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The sustainable seafood movement viewed as a maturing social-ecological issue using a South African case-study

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1. Introduction

Since its beginnings in the mid-1990s (Jacquet et al., 2011) the sustainable seafood movement (SSM) has progressed from advocacy-style campaigns with single-issue or species foci (Konefal, 2013) to complex messages about threats to marine ecosystems, biodiversity, and resource sustainability (de Vos and Bush, 2011; Iles, 2004, 2007). The SSM has come of age with the topic of overfishing sufficiently mainstream to feature in popular media (Hall et al., 2010) and postgraduate studies (Mooney, 2010; Smits, 2006), or contribute to university sustainability policies (Barlett, 2011). Some view the SSM's two main tactics, namely sustainable seafood initiatives (SSIs) and fisheries eco-labels (Hallstein and Villas-Boas, 2013) as important potential contributors to implementing an ecosystem approach to fisheries management. This alternate governance model hopes to achieve resilience and sustainability in fisheries (Hughes et al., 2005), *inter alia* by establishing more flexible institutional linkages and networks between different role players, in a space where a traditional science-based approach to resource management has apparently failed to do so (Bundy et al., 2008).

By implication, the sustainable seafood movement, particularly SSIs, recognizes that to achieve sustainability, the social-ecological milieu of fisheries needs to extend beyond traditional actors (Perry et al., 2011) – the fishing industry and formal scientific management structures – and connect with the market and consumers, here representing the majority public owners of an open resource (see Lam and Pauly, 2010). Sustainable seafood initiatives generally manifest as social marketing exercises (mainly by environmental interest groups) in response to the call for action to "… shift public attitudes in ways that enhance marine conservation efforts that will result in local conservation efforts and increased political will for broader conservation action" (Auster et al., 2009). These actions are not purely motivated by either conservation or sustainable development, but rather a blend, often described as a type of environmental stewardship representing yet another alternative perspective on fisheries governance (Gray and Hatchard, 2007). This approach requires realization about societal dependence on ocean ecosystem services, and developing a deeper sense of value or ethic attached to oceans and what they provide (Bundy et al., 2008; Limburg et al., 2011).

Compared to fishery eco-labels there has been less debate (e.g., Froese and Proelss, 2012 vs. Agnew et al., 2013) or empirical evidence for relative successes and failures of SSIs (but see Tzankova, 2014), or confirmation that they contribute to more sustainable global fisheries by meeting their objective of what is termed "positive social change" by Bates (2010). Increasingly, the initiatives and their primary tool, the "traffic light" colored seafood list, have been scrutinized with many negative and fewer positive opinions ventured about their impacts. The main identified shortcomings include: seafood lists of SSIs are merely weaker forms of eco-labeling (Peterson and Fronc, 2012) lacking the rigor of third-party, audited certification schemes like the Marine Stewardship Council (MSC); according to Iles (2004) SSIs use "scientific advice without transparency"; and, they confuse, rather than inform consumers, due to lack of consensus between seafood lists from different countries or organizations (Roheim, 2009), or, by over-simplifying complex environmental and social messages (Skladany and Vandergeest, 2004). Furthermore, some believe that SSIs can

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(at best) satisfy niche desires among pro-environmental, upper-class, or "*bourgeois*" individuals to act appropriately (or popularly), questioning their ability to truly mobilize citizens, or create meaningful deliberation between consumers and suppliers (Iles, 2004; Jacquet et al., 2011). Additional criticisms include: whether substantial expenditures on these campaigns by environmental non-governmental organizations (ENGOs) represent sensible use of funds (Jacquet and Pauly, 2008a); or, whether approaches relying solely on consumer responses can effect sustainability in the whole seafood value chain, especially without robust mechanisms for traceability, and when most world fisheries are small scale and non-industrial (Iles, 2004; Jacquet et al. 2009, 2010).

Not all discussions about SSIs focus on their shortcomings. Some view active consumerism by using sustainable seafood guides as a crucial link between production and consumption, in support of both conventional and new governance arrangements to move fisheries toward sustainability (de Vos and Bush, 2011; Oosterveer and Spaargaren, 2011). Here, the mechanism of action is described as the opening of "new governing spaces of interaction" (de Vos and Bush, 2011) where sustainable seafood lists (e.g., the Dutch *Viswijzer*) function as governance tools enabling discussions between ENGOs, scientists, and the fishing industry which would otherwise not have happened. Bush (2010) suggested that more research should examine how the movement contributes to creating spaces of interaction along the seafood value chain at different scales.

It is noteworthy the above citations exclusively cover developed country – North American and European – examples of SSIs (Iles, 2007; Jacquet et al., 2011), especially the biggest, oldest, and best-funded initiative, namely "Seafood Watch" of the Monterey Bay Aquarium (MBA) (Kemmerly and Macfarlane, 2009), with little consideration of developing countries, despite most of the world's seafood production occurring there. This bias is echoed by the 2012 report titled "Charting a Course to Sustainable Fisheries" (www.chartingacourse.org) commissioned by the David and Lucile Packard Foundation, a major supporter of the SSM in the United States (US). It suggests that the SSM over the next 5 years, should expand into countries such as Brazil, China, and South Africa; despite an SSI being initiated in the latter as early as 2002 (WWF-SA, 2014).

Global overfishing and related social marketing developments such as the SSM (see discussion in Jacquet and Pauly, 2007) clearly contain elements of a maturing social-(ecological) issue as defined by McGrail et al. (2013): "A growth of issue awareness and ownership from a special interest concern to general public management".

In this paper, we first synthesize the main published positive and negative commentaries on SSIs. Next, we apply the novel diagnostic framework of McGrail et al. (2013) to describe the development of the SSM (particularly an SSI) over more than a decade, using South Africa as a case-study. We discuss the progression and maturation of the movement in a developing country, and its interplay with international developments, so evaluating some of the criticisms and successes. Finally, we reflect on the continued relevance, and possible future direction, of the SSM as a whole.

2. Materials and methods

2.1. Meta-analysis of published commentary on global sustainable seafood initiatives

We carried out a keyword search for "sustainable seafood" in Google Scholar and ScienceDirect and selected all publications relating to the evaluation or discussion of SSI's (i.e., not eco-labels, certification schemes or other aspects of fishery sustainability). Articles were read and any specific commentaries (e.g., criticism, limitations, strengths, successes) relating to SSI's were extracted and, where possible, categorized into themes.

2.2. Constructing a time-line for sustainable seafood in South Africa

We assembled a detailed chronology of events for the SMM in South Africa and its two main expressions: the MSC and Southern African Sustainable Seafood Initiative (SASSI). We compiled a database of documentary evidence from the following sources: (1) authors' experiences and recollections from direct involvement at different stages of SASSI, implemented by the World Wide Fund for Nature South Africa (WWF-SA) and partners; (2) personal communication with local MSC representatives; (3) unpublished reports, correspondence, administrative documents, monitoring and evaluation, and market research relating to SASSI; (4) general web-based searches; (5) systematic searches of indexed content of three digital media repositories for major newspapers, periodicals, and journals on Sabinet (www.sabinet.co.za): "South African Media (SA Media)"; "Index to South African Periodicals (ISAP)"; and "SA ePublications". We searched for exact matches of the following terms combined by the Boolean operator *AND*: "sustainable", "seafood"; "SASSI", "fish"; "sustainable", "fisher***"; and "Marine Stewardship Council". We filtered results, retaining all relevant articles. From this we: (1) constructed a brief narrative of the initiation and development of the movement; (2) selected measurable statistics ("metrics") serving as baseline for its development and growth from 2002 to 2013 (e.g., media coverage, number of staff, annual budget, number of eco-labeled products, etc.). Monetary values were converted from South African Rand (ZAR) to US Dollar (USD) using yearly average historic exchange rates (www.oanda.com/currency/historical-rates/).

We compiled a timeline and narrative of events and applied an issue analysis (see McGrail et al., 2013 for more details on the methodology), where a numerical value (0–6) in increments of no less than 0.1 was assigned to each event, indicating one of six major phases in a typical maturation curve, plotted at 3-monthly intervals: Observation (1), Emergence (2), Popularization (3), Challenge (4), Governance (5), and Normative (6). We paid special attention to identifying "indicators" and "outcomes" characteristic of the various phases (see Hill et al., 2013 for examples of such terms using biodiversity awareness) and significant events ("turning points" or "firsts", e.g., list published, public campaign launched, etc.) or considered as landmarks or advancements (e.g., new listing methodology, major media reaction) in its development. We visualized the analysis as an annotated issue maturation curve fitted manually for the trend, following the approach of McGrail et al. (2013).

2.3. Evaluating target audiences

At various points during its implementation, the level of awareness of consumers about SASSI and seafood sustainability issues was assessed. This was done opportunistically by WWF-SA staff through polls held at food shows and later by contracting independent agencies to carry out large scale, representative surveys. Participation in informal polls was voluntary and did not require ethics clearance at the time. All formal surveys were carried out by two professional companies (Added Value and TNS) that subscribe to and follow industry standards for ethical market research: Added Value: United Kingdom, Code of Conduct of the Market Research Society and ESOMAR in compliance with all Data Protection/Human Rights legislation; TNS: Southern African Market Research Association (www.samra.co.za/ethics/code-of-conduct). These results are reported in Box 4.

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