INTEGRATION OF SOCIO-ECONOMIC SUSTAINABILITY CRITERIA INTO A REPORTING FRAMEWORK FOR THE AUSTRALIAN AQUACULTURE INDUSTRY

FRDC Project 2007/010

Dr. K.J. Brooks
Dr J.A. Marshall
J.G. Fromm
S.G. Bennison

National Aquaculture Council

Australian Government
Fisheries Research and Development Corporation

Integration of Socio-Economic Sustainability Criteria into a Reporting Framework for the Australian Aquaculture Industry

Dr. K.J. Brooks Dr J.A. Marshall
J.G. Fromm S.G. Bennison

National Aquaculture Council

Australian Government
Fisheries Research and Development Corporation

FRDC Project No. 2007/010

Disclaimer

The authors do not warrant that the information in this document is free from errors or omissions. The authors do not accept any form of liability, be it contractual, tortuous, or otherwise, for the contents of this document or for any consequences arising from its use or any reliance placed upon it. The information, opinions and advice contained in this document may not relate, or be relevant, to a reader's particular circumstances. Opinions expressed by the authors are the individual opinions expressed by those persons and are not necessarily those of the publisher, research provider or the FRDC.

The Fisheries Research and Development Corporation plans, invests in and manages fisheries research and development throughout Australia. It is a statutory authority within the portfolio of the federal Minister for Agriculture, Fisheries and Forestry, jointly funded by the Australian Government and the fishing industry.

Correct Citation:

Brooks, K., J.A Marshall, J.G. Fromm, & S.G. Bennison (2010). *Integration of Socio-Economic Sustainability Criteria into a Reporting Framework for the Australian Aquaculture Industry.* FRDC Report No. 2007/010, Published by: The National Aquaculture Council of Australia; Canberra, July 2010.

Project Team:

Principal Investigators: Justin Fromm (from 01/01/09) & Simon Bennison (until 01/01/09)
The National Aquaculture Council
Judy Marshall, (Co-Investigator), Phycotec Environmental Consulting
Kate Brooks, KAL Analysis Pty Ltd
Tor Hundloe, WHAT Consulting
Julian Morrison, EconSearch Consulting Pty Ltd.

This final report and other material related to the research may be requested from the National Aquaculture Council

Published by:

National Aquaculture Council
PO Box 59
Deakin West ACT 2600
Email: nac@aquaculture.org.au
Website: www.australian-aquaculturereportal.com/nac/
ISBN: 978-0-646-54035-1

ACKNOWLEDGMENTS

The project acknowledges the funding provided by the Fisheries Research and Development Corporation that enabled this project to be undertaken.

The project was instigated and developed by Simon Bennison, the past CEO of the National Aquaculture Council, and ably carried through by Justin Fromm who took over from him in 2009 to finalise the project. Also thanks to EconSearch for contributions to the economic analysis and background.

The following industry associations and their members are thanked for their support, participation and contributions to the project:

- Shellfish Industry Council of Australia – SICOA
- Australian Abalone Growers of Australia – AAGA
- Australian Prawn Framers of Australia – APFA
- Pearl Producers Association – PPA
- Tasmanian Salmonid Growers Association - TSGA
- Australian Southern Bluefin Tuna Association - ASBTA
- Australian Barramundi Farmers Association- ABFA

Many key Government agencies and industry bodies also provided review, information and assisted with the distribution of the surveys including

- Victorian Department of Primary Industries
- Tasmanian Department of Primary Industries, Water and Environment
- Tasmanian Seafood Industry Council - TSIC
- South Australian Oyster Research Council _SORCA
- Western Australian Department of Fisheries
- New South Wales Department of Primary Industries
- Queensland Department of Primary Industries

TABLE OF CONTENTS

2007/010 Integration of Socio-Economic Sustainability Criteria into a Reporting Framework for the Australian Aquaculture Industry

PRINCIPAL INVESTIGATOR:

Simon Bennison (until 01/01/09)
Justin Fromm (from 01/01/09)

ADDRESS:

National Aquaculture Council
PO Box 59
Deakin West ACT 2600
Telephone: 041 114 6396
Email: nac@aquaculture.org.au

EXECUTIVE SUMMARY

This project focuses on developing the social and economic indicators for the Australian aquaculture industry as they relate to the Ecologically Sustainable Development (ESD) Guidelines (Fletcher et. al. 2004).

This project utilises the ESD Framework for Aquaculture (Fletcher et al 2004), as the basis from which to identify appropriate indicators and questions, data collection, storage and communication methods to inform Australian ESD requirements. The original objectives of the project were to:

- Determine whether a set of easily understood and defensible ESD indicators can be developed for each of the key Australian aquaculture industries (the successful achievement of this dictated the continuation of the project);
- Develop a system for presenting these indicators that can be easily integrated within the general public reporting frameworks;
- Develop and implement a communications strategy that promotes the use of the ESD reporting framework as an essential tool for the aquaculture industry and stakeholders;

The objectives were refined in the process of the project due to the realisation that they were ambitious and that the scope of the original project concept exceeded the resources available. Therefore the scope was narrowed and the objectives interpreted to reflect this the following:

- Identify a set of easily understood and defensible indicators and their underpinning questions to inform ESD Reporting Groups appropriate to each of the key Australian aquaculture sectors.
- Develop a system for presenting aquaculture information on these indicators that can be easily integrated within the existing reporting frameworks.
- Develop methods of use and communication that promotes the use of the ESD reporting framework as an essential tool for the aquaculture industry and its stakeholders.

This project addressed the needs of not only developing robust indicators, tailored to the aquaculture industry, to inform the ESD Framework, but a method of ongoing collection and analysis by individual sectors, and the national industry, to inform regulatory agencies of the industry's performance. To achieve this, industry needed to

know what information to collect; how to provide the required data; appropriate storage and evaluation mechanisms for the data; and how these should be promulgated throughout the industry, regulatory agencies and the community.

The method used to address the first objective was a review of previous work that identified social and economic indicators and data to inform them, for not only aquaculture, but also wild catch fisheries and allied industries (including, forestry, Industrial Labour Organisation (ILO), WWF, and the Food and Agriculture Organisation (FAO)). This review identified that there was a body of existing work that could be drawn upon to frame the development of a tool to inform the social and economic ESD requirements for Australian aquaculture. From this, a draft set of potential indicators and questions associated with the ESD Reporting Groups was developed (see p.19 and Appendix 3).

The second objective of the project was addressed utilising industry sector focus groups to review the questions to inform indicators, for appropriateness to the Australian and sectoral context. These questions were then developed into a pilot survey which was applied to three sectors of the industry. The results were analysed and reviewed for; applicability to inform the ESD Reporting Groups, the ability of the results to be verified independently, and for contributions to the industry in regard to ongoing development and improvement. A final set of indicators and questions was identified for the aquaculture industry from this pilot survey and data analysis (see Table 3, p.24).

The third objective was addressed through a workshop with seven of the thirteen sectors of the industry. This workshop reviewed the final recommended survey, explored methods and frequency of ongoing implementation, analysis, data collation and storage, and communication. From this, a 'tool-box' in the form of a flow chart and associated guidelines, surveys and templates was developed for the industry (see 'A Toolbox' p.30).

OUTPUTS AND OUTCOMES ACHIEVED TO DATE

The output from the project's work on the first objective is a review of indicators used elsewhere in aquaculture and other NRM industries, and what data is collected to inform these. In addition to this a list of suggested questions was developed that were applicable to the ESD Reporting Groups and Indicators, which might be used by the industry.

The work to address the second objective of the project resulted in a generic survey of social and economic questions that can be used by all sectors of the Australian Aquaculture industry to facilitate ESD reporting. It was also structured in such a way that reporting can, if required and appropriate, be broken down into sectoral, regional or national results.

The output the third objective resulted in a 'tool box' of methods and resources for the industry to guide them in their collection, collation, interpretation, and presentation of the data, in their performance against ESD requirements. It also saw the outcome of an in-principle agreement from a majority of the industry's sector associations to collect the data on an annual basis, report against it as required, and provide a copy of it to the National Aquaculture Council for aggregation to national level.

The outcomes of the project are most visible in the means that are now provided to the industry to report against ESD Reporting Groups and associated indictors. The further and outcome has been, despite reticence to participate in some quarters, the drawing together of the sectors of an otherwise disparate industry in a common purpose, which has increased industry communication and collaboration. This will undoubtedly positively contribute to building industry capacity, flexibility and therefore sustainability, into the future.

KEYWORDS

Sustainability; Aquaculture; Social; Economic; Ecologically Sustainable Development (ESD); Indicators.

ABBREVIATIONS

AA	Aquaculture Industry Action Agenda
ESD	Ecologically Sustainable Development
ESD Framework	The 'National ESD Reporting Framework' (Fletcher et.al. 2004)
FAO	Food and Agricultural Organisation
ILO	International Labour Organisation
MISA	Marine Innovation South Australia
NAC	National Aquaculture Council
NAPS	National Aquaculture Policy Statement
NGO	Non-Government Organisation(s)
OH&S	Occupational Health and Safety
QLD DPI	Queensland Department of Primary Industries
WA Fisheries	Western Australia Fisheries

BACKGROUND

At a National Aquaculture Workshop held in Canberra in August 1999, the industry set itself a vision which stated that by 2010 a vibrant and rapidly growing Australian aquaculture industry will achieve $2.5 billion in annual sales by being the world's most efficient aquaculture producer. In response, the then Australian Government announced an initiative – the Aquaculture Industry Action Agenda (Action Agenda) - to increase the growth prospects for the industry. Under the Action Agenda, industry and governments committed under the Primary Industries Ministerial Council's endorsed 'National Aquaculture Policy Statement' (NAPS), to identify and undertake key activities to enhance the industry's sustainable competitive advantage. The relevant statement from the NAPS, relevant to this project, is:

Australian Governments will commit to:

2. *Supporting and recognising continual improvement of ecologically sustainable aquaculture practices and to develop environmental performance standards for aquaculture, including:*
    - *working with industry to develop a national ESD assessment and reporting framework for aquaculture*

This statement appeared in the NAPS because it was widely recognised at the time, by proponents of aquaculture in both industry and government that crucial ESD information was missing. Previous work on ESD reporting identified that, while there was substantial frameworks to ensure ecological monitoring and reporting, there inadequate social and economic frameworks or data to allow an holistic assessment of the industry's sustainability (Marshall & Stump 2007). This lack of data was and is still impeding and constraining the growth of aquaculture. At the time of the NAPS there was minimal, if any, fine-scale social and economic information available about Australian aquaculture, nor was there a process to collect and manage social sustainability data and information.

All State jurisdictions manage the industry either explicitly under ESD objectives or under principles to that effect. For example the South Australian Aquaculture Act, 2001 Part 2, Section 8 - Objectives of the Act, states that the objectives are to:

(1) (a) to promote ecologically sustainable development of marine and inland aquaculture; and

(b) to maximise benefits to the community from the State's aquaculture resources; and

(c) otherwise to ensure the efficient and effective regulation of the aquaculture industry.

(2) The Minister must, in the administration of this Act, have regard to, and seek to further, these objectives. (p.7)

The South Australian Aquaculture Act, which is similar to the other Australian states aquaculture related legislation, defines ecologically sustainable development as:

- Development is ecologically sustainable if it is managed to ensure that communities provide for their economic, social and physical well-being while—
    - natural and physical resources are maintained to meet the reasonably foreseeable needs of future generations; and
    - biological diversity and ecological processes and systems are protected; and
    - adverse effects on the environment are avoided, remedied or mitigated.
- In making decisions as to whether development is ecologically sustainable or to ensure that development is ecologically sustainable—
    - long-term and short-term economic, environmental, social and equity considerations should be effectively integrated; and
    - if there are threats of serious or irreversible environmental harm, lack of full scientific certainty should not be taken to justify the postponement of decisions or measures to prevent the environmental harm. (p.2)

The guidelines of ESD in conjunction with the tight environmental regulatory environment in which aquaculture operates, and the extensive biological work to address environmental

performance to date, meant that it was considered that aquaculture's environmental responsibility and credentials are well covered. Consequently, this project undertook to develop a process to report on the social and economic components of the ESD Reporting Framework in a manner that could be verified, and easily integrated with other existing reporting frameworks.

NEED

In many ways the Australian aquaculture industry has developed without community awareness and with businesses generally operating independently and in relative geographic isolation from each other. As the industry has expanded however, it has attracted the attention of government, particularly the environmental agencies, and the wider community for its environmental interactions. Due to this increased attention and public awareness of environmental interactions of activities of industries in general, there has been an increase in the level of community distrust of the industry, as with many industries that utilise natural resources. This has resulted in a community tendency to limit industry access to resources through a withholding of its 'community licence to operate'. This has created problems for the expansion of not only individual operations, but also for the industry as a whole.

The isolation of the operators has also meant that quality information about the ESD credentials of the industry does not exist in most cases, and has definitely not been collated on a sectoral or industry basis, where it does. This is only exacerbated by the fact that there are no generally agreed methods for collection of the relevant data, nor its subsequent analysis and reporting. Work has been undertaken in the past on the broad reporting levels of the ESD Framework in Australia (Fletcher et al 2004) which has resulted in extensive work on the indicators to inform ecological reporting levels. However there was a lack of information in the area of what indicators should be used to inform the social and economic reporting levels (Marshall & Stump, 2007). This highlights an urgent need to be addressed, if the industry is able to meet regulatory and community expectations of ESD reporting and transparency.

Social Indicators

At present, the industry faces many challenges in gaining community acceptance for development and expansion because of land-use changes, town planning issues or concerns about industry's sustainability. Through ESD reporting and the improved understanding of the attitudes and motivators of the industry and the communities in which they operate, it is envisaged that the industry and government will be able to develop and implement improved design and management arrangements. Effective ESD reporting will also contribute to an understanding of the industry's resilience and ability to adapt to change.

While there are any number of social indicators in use in the seafood and other primary industry sectors, in themselves they are meaningless unless associated with an objective or contextualised by a framework. The ESD Assessment Framework that had previously been developed was very high level, and while it had identified the objectives of 'Community Wellbeing', 'Regional Community Dependence', 'National Socio-economic wellbeing' and 'Indigenous wellbeing', with some indicators, further work was required to identify indicators for all reporting groups and what specific questions were required to inform the indicators relevant to the aquaculture industry. While some social data exists, it is not regularly collected, and there is no agreed format that specifically addresses the reporting requirements of ESD.

Economic Indicators

The availability of relevant economic data for ESD assessment is essential to demonstrate the industry's value to the economy, whether that is local, regional, State or national. Economic data is also essential to attracting investment into the industry. Relevant economic data provided in the context of ESD reporting to the community, may assist in relieving developmental barriers imposed by government and the community.

It is vital that the aquaculture industry can demonstrate its responsible social and economic benefit to the community, in the context of ESD, to assist the future development of the industry. While there is an amount of economic data that is collected at State level this is not necessarily broken down by sector, and is not comprehensive for example in identifying employment levels and types. Consequently, this project sought to build on the foundations of

any existing economic data collections and bring it together in a manner useful to the industry from multiple perspectives.

The need for this project therefore is to identify what information to gather through the development of robust questions to inform ESD tailored to the aquaculture industry. The need also relates to the development of a method of ongoing collection and analysis that can be implemented by individual sectors, and appropriately accessed by the national representative body and government agencies. The industry needs to develop appropriate environmental, social and economic questions to inform indicators and collect the appropriate data. To achieve this, industry needs to know what information to collect, how to provide the required data, appropriate storage and evaluation, extension mechanisms to industry, regulatory agencies and the community, and presentation in an appropriate reporting framework.

OBJECTIVES

1. Identify a set of easily understood and defensible indicators and their underpinning questions to inform ESD Reporting Groups appropriate to each of the key Australian aquaculture sectors.
2. Develop a system for presenting aquaculture information on these indicators that can be easily integrated within the existing reporting frameworks.
3. Develop methods of use and communication that promotes the use of the ESD reporting framework as an essential tool for the aquaculture industry and its stakeholders.

INTERPRETATION OF THE OBJECTIVES

In the early stages of the projects life it was realised that the objectives were ambitious and that the scope of the original project concept exceeded the resources available. Therefore the scope was narrowed and the objectives interpreted to reflect this narrower scope.

The first objective originally referred to the identification of indicators. This was quickly highlighted as being already within the ESD Framework in a number of cases. The need was actually to identify indicators under the reporting groups where these did not already exist, and more importantly the questions required to elicit the data to inform the indicators and reporting groups.

As a result, the focus of the project shifted to that of developing indicators (where they did not already exist), questions and collection methods to inform the indicators and the Reporting Level/Groups, identified in the ESD Framework.

The term 'general public reporting frameworks' in the original objectives, referred to the ability to combine survey questions with any regularly used survey tool for the Australian aquaculture industry, including use by the industry itself. The extensive process that was undertaken to pilot and verify the survey and its results with the industry, ensure that the users of the questions have confidence in the due diligence of the instrument's development, its relevance, and the utility of the resultant 'tool box' developed to inform the ESD Framework.

The final objective related to the communication of the results of the survey. It was proposed in the methods that one of the outputs of the survey would be a report card, similar in nature to the 'Signposts' series of primary industry information packs. However it was identified that a report card would only be useful when several sets of data have been collected to be able to identify trends in the social and economic status of the industry. As a result the project focused on producing a tool box of resources that can be used to collect the data, guidelines for interpretation and a template for an industry sector report card. It is the use of this toolbox that has been communicated through a number of public forums and through the NAC's networks.

METHODS

There were several methods employed throughout this project. The governance of the project was, as a directive of the FRDC funding, addressed through the implementation of a Steering Committee to review the intent, progress and achievements of the project. It was formed and meetings held as per Appendix 2, and minutes for the meetings were provided with each of the project's milestone reports.

A number of consultants (four) collaborated with the National Aquaculture Council throughout the project. Two of these consultants were with the project for its full term; however the consultants on the economic component of the project did change mid-way through.

OBJECTIVE ONE:

This component of the project was approached through the utilisation of a review of previous work that had been done on; a) social and economic data collection in the Australian Aquaculture industry; and b) previous work that has been undertaken on the development of indicators of ESD and the associated questions to inform them.

Review: The review of social and economic indicators had the specific objective of identifying what social and economic data that was already collected regularly that was in line with the ESD Reporting Framework, and, if that was not the case to determine an appropriate set of indicators and data collection questions from a regional to a national level, for consideration by the Australian Aquaculture industry. Due to the greater attention that has been paid to economic indicators and assessment in the past, the economic component of the review was confined to the discovery of data currently collected and collated by various fisheries and aquaculture agencies. Given that the review quickly established that no data of a social nature was routinely collected by any agency under the ESD Guidelines, the focus for that component of the review moved to determining an appropriate set of indicators (where these were not already provided) and associated questions to inform them, to test in collaboration with the industry for applicability and appropriateness.

This review was not undertaken as an academic review, but was of all work by those government agencies, environmental authorities, corporations, and non-government organisations (Australian and International) that had cause to develop indicators and associated data collection questions for ESD purposes. The objective of this was to identify what had been done in the past; what was being used to report against ESD requirements in Australia and elsewhere, and which of these might have relevance to the context of Australian aquaculture. As a result the vast majority of the work (contained in Appendix 4 - Reviews of social and economic indicators) is not officially reviewed or cited.

Indicator and Question development: Using the ESD Framework for Aquaculture (Fletcher et al. 2004) as the basis and with reference to the national and international review of work and reporting in the areas of fisheries (aquaculture and wild catch) forestry, agriculture, the FAO and ILO indicators and previously tested questions to inform the status of the indicators, were identified that aligned with the ESD Reporting Groups. On the basis of this a range of questions for each Reporting Group and Indicator, were selected and presented to the Steering Committee, for review and approval to progress the project to addressing the second and third objectives.

OBJECTIVE TWO:

The second objective of the project was totally reliant on the engagement of the industry, to assist with the development of a pilot survey and then its implementation and review of results.

Industry Engagement: An industry reference group was formed to assist the project in its engagement of industry. A meeting was held on the 2nd July 2008 to determine a process of industry engagement and clear definition of how this would be done through industry workshops. This meeting also undertook a review of a generic template of the most relevant social and economic indicators that had been developed as a result of the review undertaken in the first phase of the project.

The project was promoted widely at the 2008 Australasian Aquaculture Conference, Shellfish Futures Conference, at the NAC Annual General Meeting and through contact with the industry association executives, as well as with key State Government representatives from the relevant fisheries agencies.

Workshop: The industry was then engaged through a series of workshops. These commenced with the first (Workshop 1) held to gain industry comment and feedback on, and ownership of, the proposed survey questions to inform ESD indicators. The question template created was reviewed by the participating aquaculture sectors (oyster, abalone and prawns) with the objective being to identify and comment on the relevancy of identified questions to their sectors. These workshops were held in conjunction with the Australasian Aquaculture 2008 International Conference held in Brisbane, (August 2008). Industry association executives and industry leaders attended the sector based workshops, with the outcome being the selection of sector specific questions for each indicator to be reported upon. These were then reviewed for commonality and, with the exception of one sector[1] a common survey was developed to be piloted with these industries.

Pilot Survey: From the information collected in Workshop 1, a pilot survey was developed. Adjustments to the questions were made by the Steering Committee as necessary through consultation with the reference group and specific industry sector.

The surveys were sent out to the aquaculture sector businesses via the respective industry associations. A 40% valid response return rate on the sector based surveys was collected from a total of 566 distributed surveys; double the expected 20% return rate. The oyster and abalone industries were determined to have included a high percentage of investor licences in which no working farms were attached which resulted in return rates for these industries being recalculated. The pearling industry had a poor return rate and withdrew from the project due to external pressures, mainly due to the impacts of 2008/09 Global Financial Crisis.

Results of the surveys were collated and analysed. The results were summarised for use in a second round of industry workshops.

Review Workshops: The second series of industry workshops, involving executives and key industry members of each sector as well as the respective State Government managers, was held for each participant sector, to assess the usefulness of the data received and the manner in which the information was reported and to be presented. On the basis of this discussion adjustments and revisions of the questions were noted for each sector.

Generic Survey: The indicators reported on in the pilot survey for the oyster, prawn and abalone sectors were consolidated and assessed together in a 2 day workshop involving the consultants and the project officers. From this strategic analysis, a set of generic indicators that could be used by all sectors within the Australian aquaculture industry were identified, which considered the different sector's comments and weightings of the questions in the pilot survey.

Subsequent to the industry feedback received on the indicators and associated questions on the basis of the data acquired, the project team identified the key indicators and associated questions that were proven to be robust in the context of the ESD Reporting Framework, industry sector applicability and the quality of the information obtained from the industry.

OBJECTIVE THREE:

Industry Cross Sector Review Workshop: A third cross sectoral workshop was held to undertake several tasks. The first of these was to review the final generic survey and its relevance to ESD Reporting requirements with industry and government representatives. It also sought to identify and resolve data management issues such as, the regularity of data collection, succession of data collection, management of data bases, methods of reporting and confidentiality of data.

[1] This one industry sought to add two questions; one focussed on hearing (OHS) and the other on very specific environmental activities. Neither of these questions were included in the final survey due to the poor quality of the pilot results and the specificity to one sector.

This workshop was also used to present the proposed elements of the 'tool box' to the industry for comment on its structure, form, and content, to ensure the most useful end product and one that had a level of industry ownership.

DISCUSSION OF RESULTS

Objective 1:

Identifying Questions to Inform Social and Economic Requirements of ESD Reporting

REVIEW OF SOCIAL AND ECONOMIC INDICATORS

The 'Reporting Groups/Levels' of the 'Guidelines to ESD Reporting' (Fletcher et.al 2004) identified indicators that reporting should inform, but only in some cases. Hence the first requirement of this project was to identify appropriate indicators for each of the Reporting Groups, and associated means to inform these. Consequently, a review of previous work on social and economic indicators and questions was undertaken at the outset of the project.

The focus of the review was to identify indicators that could establish the contribution of the industry to ESD and to the quality of life in community's associated with the aquaculture industry. While the ESD Reporting Framework requires indicators that cover regional and national concerns, there are also local communities of reliance and concern; that is, those intimately associated with the industry which should be taken into account as those most immediately impacted by an aquaculture operation. Consequently the review sought to identify indicators and data collection questions that would allow for individual business assessment of their local impacts, and which could simultaneously be scaled up to regional and national levels of interpretation and analysis.

The further elements considered in the review were; the indicators recommended must be able to be collected and collated at the lowest cost and indicators for the Australian aquaculture industry are at least on par with, if not building upon, existing international standards and indicators. The review was also cognisant of identifying indicators and data collection questions that incorporated an element of qualitative evaluation, alongside the more easily digestible quantitative assessment options or documentation provision, as indicators of the circumstance of the industry.

The specific issues used to frame the review and analysis of the range of data, to identify potential indicators, included the following:

- The connectedness of the industry within itself and to the broader operating environment (social capital). This comprises the issues of:
    - Community interactions with the sector; and
    - Links to information and decision making networks, internal and external the industry, and also with state and federal governments.
- The ability of the industry to provide fair and gainful employment (this covers not only Occupational Health and Safety, but also attachment to lifestyle and community; and human capital contributions.)
- Support of diversity of lifestyles (Indigenous and other)
- Ability to provide a safe working environment that encourages communication and improvement (again relating to Occupational Health and Safety, quality of life and community well-being.)

Working within the above framework, the review of existing social indicator work identified that there were no currently agreed comprehensive set of indicators or consistently collected data, either across sectors, the aquaculture industry, or nationally, that addressed the ESD 'Guidelines for Reporting'.

The set of ESD economic indicators described in the Reporting Framework had been designed to assist sector management decision making by both industry and government. The review of data on economic ESD indicators identified that those in the ESD Framework were largely headline indicators, including 'Net Economic Return'; 'Import Replacement/Exports'; 'Multipliers'; 'Taxes'; 'Employment'; and 'Spinoff Industries'. However there are many elements and uses of each within these headline indicators. For instance, "Net Economic Return" represents a broad group of specific indicators that can be relevant at both the enterprise and

industry levels. An industry may want to demonstrate its importance in a regional economy (e.g. to support local infrastructure funding) in which case contribution to gross regional product (GRP) would be the appropriate indicator from the "net economic return" group of indicators. Alternatively, industry may want to demonstrate to government that licence fee increases are unreasonable, so indicators showing enterprise profitability (or lack of it), such as profit at full equity, would be the most appropriate to use.

The review identified that most data is collected by the States and Territories with little private sources of data. However, of the data collected by the States and Territories only one Reporting Group was reasonably covered, being 'Net Economic Return' (Appendix 3, p.46). The other ESD Reporting Groups identified were not comprehensively covered by all States leaving many gaps in the existing data that the industry is required to fill in order to report against its' ESD obligations as outlined in the ESD guidelines (Fletcher et al, 2004). The details of the findings are as follows:

Table 1: Regularly collected economic data

Economic Indicators	NSW	NT	QLD	SA	Tas	Vic	WA	ABARE	IBIS
Net Economic Return	√	√	√	√√	√	X	X	√	√
Import Replacement/ Exports	X	X	X	X	X	X	X	X	√
Import Demand	X	X	X	X	X	X	X	X	√
Multipliers	X	√	√	√√	X	X	X	X	√
Taxes	X	X	X	X	X	X	X	X	X
Government Funds	X	X	X	X	X	X	X	X	X
Management Fees	X	X	X	X	X	X	X	X	X
Employment	X	√	√	√√	X	X	X	X	√
Spinoff Industries	X	X	X	X	X	X	X	X	X

X: data requirements not met, √: data requirements partially met, √√: data requirements met.

As a result of the literature review, a comprehensive set of indicators were identified to support the reporting levels of the ESD Guidelines along with associated questions to provide data to inform the indicators, as follows:

Table 2: Socio and Economic Reporting Groups/Levels/Indicators and associated questions (Refer Fletcher et.al, 2004;)

ESD Group	Reporting Level	Indicator	Questions
Indigenous Community Wellbeing	Cultural Values	Traditional Fishing*; Access to Land; Continuation of activities;	1. Are there an active Indigenous community or group in your region?* 2. Do you have any formal interaction or collaboration with that community/group? 3. Do you have any informal interaction or collaboration with

<table>
<tr><td></td><td></td><td>Interaction with indigenous peoples</td><td>that community/group?</td></tr>
<tr><td></td><td>Community Viability</td><td></td><td>This was not considered a responsibility of the aquaculture industry.</td></tr>
<tr><td></td><td>Employment</td><td></td><td>This could be drawn out as part of the employment section</td></tr>
<tr><td></td><td>Income</td><td></td><td>This could be covered where indigenous employees are identified.</td></tr>
<tr><td>Community Wellbeing - Industry</td><td>Community Lifestyle</td><td><u>Work related injuries</u></td><td>1. How many work cover reports of accident/ incidents did your business record in the last financial year?
2. How often did your business provide Occupational Health and Safety training for your staff in the last financial year?
3a. Do you have a documented process for the implementation of health and safety procedures for your business?
3b. If yes, do you undertake annual audits of adherence to those processes?</td></tr>
<tr><td></td><td></td><td><u>Attachment to Lifestyle</u></td><td>1. How long have the current employees been with the business?</td></tr>
<tr><td></td><td>Industry Structure</td><td><u>Employment</u></td><td>1. How many employees did you have in the last financial year?
<table>
<tr><th>Position</th><th>Perm FTEs</th><th>PT FTEs</th><th>No. FTE unpaid</th><th>Cas. FTEs</th><th>No. Male</th><th>No. Female</th></tr>
<tr><td>Admin</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Processing</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Farm</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Hatchery</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
2. How many of those employees undertook and successfully completed formal training programs last financial year? (Detail course name and the number of employees undertaking it).
3. How frequently have you or your staff provided speakers or liaised with schools, colleges, universities or community groups (Rotary, Lions, Apex etc) to provide education about your industry in the last financial year?</td></tr>
<tr><td></td><td></td><td><u>Skills</u>/ Education</td><td></td></tr>
<tr><td></td><td>Economic</td><td>Income</td><td>1. What percentage of gross revenue was paid in income tax in the last financial year?
2. How much did you spend on local authority taxes/ rates in you business last financial year?
3. How much did you spend on licence fees last financial year?
4. How much did your business spend on environmental assessments and inspections last financial year?</td></tr>
<tr><td></td><td></td><td><u>Distribution</u></td><td></td></tr>
<tr><td></td><td></td><td>Capacity to change/adapt</td><td>1. How frequently does your business contact the following agencies for advice? (Categories include; Industry organisations, private consultants including financial, environmental, marketing etc advisors; and Government officers (State/federal fisheries and/or natural resource management officers/managers etc).
2. How many times in the last financial year did you business have interaction with Sate and/or Federal government agencies (fisheries or NRM officers, managers or agents) as a necessary part to conducting the business?</td></tr>
<tr><td>Community Wellbeing – Dependent</td><td>Resource Dependency</td><td><u>Employment</u></td><td>1. How much did you spend on local suppliers and allied businesses in procurement, equipment and services in the last financial year?
2. What is the total value of the investment in your business</td></tr>
</table>

communities		Economics	last financial year (market value of plant and equipment, land, vehicles, stock etc.)? 3. How much did you invest in your business last financial year (market value of plant and equipment, land, vehicles, stock etc.)? 4. What value of product did you export last financial year?
	Social Capital	Community Contributions Community interactions Infrastructure	1. Is your business a member of an industry Group? 1a. If Yes, How many industry group meetings did you or your staff attend in the last financial year?" 2. Is your business currently a member of any non industry business councils/or groups (e.g. State or regional Chambers of Commerce)? 3. Are you, or any of your staff, active (i.e. attend 60% of more of meetings) member of business councils, community (Apex, Lions, Rotary, etc) or environmental groups? 4. How frequently in the last financial year, have you or your staff attended seminars or conferences that address industry sustainability and development? 5. Has your business made any donations to the local community (schools, community or sporting groups, including in-kind donations) in the last financial year? 6. Has your business provided public access to its infrastructure (e.g. boat ramps, moorings, buoys, navigation poles etc.) in the last financial year?
	Other Values (Positive/negative)	Public Amenity Monitoring of Environment	1. Does your business have any documented policy for resolving community or other grievances with its operations? 2. Does your business provide any environmental monitoring services to your region in the course of its operations? 3. Do you have any area of your farm/business under environmental protection for the benefit of regional biodiversity? 4. How much did your business spend on environmental assessment and inspections in the last financial year? 5. How often in the last financial year, has your local community challenged your rights to access resources (e.g. use of water, land, etc) that were registered through planning applications; council applications; EPA or other formal process? 6. How many complaints (that were registered with Council or other regulatory body) has your business received in the last financial year?
Community Wellbeing – less Dependent communities	Other values (Positive/ negative feelings)		(Covered in the dependent communities)
National Socio-Economic Wellbeing	Health benefits/ risks	Seafood consumption Seafood quality	(This would include wild catch and therefore above the level at which the aquaculture industry can report) 1. Is your business accredited according to national food standards production and handling legislation (PPPS)?
	Employment		1. What is your farms total production for last financial year? 2. How much area/lease do you currently have under production? 3. What is the total area of your farm, including such things as production (area/lease), hatchery, storage, processing and packaging and open areas?

			4. Given the entire farm lease area, what is your potential production per hectare? (Also covered in the Industry Structure)
	Import Replacement		
	Attitudes to Fishery	Existence Values Contribution to cultural values	(Both covered in dependent communities)
	Distribution of benefits		(This is considered addressed in the area of social capital and other values.)

* Items underlined refer to those previously identified ESD indicators.

REVIEW SUMMARY

The reviews of both social and economic indicators of Ecologically Sustainable Development identified that while there is a body of work in the area, and also of data that are already being collected in the economic area, a need that still exists in the specific niche of indicators to address the agreed ESD social and economic Reporting Groups.

There is an obvious cost effectiveness benefit in utilising existing data that is already collected from industry sector businesses, aside from the consideration of minimising time imposts on business operators. However, as this review demonstrates there are two key issues in consideration of collection of social and economic data to inform ESD Reporting Criteria:

1. There is no regular and established approach or method for the collection of data to inform indicators of the achievement of social objectives of ESD Reporting Groups; and
2. Economic data that is currently collected is not nationally uniform and it does not comprehensively address the economic objectives of ESD Reporting Groups.

Consequently, the review confirmed the need to develop a specific set of indicators with associated data collection questions to address both the social and economic reporting groups of the ESD Reporting Framework.

OBJECTIVE 2:

Develop a system for presenting aquaculture information on these indicators that can be easily integrated within the existing reporting frameworks.

PRIMARY DATA COLLECTION

The following is a discussion of the development and implementation of the pilot survey applied to the Australian Prawn Farmers Association (APFA), Shellfish Industry Council of Australia (SICOA) and Australian Abalone Growers Association (AAGA). Full details of the responses to and uses of question can be found in Appendices 5, 5A, 6, and 6A (pp.113-1780)

Survey Response and Validity

Surveys were distributed to members of the Prawn, Abalone and Oyster sectors but not every oyster grower, prawn or abalone farmer was surveyed. For the purposes of ongoing ESD data collection and collation however, survey and data management through sector bodies was seen as the only logistically viable option of investigating the feasibility of an ongoing framework. On average the overall response rate across the four surveyed industry sectors was 40.1%; the analysed response rate was 41.6%[2]. Individually, the response rates were as follows:

- Australian Prawn Farmers Association – 66.6% or 15 valid responses from 27 viable farms and active licences.
- Australian Abalone Grower's Association – 45.7% or 8 valid responses from 16 estimated viable farms and active licences.
- Shellfish Industry Council of Australia – Oysters – 39.3% or 118 valid responses from 300 viable farms or active licences.
- Pearl Producers Australia – 9.1% or 2 from a potential 22 licences.

It is important to note that this research was not endeavouring to provide a comprehensive ESD report. Rather it was testing questions and indicators to assess their relevance to the aquaculture industry and to identify if such indicators could illuminate issues within the reporting groups of the established ESD framework. The data collection questions used for the indicators may in the future have confidence interval analysis applied to them, to identify the validity of responses in regard to apparent trends and the overall industry.

The inclusion of comparative data to general population data, e.g. by using Australian Bureau of Statistics, Statistical Local Area (SLA) or Local Government Area (LGA) was also initially identified as a desirable approach. However on closer examination of the data collected, it was identified that such a practice would compromise confidentiality of some operators. Consequently the comparison with general population and housing census community data was not undertaken.

The industry feedback sessions on the data resulted in the industry recommending the exclusion of a number of indicators. In many cases the benefit of long-term trend data or the possibility of being able to identify gaps and opportunities for the industry were not recognised by industry groups. Consequently, in these cases, although the industry workshops did not recommend the retention of a number of questions, the project team has recommended that they be included in the final list of questions as they were deemed valuable indicators of industry sustainability over the long term.

Consultation with Stakeholders

Consultation with government agencies, State representative bodies and external interest groups, included the Department of Primary Industries and Fisheries QLD; Department of Primary Industries, NSW; Tasmanian Seafood Council' South Australian Oyster Growers Association; Australian Abalone Growers Association; Department of Primary Industry, Victoria; Department of Fisheries, WA; and Pearl Producers Australia. Regulators provided comment on

[2] Due to the low response rate of the Pearl industry, (caused by the global financial crisis), the Pearl Industry was not included in the analysis which follows.

the generic survey through the Australian Fisheries management Forum's Aquaculture Committee, which included comments on; the economic data that was already collected in routine data collection and management by fisheries agencies; concerns regarding the applicability of the questions to all sectors; ability to 'audit' the data collected; concern over the use of the data; the necessity for clarity between land and marine based activities; and issues of maximum biomass figure associated with certain licences.

The World Wildlife Fund (WWF) Australia was identified as an important Non-Government Organisation (NGO) to provide comment on the development of social and economic indicators given the extensive involvement in the development of international aquaculture dialogues (included in the review and indicator development process). Although the WWF initially participated in the project, their participation was withdrawn as the priorities of WWF Australia no longer include aquaculture. As a result no feedback was received from WWF on the final generic survey.

FINAL RECOMMENDED SOCIAL AND ECONOMIC INDICATORS AND QUESTIONS

The following table (Table 1) is the generic survey for social and economic indicators to inform the recommended ESD requirements, which groups the questions according to the ESD Framework Reporting Levels/Groups. A full recommended format for order and response categories for each question is detailed in Appendix 8 (p.178). Some of the questions have been split into multiple parts to aid clarity and analysis, from those used in the pilot (refer Appendix 4, p.107 for the full pilot survey question response rates and results of questions.).

Table 3. Social survey question in ESD Framework (Fletcher et.al., 2004)

<table>
<tr><th>ESD Reporting level/Group</th><th>Indicator</th><th>Question</th></tr>
<tr><td>Community Wellbeing</td><td>Income/
Local Employment/
Education</td><td>1. What was the average number of employees in the business last financial year?
<table>
<tr><th>Position</th><th>Perm FTEs</th><th>PT FTEs</th><th>Cas. FTEs</th><th>No. Male</th><th>No. Female</th><th>No. unpaid</th></tr>
<tr><td>Admin</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Processing</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Farm</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Hatchery</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
2. How many of those employees undertook and successfully completed formal training programs last financial year? (Detail course name and the number of employees undertaking it).
3. How frequently have you or your staff provided speakers or liaised with schools, colleges, universities or community groups (Rotary, Lions, Apex etc) to provide education about your industry in the last financial year?</td></tr>
<tr><td></td><td>Workplace health and Safety</td><td>4. Does your business require a documented food safety management system as required by the Primary Production and Processing Standard for Seafood (PPPS)? YES/NO
If Yes, under which system? e.g. AQIS, Supermarkets, government, third-party audited standard (SQF, EuropGAP,</td></tr>
</table>

		GlobalGAP, ISO) 5. Do you have a non-mandatory documented food safety management System? 6. How many work cover reports of accident/incidents did your business record in the last financial year? 7. How often did your business provide Occupational Health and Safety training for your staff in the last financial year? 8. Do you have a documented process for the implementation of health and safety procedures for your business? If yes, do you undertake annual audits of adherence to those processes?
	Attachment to lifestyle	9. How long have the current employees been with the business?
	Capacity to Change	10. How frequently does your business contact the following agencies for advice? (Categories include; Industry organisations, private consultants including financial, environmental, marketing etc advisors; and Government officers; State/federal fisheries and/or natural resource management officers/managers etc). 11. How many times in the last financial year did you business have interaction with Sate and/or Federal government agencies (fisheries or NRM officers, managers or agents) as a necessary part to conducting the business?
	Fair Consideration of the local community by Industry	12. Does your business have any documented policy for resolving community or other grievances with its operations? 13. Does your business provide any environmental monitoring services to your region in the course of its operations? 14. Do you have any area of your farm/business under environmental protection for the benefit of regional biodiversity? 15. How much did your business spend on environmental assessment and inspections in the last financial year?
Regional Community Dependence	Regional Social Capital	16. Is your business a member of an industry Group? 16 a. If Yes, how many industry group meetings did you or your staff attend in the last financial year?" 17. Is your business currently a member of any non industry business councils/or groups (e.g. State or regional Chambers of Commerce)? 18. Are you, or any of your staff, an active (i.e. attend 60% of more of meetings) member of business councils, community (Apex, Lions, Rotary, etc) or environmental groups? 19. How frequently in the last financial year, have you or your staff attended seminars or conferences that address industry sustainability and development? 20. Has your business made any donations to the local community (schools, community or sporting groups, including in-kind donations) in the last financial year? 21. Has your business provided public access to its infrastructure (e.g. boat ramps, moorings, buoys,

		navigation poles etc.) in the last financial year?
	Social Impacts	22. How often in the last financial year, has your local community challenged your rights to access resources (e.g. use of water, land, etc) that were registered through planning applications; council applications; EPA or other formal process? 23. How many complaints (that were registered with Council or other regulatory body) has your business received in the last financial year?
Indigenous Community	Long term rights of indigenous land use	24. Is there an active Indigenous community or group in your region?* 24a. Do you have any formal interaction or collaboration with that community/group? 24b. Do you have any *in*formal interaction or collaboration with that community/group?
Net Economic Value	Production	25. What is your farms total annual production for last financial year? 26. How much area/lease do you currently have under production? 27. What is the total area of your farm, including such things as production (area/lease), hatchery, storage, processing and packaging and open areas? 28. Given the entire farm lease area, what is your potential production per hectare?
	Investment	29. What is the total value of the investment in your business last financial year (market value of plant and equipment, land, vehicles etc)? 30. How much did you invest in your business last financial year (market value of plant and equipment, land, vehicles etc)?
Import replacement and Exports		31. What value of product did you export last financial year?
Multipliers and Taxes	Spin-off Industries	32. How much did you spend on suppliers and allied businesses in procurement equipment and services in the last financial year?
	Taxes and Rates	33. What percentage of gross revenue was paid in income tax in the last financial year? 34. How much did you spend on local authority taxes/ rates in your business last financial year? 35. How much did you spend on licence fees last financial year?

Fees Etc.		36. How much did your business spend on environmental assessments and inspections last financial year?

Note. The full survey with measurement criteria is provided in Appendix 8 on p.178, and a detailed discussion of the Pilot Survey results in Appendix 5 & 5a p.145 ff; and Appendix 6 and 6a p.158 ff).

The results from these questions provide a range of information that can be used at the discretion of the specific sectors and the National Aquaculture Council to:

- Inform the public and/or raise community awareness of the contribution of the sector to regional, state or national communities.
- Inform industry with information to lobby government for due consideration in regard to legislative changes.
- Inform industry in regard to; socioeconomic areas where improvement has occurred; opportunities for improvement, areas of decline in participation and performance; and
- Build industry capacity in regard to awareness of areas where it is able to increase community interaction and the ability to monitor industry performance.

Summary

The process of engaging industry bodies to participate in the project led to a number of issues with regards to industry's ability to engage its participants and the issues associated with the process. Sectors characterised by a small number of participants, such as the salmon industry, declined participation due to the problems of being able to maintain confidentiality of data. The confidentiality issue was also identified in the Abalone sector, leading to analysis of the data on a national basis only rather than a regional basis. The pearling industry underwent a consolidation of industry participants during the project and also declined to provide data due to the impact on capacity of the industry resulting from the impacts of the 2008-09 Global Financial Crisis[3]. It is also noted that industries with a small number of participants who predominately export were more susceptible to global economic conditions.

In many cases the number of businesses operating in an area or region were so few that in any regional analysis or comparison made, it would be clear as to which individual operations were being compared, raising issues of privacy and non-ethical disclosure of business data. Consequently such a regional population analysis of either general communities and/or industry sectors was not practical.

The feasibility of implementing an analysis of the size distribution of the industry to assess the implications and representativeness of survey results where returns are low was not possible within the scope of this project. It is noted that this would present an opportunity for furthering the contextual meaning of an ESD reporting framework.

The robustness of this project is derived from:

1. The review – ensuring previous work in the area has been taken into account and integrated into this work; and
2. Industry sector consultation – to ensure understanding of the issues and process by the industry; their buy in to the project; and a process that was both relevant and able to be implemented given the resources available to all sectors in the industry.

It should be noted that the data derived from the questions can and should have varying degrees of reporting, i.e. from internal sector use only to full public disclosure. Deciding this is entirely dependent upon the sector and will depend upon the current political climate, context and consequent reporting requirements and pressures.

[3] http://en.wikipedia.org/wiki/Financial_crisis_of_2007%E2%80%932010

The work undertaken in this section of the project was, as has been discussed, extensively reviewed by the industry, and the final generic survey (as above and as presented in a useable format in Appendix 8, p.178) was deemed to be in a format that could easily be used and/or integrated with existing benchmarking and other annual data collection projects.

OBJECTIVE 3:

Develop methods of use and communication that promotes the use of the ESD reporting framework as an essential tool for the aquaculture industry and its stakeholders.

In order to be able to generalise the applicability of the recommended survey to all aquaculture industry sectors, and therefore realistically seek broad adoption of any recommendations, a workshop was undertaken in May 2010. The objective of this was to review the outcomes of the project and the survey instrument with the sector representative bodies listed under 'Acknowledgements' (p.6). The meeting attendees comprised 7 of the 13 (or 53.8%) industry sectors in Australian Aquaculture, and 80% of the top five species by value[4]. The survey and resultant workshop notes were also sent to all sector representative bodies for comment and confirmation of their concurrence with the outcomes and planned future implementation options. Affirmation of acceptance of the instrument by greater than 50% of the industry's sectors, was taken as endorsement of the survey instrument as applicable to the aquaculture industry overall.

INDUSTRY REVIEW

The industry largely agreed on the broad parameters for each of the objectives of the workshop, with some allowance for variations in the cultural differences between sectors.

It was agreed that, while it would be highly preferable that all sectors include all questions to allow sector comparison (where meaningful), if some sectors chose to only use some questions that would be an improvement on the data currently available. However, sectors must be aware of the interrelation of a number of questions and that some are only informative in the context of information provided by other questions. The section on 'interpretation guidelines' (Appendix 7) highlights which questions need to be interpreted in the context of others.

It was identified that in regard to regularity of collection, many of the industry's sectors have made a level of commitment to the benchmarking processes which focuses on economic and production reporting, and is currently being adopted as an annual data collection activity. The industry representatives commonly agreed that questions from this generic survey could easily be integrated into the benchmarking surveys. This would reduce the number of surveys that industry was asked to participate in and would decrease implementation costs. There is still some debate as to the best implementation methods (i.e. electronic or paper surveys) however it was noted that this was specific to sectors and should not be dictated, but rather the administration method best suited to the members of each sector be used as appropriate.

The industry agreed that the need to have an independent person responsible for the data, such as a sector Executive Officer, is essential to the maintenance of business operation confidentiality. Where a sector did not have such a resource, support in the form of funding for a person to undertake this, was tabled as a consideration. Further to this, it was commonly agreed that while the National Aquaculture Council remained controlled by an independent Executive Officer, access by the NAC to all data collected under the ESD indicator banner should be available to the NAC for use upon request. This would give NAC the ability to act on behalf of the industry overall in regard to identifying common issues and/or lobbying as required in relation to identified politically influenced issues.

In regard to use, it was commonly agreed that by sectors collecting the data themselves they would have unilateral access and the ability to selectively use data as best fits the needs of the time in sector report cards. In addition, the database could be developed into linear trend data over time that will be able to point to long term changes in industry behaviour or circumstances. In addition they would be able to release information on request to NAC for use in industry report cards as agreed with sectors for political negotiations as necessary.

Summary

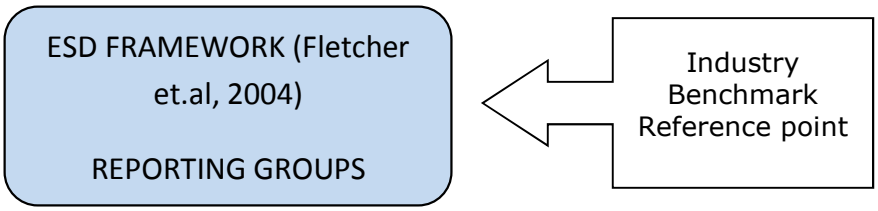
[4] The top five aquaculture species by value include; Tuna; Pearl Oysters, Salmon; edible Oysters; and Prawns.

The agreements reached by the industry at the final workshop (fully detailed in Appendix 9), set the parameters to allow confidence regarding the future implementation of the survey and collection of the data, and therefore supported the third objective of the project – to develop methods of use and communication that promotes the use of the ESD Framework.

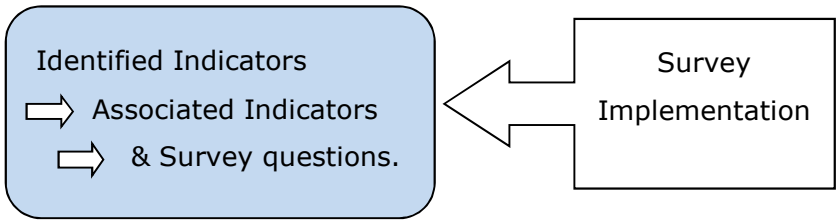
A TOOLBOX: A SOCIAL AND ECONOMIC DATA COLLECTION AND REPORTING FRAMEWORK.

As discussed in earlier sections, this project has not included ecological data considerations due to their adequate coverage elsewhere (Refer to MISA reports, WA Fisheries, QLD DPI, amongst others), but rather has been designed around social and economic considerations, cognisant of the need to be able to dovetail information collected through this means, with ecological data. It is quite feasible that the ecological data could as easily be interpreted and addressed in the same steps as outlined in the following approach, or alternatively, the findings from this work integrated with ecological reporting.

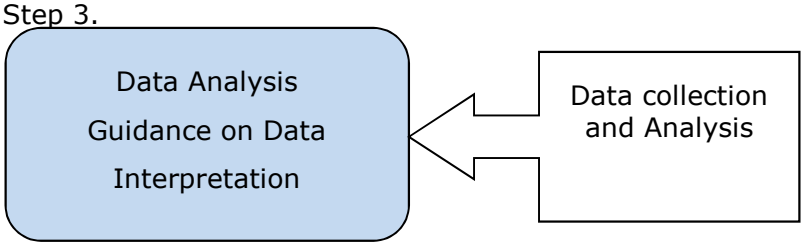
Step 1.



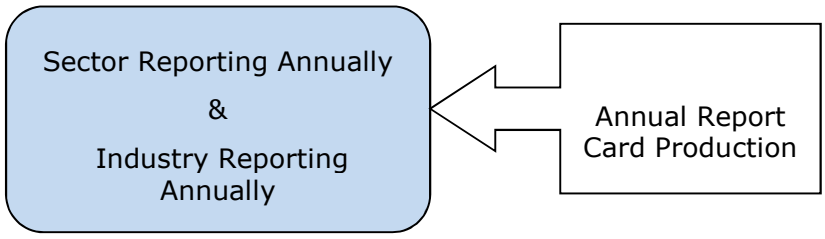
Step 2.



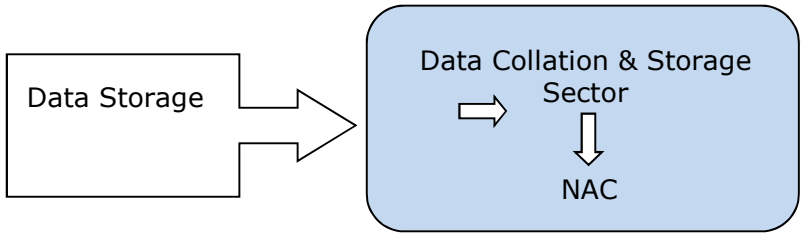
Step 3.



Step 4



Step 5.



In order to implement these steps there are several elements or resources that individuals acting upon this will require. These are the elements of what is referred to as the 'Tool Box' which is an output of the third objective of the project.

TOOL BOX ELEMENTS

1: ESD FRAMEWORK AND REPORTING GROUPS

The ESD Framework has been developed by a group of national representatives over an extended period of time with extensive consultation across the seafood and marine industries, government departments and NGOs nationally. Consequently the broad framework is well accepted in Australia and it is reasonable to say, 'well entrenched' in the policy and management minds of resource users and managers. The framework as a result provides the benchmark and baseline parameters for this reporting framework developed for the Aquaculture Industry.

Output: Recommended ESD Reporting Groups/Levels (Fletcher et.al, 2004).

2: INDICATORS AND SURVEY QUESTIONS.

The second step - involving several parts which this project has developed - requires implementation of the surveys to collect the data. The survey questions are the means by which data is collected to inform the indicators of the ESD Reporting Groups.

Implementation of the survey tested the applicability of the identified indicators and questions, across a representative sample of industry sectors. This was essential in order to be able to generate aggregated report cards for the Australian Aquaculture industry overall; it is necessary for all sectors to be utilising the same indicators for the ESD objectives.

Output: The recommended Generic Survey (Appendix 8)

3: DATA ANALYSIS AND INTERPRETATION GUIDELINES

While data can be collected through surveys or from other data collection and collation means, it is still required to be analysed and interpreted – both at the sector and overall industry level. The guidelines for interpretation are included in Appendix 7. These provide the layperson with a road map of the ways in which the data may be interpreted and utilised dependent upon both how the data presents and the circumstances or needs of the industry and the environment in which it is operating at the time.

Output: Analysis and Interpretative Guidelines. (Appendix 7)

4: REPORTING AND ANNUAL REPORT CARD PRODUCTION

The original idea of producing an industry sector report card was trialled for the prawn sector. It was found that the data available did not have enough depth or history to provide credible evidence for a formal public report card. It was decided that the production of an industry report card required data from a number of years to be able to produce trends in industry growth and change. It is recommended that the public report card for industry sectors is produced after a second survey is conducted. Resources will need to be allocated for the production of the report card.

Output: Report Card Template (Appendix 10)

STEP 5: DATA COLLATION AND STORAGE

This step was the subject of the third and final industry workshop, and while progress has been made, it will continue to be the focus of ongoing industry and agency negotiation and collaboration.

LESSONS LEARNT

While not normally recorded in FRDC final reports, the project team believe it is a valuable exercise to share with readers its experiences in undertaking this project. It is hoped that future researchers will take on board the following lessons and apply the projects team knowledge to their endeavours.

Industry and stakeholder engagement

- Cohesive industry associations are important in being able to promote and manage the use of surveys and the resulting data, highlighted by the FRDC's Co-Management Report (2008, p.19). Aside from the role of providing national co-ordination and cohesiveness, these Associations are critical in providing contact details of industry members, and a broad understanding of the reasons and benefits of the sharing of data sought in these processes, and a strategy to maximise the outcomes.
- Despite the above, industries with a small number of participants or a few dominant participants can be unwilling to participate due to problems with confidentiality; examples include the salmon and the pearling industry. These industries need to be assessed on a national rather than a regional or local basis to maintain confidence. This highlights also the broader issue of the barriers that exist to growing the industry as a whole within the Australian economy.
- Small developing sectors are often difficult to engage due to the focus and energy being directed toward becoming established rather than considering bigger picture issues associated with industry.
- Industries which are suffering financial stress or consolidation are less likely to participate in this kind of data collection and analysis.
- It is very difficult to engage those sector participants who are small or not active in the industry associations.
- Consideration needs to be given to the delivery technique of the survey. Some industries are not electronically engaged. Posted paper surveys resulted in a very successful outcome for most industries. The electronic survey was only embraced by the abalone sector.
- Industry sector Associations are often run on a voluntary basis, and do not have resources to provide services such as survey delivery and analysis. Funding assistance may be needed by these industry sectors to ensure participation in these types of activities, and co-management (as described by FRDC) may be an option to progress this.
- NGO representatives were not successfully engaged during the project. The chosen NGO representative was not appointed as WWF declined to participate in the project. Other NGOs were considered (e.g. Australian Conservation Foundation) but were not successfully engaged. Consideration needs to be given to the focus of NGOs and their interest in social and economic outcomes.
- The production of a report card was recognised as an overly ambitious aspect to the project given the resources provided and the breadth of the data required to produce a meaningful report card.
- There are implementation issues with the ESD Framework in terms of the ability to identify multiplier effects (one of the indicators specified under the Framework) due to the information required being 'commercial in confidence'.

Survey outcomes

- Future surveys should assume that all industry members comply with regulations imposed by Commonwealth and State agencies such as planning, OH&S and Employment.

- There is little data to suggest that industry does communicate with the community. The survey and its results can be used to increase industry education about ways in which to engage with community, and its benefits.

FURTHER DEVELOPMENT

While this work was undertaken specifically for the purposes of informing ESD reporting, it should be noted that the data gained from a survey such as this could be applicable to a range of other purposes, including benchmarking, and business and industry review and development.

Multipliers can be difficult to determine and are often misinterpreted, and hence are complex to construct correctly to reflect the reality of a situation. It is suggested that specific focus be given to the development of accurate multipliers for all sectors of the aquaculture industry. As separate and specific projects, multipliers have already been determined for the prawn and oyster industry from the industry benchmarking projects conducted through the CRC for Seafood.

The Seafood Cooperative Research Centre's (2007-2014) industry benchmarking project was commenced virtually concurrently with this project, and it was identified in the last industry workshop that many of the economic questions in this survey have been taken up in the benchmarking survey. Therefore, integration of these two processes needs to be undertaken through amalgamation of the indicators to remove duplication and to ensure coverage of the ESD requirements.

The industry feedback at the last workshop identified a level of confidence that the industry benchmarking process not only covered the weaknesses in the economic component of this project, but also provided an annual vehicle into which the social indicators could be integrated. In this way, the industry sectors were confident the breadth of data identified here could be collected in all sectors.

There remains the constant issue of continued resourcing for this kind of work. Most of the industry is still in its infancy and profitability is not always related to GVP. Thus industry, despite enthusiasm for the collection of data is simply not in a position to fund its ongoing collection, analyses and communication. In future, some funding mechanism needs to be found in order for the legacy of this project outputs and outcomes to continue beyond this final report.

BENEFITS AND ADOPTION

The aquaculture industry shares the resources and its operating environment with other users to a greater degree than most other primary industries. Therefore the need for stringent evaluation and thorough adherence to best practices in Ecologically Sustainable Development needs to be demonstrated.

Through developing an evaluation methodology and conducting some of the preliminary evaluation, the ability to extend the benefits of ESD to the broader aquaculture stakeholders will be facilitated and the benefits of understanding, engagement with, and improvement of, ESD outcomes, will be enhanced.

It is anticipated that the industry will have a far better understanding and appreciation for some of the broader ESD issues (in particular the social and economic) as a result of this project and why it is critical to report on ESD to the various stakeholder groups. The indicators and associated data collection questions, which have been agreed to by stakeholders, are now provided in a reporting framework that sectors can use to clearly demonstrate the industry's ESD credentials. Those indicators which identify weaknesses in the industry's ESD performance can be used to improve industry processes and activities. The aquaculture industry will be able to utilise the positive outcomes from social and economic assessments in negotiating conditions to allow continued growth and viability of the aquaculture sector.

Stakeholders will also be better informed on the ESD performance of the aquaculture industry through the implementation of a widely agreed public reporting framework that contains key agreed indicators covering all dimensions of ESD.

The key benefits of providing industry with a social and economic reporting framework are that it will:

- Lead to more effective and efficient data collection to identify gaps and needs, and inform industry development; and
- Provide a tool box of methods and approaches, and a framework that facilitates the integration of social and economic indicators into benchmarking projects; and
- Assist in identifying industry and policy priorities and directions, which can be linked to management objectives.

It has been recognised that the industry has little capacity to collect, manage, assess, interpret and store social and economic data. However, the outcomes of the last industry workshop indicated that the survey questions will be able to be adopted through integration into other industry reporting mechanisms. It is also anticipated that, potentially, agencies such as ABARE or State governments will adopt the indicators and data collection questions in their own annual processes; particularly for the economic and employment statistics.

OUTCOMES

Through developing the ESD framework for aquaculture it is hoped that the benefits of ESD to aquaculture stakeholders, such as government and the industry's associated communities, will be enhanced.

It is also anticipated that industry will have a far better understanding and appreciation for some of the broader ESD issues (in particular the social) as a result of this project and why it is critical to be able to report on ESD to the whole range of stakeholder groups. The indicators have been agreed to by stakeholders, and are provided in a reporting framework that the industry and associated organisations can use to clearly demonstrate and understand the industry's social and economic credentials. Industry will be able to utilise the demonstrable outcomes from socio-economic assessments as a tool for negotiating conditions to allow continued growth and viability of the aquaculture sector. Internally, the industry can also use the information to assist in development plans to focus on areas where there is opportunity to develop greater ESD transparency.

With the utilisation of this Framework and tool box, the opportunity exists to improve stakeholder information about aquaculture ESD performance. The key outcomes of providing industry with a socio-economic reporting framework are that it:

- Provides the industry with a means to address policy priorities and directions in regard to responsible ESD performance;
- Has established a credible and robust process of data collection to inform specified ESD indicators, which aligns with other reporting frameworks developed in the fisheries and agriculture sectors; and
- Facilitates the ability to undertake more effective and efficient data collection to identify gaps and needs in ESD, performance, reporting and management.

CONCLUSION

In terms of the original objectives of the project, it is recognised that the scope was too broad to enable the achievement of the original objectives. With the slight revision of the objectives and narrowing of the scope, and with the assistance of proactive industry representatives to drive the process, the revised objectives have been achieved and sound progress has been made toward the achievement of the original objectives. Most importantly, significant ground has been made on creating understanding about how social and economic aspects of ESD can be reported. Prior to this project very little existed, in aquaculture or elsewhere in the seafood industry in Australia, that informed industry on how to address the social and economic dimensions of ESD reporting. This project has both brought together in a cohesive form what did exist and has initiated a process for implementing ESD reporting in line with the requirements as promulgated by State and Federal aquaculture management legislation.

This study has tested and refined the indicators and potential data collection questions that may be implemented by individual aquaculture enterprises, and subjected to basic interpretation by the industry, to inform ESD reporting. Some of the economic and social data also has the potential for use, beyond ESD, in regard to identifying industry development and community collaboration opportunities.

Discussions with industry at the final workshop identified both willingness and the potential vehicles with which to undertake annual collection of the data identified here, at the individual business level. This is an important and essential factor in the long term use of the tools and implementation of the framework identified here.

There is a need to remain cognisant of the cost effectiveness of different approaches to data acquisition. Though utilising existing data in the economic domain and to integrate the collection of social indicator data with other benchmarking and regular data collection activities, it is reasonable to aim for ongoing collection of data to inform ESD performance.

The collection and integration of both economic and social indicators appropriate to national collection, but not currently broadly or consistently collected, is essential to future successful implementation of ESD reporting. Negotiations regarding the ways in which to collect data to inform nationally applicable indicators, with agencies such as ABARE or State NRM Government agencies, needs to occur. This is, however, outside the scope of this project. This project has identified recommended indicators and the associated data for the aquaculture industry that needs to be addressed in such negotiations.

REFERENCES

1. AUSTRALIAN BUREAU OF AGRICULTURE AND RESOURCE ECONOMICS (ABARE) 2009. *Australian Fisheries Statistics 2008*, Canberra. 87pp.
2. AUSTRALIAN PARLIAMENTARY LIBRARY (1999) Monthly Economic and Social Indicators (MESI) Historical Supplement 1999. IN AUSTRALIAN PARLIAMENT (Ed.). Canberra, Australian Parliamentary Library.
3. BUCKEE, J. & HOLMES, P. (2004) Assessment and Reporting of the Ecologically Sustainable Development of Australian Aquaculture - an Industry Perspective. Department of Agriculture, Fisheries and Forestry, Maunsell.
4. ECONSEARCH, 2010; *Economic Data for the Australian Aquaculture Industry, A report prepared for the National Aquaculture Council.* Paper. Adelaide, June 23, 2010
5. ECOSLYVA LIMITED (2007) *Woodmark Generic Standard and Checklist*. IN SOIL ASSOCIATION WOODMARK (Ed.) *ST-FM-001-05.* Bristol, UK, Soil Association Woodmark.
6. FISHERIES RESEARCH & DEVELOPMENT CORPORATION (2008) *Co-management: Managing Australia's fisheries through partnership and delegation,* Report of the Fisheries Research and Development Corporation's national working group on the fisheries co-management initiative — project no. 2006/068. Canberra, Australia.
7. FLETCHER, R., CHESSON, J., FISHER, M., SAINSBURY, K. & HUNDLOE, T. (2004) National ESD Reporting Framework - The 'How To' Guide for Aquaculture. Version 1.1. Canberra, Australia, Fisheries Research and Development Corporation
8. FLETCHER, R., SAINSBURY, K., CHESSON, J., HUNDLOE, T., FISHER, M. & SMITH, T. (2003) National ESD Framework Project. Case Study Information Package. Version 3.
9. FOOD STANDARDS AUSTRALIA NEW ZEALAND (2006) Standard 4.2.1 - Primary Production and Processing Standard for Seafood. IN FOOD STANDARDS AUSTRALIA NEW ZEALAND (Ed.) *Standard 4.2.1.* Canberra, FSANZ.
10. HAMILTON, L. C. & BUTLER, M. J. (2001) Outport Adaptations: Social Indicators through New Foundland's Cod Crisis. *Human Ecology Review,* 8, 2, 1-11.
11. HUDDLESTON, V. (2006) A Social Assessment of Coastal Communities Hosting the Western Rock Lobster Fishing Fleet. *Assessment of Western Rock Lobster Strategic Management Options.* Perth, Department of Fisheries WA.
12. LOCKIE, S., LAWRENCE, G., DALE, A. & TAYLOR, B. (2002) 'Capacity for Change': Testing a Model for the Inclusion of Social Indicators in Australia's National Land and Water Resources Audit. *Journal of Environmental Planning and Management,* 45, 6, 813-826.
13. MARSHALL, J.A., & STUMP N.E., (2007) *The Development and Production of EMS Template Documents for the Salmonid, Oyster and Abalone Aquaculture Sectors in Tasmania*. Fisheries Research and Development Corporation and the Tasmanian Fishing Industry Council. FRDC Report 2004/096
14. MAZUR, N., ASLIN, H., BYRON, I., CURTIS, A. & MAGPANTAY, C. (2003) Community Perceptions of Aquaculture: Report o the Eyre Peninsula. IN BUREAU OF RURAL SCIENCES (Ed.). Canberra, Department of Agriculture Fisheries and Forestry.
15. NATIONAL LAND AND WATER RESOURCES AUDIT (2007) Signposts for Agriculture - Grains Industry Profile. IN DEPARTMENT OF AGRICULTURE FISHERIES AND FORESTRY AUSTRALIA (Ed.). Canberra.
16. NUTRECO (2007) Nutreco CSR Report 2006. IN NUTRECO (Ed.). Amsterdam, Nutreco Holding.
17. PRETTO, R. (1997) Appendix 2: Objectives and Indicators for Aquaculture Development. *Report of the Expert Consultation on Small-scale Rural Aquaculture.* Rome, FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS.

18. SANFORD SEAFOOD (2007) Sustainable Development Report 2007. IN SANFORD SEAFOOD (Ed.). Auckland, NZ.

19. SCHIRMER, J. & CASEY, A. M. (2005) Social Assessment Handbook. A guide to methods and approaches for assessing the social sustainability of fisheries in Australia IN FRDC (Ed.) *FRDC ESD Reporting and Assessment Subprogram.* Canberra, Bureau of Rural Sciences.

20. SOUTH AUSTRALIAN GOVERNMENT, (2001) South Australia Aquaculture Act 2001, Version: 1.2.2010; Adelaide. http://www.legislation.sa.gov.au/LZ/C/A/AQUACULTURE%20ACT%202001/CURRENT/2001.66.UN.PDF. Accessed 21stMay 2010

21. SPARREBOOM, T. (2007) Key Indicators of the Labour Market Programme Section B: Assessing vulnerable employment: The role of status and sector indicators. IN INTERNATIONAL LABOUR ORGANISATION (Ed.). Geneva, International Labour Organisation.

22. WILD, S. (2007) *Regulation or Self-Regulation? Evaluating the Ethics and Efficacy of Sustainability Reporting in Fishing Industry Management.* University of Sydney, Sydney, Australia: 6th Australasian Conference on Social and Environmental Accounting Research (CSEAR), 2-4 Dec 2007. Full Conference Paper (http://escholarship.usyd.edu.au/conferences/index.php/CSEAR2007/CSEAR2007/paper/view/70/30)

23. WORLD CONSERVATION FORUM (2005) Minutes of the Workshops on Aquaculture held within the framework of the World Conservation Forum. IN WORLD CONSERVATION FORUM (Ed.) *World Conservation Forum,* Bangkok.

24. WORLD WILDLIFE FUND (2008) Shrimp Aquaculture Dialogue. IN WWF (Ed.) *Dialogue.* Version 2 ed. Madagascar.

APPENDIX 1: INTELLECTUAL PROPERTY

There is no intellectual property associated with this project.

APPENDIX 2: PROJECT PARTICIPANTS

Steering committee composition and meeting schedule

Committee member	Affiliation	1 Adelaide 29/11/07	2 Phone Link 30/05/08	3 Phone Link 19/06/08	4 Phone Link 18/07/08	5 Phone Link 26/03/09
Simon Bennison	National Aquaculture Council (Chair)	X	X	X	X	X
Justin Fromm	National Aquaculture Council (Chair)					
Rick Fletcher	Dept. of Fisheries, WA	X	X	X	X	X
Jean Chesson	Bureau of Rural Science	X	X	X	x	x
Tor Hundloe	Uni Qld	X	X	X		
Ted Loveday	Seafood Services Australia					
Judi Marshall	Phycotec (Project Officer)	X	X	X	x	x
Martin Hernen	SICOA guest	X				

Outcomes of steering committee meetings

Meeting 1	• Developed expectations of the project • Identified scope of the reviews • Identified industry participants and discussed industry engagement
Meeting 2	• Reviewed the project plan • Comment on the social and economic reviews was provided • Discussed issues surrounding the running of workshop 1 (objective to develop the survey)
Meeting 3	• Approval of the survey instrument
Meeting 4	• Sign off or workshop 1 material • Clarification on role of NGOs to include WWF • Reviewed changes in project plan
Meeting 5	• Reported on the outcomes of the Workshop 2 for APFA and SICOA. Feed back on the draft APFA report card developed from the

	workshop 2 results

Reference Group Members

S Bennison, J Marshall, B McCallum, Ian Lyall (representing Aquaculture Committee and regulators), K Brooks(consultant), H Jenkins(APFA), B Zippel (Oysters – SICOA), T Hundloe (Consultant), A Fleming(Abalone – AAGA).

Industry Group Leaders

PPA – Brett McCallum;

APFA – Helen Jenkins and Jeff Harrison;

AAGA – Ann Fleming and Mark Jervis;

SICOA – Bruce Zippel.

Participating Government Agencies and Industry Bodies

Gerrard Hawkes - QLD DPIF,

Tim Gippel - DPI NSW,

Anthony Forster - Vic DPI,

Neil Stump – TSIC,

Fiona vom Berg - WA DOF,

DPI NT,

Jan Lee – SAOGA

Consultants

Dr. K.J. Brooks – KAL Analysis Pty Ltd (Social Research Consulting)

Prof. T. Hundloe – WHAT Consulting (Economic Research Consulting)

Dr Julian Morrison – EconSearch Pty Ltd (Economic Research Consulting)

Dr J.A. Marshall – Phycotec Environmental Consulting

APPENDIX 3: REVIEWS OF SOCIAL AND ECONOMIC INDICATORS

Social Indicators Review

Scoping social indicators for the aquaculture industry

16 April 2008

KAL Analysis Pty Ltd

ABN 67 072 662 358

33 Barkly Ave Armadale VIC 3143

Tel: +61 3 9509 3565

E: kate@kalanalysis.com.au

W: www.kalanalysis.com.au

Contents

1.0 Introduction - Potential Social Indicators for use in Aquaculture ESD Assessments

The following review has been commissioned by the National Aquaculture Council (NAC), with the objective of determining a set of social indicators for consideration by the Australian Aquaculture industry from a regional to a national level. The focus sought by the NAC in the indicators is one of establishment of the contribution of the industry to Environmentally Sustainable Development and quality of life.

Aside from the parameters outlined above, there are a number of key issues to bear in mind in relation to developing indicators for the social component of Environmentally Sustainable Development. These include:

- The directive has been to include indicators that cover regional and national concerns (in line with previous work undertaken by the Seafood Industry's National ESD Reporting Framework). However, there are also local communities of reliance and concern; that is, those intimately associated with the industry which should be taken into account as the most immediately impacted by an aquaculture operation.
- Most indicators, traditionally, only incorporate upstream inputs – that is those factors that have contributed to the existing circumstance. Some downstream impacts are incorporated in the indicators reviewed here and also in those recommended as a means of demonstrating the effective outcomes and benefits of the aquaculture operation.
- There is often confusion over economic indicators (that is those which are quantitative and monetarily based, such as economic and employment aspects of an industry's growth) and social indicators. It is often the case that economic indicators (such as employment income) are used as proxy indicators for social circumstances. However, without contextual information in terms of other contributing factors, such as work life balance or lifestyle benefits of employment income, they tell us little of the social benefit provided by an industry. Consequently, although a number of indicators can be used as indicators for both economic and social activities – it is how they are used in combination with other indicators and how they are interpreted that provides differentiation between them.
- Social indicators are often qualitative in order to obtain the particular experiences and nuances of circumstances which, for example, elucidate the circumstances behind employment income. However, policy is often designed around the changes in quantitative benchmarks or evaluations. Ideally, social indicators combine both quantitative and qualitative data, providing a comprehensive depiction of what is happening in the industry. Qualitative evaluation is, by nature, more time consuming and therefore tends to be more expensive. In this initial establishment phase for the aquaculture industry, the following analysis and recommendations has, while incorporating both types of evaluation, has aimed to focus upon quantitative assessment options or documentation provision, as indicators of the social circumstance of the industry.
- In line with the argument regarding the benefits of qualitative and quantitative indicators, it is also imperative that the indicators recommended should be based on the fact that ESD must also rely on the ability to maintain profitability. Therefore, this review and the subsequent recommendations are cognizant of the requirement to minimize the amount of time and expense involved in undertaking the data collection and collation.

- Finally, although establishing a comprehensive set of ESD indicators for the aquaculture industry in Australia is ground breaking in itself, it is important to ensure that those indicators are at least on par with, if not building upon, existing international standards and indicators. Therefore, a range of international organisations have also been reviewed provide a benchmark upon which to build.

As the above demonstrates, there are many factors to consider. As with all things however, it is better to start off at a smaller (and achievable) scale that can be built upon, as operators become more used to the implementation of indicators and the benefits that can be derived from them.

The social issues that have been taken into consideration in reviewing the existing suite of indicators, and forming the basis of the suggested indicators, have included the following:

- The connectedness of the industry within itself and to the broader operating environment (social capital). This comprises the sub issues of:
    - Community perceptions (employees and non employees)
    - Acceptance of diversity – both within the industry and by the industry of the broader community;
    - Links to information and decision making networks, internal and external the industry, and also with state and federal governments.
- Ability of the industry to provide fair and gainful employment (this covers not only Occupational Health and Safety, but also attachment to lifestyle and community.)
- Support of diversity of lifestyles (Indigenous and European based)
- Ability to provide a safe working environment that encourages communication and improvement (again relating to Occupational Health and Safety, quality of life and community well being.)

The following discussion first reviews the existing indicators in both the seafood and other primary industries along with literature on primary industry social indicators (2.0). In section 3.0 the discussion then turns to a recommended selection of the most common, robust and preferred indicators (given the aforementioned considerations and criteria), with a range of possible data collection points. Table 2 (Indicator Parameters) highlights the questions addressed by each of the indicator categories and how they can be used by the industry.

It is envisaged that table 3, will form the basis of industry workshops and discussion around the best possible indicators given the opportunities and constraints of industry operations.

2.0 REVIEW OF EXISTING INDICATORS AND LITERATURE

The following (Table 1: Reviewed Indicators) summarises those social indicators which have been identified to date, and/or are used by a number of different organisations and bodies, both here in Australia and internationally. Many of them are, however, indicators only without any definition of measurement data that could reasonably be employed (i.e. 'Data Collected').

Where data collection points have been identified, these have also been listed. Some are, however, non specific and are open to a range of interpretations which allows for significant variation in implementation across the industry if used without further clarification. Such a lack of clarity in implementation will increase the likelihood of the indicators being open to criticism, resulting in a lack of value to the industry.

Table 1: Reviewed Indicators

Australian Sources				
Source	**Target Industry or group**	**Indicator**	**Objective of indicator**	**Data identified**
National ESD Reporting Framework V 3 (2003)	Indigenous Community	Traditional Fishing		
		Access to Land		
		Continuation of Activities		
		Other		
	Community Wellbeing	Income	Identify the economic benefits of the industry	Diversity and quantity of fish products sold locally.
		Work related injuries	To establish the Lifestyle benefits of the industry	Rate of death or injury occurring during fishing activities
		Attachment to lifestyle	To establish the lifestyle benefits of the industry	• Relative importance of fishing industry as part of local culture. (Economic Indicator) • Level of community support for fishing operations
		Distribution		Level of debt (Economic Indicator)
	Regional Community - Dependent	Employment	Establish level of Resource dependency	• Level of local & regional unemployment and

				employment. • Level of community acceptance of resource allocation arrangements.
			To identify the level of social capital	Number of second or greater generation of fishers.
			Other values (positive/negative feelings)	• Level of recreational fishing activities. • Level of competition for resource use (Specific data that could be collected to identify this?)
	Regional community – not dependent		Other values (positive/negative feelings)	
	National Socio-Economic wellbeing	Seafood consumption	Health benefits /risks	
		Seafood quality	Health benefits/risks	
			Employment	
			Import replacement	
		Existence values	Attitudes to Fishery	
		Contribution to cultural values	Attitudes to Fishery	
			Distribution of benefits	
Source	**Target Industry or group**	**Indicator**	**Objective of indicator**	**Data identified**
<u>Maunsell:</u> Assessment &	Aquaculture in Indigenous		Provision of employment opportunities.	

Reporting Australian Aquaculture ESD – an Industry perspective V.1(2004)	communities			
			Financial and economic independence of communities.	
			Arresting and reversing the movement of people from indigenous communities.	
			Achieving self sufficiency and food security.	
			Supplementing and replacing capture fisher production	
			Increased opportunities through development of aquaculture.	
	Community wellbeing – local and regional			
	National Social and Economic wellbeing		Health Benefits/Risks	
			Employment	ABS Statistics
			Attitudes to industry	
			Distribution of benefits	
			Spin off industries.	
Source	**Target Industry or group**	**Indicator**	**Objective of indicator**	**Data identified**

Community Perceptions of Aquaculture: Summary of key findings from the Eyre peninsula. (2004)	Aquaculture	Interest in being involved in aquaculture planning and management	Other values (positive/negative feelings)	Quantitative survey data on Community interest in engaging with industry activities.
		Perceived value of Community participation in aquaculture planning and management.	Other values (positive/negative feelings)	Quantitative survey data on community perception of receptiveness of industry to community concerns.
		Trust in government institutions to manage the fishery	Social Capital	Quantitative survey data on trust of community in government decision making
		Trust in industry organisations to manage the fishery	Social Capital	Quantitative survey data on trust of community in industry decision making
		Attitudes to the practice of aquaculture	Community support for Industry	Custom survey data on • approval of aquaculture • Other industry dependence • Perceptions of Environmental mgmt. • As an alternative to wild catch • Growth of aquaculture • Interaction of industry and community. • Associated pollution • Sea cages

				• Environmental impacts • Trust in the industry
Source	**Target Industry or group**	**Indicator**	**Objective of indicator**	**Data identified**
Social Assessment Handbook (FRDC) 2005	Fisheries (general)	Industry Demographic data	Identifying key strengths and vulnerabilities in communities	ABS Data including; • Age (average & median) • Gender ratios • Dependency ratios • Income • Ethnicity • Household expenditure • Length of residence • Longevity in industry • Longevity in industry sector • Education
		Regional demographic data	Profiling the region to identify key (potential) social issues	• Unemployment • Labour force participation • Employment by industry sector • Age (average & median) • Gender ratios • Dependency ratios • Income

				• Ethnicity • Household expenditure • Length of residence • Longevity in industry • Longevity in industry sector • Education
		Quality of Life	Allows analysis of how life differs between different (fishing) communities.	Quantitative survey data of: • Life satisfaction • Work satisfaction • Satisfaction with fishing activities (if not employed in fishing) • Physical and mental health • Autonomy in work • Work/life balance • Income from industry • Stability of industry and associated costs • Rate of quota/licence/share turnover in commercial fishery • Costs of staying in the industry (ie change in licence fees, ongoing

				business costs) • Cost of entry to the industry.
		Social Capital	Interaction with close acquaintances (family and friends)	• Frequency of interaction • Physical distance from family and friends • Proportion of family and friends who are also members of same industry.
			Connections in fishing industry	• Membership of fishing organisations • Level and nature of participation in those organisations • Institutions networks and processes used to acquire skills in fishing.
			Links between fishing communities and broader community	• Fishing member involvement in non fishing civic activities and groups. • Formal and informal physical infrastructure (community services) available. • Level of attachment to the region in which they live • Perceptions of relations between fishing

				communities and the general community.
Source	**Target Industry or group**	**Indicator**	**Objective of indicator**	**Data identifed**
Monthly Economic and Social Indicators (MESI - Aust. Government)		Population		• Population change • Net migration • Resident population
		Allowance Recipients		• Number of recipients • Annual change
		Overseas Visitors		Original & seasonally adjusted.
Source	**Target Industry or group**	**Indicator**	**Objective of indicator**	**Data identified**
Land & Water Resources Audit (reported in *Journal of Environmental Planning and Management*, (2002) 45(6)pp 813 - 826	Resources Managers (land holders in the main)	Education	*Capacity to change* Ability to research and absorb a variety of information	Identification of the level achieved and any ongoing development
		Use of private consultants	*Capacity to change* Use of external and objective information	Frequency and adoption
		Work with government officers to trial new practices	*Capacity to change* Flexibility of approach	Frequency and adoption
		Generations in farming	*Capacity to change* Attachment to industry	Years/generations

		Intention to continue in district	*Capacity to change* Attachment to region	Yes/No
		Participation in productivity related training	*Capacity to change* Knowledge acquisition – sources and willingness	Frequency and adoption
		Participation in land management field days	*Capacity to change*	Frequency and adoption
		Participation in leadership courses	*Capacity to change*	Frequency and adoption
		Family members working part time on farm	*Capacity to change*	Yes/No & Number
		Participation in other short courses	*Capacity to change*	Frequency and adoption
		Employment away from the farm	*Capacity to change*	Yes/ No; Industry; Hours per week.
Source	**Target Industry or group**	**Indicator**	**Objective of indicator**	**Data identified**
Signpost for Agriculture (Grains Industry)	Landholders	Individual Health	Contribution of social system to extending beyond the industry: Net contribution of the industry to human and social capital is positive and increasing over time.	
		Local and regional community employment	Contribution of social system to extending beyond the industry; Net contribution of the industry to human and social capital is positive and increasing over time.	
Source	**Target Industry or group**	**Indicator**	**Objective of indicator**	**Data identified (custom survey data design)**

Social Assessment of the Western Rock Lobster Fleet (FRDC – V. Huddleston 2006)	Western Rock Lobster	Resilience score	To identify the ability of the target group to cope with change. (The TRS (Total Resilience Score) is based on the direction and magnitude of the percentage change in each of the indicators census periods and between corresponding WRL seasons: p.50, appendix 3 of V.3 of the report).	• Total resident population; • Elderly dependency ratio defined as the number of elderly people for every 100 people of working age; • Child dependency ratio defined as the number of children for every 100 people of working age; • Number of occupied dwellings; • Labour force participation rate, calculated by expressing the number of persons in the labour force as a percentage of the population aged 15 years and over; • Unemployment rate defined as the number of unemployed people expressed as a percentage of the labour force; • Economic Diversity defined as the proportion of persons employed in the top three sectors to the total number of persons employed; • Total pot lifts for the

				whole season; and • Number of boats recorded in [December]
INTERNATIONAL SOURCES				
Source	**Target Industry or group**	**Indicator**	**Objective of indicator**	**Data identified**
Nutreco	Stock (fish) feed	Retain and recruit local people	Strengthen relationships between Nutreco and local communities	Collection of location of residence data
		Offering of equal opportunities regardless of race, gender and religion	Bridging gaps in local community social structures	Collection of nationality data Education and training programs in the company Job promotion opportunities through the company.
		Fairness of pay in accordance with national legislation	Fairness of employment and opportunities provided	Comparison with equivalent industries in the same country. Compliance with collective labour arrangements, compensation and social security packages.
		Freedom of employee association and union membership; and non use of child labour	Compliance with OECD conventions and relevant ILO conventions	Employee satisfaction surveys Compliance Certification
		Positive influence in the local community.	To bridge gaps in local community social structures	Welfare, cultural and environmental activities Scholarships (information published on website)
		Community Complaints	To identify community	Register of community

			issues	complaints, responses, and measures taken (where practicable) to mitigate causes.
Source	**Target Industry or group**	**Indicator**	**Objective of indicator**	**Data identified**
'**Outport Adaptations: Social Indicators through New Foundland's Cod Crisis'**, (Hamilton and Butler, (2001), Human Ecology Review,Vol.8 (2)	Cod Fishing Industry	Population	Indication of community wellbeing in relation to events in the industry	Population change over time
		Education	Length of education being related to future employment opportunities	% population >15 yrs with grade 9 education % population > 15 yrs with college.
		Employment	Identify and reflect shifts in employment prospects in relation to events in the industry	Employment levels; • general; • male; • female; • % income from employment • % income from government transfer
		Crime	Related to employment and population shift to identify any relation to events in the industry	Crimes reported per 1000 people.

Source	Target Industry or group	Indicator	Objective of indicator	Data identified
WWF – Aquaculture Standards	Aquaculture	Labour	Support of local communities	
Source	**Target Industry or group**	**Indicator**	**Objective of indicator**	**Data identified**
FAO[5] – '*Objectives and Indicators of Aquaculture Development*' The following contribute to lower rates of infant mortality, morbidity and influence the quality of rural life.	Third world aquaculture communities.	family size	Family planning contributes to the reduction of the number of children and poverty.	
		Education	Improvement of education to improve community knowledge and options.	
		Health Standards		
		Housing levels		
		Roads and Transportation facilities.		
Source	**Target**	**Indicator**	**Objective of indicator**	**Data identified**

[5] http://www.fao.org/docrep/X5821E/x5821e08.htm#6.5%20other%20indicators (Accessed 7/3/08)

	Industry or group			
World Conservation Forum[6] - Aquaculture workshop 25/11/05	Aquaculture	Impact minimisation on surrounding resource users	Enhance the social and community benefits from aquaculture	
		Benefits to local people	Enhance the social and community benefits from aquaculture	
		Contribution to poverty alleviation	Enhance the social and community benefits from aquaculture	
		Training and Education	Building capacity among stakeholders	
		Stakeholder partnerships	Building capacity among stakeholders	
		Promotion of the organisation of farmers	Building capacity among stakeholders	
Source	**Target Industry or group**	**Indicator**	**Objective of indicator**	**Data identified**
International Labour Organisation (ILO)	UN organisation that brings governments, employers and workers together to create a better environment. (Taken from Forestry	No Child Labour is used and there is no forced labour or debt bondage	ILO conventions 28, 105, 138 & 182	Interview with workers, their unions (labour organisations) Records of labour inspectorate Site Inspection

[6] http://iucn.org/places/medoffice/cd_aquaculture/docs/doc_base/minutes_wcc_bangkok.pdf (accessed 7/3/08)

	indicators adapted for international use)			
		Clear evidence of long term (indigenous) use rights to the land shall be demonstrated	ILO Convention 169 Art 14-17	Interviews with local community representatives and indigenous peoples Maps of titled lands or recognised territories Absence of significant disputes or all appropriate documentation (title; deeds; lease etc) available for inspection.
		Appropriate mechanisms shall be employed to resolve disputes over tenure claims and use rights.	ILO Conventions 169	Evidence that (industry) managers provide access to resources for local communities where such access does not prejudice the achievement of management objectives. Documents – records of forums for participation/ meetings Court records Community consultation
		Communities concerned have identified themselves as indigenous or tribal	ILO 169 (Article 1 (2) and 6 (1))	Consultation with local community representatives Evidence of free and informed consent by community representatives Records of information (EIAs etc) provided to the representative Absence of significant

				disputes Documentary evidence of agreements/signed agreements Appropriate payment or compensation for resource use.
		Traditional access for subsistence uses and traditional activities is granted	ILO Convention 169	Interview with representatives of local communities and workers and their unions. Interview with representatives of indigenous and traditional peoples.
		Local and resource dependent people have equal access to employment and training opportunities	ILO Conventions 169	National legislation compliance Recruitment strategy Evidence of employment of local personnel Advertisements in local newspapers Discussion with local communities
		Workers are not discriminated against in hiring, advancement, dismissal, remuneration and employment related social security	ILO Conventions 100 & 110	Compliance with national legislation Interviews with workers and their unions or labour organisations Payroll Findings of employment surveys Records of Labour inspectorate
		Wages or income of self employed or contractors	ILO Convention 131	Compliance with national legislation

		are at least as high as those in comparable occupations in the same region and in no case lower than the established minimum wage.		Interviews with workers and their labour organisations or unions Payroll of enterprise and/or contractors Findings of employment surveys Records of Labour inspectorate
		Workers are provided with safety equipment relevant to the tasks of workers, the equipment used and consistent with ILO standards	ILO Conventions 155,	Compliance with national legislation
		Where workers stay in camps, conditions for accommodation and nutrition comply at least with ILO code of Practice on Safety and Health	ILO Conventions 155	Compliance with national legislation Interviews with workers and their unions and community representatives.
		Management planning and operations shall incorporate the results of evaluations of social impact assessment	ILO Conventions 169 To incorporate the results of social impact evaluation into management decisions	Management plan or supporting documents
		Appropriate mechanisms to be employed to resolve grievances and for providing fair compensation in the case of loss or damage affecting the legal or customary rights, property, resources, or livelihoods of	ILO Conventions 169 1. To provide fair compensation to local people where their legal or customary rights, property, resources or livelihoods have been damaged. 2. To provide	• Documented mechanism for resolving grievances • Use of mechanism recorded • Documented procedure for deciding compensation • Evidence of compensation

		local peoples	compensation where inadvertent damage to indigenous and traditional resources has occurred on or near traditional lands 3. Mechanisms to resolve conflicts through consultation aiming at achieving agreement or consent, avoiding damage to property resources rights and livelihoods.	in the event of any such damage • Evidence of community control in determining the compensation • Discussion with resource managers • Documented procedures Compliance with national legislation
Source	**Target Industry or group**	**Indicator**	**Objective of indicator**	**Data identified**
Woodmark (UK)	Forestry	The management plan and supporting documents shall provide a description of the resource use and ownership status, socio-economic conditions, and a profile of adjacent lands/resources	There is a description of the socio-economic context for management	• Management plan
		Revision of management plan to respond to changing environmental, social and economic circumstances.	There is a system in place for regular revision and updating of the management plan	• Management plan • Discussion with managers
			There is a system to review management in relation to socio-economic conditions and trends	• Management plan • Social evaluation • Evidence of incorporation of significant findings of

				review and research, along with continued monitoring.
		Workers shall receive adequate training and supervision to ensure proper implementation of the management plan.	Management and supervisors shall have qualifications, training or experience appropriate to the scale and intensity of the operation sufficient to enable them to plan and organise operations and other elements of the management plan.	• Compliance with national legislation • Skills certificates, records of training • Field observation • Interviews with workers or unions
		Management should include the research and data collection needed to monitor: environmental and social impacts of harvesting and other operations.	There are meetings with representatives of local communities at which any concerns regarding the social and environmental impacts of operations are recorded.	• Records of meetings with representatives of local communities. • Documented procedures • Monitoring data.
Source	**Target Industry or group**	**Indicator**	**Objective of indicator**	**Data identified**
Sanford Limited	Sustainable Seafood (NZ)	Workforce diversity	A diverse workforce population is believed to add potential for new ideas and ways of thinking	• Gender composition of workforce • Ethnic diversity in the workforce.
		Workforce stability	Identifies the company as a desirable place to work	• Longevity of workforce's employment with the company, over time.

		Health and Safety	Important for maintain an optimal workforce	• Documentation of work related accidents • Internal documented process and audits of safety procedures • Membership of an accreditation program (Accident Compensation Corporation – ACC) • Employee health checks, including cholesterol, blood glucose, vision and blood pressure testing. • Weight loss programs • Quit smoking programs
		Work life balance	To maximise employee's feelings of being valued by the company	• Flexible working arrangements • Parental leave for both sexes in accordance with their statutory rights. • Membership of company and alternative superannuation programs to allow greater flexibility for individual saving preferences.
		Training	To encourage young people to enter fishing industry careers To ensure optimal workforce performance	• Frequency of school 'road shows' utilised nationally to educate teenagers about successful seafood

				companies and industries. • Participation and pass rates in national training and award programs.
		Community Support	Due to reliance on the local community, it is seen as imperative to give something back.	• Donations to local community groups • Donations to local school and sporting groups • Active membership of the NS Business Council for Sustainable Development. • Attendance at sustainability seminars • Provision of equipment and services to local community organisations (such as the Fire Services) • Provision of guest speakers at schools and clubs • Initiatives such as 'Adopt a boat' with schools, to teach children about sustainable practise and also about the fishing industry.

3.0 SUGGESTED SOCIAL INDICATORS FOR AQUACULTURE CONSIDERATION

Prior to any social assessment it is recommended that an industry understand the socio-economic environment in which it operates, through the generation of a 'social profile'. This provides a broad non industry specific benchmark of the environment in which the industry is operating, along with the trends that the industry may have to respond to in the future, such as a decreasing residential population, increasing age of the workforce and therefore a future decrease in available labour, or an increasing non English speaking migrant population which would impact on an organisations communication strategies with their workforce.

Social profiling information can be gleaned from data collected at the five yearly Population and Housing Census survey undertaken by the Australian Bureau of Statistics. The data from these surveys is generally available in September of the year following the census. MESI, along with the Land and Water Resources Audit and the FRDC's Social Assessment Handbook all include the following quantitative indicators as a baseline reference point of general community profiles. The data is usually analysed on the basis of Statistical Local Areas (SLA), which commonly conform to Local Government Area boundaries.

- Age (average & median)
- Gender ratios
- Age dependency ratios
- Average Income levels
- Ethnicity
- Average household expenditure
- Length of residence
- Education levels
- Unemployment
- Labour force participation
- Employment by industry sector

The following four indicator groups (Table 2: Indicator Parameters), which comprise 13 sub-indicators are suggested as a result of the foregoing review of the social indicators and consideration of the social issues noted at the outset of this review.

The indicator groups that were primarily used as a basis for the following matrix, were those developed by the National ESD Reporting Framework.

The table of 'Indicator Parameters' (Table 2) outlines the key indicator; the question it addresses; and the primary use of the data collected from each. A cost benefit analysis was requested in the project brief, however it is an economic tool, commonly used against a benchmark, for which none exists in the context of social indicators for the aquaculture industry at this time. Further the benefits derived from pursuing compliance with social indicators is rarely able to be measured in purely monetary terms, but rather they smooth transactions, decrease conflict and downtime, and increase access to opportunities in to the future. Consequently, a specific cost benefit for each indicator has not been undertaken. However, the social indicators identified here provide a beneficial reporting tool to address and engage with the various community and political pressures relating to the establishment, existence or continuance of an aquaculture operation. Further, these indicators provide verifiable support for the benefits that such operations provide to their immediate, regional and national community through their operations.

Table 2: Indicator Parameters

Indicator	Question Addressed	Use
Indigenous communities	This indicator addresses the existence of indigenous communities, and how the aquaculture operation interacts with them on an ongoing basis. It also addresses the issue of cultural recognition and maintenance of heritage.	Such an indicator **can be used to identify industry recognition of, and level of relations with, indigenous communities.** Through its use it can create surety around resource access and use. Additionally, where appropriate, it provides evidence of any negotiated compensation in regard to resource access in established traditional lands.
Community Wellbeing	This indicator comprises five aspects and addresses issues of employment levels and capacity; work place health and safety; attachment to lifestyle and industry; community capacity to change, and also ensures fair consideration of any operational impacts on the community	This indicator is used in conjunction with economic indicators such as employment and income, to address the aspects of the further benefits derived from that employment though training, community education and development (increased capacity of the community); safe, enjoyable and healthy working conditions (benefits of the specific operation to the immediate community and others of the operation's workforce); flexibility of that workforce to adapt to changes in their immediate and extended environment (such as policy change); and lastly, the level of consideration and cooperation that the operation has with its immediate and relevant communities. In combination, **the elements of this indicator provide an indication of broader community 'ownership' and the value of the industry beyond its immediate workforce, and the level of support it will enjoy in times of political or other duress**.
Regional Community Dependence	This indicator addresses the question of the level of contribution that the industry/operation makes to regional viability through cultural (via employment) diversity; capacity and skill	This indicator in its various forms is used to establish the benefits provided by the operation beyond its immediate local community. Its use also underscores the industry's consideration of the social impacts of its operation. This indicator **provides**

	levels; flexibility of employment options in the form of contract work, social capital and the social impacts of industry operations	**evidence of the support and cooperation provided by and to the regional community which can be used in policy negotiations**.
National Socio Economic Wellbeing	This indicator addresses the health benefits and risks of the industry operation to the national community	**It provides evidence of compliance with FSANZ guidelines and regulations.**

From the above table of indicators, a further sub set of indicators has been identified which is outlined in Table 3. The objective(s) of each indicator is detailed along a number of data collection points suggested to ensure the indicator is adequately and specifically covered.

Some, all, or none of these data collection points may be appropriate, viable, or considered adequate by the different sectors of the aquaculture industry. Consultation with the industry may highlight different data points that may be equally suitable for addressing the indicators identified, and which may be more easily collected and recorded.

Table 3: Suggested Social Indicators from Review (Brooks).

Target group	Indicator	Objective of indicator	Source	Data collected (documentary; quantitative format and /or graphical representation)
Indigenous Community	Indigenous consideration	Identification of indigenous communities Employment of appropriate mechanisms to resolve disputes	ILO 169	• Local communities have formally identified as indigenous, with registration or other appropriate means. • Evidence of free and informed consent of indigenous communities • Documentary evidence of signed agreements. • Documents and/or records of forums for participation/meetings. • Court records • Consultation records.
	Long term rights for indigenous land use.	Where heritage is established, to maintain respect and allow as negotiated continuation of traditional cultural practices	ILO 169	• Appropriate payment or compensation for resource use. • Documentary evidence of signed agreements. • Evidence that industry managers provide local community access to resources where such access does not prejudice the

				achievement of management objectives. • Interviews with representatives of local communities and traditional landowners to establish facts.
Community Wellbeing	Income/ local employment	Identify the skill benefits of the industry to the local communities	ILO 169; Sanford; WWF	• Number of employees from immediate geographic area. • Level of training undertaken and successful completion achieved • Frequency of extension programs undertaken with schools and community groups.
	Workplace health and safety	To establish the lifestyle benefits of the industry	Sanford; FAO	• Documentation of work related accidents • Internal documented process and audits of safety procedures • Evidence of OHS training undertaken • Membership of an accreditation program (Accident Compensation Corporation – ACC) • Employee health checks, including cholesterol, blood glucose, vision and blood pressure testing. • Weight loss programs

				• Quit smoking programs
	Attachment to lifestyle	To establish the lifestyle benefits of the industry: Work/life balance	Sanford.	• Longevity of workforce's employment with the company. • Flexibility of working arrangements. • Parental leave for both sexes in accordance with statutory rights. • Membership of company and alternative superannuation programs to allow greater flexibility for individual saving preferences. • Documentation of other non payment employment benefits.
	Capacity to change	'Capacity to change' is a social indicator of an industry's ability to adapt and develop in the context of a changing local (economic, climatic, political, or social) regional or international circumstance. It relies on the evaluation of social capital and attachment factors.	Land and Water Resources Audit	1. Frequency and adoption of information acquired: • Involvement in industry seminars and information exchange. • Use of private consultants. • Work with government officers/other organisations to trial new practices. 2. Number of family generations in each aquaculture operation; 3. Intention (of workers/owners) to continue in the

				community/region.
	Fair consideration of the local community by industry	Appropriate mechanisms to be employed to resolve grievances and for providing fair compensation in the case of loss or damage affecting the legal or customary rights, property, resources, or livelihoods of local peoples	ILO 169; Nutreco;	• Documented mechanism for resolving grievances • Use of mechanism recorded • Documented procedure for deciding compensation • Evidence of compensation in the event of any such damage • Evidence of community input in determining the compensation • Discussion with resource managers • Compliance with national legislation • Documented process (and evidence of compliance with) for the responsible and environmentally safe disposal of waste.
Regional Community - Dependence	Employment	Work force capability, stability and establishing the aquaculture business as a desirable place to work, which also encourages flexibility of ideas and approaches. This determines the social level of resource dependency in the region.	Sanford; FAO; New Foundland Cod Crisis; Nutreco; Community Perceptions of aquaculture	• Growth of aquaculture • Compliance with national legislation • Gender composition of workforce • Ethnic diversity in the workforce. • Skills certificates, records of training

				• Interviews with workers or unions
	Contract employment	Conditions for self employed contractors to the industry	ILO 131	• Compliance with national legislation in relation to wages and income payments • Payroll verification of contractor payments • Findings of employment surveys • Contractor interviews
	Regional social capital	To develop social networks which support the sustainability and development of the industry in the wider community.	Sanford	• Donations to local community groups • Donations to local school and sporting groups • Active membership of appropriate Business Councils and/or other Sustainable Development bodies. • Attendance at sustainability seminars. • Provision of equipment and services to local community organisations (such as the Fire Services or schools) • Provision of guest speakers at schools and clubs • Involvement of schools in

				aquaculture activities. • Activities with state and/or federal government fisheries bodies. • Membership of industry groups
	Social Impacts	Observance and adequacy of the evaluation of social impacts of aquaculture activities	ILO 169; Woodmark	• Level of competition for resource use (What other uses or calls upon the aquaculture resource are being forsaken and what is the social effect of that in regard to levels of employment and residency.) • Management plan incorporating consideration of social factors • A formal social impact assessment • Evidence of incorporation of significant findings of review and research, along with continued monitoring.
National Socio-Economic wellbeing	Seafood consumption	Health benefits /risks	Food Standards Australia New Zealand Standard 4.2.1 Primary production and processing standard for	Compliance with national food standards production and handling legislation

			seafood. (Food Standards Australia New Zealand, 2006)	
	Seafood quality	Health benefits/risks	Food Standards Australia New Zealand Standard 4.2.1 Primary production and processing standard for seafood.(Food Standards Australia New Zealand, 2006)	Compliance with national food standards production and handling legislation

Economic Data for the Australian Aquaculture Industry

A report prepared for

National Aquaculture Council

Prepared by

econsearch

EconSearch Pty Ltd

214 Kensington Rd,
Marryatville SA 5068

Tel: (08) 8431 5533

Fax: (08) 8431 7710

www.econsearch.com.au

Contents

List of Tables

Abbreviations

ABARE	Australian Bureau of Agricultural and Resource Economics
DPI	Department of Primary Industries
DPIW	Department of Primary Industries and Water
ESD	Ecologically Sustainable Development
GRP	gross regional product
GVP	gross value of production
PIRSA	Primary Industries and Resources South Australia
NSW	New South Wales
NT	Northern Territory
NAC	National Aquaculture Council
QLD	Queensland
SA	South Australia
TAS	Tasmania
Vic	Victoria
WA	Western Australia

Introduction

EconSearch was commissioned by the National Aquaculture Council (NAC) to prepare a review of all publically available economic data for the Australian aquaculture industry. In the process of performing the review consultants were asked to provide information on the following:

- sources of aquaculture economic data;
- nature of the available economic data; and
- Intentions for future economic data collection.

The report is structured as follows.

Section 2: The general approach to the study is outlined.

Section 3: The economic data and sources of data are described.

Section 4: Available aquaculture economic data is matched against economic data required in the national Ecologically Sustainable Development (ESD) reporting framework.

Section 5 Summary of the principal data sources is presented.

Approach

The review was undertaken in two steps. The first step involved completing a desktop study of available economic data for the Australian aquaculture industry. This involved finding what data was available for each state and whether any economic data was collected on an Australia wide basis.

The second step involved contacting the various state government agencies to enquire on additional available data and intentions for future economic data collection. A list of contacts was provided by Justin Fromm (NAC, pers. comm.) (Table 2.1).

Table 0.3 Contacts within Government agencies

Name	Position	Government Department
Ian Lyall	Manager Aquaculture	NSW Department of Industry and Innovation
Steve Nel	Manager Pearling and Aquaculture	WA Department of Fisheries
Samantha Miller	Senior Planning Officer Aquaculture Industry Development	Department of Employment, Economic Development and Innovation
Will Jocelyn	Manager Aquaculture	Tasmania Department of Primary Industries and Water
Manue Bovy	Principal Policy Officer, Legislative Programs, Aquaculture Division	Primary Industry and Resources SA
Andrew Clarke	Manager Aquaculture Fisheries Victoria	Department of Primary Industries

Ann Fleming	Aquaculture Manager Darwin Aquaculture Centre	Department of Resources

The economic data and sources of data are described in Section 3. For each available report the characteristics of the report are listed, the nature of the economic data is described and any future intentions for data collection are detailed.

Australian Aquaculture Industry Economic Data

New South Wales

The principal and most recent aquaculture economic data source for New South Wales (NSW) is the report titled *Aquaculture Production Report 2007/08*. The characteristics of the report are provided in Table 3.1. An additional report containing economic data on aquaculture for NSW titled *Aquaculture in New South Wales, Facts and Figures 2009* is detailed in Table 3.2.

Table 0.4 Characteristics of the *NSW Aquaculture Production Report 2007/08*

Source	NSW Department of Primary Industries NSW DPI, *Aquaculture Production Report 2007/08* http://www.dpi.nsw.gov.au/fisheries/aquaculture/publications/aquaculture-production-reports
Frequency	Annual
Objective	Annual report containing specific data on production in NSW
Most Recent	2009
Public or Private	Public
Regional Breakdown	State and some regional estimates
Sectoral Breakdown	Major species

Table 0.5 Characteristics of the *Aquaculture in New South Wales, Facts and Figures 2009* report

Source	NSW Department of Primary Industries NSW DPI, *Aquaculture in New South Wales, Facts and Figures 2009* http://www.dpi.nsw.gov.au/fisheries/aquaculture/publications/general/facts
Frequency	One-off
Objective	To provide some facts and figures on aquaculture in NSW in 2009
Most Recent	2009
Public or Private	Public
Regional Breakdown	State
Sectoral Breakdown	Major species

Nature of Economic Data

The economic data provided within the *Aquaculture Production Report 2007/08* includes:

- production;
- average price; and
- gross value of production.

The aquaculture sectors for which the economic data is provided include oysters (Sydney rock, pacific, triploid pacific, flat and spat), black tiger prawns, yabbies (human consumption and bait), barramundi, brown trout, eel-long finned, golden perch, Murray cod, rainbow trout, sliver perch, mulloway, sand whiting, snapper and yellow fin bream. The report also includes regional estimates of production for Sydney rock oysters and the sale of Sydney rock oysters by market destination (export, interstate, local, NSW, Sydney).

The economic data provided within the *Aquaculture in New South Wales, Facts and Figures 2009* report includes:

- gross value of production for 2007/08 for oysters (Sydney rock, pacific, flat and spat), prawns, barramundi, trout, yabbies, silver perch, Murray cod and hatcheries;
- direct and flow-on employment for total aquaculture for NSW as a whole;
- number of permits by species for NSW as a whole; and
- area of farms for oysters for NSW as a whole.

Proposed Future Data Collection

The Aquaculture Production Report is an ongoing publication with published reports presented on the NSW DPI website dating back to 1999/00. It is anticipated that this annual publication will continue into the future.

NSW Department of Industry and Innovation are revising their production returns for aquaculture and anticipate additional collection of economic data in the future.

Northern Territory

The principal and most recent aquaculture economic data source for the Northern Territory (NT) is the report titled *Fishery Status Report 2008*. The characteristics of the report are provided in Table 3.3.

Table 0.6 Characteristics of the NT *Fishery Status Report 2008*

Source	NT Government Department of Resources NT Government 2009, *Fishery Status Report 2008,* Department of Resources, Fishery Report No. 101, Darwin http://www.nt.gov.au/d/publications/index.cfm?fm=Fish%20Report
Frequency	Annual
Objective	The report provides an overview of the NT's wild harvest fisheries, recreational and fishing tourism industries, as well as the aquaculture and indigenous fishing sectors and aquatic biosecurity
Most Recent	2009
Public or Private	Public
Regional Breakdown	NT only
Sectoral Breakdown	Major species

Nature of Economic Data

The aquaculture sectors for which the economic data are provided are barramundi, mud crabs and pearls.

The economic data provided within this report includes:

- production;
- gross value of production; and
- employment.

Proposed Future Data Collection

The Fishery Status Report is an ongoing publication with published reports presented on the NT Department of Resources website dating back to 1999. It is anticipated that this annual publication will continue into the future.

The NT Department of Resources are currently finalising the 2009 publication of the *Fishery Status Report*. The Department has no intentions to expand their economic data collection in the future.

Queensland

The principal and most recent aquaculture economic data source for Queensland is the report titled *Report to Farmers, Aquaculture Production Survey – Queensland 2007/08*. The characteristics of the report are provided in Table 3.4.

Table 0.7 Characteristics of the *Report to Farmers, Aquaculture Production Survey - Queensland 2007/08*

Source	Queensland Department of Employment, Economic Development and Innovation Lobegeiger, R. and Wingfield, M. 2009, *Report to Farmers, Aquaculture Production Survey-Queensland 2007/08,* Department of Employment, Economic Development and Innovation, May http://www.dpi.qld.gov.au/28_13813.htm
Frequency	Annual
Objective	Provides production statistics for each sector of the aquaculture industry
Most Recent	2009
Public or Private	Public
Regional Breakdown	State and regional (statistical divisions)
Sectoral Breakdown	Major species

Nature of Economic Data

The aquaculture sectors included in this report are marine prawns, barramundi, redclaw crayfish, freshwater fish, hatchery and aquarium, eels, edible oysters and pearl oysters.

Economic data is provided for each aquaculture sector and includes:

- gross value of production;
- production;
- average price;
- average yield;
- number of farms by production level; and
- employment (permanent, casual, fte number of jobs and output per labour unit).

Total aquaculture production and value of production, area and employment are provided on a regional basis for Queensland's statistical divisions.

Proposed Future Data Collection

The *Report to Farmers, Aquaculture Production Survey* is an ongoing publication. It is anticipated that this annual publication will continue into the future. The Queensland Department of Employment, Economic Development and Innovation has no intentions to expand the scope of the currently published economic data for aquaculture.

South Australia

The principal and most recent aquaculture economic data source for SA is the report titled *The Economic Impact of Aquaculture on the South Australian State and Regional Economies, 2008/09*. The characteristics of the report are provided in Table 3.5.

Table 0.8 Characteristics of *The Economic Impact of Aquaculture on the South Australian State and Regional Economies, 2008/09* report

Source	EconSearch EconSearch 2010, *The Economic Impact of Aquaculture on the South Australian State and Regional Economies, 2008/09*, draft report prepared for PIRSA Aquaculture, Adelaide, May http://www.pir.sa.gov.au/aquaculture/monitoring and assessment
Frequency	Annual
Objective	To estimate the economic impact of aquaculture activity in SA in 2008/09
Most Recent	May 2010
Public or Private	Public once report is final
Regional Breakdown	State, Eyre Peninsula and other SA
Sectoral Breakdown	Major species

Nature of Economic Data

The aquaculture sectors covered in this report include tuna, marine finfish, oysters, mussels, abalone, freshwater finfish and marron and yabbies.

The economic data provided includes:

- production;
- value of production;
- projected growth in production and employment; and
- economic impacts in terms of output, contribution to GSP, employment and household income.

Estimates of direct economic impact of aquaculture production, aquaculture processing, the transport of aquaculture products and the sale of aquaculture products to the retail and food service sectors in SA in 2008/09 are provided. Complementary estimates of the flow-on effects generated by these activities through the purchase of materials, services and labour are also provided.

Provided is a time series for the period 1997/98 to 2008/09 of economic impact on the SA economy in terms of contribution to GSP and employment impacts.

Proposed Future Data Collection

The Economic Impact of Aquaculture on the South Australian State and Regional Economies report is an ongoing publication with published reports dating back to 1997/98. It is anticipated that this annual publication will continue into the future.

Tasmania

The principal and most recent aquaculture economic data source for Tasmania is the report titled *The Department of Primary Industries and Water Annual Report 2009*. The characteristics of the report are provided in Table 3.6. Details of an additional publication with an overview of the salmon industry in Tasmania are provided in Table 3.7.

Table 0.9 Characteristics of the *Annual Report 2009*

Source	Tasmanian Department of Primary Industries and Water Department of Primary Industries and Water 2009, *Annual Report 2009*, October http://www.dpiw.tas.gov.au/inter.nsf/Attachments/LBUN-7WF8GH/$FILE/DPIWAnnualReport0809p13-22.pdf
Frequency	Annual
Objective	To assess the performance of the aquaculture and fisheries sector against effectiveness indicators
Most Recent	2009
Public or Private	Public
Regional Breakdown	State
Sectoral Breakdown	Major species

Table 0.10 Characteristics of the *Tasmanian Salmon Industry* report

Source	Tasmanian Department of Primary Industries and Water Department of Primary Industries and Water 2009, *The Tasmanian Salmon Industry*, May http://www.dpiw.tas.gov.au/inter.nsf/Attachments/CART-7SPV8Y?open
Frequency	One-off
Objective	Provides an overview of the Tasmanian Salmon industry
Most Recent	2009
Public or Private	Public
Regional Breakdown	State
Sectoral Breakdown	Salmon

Nature of Economic Data

The economic data are provided for the period 2006/07 to 2008/09 and include:

- total GVP for all aquaculture; and
- production by aquaculture sector (salmonoid, mussels, abalone and pacific oysters).

The economic data in the Tasmanian Salmon Industry publication is provided for 2006/07 and 2007/08 and includes:

- production;
- value of production; and
- market destinations

Proposed Future Data Collection

The DIPW Annual Report is an ongoing publication and it is anticipated that this publication will continue into the future.

Victoria

The principal and most recent aquaculture economic data source for Victoria is the report titled *Fisheries Status Report 2008.* The characteristics of the report are provided in Table 3.8.

Additionally, five one-off individual species reports have been prepared by EconSearch for the Department of Primary Industries (DPI), Victoria. These reports are:

- *Economic Analysis of Victorian Abalone Aquaculture Production 2008/09*
- *Economic Analysis of Victorian Blue Mussel Aquaculture Production 2008/09*
- *Economic Analysis of Victorian Eel Fishery and Aquaculture Production 2008/09*
- *Economic Analysis of Victorian Murray Cod Aquaculture Production 2008/09*
- *Economic Analysis of Victorian Rainbow Trout Aquaculture Production 2008/09*

The characteristics of the reports are provided in Tables 3.9 to 3.13.

GVP data for aquaculture in Victoria was collected up until 2006/07. Since then, only production by weight has been collected. A record is kept of the source and destination (e.g. public waterways, other farms and end users) and the weight into and out of the farms. This information had been utilised in the reports listed above.

Table 0.11 Characteristics of the *Fisheries Status Report 2008*

Source	DPI Victoria Department of Primary Industries 2008, *Fisheries Status Report 2008*, Fisheries Management Report Series No 63, Melbourne http://www.dpi.vic.gov.au/DPI/nrenfaq.nsf/LinkView/3120EF25429F8FD5CA257524000FD100F5F3C3DA915AFBE4CA256C6F0016CA60
Frequency	Annual
Objective	The report summarises the performance of Victoria's key fisheries and aquaculture industries and the recent activities undertaken by the DPI in managing fishery resources
Most Recent	2008
Public or Private	Public
Regional Breakdown	State
Sectoral Breakdown	Major species

Table 0.12 Characteristics of the *Economic Analysis of Victorian Abalone Aquaculture Production 2008/09* report

Source	EconSearch EconSearch 2010, *Economic Analysis of Victorian Abalone Aquaculture Production 2008/09*, report prepared for Department of Primary Industries Victoria, Adelaide, June
Frequency	One-off
Objective	The aim of this report is to provide an economic profile of the abalone aquaculture sector and summarise key factors influencing the economic health of the sector currently and into the future
Most Recent	Forthcoming
Public or Private	Public once report is final
Regional Breakdown	State
Sectoral Breakdown	Abalone

Table 0.13 Characteristics of the *Economic Analysis of Victorian Blue Mussel Aquaculture Production 2008/09* report

Source	EconSearch EconSearch 2010, *Economic Analysis of Victorian Blue Mussel Aquaculture Production 2008/09*, report prepared for Department of Primary Industries Victoria, Adelaide, June
Frequency	One-off
Objective	The aim of this report is to provide an economic profile of the blue mussel aquaculture sector and summarise key factors influencing the economic health of the sector currently and into the future
Most Recent	Forthcoming
Public or Private	Public once report is final
Regional Breakdown	State
Sectoral Breakdown	Blue Mussel

Table 0.14 Characteristics of the *Economic Analysis of Victorian Eel Fishery and Aquaculture Production 2008/09* report

Source	EconSearch EconSearch 2010, *Economic Analysis of Victorian Eel Fishery and Aquaculture Production 2008/09*, report prepared for Department of Primary Industries Victoria, Adelaide, June
Frequency	One-off
Objective	The aim of this report is to provide an economic profile of the eel fishing and aquaculture sectors and summarise key factors influencing the economic health of the sector currently and into the future
Most Recent	Forthcoming
Public or Private	Public once report is final
Regional Breakdown	State
Sectoral Breakdown	Eels

Table 0.15 Characteristics of the *Economic Analysis of Victorian Murray Cod Aquaculture Production 2008/09* report

Source	EconSearch EconSearch 2010, *Economic Analysis of Victorian Murray Cod Aquaculture Production 2008/09*, report prepared for Department of Primary Industries Victoria, Adelaide, June
Frequency	One-off
Objective	The aim of this report is to provide an economic profile of the Murray Cod aquaculture sector and summarise key factors influencing the economic health of the sector currently and into the future
Most Recent	Forthcoming
Public or Private	Public once report is final
Regional Breakdown	State
Sectoral Breakdown	Murray cod

Table 0.16 Characteristics of the *Economic Analysis of Victorian Rainbow Trout Aquaculture Production 2008/09* report

Source	EconSearch EconSearch 2010, *Economic Analysis of Victorian Rainbow Trout Aquaculture Production 2008/09*, report prepared for Department of Primary Industries Victoria, Adelaide, June
Frequency	One-off
Objective	The aim of this report is to provide an economic profile of the Rainbow Trout aquaculture sector and summarise key factors influencing the economic health of the sector currently and into the future
Most Recent	Forthcoming
Public or Private	Public once report is final
Regional Breakdown	State
Sectoral Breakdown	Rainbow trout

Nature of Economic Data

The economic data in the *Fisheries Status Report 2008* are provided for the period 2002/03 to 2006/07 and include:

- hatchery production value for total aquaculture for the whole of Victoria;
- weight and value of grow out production for total aquaculture for the whole of Victoria; and
- production and value of production for abalone, blue mussel and scale fish (freshwater eels, salmonoids, inland scale fish, yabbies and ornamental fish) for the whole of Victoria.

Following is some description of the nature of the economic data provided in the economic analysis reports prepared by EconSearch for the Victorian DPI.

The abalone economic data are provided for 2000/01 to 2008/09 and includes:

- production;
- value of production;
- average price; and
- number of licences.

Economic profiles of Victorian abalone aquaculture operations are provided for three different farm sizes. Data includes estimates of income, variable costs, fixed costs, capital investment and employment. The report also provides some description of demand and supply side factors which influence the economic condition of the abalone aquaculture sector.

The blue mussel economic data are provided for 1998/99 to 2006/07 and includes:

- production;
- value of production;

- average price;
- number of licences; and
- average production (tonnes per licence).

Economic profiles of Victorian blue mussel aquaculture operations are provided for 2007/08 and 2008/09 as an average per licence. Data includes estimates of area operated, income, variable costs, fixed costs, capital investment and employment. The report also provides some description of demand and supply side factors which influence the economic condition of the blue mussel aquaculture sector.

The eel economic data are provided for 1998/99 to 2006/07 and includes:

- production;
- value of production; and
- average price.

Economic profiles of Victorian eel aquaculture operations are provided for 2008/09 as an average per farm and average per unit. Data includes estimates of area operated, income, variable costs, fixed costs, capital investment and employment. The report also provides some description of demand and supply side factors which influence the economic condition of the eel aquaculture sector.

The Murray cod economic data are provided for 2003/04 to 2007/08 and includes:

- production;
- value of production; and
- average price.

Economic profiles of Victorian Murray cod operations are provided for 2008/09 as an average per operation and average per unit. Data includes estimates of income, variable costs, fixed costs, capital investment and employment. The report also provides some description of demand and supply side factors which influence the economic condition of the Murray cod aquaculture sector.

The rainbow trout economic data are provided for 2000/01 to 2006/07 and includes:

- production;
- value of production;
- average price; and
- number of licences.

Economic profiles of Victorian rainbow trout operations are provided for 2008/09 as a representative operation and the industry as a whole. Data includes estimates of income, variable costs, fixed costs, capital investment and employment. The report also provides some description of demand and supply side factors which influence the economic condition of the rainbow trout aquaculture sector.

Proposed Future Data Collection

The *Fishery Status Report* is an ongoing publication and it is anticipated that this annual publication will continue into the future.

Victorian Fisheries will continue to collect and publish production data for aquaculture but have no intentions for any additional economic data collection in the future.

Western Australia

The principal aquaculture economic data source for WA is the report titled *State of the Fisheries Report 2008/09*. The characteristics of the report are provided in Table 3.14.

Table 0.17 Characteristics of the *State of the Fisheries Report 2008/09*

Source	Government of Western Australia Department of Fisheries Fletcher, W.J. and Santoro, K. 2009, *State of the Fisheries Report 2008/09*, Department of Fisheries, Western Australia http://www.fish.wa.gov.au/docs/sof/2008/index.php?00
Frequency	Annual
Objective	This report is published annually to provide a detailed review of the management of fisheries resources and their environment
Most Recent	2009
Public or Private	Public
Regional Breakdown	Bioregions
Sectoral Breakdown	-

Nature of Economic Data

The economic data is provided for 2007/08 and includes a description of industry and research and development in the different bioregions.

Proposed Future Data Collection

The State of the Fisheries Report is an ongoing publication with published reports presented dating back to 1998/99. It is anticipated that this annual publication will continue into the future.

In addition to this report, the Department of Fisheries in WA have recently undertaken an economic study to support a case for government to fund offshore aquaculture development. The report will be released shortly and will be available on the WA Department of Fisheries website (http://www.fish.wa.gov.au/index.php).

ABARE

The principal aquaculture economic data source for the whole of Australia is prepared by ABARE and titled *Australian fisheries statistics 2008*. The characteristics of the report are provided in Table 3.15.

Table 0.18 Characteristics of the *Australian fisheries statistics 2008* report

Source	ABARE ABARE 2009, *Australian fisheries statistics 2008*, Canberra, July http://abareconomics.com/publications_html/afs/afs_09/afs_09.html
Frequency	Annual
Objective	*Australian fisheries statistics* is designed to meet the needs of the fishing industry and fisheries managers, policy-makers and researchers. The estimates of the gross value of production provided in the report are used for a range of purposes such as determining Commonwealth, state and territory fisheries research funding arrangements each year.
Most Recent	July 2009
Public or Private	Public
Regional Breakdown	National and state
Sectoral Breakdown	Major species

Nature of Economic Data

Estimates are provided for production and value of production disaggregated by state. The aquaculture sectors included in the analysis are prawns, yabbies, oysters, silver perch, trout, mussels, barramundi, snapper, ornamentals, salmonids, eels, warm water finfish, abalone, pearls, Murray cod, jade perch, redclaw, marron, gold fish, southern bluefin tuna and trout.

Proposed Future Data Collection

ABARE have been collecting detailed production and trade data since 1991 and it is anticipated that this annual publication will continuation into the future.

IBIS World

IBIS World publish a report on aquaculture for the whole of Australia which is titled *Fish and Seafood Farming in Australia*. The characteristics of the report are provided in Table 3.16.

Table 0.19 Characteristics of the *Fish and Farming in Australia* report

Source	IBIS World IBIS World 2010, *Fish and Seafood Farming in Australia*, January http://www.ibisworld.com.au/industry/default.aspx?indid=54
Frequency	Annual
Objective	In-depth industry market research and market analysis on the Australian Fish and Seafood Farming Industry
Most Recent	January 2010
Public or Private	Public – cost $795 AUD
Regional Breakdown	National
Sectoral Breakdown	Major species

Nature of Economic Data

The aquaculture sectors covered in this market research report are oysters, other fish, other molluscs, pearls, prawns, salmon and tuna.

The market statistics are provided for the last five years and include industry revenue, industry gross product, industry employment, number of establishments, number of enterprises, export revenue, export share of total industry revenue, import share of domestic demand, total cost of industry wages, industry growth, and a growth trend or decline trend.

Proposed Future Data Collection

It is anticipated that this annual publication will continue into the future.

ESD Economic Indicators and Current Aquaculture Economic Data

ESD Economic Indicators

The national Ecologically Sustainable Development (ESD) reporting framework for aquaculture identifies relevant environmental, social and economic issues, assists with determining the appropriate level of management response using risk assessment techniques, and provides a reporting structure to document outcomes (Fletcher et al. 2004[7]). The economic indicators outlined in the national reporting framework are briefly described below.

Net Economic Return

Net economic return can be considered, in general terms, as the value of output (i.e. gross value of production) less the cost of goods and services (including imports) used in producing the output. At an enterprise level this could be measured by the various indicators of enterprise profit such as gross margin, gross operating surplus, profit at full equity and rate of return on investment.

At an industry level net economic return can be measured by enterprise aggregates (e.g. industry gross operating surplus) and broader measures such as industry value added. Industry value added is defined as all payments to labour (wages and salaries paid in cash and in kind, drawings by owner operators, etc) plus industry gross operating surplus plus all production taxes less subsidies. Industry value added is equivalent to the industry's direct contribution to gross state product (or gross regional product (GRP) in the case of regional studies).

Import Replacement/Exports

Import replacement measures the proportion of domestically produced and consumed aquaculture product which replaces that previously sourced from imports.

Exports measure the amount of domestically produced aquaculture product which is sold internationally.

Import Demand

Import demand is the quantity and value of aquaculture imports that are required to satisfy domestic demand where domestically produced product cannot meet this demand.

Multipliers

Multipliers are ratios which indicate the indirect (flow-on) impact of aquaculture activity. They can be expressed in terms of output, value added (GRP), household income and employment. Generally, it is the magnitude of the indirect impacts rather than the value of the multipliers *per se* that is of interest.

Taxes

Taxes relevant to aquaculture include taxes on business revenue, such as company tax; income tax on business proprietors and employees; and state government taxes such as land tax and payroll tax.

Funds Provided by Government

Funds provided by government can include the provision of direct grants for industry development, government provision of and support for industry infrastructure, and other local, state and federal government rebates or concessions for payment of government fees and charges.

---

[7] Fletcher, W.J., Chesson, J., Fisher M., Sainsbury, K.J., and Hundloe, T.J. 2004, *National ESD Reporting Framework: The 'How To' Guide for Aquaculture*, Version 1.1, FRDC, Canberra.

Management Fees

Generally, licence fees are set to cover the cost of managing an aquaculture sector. The costs of managing an aquaculture sector can include resource planning; management of leases and licences; processing of lease and licence applications; administering legislation; compliance; biosecurity and surveillance; environment and resource management; and program management and administration.

Employment

Employment is a measure of the number of working proprietors, managers, directors and other employees, in terms of the number of full-time equivalent jobs. Note that in the ESD framework employment is classified as a social outcome.

Spinoff Industries

Spinoff industries are industries that take off as a result of a need from an existing industry. Spinoff industries, such as developing farm management and fish feeding systems, can emerge as a result of an existing aquaculture industry, creating additional employment opportunities. Note that in the ESD framework this indicator is classified as a social outcome.

Matching Aquaculture Economic Data with ESD Economic Indicators

Table 4.1 summarises for Australia and its jurisdictions, the extent to which the economic indicators included in the national ESD framework for aquaculture, as described in Section 4.1, can be found in the data presented in the annual aquaculture publications, summarised in Section 5.

Table 0.20 ESD economic indicators found in annual aquaculture publications [a]

Economic Indicators	NSW	NT	QLD	SA	Tas	Vic	WA	ABARE	IBIS
Net Economic Return	√	√	√	√√	√	X	X	√	√
Import Replacement/ Exports	X	X	X	X	X	X	X	X	√
Import Demand	X	X	X	X	X	X	X	X	√
Multipliers	X	√	√	√√	X	X	X	X	√
Taxes	X	X	X	X	X	X	X	X	X
Government Funds	X	X	X	X	X	X	X	X	X
Management Fees	X	X	X	X	X	X	X	X	X
Employment	X	√	√	√√	X	X	X	X	√
Spinoff Industries	X	X	X	X	X	X	X	X	X

[a] X: data requirements not met, √: data requirements partially met, √√: data requirements met.

Usefulness of ESD Economic Indicators

The set of ESD economic indicators described in Section 4.1 was developed with a view to assist decision making for sector management by both industry and government. There are many uses for this type of information. For example, "Net Economic Return" represents a broad group of specific indicators that can be relevant at both the enterprise and industry levels. An industry may want to demonstrate its importance in a regional economy (e.g. to support local infrastructure funding) in which case contribution to gross regional product (GRP) would be the appropriate indicator from the "net economic return" group of indicators. Alternatively, industry may want to demonstrate to government that licence fee increases are unreasonable, so indicators showing enterprise profitability (or lack of it), such as profit at full equity, would be the most appropriate to use.

The indicators described in Section 4.1 should be taken as "guideline" indicators; their appropriateness and usefulness will depend on the specific needs and circumstances of individual aquaculture sectors. It is unlikely that all indicators will be relevant in all situations and, indeed, in some circumstances there may be other indicators, not included in the list, that are more appropriate.

Summary

In summary, the most recent publications and sources of economic data for aquaculture in Australia are listed below.

New South Wales

NSW DPI, *Aquaculture Production Report 2007/08.*

NSW DPI, *Aquaculture in New South Wales, Facts and Figures 2009.*

Northern Territory

NT Government 2009, *Fishery Status Report 2008,* Department of Resources, Fishery Report No. 101, Darwin.

Queensland

Lobegeiger, R. and Wingfield, M. 2009, *Report to Farmers, Aquaculture Production Survey-Queensland 2007/08,* Department of Employment, Economic Development and Innovation, May.

South Australia

EconSearch 2010, *The Economic Impact of Aquaculture on the South Australian State and Regional Economies, 2008/09*, draft report prepared for PIRSA Aquaculture, Adelaide, May.

Tasmania

Department of Primary Industries and Water 2009, *Annual Report 2009*, October.

Department of Primary Industries and Water 2009, *The Tasmanian Salmon Industry*, May.

Victoria

Department of Primary Industries 2008, *Fisheries Status Report 2008*, Fisheries Management Report Series No 63, Melbourne.

EconSearch 2010, Economic Analysis of Victorian Abalone Aquaculture Production 2008/09, report prepared for Department of Primary Industries Victoria, Adelaide, June.

EconSearch 2010, *Economic Analysis of Victorian Blue Mussel Aquaculture Production 2008/09*, report prepared for Department of Primary Industries Victoria, Adelaide, June.

EconSearch 2010, *Economic Analysis of Victorian Eel Fishery and Aquaculture Production 2008/09*, report prepared for Department of Primary Industries Victoria, Adelaide, June.

EconSearch 2010, *Economic Analysis of Victorian Murray Cod Aquaculture Production 2008/09*, report prepared for Department of Primary Industries Victoria, Adelaide, June.

EconSearch 2010, *Economic Analysis of Victorian Rainbow Trout Aquaculture Production 2008/09*, report prepared for Department of Primary Industries Victoria, Adelaide, June.

Western Australia

Fletcher, W.J. and Santoro, K. 2009, *State of the Fisheries Report 2008/09*, Department of Fisheries, Western Australia.

Australia

ABARE 2009, *Australian fisheries statistics 2008*, Canberra, July.

IBIS World 2010, *Fish and Seafood Farming in Australia*, January.

Disclaimer

We have prepared the above report exclusively for the use and benefit of our client. Neither the firm nor any employee of the firm undertakes responsibility in any way whatsoever to any person (other than to the above mentioned client) in respect of the report including any errors or omissions therein however caused.

APPENDIX 4: OVERVIEW OF SURVEYS RETURNS

Industry	Contact Sources	Number surveys distributed *	Number surveys returned	% returns	Est. No. of viable farms	% return of viable farms
Oysters	Dept. Primary Industries and Fisheries, Qld	452	118	26.1%	300#	39.3%
	Dept. Primary Industries, NSW					
	Tasmanian Seafood Industry Council					
	South Australian Oyster Growers Association					
Abalone	Australian Abalone Growers Association	35	8	22.9%	16	45.7%
	Tasmanian Seafood Industry Council					
	Department of Primary Industry, Vic					
	Department of Fisheries, WA					
Prawns	Dept. Primary Industries and Fisheries, Qld	57	18	31.6%	27	66.6%
	Dept. Primary Industries, NSW					
	Department of Fisheries, WA					
Pearls	Pearl Producers Association	22	2	9.1%	22	9.1%
	Department of Fisheries, WA					
Total or average		566	146	25.8%	364	40.1%

Notes:

it is believed that the oyster industry has a high percentage of investor licences in which no working farms are attached. This figure needs to be clarified.

^ the pearling industry was impacted through the global financial crisis with a large number of employment losses and production scale downs, and were not available to provide information for the survey.

INDUSTRY RESPONSE PROFILES

Disclaimers

The following represents and aggregation of the collected data for confidentiality reasons and should be interpreted with that in mind

Interpretive issues across sectors.

	APFA % Answered	**APFA % Answered**	**SICOA % Answered**	**Fate of Question**
SOCIAL INDICATORS				
Do you comply with national food standards production and handling legislation? (E.g. PPPS)	100%	88%	91%	Adapted
Do you have Supermarket Quality Accreditation?	100%	NA	NA	Adapted
Are you a member of your industry association or other industry group?	100%	100%	75%	Retained
How many industry group meetings do you attend each year?	88%	100%	90%	Retained
Are you an active (i.e. attend at least 60% of meetings) member of business councils (E.g. Chamber of commerce) or an environmental group(s)?	100%	NA	97%	Adapted
How many employees did you have in the last financial year (2007/08)	88%	100%	91%	Adapted
How long have your employees been with your business?	71%	100%	NA	Retained
How many of those employees undertook and successfully completed formal training programs in the last financial year?	47%	75%	78%	Retained
What is the male and female composition of your workforce?	88%	100%	79%	Removed

How many work related accidents/incidents did you have last financial year (2007/08)	94%	100%	89%	Adapted
Do you have a documented process and audits of safety procedures in your business?	94%	100%	94%	Retained
Do you undertake OHS training of all staff on a regular basis?	82%	NA	94%	Retained
What percentage of your staff undertake annual hearing checks?	NA	100%	NA	Removed
Are you a member of a State OHS Accreditation program?	NA	NA	90%	Removed
Do you have any other non payment employment benefits (e.g. Health insurance, time in lieu)	NA	100%	NA	Removed
Do you provide the local indigenous community with access to the your resource?	NA	100%	NA	Adapted
Do you have a documented employment policy that allows parental leave for both sexes?	NA	100%	NA	Removed
How much has your business grown in the last financial year?	71%	88%	83%	Removed
Have you made donations to the local community (schools, community groups or sporting groups, including the value of in-kind donations) in the last financial year (2007/08)	65%	88%	44%	Retained
Have you provided speakers to schools and/or liaised with colleges or university groups to educate them about your industry?	88%	100%	95%	Retained
Have you provided equipment to the community in the course of your business (such as navigation aids; markers etc) in the last financial year (2007/08)?	NA	NA	91%	Adapted
Have you attended seminars or conferences that address the sustainability of the industry and seafood in the 2007/08 year?	88%	100%	93%	Removed
How often is your use of the resource been challenged in the last financial year (2007/08)? (e.g. Planning applications; council applications; EPA etc)	NA	75%	NA	Adapted
How many complaints did you receive about your business in the last financial year, that were registered with council or other	94%	100%	94%	Retained

regulatory body?				
If you did receive a complaint against your operation, was an open negotiation and discussion regarding the issue entered into?	NA	63%	NA	Removed
Do you comply with all state and national planning regulations?	100%	100%	96%	Removed
Do you have documented evidence of a process (and compliance with) for the environmentally safe disposal of waste?	88%	100%	95%	Removed
Do you have a documented process for resolving community or other grievances with your business?	100%	100%	97%	Retained
Do you have interaction with State and /or federal government agencies (fisheries and natural resource officers/managers etc)?	88%	NA	97%	Retained
How frequently do you contact the following agencies for advice? (Circle the number that corresponds to how often you interact with each). Industry Organisations, Private consultants (including financial, environmental, marketing, etc advisors), Government officers (field days etc), Research bodies/organisations.	88%	NA	97%	Retained
ECONOMIC INDICATORS				
What is the total value of the investment in your business (equipment, land, licenses etc)?	76%	88%	69%	Retained
What was the value of the local authority taxes/ rates that you paid on your business last financial year?	76%	88%	NA	Retained
What is the value of your license fees (except those having capital value covered in question 24)	76%	100%	74%	Adapted
What is the value of assessment fees that you pay for environmental assessments and inspections etc. in the last financial year (2007/08)	76%	88%	72%	Retained
How much income tax did your business pay in the last financial year?	NA	50%	NA	Adapted
What is the value of the amount that you spent last financial year with your suppliers and allied businesses in procurement	59%	75%	59%	Retained

equipment and services?				
What value of product did you export last financial year?	NA	100%	NA	Retained
How much did you receive in the 2007/08 year in government subsidies (if none, please put $0)	NA	100%	NA	
What is the maximum number of full time employees you had in 2007/08?	88%	NA	NA	Adapted
What is the maximum number of part time or casual employees you had in 2007/2008 financial year?	88%	NA	NA	Adapted
What is the maximum number of unpaid workers you had in the 2007/08 financial year? (e.g. Spouse or children)	88%	100%	82%	Adapted
ECOLOGICAL INDICATORS				
What is your farms annual production?	76%	100%	62%	Retained
Do you sell market ready oysters? (if not, questions 28-31 may not be applicable)	NA	NA	27%	Removed
How much area do you currently farm?	94%	NA	60%	Adapted
How much area could you potentially farm	NA	NA	61%	Retained
Given your entire farm/lease area what would be your potential production if you were to farm it all?	65%	NA	61%	Retained
Do you provide any environmental monitoring services (mangrove health, wetlands, groundwater salinity, birdlife etc)	94%	75%	85%	Adapted
What is the value of monitoring costs in regard to health stocks and environment?	47%	100%	NA	Adapted
Do have any area of your farm under protection?	82%	NA	85%	Retained
Have you had any established (by independent experts) increase in bio diversity on your farm?	88%	NA	NA	Removed
How much feed did you use per tonnage product produced in the last financial year in your business?	NA	100%	NA	Removed
What is your level of nutrient output per annum?	NA	38%	NA	Removed

What was the number of marine pests you identified or removed from the system in the last financial year?	NA	NA	86%	Removed
What type and level of energy did you use in the last financial year (2007/2008)	71%	75%	65%	Removed

Note: N/A denotes that this question was not included in that sector's questionnaire as it was not initially deemed relevant enough by industry groups.

APPENDIX 5: SOCIAL INDICATOR SURVEY RESULTS

SOCIAL ANALYSIS SUMMARY

March 2009

ABBREVIATIONS

AAGA	Australian Abalone Growers Association
APFA	Australian Prawn Farmers Association
EMS	Ecological/Environmental Management Systems
ESD	Ecologically Sustainable Development
FAO	Food and Agriculture Organization of the United Nations
FRDC	Fisheries Research and Development Corporation
ILO	International Labour Organization
PPA	Pear Producers Australia
SICOA	Shellfish Industry Council of Australia

TABLE OF CONTENTS

1.0 INTRODUCTION

This project was undertaken with the objectives of evaluating previous EMS projects undertaken in aquaculture and against the FRDC ESD framework; to identify meaningful social indicators applicable to the Australian aquaculture industry; evaluate current sector support kits and provide recommendations for future requirements to incorporate key social indicator reporting elements for each major aquaculture sector, and to increase the capacity of the industry around EMS and the ESD framework.

The further objectives of the project were to create an increased appreciation by the industry and the associated government and industry bodies of ESD issues in aquaculture, proving the industry's credentials (and identifying opportunities for further development), and to create benchmarks of measurable and specific benefits that the industry brings to its immediate and broader Australian communities.

While this report covers the sociological aspects of the project, it was also undertaken in conjunction with environmental and economic components of ESD assessments. In doing so, the aim was to bring a triple bottom line approach to the ecological assessment of Australian Aquaculture's ability to develop sustainably.

2.0 METHODOLOGY

The project involved three stages. The first was a review to identify the frameworks that have been used of the sociological assessment of sustainable development not only in aquaculture in Australia, but also fisheries in general both here in Australia and internationally.

The review along with the theoretical framework of social capital (incorporating bonding, bridging and linking networks) was used as a basis to develop a set of indicators to assess the social component of the aquaculture industry's operations. The four largest sectors in the industry were selected and agreed to participate in the project, being the;

1. Australian Prawn Farmers Association (APFA)
2. Shellfish Industry Council Of Australia (SICOA)
3. Pearl Producers Australia (PPA)
4. Australian Abalone Growers Association (AAGA)

The second stage involved workshops which were held with the heads and willing representatives of each of these organisations to identify the relevance of each indicator (to their industry) from the broad set developed from the review. A number of indicators commonly used in developing countries and promoted by the ILO and FAO, were deemed irrelevant to Australian industries, as they are commonly regulated by State or Commonwealth laws. This applies to the areas of occupational health and safety; food safety; environmental constraints and planning authorities. The workshops selected a relevant subset of indicators from the initial broad set for each industry group. In many cases these overlapped, and in total they resulted in a varied survey length from 22 (SICOA); 23 (AAGA); 24 (APFA); and 26 (PPA) questions for the social component.

The surveys were distributed by the industry bodies to all members and, where possible, all licence holders. Unfortunately very low returns were received from the Abalone industry, though this data has still been taken into account, and the Pearling industry was struck by the economic downturn of October 2008. This latter event contributed to the sale of the second largest pearl producer and suspension of a large proportion of the operations of the largest pearl producer; consequently the pearling industry has not as yet participated in the research in terms of undertaking the surveys.

Where the returns were significant enough to allow obscuration of individual business details and activities, the survey data was collated and analysed by state and (where possible and relevant) region, to identify any anomalies or significant issues in the data

aside from general trends. Analysis and reports on the sociological aspects of the survey for SICOA and APFA were undertaken and returned to the NAC in December 2008, followed by the analysis of results from the redistributed survey to AAGA members, in March 2009.

3.0 FINDINGS

3.1 Review

A range of international and domestic literature and research was reviewed to assess the common elements that occur across these domains. These were then organised under the framework established by the FRDC's ESD program, being;

- Indigenous communities
- Community Wellbeing
- Regional Community Dependence, and
- National Socio Economic Wellbeing

A further sub set of indicators was then identified which sat within these headings and reflected those that had been previously tested. (Refer to previous - Appendix 4 of this document). The objective(s) of each indicator was detailed along with a number of data collection points suggested to ensure the indicator is adequately and specifically covered.

As was noted at the time, some, all, or none of these data collection points may be have been considered appropriate, viable or adequate by the different sectors of the aquaculture industry. Consultation with the industry was deemed necessary to highlight different data points that may be equally suitable for addressing the indicators identified, and which may be more easily collected and recorded.

3.2 Workshop outcomes

The workshops undertaken with each of the industry groups to indentify the relevance of the broad range of potential indicators, identified slightly differing sets of questions; dependent upon the elements most pertinent to their industries.

Four slightly differing surveys were constructed from the outcomes of those workshops, but all adopting the same framework and format, which consisted of general business location, size, and number of operations. This general information was then followed by three sets of questions, focussing on social, economic and biophysical issues that would provide indicators of particular circumstances each industry deemed relevant to the issues it has been and expects to be dealing with. The objective was to cover not only issues that are of interest to the public, but also policy development, and the industry's own development aspirations.

3.3 Survey Findings

For full details of the question background, purpose and responses please refer to the full reports provided for SICOA, AAGA and APFA industries (See 6.0 Appendix 2.) From those results the following summary findings can be gleaned and are possibly best categorised according to the recommended use of each question into the future.

3.3.1 Common Dropped Questions

In all three industry groups, only one question in common was deemed appropriate to drop completely, as it did not provide any useful information. It was:

- *"Do you comply with all State and national planning regulations?"*

In the case of APFA, 100% of the respondents stated that they comply, as did 93.2% of SICOA and 75% of AAGA respondents. Those that did not respond may not have done so (SICOA 4.3%) as the response had to be 'yes' unless they were going to admit to a legal breach. 25% (or two) of AAGA's respondents and 2.6% of SICOA respondents indicated that they DO NOT comply with all State and Federal planning regulations which, while being interesting enough to perhaps warrant further investigation, is not significant to warrant the inclusion of the question.

3.3.2. Sector Specific & Ongoing Database Use

Of the remainder of the questions; seven (APFA), fourteen (SICOA) and twenty (AAGA) questions, representing a total of 16 questions across both groups (three of which were common across all groups and are highlighted) were deemed as useful to retain in any ongoing data collection process, aside from those to be used in report cards. This was either in terms of the information that they provided to underpin data from other questions, such as:

- *"How many employees did you have in the last financial year?"*

Or, despite the negative results presented by the responses (hence not to be included in an industry or public report card at this time) would, with the identification of trends, provide useful industry and possibly positive public report card data. These included;

- *"Do you comply with national food standards production and handling legislation?"*
- *"Have you provided equipment to the community in the course of your business in the last financial year?"*
- *"Are you an active member of business councils?"*
- *"How many times a year do you have interaction with State and/or federal government agencies?"*
- *"Do you have a documented process for resolving community or other grievances with your business?"*
- *"Are you a member of (SICOA/AAGA) or other industry group?"*
- *"How many of those employees undertook and successfully completed formal training program in the last financial year?"*
- *"What is the male and female composition of your workforce?"*
- *"Do you have a documented process and audits of safety procedures in your business?"*
- *"Are you a member of a State OHS program?"*
- *"Have you made a donation to the local community in the last financial year?"*
- *"Do you undertake OHS training or staff on a regular basis (at least once a year)?"*
- *"Do you provide speakers at schools or liaise with education bodies about your industry?"*

- *Do you have documented evidence of a process (and compliance with) for the environmentally safe disposal of waste?"*

At this point in time, that such a large number of questions generated negative reflections upon the different sectors of the industry in terms of its social interaction with the regional and broader community is disappointing. However it does highlight areas the industry can focus on, to increase its profile in terms of the social component of sustainable development and socially responsible behaviours.

3.3.3 Common NAC Industry Report Card Questions

The questions that all groups had in common in terms of a NAC industry report card*, were as follows:

- *"Do you comply with National food standards production and handling legislation?"*
- *"How many industry group meetings do you attend each year?"*
- *"How many work related incidents did you have last year?"*
- "*How much has your business grown in the last financial year"* (though this is subject to economic interpretation, and the inclusion of it should be at the discretion of an economics expert.)
- "*How many complaints did you receive about your business in the last financial year that were lodged with the Council or other regulatory body?"*

* Questions may be repeated from the previous category, as if they qualified for a NAC report card, they would also be required to be retained for specific sector and database purposes.

3.3.4 Common Public Report Card Questions

Of those questions which were recommended for a public report card and all the surveys had in common, these were:

- *"Do you comply with national food standards production and handling legislation?"*
- *"How many work related incidents do you have in the last year?"* And
- *"How many complaints did you receive about your business in the last financial year that were lodged with the Council or other regulatory body?"*

* Questions may be repeated from the category of industry sector and database use only, as if they qualified for a Public report card, they would also be required to be retained for industry, specific sector and database purposes.

4.0 RECOMMENDATIONS

From the above, five questions have a common benefit from the perspective on the Aquaculture industry as a whole and can be reported on, at minimum as a NAC report card. At this point in time, only three indicators provide a positive story for use in a public report card, in terms of demonstrating responsible regional contributions and industry management from a social perspective.

These are:

1. *"Do you comply with National food standards production and handling legislation?"*
2. *"How many industry group meetings do you attend each year?"*
3. "*How much has your business grown in the last financial year"*
4. "*How many complaints did you receive about your business in the last financial year that were lodged with the Council or other regulatory body?"* and
5. *"How many work related incidents do you have in the last year?"*

On the face of it the result of such a small number of reportable indicators may appear discouraging. In many instances however, those questions currently only providing industry sector data (3.2.2) will, over time and with increased cognisance and focus by industry operators, provide very useful trend results. Obviously the attendant benefits of such focus is not just the ability to report, but also the increased social interaction and industry responsibility that may be perceived by associated regional and broader communities. Such increases in interaction and perceived responsibility commonly result in increased trust in the industry, thereby decreasing negative public pressure on those industries who engage this approach.

Consequently, not only can six indicators be drawn from this work that will provide a positive story about the industry's responsibility, social interactions and proactive awareness of issues through industry engagement, but there are extensive opportunities to further improve the number of industry and public report card indicators from the list of industry indicators, if desired.

5.0 APPENDIX TWO – Survey Results[8]

5.1 APFA RESULTS

Total responses: 17

Invalid Responses: 2

Valid Responses: 15

Please Note: Where the words 'National' or 'Total' are used, it refers to the results of all aggregated data from QLD, NSW and WA.

Detailed Analysis and Discussion

Following is the data analysis and brief discussion of the issues the question relates to and how the information might be used in the public, policy or industry forums. The key summary points are highlighted in italic bold type.

Q.1 Do you comply with national food standards production and handling legislation?

Yes - 9 or 56.3%

No - 7 or 43.7%

This indicator should provide a higher positive response to accreditation to be useful in a government policy context.

Q.2 Do you have Supermarket Quality Accreditation?

Yes - 10 or 62.5%

No - 6 or 37.5%

This indicator should provide a higher positive response to accreditation to be useful in a government policy context, however at 62.5% it would appear to be already a usefully positive one, particularly given that the largest producer is included in those who do have accreditation. Cross checking with FZANZ to see what the standard level of compliance is could be useful.

Q.3 Are you a member of APFA or other industry group?

Yes - 11 or 68.8%

No - 5 or 31.3%

[8] **Please note**: Explicit result data, which was made generally available to the industry, has been removed from this public report in the interests of protecting confidentiality.

This is a positive indication for the cohesion of QLD Prawn farmers as eight of the 12 respondents (66.6%) were members, despite the fact that it could be increased.

This a positive indicator that should be retained. The ramifications of this cohesion for Queensland farmers is the ability of the industry to pull together and advise government of industry circumstance in a unified manner. However this same argument could not be applied to NSW or WA farmers.

Q.3a Which Groups?

The question asking which groups respondents belonged to identified only three, which were; APFA; QAIF; and CRC.

Q.4 How many industry group meetings do you attend each financial year?

49.6% of respondents either do not go to any industry meetings or did not respond; 2 of the 7 who identified as going to 1 or more meetings a year, did not detail which groups they belonged to. Despite the high membership of industry group(s), there is only a moderate rate of participation with only 55.9% of respondents attending none or only one meeting a year, indicating a low level of active industry engagement.

This can still be a very useful public and policy reporting indicator to identify the level of association membership and therefore the implied cohesion of the industry. Further, the level of meeting attendance is a very useful industry indicator of industry engagement and association relevance.

Q. 5 How many employees did you have in the last financial year (2007/08)?

In the 2007/08 year, Queensland was the greatest employer in the industry as indicated by the respondents here. 37.5% of respondents overall employ 10 or more people in their businesses, but the majority 50.0% employ less than eight people in their businesses, with one business not having any paid employees and therefore not contributing to regional employment.

Not necessarily a useful indicator in itself, however it underpins many of the other indicators. Over time, it would be useful to indicate growth or decline trends in the industry and contribution to regional employment. While it is currently noted as only recommended as an APFA indicator, over time it would become a very useful Industry indicator and potentially even public reporting one in the future.

Q. 6: How many of those employees undertook and successfully completed formal training programs in the last financial year?

As to be expected the majority of the training occurred in Queensland, however while in the other states (NSW & WA) 50% of respondents trained staff, this comprised a maximum of 16% of the total staff employed in these two states. This compares with QLD which trained a maximum of 21.0% of its staff**.**

- Not a good contribution to training and development of regional employees overall,
- QLD is doing better than other states in the industry in terms of contribution to regional human capital with its industry training, however given the size of some of the business' staff (33.3% have more than 24 employees) it should be a higher percentage than this.

Currently 50.1% of respondents are undertaking staff training of one or more courses per year. This provides some evidence of the industry's contribution to regional

training and employment, however it should be used as a APFA indicator only until such time as that industry figure can be raised.

Q.7: What is the male and female composition of your workforce?

Industry overall does not exhibit gender equity in its employment, however that the industry is recording this data and aware of gender equity issues in regional employment is a positive factor in industry profile and negotiations. ***Change over time in this indicator, may well make it a very positive indicator for the industry to use in the area of gender improvements in regional community support.***

Q.8: How many work related incidents did you have last year?

50% of respondent had no incidents in the previous year, and 25% had only one. This can be a very positive indicator to use in external reporting in terms of establishing this industry as a safe one for people to be employed in. It would be improved by increasing the number of zero incidents and decreasing those respondents with two or more incidents (25%).

A very valuable indicator to identify the relative health and welfare safety benefits of the industry to regional employment.

Q.9: Do you have a documented process and audits of safety procedures in your business?

56.3% of respondents had a documented process. The positive response to this question needs to be improved to be a useful positive external indictor, given that it expresses concern for employees and raising regional business standards***. As it currently stands, the figures are not positive enough for it to be useful, but may prove so over time. Currently they could be detrimental in terms of the requirements of legislation, hence not beneficial to make public or use in an industry report card at this point in time.***

Q.10 Have you made donations to the local community in the last financial year?

Total contributions of the industry to their local communities in Queensland only were $26,650***. This does not make it a significant contributor to the community in terms of dollar donations, and would need to be compared to the overall net profit of the industry for the state to be confirmed as an indicator to be useful externally or only internally at this time. The industry may well be perceived as a low contributor to its regional communities.***

Q.11 Have you provided equipment to the community in the course of your business in the last financial year?

37.5% of respondents are providers of equipment to their communities, with the majority of these in Queensland. This indicates a low level of bridging social capital by the industry with community organisations in Queensland and largely nonexistent levels of this kind of bridging social capital in NSW and WA for the industry. ***It also indicates that the industry as an entity is not (able to) connecting with the broader community and establishing its relevance to regional well being***. While individuals may well be making contributions

through networking with their local community, the industry as an entity in itself, is not profiling itself as a contributor to regional wellbeing.

Q11.a: What type(s) of equipment have been provided?

The equipment cited included; Fish box & aerators, local fishing competition; Signage; prawns; and Ice bins

Q.12 Do you undertake OHS training for staff on a regular basis?

18.8% of respondents don't undertake any OHS training which is accounted for in the three business which employ two or less people.

QLD did well with its training 75% of respondents undertaking training one or more times during the year. While both WA and NSW only had one operator each who conducted training, the WA operator indicated that this was undertaken quarterly or more frequently (this was one respondent of the three who undertook such extensive training. ***Overall, while training is undertaken at some level by 68.8% of the respondents, this could be increased to demonstrate greater engagement by the industry with their workers' health and welfare.*** **However Queensland at 75% was the very positive performer dragged down by the other states, decreasing the appearance of the overall industry position.**

Q.13 Do you provide speakers at schools or liaise with education bodies about your industry?

The majority of respondents (68.8%) liaise with community education bodies, either local or with universities. ***This indicates a relatively high level of bridging social capital overall for the industry,*** which is understandably concentrated in Queensland given the bias of the respondent locations. ***This is one key factor in increasing community awareness, understanding and empathy with the industry's activities, objectives and environmental contributions. This indicator should be used both on the public report card as well as the Industry one.***

Q.14 Have you attended seminars or conferences that address the sustainability of the industry and seafood in the 2007/08 year?

56.3% of respondents attended at least one seminar or conference in the past year. This indicator highlights the diversity of ideas that the industry exposes itself to and therefore the relative level of adaptability it has. While the majority of respondents do attend conferences and seminars, these are on this occasion ALL located in Queensland. Only four cited the activity that they attended and all attended the Australasian Aquaculture Conference. Those in Queensland who did not attend conferences or seminars were all located in the NE region of Queensland - where accessibility to such activities is likely to be very limited.

The data indicated that the industry in Central and southern Queensland would likely to be the most adaptable and is making the most effort to inform itself to new approaches, innovations and potential changes in the industry. ***From a political policy perspective this indicates the industry's willingness to proactively manage its response(s) to a changing environment.***

It is recommended to keep this indicator in but only as an internal monitoring and information base at this time, which will hopefully demonstrate change over time and improved engagement across the whole industry.

Q.15: How frequently do you contact the following agencies for advice?

This indicator is designed to identify the level of proactive engagement with external agencies, who can provide expert advice, new perspectives and technologies and increase the industry's capacity to adapt.

The majority of respondents make contact with external bodies for advice once per year, with private consultants being used as often as the industry organisations by those in Queensland (the majority of the industry). It is, however, interesting to note that only 58% of the industry in Queensland also consults with government agencies. This is an interesting indicator for the industry as to how much connection it may have with government agencies who have input to policy affecting their industry.

This data indicates that the industry is engaged with external agencies. However, the industry does not appear from this data to be as well connected with the advice and perspectives emanating from government agencies and decision making bodies as it might be. It is well engaged with private consultants and industry organisations, demonstrating a proactive ability to seek information.

Q. 16: How much has your business grown in the last financial year?

Refer to the Economic analysis for comment in regard to these responses.

Q.17: Are you an active member of business councils?

Only 18.7% of respondents were active members (i.e. attend meetings) of business councils. This demonstrates a low level of engagement of the industry with its business environment, and therefore is more likely to be exposed to change without prior knowledge of input. For those who do participate, two provided details of the organisations which were:

- Chamber of Commerce (2)
- Landcare (1)

Both of these organisations are ideal bodies for the industry to be associated with to demonstrate its active role and place in the regional economy.

These results weaken any industry call upon governments to recognise their legitimate position and input as an integral component to the regional economy.

This is an important indicator for the industry to track to enable the identification of its connections with, and place in, its regional economy.

Q.18: How many times a year do you have interaction with State and/or federal government agencies?

This indicator is targeted at identifying the level of interaction (voluntary or mandatory) that the industry undertakes with government agencies (contrary to Q.15 which was focused on the proactive seeking of advice). **The data indicates that the majority (87.5%) have interaction with government agencies one or more times per year**, but in 62.5% of these cases, it is four or less times per year. While these interactions are most likely those required by legislation, **it does beg the question of how the remaining 12.5% are managing to conduct their businesses with no interaction with government**, and further investigation should be undertaken as to the reasons behind this.

18.a Please list agencies and reason

WA: Fisheries - fish health, licensing, brood collection

NSW: Fisheries

QLD: EPA, DPI - environmental issues

EPA -audit

EPA - Crocodile control, DPI - growth trials of other culture species

Northern Fisheries Centre (DPI) - fish health, disease treatment

EPA, DPI - annual audit & expansion

EPA - Annual Reports, audit

EPA - compliance & expansion, DPI - fish & wildlife etc. (5 - 12 times per year)

QDPI - R&D, EPA - compliance, R&D (5 - 12 times per year)

DPI, EPA, DSDTI, DAFF, AIRR, GBRMPA - Industry representation (27+ times per year)

Engagement with these government agencies is very positive in regard to demonstrating compliance and proactive industry stewardship.

The data from this question could be used to demonstrate the level of engagement that the grass roots level of the industry has with the relevant government agencies at different levels. It can be very useful indicator of engagement and input by the industry with government agencies (particularly given the agencies cited), which could be used in negotiation processes.

Q.19: Do you have a documented process of resolving community or other grievances with your business?

This is indicator was included to identify the level of care and concern the industry has in regard to its associated communities***. It identified that 43.8% of respondents do have documented processes in place, leaving 58.3% without.***

At this level the indicator is <u>not</u> a good news story, however, with simple processes it could be increased and a useful demonstrator of the industry's willingness to engage with and care for its constituent communities.

Q.20 How many complaints did you receive about your business in the last financial year, that were registered with the Council or other regulatory body?

The results – 93.7% with zero complaints against the respondents businesses - are a strong indicator of the low level of community dissatisfaction with the industry and provide a very useful instrument

The results of this question tends to address the deficiencies demonstrated by the previous one (Q.19), however to be able to present both together (if the results of Q.19 can be improved) with equally positive results would provide a much stronger story of the industry's engagement with its constituent communities.

Q.21: Do you comply with all state and national planning regulations?

100% compliance resulted in the recommendation that this question is dropped.

Q.22: Do you have documented evidence of a process (and compliance with) for the environmentally safe disposal of waste?

87.5% of respondents do have documented evidence of a waste disposal process. This question was included to identify the level of socially responsible waste management that could be verified if required by auditing. It is a very positive result that could easily be improved by compliance from the two outstanding respondents.

It is recommended that this indicator be retained.

Q.23: How long have your employees been with your business? (Related to Q.5)

The data from this question demonstrates that it is a relatively short term employment industry with 56.8% having employees employed for less than five years, and 31.1% of those, for less than one year. ***This can be made a positive (as well as a negative) in terms of the industry being able to soak up short term employment and being a flexible employer for transient populations in tourism regions.***

5.2 SICOA RESULTS

Please Note: Where the words 'National' or 'Total' are used, it refers to the results of all aggregated data from QLD, NSW and WA.

Overall Summary:

Total responses: 117

Q.1 Do you comply with national food standards production and handling legislation?

Yes - 102 or 87.2%

No - 4 or 3.4%

No response - 10 or 8.5%

Q.2 Are you a member of SICOA or other industry group?

Yes - 51 or 43.5%

No - 37 or 31.6%

No response - 29 or 24.8%

Potentially up to 56.4% of respondents are not members of industry organisations. This indicates a potential dislocation from their industry and a low level of industry connection (bridging social capital). The ramifications of this are the ability of the industry to pull together and advise government of industry circumstance in a unified manner.

Which Groups?

Organisation
SAOGA - SA
SAORC - SA
HAACP ?
NSW Farmers Association (Oyster or Shellfish Sections) - NSW
TSEC - TAS
Brisbane Water Oyster Farmers - NSW
WAS
OFA - NSW
Bay Industry Groups - QLD
SASQAP- SA
Tasmanian Shellfish Executive, Tasmanian Seafood Industry Council

QOGA - QLD
TORC - TAS
TIFIC - TAS
Safe Foods QLD - QLD
Wallis Lake Shellfish Program - NSW
Pambula River Shellfish Quality Assurance - NSW
AOPFA
South East Shellfish Growers Assoc
TISIC
CRC
Oyster Consortium
SAOFI
Broken Bay Oyster Association
NSW Food Authority - NSW
Camden Haven Shellfish Program
ARAC,
NSW SQAO
SOCO
Shoalhaven/Crookhaven Estuary - NSW
QAP Shoalhaven/Crookhaven Oyster Farmers Co-op - NSW
Freycinet Shellfish Growers Association - TAS

This is an indicator that should be retained , in terms of tracking the cohesion of the industry. At this time it is not an indicator that is overly positive, but should be retained for industry only use and not on report cards, until such time as significant improvement has occurred. With significant improvement, SICOA is in the position to asset its ability to speak on policy issues on behalf of the industry. At this point that is not the case.

Q.3 How many industry group meetings do you attend each financial year?

30% of respondents either do not go to any industry meetings or did not respond; 27.4% of these either did not attend meetings

22 of those who identified to going to 1 or more meetings a year, did not detail which groups they belonged to. With 2 exceptions, those who attended four or more meetings a year were consistently members of the NSW Farmers Association.

However, this can still be a very useful public and policy reporting indicator to identify the level of association membership participation and therefore the implied cohesion of the industry. Further, the level of meeting attendance is a very useful industry indicator of industry engagement and association relevance.

Q. 4 How many employees did you have in the last financial year (2007/08)?

In the 2007/08 year, Tasmania and NSW were the biggest employers in the industry as indicated by the respondents here. 5.3% of respondents overall employ more than 10 people in their businesses, but the majority 25.5% employ less than three people in their businesses. Tasmania was abnormal compared to the other states with 20% of operators employing six people in their business, compared to all other states. 60% Tasmania's respondents employed 6 or more employees, compared to all other states, where the majority of respondents employed were three or less.

NSW had the highest number of business (23% of all respondents) that do not have any employees.

- Almost a third (32.5%) of all businesses who responded do not contribute to community employment. This is potentially increased to 39.3%, due to a further 6.8% of respondents who did not advise of the number of employees (possibly none).
- Overall, Tasmania is the greatest contributor to employment in the industry for its State per capita.

This is not necessarily a useful indicator in itself, however it underpins many of the other indicators. Over time, it would be useful to identify any growth or decline trends in the industry and contributions to regional employment. While it is currently noted as only recommended as a SICOA indicator, over time it would be a useful industry indicator and potentially even public reporting one in the future.

Q. 5: How many of those employees undertook and successfully completed formal training programs in the last financial year?

The majority of respondents - 78.6% - do not undertake any staff training.

Despite the majority of the respondents (61.5% representing businesses employing 47.4% of all employees) being from NSW, only 13.8% of respondents in this state trained any of their staff at all. Tasmania (representing 17.1% of respondents but 33.3% of employees) had the highest rate of training with 50% of their respondents training staff in one or more courses per year. QLD had a zero training rate, which is not surprising given that the state only employees three people.

- This does not represent a good contribution to regional training and development;
- Tasmania is doing better than other states in their industry in terms of its contribution to regional human capital with its industry training.

It is recommended that this be retained as a SICOA only indicator at this stage, though Tasmania could use it as an industry indicator. This is a good basis for

encouraging improvement in the training and education aspirations of the industry for future industry and public reporting and should consequently be retained.

Q.6 What is the male and female composition of your workforce?

Industry overall does not exhibit gender equity in its employment. However QLD & TAS are the better of the states with 30% and 26.3% respectively of their workforces being female.

Change over time in this indicator, may well make it a very positive indicator for the industry to use in the area of gender improvements in regional community support.

Q.7 How many work related incidents did you have last year?

82.1% of the industry had no incidents in the last year. ***A positive indicator to use in public and industry reporting in terms of a safe industry for people to be employed in. It would be improved by removing the number of no responses.***

Q.8 Do you have a documented process and audits of safety procedures in your business?

56.4% of respondents have a documented process and audit of safety procedures in their businesses. Improvement in the positive response rate to this question would be an externally positive indicator of community social capital and corporate citizenship, given that it expresses concern for employees and raising regional business standards***. As it currently stands, the figures are not significantly positive enough for it to be useful, but may prove so over time. It is recommended to retain this as an industry only indicator.***

Q.9 Are you a member of a state OHS Program?

83.4% of respondents were not members of an OHS program.

Q. 9a If yes, which one(s)?

NSW	- Course with Fisheries
	- Workcover
QLD	- None cited
SA	- SASQAP
TAS	- Working with a consultant

There is a low level of membership of or engagement with occupational health and safety programs, with South Australia being the best***. At face value, this is not a good reflection upon the industry's care of its workers, however it would have to be taken in the context that approximately 56% of respondent had none (36%) or less than two employees in their businesses***.

The lack of engagement with OHS programs is mitigated by the 96% no incident result of workplace incidents and accidents (Q. 7)

It is recommended that this be retained as an industry only indicator at this time.

Q.10 Have you made donations to the local community in the last financial year?

One hundred dollars or less is the highest amount most commonly donated across all states***. This does not make it a significant contributor to the community in terms of dollar donations, and therefore the industry may well be perceived as a low contributor to its regional communities.***

It is recommended that this indicator be retained as an industry only indicator.

Q.11 Have you provided equipment to the community in the course of your business in the last financial year?

17.1% of businesses had donated equipment to their community in the last financial year. This indicates low levels of bridging social capital by the industry with community organisations. It also ***indicates that the industry is not (able to) connecting with the broader community and establishing its relevance to regional well being***.

It is recommended that the industry retain this as an industry only indicator.

Q11.a What type(s) of equipment have been provided?

NSW - Channel markers (2)
- Lake Foreshore clean up
- Training
- Provision of boat for water sampling (2)
- Use of punt and driver to assist in environmental work(2)
- Use of hatchery equipment
- Lease markers

QLD - Blue Care National Stroke Foundation, Salvos

SA - Trucks/Plant
- Corner Punt and Buoys
- Punt for Oyster Fest

TAS - Markers x 32
- Channel marker and Lease
- Nav Aids, Boat use, Field Days
- Assisted with moving channel markers (2)
- Time and equipment to collect, germinate and plant mangrove seeds for bank stabilisation and fish habitat

Q.12 Do you undertake OHS training for staff on a regular basis?

46.8% of respondents don't undertake any OHS training must be taken in the context of 36% of them not having any employees and a further 22% having 2 employees or less (one of which would be themselves).

However of those who do undertake OHS training, SA was the highest with 76.9% of SA respondents undertaking training once or more times during the year. This was followed by Tasmania where 65% of respondents undertake OHS training at least once a year. ***This indicates relatively low levels of engagement by the industry with their workers' health and welfare. However South Australia at almost 77% was the performer in this area that contradicts the overall industry position*.**

It is recommended that this indicator be retained with a view to future report card use.

Q.13 Do you provide speakers at schools or liaise with education bodies about your industry?

The majority of respondents (62.4%) do not liaise with community education bodies, either local or with universities. Of those who do, the Tasmania had the highest level, followed by South Australia. ***This indicates a low level of bridging social capital overall for the industry,*** however the bridging social capital that exists in this area, is concentrated in SA and TAS, followed by NSW. ***This is one key factor in increasing community awareness, understanding and empathy with the industry's activities, objectives and environmental contributions.***

It is recommended that this be retained as an industry only indicator.

Q.14 Have you attended seminars or conferences that address the sustainability of the industry and seafood in the 2007/08 year?

This indicator highlights the diversity of ideas that the industry exposes itself to and therefore the relative level of adaptability it has. The majority of respondents (93.2%) do attend conferences and seminars, with attendance rates spread evenly across all states, though with Queensland slightly lower at only 80%. The conferences attended included

Shellfish Futures (5)

Australasian Aquaculture Conference (2)

Seafood Directions (1)

Tasmanian Seafood Executive Council (1)

Seafood Safety Plan Seminars (1)

SAOGA (3)

SAORC (2)

Australasian Aquaculture Conference (1)

QOGA (2)

DPI (1)

Southern Cross University (1)

Rous County Council (1)

Tide to Table (1)

ICSSMC (1)

Australasian Aquaculture Conference (4)

Food Pro 2008 (1)

NSA (USA) (1)

NSW Farmers Oyster Field Days (1)

CMA Events

EMS Seminars (1)

NSW DPI field day, (5)

BBO Meetings, (1)

Oyster Industries Field Day (3)

Safe Foods (1)

The industry in NSW demonstrates the greatest diversity of sources of information, while Tasmania has recorded the highest response rate in terms of being prepared to detail where they are procuring their information from. Overall the industry is making a very positive effort to inform itself to new approaches, innovations and potential changes in the industry. ***From a political policy perspective this indicates the industry's willingness to proactively manage its response(s) to a changing environment.***

It is recommended to keep this indicator as a public and industry report card item.

Q.15: How frequently do you contact the following agencies for advice?

This indicator is designed to identify the level of proactive engagement with external agencies, who can provide expert advice, new perspectives and technologies to increase the industry's capacity to adapt.

The majority of respondents make contact with external bodies for advice once per year, with industry bodies and government officers being used the most. This is an interesting indicator for the industry as to how much connection it may have with government agencies who have input to policy affecting their industry.

This data indicates that the industry is engaged with all types of external agencies in terms of receiving the advice and alternative perspectives, with an average of 85.7% across all three types of contact points and respondents from all States (85.2% of the industry liaises with government; 86.3% with industry bodies and 85.7% with private consultants at .This demonstrates a proactive ability to seek information and it is recommended that this indicator be retained for external reporting purposes.

Q. 16: How much has your business grown in the last financial year?

Less than half of the respondents experienced growth in their business in the 2007/08 and 7.8% in fact experienced losses, which were in the majority, located in New South Wales. South Australia has experienced the greatest growth, followed closely by Tasmania. ***On the evidence provided here, it is recommended that this indicator be retained and used in both public and industry report cards.***

Q.17: Are you an active member of business councils?

With 76.1% of respondents not being an active member of any business council, this demonstrates a low level of engagement of the industry with its business environment, and therefore is more likely to be exposed to change without prior knowledge or input. For those who do participate, the details of the organisations were as follows:

- **NSW Farmers Assoc (1)**
- BBO(1)
- **Local Estuary Management (NSW 4)**
- Wapengo Watershed Group (NSW 1),
- Wapengo Shellfish Quality Assurance Group (NSW 1),
- **Local CMA Events (NSW 1),**
- Local Surveys (NSW 1),
- **Voluntary Conservation Group (NSW 1)**
- SRCMA (NSW 1)
- **Chamber of Commerce (NSW 1; SA 1;TAS 1)**
- **Community Program (NSW 1),**
- **Community Club (NSW 1)**
- **Foreshore Council Committee (NSW 1)**
- Clyde Oyster Farmers EMS Cluster Groups (NSW 1)
- **Richmond River Floodplain Committee (NSW 1)**
- EMC (NSW 1),
- QAPSP (NSW 2)
- **Local farmers meetings (NSW 1)**
- QOGA (QLD 1)
- **Natural Resource Management Committee with GSB Council (TAS 1)**
- Tasmanian Shellfish Executive Council (TAS 2)
- CHOGA (TAS 1)
- POGA (Tas 1)
- TORC (TAS 1)
- TSIC (TAS 1)

Approximately half of the organisations listed here are very focused on the industry, which does not identify the industry as an active member of the broader regional economy. However the remaining 50% of memberships (in bold) identified by respondents does demonstrate and involvement and sense of stewardship in their greater regional economies.

These results may be helpful in any industry call upon governments to recognise their legitimate position and input as an integral component to the regional economy. *This is an important indicator for the industry to track to enable the identification of its connections with, and place in, its regional economy.*

Q.18: How many times a year do you have interaction with State and/or federal government agencies?

This indicator is targeted at identifying the level of interaction (mandatory) that the industry undertakes with government agencies (contrary to Q.15 which was focused on the proactive and voluntary seeking of advice). The data indicates that the majority (90.35%) have interaction with government agencies one or more times per year. As these interactions are most likely those required by legislation, it does highlights the relatively low level of interaction being undertaken in New South Wales (79.1%) compared with the other States.

18.a Please list agencies and reason

NSW: Fisheries (10)
Food Authority (13) - Plant Audit; on Committee
NSW DPI (30) - Lease inspections; compliance; research etc;
Council (4)
NSW SQAP - Quality assurance matters,
NSW Forestry - Catchment concerns/local logging,
NSW Dept. of Lands (6) - Share lease inspections
DPI - QX Information
Safe Food (3)
CMA (2) - undertake environmental projects together
NSW Farmers (1)
WLSQAP (1)
DECC (1)
DOTARs, Minister's Office (1)
NPWS (2)
SRCMA (1)
Maritime NSW (1)
NSW Farmers Assoc. (1)
DECC (1)
NSW Premiers (1)

QLD: DPI Fisheries (3) - environmental issues
Safe Foods (1)
Dept (?) Natural Resources (2) - Water
QOGA (1)
QLD P&F (1)
AQUIS

SA: Fisheries (2) Boat Ramp; Marine Safety
PIRSA (5) - applications
Food Safety Authority (1)
AACB - Food safety (1)
SAGO - Industry (1)
Austrade - Development Board (1)
EPA (1)
DEH (1)

TAS: DPIW (14) -Marine Farming Branch, advice, licensing, seafood safety, research; inspections; safety & lease issues.

TSQAP (1) - Water quality

NRM

DEH

The level of engagement with these government agencies is very positive in regard to demonstrating compliance and proactive industry stewardship.

The data from this question could be used to demonstrate the level of engagement that the grass roots level of the industry has with the relevant government agencies at different levels. It can be very useful indicator of engagement and input by the industry with government agencies (particularly given the agencies cited), which could be used in negotiation processes.

Q.19: Do you have a documented process of resolving community or other grievances with your business?

81.2% of respondents did not have a documented grievance resolution process. This is indicator was included to identify the level of care and concern the industry has in regard to its associated communities***.***

At this level the indicator is <u>not</u> a good news story, however, with simple processes it could be increased and a useful demonstrator of the industry's willingness to engage with and care for its constituent communities.

Q.20 How many complaints did you receive about your business in the last financial year, that were registered with the Council or other regulatory body?

The results are an indicator of the level of community (dis)satisfaction with the industry and provide a very useful instrument. It is noteworthy that the industry has had no complaints in the previous year in the majority (82.9%) of cases. One respondent had 15 complaints against them, which if it is not already a known case, would require investigation.

The results of this question are useful in demonstrating a level of responsible community citizenship and interaction with its regional environment. It would make a very useful indicator for a public and industry report card.

Q.21: Do you comply with all state and national planning regulations?

93.2% of respondents comply with all regulations. ***It is recommended that this question be dropped because although it is positive, it should read 100% and while the honesty is to be applauded, the results could be used against the industry. However remedial action is required by the industry***

Q.22: Do you have documented evidence of a process (and compliance with) for the environmentally safe disposal of waste?

This question was included to identify the level of socially responsible waste management that could be verified if required by auditing. **It provides a result that would be recommended used by industry (ie SICOA) but not for public or industry report cards at this point in**

time. Utilisation of the indicator over time would be useful to demonstrate environmentally responsible development occurring in this area.

It is recommended that this indicator be retained.

5.3 AAGA RESULTS

Total responses: 8

Valid Responses: **8**

Given the low number of respondents it is not possible to realistically regard the data as representative. However, if the response rates could be verified as being applicable across the industry, there are twelve questions that emerge as worthy of public report cards, and a further two that are worthy of industry report card inclusion. The following table summarises the outcomes from analysis and discussion which follows.

Analysis and Discussion

Following is the data analysis and brief discussion of the issues the question relates to and how the information might be used in the public, policy or industry forums. The key summary points are highlighted in italic bold type.

Q.1 Do you comply with national food standards production and handling legislation?

Yes -	7 or 87.5%
No -	1 or 12.5%

This is very positive (though for the low number of respondents it is debateable that it is useful) to show compliance in a government policy context.

Q.2 Are you a member of AGGA or other industry groups?

Yes -	8 or 100%
No -	0

This is a positive that all respondents are members of the industry organisation.

This is positive indicator that should be retained. The ramification of this cohesion is the ability of the industry to pull together and advise government of industry circumstance in a unified manner. However this would need to be demonstrated consistently across the industry (not just assumed from this low response rate).

Q.3a Which Groups?

Organisation
AAGA,
VAGA,
AAHC,
NAHMCAB,
AWAB

Good Food Kangaroo Island
AUSAB
TAGA
TAC
No response

Q.3 How many industry group meetings do you attend each financial year?

Only 12.5% of respondents do not go to any industry meetings. The majority went to between 5 and 9 meetings a year. Relative to the responses received from other industry groups, 87.5% industry group participation is high, indicating a high level of active industry engagement.

Despite the low overall response rate, this can still be a very useful public and policy reporting indicator to identify the level of association participation and active membership and therefore the cohesion of the industry. Further, the level of meeting attendance is a very useful industry indicator of industry engagement and association relevance.

Q. 4 How many employees did you have in the last financial year (2007/08)?

In the 2007/08 year, 75% of respondents had seven or more employees in their businesses.

This is not necessarily a useful indicator in itself, however it underpins many of the other indicators. Over time, it would be useful to indicate growth or decline trends in the industry and contribution to regional employment. While it is currently noted as only recommended as an AAGA indicator, over time it would become a very useful Industry indicator and potentially even public reporting one in the future.

Q. 5: How many of those employees undertook and successfully completed formal training programs in the last financial year?

One business had an outstanding self reporting record of training; however, overall only 48% of staff were reported to have undergone some form of training in the financial year. ***Although this total figure could be improved, 48% is a positive contribution that the industry is making to the development of human capital in the communities in which it operates.***

Currently 75% of respondents are undertaking staff training of one or more courses per year. This provides very positive evidence of the industry's contribution to regional training and employment, and as a result could be used as an AAGA indicator when a higher representation of the industry can be obtained.

Q.6: What is the male and female composition of your workforce?

The industry overall does not exhibit gender equity in its employment, however that the industry is recording this data and aware of gender equity issues in regional employment would be a positive factor in industry profile and negotiations. ***An increase in equality over time in this indicator may well make it a very positive one for the industry to use in the area of gender improvements and regional community support.***

Q.7: How many work related incidents did you have last year?

62.5% of respondents had no incidents in the last year. This can be a very positive indicator to use in external reporting to establish this industry as a safe one for people to be employed in. It would be improved by increasing the number of zero incidents and decreasing those respondents with two or more incidents (25%).

A very valuable indicator to identify the relative safety and health and welfare benefits of the industry to regional employment.

Q.8: Do you have a documented process and audits of safety procedures in your business?

The response to this question (75% with a documented process) is very positive and would be a useful external indictor if it could be demonstrated to apply across the industry generally, as that it expresses concern for employees and raises regional business standards***. As it currently stands, the figures of those employers who document the process of safety and audit these for effectiveness, are not representative enough across the industry to be useful, but may prove so over time, if this was pushed as important to the industry.***

Q.9. What percentage of your staff undertake annual hearing checks?

This is not currently a positive public or industry report card indicator, but was one specifically developed by the industry as important to them. 12.5% of respondents' staff undertake annual hearing checks.

It should be retained as an AAGA only indicator and an ongoing data base maintained for it.

Q.10 By what % has your tonnage produced grown in the last financial year (2007/08)?

Please refer to the economic analysis for details on this question.

Q. 11 Have you made any donations to the local community (schools, community groups or sporting groups, including the value of in kind donations) in the last financial (07/08) year?

The figures here (75% do make donations) do not identify the industry as a significant contributor to the community in terms of dollar donations, and would need to be compared to the overall net profit of the industry for it to be confirmed as an indicator useful for external reporting. The industry may well be perceived as a low contributor to its regional communities if the net profit of the industry is significantly higher. ***It is however an indicator that the industry may use to cite % increases in community donations over time, which would be very positive.***

Q.12 How many complaints did you receive about your business in the last financial year, that were registered with the Council or other regulatory body?

These results (75% with no complaints) are a strong indicator of the low level of community dissatisfaction with the industry and provide a very useful instrument to demonstrate this.

The result of this question is a very useful public and industry report card indicator, as well as one that is useful to track trends internally as well. It should be retained.

Q. 13. If you did receive a complaint against your operation, was an open negotiation and discussion regarding the issue entered into?

Of those who did respond this is a positive indicator of the active engagement with issues in the industry and desire to resolve them, with 66% engaging in an open negotiation and/or discussion regarding the issue.

It is an indicator that should be retained but as an AAGA only indicator at this time - it may prove useful in the future on an industry report card if it is deemed representative of the industry.

Q.14: Do you comply with all state and national planning regulations?

It is recommended that this question is dropped.

Q.15: Do you have a documented process of resolving community or other grievances with your business?

This is indicator was included to identify the level of care and concern the industry has in regard to its associated communities***.***

At this level (75% not having a process in place) the indicator is <u>not</u> a good news story, however, with simple processes it could be increased and a useful demonstrator of the industry's willingness to engage with and care for its constituent communities. It is recommended that this indicator be retained subject to industry dedication to rectifying the situation.

Q.16: Do you have documented evidence of a process (and compliance with) for the environmentally safe disposal of waste?

This question was included to identify the level of socially responsible waste management that could be verified, if required, by auditing. It is a very positive result (75% with a documented process) that could easily be improved by compliance from the non responsive respondents.

It is recommended that this indicator be retained.

Q.17 Do you provide speakers at schools or liaise with education bodies about your industry?

All respondents (100%) liaise with community education bodies, either local or with universities. ***This indicates a high level of bridging social capital overall for the industry. This is one key factor in increasing community awareness, understanding and empathy with the industry's activities, objectives and environmental contributions.***

This indicator should be used both on the public report card as well as the Industry one.

Q.18. Have you attended seminars or conferences that address the sustainability of the industry and seafood in the 2007/08 year?

This indicator identifies the good access (87.5% of respondents attending seminars or conferences) to a diversity of ideas and therefore the relatively good level of adaptability it is likely to have. These conferences and seminars included, the Australasian Aquaculture Conference; EMS Workshop; Abalone workshops (WADA), AB(?), and ECO Mapping (workshop). Only four of the seven cited the activity(ies) that they attended.

From a political policy perspective this indicates the industry's probable willingness to proactively manage its response(s) to a changing environment. It is recommended to retain this indicator as both an internal and external indicator (assuming all business are equally as engaged).

Q.19. How often has your use of the resource been challenged in the last financial year (2007/08)? E.g. planning applications; council applications; EPA etc)

This indicator was included to complement question 12 (complaints against the business) to identify if there were public challenges to prevent businesses from being established or expanding their activities. This also provides an indication of constituent community sentiment toward the industry, which can be related to how the industry interacts with region. ***There is a lower reporting of challenges to the business (25%), than there were complaints against the industry, which is likely to indicate that the communities are open to having Abalone Aquaculture operating in their regions***. ***It is recommended to retain this indicator as both an external and internal report card item.***

Q.20: How long have your employees been with your business? (Related to Q.4 & 6)

More than a fifth of respondent's employees have been employed for more than five years. And 66% for more than a year and less than four, indicating that it is a relatively longer term employment industry, with only 8.6% of employees being so for less than one year. ***This can be a positive indicator in terms of the industry's contribution to stable regional employment. It is recommended to retain this indicator as both a public and industry report card item.***

Q.21 Do you have a documented employment policy that allows for parental leave for both sexes?

This question has been included to complement questions 7, 8 and 9 which aim to identify the quality of the industry as an employer, in terms of how it cares for the welfare of its employees and contributes to the quality of regional employment.

The responses are a positive indication of awareness and reaction to calls for equal parental leave, but could be improved, with 62.5% having a documented employment policy that allows for parental leave for both sexes.

This indicator identifies the relatively forward approach of the industry to equality in parental benefits, however would need to be improved to fully demonstrate this for the Abalone industry.

It is recommended that it be considered for retention as an internal indicator and monitored in comparison to other regional industries over time.

Q.22 Do you have any other non payment employment benefits (e.g. health insurance, time in lieu etc)?

This can be a very positive indicator to use in external reporting to establish this industry as beneficial one to raising the employment standards for regional communities. ***Further improvement in the provision of benefits is possible; however, a 75% positive response rate would be useful in demonstrating the contribution of the industry to regional welfare.***

It is recommended to retain this indicator as both a public and industry report card item.

Q.23. Do you provide the local indigenous community with access to your resource?

This can be a very positive indicator to use in external reporting to establish this industry's contribution to reconciliation and regional welfare. Given that the industry is aquaculture, and therefore the product is not growing wild on leased crown land, the expectation that indigenous access be provided is very low. Consequently that 37.5% of respondents that do provide access to abalone the business grows (if this is the case) then it is a very positive external indicator.

If the responses provided here can be verified to apply across the industry, it is recommended to retain this indicator as both a public and industry report card item.

APPENDIX 5A SOCIAL INDICATOR ANALYSIS

INDIGENOUS COMMUNITIES

While two of three industry groups refused to have a question in their surveys relating to interactions between their businesses and indigenous community members, the Australian Abalone Growers Association did select a question focused on indigenous interactions. The original question accepted by only the AAGA members was:

"Do you provide the local indigenous community with access to your resource?"

Comments

APFA and SICOA refused this question or any other indigenous question on the grounds that it may raise the issue of ownership rights and therefore it was 'safer' not to engage with it at all. In regard to the above question 37.5% of AAGA respondents said 'yes' they did provide access.

Questions regarding the maintenance of indigenous communities' rights to continue cultural customs and consideration for long term resource use are deemed necessary in any social evaluation of industry or government effects on indigenous communities by the International Labour Organisation (ILO) and other human rights organisations. Given that the industry is aquaculture, and therefore the product is not growing wild on leased crown land, the expectation that indigenous access be provided is very low. In the case of AAGA where 37.5% of respondents do provide access to abalone the business grows (if this is the case) then it is a very positive external indicator. However, in many of Aquaculture sectors the expectation that access to the resource grown by the business would be and is considered unreasonable, consequently the utility of the question across the aquaculture industry is very low.

Recommended Use

It is recommended that original question selected by AAGA not be used, but the suggested alternative question with its attendant parts is recommended. It both suits the industry and engages with indigenous humanitarian concerns expressed in international indicators.

"Is there an active indigenous community or group in your region?"

If YES:

"Does your business have any formal interaction or collaboration with that community or group?"

Utility and Interpretative Guidelines

Inclusion of questions to inform such an indicator can be a very positive in external reporting to establish this industry's contribution to reconciliation and regional welfare.

In the first instance the question is establishing the existence of and the requirement to consider indigenous rights, activities and interaction in the region of the businesses' operation. If an indigenous community exists, then, it is necessary to establish if there is any interaction. Ideally further questions could be asked to establish the nature of that interaction – for example; is it positive; collaborative; what are the employment outcomes from it; are there formal resource sharing agreements; how often does interaction occur?

The objective is to establish if there is any basis for interaction, and if so, if it is occurring. Further benefit could be gained in those instances where interaction is occurring by establishing the benefits of that which is facilitated by the particular business. Similarly, if interaction should be as a result of the existence of indigenous groups, but is not, this is a flag to the business, sector and overall industry that an opportunity exists to improve local relations and its ESD score card.

INCOME/LOCAL EMPLOYMENT AND EDUCATION

The following group of questions come under the ESD Reporting level of Community Wellbeing and relates to the contribution that the industry makes to regional employment and education.

EMPLOYMENT

A number of questions regarding employment were asked over the three sectors' surveys, which encompassed:

> *"How many employees did you have in the last financial year?"*
>
> *"What was the male and female composition of your workforce?"*
>
> And from the Economics Section
>
> *"What is the maximum number of full time employees you had in 2007/08?"*
>
> *"What is the maximum number of part time or casual employees you had in the 2007/08 financial year?" and*
>
> *"What is the maximum number of unpaid workers you had in the 2007/08 financial year (e.g. spouse, children or other family members)?"*

Comments

Discussion from all industry groups identified that this range of questions could be more efficiently encompassed in one question which requested respondents to complete a table for the previous last financial year, which would provide all the employment information in one location.

Recommended use

The following revision was recommended for this question.

> *"Please complete the following table with the average number of workers you had at any one time in each of the categories for the last financial year."*

Position	N°. Permanent FTEs	N°. Part Time FTEs	N°. Casual FTEs	N°. Male	N°. Female	N°. unpaid workers
Admin						
Processing						
Farm						
Hatchery						

Utility and Interpretative Guidelines

The number and composition of employees is an essential indicator for contributions to the community in regard to full time, part time, casual and unpaid, in a range of contexts.

The data derived from this question may provide an indicator of a number of issues depending upon the context of the sector and interpretation adopted. It may be the permanent full time positions provided over a long time; the support it provides in regard to supplementary employment through permanent part time; or support of other industry groups such as tourism with seasonal casual employment. It also underpins many of the other indicators.

Over time, it indicates growth or decline trends in the industry and contribution to regional employment.

TRAINING

Only one question in regard to training was used which followed directly on from the question in regard to the number of employees in the business. The question was;

"How many of those employees undertook and successfully completed formal training programs in the last financial year?"

Comments

The positive response rates to this question in terms of the number of employees undertaking formal training in businesses of these sectors, ranges from 14% to 75% of respondents in any one sector have staffs who were undertaking one or more formal training courses in the last financial year. The rates of training varied notably between sectors and by region within sectors, suggesting different cultural approaches or employment circumstances between sectors and regions to employee training.

Recommended Use

It was recommended that this question be retained and used by all participating sectors. No changes to the wording of this question were suggested by the responses or the data received or the sectors involved.

Utility and Interpretative Guidelines

The utility of this question is to identify the industry's (or sector within the industry) contribution of the development of human capital in their area or region.

Although the figures received in this initial data collection can be improved over time, the question provides a very good indicator of the industry's contribution to the human capital (skill levels) in the communities in which it operates, and the industry's contribution to regional training and employment. It is also a sound basis for encouraging improvement in the training and education aspirations of the industry for future industry and the option of public reporting should be retained as a future consideration by those sectors not currently reporting high training levels.

LOCAL COMMUNITY EDUCATION AND INTERACTION

In order to gain an insight to the bridging social capital – or the relationship networks that the industry develops with individuals outside it to increase understandings in both directions – one question on the education the industry provided through presentations was asked. The question was worded as follows:

> **"How frequently have you provided speakers to schools and/or liaised with colleges or university groups to educate them about your industry?"**

Comments

The range of liaison between sectors and their associated community education organisations varied widely across the three groups, states and regions. It was however, deemed a valuable indicator of community engagement by the industry.

Recommended Use

It was recommended to retain the question, with a slight modification to increase the breadth of community bodies encompassed by the question. The recommended revision is:

> *"How frequently have you or your staff provided speakers/liaised with schools, colleges, universities or community groups (Rotary, Lions, Apex etc) to provide education about your industry in the last financial year?"*

Utility and Interpretative Guidelines

This question provides data on the indicator of industry contribution to community social capital

The provision of industry liaison to educate the broader community is a key factor in increasing community awareness, understanding and empathy with the industry's activities, objectives and

environmental contributions. This indicator should be used both on the public report card as well as the Industry one dependent on the results and can also be a very good indicator of trends in the industry's endeavours to engage with its broader community.

WORKPLACE HEALTH AND SAFETY

This is an indicator, also falling under Community Wellbeing, which relates to the degree to which the industry cares for the regional population through its workplace operations; establishing if it is a socially responsible industry. Three questions were asked in this section.

FOOD HANDLING AND PREPARATION STANDARDS

This indicator is included as the level of compliance identifies the industry as a responsible producer of food to the broader Australian and export community.

The wording used in the pilot survey was:

> **"Are you accredited with national food standards production and handling legislation (e.g. PPPS)?"**

Comments:

Many of the participants and executive felt that this question was unnecessary as compliance with this legislation is a requirement to obtain an industry licence in Australia. However the response rate of some 43.7% who answered "NO" in the APFA survey, identifies that this is a very important indicator to include if only for the purposes of industry education. AAGA declined to have it in their survey and SICOA with a response rate of 3.4% "NO" and 8.5% of "No Response", felt that it was not of enough assistance to be included.

Recommended Use:

It is recommended that the indicator be retained and initially used for industry education in the first instance, and subsequently as compliance rates are confirmed to be 100% as a public indicator. The wording is suggested to be revised slightly to the following:

> *"Do you have a documented food safety management system?"*
>
> *"If Yes, under which system? e.g. AQIS, Supermarkets, government, third-party audited standard (SQF, EuropGAP, Global GAP, ISO)*

Utility and Interpretative Guidelines

The utility of this question is in the data it provides on corporate social responsibility.

Interpretation of this information should be focussed on the level of education provided by the industry about its level of responsibility in both its', compliance with food handling and production legislation, and to the consumer public for the standards maintained by the industry that are externally audited.

WORKCOVER ACCIDENT CLAIMS

The following question was asked in all surveys:

> **"How many work related accidents/incidents did you have last financial year?"**

Comments

The responses to this question varied widely over the three sectors and no response was recorded in a large number of instances. The sectors attributed this to the question being too 'loose' in regard to what was deemed an accident or incident. Consequently it was recommended that the question be tightened up. While there is cross over with state and federal reporting under Workcover, it was deemed necessary to retain this question to be able to get access to comprehensive industry data, which is not possible through Workcover Australia or many of the States due to variations in reporting where less than five instances occur, and only where a week or more of work is lost. Additionally Workcover also reports only at the overall Aquaculture level, and does not provide data at the sectoral level (i.e. by shellfish,

abalone, pearl, prawn etc). However, this may prove a useful start, with a decision made at a later date as to whether it would be a cost effective improvement to collect more specific data.

Recommended Use

It is recommended that the question be used, but in a slightly revised format as follows:

> *"How many work cover reports of accident/incidents did your business record in the last financial year?"*

Utility and Interpretative Guidelines

The utility of this question is in the data it provides on corporate social responsibility.

Low and decreasing levels of work cover incident reports demonstrates a safe or increasingly safe workplace, and therefore a socially responsible industry. It also demonstrates a care for its workers (and therefore community wellbeing) by providing a safe workplace.

WORK PLACE HEALTH AND SAFETY TRAINING

The adjunct question to accident reporting is one which identifies the level of safety training that is undertaken in the businesses of the industry, to assist in accident prevention. One question was asked in this area, which was:

> **"How frequently do you undertake OHS training of all staff?"**

Comments

The collected data demonstrates that training is undertaken at some level by approximately 65% (or higher) of the respondents. The difficulty identified in this indicator is that in many operations there are only a small number of employees (1 – 4), meaning that Occupational Health and Safety education is 'assumed' to be passed between employees in the course of business. It was recognised by the industry that this is an important indicator to demonstrate responsible business management and care for the wellbeing of its workers – aside from it being an operational requirement of the provision of any Workers compensation insurances.

Recommended Use

It was recommended that this question be retained, but with a slight variation of the wording, to increase the preciseness, as follows:

"How often did your business provide Occupational Health and Safety training for your staff in the last financial year?"

Utility and Interpretative Guidelines

The utility of this question is in the data it provides on corporate social responsibility and the human capital generated by the industry.

The interpretation of the data collected via question is guided by the need to demonstrate the due care taken in providing regular training by businesses in the industry. It illustrates the contribution that the industry makes to being socially responsible and the overall wellbeing of the community: it ensures the work force is informed about how to protect themselves. Increasing levels of training indicate higher levels of corporate social responsibility and contribution to the community's levels of human capital.

DOCUMENTED PROCESSES

In order to demonstrate the veracity of responses to the above two questions, a third question was incorporated into those underpinning the indicator of workplace health and safety training, which investigated documented processes and audits of safety procedures.

The question asked was:

> **"Do you have a documented process and audits of safety procedures in your business?"**

Comments

Between 56 and 75% of respondents across all three participating sectors indicated that they did have a documented procedure in regard to OHS procedures. As a result the response to this question is very positive and would be a useful external indictor.

Recommended Use

The failing of this question is it is actually in two parts, and it is consequently recommended that it be separated for greater clarity, which will aid education of the industry and contribute to the robustness of the indicator. The question should be reworded as follows:

> *"Do you have a documented process for the implementation of health and safety procedures for your business?"*
>
> *"If yes, do you undertaken annual audits of adherence to those processes?"*

Utility and Interpretative Guidelines

The utility of this question is the auditable value of claims of safe work places and procedures and processes to ensure the maintenance of them.

High levels of a positive response to this question indicate industry concern for employees and raises regional business standards. High levels of positive responses to this question would provide strong evidence of the industry as a socially responsible corporate citizen.

ATTACHMENT TO LIFESTYLE

Only one question was asked under the indicator of attachment to lifestyle as in a quantitative survey more extensive questions are problematic, and this one question was deemed adequate by the industry. That question was:

> **"How long have the current employees been with the business?"**

Comment

Overall, 25% of employees were reported as being with businesses for more than a year, but less than five, from which an average could be derived. The specific profile of employee longevity varied markedly between sectors, which is explained by the geographic location (tourism areas in northern Queensland) and small stable communities which demonstrated much greater retention of employees. Only two of the three sectors agreed to the use of this question, however it was still deemed useful and without change.

Recommended use

It is recommended that the question be retained as is, which was:

> *"How long have your employees been with your business? Enter the number per category"*

Utility and Interpretative Guidelines

This question it utilised to provide data on the indicator of the attachment or connection the industry provides to people in the community to the physical place – it is a component of social capital and the value that the industry generates in providing a sense of belonging to community members.

Data from this indicator can be used to identify trends in employment which helps particularly with lobbying in regard to the need for greater flexibility in employment ability; the contribution the industry makes to seasonal employment; the flexibility that the industry provides to accommodate the needs and therefore maintain employees for longer periods etc. This would also be a useful question in a benchmarking study e.g. in terms of comparative analysis of firms – feedback on individual firm performance versus average for group, however this is subject to industry agreement in regard to confidentiality.

CAPACITY TO CHANGE

There were two questions under the indicator of capacity to change. This indicator is used as one of the flexibility of, in this case an industry, to adapt to a changing environment. The proxies used for it are those that can be equated to bridging social capital – or what type of

networks do the respondents have to access new and varied ideas to address changes in their environment. The two questions were split into *proactive* and *reactive* activities and network access.

PROACTIVE ENGAGEMENT

The question asked was:

> **"How frequently do you have contact with the following agencies?"**
>
> - **Industry organisations**
> - **Private consultants (including financial, environmental, marketing etc advisors)**
> - **Government officers (Field days etc)**

Comment

The data from this question indicated that different sectors (e.g. oysters, prawns or abalone) of the aquaculture industry had varying levels of engagement with external agencies in terms of receiving the advice and alternative perspectives, particularly with government agencies. The initial data collected here indicates high levels of engagement with private consultants and industry organisations, demonstrating a proactive ability to seek information. All sectors in the industry agreed to the importance of retaining this question.

Recommended Use

It is recommended that this question be slightly altered to approve the precision of the question, to the following:

"How frequently does your business contact the following agencies for advice?

> Industry organisations
>
> Private consultants (including financial, environmental, marketing etc advisors)
>
> Government officers (State/federal fisheries and/or natural resource management officers/managers etc)

Utility and Interpretative Guidelines

The utility of this indicator is to identify the level of proactive engagement with external agencies – representing the industry's bridging social capital – or source of new ideas, innovation and flexibility.

The data provided by this question and indicator, if increasing provides guidance as to the level of expert advice, new perspectives and technologies that the industry is accessing and therefore its endeavours to increase its social capital and, therefore, capacity to adapt. This has the external or regional benefit of increasing the resilience of the industry, and therefore its ability to support its regional community.

REACTIVE ENGAGEMENT

The second question asked under this indicator, which aimed to identify levels of reactive engagement was:

> **"How many times per year do you have interaction with State and/or federal government agencies (fisheries and/or natural resource management officers/managers etc)?" List agencies and reasons.**

Comment

The data indicates that the majority (87.5%) have interaction with government agencies one or more times per year, but in 62.5% of these cases, it is four or less times per year. While these interactions are most likely those required by legislation, it does beg the question of how the remaining 12.5% are managing to conduct their businesses with no interaction with government.

Recommendation

As with the previous question it was recommended and agreed that this question be slightly reworded to increase its precision. The revised wording is:

> *"How many times in the last financial year did you business have interaction with Sate and/or Federal government agencies (fisheries or NRM officers, managers or agents) as a necessary part to conducting the business?"*

Utility and Interpretative Guidelines

This indicator is targeted at identifying the level of incidental interaction that the industry necessarily undertakes in the course of its operations with government agencies, as against those interactions that are sought out (contrary to Q.15 which was focused on the proactive seeking of advice).

The utility of this question is to provide information on the level of enforced interaction that may or may not be directly beneficial to individual businesses.

The interpretation of this indicator is entirely dependent on the context of the sector and the level of interaction that is being forced upon businesses in order for them to simply conduct business. It can be interpreted in a number of ways. If there are very low or minimal levels of interaction (the cause of which may need to be investigated) compared to the standard expected number, a decreased capacity to adapt to change may be indicated, as businesses may not be aware of what is required of them and they are exposing themselves to regulatory imposts – this would be a red flag to the industry to engage its members to become aware and responsive to standard requirements. Industry participants may not necessarily be 'tapped into' regulatory processes and decision making, suggesting they may be disadvantaged in terms of the ability to be proactive. Alternatively, if the level of necessary interaction is increasing dramatically, it may indicate an undue impost on aquaculture business, or a particular sector (compared to others or wild catch) which may prove detrimental to free and unimpeded conduct of business.

FAIR CONSIDERATION OF THE LOCAL COMMUNITY BY INDUSTRY

COMMUNITY ENGAGEMENT

Four questions were asked in this category, one of which was both a social and economic question.

The first question was:

> **"Do you have a documented process for resolving community and other grievances with your business?"**

Comments

While one of sectors suggested this question should be dropped, the other wanted to retain it. The data indicated that currently between 53 and 81% of businesses do not have any documented process for resolving community grievances with their businesses. Currently this is not a good news story for the industry in terms of its preparedness to consider issues raised by the community. It is recommended that a simple policy for industry be developed as a means to improve the responses.

Recommended Use

It is recommended that the question be retained but in a slightly revised wording, which is:

> *"Does your business have any documented policy for resolving community or other grievances with its operations?"*

Utility and Interpretative Guidelines

The data from this question is useful in providing an indicator of the industry's willingness to engage with, and care for, its constituent communities.

The existence of such documentation and the an increasing trend to have a documented process (that can be externally audited) is interpreted as a clear indicator of taking broader community concerns seriously and engaging with the issues of most importance to the community when it involves businesses in the sector and broader industry.

ENVIRONMENTAL MONITORING, PROTECTION AND ASSESSMENTS

While environmental monitoring may, on the surface, not be interpreted to be associated with social or economic indicators, environmental factors are inherently social values, therefore there is an unavoidable social aspect to environmental management activities. Equally the costs associated with those activities have a social and economic component.

MONITORING

There was one question asked under this category which was:

> **"Do you provide any environmental monitoring services (mangrove health, wetlands, groundwater salinity, birdlife etc.)?"**

Comments

Most sectors actively participate in providing environmental services for the community. These services occur either yearly, monthly or weekly. This is a positive indicator for the industry, which all sectors where keen to maintain and report upon.

Recommended Use

It was recommended by the industry sectors that this be retained for both public reporting and industry reporting. Again a slight revision to the wording is recommended, being:

> *"Does your business provide any environmental monitoring services to your region in the course of its operations (mangrove health, wetlands, groundwater salinity, birdlife etc.)?"*

Utility and Interpretative Guidelines

The utility of this question is in demonstrating the contribution that the businesses of the industry make to their regional community's environmental awareness and health.

The environmental services often provide the basis for maintaining the ecosystem and recreational values of immediate and neighbouring areas. Varying trends in the data provided by this question demonstrate the value that the industry contributes to the region in more than simply direct economic inputs. The question links to *"How much did you spend on environmental assessments and inspections etc in the last financial year?"* which is in the economic section.

PROTECTION

There were two questions related to the activities that business may undertake that incorporate protection of biodiversity or particular species. These were:

> **"Do you have any area of your farm under protection" and**
>
> **"Have you had any established (by independent experts) increasing biodiversity on your farm?"**

Comments

Many aquaculture industries are associated with sensitive habitats and generally demonstrate a high level of environmental protection, which are most likely high value wetlands. The shellfish industry in particular was keen to maintain this indicator as an indicator of environmental stewardship.

Recommended Use

It was recommended by the industry sectors that these questions be retained for both public reporting and industry reporting. However, given the data acquired from the pilot process, it is recommended that these two questions be incorporated together in the following one question:

> *"Do you have any area of your farm/business under voluntary or compulsory environmental protection for the benefit of regional biodiversity?"*

Utility and Interpretative Guidelines

The utility of this question is to demonstrate the broader environmental contribution that the businesses of the industry make to their regional community's environmental protection and enhancement.

The interpretation of changing trends in the data elicited by this question should focus on the demonstration of the value (increasing or decreasing) that the industry contributes to the maintenance of the region's biodiversity and environmental protection, and therefore its contribution in other than simply direct economic inputs.

ASSESSMENTS

There was one question relating to the environmental assessments that businesses may undertake to protect biodiversity or particular species. This was:

> **"What is the value of monitoring costs in regard to health stocks and environment?"**

Comments

The costs borne by the farmer in monitoring of farm stocks, particularly of native species, provides an external service for monitoring the health of the marine environment. The costs and benefits of monitoring the marine environment is often not recognised by the wild catch sector and the community as an altruistic beneficial community service.

Recommended Use

It was recommended by the industry sectors that this question be retained for both public reporting and industry reporting, with the following revision of the wording adopted:

> *"How much did your business spend on environmental assessments and inspections in the last financial year?"*

Utility and Interpretative Guidelines

The utility of this question is to demonstrate the financial cost incurred by the industry in efforts to protect and enhance the regional environment in which it operates, and therefore the contribution the industry makes to environmental protection and enhancement.

The data from this question should be interpreted in connection with the previous one, in terms of proving information on the increasing or decreasing costs of environmental protection of areas to businesses in a sector.

REGIONAL SOCIAL CAPITAL

A number of questions were asked in this section, which is recommended to be retained under this indicator. They related to the industries bonding and bridging social capital. The questions were designed to illicit information on the bonding and bridging social capital of industry businesses in relation to their constituent communities. The existence and type of social capital – or the resources provided by strong social networks of different kinds – is one of the essential factors to consider in evaluating an industry's contribution to regional sustainability.

The questions were:

> **"Are you a member of (Industry group) or other industry group?"**
>
> **"How many industry group meetings do you attend each financial year?"**

"Are you an active (i.e. attend at least 60% of meetings) member of business councils (e.g. Chamber of commerce, etc) or environmental groups?"

"How frequently have you attended seminars or conferences that address the sustainability of the industry and seafood in the 2007/2008 year?"

"Have you made any donations to the local community (schools, community or groups or sporting groups, including the value of in kind donations) in the last financial year?" and

"Have you provided equipment to the community in the course of your business (such as navigation aids; markers, boat ramps, buoys etc) in the last financial year?"

Comments

While some of the industry participants were inclined to have a number of these questions removed as the data from these questions was generally indicative of low interaction and support (with definite exceptions), it is strongly recommended that they be retained, albeit some in a modified format. This is due to the importance of not only demonstrating connections between the industry and its broader community, but also for the capacity building opportunity that bringing the industry's attention to the opportunities that exist for them to improve their profile.

Recommended Use

It is recommended that the questions still be used, but slightly modified to reflect the following seven questions:

"Is your business a member of an industry Group?"

"If Yes, How many industry group meetings do you or your staff attend in the last financial year?"

"Is your business currently a member of any non industry business councils/or groups (e.g. State or regional Chambers of Commerce)?"

"Are you, or any of your staff, active (i.e. attend 60% of more of meetings) member of business councils, community (Apex, Lions, Rotary, etc) or environmental groups?"

"In the last financial year, how many seminars, workshops or conferences that address industry sustainability and development issues did you or your staff attended?"

"Has your business made any donations to the local community (schools, community or sporting groups, including in-kind donations) in the last financial year?"

"Has your business provided public access to its infrastructure (e.g. boat ramps, moorings, buoys, navigation poles etc.) in the last financial year?"

Utility and Interpretative Guidelines

These questions establish the capacity of the industry to support its own industry members, collaborate with and support other organisations in its communities, and access new and diverse ideas and knowledge to assist it in adapting to changing circumstances, and therefore contributing to the sustainability of the regional community.

In interpreting this set of questions, the data will provide information on the number of community groups and organisations that businesses are involved in in the community and how active they are and the contributions they make through direct (donations) or indirect support (infrastructure) – bonding social capital. The will also identify how many opportunities businesses availed themselves of to gain additional knowledge and information about regional sustainability – bridging social capital. Increasing trends in these areas indicate an increase in social capital that benefits the community's in which industry businesses operate and therefore the contribution of the industry to regional sustainability. They are important aspects of the indicator of the industry's importance to its regional communities.

SOCIAL IMPACTS

There were two questions in this section to identify the level of social impacts reported on or experienced by the industry. These were:

> **"How often has your use of the resource been challenged in the last financial year (2007/08)? E.g. planning applications; council applications; EPA etc)?" and**
>
> **"How many complaints did you receive about your business in the last financial year, which was registered with the Council or other regulatory body?**

Comments

In all cases these questions were recommended to be retained for the purposes of both public reporting and to track industry trends. The value of demonstrating the very low levels of public and official challenge to the operation of the industry was recognised by all participants.

Recommended Use

There were some small modifications to the first question that were recommended and consequently the following are the recommended questions to be used in future:

> *"How often in the last financial year, has your local community challenged your rights to access resources (e.g. use of water, land, etc) that were registered through planning applications; council applications; EPA or other formal process?"* and
>
> *"How many complaints (that were registered with Council or other regulatory body) has your business received in the last financial year?"*

Utility and Interpretative Guidelines

The benefit of this question to the industry is the ability to demonstrate the verifiable levels of complaints and community issues with the operation of the industry.

The data from this question should be interpreted in terms of increasing challenges to the industry businesses indicates the need for industry businesses to increase community communication and collaboration, while decreasing trends of challenges or complaints indicated appropriate consultation and collaboration with the community to ensure businesses receive a 'social licence to operate' unencumbered.

DELETED QUESTIONS

A number of questions were deleted from the survey as a result of both the quality of the data elicited and a lack of necessity for them identified subject to further investigation. The following were the questions that were deleted:

Product Quality

> **"Do you have supermarket quality accreditation?"**

This question was only approved by one of the three industry pilot groups and the results were not deemed sufficiently outstanding by the sector to be included, nor were they considered to be broadly applicable enough to be included in a generic survey. Additionally, the objective of this question is covered by the question in regard to food handling accreditation.

OHS

SICOA requested that one question be included to ask respondents if they were a member of a State OHS Accreditation program.

> **"Are you a member of a State OHS Accreditation Program?"**

This was not deemed broad enough to be applicable for a general survey and was covered by the other questions asked.

AAGA asked that a question on annual hearing checks be included:

> **"What % of staff undertakes annual hearing checks?"**

This was not included in the generic survey given the specificity of it, and that the intent of it is covered by those questions in regard to OHS training included in the generic survey.

Business Growth

Two questions which were used in the social section, but related to business growth:

> **"By what % has your tonnage produced/grown in the last financial year?"**
>
> **"How much (% of annual net income) has you business grown in the last year?"**

These questions (one used in AAGA and the other in APFA) did not elicit information that was able to be interpreted usefully. It was deemed by that this information could be obtained through other economic avenues and therefore dropping the questions was acceptable.

Fair Consideration of the Community

AAGA chose to include one question relating to community complaint negotiations:

> **"If you did receive a complaint against your operation, was an open negotiation and discussion regarding the issue entered into?"**

Less than half of the participants responded to this question (2 of 8), with five either not responding or deeming it irrelevant. As there were four other questions in this category a that were useful and well engaged with, and given the disinclination of the industry to engage with this question, it was deemed that the issue of fair consideration of the community would be well covered despite the deletion of this question.

APPENDIX 6: ECONOMIC INDICATOR SURVEY RESULTS

Table 5: Recommended Economic Indicator parameters & Reporting Use:

ESD Reporting level / group	Indicator	Objective of indicator	Existing Data Sources	Questions to answer indicator	Format of Survey Question Response
Economic Return	1.1 Production	As an indicator of growth	ABARE Fisheries Statistics	What was you production volume last financial year?	Tonnes, dozens
	1.2 Cost Of Production	Component of profitability	Nil	How much do you pay for: fuel; energy; staff; feed?	Dollar value per item
	1.3 Revenue	Component of profitability	Nil	1.3.1 What is the value of your exports?	Dollar value
			Nil	1.3.2 What was your revenue last financial year?	Dollar value
	1.4 GVP	As an indicator of growth	ABARE Fisheries Statistics		
	1.5 Related Industries	To show the return of the industry in the community	Nil	1.5.1 How much did you spend on suppliers and allied businesses in procurement equipment and services in the last financial year?	Dollar value broken up by: - feed - equipment

			Nil	1.5.2 How many local/domestic suppliers and allied businesses did you procure equipment and services from in the last financial year?	Number
	1.6 Business Investment	To show trends in investment	Nil	1.6.1 What is the value of the investment in your business?	Breakdown by investment: - Equipment - Land - Buildings
			Nil	1.6.1 What is the value of investment in your business in this financial year?	Breakdown by investment: - Equipment - Land - Buildings
	1.7 Employment	To show the return of the industry in the community	Nil	1.7.1 What is the maximum number of full time employees you had last financial year? (paid and unpaid)	Number
			Nil	1.7.2 What is the maximum number of part time or casual employees you had last financial year? (paid and unpaid)	Number
	1.8 Community Investment	To show the return of the industry in the community	Nil	1.8.1 How much did you spend on local authority taxes/ rates in your business last financial year?	Dollar value
			Nil	1.8.2 How much did you spend on licence fees last financial year?	Dollar value

6.2 APFA SURVEY RESULTS:

Q5, 29, 30: Employment: Employment is an important indicator to use in the public arena. However the data we obtained is difficult to decipher. There is lack of consistency in some responses. More importantly we cannot estimate FTE's.

The range is from 2 to 91 people, measured at the end of the year .However, the largest farm reports an "average" of 130 fulltime and 65 part-time.

We need to reorganise all employment questions. If we are to obtain data to report publicly - assuming we can obtain data on the basis of a census or from a representative sample . Maybe NAC could ring each farmer and get employment data.

Q31: As only small numbers involved, I would discard in the future.

Q28: Expenditure on supplies: This is a very important indicator. Our survey results show an enormous range, from $9 million to $25000.(excluding non-productive farms . In the future NAC should get someone to do a simple, but data-intensive Economic input-output survey and analysis . Fisheries examples of this technique are found in Hundloe's:"Fisheries of the Barrier Reef".

Q25, 26, 27: Expenditure on environmental services: These questions were misunderstood by many and we cannot use the data gathered.

If the amount of expenditure on these items is large, in the future there should be an attempt to gather them .This would be part of the exercise in getting input-output data. Once every three years would be ideal.

Q 33: Quantity data: This is an important indicator, particularly when converted to $'s. In the future I suggest we attempt to obtain this directly from the state agencies.

Our results show an enormous range, from 1100 tonnes to 3.5 tonnes. We cannot use our survey data. We would need to ensure we had a representative sample.

Q16: We cannot use data on the growth/decline of production .It is all over the place, from very strong growth (25%) to extremely negative (- 500%)!!

6.3 SICOA SURVEY RESULTS:

Q5, 29, 30: Employment: Employment is an important indicator to use in the public arena. However the data we obtained is difficult to decipher. There is lack of consistency in some responses. More importantly we cannot estimate FTE's.

The range is from 2 to 91 people, measured at the end of the year .However, the largest farm reports an "average" of 130 fulltime and 65 part-time.

We need to reorganise all employment questions. If we are to obtain data to report data publicly --assuming we can obtain data on the basis of a census or from a representative sample. Maybe NAC could ring each farmer and get employment data.

Q31: As only small numbers involved, I would discard in the future.

Q28: Expenditure on supplies: This is a very important indicator. Our survey results show an enormous range, from $9 million to $25000, (excluding non-productive farms). In the future NAC should get someone to do a simple, but data-intensive Economic input-output survey and analysis. Fisheries examples of this technique are found in Hundloe's:"Fisheries of the Barrier Reef".

Q25, 26, 27: Expenditure on environmental services: These questions were misunderstood by many and we cannot use the data gathered.

If the amount of expenditure on these items is large, in the future there should be an attempt to gather them .This would be part of the exercise in getting input-output data. Once every three years would be ideal.

Q 33: Quantity data: This is an important indicator, particularly when converted to $'s. In the future I suggest we attempt to obtain this directly from the state agencies.

Our results show an enormous range, from 1100 tonnes to 3.5 tonnes. We cannot use our survey data. We would need to ensure we had a representative sample.

Q16: We cannot use data on the growth/decline of production .It is all over the place, from very strong growth (25%) to extremely negative (- 500%).

APPENDIX 6A: ECONOMIC INDICATOR ANALYSIS

Some rewording of the questions has been undertaken in line with industry sector recommendations and review of the intent of the question and the responses elicited. Additionally some questions have been split into a number of questions to aid clarity and analysis purposes. The following is that final list of questions.

NET ECONOMIC VALUE

The major indicator of economic performance is whether the industry is making sustainable profits. It is obvious that if someone was considering investing in a business, the first thing one would do is to seek verifiable evidence of its profitability over a number of recent years and make informed forecasts of its future profitability. This also extends to the communities that support an aquaculture business as it too wants to know whether the business will be sustainable into the future. Therefore these questions are attempting to elicit from the industry data to support its economic sustainability. As mentioned before, there are a number of coarse level economic data sources. Therefore these questions have been designed and shaped to gather more fine-scale economic data.

PRODUCTION

The questions under the production are recommended as an intact set, as a full picture is developed as a result of the information provided by the parts. Being that, what is the capacity of the industry to contribute to a region's GDP, both currently and into the future. This information can be utilised in the context of pressure that might be place on the industry in regard to access to resources for the industry. These questions were only piloted by the Shellfish sector; however the data generated indicated that the set production questions can provide beneficial data in the context of ESD reporting.

The question asked:

"What is your farm's total annual production for last financial year?"

Comments

This question comes with the pitfall of it being highly unlikely that the whole industry would be surveyed and therefore the production data will be an underestimate. However, for a sector with a small number of players, e.g. the abalone industry, this question could potentially capture the whole industry. The value of this question though is if it used in conjunction with other data collected during the survey.

Recommended Use

It is recommended that this question be retained in the survey as is.

Utility and Interpretative Guidelines

The data generated by this question can be used in conjunction with and/or combined with other data to provide the basic framework of the industry's financial viability and contribution.

The questions should be interpreted for example, in combination with the question "How much area/lease do you currently farm" as it provides a good indicator of food produced per unit of area for the sector.

The second question was:

"How much area do you currently farm?"

Comment

As this question was only asked in the Shellfish sector, its specificity must be acknowledged in regard to the interpretation of 'area'. The question may not be interpreted commonly across all sectors.

Recommendation

While this question is relatively straight forward, to be useful across all sectors it needs to be reworded to reflect the industry being surveyed. For example, lease is appropriate for the oyster industry, but area is probably more appropriate to the prawn sector. Thus the question becomes:

> *"How much area/lease do you currently have under production?"*

In addition, a second question needs to be asked previous to this question which is

> *"What is the total area of your farm, including such things as production (area/lease), hatchery, storage, processing and packaging and open areas?"*

Utility and Interpretative Guidelines

The original question remains valid, but only gives part of the picture. This is the reason for the addition of a second question. The utility of the two questions together, is that a more accurate picture of the footprint of the industry can be determined.

The interpretation of this question is guided by endeavouring to uncover both how much area (land or aquatic resource) is being held by businesses and how much of that is being utilised for production. This question should be considered in conjunction with the following question.

The third question asked was:

> **"Given the entire farm lease area, what is your potential production per hectare?"**

Comment

This question aims to provide an indication of the potential industry growth through increased production utilising current farm area. This question was only asked of the oyster industry, but its utility could be expanded to other industries by rewording. It would only be useful indicator if close to 100% of the industry were surveyed.

Recommendation

It is not recommended that this question as used with the following variation:

> *"Given favourable conditions, what could you increase your production to through expansion/utilisation of your current site/lease?"*

This alteration has been made because the original intention of the question was to gain information about the potential for the industry to grow within existing area. The rewording makes it easier to understand and the introductory "Given favourable conditions..." is intended to gain a best case scenario response.

Utility and Interpretative Guidelines

This question along with the previous two questions provides base level data from which the actual and potential capacity of the industry, sectors and regional businesses can be determined.

In regard to interpreting the data, the information from this question should be used in conjunction with the question *"What is your farms total annual production for last financial year?"* as trend data, as an indicator of the growth potential of the sector or industry overall.

INVESTMENT

The following question is asked because the value of major capital items can act as a guide to sustainable profits – to the extent that these prices reflect the capitalization of profits or the confidence in making future profits. The oyster and abalone sectors were asked this question.

> **"What is the total value of the investment in your business (market value of plant and equipment, land, vehicles etc)?"**

Comments

Two sets of investment values could be collected under this question, market value and replacement value. Replacement value will be considerable more than market value because replacement means to replace all equipment with state-of-the–art equipment. This value is likely to be a difficult figure to determine. Therefore, market value is considered the easiest to collect and should remain the value sought. As a consequence, when releasing public information sectors should note that to replace the totality industry's plant it would entail spending considerably more than the market value.

Recommended Use

It is recommended that this question be retained in the survey as is. However the following second question should be added.

> *How much did you invest in your business last financial year (market value of plant and equipment, land, vehicles etc)?*

The reasoning behind asking this question is to gain further insights into the profitability of the particular sector. It can be assumed that trends in capital investment provide an indication of the confidence or otherwise that the business (and by association the sector) has in earning future profits and therefore its economical sustainability.

Utility and Interpretative Guidelines

This indicator is selected as it provides information regarding industry investment and profitability.

Over time, the trends of investment can be used to identify the level of commitment that businesses have to the industry and also the contribution of the industry to regional viability; increasing investment can reasonably be equated to increasing commitment and visa versa. Its utility will be more apparent in the trends that emerge over time.

IMPORT REPLACEMENT AND EXPORTS

Historically, Australia has been a net importer of fisheries products in volume terms but a net exporter in value terms. This disparity reflects the composition of Australian fisheries exports compared to imports. Australian fisheries exports are dominated by high value species such as rock lobster, tuna and abalone, while imports largely consist of lower value products such as frozen fish fillets, canned fish and frozen prawns. In recent years, the gap between imports and exports has closed. In 2007-08 Australia became a net importer of fisheries products in value terms (ABARE 2008). With trend likely to continue there is a need of an indicator that shows a sectors contribution to the relationship between imports and exports.

This question was asked of the abalone industry only.

> **"What value of product did you export last financial year?"**

Comments

The abalone aquaculture sector is a high value sector exporting to premium markets in China. However, its export value is hidden within the statistics of 'Abalone' which also includes the wild catch. Therefore the industry identified a need to collect this data. However, this dilemma is likely to affect all exporting sectors where there is an identical or similar domestic wild catch product, whether they are currently exporting or planning to.

Recommended Use

Despite the issues associated with this indicator, it is only collected by IBIS and there was felt to be value in retaining this question to provide greater detailed information for industry sectors. It may be more useful for some sectors over others as an indicator of regional export champions.

Utility and Interpretative Guidelines

The utility of this question is in identifying by specific sector the export value of businesses in the sector, which may be aggregated up for the benefit of industry reporting.

Interpretation of the data is straight forward in regard to increasing exports indicates an increase in the value of a sector and therefore overall aquaculture industry to a region or the county.

MULTIPLIERS

An economic multiplier is a number used to estimate economy-wide impacts of industry-specific economic changes. Each multiplier can be thought of as a measurement of the strength of the economic linkages between the sector and the rest of the economy. In most cases this economy will be the local economy of the aquaculture business and/or sector. In essence, the greater the extent of the linkages then the greater the size of the multiplier. And it follows then that the greater the multiplier, the greater the economy-wide dollar or employment impact of the sector on the economy.

The questions asked in this section are intended to inform indicators that can show the effect of an aquaculture business and/or sector on the economy – whether it is local, regional, state or national.

SPIN-OFF INDUSTRIES

All sectors involved in the surveys were asked this question.

> **"How much did you spend on suppliers and allied businesses in procurement equipment and services in the last financial year?"**

Comments

It appeared from the survey responses across the sectors that the survey question was not well understood by respondents. The result was large variations in the data. This is unfortunate because accurate results provide an important indicator of the economic activity created by the business and therefore the sector.

Recommended Use

It is recommended that this question remain in the survey. However, due to the confusion over what the question was asking for it is recommended that the question includes some examples on what is meant by suppliers and allied businesses. Such examples may include accounting services, plumbing, electrical, hardware, computing supplies, equipment and technology suppliers, earth moving, builders and printing and packaging etc.

In addition, it was noted that by localising the question it could add benefit to analysis at the local spatial level. Variations suggested included:

> *"How much did you spend on local suppliers and allied businesses in procurement equipment and services last financial year?"*

Utility and Interpretative Guidelines

This question is required in the survey to gain insights to the effect that a business and/or sector has on the regional or national economy in terms of contributions to other business income.

It should be interpreted fundamentally in terms of increasing spend in local areas indicates an increased contribution to the regional, State and National economies.

EMPLOYMENT

Growth, decline and/or stability of employment levels provide important information about the economic stability of the sector. This question was, for convenience, located in the social indicator section, though the information provides both social and economic indicators of the industry's contribution. Please refer to the social section for details of the original questions and the revised structure of them.

Utility and Interpretative Guidelines

The number and composition of employees is an essential indicator for contributions to the economy in regard to full time, part time, casual and unpaid, in a range of contexts. It may be the permanent full time positions provided over a long time; the support it provides in regard to supplementary employment through permanent part time; or support of other industry groups such as tourism with seasonal casual employment. It also underpins many of the other indicators.

Over time, interpretation of the indicated growth or decline will identify trends in the industry and its contribution to regional employment. However, employment statistics trends may not necessarily paint the correct picture about what is happening in the sector. For example, new automated technology may mean that the number of employees declines, which must be interpreted carefully in that this may provide an economic benefit, while potentially creating a social deficit if in an area of increasing unemployment.

TAXES AND RATES

Taxes can be used as a proxy for profit, although they are not an accurate measure as taxes generally have accountancy treatment to many elements of a business's balance sheet that can distort the final figure. However trends in business income tax over time does provide useful information. Clearly if income tax is increasing over time then the business is making more money and this provides an important indicator of economic stability.

Rates on the other hand are not likely to be linked to production and therefore are not used in the same way as taxes. Rates are more likely to be local, state or perhaps regionally based Therefore rates are an indicator of the business or sector contribution to that community through the payment of rates. Rates could be considered a measure of the cost of the communities 'license to operate'.

This question was only used in the abalone industry

"How much income tax did your business pay in the last financial year?"

Comments

Of the 10 respondents to the survey only 1 respondent put in a figure for this question. This could have a number of explanations, but the two most plausible are probably that the request touched a commercial in confidence nerve, or, in fact the businesses made a loss and in fact did not pay income tax and were unable to answer the question. The poor response rate to this question is likely to be the same across all sectors.

Recommended Use

Given the poor response to this question it is recommended that this question not be used. However, it should be reworded to ask:

"What percentage of gross revenue was paid in income tax in the last financial year?"

It is felt that this question is not as confronting as the original question and that it hides the real quanta of both the gross income and the income tax paid. This modification was undertaken, while also being cognisant of the need to ensure protection of commercial in confidence information.

Utility and Interpretative Guidelines

This question is used to identify trends in the economic stability of the sector, not about identifying dollar amounts of profit. It is also to provide an indication of the contribution of the industry to the general national economy.

Therefore, interpretation of the data generated by the question should focus on the diversity of trends – are they steady in regard to taxes or is the industry being stressed by fluctuating incomes which might generate difficulties in regard to confident business planning, or visa versa. Additionally and or alternatively, steadily increasing tax percentage indicates – depending on the context of the sector being reported on – either business growth, or in combination with

other production, may indicate an increasingly heavy tax burden on the industry that may be having profitability and export income impacts.

Both the prawn and abalone sectors asked this question in the survey.

"How much did you spend on local authority taxes/ rates in your business last financial year?"

Comments

This question was well answered probably due to the ease of which information could be sourced.

Recommended Use

It is recommended that this question remain as is.

Utility and Interpretative Guidelines

The utility of this question is in relation to both the imposts on the business and its contribution to regional community economies. In combination with other tax/rate related data, it provides another aspect of the overall economic picture of the industry.

It should be interpreted on a regional basis and there are difficulties to be aware of in regard to the variations between rates levied by different local council areas. However overall the trend data provided by data elicited from this question will be useful in identifying regional contributions to economic stability.

FEES

This question was in all three of the participating sectors surveys.

"How much did you spend on licence fees last financial year?"

Comments

It must be noted that cross jurisdictional license fees are collected in different ways. In the formulation of the question it was thought that aquaculture licences are bought and sold like fisheries licenses. However, in most cases, the licence fees are set by the State management agencies, irrespective of the value of the operation and its access to the natural resource. In most States' licence fees are collected to cover the costs of managing the industry and in some cases these costs 100% cost recovered.

Recommended Use

It is recommended that the question remains as is.

Utility and Interpretative Guidelines

Because of the different management frameworks across the states the data from this question cannot be combined for each sector. However, if used by sectors confined to one jurisdiction, or it is combined by State then it would provide a good indicator of the license costs.

It should be interpreted similarly to the question of local authority taxes and rates, and as such provides another means to indicate the industry or sector's contribution to local, regional and national economies.

DELETED QUESTIONS

This question only appeared in the abalone sector survey under the title of 'Funds provided by Government'

How much did you receive in government subsidies last financial year?

This question was developed with the intention to provide evidence of government support for the industry. However its utility in the long-term is questionable and therefore it is recommended not to include this question in the generic survey.

APPENDIX 7: SURVEY QUESTION UTILITY AND INTERPRETATIVE GUIDELINES.

SOCIAL INDICATOR QUESTIONS UTILITY AND INTERPRETATION

INDIGENOUS COMMUNITIES

"Is there an active indigenous community or group in your region?"

If YES:

"Does your business have any formal interaction or collaboration with that community or group?"

Utility and Interpretative Guidelines

Inclusion of questions to inform such an indicator can be a very positive in external reporting to establish this industry's contribution to reconciliation and regional welfare.

In the first instance the question is establishing the existence of and the requirement to consider indigenous rights, activities and interaction in the region of the businesses' operation. If an indigenous community exists, then, it is necessary to establish if there is any interaction. Ideally further questions could be asked to establish the nature of that interaction – for example; is it positive; collaborative; what are the employment outcomes from it; are there formal resource sharing agreements; and/or, how often does interaction occur?

The objective is to establish if there is any basis for interaction, and if so, if it is occurring. Further benefit could be gained in those instances where interaction is occurring by establishing the benefits of that which is facilitated by the particular business. Similarly, if interaction should be as a result of the existence of indigenous groups, but is not, this is a flag to the business, sector and overall industry that an opportunity exists to improve local relations and its ESD score card.

INCOME/LOCAL EMPLOYMENT AND EDUCATION

"Please complete the following table with the average number of workers you had at any one time in each of the categories for the last financial year."

Position	N$^{o.}$ Permanent FTEs	N$^{o.}$ Part Time FTEs	N$^{o.}$ Casual FTEs	N$^{o.}$ Male	N$^{o.}$ Female	N$^{o.}$ unpaid workers
Admin						
Processing						
Farm						
Hatchery						

Utility and Interpretative Guidelines

The number and composition of employees is an essential indicator for contributions to the community in regard to full time, part time, casual and unpaid, in a range of contexts.

The data derived from this question may provide an indicator of a number of issues depending upon the context of the sector and interpretation adopted. It may be the permanent full time positions provided over a long time; the support it provides in regard to supplementary

employment through permanent part time; or support of other industry groups such as tourism with seasonal casual employment. It also underpins many of the other indicators.

Over time, it indicates growth or decline trends in the industry and contribution to regional employment

"How many of those employees undertook and successfully completed formal training programs in the last financial year?"

Utility and Interpretative Guidelines

The utility of this question is to identify the industry's (or sector within the industry) contribution of the development of human capital in their area or region.

Although the figures received in this initial data collection can be improved over time, the question provides a very good indicator of the industry's contribution to the human capital (skill levels) in the communities in which it operates, and the industry's contribution to regional training and employment. It is also a sound basis for encouraging improvement in the training and education aspirations of the industry for future industry and the option of public reporting should be retained as a future consideration by those sectors not currently reporting high training levels.

LOCAL COMMUNITY EDUCATION AND INTERACTION

"How frequently have you or your staff provided speakers/liaised with schools, colleges, universities or community groups (Rotary, Lions, Apex etc) to provide education about your industry in the last financial year?"

Utility and Interpretative Guidelines

This question provides data on the indicator of industry contribution to community social capital

The provision of industry liaison to educate the broader community is a key factor in increasing community awareness, understanding and empathy with the industry's activities, objectives and environmental contributions. This indicator should be used both on the public report card as well as the Industry one dependent on the results and can also be a very good indicator of trends in the industry's endeavours to engage with its broader community.

WORKPLACE HEALTH AND SAFETY

"Do you have a documented food safety management system?"

"If Yes, under which system? e.g. AQIS, Supermarkets, government, third-party audited standard (SQF, EuropGAP, Global GAP, ISO)

Utility and Interpretative Guidelines

The utility of this question is in the data it provides on corporate social responsibility.

Interpretation of this information should be focussed on the level of education provided by the industry about its level of responsibility in both its', compliance with food handling and production legislation, and to the consumer public for the standards maintained by the industry that are externally audited.

"How many work cover reports of accident/incidents did your business record in the last financial year?"

Utility and Interpretative Guidelines

The utility of this question is in the data it provides on corporate social responsibility.

Low and decreasing levels of work cover incident reports demonstrates a safe or increasingly safe workplace, and therefore a socially responsible industry. It also demonstrates a care for its workers (and therefore community wellbeing) by providing a safe workplace.

"How often did your business provide Occupational Health and Safety training for your staff in the last financial year?"

Utility and Interpretative Guidelines

The utility of this question is in the data it provides on corporate social responsibility and the human capital generated by the industry.

The interpretation of the data collected via question is guided by the need to demonstrate the due care taken in providing regular training by businesses in the industry. It illustrates the contribution that the industry makes to being socially responsible and the overall wellbeing of the community: it ensures the work force is informed about how to protect themselves. Increasing levels of training indicate higher levels of corporate social responsibility and contribution to the community's levels of human capital.

"Do you have a documented process for the implementation of health and safety procedures for your business?"

"If yes, do you undertaken annual audits of adherence to those processes?"

Utility and Interpretative Guidelines

The utility of this question is the auditable value of claims of safe work places and procedures and processes to ensure the maintenance of them.

High levels of a positive response to this question indicate industry concern for employees and raises regional business standards. High levels of positive responses to this question would provide strong evidence of the industry as a socially responsible corporate citizen.

ATTACHMENT TO LIFESTYLE

"How long have your employees been with your business? Enter the number per category"

Utility and Interpretative Guidelines

This question it utilised to provide data on the indicator of the attachment or connection the industry provides to people in the community to the physical place – it is a component of social capital and the value that the industry generates in providing a sense of belonging to community members.

Data from this indicator can be used to identify trends in employment which helps particularly with lobbying in regard to the need for greater flexibility in employment ability; the contribution the industry makes to seasonal employment; the flexibility that the industry provides to accommodate the needs and therefore maintain employees for longer periods etc. This would also be a useful question in a benchmarking study e.g. in terms of comparative analysis of firms – feedback on individual firm performance versus average for group, however this is subject to industry agreement in regard to confidentiality.

CAPACITY TO CHANGE

"How frequently does your business contact the following agencies for advice?

- ***Industry organisations***
- ***Private consultants (including financial, environmental, marketing etc advisors)***
- ***Government officers (State/federal fisheries and/or natural resource management officers/managers etc)***

Utility and Interpretative Guidelines

The utility of this indicator is to identify the level of proactive engagement with external agencies – representing the industry's bridging social capital – or source of new ideas, innovation and flexibility.

The data provided by this question and indicator, if increasing provides guidance as to the level of expert advice, new perspectives and technologies that the industry is accessing and therefore its endeavours to increase its social capital and, therefore, capacity to adapt. This has the external or regional benefit of increasing the resilience of the industry, and therefore its ability to support its regional community.

"How many times in the last financial year did you business have interaction with Sate and/or Federal government agencies (fisheries or NRM officers, managers or agents) as a necessary part to conducting the business?"

Utility and Interpretative Guidelines

This indicator is targeted at identifying the level of incidental interaction that the industry necessarily undertakes in the course of its operations with government agencies, as against those interactions that are sought out (contrary to Q.15 which was focused on the proactive seeking of advice).

The utility of this question is to provide information on the level of enforced interaction that may or may not be directly beneficial to individual businesses.

The interpretation of this indicator is entirely dependent on the context of the sector and the level of interaction that is being forced upon businesses in order for them to simply conduct business. It can be interpreted in a number of ways. If there are very low or minimal levels of interaction (the cause of which may need to be investigated) compared to the standard expected number, a decreased capacity to adapt to change may be indicated, as businesses may not be aware of what is required of them and they are exposing themselves to regulatory imposts – this would be a red flag to the industry to engage its members to become aware and responsive to standard requirements. Industry participants may not necessarily be 'tapped into' regulatory processes and decision making, suggesting they may be disadvantaged in terms of the ability to be proactive. Alternatively, if the level of necessary interaction is increasing dramatically, it may indicate an undue impost on aquaculture business, or a particular sector (compared to others or wild catch) which may prove detrimental to free and unimpeded conduct of business.

FAIR CONSIDERATION OF THE LOCAL COMMUNITY BY INDUSTRY

"Does your business have any documented policy for resolving community or other grievances with its operations?"

Utility and Interpretative Guidelines

The data from this question is useful in providing an indicator of the industry's willingness to engage with, and care for, its constituent communities.

The existence of such documentation and the an increasing trend to have a documented process (that can be externally audited) is interpreted as a clear indicator of taking broader community

concerns seriously and engaging with the issues of most importance to the community when it involves businesses in the sector and broader industry.

ENVIRONMENTAL MONITORING, PROTECTION AND ASSESSMENTS

While environmental monitoring may, on the surface, not be interpreted to be associated with social or economic indicators, environmental factors are inherently social values, therefore there is an unavoidable social aspect to environmental management activities. Equally the costs associated with those activities have a social and economic component.

"Does your business provide any environmental monitoring services to your region in the course of its operations (mangrove health, wetlands, groundwater salinity, birdlife etc.)?"

Utility and Interpretative Guidelines

The utility of this question is in demonstrating the contribution that the businesses of the industry make to their regional community's environmental awareness and health.

The environmental services often provide the basis for maintaining the ecosystem and recreational values of immediate and neighbouring areas. Varying trends in the data provided by this question demonstrate the value that the industry contributes to the region in more than simply direct economic inputs. The question links to *"How much did you spend on environmental assessments and inspections etc in the last financial year?"* which is in the economic section.

"Do you have any area of your farm/business under voluntary or compulsory environmental protection for the benefit of regional biodiversity?"

Utility and Interpretative Guidelines

The utility of this question is to demonstrate the broader environmental contribution that the businesses of the industry make to their regional community's environmental protection and enhancement.

The interpretation of changing trends in the data elicited by this question should focus on the demonstration of the value (increasing or decreasing) that the industry contributes to the maintenance of the region's biodiversity and environmental protection, and therefore its contribution in other than simply direct economic inputs.

"How much did your business spend on environmental assessments and inspections in the last financial year?"

Utility and Interpretative Guidelines

The utility of this question is to demonstrate the financial cost incurred by the industry in efforts to protect and enhance the regional environment in which it operates, and therefore the contribution the industry makes to environmental protection and enhancement.

The data from this question should be interpreted in connection with the previous one, in terms of proving information on the increasing or decreasing costs of environmental protection of areas to businesses in a sector.

REGIONAL SOCIAL CAPITAL

The following seven questions are designed to illicit information on the bonding and bridging social capital of industry businesses in relation to their constituent communities. The existence and type of social capital – or the resources provided by strong social networks of different kinds – is one of the essential factors to consider in evaluating an industry's contribution to regional sustainability.

"Is your business a member of an industry Group?"

"If Yes, How many industry group meetings do you or your staff attend in the last financial year?"

"Is your business currently a member of any non industry business councils/or groups (e.g. State or regional Chambers of Commerce)?"

"Are you, or any of your staff, active (i.e. attend 60% of more of meetings) member of business councils, community (Apex, Lions, Rotary, etc) or environmental groups?"

"In the last financial year, how many seminars, workshops or conferences that address industry sustainability and development issues did you or your staff attended?"

"Has your business made any donations to the local community (schools, community or sporting groups, including in-kind donations) in the last financial year?"

"Has your business provided public access to its infrastructure (e.g. boat ramps, moorings, buoys, navigation poles etc.) in the last financial year?"

Utility and Interpretative Guidelines

These questions establish the capacity of the industry to support its own industry members, collaborate with and support other organisations in its communities, and access new and diverse ideas and knowledge to assist it in adapting to changing circumstances, and therefore contributing to the sustainability of the regional community.

In interpreting this set of questions, the data will provide information on the number of community groups and organisations that businesses are involved in in the community and how active they are and the contributions they make through direct (donations) or indirect support (infrastructure) – bonding social capital. The will also identify how many opportunities businesses availed themselves of to gain additional knowledge and information about regional sustainability – bridging social capital. Increasing trends in these areas indicate an increase in social capital that benefits the community's in which industry businesses operate and therefore the contribution of the industry to regional sustainability. They are important aspects of the indicator of the industry's importance to its regional communities.

SOCIAL IMPACTS

"How often in the last financial year, has your local community challenged your rights to access resources (e.g. use of water, land, etc) that were registered through planning applications; council applications; EPA or other formal process?"

and

"How many complaints (that were registered with Council or other regulatory body) has your business received in the last financial year?"

Utility and Interpretative Guidelines

The benefit of this question to the industry is the ability to demonstrate the verifiable levels of complaints and community issues with the operation of the industry.

The data from this question should be interpreted in terms of increasing challenges to the industry businesses indicates the need for industry businesses to increase community communication and collaboration, while decreasing trends of challenges or complaints indicated appropriate consultation and collaboration with the community to ensure businesses receive a 'social licence to operate' unencumbered.

ECONOMIC INDICATOR QUESTION UTILITY AND INTERPRETATIVE GUIDELINES

A total of 14 questions were developed through the review and workshops to elicit fine-scale economic information. These questions were then posed to the three industry sectors through the surveys for validation and to test their utility. The ESD framework has been used to structure the reporting of the economic indicators rather than commonly used economic reporting formats. The questions and how they should be used are as follows:

NET ECONOMIC VALUE

"What is your farm's total annual production for last financial year?"

Utility and Interpretative Guidelines

The data generated by this question can be used in conjunction with and/or combined with other data to provide the basic framework of the industry's financial viability and contribution.

The questions should be interpreted for example, in combination with the question "How much area/lease do you currently farm" as it provides a good indicator of food produced per unit of area for the sector.

"How much area/lease do you currently have under production?"

And

"What is the total area of your farm, including such things as production (area/lease), hatchery, storage, processing and packaging and open areas?"

Utility and Interpretative Guidelines

The original question remains valid, but only gives part of the picture. This is the reason for the addition of a second question. The utility of the two questions together, is that a more accurate picture of the footprint of the industry can be determined.

The interpretation of this question is guided by endeavouring to uncover both how much area (land or aquatic resource) is being held by businesses and how much of that is being utilised for production. This question should be considered in conjunction with the following question.

"Given favourable conditions, what could you increase your production to through expansion/utilisation of your current site/lease?"

Utility and Interpretative Guidelines

This question along with the previous two questions provides base level data from which the actual and potential capacity of the industry, sectors and regional businesses can be determined.

In regard to interpreting the data, the information from this question should be used in conjunction with the question *"What is your farms total annual production for last financial year?"* as trend data, as an indicator of the growth potential of the sector or industry overall.

"How much did you invest in your business last financial year (market value of plant and equipment, land, vehicles etc)?"

Utility and Interpretative Guidelines

This indicator is selected as it provides information regarding industry investment and profitability.

Over time, the trends of investment can be used to identify the level of commitment that businesses have to the industry and also the contribution of the industry to regional viability; increasing investment can reasonably be equated to increasing commitment and vice versa. Its utility will be more apparent in the trends that emerge over time.

IMPORT REPLACEMENT AND EXPORTS

"What value of product did you export last financial year?"

Utility and Interpretative Guidelines

The utility of this question is in identifying by specific sector the export value of businesses in the sector, which may be aggregated up for the benefit of industry reporting.

Interpretation of the data is straight forward in regard to increasing exports indicates an increase in the value of a sector and therefore overall aquaculture industry to a region or the county.

MULTIPLIERS

"How much did you spend on local suppliers and allied businesses in procurement equipment and services last financial year?"

Utility and Interpretative Guidelines

This question is required in the survey to gain insights to the effect that a business and/or sector has on the regional or national economy in terms of contributions to other business income.

It should be interpreted fundamentally in terms of increasing spend in local areas indicates an increased contribution to the regional, State and National economies.

EMPLOYMENT ***Questions (Included in Social Indicators section)***

Utility and Interpretative Guidelines

The number and composition of employees is an essential indicator for contributions to the economy in regard to full time, part time, casual and unpaid, in a range of contexts. It may be the permanent full time positions provided over a long time; the support it provides in regard to supplementary employment through permanent part time; or support of other industry groups such as tourism with seasonal casual employment. It also underpins many of the other indicators.

Over time, interpretation of the indicated growth or decline will identify trends in the industry and its contribution to regional employment. However, employment statistics trends may not necessarily paint the correct picture about what is happening in the sector. For example, new

automated technology may mean that the number of employees declines, which must be interpreted carefully in that this may provide an economic benefit, while potentially creating a social deficit if in an area of increasing unemployment.

"What percentage of income tax as a proportion to gross revenue did you pay in the last financial year?"

Utility and Interpretative Guidelines

This question is used to identify trends in the economic stability of the sector, not about identifying dollar amounts of profit. It is also to provide an indication of the contribution of the industry to the general national economy.

Therefore, interpretation of the data generated by the question should focus on the diversity of trends – are they steady in regard to taxes or is the industry being stressed by fluctuating incomes which might generate difficulties in regard to confident business planning, or visa versa. Additionally and or alternatively, steadily increasing tax percentage indicates – depending on the context of the sector being reported on – either business growth, or in combination with other production, may indicate an increasingly heavy tax burden on the industry that may be having profitability and export income impacts.

"How much did you spend on local authority taxes/ rates in your business last financial year?"

Utility and Interpretative Guidelines

The utility of this question is in relation to both the imposts on the business and its contribution to regional community economies. In combination with other tax/rate related data, it provides another aspect of the overall economic picture of the industry.

It should be interpreted on a regional basis and there are difficulties to be aware of in regard to the variations between rates levied by different local council areas. However overall the trend data provided by data elicited from this question will be useful in identifying regional contributions to economic stability.

"How much did you spend on licence fees last financial year?"

Utility and Interpretative Guidelines

Because of the different management frameworks across the states the data from this question cannot be combined for each sector. However, if used by sectors confined to one jurisdiction, or it is combined by State then it would provide a good indicator of the license costs.

It should be interpreted similarly to the question of local authority taxes and rates, and as such provides another means to indicate the industry or sector's contribution to local, regional and national economies.

APPENDIX 8: RECOMMENDED GENERIC SURVEY

National Aquaculture Council

INSERT INDUSTRY LOGO HERE

[Name of Industry Association of Australia]

COLLECTION OF DATA FOR REPORTING SOCIAL AND ECONOMIC INDICATORS FOR THE INDUSTRY ASSOCIATION OF AUSTRALIA

Please fill out the following questionnaire and return in the pre addressed envelope.

If you should have any concerns about the survey please do not hesitate to contact the industry executive on (XX) XXXXXXXX

What is your postcode? ☐☐☐☐

Name of species farmed?

Species 1…….

Species 2…….

Species 3…….

PRIVACY DISCLAIMER: All information collected by this survey is for the purpose of the project. Information will be pooled by local area. No individual data will be released without permission. Personal information will not be passed on to any third party beyond the Industry Association of Australia and the National Aquaculture Council.

Office code

Date Received

SOCIAL INDICATOR SECTION

Income/Local Employment/Education

5. What was the average number of employees in the business last financial year? (Enter the number of employees applicable to each category)

Position	Perm FTEs	Part Time FTEs	Casual FTEs	N°. Unpaid FTE	N°. Male	N°. Female
Admin						
Processing						
Farm						
Hatchery						

6. How many of those employees undertook and successfully completed formal training programs last financial year? (Detail course name and the number of employees undertaking it).

   Course name/training: _____ No._____

   Course name/training: _____ No._____

   Course name/training: _____ No._____

   Course name/training: _____ No._____

7. How frequently have you or your staff provided speakers or liaised with schools, colleges, universities or community groups (Rotary, Lions, Apex etc) to provide education about your industry in the last financial year?

   Never Once per Yr Twice per yr Three times per Yr Quarterly or more

Workplace health and safety

8. Does your business require a documented food safety management system as required by the Primary Production and Processing Standard for Seafood (PPPS)? YES/NO

   4a. If YES, under which system? E.g. AQIS, Supermarkets, government, third party audited standard etc (List as many as are applicable.)

   _____
   _____

9. Do you have a non mandatory documented food safety management system? YES/NO

10. How many work cover reports of accident/incidents did your business record in the last financial year?
    Number:_____

11. How often did your business provide Occupational Health and Safety training for your staff in the last financial year?
    Never Once per Yr Twice per yr Three times per Yr Quarterly or more

12. Do you have a documented process for the implementation of health and safety procedures for your business? YES/NO

    8a. If yes, do you undertaken annual audits of adherence to those processes? YES/NO

Attachment to lifestyle

13. How long have the current employees been with the business?

	>10 yrs	5- 9 yrs	1 – 4 yrs	< 1 year
Number of Employees				

Capacity to Change

14. How frequently does your business contact the following agencies for advice? (Industry organisations; private consultants, including financial, environmental, marketing etc advisors; and Government officers, including State/federal fisheries and/or natural resource management officers/managers etc).
    Industry Organisations: Never 1 X per Yr 2 X per yr 3 X per Yr Quarterly or more
    Private Consultants: Never 1 X per Yr 2 X per yr 3 X per Yr Quarterly or more
    Government offices: Never 1 X per Yr 2 X per yr 3 X per Yr Quarterly or more

15. How many times in the last financial year did your business have interaction with Sate and/or Federal government agencies (fisheries or NRM officers, managers or agents) as a necessary part to conducting the business? (Circle the appropriate (group of) number of times.)
    Never 1-4 5-12 13 – 26 27+

Fair consideration of the local community

16. Does your business have any documented policy for resolving community or other grievances with its operations? YES/NO

17. Does your business provide any environmental monitoring services to your region in the course of its operations? YES/NO

18. Do you have any area of your farm/business under environmental protection for the benefit of regional biodiversity? YES/NO

19. How much did your business spend on environmental assessment and inspections in the last financial year? $ _____

Regional Social Capital

20. Is your business a member of an industry Group? YES/NO
    16a. If Yes, How many industry group meetings did you or your staff attend in the last financial year? N°. _____

21. Is your business currently a member of any non industry business councils/or groups (e.g. State or regional Chambers of Commerce)? YES/NO

22. Are you, or any of your staff, an active (i.e. attend 60% of more of meetings) member of business councils, community (Apex, Lions, Rotary, etc) or environmental groups? YES/NO

23. How frequently in the last financial year, have you or your staff attended seminars or conferences that address industry sustainability and development? (Circle the appropriate (group of) number of times.)
    Never 1 X per Yr 2 X per yr 3 X per Yr Quarterly or more

24. Has your business made any donations to the local community (schools, community or sporting groups, including in-kind donations) in the last financial year?

    $ _____ or ☐Not Applicable

25. Has your business provided public access to its infrastructure (e.g. boat ramps, moorings, buoys, navigation poles etc.) in the last financial year? YES/NO

Social Impacts

26. How often in the last financial year, has your local community challenged your rights to access resources (e.g. use of water, land, etc) that were registered through planning applications; council applications; EPA or other formal process?

    N°. _____ or ☐Not Applicable

27. How many complaints (that were registered with Council or other regulatory body) has your business received in the last financial year?

    N°. _____ or ☐Not Applicable

Indigenous Land Use

28. Are there an active Indigenous community or group in your region? YES/NO

24a.Do you have any formal interaction or collaboration with that community/group? YES/NO

24b. Do you have any informal interaction or collaboration with that community/group?
YES/NO

ECONOMIC INDICATOR SECTION

Production

29.What is your farms total production for last financial year?

Amount_____ Units (No./tonnes/Doz etc.) _____

30.How much area/lease do you currently have under production?

No. Hectares_____

31.What is the total area of your farm, including such things as production (area/lease), hatchery, storage, processing and packaging and open areas?

No. Hectares_____

32.Given the entire farm lease area, what is your potential production per hectare?

No. Hectares_____

Investment

33.What is the total value of the investment in your business last financial year (market value of plant and equipment, land, vehicles, stock etc.)? $_____

34.How much did you invest in your business last financial year (market value of plant and equipment, land, vehicles, stock etc.)? $_____

Export

35.What value of product did you export last financial year? $_____

Spin-off Industries

36.How much did you spend on local suppliers and allied businesses in procurement, equipment and services in the last financial year? $_____

Taxes and Rates

37. What percentage of gross revenue was paid in income tax in the last financial year? _____%

38. How much did you spend on local authority taxes/ rates in you business last financial year? $ _____

39. How much did you spend on licence fees last financial year? $_____

40. How much did your business spend on environmental assessments and inspections last financial year?

APPENDIX 9: FINAL INDUSTRY REVIEW WORKSHOP

SURVEY QUESTIONS:

It was commonly agreed that the survey questions made sense in regard to informing the ESD reporting requirements. Some industry representatives felt that the survey was too lengthy, and a number questioned the need to incorporate the economic questions given that this component of the project has largely been taken over by the benchmarking process that has somewhat overtaken this project and is in the process of being implemented into annual industry reporting requirements.

It was agreed that, while it would be highly preferable that all sectors include all questions to allow sector comparison (where meaningful), if some sectors chose to only use some questions that would be an improvement on the data available currently. However, sectors must be aware of the interrelation of a number of questions and that some are only informative in the context of information provided by other questions. The section on 'interpretation guidelines' will highlight which questions need to be interpreted in the context of others.

DATA COLLECTION:

METHODS: Given that many of the aquaculture industry sectors have made a level of commitment to the Benchmarking process which focuses on economic reporting, which is currently being adopted as an annual data collection activity, the industry representatives commonly agreed that questions from this generic survey could easily be added to benchmarking surveys. This would reduce the number of surveys that industry was confronted with.

It was noted that for some sectors online surveys are well received and responded to, while in others paper surveys remained the preferred option. While the data collation benefits associated with online survey implementation were recognised, the flexibility between delivery modes was identified as an essential factor to adoption by all sectors of the industry.

FREQUENCY: In line with the suggested form of data collection, it was uniformly agreed that collection of the data on an annual basis was both reasonable and possible. It was also recognised that annual data collection would provide the fastest possible means to collect longitudinal data.

DATA ANALYIS & STORAGE:

All sectors agreed that the preferred option was for sector collection as part of annual benchmarking surveys. However the variation in resources between sectors to collect and collate the data was identified as being a potential weakness. This was noted in conjunction with the need to have an independent person responsible for the data, such as a sector Executive Officer, as being essential to the maintenance of business operation confidentiality. Where a sector did not have such a resource, support in the form of funding for a person to undertake this, was tabled as a consideration. However, it should be noted that this issue would be equally applicable to benchmarking surveys.

DATA ACCESS AND USE:

It was commonly agreed that while the National Aquaculture Council remained controlled by an independent Executive Officer, access by the NAC to all data collected under the ESD indicator banner should be available to the NAC for use upon request. This would give NAC the ability to act on behalf of the industry overall in regard to identifying common issues and/or lobbying as required in relation to identified politically influenced issues.

In regard to use, it was commonly agreed that by sectors collecting the data themselves they would have unilateral access and the ability to selectively use data as best fits the needs of the time in sector report cards. In addition, the database could be developed into linear trend data over time that will be able to point to long term changes in industry behaviour or circumstances.

In addition they would be able to release information on request to NAC for use in industry report cards as agreed with sectors and political negotiations as necessary.

The use of select indicators and reporting set is dynamic and will depend on the information identified from data collected and the issues of the day.

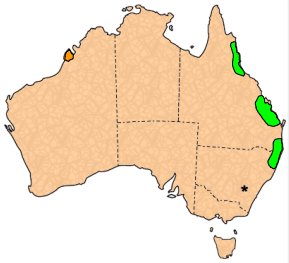
APPENDIX 10: TEMPLATE FOR INDUSTRY REPORT CARD

Australian Farmed Prawns

NATIONAL AQUACULTURE COUNCIL INC.

Sustainability Reporting for Australian Aquaculture

Industry Overview



Report Cards for Australian Aquaculture

The Fisheries Research and Development Corporation. (FRDC) has funded the publication of a series of report cards to communicate the sustainability of the Australian aquaculture to stakeholders and the general public. This report card has been developed through a partnership between the National Aquaculture Council and the Australian Prawn Farmers Association (APFA), who represent around 80% of Australian farmed prawn production.

The Report Card provides information on the aquaculture industries contribution to ecologically sustainable development (ESD) using the FRDC's ESD Framework. The industry's social, economic and environmental contribution to the Australian community included this initial report card will revised in future years to produce an accurate picture of the benefits, trends and gaps within the industry. The ongoing results are provided in web-based profiles at www.australian-aquacultureportal.com. This fact sheet provides a summary of key information extracted from the prawn industry profile.

National Aquaculture Council

Australian Government
Fisheries Research and Development Corporation

Economic return of industry to regional community


Focus
Social


Focus
Ecological

Australian Government

Fisheries Research and Development Corporation