Sustainable seafood: A framework of current Stakeholder perspectives and approaches

INTRODUCTION

Sustainability is a topical buzz word for the seafood industry, with a recent Google search on the term ‘sustainable seafood’ scoring over 7.6 million hits, and the global significance of seafood sustainability is increasing. Fish currently accounts for about 20 per cent of all human-consumed protein, constituting the primary protein source for more than one billion people (FAO 2009). World fish consumption is projected to increase from 19 to 20.6 kilograms per capita in the decade to 2022, with the highest growth rates predicted for Oceania and Asia (OECD-FAO 2013).

Sustainability has been identified as an emerging megatrend (Lubin & Esty 2010) and the importance of sustainability, particularly in relation to food production, is undisputed (Gafsi, et al. 2006). In reflection of this trend, seafood sustainability is a topic of considerable debate in the current academic conversations (Roheim 2009, Roheim et al. 2011). A glance through the agenda of any recent seafood industry conference reveals discussions about eco-labelling, accreditation schemes, government fishing and marine conservation policy, production/harvesting practices, retail strategy and practice, and consumer intentions and behaviour.

Research into sustainable seafood would be categorised as emergent. In particular, while there is no doubt that sustainability of seafood production needs to be ensured, the current literature indicates a lack of consensus on what sustainability means in relation to seafood. This is perhaps most evident when considering the perspectives of the various stakeholders involved, which span governments, NGOs, the seafood industry (producers, processors, middle men and service providers such as retailers), and consumers.

In part, the lack of consensus derives from the complex and ambiguous usage of the term “sustainability” and, in part, from the different roles and associated goals of stakeholders. A wide range of vocal and influential NGOs help shape political and social spheres, and governments increasingly regulate the industry – with variable impacts on industry stakeholders. In response to both these pressures, and in a highly competitive global business environment, many producers and retailers are using sustainability as a key business strategy to develop competitive advantage to influence both what consumers buy as well as where they shop (Deloittes 2007).

Additionally, the literature is relatively fragmented and unevenly weighted. The majority of current research has focussed on consumer attitudes and behaviours, with less attention devoted to other stakeholder groups. Consumer behaviour research on the broader category of food sustainability has addressed several themes including motivations underpinning consumption of sustainable food (Megalicks 2008; Wells et al. 2011), the gap between attitudes and actual consumption behaviour (Leonides et al. 2010), labelling and packaging interventions (Thorgersen, Haugaard & Oleson 2008), segmentation studies in an attempt to profile sustainable purchasers (Robinson et al 2002; McEachern et al Year), and price premiums and willingness to pay more for sustainable products (Roheim, Asche & Insignares 2011; Gulbrandsen 2006). This pattern of previous consumer research is also evident when looking specifically at the seafood category with research primarily focussing on segmentation (DEFRA 2011), labelling and packaging, accreditation and other marketing claims (e.g. carbon zero).

In brief, there are several gaps in the current research into sustainable seafood with much research focussing on a single stakeholder perspective (eg consumers) and very limited research from the perspective of smaller stakeholder groups (eg chefs). No clear understanding of how each stakeholder group actually defines sustainability exists. The different stakeholder groups all use different approaches and tactics to achieve their goals, often resulting in suboptimal outcomes for the industry and consumers. A better understanding of the perspectives of various stakeholders would provide a basis for developing more effective strategies to influence the behaviour of all groups.

The purpose of this paper is to begin to address the gaps identified above by developing a framework identifying how each stakeholder group defines sustainability in relation to seafood, the level of knowledge and types of actions each group currently pursues and what motivates each group. This framework will highlight the sources of confusion and conflict in the field, where knowledge needs to be improved, and how to influence behaviours while contributing to the fulfilment of all stakeholder goals. The paper proceeds by reviewing the current literature and research, specifically from the Australian context, to complete a framework of the various stakeholder perspectives. This framework then forms the basis for an analysis of the similarities and differences between stakeholder groups and acts as a starting point for developing strategies for each group.

THE LITERATURE

Sustainability – a complex and ambiguously used concept

Fragmentation of approaches to seafood sustainability is at least partly linked to inconsistent usage of the term “sustainability” in the literature. A range of apparently interchangeable related terms is evident, including sustainable development, ecologically sustainable development and sustainable consumption. Terms such as ethical consumption and socially responsible consumption, which overlap considerably with sustainability (Megicks, Memery & Williams 2008; Belton and Little 2009), add further complexity.

Early interpretations of the term “sustainable” focussed primarily on environmental sustainability (Boyd and Schmittou 1999); however, it is now well established that there are three pillars of sustainability – environmental, social and economic (Gafsi et al 2006; Lubin and Esty 2010; Wurts 2010). While these pillars apply to sustainability in all industries, more specific meanings can be tailored for food. For example, the environmental element of sustainability may be interpreted as referring to care for the natural environment as well as production methods and conditions; and the social element refers to issues such as quality of life, human health, humane production and relationships with community while the economic element addresses producers being paid a fair price and consumers paying a fair price (Vermeir and Verbeke 2006; Gafsi et al 2006).

In brief, sustainability is a complex concept that is not easily operationalized (Gafsi et al 2006; Wurts 2010), with the complexity of defining sustainability further reflected in the varying perspectives adopted by the key stakeholder groups involved in seafood. For the purpose of this analysis, the following stakeholder groups are considered as those involved in seafood in Australia. Not-for-profit groups include NGOs (eg major players such as the Marine Stewardship Council, the Australian Marine Conservation Society, the Australian Conservation Foundation, the World Wildlife Fund, the Aquaculture Stewardship Council, and Global GAP Aquaculture), with the main government department being the Federal Department of Agriculture, Fisheries and Forestry (DAFF). The groups within the Australian seafood industry include fisheries, processors, distributors and service providers (eg retailers and restaurants) and are typically for-profit organisations. Consumers constitute a final group.

In addition to the complexity of the concept itself, these stakeholder groups construe sustainability differently in terms of the three pillars, with most groups, and members within the groups, having a partial rather than comprehensive focus or understanding. Little research has addressed the definition each group uses for sustainability and not all provide direct definitions. As such, the understanding of what sustainability is in some instances has to be intuited from stakeholder actions or indirect statements.

NGOs affecting seafood in Australia cover a broad spectrum, ranging from international government-funded bodies such as the Food and Agriculture Organisation (FAO), through non-profit/charity organisations such as the Marine Stewardship Council (MSC) which focus on seafood and are funded largely through their accreditation work, to conservation organisations such as the World Wildlife Fund (WWF). Given the differing goals of many NGOs, their focus and definition of sustainability vary.

While broadly focused international NGOs such as FAO highlight the importance of all three pillars of sustainability across all sectors (wild capture and aquaculture) (FAO 2010), many NGOs tend to focus more strongly on the environmental perspective (e.g. MSC). For example, the David Suzuki Foundation (2013) defines sustainable seafood as ‘seafood fished or farmed in a manner that can maintain or increase production in the long term, without jeopardizing the health or function of the web of life in our oceans”. Reviews of accreditation schemes and eco-labels promoted by NGOs also identify several inconsistencies in relation to criteria used to assess sustainability, transparency, accuracy and independence, with social and economic aspects often being poorly addressed (Parkes 2010; Leadbitter and Ward, 2007).

Turning to government stakeholders, a brief review of the DAFF website shows use of a range of terms (but no definitions) including sustainable, ecologically sustainable, social licence, social and economic sustainability. The term “sustainability” is variously employed, with both general and very specific interpretations, with all three dimensions addressed overall. For instance, government-sponsored research exploring community perceptions of sustainability of the fishing industry in Australia offered the following definition, which focusses on ‘practices and policies’ as well as ecological/environmental sustainability and a statement that could relate to social and economic pillars of sustainability: ‘*the industry having the necessary practices and policies in place that ensure the future of fish species* *and the marine environment, while at the same time providing sufficient supply of fish for commercial and recreational fishing needs*' (Sparks 2011).

Little literature exists to indicate the understanding stakeholder groups within the Australian seafood industry have of sustainability. From their practices and industry discussions, it is evident that Australian seafood producers have a high degree of knowledge relating to the economic and environmental pillars of sustainable seafood practices. In response to both competitive and regulatory forces they have pursued more sustainable fishing practice, as well as focusing on changing consumer purchasing decisions by promoting sustainable consumption.

Although processors' and wholesalers' understanding of sustainability is largely neglected in research, their behaviours show awareness of a link between sustainability and consumer buying preferences, with labelling and certification. In Australia the popularity of various sustainability assessment techniques is growing with increasing adoption, including those provided by the Sustainable Fisheries Partnership and WWF's Ecological Sustainability Evaluation of Seafood (FRDC 2013).

Press releases accompanying the recent launch (2011) of sustainable seafood initiatives by both major Australian supermarket chains provide an indication of these retailers' perceptions of the sustainability concept. Together the two supermarkets, Woolworths and Coles, hold 70% share of the Australian market for groceries. Both tend to focus on the environmental aspects of seafood sustainability. For example, in one press release 'sustainable seafood' was used specifically in reference to wild caught, fresh seafood and sustainability was construed narrowly as environmental sustainability: '*preserving stocks of some traditional favourites which are under threat from overfishing*' (Coles, 2011).

In the food service sector (eg restaurants and other catering outlets) sustainable seafood is emerging as an important issue for many chefs and buyers (Glazer 2012), however again understanding of sustainability appears to focus solely on environmental sustainability, specifically for wild capture seafood with many conflicting interpretations by different chefs including that to be truly sustainable, seafood must be 'locally' sourced (Lebihan 2011). In a recent Australian study of 68 chefs (Howieson and Lawley 2014), chefs noted that they relied on suppliers to provide information regarding sustainability because, while they were interested, time pressures meant they were unable to spend time looking for information about sustainability themselves. In brief, while some chefs are passionate advocates for sustainable seafood, many appear confused about what sustainability actually means.

Consumers constitute the stakeholder group for which there is most research into understanding of and knowledge about sustainability but even here there are gaps. For instance, many research studies focusing on sustainable seafood start with the assumption that consumers have a shared understanding of what sustainability actually means. Recent research reveals that many Australian consumers lack knowledge, and are confused about sustainability with respect to seafood (Danenburg & Mueller 2011; Danenburg & Remaud 2010; Lawley 2012). While consumer recognition globally of ecolabels such as the MSC ecolabel is slowly growing, a recent global survey (n = 5977) conducted by Albemarle Market Research (AMR) revealed that only 12% of Australian consumers could describe “the de-branded MSC ecolabel in their own words as a mark for environmental/sustainable seafood,” lagging well behind European consumers (MSC 2012). Moreover, with greater than 320 environmental groups currently targeting sustainable seafood across the globe (McGovern 2005), a multitude of often conflicting seafood accreditation schemes, and over 200 seafood guides advising consumers what seafood they should and should not eat (Seaman 2009), it is little wonder that current research suggests consumers are confused (Roheim 2009).

Many consumers use the terms locally, organically, environmentally-friendly and sustainably produced foods interchangeably (Robinson and Smith 2002). Several studies highlight that while consumers have favourable attitudes to sustainability, their knowledge remains limited with only a vague understanding of what sustainability actually means (Aslin and Byron 2003; Mintel 2010).

Some consumer studies compound this issue by simply asking about sustainability as a general concept and assuming respondents know what the term means (eg Aslin and Byron 2003). In a recent Mintel study (2010), consumers associated sustainability with creating less waste, helping the environment, and food safety. In a 2007 survey of the UK general public, when asked how knowledgeable they were about sustainability in relation to food, only 6% suggested they know a lot with a further 78% saying they knew a little and 16% saying they didn’t know anything (Seafish 2007). A 2003 study of community perceptions of fishing in Australia (Aslin and Brown, 2003) indicated low levels of knowledge about the Australian fishing industry, but when asked how sustainable (as an overall term) various sectors of the fishing industry were, 37% of respondents gave a neutral response, perhaps indicating a lack of understanding of what the term meant. A follow up study in 2011 showed this pattern of responses remained unchanged over time (Sparks 2011).

Turning to recent Australian consumer research about seafood sustainability, results confirm the confusion and lack of knowledge highlighted above. Content analysis of 10 focus groups which included a question about what (consumers) understood by the term sustainable in relation to seafood identified three differing levels of understanding (CB2010). First, approximately one third of respondents did not know what the term meant or were confused by the term. Some respondents openly admitted they did not know what the term meant stating 'I *wouldn't have a clue'* and '*I don't know'*, while others commented, '*I think a lot of people would be scratching their heads about it*' and '*some people might not know what it means'*. Second, those who proffered a definition of sustainability primarily focussed on environmental aspects including '*not overfishing'*, '*environmentally friendly'*, and '*dolphin friendly'* while some provided a more traditional 'Bruntland-type' definition such as, '*our grandkids can eat it too'* and *'new word on the block – it means ongoing'*. Only one respondent commented on the economic aspect of sustainability stating, '*it means in the future there is going to be fish around. It's not going to be fished out and it's going to stay at the same price as well*'. None of the participants mentioned any social aspects of sustainability with regard to seafood. Finally, considerable confusion about the meaning of the term "sustainability" was evident with participants making comments such as, '*it lasts longer if it is sustainable,*' and using country of origin as a measure of sustainability, for example, '*People want Australian products because they know they are sustainable*'.

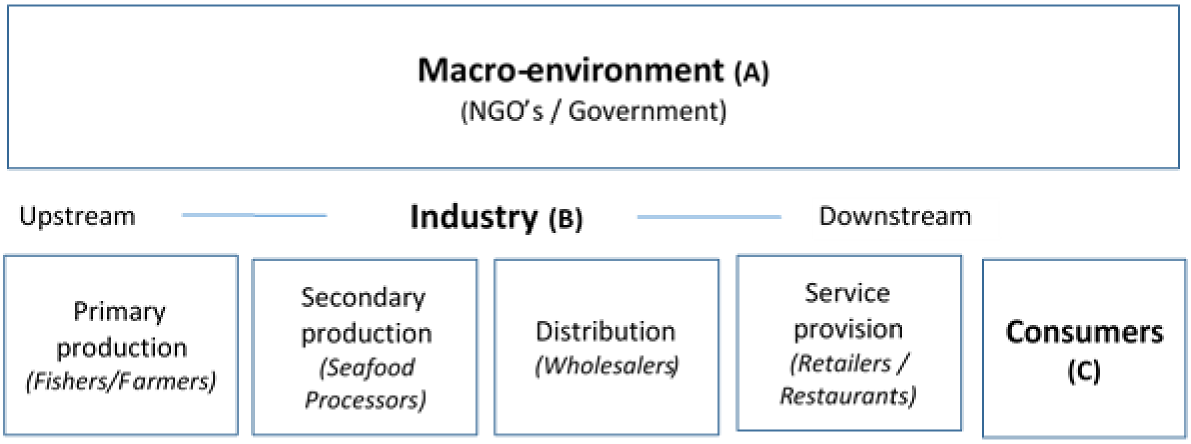
In summary, these findings support previous research indicating a low level of knowledge and confusion among seafood consumers about what sustainability actually means, with many consumers focusing solely on environmental aspects of sustainability. Moreover, an element of political correctness was evident with respondents acknowledging that sustainability was important without really understanding the term. None of the respondents demonstrated an in-depth or balanced understanding of the term across the three pillars of environmental, economic and social dimensions.

Stakeholder roles and goals and actions vary

The varying understanding of sustainability and focus on one or two rather than all three sustainability pillars can be partly understood in the context of each stakeholder group playing a different role in contributing to seafood sustainability, which directs its attention to particular sustainability goals. Accordingly, here we categorise stakeholder groups into three broad categories based on their role in sourcing, delivering and consuming seafood (Figure

1). The role may relate to the over-arching macro-environment (A), which provides a context within which the industry operates, to individual stages of the industry value chain (B) or to consumers (C). Although the seafood industry value chain itself is not well defined, here we provide a rough division between upstream and downstream activities. It should be noted that a specific organisation may operate in only one or several of the steps of the value chain and have multiple goals addressing a subset or all of the three pillars of sustainability.

Figure 1: Stakeholder Roles in Seafood Sustainability



Macro-environment stakeholders (A)

NGOs and Government are the main stakeholder groups in the macro-environment (A) for seafood sustainability, each with different roles.

NGOs share an influencing and knowledge dissemination role, with objectives primarily related to creating a public good. The NGO group has additional internal complexity of roles and goals. NGOs vary widely in terms of their degree of internationality, the breadth or specificity of their remit, and sources of funding, which all in turn influence their perspectives on seafood sustainability. This stakeholder group includes broadly focused government-funded international bodies such as the FAO, international organisations with a single focus on conservation such as the WWF or Greenpeace, as well as non-profit/charity organisations specifically focused on seafood such as the Marine Stewardship Council, which are funded largely through accreditation work. Given the differing goals of many NGOs, their focus and definition of sustainability vary.

World food security is the prime goal of the FAO. The FAO's mission revolves around research and then disseminating research outcomes to other stakeholders to improve food security. It has also established sustainability guidelines for both fishery management and aquaculture, which are increasingly being implemented globally and influencing government policy and self-regulation by industry. The NGOs which are more environmentally driven often use accreditation schemes to influence outcomes (and generate funding for their activities). Moreover, fragmentation is evident with some accreditation schemes focussed on wild capture only (MSC) and others focussed on aquaculture (ASC). The proliferation of accreditation schemes and eco-labels promoted by NGOs (as well as other industry stakeholders) adds to the confusion, with over 30 schemes identified in one recent global review (Parkes 2010).

Governments play a role that focuses on the development and implementation of policy and regulation, as the only entities with the authority to regulate and enforce industry practice. There are two main Australian federal government stakeholders relating to seafood. The Department of Agriculture, Fisheries and Forestry (DAFF) manage fisheries for the public good through controls such as limiting catches and controlling fishing methods, while the Department of Sustainability, Environment, Water, Population and Communities controls the establishment of marine parks and protected areas. Governments are also susceptible to political pressures from shifts in public opinion. An increase in consumer knowledge of the concept of sustainability has led public opinions shifting to a more holistic approach to sustainability rather than purely focussing on environmental concern (OECD 2008). This prompts local, state and federal governments to act through regulation and policy on sustainability matters, by the use of subsidies or the imposition of taxes. There is some evidence that taxes have proven to be more effective at initiating corporate sustainability change as corporations tend to internalise the costs to avoid the tax.

Industry value chain stakeholders (B)

Turning to the production and delivery of seafood products to end consumers, Figure 1 illustrates activities that play a distinctive role in the seafood industry, and will be associated with separate stakeholder groups that have different specific roles and related goals. For example, those engaged in upstream, primary production activities are closest to the natural resource and include seafood fishers and farmers. Seafood processors and distributors then link with the service providers (retailers and restaurants) who deliver end products to consumers and are most influenced by consumer preferences and behaviours. While the clear majority of industry value chain stakeholders are for-profit organisations with profit-related goals, the competitive pressures and regulatory requirements, as well as how seafood sustainability affects their roles, differ across steps in the value chain.

Seafood primary producers The main motivation of seafood primary producers (fishers and farmers) is to make a profit, however, motivations can differ depending on the size of the organisation and their ethical approach. For example, local, small scale seafood producers are often family owned business whose members have grown up on the land. They rely on the land for their survival and as a result have a greater appreciation and concern for the environment and the impacts they are having. Larger producers may have a stronger focus on profits.

Australian seafood producers face the challenge of overcoming the lack of competitive edge for local products, despite an increasing seafood market in Australia (FRDC 2013). Australian seafood producers are faced with aggressive competition from seafood imports from places like China. In addition, supermarket chains such as Coles and Woolworths continue to increase their demands on seafood producers to show proof of sustainable production methods (FRDC 2013). These factors, combined with pressures from Governments and NGOs, have forced seafood producers to explore and implement more sustainable fishing practices. Significant restructuring of fisheries in recent years has led to smaller fleet sizes in many fisheries. Moreover, a number of external factors, including a high exchange rate and higher business input costs, particularly fuel, have increased the industry focus on sustaining profitability (Curtotti et al. 2012).

Primary producers also play a role in marketing direct to consumers. While Australian seafood producers recognise the need for increased education and innovation to promote and enhance sustainable fishing practices to meet the demands of government authority and NGOs, it requires considerable investment and re-capitalisation (O'Sullivan 2009). Instead suppliers are focusing on changing consumer purchasing decisions by promoting sustainable consumption, which relies on improved understanding of consumer behaviour and attitudes. For producers to successfully accomplish this, general consumer behaviour (awareness, rationality) as well as attitudinal variables should be considered (OECD 2008).

In short, Australian seafood producers have a high degree of knowledge relating to sustainable seafood practices but appear to only take action when pressures to adopt sustainable methods are present and can provide a profitable outcome.

Processors and wholesalers Little literature exists to support the role processors and wholesalers play in sustainable seafood practices. Wholesalers have a major role in the marketing phase of the seafood industry and can promote sustainable seafood practices by ensuring their products are sourced from sustainable seafood fisheries. Australian seafood wholesalers are strongly influenced by consumer demands and as a result have a strong desire to prove the sustainability of their seafood products by demonstrating their adoption of various sustainability assessment techniques, including those provided by the Sustainable Fisheries Partnership and WWF's Ecological Sustainability Evaluation of Seafood (FRDC 2013). Labelling and certification are growing in popularity. This motivation is influenced by consumer demands and their buying habits, but in some areas, the consumer's inability to track seafood through the supply chain and back to the producers and their impacts on the environment, means they cannot hold producers accountable for environmental performance (Iles 2007). This could lead to consumers not being willing to exercise their buying power and as a result lead to a decreased focus on sustainability matters by wholesalers. This is ultimately a knowledge gap.

Retailers Retailers have several roles related to seafood – sourcing products and providing them to consumers, as well as marketing. Both major Australian retailers changed seafood sourcing policies in 2011, purportedly based on research indicating that sustainability is increasingly important to consumers and the belief that Australian consumers are sufficiently concerned about consuming sustainable seafood, for accreditation to deliver a competitive advantage within an aggressive retailing environment.

Woolworths states it aims are to ensure that all its wild-caught seafood will be MSC certified by 2015, its premium private label (Select) canned tuna will be line-caught by 2013, fish aggregation devices will be phased out by 2015 for all private label canned tuna thus reducing bycatch, and all farmed seafood products will be suitably accredited for sustainable farming practices by 2015 (Woolworths 2013). Woolworths' seafood sourcing policy is guided by the Sustainable Fisheries Partnership (SFP). The SFP is an independent non-government organisation which "undertakes scientific assessment of the sustainability of seafood products and provides advice on the management of specific issues" (Woolworths 2103). In addition to sourcing sustainable seafood, Woolworths is a principal supporter of marine conservation programs such as the Taronga Zoo's marine protection programs and the Taronga Conservation Society of Australia's Great Southern Oceans precinct. Moreover, Woolworths states that it is committed to supporting its suppliers and where appropriate making grants to assist with the accreditation process and co-investing in sustainability improvements of its fish suppliers. Additionally, Woolworths has provided research funding and scholarships to government entities and fisheries (e.g. CSIRO, Fisheries Research and Development Corporation).

The other major Australian supermarket, Coles works with the MSC to source certified sustainable seafood, and is a signatory to the WWF Global Seafood Charter committed to sustainable seafood and safeguarding marine eco-systems. In 2011, Coles asked the WWF to review all of their wild-caught fresh seafood and like Woolworths, Coles is committed to sourcing sustainable and “dolphin friendly” tuna from sustainable fisheries and methods (Coles 2013). There are more than 120 MSC certified seafood products bearing a blue ecolabel on supermarket shelves (MSC 2013).

Restaurants In the food service sector (eg restaurants and other catering outlets) sustainable seafood is emerging as an important issue for many chefs and buyers (Glazer 2012). However, it is only one of many economic, customer delivery and quality related issues. A recent Australian study of 68 chefs found that sustainability was ranked 13th out of 14 factors in terms of importance in their purchasing decisions (Howieson and Lawley 2014).

Consumers as stakeholders (C)

Consumers play a key role as those making the decision about whether and how to purchase the seafood product, which directly affects the economic goals of stakeholders within the industry. Recent research reveals that many Australian consumers are ambivalent as well as confused about sustainability with respect to seafood (Danenburg & Mueller 2011; Danenburg & Remaud 2010; Lawley 2012). Indeed, Klein and Ferrari (2012) note that conflicting messages across the seafood guides used by the two major supermarkets in Australia has contributed to “a type of seafood stewardship crisis, one that the ocean cannot afford to battle,” and suggest that “consistent guidelines are essential if we want consumers to take sustainable seafood and marine conservation seriously.” However, correctly determining whether seafood is sustainable or not is challenging as it relies on access to full information on how the species is fished, the fishing equipment used, origin or location of wild-catch or the particular farming method used (Klein & Ferrari 2012).

With the lack of consistency and clarity highlighted earlier, it is little wonder that consumers are generally ambivalent, lack knowledge and are confused (Jacquet et al 2009). Further, for many consumers sustainability is not top of mind. Many retailers report that the questions they are most commonly asked about seafood are how to store and how to cook it, with many reporting they have never been asked about sustainability (Telesca 2011).

While knowledge and awareness about sustainable seafood appear low, when questioned, consumers report favourable attitudes toward sustainable seafood (Aslin and Byron 2003; Ruello, 2006; Seafish 2007). However these favourable attitudes are not consistently translated into behaviour. This attitude-behaviour gap has been widely reported in relation to pro-environmental behaviour in general (Finisterra do Paco and Raposo 2010; Diamantopoulos et al 2003; Kollmuss and Agyeman 2002) as well as in relation to sustainable foods (McEachern et al. 2010; Dutra de Barcellos et al. 2011;) and specifically in relation to seafood (Seafish 2007; DEFRA 2011). For example in a UK Department of Environment, Food and Rural Affairs study (DEFRA 2011), 70% of consumers said buying sustainable fish was important but only 30% of consumers actively sought sustainable seafood (with no indication of the number of consumers who then actually bought sustainable seafood). Common explanations of the attitude-behaviour gap reflect pragmatism and include price (ie sustainable option is too expensive), convenience (ie sustainable option not conveniently available) and the fact that sustainability is a credence attribute that consumers cannot evaluate personally and therefore must rely on or trust the source claiming sustainability (Vermeir & Verbeke 2006; McEachern et al. ????MG initals).

In addition, research on the role of sustainability in consumer decision processes suggests low involvement. In a large national survey, consumers were asked the relative importance of 19 attributes influencing their choice of retail outlets for seafood. Of the 19 attributes measured the item 'is concerned with the sustainability of the seafood it sells' ranked 14th in terms of relative importance (Danenburg & Remaud 2010). Turning to in-depth interviews of 12 fishmongers (Lawley 2012), the consensus of fishmongers was that most consumers do not understand what sustainability means, that there was considerable misinformation, and very few consumers ask about sustainability at the point of sale. Indeed, two respondents could not recall ever being asked about sustainability by a customer, with the other ten respondents suggesting only two or three of their customers had ever asked about sustainability.

DEVELOPMENT OF A FRAMEWORK

Given the various findings above, it remains to bring the various perspectives and behaviours together to gain an understanding of the overall picture of all stakeholder groups, as shown in table 1.

The first column lists the key stakeholder groups in the seafood industry, with NGOs split into two groups based on funding: government funded organisations like the FAO in the first group and more special interest independently funded groups like WWF and MSC in the second group. The second column draws from the previous literature to identify how each group defines or views sustainability, while the third column suggests a level or depth of knowledge about sustainability. A fourth column captures the role that each group might play in seafood sustainability – the form of action of control, influence or communication available to it. The last two columns categorise the major goal or motivation of each stakeholder group and their pattern of action in terms of being proactive or reactive.

In considering how each group defines sustainability, it is evident that governments and government-funded NGOs tend to view sustainability from the perspective of all three pillars (albeit with some government departments focussing more on one of the pillars) and also have high levels of knowledge about sustainability. On the other hand, the independently funded NGOs like WWF and Greenpeace often focus strongly on environmental sustainability with variable levels of knowledge. While producers have to be economically sustainable to stay in business, they also are very conscious of the environment and seem to be knowledgeable. Consumers tend to focus on the environmental issues of sustainability and have very limited understanding and knowledge of sustainability overall. In brief, different groups tend to define sustainability differently with varying degrees of knowledge.

Turning to goals and motivations, again a range of different perspectives is evident. Motivations have been classified here using a combination of approaches. Paulraj (2008) groups organisation motivations into three categories of legislation or regulatory compliance; competitiveness by using sustainability to gain competitive advantage and build corporate reputation; and ethical motivations. Consumer motivations can be grouped into utilitarian or budgetary concerns and altruistic motivations such as concern for the environment. Using these approaches we can see from table 1 that, again, different stakeholder groups are motivated by different goals covering all of the approaches discussed, and that some stakeholders have multiple motivations. These multiple motivations potentially explain the attitude-behaviour gap in the consumer group, whereby consumers do want to support sustainability, but often budgetary constraints mean they make different choices.

While all stakeholder groups play different roles in driving sustainability, ultimately consumers are key as they make the final purchase decisions. All other stakeholder groups seek to influence the behaviour of consumers through a variety of different tools and approaches. In addition to developing policies and legislation, governments develop communication campaigns and educational programs to inform and influence consumers. NGOs like Greenpeace are very proactive in taking actions and generating high levels of publicity to support their perspectives. Retailers proactively market any potential competitive advantage to consumers through promotional campaigns and at point of sale while using purchase criteria to control the activities of upstream chain members. Chefs have become very influential through the prominence of reality TV shows such as Masterchef and My Kitchen Rules and also act as opinion leaders in their restaurants and through menus etc. Of all the stakeholder groups, consumers and the majority of chefs are perhaps the most passive as they tend to abrogate responsibility to other stakeholders – 'if Woolworths is selling it, it must be sustainable'. The most proactive of the stakeholder groups are the specialist interest NGOs, with the seafood industry, producers, middle men etc being notably reactive rather than proactive, for example, the majority of seafood industry do not actively promote sustainability but rather simply react when an issue of sustainability is raised (often buy an environmental group, for example the recent Tasmanian super trawler issue).

Table 1 Sustainable Seafood: Stakeholder perspectives and approaches

	Focus/Definition	of	Sustainability	Level of knowledge	Form of action/control/influence/communication	Major Goal/Motivation	Pattern of Action
Stakeholder	**Environment**	**Social**	**Economic**				
Government	x	x	x	high	Legislation; policies; controls	Public good/ethical	ProActive and reactive
NGOs (eg FAO) (government funded)	x	x	x	High	Research /connector to turn information into action /Policies/ accreditation schemes/ education	Public good/ethical	proActive
NGOs eg Greenpeace (independently funded)	x			Variable	Publicity/high profile actions/protests/boycotts Communication campaigns	Ethical	Very proactive
Producers	x	x	x	High	???	Regulatory compliance Competitive	Reactive
Wholesalers/middlemen	x		x	moderate	Information gatekeeper? Labelling/packaging	Competitive	Passive/reactive
Large Retailers	x			moderate	Marketing to consumers;	Competitive	proActive

					supply criteria upstream	advantage/ Build corporate reputational	
Chefs	x			low	Master chef factor? menus	Competitive/ethic al	Passive
Consumers	X			low	Purchase behaviour	utilitarian (budget) altruistic (concern for the environment)	Passive

DISCUSSION

Understanding the different perspectives and motivations of the various stakeholder groups provides a basis for developing strategies to promote shared understandings, increase knowledge and influence the behaviour of each group.

Primary producers' role is most closely associated with environmental issues, although economic and regulatory considerations appear to be the most direct strong motivations. Governments and NGOs are increasingly active in promoting sustainability – with groups like the OECD publishing guidelines of good practices for promoting sustainable consumption (OECD 2008). With Government organisations and highly engaged NGO's placing pressures on the seafood industry to increase efforts towards sustainable seafood practices, it is important to define what is a sustainable level and explore whether such a level is achievable or realistic. Most stakeholders believe that to be sustainable is to be in a constant state where input equals output or in other words, where a system is in equilibrium. However, this is not the case. Sustainability in relation to ecology and consumer consumption is a complex issue (White 2013). Economic, social and environmental systems are complex and adaptive and are constantly changing. This means it is impossible to find a perfectly steady state for any of the three pillars (White 2013). Sustainability has to follow Murphy's Law which states that if anything can go wrong it will or in other words, a fully sustainable state does not actually exist (Longhurst 2002). Rather an actual level of sustainability will fluctuate up and down around a desired level. Understanding this is important in ensuring that policies, regulations, strategies and plans are formulated to be flexible, realistic and achievable.

While producers' and suppliers' main motivation is profit, which occurs through sales to customers such as retailers and restaurants, pressure placed on producers and suppliers to adopt sustainable seafood practices from government, consumer groups and vocal NGO's has led to a growing interest in informing consumers about the environmental aspects to take into account when purchasing seafood (Young et al. 2010). Producers and suppliers do this in order to influence consumer purchasing decisions so that efforts towards sustainable seafood practices can be profitable as well as relieving pressures from the groups mentioned above.

Consumers stand out as a key group but the group with the least knowledge and understanding of sustainability and, at this point in time, sustainability appears more a business imperative rather than a consumer concern. Sustainability only influences the actual purchase decisions of fewer than 5% of consumers (OECD 2008). Since consumer adoption of sustainable seafood products has been low, a central issue would appear to be changing consumer behaviour, but this is recognised in the literature as a complex issue. Research supports that raising involvement can change behaviour (Vermeir & Verbeke 2006), with increasing knowledge through education a key driver. However while information plays a key role, Wells et al. (2011) highlight that the information must be relevant and the right quality as too much information leads to overload. As noted earlier, the plethora of accreditation schemes (and associated eco-labels) has simply resulted in confusion and limited recognition of any one scheme. Labelling is another area of communication that due to a range of different approaches has generated large amounts of consumer cynicism (Hoek J about mid to laTE 2000s). Labelling by itself is also not effective and needs to be supported with a full communication strategy that is supported by all stakeholder groups. The role of retailers is critical when consumers are generally ambivalent, lack knowledge and are confused so abdicate responsibility given their tendency rely on assumptions that “if a retailer sells it, it must be sustainable”. Consumers simply don’t want or need the complication, they just want to trust retailers to sell quality, fresh sustainable seafood.

An additional factor is the ‘attitude-behaviour gap”, where consumers state they are concerned about environmental issues but struggle to translate this concern into green purchases (Young et al 2010). Analysing why green ‘sustainable’ values have a weaker influence on consumer decision making processes when actually purchasing a product is vital in understanding and influencing consumer behaviour towards sustainable consumption (Young et al 2010). According to Wheale and Hinton (2007), there could be many influencing factors including, culture, habit, lack of information, lifestyles, personalities and trading off between different ethical factors.

Additionally, all of these factors except for lack of information are determined by the consumer’s cultural background. As mentioned earlier, sustainability is made up of three pillars, social, political and environmental. However recent studies have shown that a fourth pillar may exist in the form of cultural vitality. Cultural vitality refers to evidence of creating, disseminating, validating and supporting arts and culture as a dimension of everyday life in communities (Jackson et al. 2006). A person’s or society’s culture determines their behaviour, including purchasing behaviour. Consumers’ cultures have a strong influence on their values, perceptions and actions, the acceptance of products and services and purchasing behaviour (Nayeem 2012). As mentioned earlier, many Australian consumers are ambivalent, lack knowledge and are confused about sustainability with respect to seafood. If consumer adoption of sustainable seafood products is low it is partly because their culture does not create ethical values or beliefs based around sustainability that give them the desire to fulfil their needs and wants through the purchasing of sustainable products. If producers and suppliers want consumers to purchase these products then they need to change their consumers' purchasing behaviours by altering their cultural views (Pandey and Dixit 2011). This would typically be addressed through effective marketing techniques and increased education.

CONCLUSIONS AND IMPLICATIONS

While there is broad agreement among stakeholders that seafood sustainability is important and many stakeholder groups are acting in some ways towards this goal, the understanding of seafood sustainability is partial and ambiguous and strategies to achieve it are at best piecemeal and incomplete.

Those in the macro-environment have an impact on the perceptions and actions of both industry stakeholders and consumers through influence processes and regulation. However, given the differing goals of many NGO's, their focus and definition of sustainability vary. Review of NGO schemes identified several inconsistencies in relation to areas such as the approaches and criteria used to assess sustainability, transparency, accuracy and dependence, with social and economic aspects often being poorly address. This shows that while NGO's have some knowledge of what is meant by the term sustainability, they are not clear on how to deal with sustainability issues effectively and due to their organisational focus, have a narrow view on sustainability in its entirety. Government organisations use sustainability across a range of interpretations, some general and some very specific. Their focus is on practices and policies rather than ecological and environmental sustainability. Governments have a high degree of knowledge and address sustainability across all three dimensions.

Those in the industry, involved in producing, processing and selling seafood are variously aware of sustainability and differently affected by the macro-environment influences and regulations. Producers were found to have a good degree of knowledge on sustainable seafood practices as a result of governments and NGO's applying pressures to be more sustainable. Producers used this to try and create a competitive advantages but consumer adoption of sustainable seafood products has been low. As pressures from governments and NGO's are unlikely to dissipate, a sustainable seafood industry is likely, regardless of consumer adoption of these products. This means, seafood producers will need to find a new competitive advantage to stay profitable in the long run. This will most likely lead to point of entry rather than point of differentiation leading to a competitive advantage.

While industry pressures have led to processors and wholesalers requiring some knowledge on sustainable seafood practices their level of understanding is moderate. Australian seafood wholesalers are strongly influenced by consumer demands. Wholesalers appeared to pass this responsibility onto their producers, simply providing proof that their produce comes from sustainable seafood producers.

There is evidence Australian retailers have begun to realise that stocking sustainable seafood products may lead to a competitive advantage as consumers become more concerned with sustainability matters. Many of the big retailers including Coles and Woolworths are promising that all of their seafood will be supplied from sustainable sources within specific time frames as well as supporting various environmental agencies in an aim to boost their reputation.

Sustainable seafood is emerging as an important issues for many chefs, however their understanding is primarily environmental based. Many chefs believed that for seafood to be truly sustainable, it had to be sourced locally. Chefs were found to rely on suppliers to provide information regarding sustainability, as time pressures did not allow them to seek this information for themselves. Overall, many chefs appear confused about what sustainability actually means.

It was found that many Australian consumers are ambivalent, lack knowledge, and are confused about sustainability with respect to seafood. This appears to be fuelled by the multitude of often conflicting seafood accreditation schemes and seafood guides. While many consumers stated that sustainability was an important factor to them, their understanding of the term was vague with many terms like locally, organically and environmentally-friendly used interchangeably. A lack of coordination driven by NGO's and retailers could be largely responsible even though Australia's large retailers are stating that consistent guidelines are essential if we want consumers to take sustainable seafood and marine conservation seriously. Although consumers supported sustainable seafood products, roles of consumer decision processes suggest low involvement with consumers ranking sustainable seafood 14 out of 19 for relative importance when purchasing seafood products. Overall, consumers possessed a low level of knowledge and were confused about what sustainability actually means, with many consumers focusing solely on environmental aspects of sustainability.

This study has shown that the different stakeholder's knowledge, understanding and engagement of sustainable seafood are vague and unclear with many inconsistencies between strategies, policies, plans and guidelines. As a result this has contributed to consumers being confused about sustainability. At present, sustainability appears more a business imperative rather than a consumer concern. Research supports that raising consumer involvement can change behaviour, with increasing knowledge through education a key driver. This highlights the idea of a forth pillar of sustainability, cultural vitality, meaning that if suppliers, retailers, NGO's and governments wish to change consumer behaviour they will need to influence societal culture.

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