary management, on water navigation and safety, flood response and mitigation and protection of sensitive habitats and nursery areas. Yet commercial fishers can be an extremely difficult group to engage in formal planning or research activities. This paper will provide some context to the challenges of engaging with commercial fishers through historical and sociological insights into fisheries management and fishing communities from NSW and overseas. It will then go on to provide insights into the lessons learnt from our experiences working with industry on this at times challenging project.

Introduction

Commercial fishing has played a huge role in the historical development of many NSW coastal towns. The industry was an important economic driver of the growth of many of the larger regional centres of NSW, and was the main source of employment in many 'fishing villages' up and down the coast for much of the late 19th and early 20th century (Clarke, 2011, Hoskins, 2013). Commercial fishing has also contributed to the cultural diversity of regional areas as Italians, Croatian and Vietnamese migrants moved from the larger metropolitan areas to explore new fishing opportunities. These new arrivals grew the fishing industry in their new homes and introduced new fishing methods, culinary ideas about seafood consumption and cultural events around seafood and fishing such as the Blessing of the Fleet festivals often held across the state (Clarke, 2011, Puglisi and Puglisi Inglis, 2008). Commercial fishing has also historically played a crucial role in supporting Indigenous communities along the NSW coast, not only as a source of employment and income for Aboriginal fishers but also as a means of supplementing meagre rations provided by the Aboriginal Protection Board in mission or reserve communities (Goodall, 1996, Bennett, 2007, NSW Office of Environment and Heritage, 2012, Schnierer and Egan, 2012). A number of NSW Indigenous communities have built up a strong cultural connection to the tradition of commercial fishing, which has been practised since at least the earliest days of colonisation and likely prior to colonisation through trade and barter of seafood species (Schnierer and

Egan, 2012, NSW Office of Environment and Heritage, 2012). NSW coastal communities therefore have a strong fishing heritage which is largely unrecognised.

The NSW fishing industry, common with many other fisheries, has been in an almost constant state of reform and restructure for close to 150 years. The NSW Fisheries Act was first brought into force in 1865 and established controls over mesh sizes and introduced fishing licences for fishers and boats. Additional acts followed in 1935 (Fisheries and Oyster Farmers Act) and 1979 (Environmental Planning and Assessment Act)(Howard, 2012). While the early stages of the fishing industry did include restrictions on effort, spatial closures and competition with recreational fishing sectors it was largely characterised by a focus on expansion and prospecting for new species (Leadbitter, 2011).The more recent history of commercial fishing in NSW is one of decline. After a 'boom' period in the mid 20th century – characterised by fleet expansion, an over allocation of fishing licences, the operation of two canneries and likely overexploitation of a number of species – the economic significance of the industry has progressively declined (Leadbitter, 2011, Stevens et al., 2012). A new era of fisheries management commenced in the 1980s when the focus shifted away from expansion towards sustainability. These more recent changes included a raft of new regulations and restrictions aimed at downsizing the industry, managing latent effort, controlling effort, minimising bycatch and protecting biodiversity. A series of economic and environmental reforms, including industry restructures, recreational fishing havens and marine parks, have reduced the size of the industry to a quarter of its peak. The number of fishing businesses in the state now number less than a thousand, a significant reduction from previous estimates of over 4000 (Howard, 2012).

The impacts of these progressive changes to the Industry have been significant. Most NSW fishing co-operatives[1] (79%) rate their viability as reasonable or below, with only 3 categorising their business viability as good or very good (GHD, 2014). The mental and physical health of fishers is also known to be poor with stress relating to regulatory uncertainty a significant factor (King et al., 2014). The costs of remaining in the industry have risen significantly and there are considerable issues with 'social licence' in a number of NSW fisheries. Social licence refers to the level to which the community accepts, or is supportive of the actions of the industry. Evidence of problems relating to social licence for the NSW industry is seen in regular calls for fishing to be banned or significantly reduced in areas up and down the coast (eg see Collins, 2015). These factors influence the level to which fishers are willing to engage with regulators and the wider community.

A number of studies around the world have pointed to the importance of fishing as a way of life for many within the industry – a profession that encompasses critical components of an individual's sense of personal identity (Britton and Coulthard, 2013, Pollnac et al., 2014, Pollnac and Poggie, 2008, Minnegal et al., 2003). This attraction to the profession is not easily explained solely in economic terms and accounts for fishers resistance to change and reluctance to leave the industry even in situations where economic returns are dwindling (Weeratunge et al., 2014). Many of these studies point to the value fishers place in having autonomy, and the ability to engage in physical work in a natural setting. In addition sociological studies into professional fishing communities indicate that the risky nature of fishing makes it an attractive occupation for those that have adventurous, aggressive or courageous personalities - characteristics that allow for higher levels of job satisfaction amongst the fishing

[1] NSW fishing co-operatives are owned and managed by fishers. Fishers fish independently according to their licence conditions but they can have their fish consigned for sale to market or direct to the public/wholesalers or export markets through the co-op. The co-op usually receives a percentage of the sale which is used to provide services back to their members, such as ice and discounted fuel. Co-ops are managed by a board of fishers voted in by the members of the co-op.

profession, but may also create challenges for regulators seeking to engage the industry (Weeratunge et al., 2014, Pollnac and Poggie, 2008).

This paper examines the role commercial fishing plays in contemporary coastal towns in NSW and how some of these challenges might be addressed to improve the level of engagement of the sector in community life. In particular it examines how this may be considered by managers and planners involved in the day-to-day management of coastal resources.

Methods

In July 2014 the authors commenced a research project examining the social and economic contribution of NSW professional fishing industry to the wider community. This research is funded by the Fisheries Research and Development Corporation (FRDC) of Australia, a Commonwealth government funding agency which is partially funded by Industry contributions. The research project was born out of a need, expressed by Industry representatives and Government, for reliable data which quantified the social and economic contributions that fishers make to their communities. The project has since developed around a broad research question of '*How does professional fishing contribute to community wellbeing?*' and is investigating a range of different dimensions of community wellbeing to determine the part fishing plays. The methodology employed reflects the diversity of ways in which contributions to wellbeing can be made, guided by the social wellbeing approach (Britton and Coulthard, 2013, Coulthard et al., 2011, Coulthard, 2012). This approach combines an objective evaluation of circumstances in which a community finds itself with a subjective evaluation of those circumstances, whilst also giving emphasis to the social context by which these evaluations are made (Britton and Coulthard, 2013).

The project has involved employing a range of methodological approaches to data gathering. These have included an economic survey of all professional fishers in NSW, an extensive period of fieldwork involving interviews and focus groups throughout the state, literature and media searches and field observations. Current and future stages of the project include questionnaires on social contributions and further fieldwork. This paper focuses largely on results of the qualitative fieldwork conducted between September 2014 and May 2015. However, a brief overview of the other components of the study is also provided below.

An economic survey was developed to evaluate the economic contribution of commercial wild-catch fisheries for 8 regions covering the whole NSW coast, including the regional economic impacts such as multiplier effects and employment and contributions to related sectors within regions, building on previous similar studies. The survey was designed to build on previous fishery economic surveys developed in NSW, the Commonwealth and South Australia (Harrison, 2010, Dominion Consulting, 2001). The survey was distributed to all 989 commercial fishing businesses on the DPI license database (via an external mailing house to protect privacy). The survey focused on costs and income in order to determine business contributions to regional economies.

In addition, fieldwork was conducted over a period of 6 months from September 2014 until May 2015. This fieldwork was the first stage of a three stage process aimed at evaluating the social contributions of commercial fisheries for the same regions as the economic survey, including the participation of fishing families in community organizations, heritage values of fishing for regions, and the social aspects of economic contributions, building on previous studies. The fieldwork covered the entire NSW coastline over the course of six months. Initial contact with interview participants was made in a variety of ways. These included:

- Targeted approaches based on recommendations from steering committee members and industry research;
- Announcements through the Professional Fishermen's Association (PFA) newsletter, local media and social media;
- Advertising of 'drop in sessions' at co-ops and other venues through co-op networks and local media; and
- 'Snowball' sampling whereby people interviewed recommended additional people to contact.

Prior to commencement of the interviews the project objectives were explained and a detailed consent form provided to the participant to complete either before or after the completion of the interview. The majority of interviews were audio recorded and subsequently transcribed in full. Where significant sections of the interview included discussion about matters outside the core research questions these interviews were logged and only the relevant sections transcribed. Where it was not possible to audio record the interview (e.g. because of problems with background noise) or the interviewee did not give consent to being recorded, detailed notes were taken. Where requested copies of interview notes or transcripts were provided to the interview participant for review and amendments as necessary.

All the transcripts, interview notes and interview logs were entered and coded using NVivo 10. Key themes were identified guided by a range of wellbeing material. In particular, a literature review of indicators of quality of life employed across multiple scales and jurisdictions was used to guide the data analysis (Nussbaum, 2003, Partridge et al., 2011, Nussbaum, 2000, Stiglitz et al., 2009, Himes-Cornell et al., 2013, Kasperski and Himes-Cornell, 2014, OECD, 2013, New Zealand Quality of Life Project, 2007). These indicators were used to determine common dimensions of community wellbeing and fishing contributions were subsequently coded against each of these dimensions (Table 1).

Table 1. Wellbeing framework

Dimensions of community wellbeing (things that contribute to overall community wellbeing)								
A diverse and resilient local economy	Community health	Educational opportunities	Social capital (bridging, bonding)	A sense of community and individual identity	Integrated, culturally diverse, and vibrant communities	Connections with Indigenous cultural heritage & practice	Services and infrastructure that benefit the community	A healthy environment
Contributions of professional fishing to community wellbeing (how the fishing industry contributes to each of the dimensions of wellbeing)								
Revenue generation and multipliers Employment opportunities (direct and supply chain) Tourism	Provision of nutrition/ food	Skills training formal and practical (life skills) Transfer of environmental knowledge (eg to policy makers, other fishers, and younger generation)	Sponsorships, search & rescue, donations, community and industry involvement	Cultural heritage (history) Sense of place (eg 'fishing towns') Sense of self (fishers)	Multi generational fishing families and experiences Culture and seafood (including celebrations) Migration and fishing	Maintenance of livelihoods, connection to country and cultural practices/ food Transfer of customary knowledge	Public infrastructure (eg jetties, wharves, slipways) Services to the community eg bait, fuel supply and ice	Environmental Stewardship Engagement in catchment and fisheries research, planning and management

In total more than 160 interviews were conducted with fishers, fishing family members, co-ops, fish retailers and wholesalers, local businesses, local government representatives, tourism bodies and recreational fishers. Analysis of these interviews is

ongoing, however the preliminary trends identified through our early analysis are presented below.

Results

The project fieldwork involved visits to all major ports on the NSW coast. Concurrently the economic survey was mailed to all licensed fishing businesses in NSW. This survey aimed to measure the way revenue generated through the fishing industry contributes to the local economy through 'multipliers' and therefore asked a range of questions relating to income and expenditure of the fishing business. The initial response to the project, and in particular the survey, was extreme suspicion. The project team spent considerable amounts of time defending their professionalism, ethics and the methodological approach to the project as some industry members reacted angrily via phone calls and via an Industry FaceBook page to aspects of the survey which asked about income. The main suspicion was that the project was in some way tied with an ongoing Government reform project. While face-to-face encounters in the field were without exception polite and respectful, there was intense scrutiny of the project online and the tone of those exchanges was at times aggressive. Many fishers refused to participate in the economic survey component of the project yet were very receptive to one-on-one interviews and small group discussions.

In total 164 people were interviewed across the state. The majority of the interview participants were directly engaged in the fishing industry as fishers or members of fishing families (59%), however interviews were also conducted with a range of other sectors as outlined in Table 2. These interviews have now been coded using NVivo 10, and whilst analysis is ongoing, preliminary results have indicated a number of key points of interest, which have been grouped into each of the community wellbeing dimensions and detailed in the sections below.

Table 2. Interview participants by relationship to Industry

Fishers	**No. Interviewees**	**Other**	**No. Interviewees**
Licensed fisher	78	Local government (including councillors)	15
Fisher and retailer	5	Co-op staff or managers	14
Fisher and wholesaler	2	Supply chain business	13
Indigenous fisher	5	Retail outlet/ restaurant/take away	7
Partner/wife	7	Industry representative body	5
		Community/Recreational fisher	5
		Government	3
		Tourism	3
		Indigenous (community)	1
		Wholesaler/processor	1
Total	***97***	***Total***	***67***
Grand Total			**164**

A diverse and resilient local economy

A diverse and resilient local economy requires a variety of strong, stable employment options and revenue generating sectors. This allows for a range of opportunities for employment according to the skills sets within the community. A stable employment base provides intergenerational equity, ensuring employment opportunities are available for future generations. Resilient economies support local employment opportunities so workers are able to contribute to the social and economic life of their communities. Finally these economies are dynamic and innovative and are able to respond to shocks or fluctuations in economic conditions (Partridge et al., 2011, New Zealand Quality of Life Project, 2007, OECD, 2013).

Our interviews revealed that many within the industry see themselves as important contributors to the resilience of their local economies. The NSW Industry has a strong history of multiple generations employed within the sector, providing intergenerational equity for these families. Many felt that this aspect of NSW commercial fishing was increasingly under threat through current and historical reforms, with a number indicating that they expected their families association with fishing to end with them.

The relative consistency of the economic contributions of commercial fishing industry was often contrasted with the more seasonal and at times fickle tourism and recreational fishing markets. While many interview participants acknowledged a decline in the economic importance of fishing in their communities there was still a sense that it provided relatively stable and ongoing employment opportunities and multiplier economic benefits.

An early trend identified in the analysis is the relationship between professional fishing and tourism. The role of fishing in tourism includes cultural heritage, provision of fresh seafood to local restaurants and fish and chip outlets, as well as tourism experiences associated with visiting working harbours, watching boats unload, buying cooked prawns direct from the back of the boat, or watching a mullet haul brought in on a beach. Increasingly sophisticated marketing approaches are emerging around local seafood supply as a tourism product through seafood inclusion in tourism 'food trails' coupled with the growth of 'food ethics', especially localism among consumers. Some marketers are beginning to position the seafood industry as part of the ecotourism product rather than being in conflict with it. A visible fishing industry is an important factor in this, with a number of interview participants discussing the importance of commercial fishing boats on the harbour as an essential part of their seafood outlet's marketing strategy. The fishing industry and associated fresh local seafood is also a big ticket international tourism drawcard – particularly for the Asian tourism market. These concepts are currently being explored in further detail through a questionnaire targeted at tourism providers and a broader scale community questionnaire.

Educational opportunities

The interviews revealed a number of key avenues in which the NSW wild catch fishing industry is engaged in providing education both internally and external to the Industry. These include formal and informal skills training of employees and participants in the industry itself and related businesses – including boat handling, fishing techniques, safe food handling, seafood preparation and preservation techniques and a range of other skills.

The fishing industry also provides opportunities for the exchange of environmental knowledge with policy makers, researchers, recreational fishers and the general public. This might include the informal provision of advice on fish movements or feeding practices, navigation tips, water quality or weather patterns as well as historical changes to the environment. More formal contributions include involvement in environmental management projects and committees, such as local government Estuary Management Committees. In addition fishers are often engaged in gathering or providing scientific data to research activities, at the most basic level through provision of catch data but often more formally through direct involvement in a range of different research programs.

An unexpected finding was the number of fishing industry interview participants who discussed the role of the industry in providing life skills training to young adult males struggling with personal or social issues, and for whom other employment options are

limited, in part due to a lack of educational qualifications. The role of the industry in teaching these young people how to 'be a man' was a trend that will be further analysed in the coming months.

Community health

One of the most fundamental contributions that the commercial fishing industry provides to the community is fresh fish and other seafood products. There was extensive discussion of some consumers' perceptions of the superiority of fresh, local product to imported products from a health and sustainability perspective, as well as discussions about the health benefits of many local species (especially mullet). The importance that NSW communities place on being able to access fresh, local or regional product are currently being explored in a community survey.

Services and infrastructure that benefit the community

The commercial fishing industry is associated with, and often responsible for, a large amount of public infrastructure including wharves, jetties, moorings and slipways. This infrastructure is commonly available to the public for their use and enjoyment, including recreational fishing from wharves, fuel supply for pleasure cruisers and other vessels, and ice supply for events to a variety of community groups, schools and charities. Another often unrecognised service that the industry provides the community is the provision of bait to the recreational fishing community.

A healthy environment

There was a great deal of discussion in the interviews about the sustainability credentials of the NSW fishing industry, with a general sense that the public do not understand or appreciate the extent of the regulatory and voluntary restrictions that the industry works within. The industry is formally involved in a range of programs aimed at improving environmental management and conditions, including estuary management committees, issue based lobby groups, research programs and programs to improve fishing practices and equipment. Fishers also often discussed some of the informal stewardship activities in which they participate, including gear modifications to reduce bycatch, cleaning up litter on local waterways and reporting environmental concerns, such as fish kills or pollution events.

Integrated, culturally diverse, & vibrant communities

This concept of wellbeing refers to communities having active cultural lives in which people from various groups feel connected and have opportunities for a good life across generations, across cultures and across socio-economic class divisions (OECD, 2013, Partridge et al., 2011, New Zealand Quality of Life Project, 2007). The role of the fishing industry in all three aspects has emerged through the interview data. The interviewees referred to the cultural heritage values associated with multi-generational fishing families. Less recognised is the role that fishing has played in the migration of new cultures into regional NSW communities and the importance of the fishing industry as an avenue of employment for working class, semi- or unskilled labour. Many participants discussed how they came to fishing with minimal academic skills but a passion and aptitude for the rigours of fishing, and some have made a very good living for themselves and their families.

The role of seafood in religious and cultural celebrations of the NSW community (e.g. Christmas, Easter, Lunar New Year) also emerged amongst interviewees as a concept worthy of further exploration. Therefore, this has been included in the social evaluation questionnaires. In addition, some interviewees talked about the growth of new markets for previously unmarketable species. These markets were seen to be associated with

specific cultural groups who value species not often sought after by British- or Irish-background consumers.

Indigenous cultural heritage & practice

The wellbeing of our Indigenous communities is an essential element to the overall health and wellbeing of our community as a whole. The significant scope of the fishing industry to provide employment opportunities to young Indigenous men and women was highlighted as an, as yet, largely unfulfilled opportunity to contribute to Indigenous health and wellbeing. Interviewees discussed the crucial role that commercial fishing historically played in the very survival of a number of Aboriginal communities on the NSW coast, especially those previously established as 'missions' or 'reserves' in the last century. The history of Indigenous engagement in the commercial fishing industry in NSW, its current role and the potential for future contributions will be explored in greater depth in the coming months through key informant interviews and further literature reviews.

Identity

There are two aspects of identity that will be explored further as this project progresses. The first aspect is personal identity for the fishers themselves and how their profession contributes to their own sense of self as well as their personal wellbeing. The second aspect of identity is community sense of place and its relationship with the cultural heritage values of commercial fishing.

Social Capital

The interviews explored two main forms of social capital. Bonding social capital refers to connections made between peers, or within a group – in this case the fishing industry. Bridging social capital refers to connections across different groups, in this case we especially focused on bridging social capital between the fishing industry and the communities they live in, and with regulators. The fishing industry makes contributions to their communities' pool of social capital but also faces a number of challenges, particularly in relation to a lack of bonding social capital within the industry. This manifests itself in terms of suspicion of the motivations of other individuals and industry groups. Bridging social capital appears to be variable across the Industry and across regions; some fishers appear to have good connections to local and state government decision makers, others feel their voices often go unheard. Fish receivers, especially co-ops, appears to play a role in providing connections between the industry and the wider community through the provision of sponsorships, search & rescue capabilities, donations and membership on committees. Some coops and fish receivers also play a bridging function by speaking for Industry in some government consultation processes and public debates on topics of interest, such as seismic testing off the Newcastle coast. These are currently being explored further in a survey of fish receivers and co-ops.

Discussion

Preliminary analysis of the interviews conducted to date offer a number of key insights into the professional fishing industry in NSW that is of relevance to managers of coastal resources and decision makers in coastal communities.

The first insight is that the social and economic benefits of supporting and nurturing a sustainable local fishing fleet are likely to include more than a supply of fresh local seafood to communities and tourists. Our preliminary data reveals that these benefits

may also extend to environmental knowledge, search and rescue and maintenance of cultural heritage values.

The second relevant insight is that the commercial fishing industry is suffering the social impacts of progressive regulatory upheaval over an extended period of time. This upheaval has created barriers between the Industry and regulators, researchers and the wider community which makes effective engagement with the Industry a significant challenge. The distrust felt by many within the Industry of external parties and even their internal representatives inhibits the effective recognition and utilisation of the unique skill sets held by many of the individuals and families employed within the Industry.

The lessons learnt from our experiences over the last 18 months may assist councils and other groups wishing to build or improve their relationships with the industry. Of particular relevance is the differential response to the two components of our research – the economic and the social aspects. While the economic survey was received poorly within the Industry the response to the qualitative fieldwork was very receptive and involvement was limited only by availability of time rather than a lack of willingness to participate. This result suggests that fishers are more receptive to one on one contact then to paper based surveys particularly in the current climate of uncertainty for the industry.

Our findings are also consistent with those of King et al (2014), who found that industry engagement in mental and physical health initiatives was limited by the irregular and unpredictable working hours of fishers. This applies equally to fisher involvement in formal committees and meetings which are often held at times that impact the ability of fishers to earn an income, or when they are catching up on sleep after working late into the night or early in the morning. Our experience indicates the need for flexibility and persistence and a willingness to engage with fishers at times and places that fit into their work practices. This may mean conducting meetings on board vessels, outside of business hours or at short notice.

A number of studies around commercial fishing have pointed to the central role of fishermen's partners and wives play in the industry as key support structures, business partners and Industry networkers (Britton and Coulthard, 2013, King et al., 2014). This group may be even more difficult to access then the fishers themselves but may also provide excellent opportunities for wider engagement of the industry, if the effort is made at the outset to engage them successfully.

The problems that exist within the NSW fishing industry in relation to bonding social capital also creates challenges for engaging with the industry. There is no one agreed peak body and there is some disharmony between the groups that do exist. We would advise a neutral approach which engages equally with all the available options but also looks beyond these groups to directly interact with the fishers themselves, regardless of their membership arrangements with representative bodies.

Finally, engagement with the NSW fishing industry should as much as possible be conducted in a friendly, accessible manner, avoiding jargon and bureaucratic language. Correspondence should be written in a manner that recognises that sections of the industry have limited literacy skills, but also respects that despite this fishers can have considerable knowledge and intelligence that should not be underestimated. A lack of formal education does not equate to an inability to grasp complex concepts, provided these concepts are be communicated in easily understood language through a respectful two-way dialogue.

Engagement with the NSW commercial fishing Industry can be difficult, time consuming and challenging, but it is likely to be worth it. The preliminary results of our research suggest that the benefits to community wellbeing of a successful, engaged and sustainable industry in coastal regions may well outweigh the costs and effort involved in building trust.

Further details of the findings of our research, particular the results of the social questionnaires currently underway will be available shortly. In the meantime you can keep up to date with the progress of our project by visiting our Facebook page:
www.facebook.com/UTSValuingCoastalFisheries

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