



## British Food Journal

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### Article information:

To cite this document:

Craig Michael Johns Nathan Kimber Janet Howieson Meredith Lawley , (2016), "Evaluating the outcomes of VCA-led improvement projects: a case study of an Australian prawn fishery", British Food Journal, Vol. 118 Iss 12 pp. -

Permanent link to this document:

<http://dx.doi.org/10.1108/BFJ-03-2016-0126>

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# Evaluating the outcomes of VCA-led improvement projects: a case study of an Australian prawn fishery

## Introduction

Competitive advantage increasingly involves chain versus chain rather than business versus business (Fearne *et al.*, 2012; Lambert and Cooper, 2000; Porter, 2008). Thus, the analysis of performance along the entire chain of an industry, and the design of programs and strategies to improve benefits to all chain stakeholders, are critical to maintaining competitive advantage. Developing cohesive and efficient value chains is particularly important in agribusiness where small to medium businesses at the production end have traditionally acted in an opportunistic and individualistic manner rather than seeing themselves as part of a chain (Saltmarsh and Wakeman, 2004).

Value chain analysis (VCA) is increasingly used as a tool to enhance the profitability and sustainability of agribusiness chains and wider food industry networks (Collins *et al.*, 2015; Francis *et al.*, 2008; Macharia *et al.*, 2013; Simons *et al.*, 2003; Taylor, 2005). While VCA can take many forms its primary purpose remains diagnostic, involving identification of improvements including efficiency gains in getting the product to market, value-adding opportunities (Bernet *et al.*, 2005) and co-innovation (Bitzer and Bijman, 2015; Bonney *et al.*, 2007). Improvements can be brought about in two major ways: by reducing costs and by adding value that meet and exceed consumer requirements and expectations (Bernet *et al.*, 2005). Consequently, VCA techniques usually focus on identifying consumer values and then analysing activities along the entire value chain to prioritise improvements or identify new opportunities (Bonney *et al.*, 2007; Fearne, 2009). The key motivation behind this approach is to identify opportunities where stakeholders in the value chain can work together to improve efficiency, reduce costs and add value in ways that better satisfy the consumer (Bernet *et al.*, 2005; Devanney, 2006). Traditionally, the use of VCA has focussed on single chains. However, VCA is increasingly being used to understand industry networks (Braziotis *et al.*, 2013; Peppard and Rylander, 2006; Vieira *et al.*, 2013) and to provide policy insights (Cattaneo *et al.*, 2010; Kaplinsky and Morris, 2001). This expanded focus on industry networks is an important step in how VCA can be used more effectively because the methodology is now suitable to provide insights and benefits for both private and public stakeholders including individual companies, groups of companies, whole chains, industry networks and relevant government agencies (Cattaneo *et al.*, 2010; Kaplinsky, 2000; Kaplinsky and Morris, 2001; Schmitz, 2005).

Previous research has addressed several aspects of VCAs including their value as a diagnostic tool (Kaplinsky and Morris, 2001), how best to conduct the analysis (Taylor, 2005; Webber, 2007), and key measures of success (M4P, 2008; Springer-Heinze, 2007; Webber, 2007). Less research has

focussed on the important gap between implementation and evaluation of VCA-led improvement projects. While international donor agencies conduct post-project monitoring and evaluation exercises on value chain-led development projects (Altenburg, 2006; Springer-Heinze, 2007; Stamm and Drachenfels, 2011; Webber, 2007), the vast majority of investigations involving food and agribusiness chains have ceased at the conclusion of the analysis stage and have either not acted on the insights identified or have failed to measure the benefits of any attempted improvement activity (Bernet *et al.*, 2005; Rich *et al.*, 2011; Taylor, 2005). Evaluation of the implementation phase is essential, as it provides feedback and enables both private sector personnel and researchers to determine and quantify the effect of the implementation activity and thus the success or failure of the particular use of VCA.

We used an Australian prawn fishery case study to extend research into VCA by investigating the gaps between implementation and the evaluation of improvement projects. Specifically, we answered the research question: ‘How can the outcomes of VCA-led improvement projects be evaluated?’. Our objective was, therefore, to evaluate the implementation phase of an agribusiness VCA.

In this paper we review the literature on the use of value chain analysis, with an emphasis on the evaluation phase. Background and context is then provided by describing the prawn fishery used as the example in our study, and the VCA methods and results from the project up until the commencement of the implementation activity. The results section discusses the implementation and evaluation activity and concludes with some key lessons and their implications for further research.

## Literature Review

There are a number of different methods used to conduct VCA research (Gereffi and Lee, 2012; M4P, 2008; Kaplinsky and Morris, 2001; Raikes *et al.*, 2000; Schmitz, 2005; Springer-Heinze, 2007; Webber, 2007). The variety of VCA techniques can be confusing to agribusiness and food industry value chain practitioners wanting to choose a suitable technique for the specific set of circumstances and objectives of their study. In addition to using an appropriate technique, it is important to define the scope of the study, so the analysis and implementation stages meet value chain partner expectations (Power, 2005; Webber, 2007).

While in theory, most VCA techniques share the same basic elements as shown in Table 1. (Bonney *et al.*, 2007; M4P, 2008; Kaplinsky and Morris, 2001; Nang’ole *et al.*, 2011; Simons *et al.*, 2003; Taylor, 2005), in practice the final stages of evaluation (3b) are often neglected or not reported.

**Table 1: Stages and Activities used in Value Chain Analysis Research**

Bernet et al. (2005) observed that many VCA projects do not progress to the stage of implementation or evaluation (Table 1, point 3a and 3b) and the project's scope is limited to a final report that outlines the *potential* improvement projects and *possible* next steps. Some of the VCA toolkits used by donor agencies (Springer-Heinze, 2007; Stamm and Drachenfels, 2011; Webber, 2007) do include monitoring, evaluation and impact assessments on their projects, but this is rarely reported in the literature, and is often limited to donor based evaluation reports to justify the aid expenditure budgets (Collins et al., 2015). Altenburg (2006) explains this research gap by highlighting how complex value chain interventions can be, the challenges of trade-offs and side-effects and how varying impacts over different timeframes make it extremely difficult to assess how an industry or value chain would have evolved without the interventions taking place.

Other examples such as a case study by Helen Dekker (2003) on a large UK retail firm go some way towards an evaluation of the VCA methodology used in developing an intervention strategy, but it focuses more on supply chain management efficiency and does not extend to evaluating any of the improvements suggested. In a recent publication, Prowse and Moyer-Lee (2014) track industry changes over a six-year period by comparing VCAs undertaken on the Malawi tobacco industry between 2003 and 2009, but they do not report on the effectiveness of the improvements made as a result of the initial analysis. Another case study on honey value chains in Brazil (Santana de Figueiredo *et al.*, 2016) outlined the scarcity of studies measuring the impact of value chain strategies and addressed this by asking experts to judge the potential impact of the hypothetical strategies identified during their analysis. There are other examples of desktop-based industry reviews (Haby et al., 2003) but the collection of new data as part of the evaluation of a agribusiness VCA-led intervention is uncommon.

In the prawn/shrimp industry a few studies have used a broad industry framework to analyse competitor industries, import trends, market data, and successful case studies as a basis for suggesting how to add value by repositioning the prawn product in a higher end niche market (Fuduric *et al.*, 2005; Haby *et al.*, 2003). Studies in the prawn/shrimp industry that have utilised value chain techniques, such as chain member interviews and surveys, have focused on the supply end of the chain independently of retailers or end consumers (Doan, 2011; Hassan *et al.*, 2012; Islam, 2008), while other studies have looked at consumers (Hansen, 2005). Even when the research has been more comprehensive along the value chain (Dubay *et al.*, 2010), the outcomes of intervention strategies and/or the evaluation of the opportunities identified are rarely mentioned.

## Context

The industry chosen for this research was the Spencer Gulf Prawn Fishery (SGPF), one of the most important fisheries in South Australia in terms of both value and production. Since 2010 the Australian prawn industry has been negatively affected by increased competition from cheaper farmed prawns and reduced export competitiveness due to a high Australian dollar. The result has been an increased focus on the most profitable domestic market channels. As the fishery has successfully implemented collaboration at the production end of the value chain, it was thought that the entire industry might gain a significant benefit from a value chain approach, to enable better understanding of the available opportunities and identify and implement improvement projects where indicated.

The fishery consists of 39 commercial licence holders that all utilise similar equipment and techniques to capture a single species, the Western King Prawn (*Melicertus latisulcatus*). Prawns are caught, graded, sorted and sometimes cooked before freezing and packing in 5kg or 10kg cartons. All processing takes place on board the fishing vessels. Management of the SGPF occurs through a collaborative partnership between the State Government department responsible for Primary Industries and Regions and the Spencer Gulf and West Coast Prawn Fishermen's Association Inc. (SGWCPFA). This co-management has been in place since the late 1990's and has stabilised prawn production and the future sustainability of the fishery, and has recently led to formal certification from the Marine Stewardship Council.

## **The research problem**

Reporting on the implementation and the evaluation of that implementation is neglected in the VCA literature, yet these are the commercially critical outcomes resulting from the analysis work. Current events in the Australian Prawn industry have highlighted the need for improvements in the value chain in order for the business to remain competitive. The Spencer Gulf Prawn Fishery has a history of collaboration between the fishers but had not attempted a whole of chain collaboration for the benefit of all stakeholders. Hence, the research question addressed in this study is, 'How can the outcomes of VCA-led improvement projects be evaluated?'. Given the lack of experience of the fishery and its value chain partners with the VCA process and their busy professional schedules, an action research approach was adopted where the researchers were active participants in facilitating and evaluating the VCA process.

## **Method**

The research adopted an action research approach (Taylor, 2005) with the researchers being involved as facilitators throughout the process. The research team was composed of experts in all aspects of the value chain: production and processing, value chain management, consumer behaviour and marketing. The cycle of action research was used to understand the issues and opportunities, act on the priorities

indicated, observe and measure the benefits and review lessons learnt once the project concluded (Checkland, 1991; Perry and Gummesson, 2004; Reason and Bradbury, 2001). The incentive for the companies involved was the assurance that they could use the project results to improve their operations and thus potentially attain collaborative benefits across the industry. Analysis of the Spencer Gulf Prawn Fishery (SGPF) followed the basic elements of VCA (see Table 1). Given the research question of this study, the first two stages of the VCA of engagement and analysis are reported here, as is the implementation step of stage 3 and the methods used to evaluate the outcomes of the improvement project, with results of the evaluation reported in the results section. The evaluation methods to measure outcomes were developed in consultation with industry to ensure no confidentiality breaches.

**VCA Stage 1 Engagement.** The first step was the successful engagement of the Spencer Gulf and West Coast Prawn Fishermen's Association (SGWCPFA) as the principal driver for the research. Ninety-eight percent of all licence holders in the fishery industry belong to the association, which has a formal governance structure and is supported by a full-time executive officer. The next step was to define the scope of the project and identify relevant stakeholders. A series of workshops were held with the SGWCPFA, including one facilitated by Professor Andrew Fearn (University of East Anglia, Norwich, UK), an international leader in VCA research.

**VCA Stage 2 Analysis.** Once the project structure was established, interviews and surveys were conducted with value chain stakeholders from the producers through to the consumers. As a result of these interviews, the industry association agreed that the target market/s for the next phase of the research should be domestic, in order to capitalise on its great potential for sales growth and increased profitability for all members of the value chain. The two target markets identified were supermarkets and restaurants. A map of the flow of product for the SGWCPF developed during the interviews is shown in Figure 1.

### **Figure 1: Map of the product flow for the Spencer Gulf and West Coast Prawn Fishery**

The next phase of the research focussed on the analysis of two distinct value chains that supplied product to the two identified target markets: a local supermarket chain with 40 stores state-wide (Drakes) and a restaurant that is part of a 5-star international chain. The methodology was developed from other studies (Bonney *et al.*, 2007; Soosay *et al.*, 2012; Taylor, 2005) that divided the value chain information into three key areas: (i) material or product flow; (ii) information flow; and (iii) relationships. Concurrently, research was undertaken among supermarket shoppers and restaurant

patrons to identify the attributes of prawns valued by consumers at the point of purchase and/or consumption.

A detailed VCA of the supermarket and restaurant chains resulted in the development of nine projects and/or activities with the potential to improve the industry's overall performance. A range of activities were covered, all of which focussed on adding value (rather than reducing costs) at various stages of the chain. These included improving product quality, packaging innovations, and retail activity.

Having identified nine possible improvement projects, the next phase prioritised these projects in terms of greatest potential benefit to the entire industry and included fishers, wholesalers and retailers. At a workshop of industry stakeholders and researchers, the nine different improvement options were discussed in detail before each stakeholder was asked to vote on the projects that they considered had the most potential. One project was unanimously selected and given priority. This project aimed to grow sales and profitability through a targeted marketing campaign that increased the level and type of information available to prawn consumers at the point of sale, the supermarket.

VCA Stage 3 Implementation and Evaluation. An expertise-based team was appointed to plan, develop, print, and distribute the point of sale material (POS) as well as to undertake the range of evaluation activities. The team included representatives from the fishery, the wholesaler, the supermarket chain, and academic researchers. The skill set of the team included those with project management, prawn industry knowledge, supermarket retailing experience, skills in POS material development, and a practical and academic understanding of surveys and evaluation techniques.

The POS resources (information/recipe brochures, posters and decals) and activities are summarised in Table 2, as is the information they provided and how they were used. The development of these resources was informed by the consumer research carried out in Stage 2. Importantly, all POS collateral emphasised the Marine Stewardship Council accreditation of the fishery as sustainable. To ensure maximum penetration of the information and to compensate for the seasonal factors affecting the marketability of prawns in Australia, the intervention activity targeted three separate time periods: Christmas 2011 and Easter 2012 – holidays that are traditional annual high points of Australian prawn consumption, and winter 2012. The specific resources used over the three periods are also summarised in Table 2.

**Table 2: Point of Sale (POS) collateral, information and activity periods for the implementation phase**

Evaluation of the intervention activities constituted the final stage of the project. Given the lack of previous research about the evaluation stage, thought and planning went into ensuring we used a range of techniques were used to ensure that feedback from all stakeholders was collected. A major issue considered by the project group was how many evaluation activities were required. Consideration was also given to the ease of conducting the specific evaluation technique, the costs of the evaluation, and the timing of each evaluation. The techniques used are summarised in Table 3.

**Table 3: Evaluation techniques used for assessing the results of the intervention**

Four separate measures (Table 3) were selected to evaluate the implementation phase of the project: 1) sales figures; 2) a consumer survey at three selected supermarkets; 3) a survey of all supermarket delicatessen managers; and 4) a survey of key stakeholders across the value chain. The key criterion that guided selection was the need for feedback from *all* key stakeholders, not only on the success of the intervention but also to identify potential subsequent improvements. The first three evaluation activities focussed on measuring the outcomes of the changes made when implementing the project, while the final technique focussed on the evaluation of the perceived success or failure of the project by key stakeholders.

Sales figures, which should be readily available and easy to collect and collate, were seen as being an early indicator of the project impact. In practice, however, quantitative sales information was difficult to obtain due to proprietary confidentiality issues. However, while sales data can give an overall indication of impact, they do not in themselves reveal how increased sales translate into benefits for different stakeholder groups. For example, do increases in sales result in an increased income for fishers? Furthermore, sales figures in isolation give no indication of the effectiveness or areas for improvement in the range of activities implemented. In this study, sales were measured through volumes sold to the retailer.

Consumer surveys are more time-consuming and costly to conduct than collecting sales figures, but have the advantage of revealing purchase intentions and current consumer behaviour. Significant costs arise from designing the survey instrument, administering the instrument face-to-face, and then analysing results. Therefore, we conducted detailed consumer surveys on three stores, which were selected on the basis of larger sales volume as well as diversity in geographical region and sociodemographic factors. Given the limited time consumers are prepared to respond to surveys in



store, the questionnaire focussed on identifying the effectiveness of individual components of the intervention strategy in relation to purchase intention and identifying drivers and barriers to increasing consumption frequency of Spencer Gulf prawns. Data regarding the effectiveness of the implemented strategy was quantitative and analysed using univariate methods, while the responses to the open ended questions regarding drivers and barriers to future purchase were assigned into key themes.

Feedback was sought from the delicatessen managers of each of the stores participating in the intervention project. Delicatessen managers deal with consumers and other staff on a daily basis. Surveys involved both the self-completed survey of delicatessen managers focussed on their evaluation of point of sale (POS) collateral as well as the response of staff and consumers to the material. Surveys were brief to minimise time expenditure and similarly to the consumer surveys, comprised a mix of closed and open response questions. Closed response questions used scales to ask delicatessen managers to rate the consumer impact of both individual items of POS collateral and the overall impact of the strategy while open ended questions probed for additional improvements and feedback.

At the concluding management committee meeting, key stakeholders across the value chain completed surveys to gauge their overall satisfaction with the project (10 point scale), the most and least useful aspects of the project (open-ended) and identify the outcomes of the project on their own business (multiple choice).

## Results

**1. Sales figures.** In the eight-month period from commencement of the project, the volume of SGWC Prawns sold through Drakes' supermarkets increased by approximately 60% compared to the same period for 2011. While the relationship between the trader and the supermarkets was well established before the intervention activities, both the trader and supermarket management stated that the 2012 increase was significantly greater than would otherwise have been expected. This sales volume increase is even more impressive considering prawn prices increased from 2011 to 2012: increased sales and prices resulted in benefits for all levels of the value chain, including fishers.

**2. Consumer surveys.** Consumers were surveyed during in-store tasting sessions at three Drakes supermarkets approximately eight months after the commencement of the intervention period. Of the 190 respondents, 72% were female and 28% male, which reflects the profile of Australian grocery shoppers (Inside FMCG, 2015). Other purchase behaviour also reflected trends reported in other seafood consumer studies, with prawn purchase spread across supermarkets and specialty fishmongers (Danenberg and Mueller, 2011). The surveys found that while respondents do not always choose Spencer Gulf and West Coast produce when purchasing prawns, those purchasing prawns less

frequently (i.e. for special occasions) were more likely to buy Spencer Gulf and West Coast Prawns in preference to imported prawns.

Consumers were asked if they had noticed the POS materials and whether they recalled the Marine Stewardship Council (MSC) logo indicating sustainability certification and which was present on all collateral items. While three POS materials were designed at the commencement of the project (information/recipe brochure, poster, decal), by the time the consumer survey was administered (approximately 8 months after commencement) most stores were no longer displaying the poster or using the decals. The information/recipe brochure was still available in each store. Consequently, 93% of consumers recalled the information/recipe brochure, but no one recalled the posters or decals and only 3% had noticed the MSC logo. Respondents were asked to rate the POS materials they had noticed and the tasting/demonstration. On a four point scale (1 = poor 4 = very good) the tastings rated highest at a mode of 4, followed by the information/recipe brochures (mode = 3) with the presence of the sustainability logo rating poorly (mode = 1). With regard to the likelihood of purchase (5 point scale 1 = highly unlikely, 5 = definitely will buy), tastings were rated as most likely to impact purchase (mean 3.1), followed by the information/recipe brochure (mean = 2.5), while the MSC logo was unlikely to influence purchase (mean = 1.6).

Respondents were asked to list the drivers/barriers which might increase their purchase of West Coast and Spencer Gulf Prawns. Of the 190 respondents, the most common driver to increase purchase was a decrease in price (40 respondents, 21%) whilst confidence in the local origin (34 respondents, 18%) and sustainable management and harvest (10 respondents, 5%) were also factors. When asked why they would not increase their frequency of purchase, 40 respondents (21%) said that they generally only purchased prawns/seafood from a fishmonger rather than a supermarket. Thirteen respondents (7%) indicated they only purchased frozen and imported products, and 9 respondents (5%) stated that high price was an issue.

**3. Delicatessen manager surveys.** Delicatessen managers in all 40 stores participating in the intervention project were asked to complete an evaluation survey and 18 out of 40 (44%) complied. All respondents had worked for Drakes as a delicatessen manager for periods from 6 months to 14 years. Responses were positive (10 point scale, 1 = poor 10 = excellent), particularly for the information/recipe brochure and decals (means = 7.5) and posters (mean = 7). The MSC logo (mean = 6.4), which was featured on the posters, was attributed the lowest impact by the delicatessen managers. It is possible that staff and consumers did not know what the logo meant. Managers believed that overall the POS materials had a positive impact (5 point scale) on both staff (mean = 3.4) and consumers (mean = 4.1). Qualitative responses from managers indicated that staff actively promoted the booklets, pointed out the poster to shoppers, and felt more confident promoting SGWC Prawns with appropriate supporting material. In terms of future improvements, delicatessen managers

favoured in-store demonstrations and tastings, advertising in media such as newspapers as well as store brochures, increased POS signage and more recipe cards.

**4. Project evaluation interviews with key chain stakeholders.** Seven key stakeholders in the value chain completed evaluation surveys. The respondents included four fishers, the Executive Officer for the SGWCPFA, the main wholesaler of the supermarket chain, and the manager with overall responsibility for delicatessen activity in the supermarket chain. Table 4 summarises the responses in regard to overall satisfaction with the project (1 to 10 on a scale from least to most satisfied), the least and most useful aspects of the project, and the key outcomes of the project overall.

The most frequently identified outcome was the increased understanding by stakeholders of other parts of the value chain which has led to the collaborative improvement projects for mutual benefit. Generally, whilst all respondents valued the intervention activities highly, down-chain stakeholders gave the highest scores of 8 out of 10. The fishers reported improved profitability and improved relationships as a result of the project, although two fishers who did not have direct involvement in the project activities gave the lowest overall satisfaction ratings of 5 and 6

**Table 4: Results of interviews with key chain stakeholders**

## Discussion

This study has extended the research into VCA by addressing the key issues relating to the evaluation of intervention activities (Altenburg, 2006; Bernet *et al.*, 2005; Taylor, 2005). We proposed to answer the research question of whether a well-designed VCA can diagnose a problem, design an intervention and evaluate the results. Our research, concerning the interventions in the Australian prawn industry, supports the proposition that VCA analysis can extend into evaluation to provide commercial insights to all value chain stakeholders.

In this case study there was strong support from the industry association which was invaluable in the engagement of the industry stakeholders from concept through to implementation and evaluation. However, industry structures will vary and the strategies for engaging key stakeholders must be tailored to each situation.

The most important outcomes of the study arose after considering whether benefits were experienced by all chain members and what were the most appropriate evaluation techniques. Selection of useful evaluation techniques involved considering the information trade-offs, time, cost effectiveness and the advantages of combining different techniques. Our results showed that the project generated benefits

that were experienced along the whole chain from producer to consumer. However, stakeholders closer to the market were more positive about the project than those interviewed at the production end. This is not surprising, considering most of the activities were focussed on stakeholders at the market end of the chain. While the increase in sales and profits were shared along the chain, the supermarket involved gained the greatest benefit, not only as a result of the increased sales, but also because they were able to apply knowledge arising from the prawn project research to other aspects of their food business. Other value chain stakeholders did report benefits from the project but the assessment of these benefits was variable. One way to manage expectations and ensure the best possible outcome for the entire value chain may be to make sure a wide range of improvement projects are considered and perhaps forecast potential benefits for all stakeholders. As well, it is important to ensure that all stakeholders are engaged in or at least regularly informed of the implementation activities (Devanney, 2006; Hastings *et al*, 2016).

As expected, the greatest benefit of this research has come from the prioritised POS marketing activities that involved multiple chain members. However, it is important to note how insights into other parts of the chain resulted in additional benefits and improvements (Altenburg, 2006) to the value chain companies and the SGWCPFA. The wholesaler used the better understanding of retail consumers to develop new product packaging while the SGWCPFA used the project insights to develop a new strategic policy and protocol to receive market feedback and guide future promotional investment. While these were not primary project objectives, they arose from the VCA process and were only identified as a result of the evaluation.

In this study we used four different evaluation techniques. Each technique varied in two key areas: cost and depth of information provided. The combination of techniques was necessary to get feedback from all stakeholders and generate sufficient detail in order to identify the aspects of the project that worked best and those aspects that should be changed. One important finding was that because the VCA focussed on identifying improvement projects, it did not provide information with regard to what the outcomes/benefits of the project should be to each stakeholder, which may explain the lower levels of satisfaction expressed by the fishers. While the fishers supported the selection of the project, more work needs to be done to clarify the benefits they expected to derive from the project, and further criteria associated with fishers' benefit must be identified against which the program could be evaluated. The evaluation stage should be considered and planned in more detail when prioritising and selecting improvement projects to be implemented.

## **Conclusions and Future Research**

This study has addressed a research gap by showing that VCA is not only an effective tool for identifying industry improvement projects, but also that the subsequent evaluation process provides

important insights that have value for the industry. Whilst a limitation of this research is that it was restricted to a single project within a single case study, the results of the evaluation have uncovered benefits that were not present during the diagnostic phase of the analysis. This has led to a clearer understanding of how the project was effective and where improvements could be made for both private sector and VCA practitioners. Further research is required on a range of case studies and projects across multiple sectors in order to verify the advantages of this type of evaluation and improve and refine the methodology. Our research also highlighted how planning for the detailed evaluation of the results must be incorporated before recommendations are made and implementation occurs. Future research should focus on the longer term impacts of value chain analysis interventions, with particular emphasis on the important role evaluation can play in providing additional insights to all value chain stakeholders.

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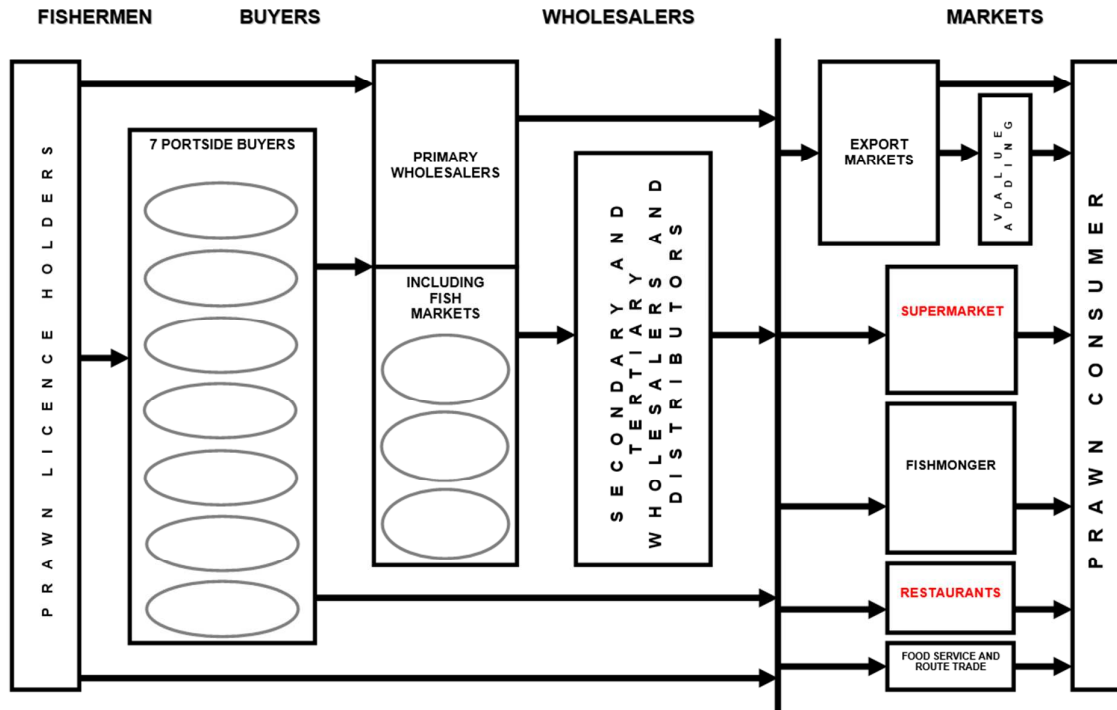
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**Table 1: Stages and Activities used in Value Chain Analysis Research**

Stages	Activities
1. Engagement	<ul style="list-style-type: none"><li>a. Identify and engage stakeholders</li><li>b. Define project scope</li><li>c. Collect value chain information</li></ul>
2. Analysis	<ul style="list-style-type: none"><li>a. Identify key constraints and opportunities</li><li>b. Conduct consumer and market research</li><li>c. Prioritise and recommend improvement projects</li></ul>
3. Implementation and Evaluation	<ul style="list-style-type: none"><li>a. Implement improvement projects</li><li>b. Evaluate the effectiveness of the improvement project</li></ul>

Figure 1: Map of the product flow for the Spencer Gulf and West Coast Prawn Fishery



**Table 2: Point of Sale (POS) collateral, information and activity periods for the implementation phase**

POS collateral (Time Period)	Information provided	Number of items/how displayed	Comments
<b>Information booklet (1, 2 &amp; 3)</b>	<ul style="list-style-type: none"> <li>Background on fishery, highlighting the Marine Stewardship (MSC) accreditation and logo</li> <li>Described catching and storing methods on the boat and the best thawing and preparation methods for consumers</li> <li>4 prawn recipe ideas</li> </ul>	<ul style="list-style-type: none"> <li>Displayed on top of delicatessen counter in all 40 stores</li> <li>Approx. 150 copies per store</li> </ul>	<ul style="list-style-type: none"> <li>Two new recipes were introduced for the Winter period booklet</li> <li>Aim was to promote immediate sales and provide the consumer with a level of knowledge about the product to encourage repeat sales</li> </ul>
<b>Decal (1, 2 &amp; 3)</b>	<ul style="list-style-type: none"> <li>Highlighted the key attributes of the prawn industry. "Superior taste; Healthy choice; sustainable prawns"</li> </ul>	<ul style="list-style-type: none"> <li>Designed to be stuck on the bottom or top of the delicatessen cabinet in 40 stores</li> </ul>	<ul style="list-style-type: none"> <li>Distributed to all stores</li> <li>Designed to attract attention of shoppers</li> </ul>
<b>Posters (1, 2 &amp; 3)</b>	<ul style="list-style-type: none"> <li>Highlighted the MSC accreditation of the fishery</li> </ul>	<ul style="list-style-type: none"> <li>Designed to be stuck on the back wall of the delicatessen area in 40 stores</li> </ul>	<ul style="list-style-type: none"> <li>Distributed to all stores</li> <li>Designed to inform shoppers of sustainability</li> </ul>
<b>In-store tastings (3 only)</b>	<ul style="list-style-type: none"> <li>Tasting of the product in store</li> <li>Information booklet and new recipe cards were offered</li> </ul>	<ul style="list-style-type: none"> <li>Three 4-hour sessions with cooking demonstrations and subsequent tasting</li> <li>Conducted at three key supermarket stores</li> </ul>	<ul style="list-style-type: none"> <li>The winter period was targeted because this is the traditionally slow period for sales of prawns</li> </ul>

**Table 3: Evaluation techniques used for assessing the results of the intervention**

Evaluation technique	Details	Difficulty in accessing data	Cost	Timing
<b>Sales figures</b>	<ul style="list-style-type: none"> <li>Information shared by trader and supermarket retailer</li> </ul>	<ul style="list-style-type: none"> <li>Low</li> </ul>	<ul style="list-style-type: none"> <li>Low</li> </ul>	<ul style="list-style-type: none"> <li>Each campaign periods</li> <li>Comparable period previous year.</li> </ul>
<b>Consumer surveys (n = 190)</b>	<ul style="list-style-type: none"> <li>In-store face to face interviews (n = 190)</li> <li>3 stores only (the stores doing the in store tasting)</li> </ul>	<ul style="list-style-type: none"> <li>High</li> </ul>	<ul style="list-style-type: none"> <li>High</li> </ul>	<ul style="list-style-type: none"> <li>Undertaken during the winter campaign in conjunction with the in-store tasting sessions</li> </ul>
<b>Delicatessen manager surveys (n = 18)</b>	<ul style="list-style-type: none"> <li>Self-completed surveys by delicatessen managers</li> </ul>	<ul style="list-style-type: none"> <li>Moderate</li> </ul>	<ul style="list-style-type: none"> <li>Moderate</li> </ul>	<ul style="list-style-type: none"> <li>Collected after Christmas and Easter activity</li> </ul>
<b>Feedback from key value chain stakeholders (n = 7)</b>	<ul style="list-style-type: none"> <li>Self-completed surveys by the key businesses / stakeholders that operated within the chain</li> </ul>	<ul style="list-style-type: none"> <li>Moderate</li> </ul>	<ul style="list-style-type: none"> <li>Moderate</li> </ul>	<ul style="list-style-type: none"> <li>End of project, at a final management committee meeting</li> </ul>

**Table 4: Results of interviews with key chain stakeholders**

Role in chain	Overall satisfaction *	Most useful aspect	Least useful	Result of changes
Fisher (F1)	6	<ul style="list-style-type: none"> <li>No response</li> </ul>	<ul style="list-style-type: none"> <li>No response</li> </ul>	<ul style="list-style-type: none"> <li>No response</li> </ul>
Fisher (F2), license owner	5	<ul style="list-style-type: none"> <li>Better understanding of retail end of the chain</li> </ul>	<ul style="list-style-type: none"> <li>Information about the production end of the chain</li> </ul>	<ul style="list-style-type: none"> <li>Improved profitability</li> </ul>
Fisher (F3) Skipper, management committee member	8	<ul style="list-style-type: none"> <li>Understanding the lack of supermarket knowledge about the product</li> </ul>	<ul style="list-style-type: none"> <li>No response</li> </ul>	<ul style="list-style-type: none"> <li>Improved relationships</li> </ul>
Fisher (F4) Skipper, management committee member	8	<ul style="list-style-type: none"> <li>Better understanding of what consumers want</li> </ul>	<ul style="list-style-type: none"> <li>No response</li> </ul>	<ul style="list-style-type: none"> <li>Improved sales volume</li> </ul>
Executive officer of SGWCPFA	8	<ul style="list-style-type: none"> <li>Clarity in the most effective POS given available resources</li> <li>The mapping of the value chain</li> </ul>	<ul style="list-style-type: none"> <li>Everything useful</li> </ul>	<ul style="list-style-type: none"> <li>No response</li> </ul>
Wholesaler (supplier to the retailer)	8	<ul style="list-style-type: none"> <li>Gaining a greater understanding of the retailers perspective and operation, and the ability to test ideas and concepts with a willing partner</li> </ul>	<ul style="list-style-type: none"> <li>Time commitment</li> </ul>	<ul style="list-style-type: none"> <li>Improved sales volume</li> <li>Improved relationships</li> </ul>
Supermarket manager, strategic director for Drakes fresh foods section	8	<ul style="list-style-type: none"> <li>A better overall view of the supply chain and new POS material for customers</li> </ul>	<ul style="list-style-type: none"> <li>All relevant</li> </ul>	<ul style="list-style-type: none"> <li>Improved sales volume</li> <li>Improved relationships</li> </ul>

\*Overall satisfaction is rated from 1 to 10 on a scale from least to most satisfied