

The Social in Assessing for Sustainability:

Fisheries in Australia

Kate Barclay

University of Technology, Sydney

Abstract

The notion that sustainability rests on three pillars – economic, environmental and social – has been widely accepted since the 1990s. In practice, however, the economic and environmental aspects have tended to dominate the sustainability agenda, and social aspects have been sidelined. Two reasons for this are: 1) there is a lack of data collected about which to build meaningful pictures of social aspects of sustainability for populations over time, and 2) there is a lack of recognition of the role of social factors in sustainability, and a related lack of understanding of how to analyse them in conjunction with economic and environmental factors. This paper surveys the literature about sustainability in fisheries, focussing on Australia, and focussing on the way social aspects have been treated. The paper finds that the problems that have been identified for assessing the social in sustainability in general are certainly manifest in fisheries. Management of Australian fisheries has arguably made great improvements to biological sustainability over the last decade, but much remains to be done to generate similar improvements in social sustainability for fishing communities. This is the case for government-run resource management as well as for initiatives from the private sector and conservation organizations as part of movements for corporate social responsibility and ethical consumerism. A significant challenge for improving sustainability in Australian fisheries, therefore, lies in improving data collection on social factors, and in bridging disciplinary divides to better integrate social with economic and biological assessments of sustainability.

Assessing Social Factors in Sustainability

The question of sustainability came to international prominence with the publication of the Brundtland Commission Report *Our Common Future* in 1987, with its well-known definition of sustainable development as ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’. Concerns about environmental degradation from human activities had been gaining ground in the public arena since the 1960s so the ecological aspects of this perspective on sustainability were taken up relatively quickly, with governments collecting data on environmental impacts and (more or less) orienting their regulation of the economy to manage these. At the same time, however, the importance of the economy to governments and their populations, and powerful corporations, meant that the economic aspects of sustainable *development* remained high on the agenda. It was always recognized that social aspects of sustainability were important -

intergenerational equity, the organization of economic activity and indeed the whole rationale for economic development are at root social phenomena. So, especially since the 1990s with John Elkington coining the phrase ‘triple bottom line’ (Elkington 1999), sustainability has often been depicted as resting on three equally important pillars of ecology, economy and society. The Global Reporting Initiative (GRI) came into existence with a system of guidelines for companies to report on their sustainability in terms of their environmental, economic and social performance. Many of the world’s largest companies now use the GRI format and report in this manner.

Despite the acknowledgement of the equal importance of the social in sustainability, however, there has been less success than for economic or ecological aspects of sustainability in defining the social aspects of sustainability, agreeing on indicators to measure them, systematically collecting data for that measurement and thus being able to track social sustainability and plan for it in governance. In the early 2000s the GRI found that reporting on social performance was done less frequently and consistently than environmental reporting (Global Reporting Initiative 2000, p.33). A large study on social aspects of sustainability by the Western Australian Council of Social Services also found that government efforts at sustainability tended to focus on the environmental and economic aspects, leaving social aspects to ‘fall off the agenda’ (L. Barron & E. Gauntlet as quoted in McKenzie 2004, p.6). Financial performance auditing processes are well established, and much progress has been made on environmental auditing standards, but there are few guidelines by which to construct a ‘meaningful social audit’ (McKenzie 2004, p.7). Stephen McKenzie argues that the social is crowded out by most approaches to sustainability because they are either focussed on the economic, or on the environmental, and treat the social as subordinate in either case (McKenzie 2004).

Nevertheless, the imperative remains for governments and companies to report on social aspects of sustainability. Various influential documents have increased the profile of social aspects of sustainability in recent years, especially since the Global Financial Crisis. In 2009 the *Report by the Commission on the Measurement of Economic Performance and Social Progress* (Stiglitz et al. 2009) found that sustainability is about quality of life, which cannot be meaningfully measured by Gross Domestic Product (GDP) alone but must also include other indicators. In the same year the European Commission came out with *GDP and Beyond. Measuring Progress in a Changing World* (European Commission 2009). The

OECD came out with *Measuring and Fostering Well-Being and Progress: the OECD Roadmap* (OECD 2009), as part of the same program that gave rise to the Global Project on Measuring the Progress of Societies which encourages governments to improve the statistical information they collect on quality of life indicators (Bijl 2011). There is still much to be done, however, in developing definitions of social sustainability, linking those to appropriate indicators, and collecting the data necessary for measurement. For example, according to Kathryn Davidson (2011), the Australian government reports on Measuring Australia's Progress compiled by the Australian Bureau of Statistics in 2004 and 2006 have no stated definition of sustainability. Furthermore, the ABS does not have data sets oriented to reporting in the ways imagined in the OECD Measuring Progress of Societies project, so has used proxy indicators with existing data sets that were devised for other purposes.

Social sustainability assessments have yet not been applied to many fisheries internationally, and where they have been the process of developing the assessment tools has often been slow. The United Nations Code of Conduct for Responsible Fisheries, initiated in 1991, has always included social factors, with its objective being to establish principles 'for responsible fishing and fisheries activities, taking into account all their relevant biological, technological, economic, social, environmental and commercial aspects'.¹ However, the guidelines for incorporating social factors in fisheries management practices for the purposes of complying with the Code have taken many years to develop and just become available in the last year.² 'Rapfish' is a rapid appraisal framework for assessing the sustainability of fisheries that had been applied in various countries by 2001 (Pitcher & Preikshot 2001). It also always included social factors, but in 2011 it was decided that Rapfish had not addressed the 'human dimension' adequately so the framework was suspended and revised. The new version of Rapfish collects and analyses data on use of local environmental knowledge, strength of social networks, equity and stability of distribution of benefits from fishing, consumer attitudes about sustainability, and rates of change in fishing operations (Rapfish 2011).³

¹ The FAO Code of Conduct for Responsible Fisheries is available at: <http://www.fao.org/docrep/005/v9878e/v9878e00.HTM#1> .

² Rick Fletcher, personal communication, email, 27 June 2012. See the Ecosystem Approach to Fisheries (EAF), which the FAO has adopted as the way to implement the Code <http://www.fao.org/fishery/eaf-net/topic/166236/en> .

³ As stated on the Rapfish home page in September 2011, see <http://www.Rapfish.org/> .

Defining and Measuring Social Aspects of Sustainability

Social aspects of sustainability may be understood in various ways. The literature on sustainability points to the utility of having an overarching conceptual framework for considering sustainability across different contexts, but having the details worked out to suit locally specific contexts. The validity of an assessment, and its value to the target community, depends on the details being worked out in consultation with local stakeholders. For example, the Wuppertal Institute of Climate Change and Energy developed a 'prism of sustainability', with three points of a triangle representing the environment economy and society, and a fourth connecting those three being 'institutions'. The prism is used as a 'compass' to orient planning for sustainability in each location, but the set of indicators used for measurement and planning of sustainability are derived through stakeholder consultation in each location and thus vary from place to place (Valentin and Spangenberg 2000). One practical approach along these lines is to define sustainability as a social condition and then measure it with a set of indicators (McKenzie 2004). A possible overarching definition might be: 'social sustainability is a life-enhancing condition within communities and a process within communities that can achieve that condition' (McKenzie 2004, p.12).

There are various kinds of indicators that may be used to measure the extent to which a particular fishery meets the general definition of social sustainability. The revised Rapfish framework has six social attributes and five institutional attributes, each with a numerical measure (Rapfish 2011). The Rapfish model, however, is a 'rapid' appraisal tool so for more a more in depth understanding of the social aspects of sustainability other models should be considered. The *Social Assessment Handbook* (Schirmer & Casey 2005) lists six types of information that may be gathered regarding fisheries: 1) history of fishing; 2) social profiles; 3) quality of life; 4) social capital; 5) values and beliefs of fishing groups and the wider community; and 6) spatial analysis of communities in relation to the fisheries resources they use. There is not space here to discuss the kinds of indicators that might be used under all of these headings, discussion below is limited to: quality of life, social capital and social profiles.

Quality of life is a key way of understanding the social aspects of any given phenomenon. Quality of life may be measured by three different kinds of data. The first is economic indicators about people's income and their capacity to buy goods and services, which over the decades have been fairly well considered and documented internationally. The second

type of indicator is other kinds of social data such as health and crime rates, which similarly are well established. The third type of data is subjective information about how people feel about their lives and societies. Subjective measures of quality of life include satisfaction with life in general and satisfaction with work. Since this type of data is not routinely collected, assessments of quality of life have to generate their own data through interviews and questionnaires, which means only small populations are covered and longitudinal data is rarely available. Each type of indicator has strengths and weaknesses but a comprehensive picture of quality of life can only be achieved with a combination of all three types of data (Diener & Suh 1997). Quality of life indicators overlap with several of the other types of indicators listed by Schirmer and Casey (2005). For example, the values and attitudes of fishermen affect their satisfaction with their work. Attitudes and beliefs held by the wider community about fishing are related to the position of fishing families within society. Quality of life is also often measured through an assessment of social capital.

Social capital, among other forms of capital, has been used in several approaches to measuring social sustainability (McKenzie 2004, pp. 15-16). Social capital exists in people's relationships and networks. It works through shared norms and values, and acts as capital in that trust and habits of reciprocity within relationships can facilitate action, including communal action. Social capital can help with resilience in adapting to change, and also contribute to quality of life, particularly in terms of a sense of belonging and community. In some cases, however, the existence of social capital has been taken to mean the existence of social sustainability, and this assumption is problematic. Different kinds of social capital, such as 'bridging' and 'linking' (connections across social groups, including to decision-making bodies) and 'bonding' (ties within a group), may mean different things for sustainability (Brooks 2010). The two types can lead to different outcomes regarding the capacity for collective action to manage natural resources (Ishihara & Pascual 2009). Power relations are key to the different ways social capital can work. For example, some kinds of strong social capital entrench inequity (Bijl 2011). If marginalized groups' perspectives are not taken account of in plans for collective action those groups may undermine the collective action (Ishihara & Pascual 2009). It is therefore important in using social capital data to assess for social sustainability to ask 'sustaining what?' and 'for whom?' (Bijl 2011; McKenzie 2004) The kinds of data that can be used to assess social capital include information about the nature and frequency of interactions with family and friends, participation in social and community organizations, contacts with decision making bodies

outside the community, and relations between different groups within communities (Schirmer & Casey 2005). Data on social capital is rarely collected by government agencies so like subjective data on quality of life, assessments of social capital need to generate their own data.

The kinds of indicators that might be included in a social profile include: average and median age; gender ratios; dependency ratios; employment across different industries; income levels; household spending patterns; educational qualifications; health status; home ownership levels; economic diversity of local economy; occupational health and safety; number of years working in current occupation; generations of family involved in that occupation; and numbers of people dependent on people working in a sector. These may constitute indicators for social sustainability in that an aging population, or one with economic prospects markedly below that of the surrounding community, may be unstable. Data for these indicators can come from ABS Census data, occupational licence data, and also be collected via interviews and questionnaires (Schirmer & Casey 2005).

Social Assessment in Australian Fisheries

The position of social factors within understandings of sustainability in Australian fisheries reflects the broader international trends, with ecological concerns having been taken up first, and then over the last few years more effort put in to capturing the social aspects of sustainability. In 1992 the Australian government formally responded to the sustainable development movement that arose from the Brundtland report with a national strategy for Ecologically Sustainable Development (ESD). In 1999 the Commonwealth *Environment Protection and Biodiversity Conservation (EPBC) Act* provided a regulatory framework for the management of Australia's natural resources. In 2000 the various fisheries agencies and major stakeholder groups in Australia came together in a workshop to work out how to implement ESD in fisheries. A range of projects emerged from that process to incorporate ESD principles into fisheries and aquaculture management and to set up systems for reporting accordingly (Millington & Fletcher 2008; Fletcher et al. 2002; 2005). The overarching plan divided ESD into components under three main categories of ecological well-being, human well-being and ability to contribute. In considering the contributions of a fishery to human well-being the *ESD Assessment Manual for Wild Capture Fisheries* (Fletcher et al. 2003) broke this down into component trees for national socio-economic well-being and community well-being, each with a one-page set of possible objectives, indicators, performance measures

and data requirements, but most of the work on ESD at that stage was on the ecological well-being side of the sustainability equation.

The social side was taken up in the *Social Assessment Handbook: A Guide to Methods and Approaches for Assessing the Social Sustainability of Fisheries in Australia* (Schirmer & Casey 2005) and an extensive literature review of *Social and Economic Evaluations Methods for Fisheries* (Vieira et al. 2009). Since 2005 the Australian Fisheries Research and Development Corporation (FRDC) has funded several studies into the social aspects of aquaculture (Brooks et al. 2010), the Western Rock Lobster industry (Huddleston & Tonts 2007), the South Australian Marine Scalefish Fishery (Schirmer & Pickworth 2005), the commercial fishing industries in northern New South Wales (Harrison 2010) and also a research audit of social sciences fisheries research (Clarke 2010). The recent application of an Ecosystem Based Fisheries Management (EBFM) framework to Australia's West Coast bio-region included 'social amenity' and 'social risk' among six factors used to prioritize fisheries issues (Fletcher et al. 2010). The FRDC has also published a report spelling out very clearly the value of social science research to natural resource management, and giving an overview of some of the main social science methodologies and how they may address particular issues in resource management, including for fisheries (Brooks et al. 2011).

Notwithstanding all the work that has gone on in recent years to incorporate the social into consideration of sustainability in Australian fisheries and aquaculture, as in the broader field of sustainability internationally, there remain serious stumbling blocks over implementing social assessments. Brooks et al. (2010) found that ESD principles cannot be properly implemented in aquaculture until there is more reporting on relevant socio-economic indicators. Furthermore, the social is still not well integrated with the biological and economic in assessing for sustainability. Dowling (2011) found that widespread misunderstandings about the role of women in fisheries in Australia meant a corresponding misunderstanding of the social basis for sustainability. In 2005 the South Australian Marine Scalefish Fishery was restructured for ecological reasons (to combat overcapacity). The restructure had positive economic outcomes for the fishermen who remained in the fishery, because of reduced competition (Brooks 2010). The restructure, however, did not take social aspects into consideration, even though a large social assessment had been undertaken just before the restructure (Schirmer and Pickworth 2005). Another social assessment done after the restructure, building on the earlier social assessment, found that the restructure

exacerbated social fragmentation among commercial fishing groups and their connections to potentially useful networks outside their industry, and restricted opportunities for succession planning (Brooks 2010). So despite the restructure having generated ecological and economic improvements in the fishery, the long-term sustainability of the fishery seems likely to be derailed by not having taken social factors into consideration. In reviewing the progress of ESD in Australian fisheries in 2008 the stakeholders found there was still a gulf between ecological research and socio-economic studies on fisheries, and furthermore that there was ‘a real capability gap in social scientists who can examine the human behavioural element within an NRM [natural resource management] context’ (Millington and Fletcher 2008, 12). The 2009 audit of social science in fisheries in Australia found that no studies tackled integrated economic, social and ecological (triple bottom line) decision-making (Clarke 2010).

Australian fisheries management has successfully improved the biological aspects of sustainability over the last decade, but not in balance with social aspects. Up to the early 2000s the number of fish stocks in Australia classified as overfished or overfishing (on the way to being overfished) had been steadily increasing, with around 40% of fished stocks being fished too hard. By 2010 this situation had been turned around, with only around 15% of the fished stocks still being fished too hard, and signs of stock recovery being seen in some of the previously overfished stocks (Woodhams et al. 2011). One of the main policies implemented widely in Australia to improve ecological outcomes since the 1990s has been Individual Transferable Quotas (ITQs), which require fishermen⁴ to buy an amount of catch in advance and stick within that limit. Another is Marine Protected Areas (MPAs), which create spatial zones where fishing activity is limited or banned. Arguably these measures prioritized biological sustainability, and have been implemented without a clear understanding of how they affect social sustainability. Both of these measures have radically changed the ways fishing business is done, and pushed people out of the industry. Having people leave a biologically or economically unsustainable industry need not be socially a bad thing, especially if this process is understood and planned for in restructuring plans. At least in some cases, however, the changes caused by management measures had wholly unanticipated social effects, in that the socio-economic group that had been doing the fishing was marginalized because they did not have the skills or cultural capital to engage in the

⁴ Although not all people who fish are men, English language fishing groups usually prefer to be called ‘fisherman/men’ rather than gender neutral terms such as ‘fisher/s’.

fishery under new conditions requiring much more complex accounting systems and connections with markets (Minnegal & Dwyer 2010).

Corporate Social Responsibility and Ethical Consumerism in Seafood Retail

The preceding discussion has focussed on public issues of resource management, to be achieved through government policy in conjunction with industry and other stakeholders. There are, however, also measures being taken by the private sector to improve sustainability, including for social aspects. Like efforts in the public sector, private sector attempts to assess social factors in sustainability suffer from the dual problem of a lack of available data on social factors, and a lack of understanding of how to integrate analysis of social factors with economic and biological factors.

There is a growing trend internationally of branding products at the point of retail in a way that provides consumers with information about the social and environmental conditions under which the product was made. In the mid 1990s this trend took off in fisheries with the sustainable seafood movement. Within a few years there were various interventions at the point of retail, such as consumer guides like one developed by the Monterey Bay Aquarium in the USA, and eco-labels such as the Marine Stewardship Council (MSC) 'blue tick'. These retail interventions are based on the assumption that consumers want to shop in a socially responsible way, and one way to enable consumers to do this is by having a reputable non-governmental organization (NGO) show via a guide or a label that certain products are more ethical than others.

Eco-labels and consumer guides, however, may not always act in the ways NGOs hope they will. One issue with these retail interventions is that the image of the ethical consumer upon which they are premised is problematic. While surveys often show that consumers say they would like to have more information about the social responsibility of the products they buy, and that they would be willing to select responsible products over others and pay more for them, comprehensive studies of what people actually buy and their willingness 'at the check-out' to pay more for socially responsible products reveal that most consumers are more influenced by price and functionality than by social considerations (Devinney et al. 2010). Studies on ethical consumerism in seafood, have found that even consumers who are concerned about overfishing generally do not shift from a 'more preferred less sustainably fished' species to a 'less preferred more sustainably fished' one because of this (Johnston &

Roheim 2006). Furthermore, seafood guides that use the ‘green, yellow, red’ schema may confuse consumers because there are inconsistencies between guides produced by different organizations using different bases for their judgements (Roheim 2009). Some studies also show that the implementation of seafood eco-labels may not necessarily improve the sustainability of fishing practices but be more about complying with new reporting standards (Ponte 2008; Ward 2008). This is similar to what some researchers have found with the Global Reporting Initiative, companies may use these systems as ways to present themselves publically as socially responsible without necessarily changing mindsets or practices within organizations to improve sustainability (Moneva et al. 2006).

Nevertheless, the boom in eco-labelled seafood proceeds apace. It is yet to be strongly felt in Australian food retail, but has been an influential part of the scene in Europe and North America for most of the last decade. In 2006 Walmart declared it would aim to have all of its fish products certified by the MSC, and by 2012 76 per cent of its wild-caught seafood was certified. Most large European retail chains also have seafood sustainability policies including eco-labelling. In 2012 Target became the latest large US retailer to make a similar declaration, that all of its wild-caught seafood, including canned, fresh and frozen, would be certified as sustainable by 2015 (atuna.com 2012). In 2011 a consortium of Pacific Islands countries whose combined waters make up the with the richest skipjack fishing grounds in the world achieved MSC certification for a certain kind of fishery conducted in their waters that supplies a significant proportion of the world’s canned tuna.⁵

When the MSC eco-label certification process was created in the late 1990s it was intended to cover all three pillars of sustainability, but due to the complexity of a triple bottom line assessment ended up doing only biological sustainability assessment.⁶ Since then progress has been made in applying social criteria in eco-labelling for aquaculture products. The Best Aquaculture Practices (BAP) label and WWF certifying standards for pangasius, shrimp and tilapia exported from Southeast Asia include several social criteria (WWF 2009; Global Aquaculture Alliance 2010). The Fairtrade Foundation, which has always had a social focus, is currently working on certifying its first aquaculture product, shrimp from Asia, for UK markets (Partos 2011). Two forms of social certification are also being considered by canned

⁵ See the Pacific website: <http://www.pacific.com/> .

⁶ Duncan Leadbitter, personal communication, email, 27 August 2011.

tuna processors in Pacific island countries – from the Business Social Compliance Initiative (BSCI) and Social Accounting International (SA 8000).⁷ Fieldwork interviews I conducted in April 2012 in Papua New Guinea revealed that several tuna processors are moving ahead with SA 8000 certification, and that this is necessitating changes in some human resources practices – such as extending options for collective bargaining and improving health services for employees. One manager of a processing company said this was because their main buyer was planning to use the MSC label, and wanted the social certification to go with it, as part of the branding for that product (Preston et al forthcoming).

The development of a new eco-label in Australia, Sustainable Australian Seafood (SAS), shows the difficulties inherent in instituting a social assessment of sustainability in fisheries, compared to a biological assessment. Several years ago the non-government organization (NGO) the Australian Conservation Foundation (ACF) perceived a need in Australia for an independent assessment process for sustainable seafood. The need was identified in calls from seafood consumers wanting information to help them make sustainable seafood choices. The seafood industry also wants to enhance the sustainability of its operations while working on the marketing and promotion of wild-catch and farmed seafood products. The MSC system offers an independent assessment process for sustainable wild-catch seafood, but it can be very expensive to gain MSC certification, and the reporting requirements to achieve and maintain certification can be onerous for small-scale producers. The ACF felt it was important to have a process that also covered aquaculture and would be easier for small-scale producers. The SAS approach was adapted from the Monterey Bay Aquarium's Seafood Watch approach to establishing recommendations about specific seafood products. Fisheries are classified as 'green' if they are found to be ecologically sustainable, 'yellow' if they have some areas to work on to achieve a 'green' status, and 'red' for fisheries that are unsustainable. The ACF aims to work with retailers (usually restaurants) in using the system, as a way of encouraging retailers to think about and improve the sustainability of the products they source.

The ACF felt that to ensure credibility the assessment should be designed and carried out by an independent panel of scientists. The ACF worked with marine biologists to set up an independent, university-based group to develop the criteria used to assess fisheries. The

⁷ See <http://www.bsci-intl.org/> ; <http://www.sa-intl.org/> .

information used to make assessments against these criteria includes information in the public domain, for example, state-based fisheries status reports and fisheries assessments under the Commonwealth *Environment Protection and Biodiversity Conservation (EPBC) Act*. It also includes data and knowledge provided by producers or suppliers, and evidence from conservation organizations such as reports from the Marine Stewardship Council eco-label certification process. In 2008 and 2009 a set of biological assessment criteria were drafted, work-shopped with scientists and fishermen, and preliminary assessments of several wild-caught and aquaculture products were conducted. This process was used to develop the assessment criteria into a form that would be suitably rigorous but also workable as an ongoing project for the ACF as a charitable NGO to manage with limited resources. A small Science Research Team collates the data on a fishery which is being assessed, which is provided to a Science Reference Panel that then looks at the data against the specified criteria, seeks further input from key informants where there are gaps in or questions about the data, and makes a decision. In 2010 a pilot project applied the criteria to five seafood products from around Australia. Assessment was rolled out further over 2011 and 2012. The assessments are to be reviewed periodically.⁸

Setting the SAS system up was facilitated by the existence of two things. One was existing data about the biological sustainability of fisheries in an easily accessible and usable format, in the form of reports to government under the EPBC Act. The other was models of acting on assessments in the form of seafood guides and eco-labels that have been running internationally for several years. Neither of these things exists in the same way for assessing social aspects of sustainability. The BAP, WWF and Fairtrade systems of assessing and labelling have only just been implemented, so do not as yet offer a tried and tested model. In addition, these are only for aquaculture, and are specifically designed for a developing country context. For example, some of their key criteria are about child labour and forced labour, which are not relevant for Australian contexts. The BSCI and SA 8000 certifications are also a useful starting point. These systems, however, are designed for assessing working conditions of employees, whereas many people working in Australian fisheries are owner-operators. Considering the social sustainability of fishery entails looking at the entire community, not just employment conditions. So existing models of implementing assessments are not such a good fit for social sustainability criteria, and would require more

⁸ For further details on the SAS assessment process see <http://blog.acfonline.org.au/css/>.

work and testing to be adapted. Neither is the existing information about social factors as good a fit as the EPBC Act data was for the biological aspects of the SAS initiative. The EPBC Act data is for the same purpose – biological sustainability of fisheries – and collected by one main agency. There is no data collection for the purpose of understanding social aspects of sustainability in fisheries, so data collected by various agencies for other purposes would have to be pulled together, and there would still be big gaps (subjective measures of quality of life and indicators on social capital, for example). In other words, the social data that exists is less suitable, it would require more effort to access and would need to be supplemented by additional primary data collection. The human hours this extra work entails, especially the data collection and analysis, is expensive, so these problems amount to a disincentive for charitable NGOs to commit to certifying for social sustainability.

Conclusion

The social in sustainability has been subordinated to economic and biological considerations. This is apparent in Australian fisheries, where there have been considerable improvements in biological sustainability in recent years, but where despite increased effort to include the social there remains a lack of data by which to assess social factors, and an evident lack of understanding of the way social, economic and biological factors interact in fisheries management. This pattern is visible both in government policies, and in private sector moves to address sustainability via corporate social responsibility and eco-labelling; biological factors began being addressed over the last decade or so, with social factors just starting to gain ground now. Both public and private sector measures remain hampered by the dual problem of insufficient data appropriate for measuring social factors, and misunderstandings of how the social may be integrated with economic and biological assessments of sustainability.

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