Title: 'Do fish scales matter? Diversification and differentiation in seafood commodity chains'

Authors: Michael Fabinyi[a,b,c], Wolfram Dressler[d], and Michael Pido[e].

[a] Corresponding author: Faculty of Arts and Social Sciences, University of Technology Sydney, Broadway 2007, NSW, Australia. Email: michael.fabinyi@uts.edu.au. Phone: (+61 2) 9514 2308

[b] WorldFish, Jalan Batu Maung, Batu Maung, 11960 Bayan Lepas, Penang, Malaysia.

[c] Australian Research Council Centre of Excellence for Coral Reef Studies, James Cook University, Townsville 4811, QLD, Australia.

[d] School of Geography, University of Melbourne, Parkville 3052, VIC, Australia. Email: wolfram.dressler@unimelb.edu.au. Phone: (+61) 402761208.

[e] Center for Strategic Policy and Governance, Palawan State University, Tiniguiban Heights, 5300 Puerto Princesa City, Palawan, Philippines. Email: mpido@psu.palawan.edu.ph Phone: (+63 48) 434 0109

Acknowledgements

We thank the San Vicente municipal government for their support of this research, the household interviewees for their time, and Mark Tabangay, Reziel Camacho, Precious Joy Latras, Mark Buncag, Engr. Maria Rosario Aynon A. Gonzales, Eva Marie Ponce de Leon and other faculty and staff members from Palawan State University for logistical and fieldwork assistance. Funding for this research was provided by the Australian Research Council Discovery Program (Grant Number DP140101055) and a Society in Science – Branco Weiss Fellowship (M. Fabinyi).

ABSTRACT

Recent studies in the literature on fisheries trade have contrasted the challenges and opportunities associated with domestic and internationally oriented fish trade. We examine in detail forms of domestic and international fish trade in a municipality of the Philippines to show the empirical complexities of how fish trade unfolds on the ground. We draw on insights from literature in livelihoods to highlight how the debate on fisheries trade can benefit from closer attention to the social and economic context of fisher livelihoods. We argue that from the perspective of small-scale producers who are focused on maintaining diversified livelihoods across a range of fisheries, the distinctions between domestic and international fish trade blur locally, and are sometimes of limited relevance when assessing livelihood options and outcomes for small-scale producers. Instead, a more important distinction is how each trade articulates with social differentiation based on

ownership of fishing assets. We suggest that household asset characteristics strongly influence how they can access a broad range of fisheries (both domestically and internationally traded) that often co-emerge in rural areas of the Philippines.

1. INTRODUCTION

Scholars and practitioners are increasingly debating about the comparative challenges and opportunities generated by international fisheries trade (Béné et al. 2010a, 2016; Crona et al. 2015; Marschke and Betcherman 2015). Central to this analysis has been interrogating the ideal scale of market integration for poverty alleviation, economic growth and food security: comparing regional, or domestic, fish trade with global, or international fish trade[1]. On the one hand, proponents of international fish trade suggest that such trade will bring increased wealth to developing nation-states through increased foreign exchange earnings and economic growth, the effects of which will eventually trickle-down to communities – drawing on ideas from neo-classical economic theory (Cunningham et al. 2009; World Bank/FAO 2009). In contrast, critical scholars and activists argue that international fish trade may heighten food insecurity (Kaczynski and Fluharty 2002; Mulekom et al. 2006), and that the positive returns from fish trade are rarely invested back into local populations and so their effects on poverty alleviation are limited (Béné et al. 2010b). From an environmental perspective, international fish trade has also been identified as a key cause of overfishing and declining fish stocks (Jackson et al. 2001; Cinner et al. 2013). In addition to the traditional policy and donor focus on international markets, therefore, domestic fish trade is now receiving greater scholarly and policy attention as a potential means to improve food security and poverty alleviation (e.g. Béné et al. 2010a; HLPE 2015; WorldFish 2015). Domestic and international fish trade are

[1] The distinctions between 'local', 'domestic', 'regional' vs 'international' and 'global' have different terms in different contexts. The term 'regional', for example, is sometimes taken to mean a focus on intra-African fish trade (e.g. WorldFish 2015), but in the context of the Philippines refers to an agglomeration of several provinces. In this paper we use the terms domestic to mean traded within a country, and international to refer to trading between two or more countries.

55 therefore often implicitly and explicitly viewed to be two distinct types of fish trade, with different
56 sets of outcomes for producers.

57 In this paper, we caution against the adoption of generalised promotion of either international or
58 domestic fish trade in varied local settings. While from external viewpoints the differences between
59 international and domestic fish trade may appear quite clear, there is now a considerable literature
60 in geography demonstrating that scale (of trade or otherwise) is not a natural or given phenomenon,
61 but highly socially produced and contested (Swyngedouw and Heynen 2003; Neumann 2009).
62 Accordingly, it becomes problematic to reify scale and assume enduring characteristics with any
63 fixed 'scalar arrangement' (Born and Purcell 2006: 197). This extends to the scale of fish trade,
64 where we suggest that an undue pre-occupation with the scale of fish trade can potentially lead to
65 the promotion of policies that are disconnected from the perspectives and priorities of small-scale
66 producers[2]. Instead, it remains crucial to understand how domestic and international fish trade
67 unfolds for small-scale producers on the ground.

68 We examine in detail forms of fish trade in a municipality of the Philippines to show the empirical
69 complexities of how households negotiate multiple types of fisheries trade. We draw on insights
70 from literature in livelihoods to highlight how the debate on fisheries trade can benefit from closer
71 attention to the social and economic context of fishers. We argue that from the perspective of small-
72 scale producers that are focused on maintaining diversified livelihoods across a range of fisheries,
73 the distinctions between domestic and international fish trade blur locally, and are sometimes of
74 limited relevance when trying to understand specific outcomes and livelihood options for small-scale
75 producers. We argue that from the perspective of producers, categorising fisheries by whether they
76 are produced for domestic or international trade is of limited relevance. Instead, a more important
77 distinction is how each trade articulates with households in terms of social differentiation based on

[2] Although the term 'producer' is often used to refer to producers of aquaculture products, in this paper we use the term to refer to catchers and processors of capture fishery products.

78 ownership of fishing assets. We suggest that household asset characteristics strongly influence how
79 households can access a broad range of fisheries (both domestically and internationally traded) that
80 often co-emerge in rural areas of the Philippines.

81 After this introduction and a discussion of the methods, we introduce the debate about domestic
82 and international fish trade in more detail and discuss literature from livelihoods that highlights the
83 importance of the social and institutional context of trade. We then describe the different features
84 of the major types of fisheries trade in San Vicente, a municipality in Palawan province, Philippines.
85 Our analysis then focuses on how a better understanding of the social and economic context of
86 producers – in particular, forms of livelihood diversification across different types of fisheries, and
87 social differentiation within these fisheries – provides a view of fisheries trade that is more closely
88 aligned with the perspectives and priorities of local fishers than a focus on whether such trade is (or
89 should be) domestically or internationally oriented.

90 ## 2. FISH TRADE, CONTEXT AND LIVELIHOODS

91 Proponents of international fish trade suggest that fish exports will provide high cash incomes for
92 producers, generate economic growth and provide increased revenue for governments, which will
93 ultimately lead to poverty alleviation and improved food security (e.g. World Bank/FAO 2009). As
94 Béné et al. (2010b, 2016) point out, however, these arguments tend to rely on the usually untested
95 assumptions that 'exploiting rising demand in export markets is an unproblematic means of wealth
96 generation' (Béné et al. 2016: 185). Frequently, this argument is linked to a broader rhetoric about
97 the financial value of marine resources, and the importance of realising this value (e.g. Cunningham
98 et al. 2009; Hoegh-Guldberg et al. 2015). Informed strongly by neo-classical economic theory, this
99 perspective has achieved a great deal of prominence among policymakers in recent years.

100 In contrast, critics of international trade have argued that international fish trade contributes to
101 both local food insecurity and poverty. They argue that such international trade exports fish that
102 would otherwise be consumed locally (e.g. Mulekom et al. 2006), that returns from fish exports are

often not invested locally so local fishers subsequently capture few of the benefits (Béné et al. 2010b, Sadovy de Mitcheson and Yin 2014), and that increased trade can in some cases increase local prices (Béné et al. 2016: 185). Partly in response to these critiques, some scholars have promoted domestic fish trade. The authors of the recent High Level Panel of Experts on Sustainable Fisheries and Aquaculture for Food Security and Nutrition (2015), for example, suggest that for small-scale producers who may not produce one of the relatively small number of internationally-traded species, greater demand at a domestic level may exist for diverse types of seafood products. Domestic fish trade would also offer fewer barriers to entry for small-scale producers, many of whom are marginalised by constraints such as strict regulatory conditions for food safety (Henson et al. 2000) or environmental sustainability (Ponte 2012). It would also generate a greater supply of fish locally, contributing to food security goals. Finally, it would more generally re-orient private and public investment in the small-scale sector, with consequential impacts on food security and nutrition (HLPE 2015: 62-63).

Beyond this specific debate, international and domestic fisheries are often held to be discrete types of fish trade with different characteristics. The distribution of benefits from internationally-traded fisheries, for example, are frequently viewed, implicitly and explicitly, as generating higher levels of inequality than locally-traded fisheries (Fabinyi et al. 2012; ADB 2014; Wamukota et al. 2014; Sadovy de Mitcheson and Yin 2014). In this way, the differences between international and domestic fisheries trade have tended to harden in much of the literature.

This debate about the normative ideal scale of fish trade engages a range of important larger-scale concerns that have significant implications for local producers, including the relevance of certification and standards, and how fish supply affects food security. In particular, arguments for greater attention to domestic fish trade provide a valuable corrective to the unexamined assumptions about capturing wealth and increasing 'efficiency' prevalent in much mainstream fisheries policy discourse (cf. Béné et al. 2016: 185). However, it is not our goal to add to these

128 critiques – in part because they are already well articulated[3]. Instead, we suggest that from the
129 perspective of local fish producers, whether or not fish is domestically or internationally traded is
130 less relevant than a range of other concerns. As geographers writing on the social construction of
131 scale have discussed at a conceptual level, the characteristics of a particular scale or scalar
132 arrangement cannot be assumed *a priori*, and no particular scale is inherently more desirable than
133 another in terms of local perspective (Brown and Purcell 2005: 608-609). In the same way, we
134 suggest that the ideal scale of fish trade cannot be assumed, and that from the perspective of local
135 fish producers, the final destination of the seafood product can be of limited relevance.

136 In this paper, we argue that further attention needs to be directed at how domestic and
137 international fish trade unfolds for producers in context. We argue for greater attention to the
138 broader social and economic context in which domestic and international fish trade takes place, and
139 in particular, the livelihood context of small-scale producers. We suggest that from the perspective
140 of a producer with a diversified livelihood, distinctions about the scale of fish trade are of often
141 limited relevance. Instead, for local producers, more important ways of understanding different
142 types of fisheries relate to the level of capitalisation and profitability of the fishery, and their
143 position within the particular fishery they are most engaged with.

144 Our call for greater attention to the socio-economic context in studies of fish trade resonates with
145 recent shifts in studies of trade in international development more broadly. In the social sciences,
146 the concept of 'global production networks', for example, has developed partly from a critique of
147 the earlier 'global value chain' approach (Coe et al. 2008). Many global value chain studies have
148 tended to focus primarily on inter-firm relations, or the linear, 'vertical' relationships among
149 participants in a value chain, with a narrow focus on economic upgrading. In contrast, one of the
150 contributions of the literature on global production networks has been to highlight how elements of

[3] Additionally, a range of types of fisheries trade are likely to be appropriate in different contexts (Andrew et al. 2007; Ratner and Allison 2012).

151 social context, or 'horizontal' relationships such as culture, the state, and social relationships are of
152 key importance when trying to understand distributional and governance outcomes (Coe et al. 2008;
153 Hamilton-Hart and Stringer 2015). As Bolwig et al. (2010: 178) note, 'attention has to be paid both to
154 the vertical links – the value chains that link local livelihoods upstream and downstream to distant
155 networks of production and exchange – and to the horizontal ones – the ways in which the impact
156 and nature of integration into globalised systems are locally mediated'[4]. By focusing on the scale of
157 market integration (i.e. domestic vs international), we suggest that the debate about domestic and
158 international fish trade runs the risk of over-emphasising the vertical links of value chains at the
159 expense of sufficient attention to the horizontal contexts where trade unfolds.

160 Our analysis of this 'horizontal' context of fish trade stems from a detailed focus on the livelihoods of
161 fish producers. Following Ellis, 'A livelihood comprises the assets (natural, physical, human, financial
162 and social capital), the activities, and the access to these (mediated by institutions and social
163 relations) that together determine the living gained by the individual or household' (Ellis 2000: 10).
164 Livelihood analyses have a long history in the international development literature, with a range of
165 emphases and components (see Scoones 2009 for a review). The sustainable livelihoods approach
166 became particularly prominent from the late 1990s and was incorporated into much policy and
167 planning , including in the marine sector (Ferrol-Schulte et al. 2013). More recently, a range of
168 critiques of the sustainable livelihoods approach have emerged, drawing attention to its largely
169 apolitical and inflexible, technocratic nature, and its pre-occupation with material assets at the
170 expense of less tangible assets. In the critical literature, more contemporary livelihood analyses now
171 speak of 'livelihood trajectories' (McLean 2015) or 'livelihoods as intimate government' (Carr 2013).

[4] Similarly, work in economic anthropology has long emphasised the ways in which economic activity needs to be considered within wider frames of social relationships (Carrier 2012). In fisheries contexts, for example, economic anthropologists have discussed the role of distinctive cultural institutions that interact with economic activity, including patron-client relationships (Firth 1966[1944]; Adhuri et al. 2016) and the role of gifts, sharing and re-distribution of wealth (e.g. Russell and Alexander 2000; Segi 2014).

While duly recognising that livelihoods have multiple components, for the purposes of this paper we focus on two core concepts in the livelihoods literature: diversification and asset holdings. Analysing these two components of livelihoods highlights that from the perspective of producers, the distinctions between domestic and international fish trade are not always as clear as they might appear to be for policymakers.

Firstly, following Ellis, 'livelihood diversification is defined as the process by which rural families construct a diverse portfolio of activities and social support capabilities in their struggle for survival and in order to improve their standard of living' (1998: 4). Recognition of diversification has long been a focus of the livelihoods literature, and has been important in moving international development policy away from an undue preoccupation with single sectors (Allison and Ellis 2001). Fishers, for example, may take up fishing as one option among a broader suite of livelihood options and social relations – their social identity is not simply as 'fishers', and their economic interests are not simply associated with 'fishing' (Allison and Ellis 2001; Eder 2003; Allison and Horemans 2006). Even when their income may be derived solely or largely from fishing, fishers in the Philippines will usually participate in a range of fisheries over the course of a year, using multiple gears to target different species that are traded to different places (Pido 1995; Fabinyi 2012). We highlight that because of the diverse livelihood portfolios fishing households usually hold, the outcomes associated with domestic and international trade are difficult to disaggregate. Essentially, just because fishers may be involved with one type of fish trade does not mean that their livelihood is solely concerned with this type of fish trade. This means that in the context of a diversified livelihood portfolio, where income is drawn from multiple sources annually, the question of whether a fishery is domestically or internationally traded is not the most important or relevant issue for small-scale producers.

Secondly, we emphasise the significance of differentiation within fishing communities. There are many ways of understanding differentiation within fishing communities, and the distinctions between different types of fishers are often not as clear as they may be in comparable agricultural

communities. Fishers are often differentiated on the basis of the type of technology employed, the relative scale of equipment used, or whether production is operated by kin- or non-kin (Russell and Poopetch 1990; McGoodwin 1991; Jentoft and Chuenpagdee 2015). In the Philippines, for example, capture fisheries are formally divided into the municipal (roughly corresponding to the more widely used term of 'small-scale fisheries') and commercial sectors (also referred to as large-scale or industrial fisheries)[5]. In this paper we adapt Bernstein's definition of differentiation as 'the tendency of petty commodity producers to divide into classes of capital and labour' (2010: 125). We focus on the role that ownership of fishing assets plays in the livelihoods of fish producers. As scholars in the political economy of fisheries have argued (Platteau 1984; Campling et al. 2012; Howard 2012), 'who owns what' (cf. Bernstein 2010) – in fishing communities the boat and fishing gears – plays a key role in differentiation. Although the literature on livelihoods emphasises the role of multiple assets (natural, physical, human, financial and social), we focus here on how the ownership of fishing assets (i.e. physical) is more important for livelihoods than the question of whether trade in fish is domestically or internationally oriented. Specific rules for profit sharing systems in the Philippines greatly favour the owners of fishing assets – simply put, those with more assets and fishing capital do better than those without such assets (recognizing also that physical assets can leverage financial and social capital). Sometimes these capital assets are held in domestically traded fisheries, and sometimes in internationally traded fisheries, but each fisher's asset base may produce for either market. We argue that social differentiation within communities is therefore a much more significant driver of outcomes associated with fisheries trade than the narrower one of which type of fisheries trade one is involved in.

3. METHODS AND BACKGROUND TO FIELDSITE

[5] Under the 1991 Local Government Code and 1998 Fisheries Code of the Philippines, the fisheries within 15 kilometres from the shoreline are allocated for municipal fishers. Commercial fishing boats are those greater than three gross tons, and are restricted to fishing outside of this zone.

This paper draws on fieldwork from 2014-2015 in the municipality of San Vicente, Palawan province, Philippines. San Vicente has a population of 30,919 and, facing the South China Sea on the west coast of Palawan province, lies 186km from the provincial capital, Puerto Princesa City (see Figure 1). Palawan is marked by a relative abundance of fishery resources and a high level of socio-cultural diversity. Indigenous ethno-linguistic groups living along the southern, central and northern coasts of Palawan include the Tagbanua (north-central), Pala'wan (central-south), and Molbog (south). However, Palawan's coastal fishing communities are largely composed of migrant settlers who have arrived in the province from across the Philippines. In recent decades, settlers have typically left locations of environmental degradation and social conflict to the relatively peaceful, resource-abundant environment of Palawan (Eder 2008). In this study we focus primarily on migrant (non-indigenous) fishers, noting that although the sample is not comprehensive for the broader region, the vast majority of coastal residents in Palawan are migrants.

Figure 1: Map of municipalities of Palawan province, Philippines.

In August 2014, we conducted 15 interviews in two communities in San Vicente, and three focus group discussions (FGDs). In 2015, we conducted a further 34 interviews and 28 interviews in June and November, respectively. Interviewees were selected through stratified sampling to include households of different ethnicity, class, and livelihood strategy (e.g. different types of fishing gears). We interviewed fishers, traders, and government officials. The topics for interviews and focus group discussions focused on life histories with an emphasis on livelihood change over time, possession of assets, livelihood strategies, and social differentiation within the coastal communities. A smaller sample of these interviews examined in greater depth household decision-making in fishing activities, and the costs and profits associated with different types of fishing and other income-generating activities. Interviews were conducted in Tagalog, which is the national *lingua franca* and spoken by community members. Detailed fieldnotes were taken each day during fieldwork, and

these fieldnotes were subsequently manually coded and qualitatively analysed for key themes that emerged (Bernard 2006).

4. RESULTS AND DISCUSSION

4.1 Fisheries trade in San Vicente

As elsewhere in the coastal Philippines assorted fishery activities are present in San Vicente. These fisheries operate at a range of levels of capitalisation, which produce a large diversity of seafood products that are traded to various domestic and international locations (see Table 1). At the lowest level of capitalisation are small boats without an engine; fishers will use these boats to fish in inshore waters with hook and line and other simple gears such as traps, squid jigs (*ganti-ganti*) and, less often, nets. The next level of capitalisation will be slightly larger boats with an engine. On these boats, fishers may use hook and line to fish for live fish, squid jigs, or a range of nets. Larger boats still will have a much larger engine, crew of up to 10-20, and very large nets (ringnets).

Small pelagic and demersal fish, including scads (*Decapterus*), mackerel (*Rastrelliger*), ponyfish (*Leiognathidae*), sardines (*Sardinella*) and threadfin bream (*Nemipterus*) are caught by hook and line or various types of nets and are traded domestically. They are consumed and sold locally within San Vicente, or transported via truck or smaller traders using motorbikes to neighbouring municipalities such as Taytay and Roxas, or all the way to Puerto Princesa City. Some higher-valued fish such as dried threadfin bream are transported all the way to Iloilo City on neighbouring Panay Island, or to Manila.

Squid (*Sepioteuthis lessoniana*) and live reef food fish (*Plectropomus leopardus*) are exported internationally. For the squid fishery, fishers will sell either to a range of middlemen or directly to one of four exporters based in San Vicente. These exporters are all agents or branches of larger companies, headquartered in either Manila or Iloilo City. The squid will be transported by truck to Puerto Princesa, and from there flown to Manila. From Manila, the squid is exported to either

Taiwan or Japan. For the live reef fish fishery, fishers will sell either to a middleman or direct to one of the six larger traders based in San Vicente town. Three of the six traders are agents or branches of larger exporting companies, based in Manila. From San Vicente, the fish are transported to the nearest commercial airport in Roxas, from where the live products are flown to Manila and then on to Hong Kong.

Other common fishing techniques include fish traps and corrals, spearfishing, crab traps, and gleaning.

Table 1 summarises the different types of fishing activities in San Vicente, organised by level of capitalisation.

Fishery name	Share system	Start-up costs	Cost of average trip	Targeted species	Simplified commodity chain	Season	Range of catch and price
Hook and line (*Kawil*)	Own catch is kept, one share to boat owner.	USD20-40[6]	USD2-4 for a day trip.	Threadfin bream (*Nemipterus*)	Fisher→Middleman→Roxas, Taytay and/or Puerto Princesa. When dried, they will reach Manila.	No season	5-10kg, USD0.50-1.60/kg
Squid (*Pusit*)	If boat only supplied, then 20% to the owner, 80% to crew. If expenses also supplied, then 33% to owner, rest to crew.	USD1490-2130	USD2-4 expenses for an overnight trip.	Bigfin Reef Squid (*Sepioteuthis lessoniana*)	Fisher→Middleman→Agent of exporter in San Vicente→Puerto Princesa→Manila→Japan and Taiwan.	December -May. Only 10-15 days per month.	7-200kg, USD2.30-3/kg
Bottom set gillnet (*Palubog*)	40% to owner, 60% to crew.	USD2130-3190	USD4 expenses for an overnight trip.	Small pelagic and demersal fish	Fisher→Middleman→Roxas, Taytay and/or Puerto Princesa. When dried, they will reach Manila.	No season	10-100kg, USD0.50-1.60/kg
Live fish (*Suno*)	50% to owner, 50% to crew.	USD1490-2130	USD64 expenses for a 3 day trip.	Leopard coral grouper (*Plectropomus leopardus*)	Fisher→ Agent of exporter or local trader in San Vicente→ Roxas→Manila→Hong Kong.	May-September	2-4kg, USD32-53/kg
Driftnet (*Palutang)*	50% to owner, 50% to crew.	USD4260	USD6.4 per trip for an overnight trip.	Small pelagic and demersal fish	Fisher→Middleman→Roxas, Taytay and/or Puerto Princesa. When dried, they will reach Manila.	October-January	20-300kg, USD0.5-1.60/kg
Ring net (*Talakop*)	50% to owner, 50% to crew. Crew have different shares depending on role. 25% of profit also to go to owner of Fish Aggregating Device (FAD) if FAD is used.	USD 21,280-42,530	USD28 per trip for a trip of several hours.	Small pelagic and demersal fish	Fisher→Middleman→Roxas, Taytay and/or Puerto Princesa. When dried, they will reach Manila.	No strict season, but better during May-September	200kg-2 tonnes, USD0.5-1.60/kg

[6] Costs were converted from Philippine Pesos (PHP) to US Dollars (USD). At the time of the last period of fieldwork in November 2015, 1USD = 47PHP.

Table 1: Major fishing activities in San Vicente, Palawan province, Philippines.

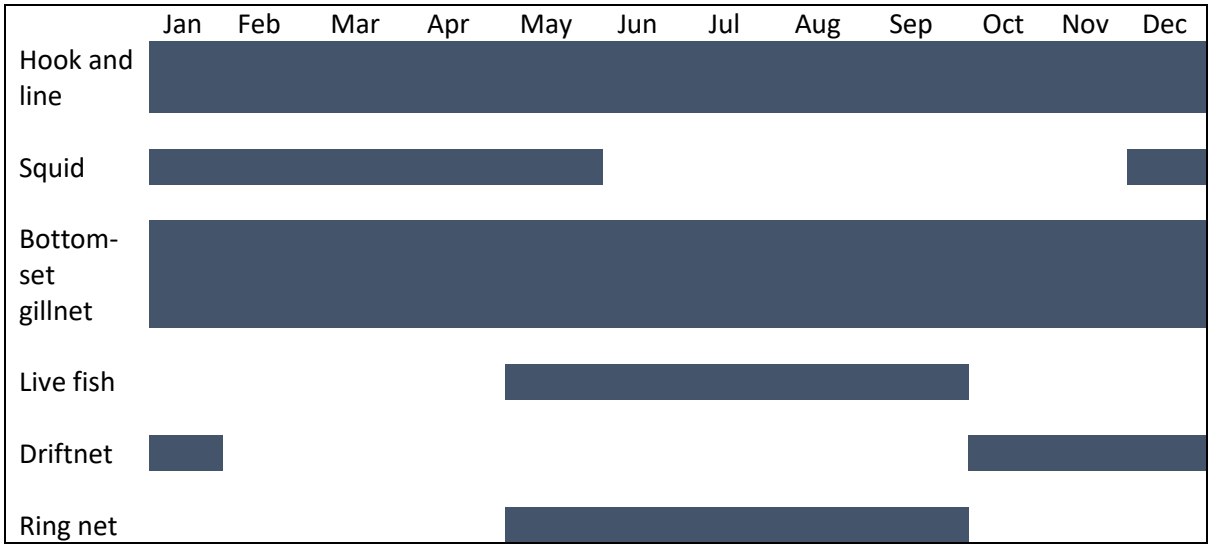
4.2 Fish trade and diversified livelihoods

As with many other fishing communities in the Philippines, livelihoods in coastal San Vicente are strongly diversified. Fishers engage in multiple types of fisheries trade and income generation, which blurs locally the distinction between domestic and internationally traded fisheries. Products from domestically traded fisheries are used as production inputs for internationally-traded fisheries, and vice versa. Additionally, the seasonality of many fisheries means that fishers will undertake different types of fishing activities over the course of a year. This means that from the perspective of producers, the distinctions between different types of fisheries in terms of whether they are internationally or domestically traded become less relevant. While fishers are usually well aware of where the fish eventually get sold, the relevance of this point for their livelihood choices is limited. Fishers may draw on very low fishing capital to produce for international markets, and the wealth on higher capital assets to capture high volumes of fish for domestic markets.

The fisheries are sometimes physically linked, and fish from one fishery are often used as production inputs in another fishery. For example, threadfin bream are caught with hook and line, dried and sold to domestic markets in Manila. However, they are also used as bait for catching squid, which are exported to international markets in Taiwan and Japan. Similarly, squid is used as bait for threadfin bream. This means that fishers involved in one domestic fishery (threadfin bream) are usually involved in another international fishery (squid). A typical fishing trip will involve fishing for threadfin bream in the late afternoon, then squid fishing at night. A similar example is the relationship between round scads, which are traded within Palawan and sometimes to Manila, and leopard coral groupers, which are exported internationally to Hong Kong and mainland China. Round scads are frequently used as fish feed for live groupers that are placed in grow-out cages. Hence, fishers or traders who may specialise in live groupers will also engage in fishing for round scads.

Even more important than the physical interconnections between the fisheries are the ways in which livelihoods are usually based around engagement with multiple fisheries because of seasonality. The squid fishery lasts only from December to May, with peak catches occurring during March. Even during this period, fishers are dependent on lunar cycles, fishing for 15 days per month, from the end of the first quarter to the beginning of the fourth quarter. This means that households engaging in the squid fishery only benefit from it during certain times of the year. Emma, for example, was a fish trader in San Vicente who bought octopus, cuttlefish, squid, threadfin bream, and mixed reef fish from one community and sold them to market traders or agents of Manila-based exporters in Puerto Princesa. When asked about her preference for particular fish products, she noted: '*I have no favourite product in particular because I need all of them at different times. I cannot afford just to wait for the squid season. I have children going to school and college and they need support throughout the year*.'

Similarly, the export live grouper fishery is also heavily seasonal. During the northeast monsoon (*amihan*) from October to early May, conditions at sea make it difficult for fishers to travel far, making it unprofitable to fish during this period. Instead, the best fishing time is during the southwest monsoon (*habagat*), from late May to September. Recent attempts by the municipal and provincial governments to introduce a closed season may also reduce the length of time during the year when the live grouper fishery is active. During the time of year when it is not possible to fish for grouper, fishing households will turn to a range of alternative fishery options among those outlined in Table 1. Table 2 summarises the different fishery activities in San Vicente by season.



325

326 Table 2: Seasonality of major fishing activities in San Vicente, Palawan.

327 Source: Fieldwork 2014-2015.

328 The importance of seasonality and multiple livelihood options is illustrated by the example of José,
329 who over the course of a year uses his fishing assets across multiple livelihood activities. He owns a
330 boat with a 10 horsepower engine, and for most of the year uses this boat with a bottom-set gillnet
331 (*palubog*). With this net he catches small fish such as mackerel, threadfin bream, and scads that are
332 sold to a local middleman. The middleman then transports these fish to neighbouring municipalities
333 and to Puerto Princesa. During the squid season he will use the same boat to focus on squid fishing,
334 and he will also sometimes use his boat to catch live fish. However, he prefers net fishing as '*it is*
335 *easier to come home each day. Fishing for live fish is dangerous as you have to go far out, and you*
336 *have to spend three days away from home. Squid fishing is also good because it is inshore, but it only*
337 *goes for a few months each year*.' During the farming season, José also works as a labourer on
338 others' farms. Members of his household also opportunistically glean for shellfish and go
339 spearfishing at night. This example is similar to that of many households, who will normally aim to
340 diversify their sources of income.

In addition to working in multiple fisheries, households will typically engage in a range of other land-based income-generating activities, including: managing a small general (*sari-sari*) store; raising a small amount of livestock (e.g. chickens, pigs); wage labour for road construction; operating tricycle or motorcycle transport services; obtaining remittances from relatives working in Manila or overseas. Some may own small plots of land for farming (mostly paddy rice and some vegetables), and in recent years, many poorer households also qualify for a government program of conditional cash transfers. In many cases, such land-based livelihood activities may be linked with marine activities – income from one may be used to support investments in the other. From a perspective focused on a diversified livelihood, the distinctions between domestic and international fish trade thus become blurred. Fisheries in San Vicente do not offer themselves as discrete, whole livelihood options; instead they provide opportunities that producers engage in different ways and at different times of the year, according to their own shifting and flexible livelihood priorities.

4.3 Fisheries capitalisation, asset ownership and differentiation

For local producers, the distinction between domestically and internationally traded fisheries is less important than the level of ownership and assets within any particular fishery. Supported by local profit sharing systems that heavily favour owners, those who own considerable fishing assets and hence command the means of production obtain significantly more financial benefits than those who do not own fishing assets. The fisheries that are most profitable are those with higher levels of capitalisation. Such higher-capital and more profitable fisheries include a mixture of both domestic and internationally-traded fisheries, leading those with assets and capital to invest in both.

As Table 1 shows, there are different systems for profit sharing in different types of fisheries. Such profit sharing systems have many local variations, but are broadly related to other similar sharing systems in the Philippines (e.g. Russell and Alexander 2000) and Southeast Asia (e.g. Firth 1966 [1944]; Russell and Poopetch 1998). One key element of these share systems is that as fisheries become more capitalised, profit sharing systems alter in favour of boat owners. As Eder notes from

366 an earlier study of coastal San Vicente, 'the principle used in determining compensation is that
367 capital comes before labour. In the Philippines, capital commands a considerable share of the total
368 revenue' (2008: 71)[7].

369 At the lowest level of capitalization is using hook and line or other simple gears on a boat without an
370 engine, or a very small engine. Each crewmember will keep their own catch, and one share will go to
371 the boat owner. In squid fishing, a slightly larger boat with a larger engine is used, and so when
372 expenses such as fuel are provided in addition to the boat and gear, greater shares begin to accrue
373 to the owner (1/3). Fishing using a bottom-set gillnet requires significant start-up costs, and so in this
374 fishery, 40% of the profits go to the owner. At a higher level of capitalisation is fishing for live fish,
375 which uses a similar type of boat as in squid fishing and bottom-set gillnets, but requires greater
376 expenses for an average trip of three days. In this fishery, 50% of the profits will go to the owner, as
377 they also do in the driftnet and ringnet fisheries. In the latter case of ringnet fishing, the crew will be
378 around 10-20people, meaning that the owner's share will end up being significantly higher than that
379 of individual crewmembers. If the boat uses a ringnet to catch fish near a Fish Aggregating Device
380 (FAD) made of coconut fronds, bamboo and rope (*payaw*), 25% of the profits will also be required to
381 go the owner of the FAD. Thus, more capital-intensive fisheries generate a progressively greater
382 share of the profits to the owners of the capital. As the owner of the capital takes the greater
383 financial risk, larger capital outlays obtain a larger proportion of the returns.

384 Importantly, these capital-intensive fisheries are also the most profitable. Ring-net fishing trips may
385 catch between several hundred kilograms and 2-3 tonnes of small fish (for domestic markets) per
386 trip, and are by a considerable margin the most profitable type of fishing in terms of net profit (gross
387 revenue minus expenses). According to an earlier study of coastal fisheries in San Vicente by
388 Palawan State University (2011), vessels in the highly capitalised ringnet fishery have the highest

[7] In practice, boat owners will usually have to satisfy crew demands for a minimal share before any profits are made, and fish will also be re-distributed through giveaways (see also Russell and Alexander 2000; Segi 2014).

389 catch per unit of effort by a considerable margin. This is partly simply because these vessels have
390 better physical access to the most productive fishing grounds further offshore. In the middle level of
391 capitalization, driftnet fishing trips will catch between 20-300kg of small fish, while bottom-set
392 gillnets will catch 10-100 kg per trip. While the fish that are targeted (for international markets) in
393 live fishing trips, leopard coral grouper, frequently attain beach prices of well over USD40 per kg,
394 usually only 2-3 pieces are caught over the course of a three day trip, meaning that they are not
395 necessarily particularly profitable. And while squid fishing (for international markets) is highly
396 profitable during the peak season, the time that is possible to fish for squid is so circumscribed by
397 seasonal and lunar variation that over the course of the year it is less significant than other fisheries.
398 The least profitable fishery is also the least capitalised: those boats using hook and line to target
399 small fish in inshore waters. There are no clear correlations between the capitalization and the
400 profitability of fisheries on the one hand, and the length of the commodity chain on the other, as
401 might have been expected: fisheries for international markets (squid and live fish) lie in the lower-to-
402 middle range of capitalization and profitability, whereas fisheries for domestic markets include
403 simple hook and line fisheries, middle-range net fisheries and highly capitalised ring-nets.

404 Instead of the length of the commodity chain, from the perspective of the livelihood of a fishing
405 household, a more pertinent distinction is the level of differentiation based on the possession of
406 fishing assets. Access to and use of the assets that underpin these various fishing activities depends
407 on a fisher household's suite of socio-economic characteristics, and the social relations they
408 negotiate in place. In particular, differentiation in San Vicente and the coastal Philippines is closely
409 linked with other social relationships and categories including ethnicity (Dressler 2009), status and
410 time of migration (Knudsen 2012) and gender (Eder 2006). Such differentiation is also frequently
411 closely linked to political power, whereby economic status is often correlated with social and
412 political status (c.f. Kerkvliet 1990: 61; Russell 1997). In many cases, however, access to the 'asset
413 base' often matters most to 'productive potential' and ensuing socio-economic differentiation.

While differentiation is by no means clear-cut, we divide groups of fishing households into three general classes.

The poorest, lower income households are fishers with few or no capital assets. These fishers will use hook and line or other simple gears on boats without engine, or will work as crew-members for other boats with engines, but they also often produce for global markets. As a fisher from a nearby coastal area of Palawan with similar economic conditions pointed out: '*Being a boat owner would be much better; that is my goal one day. Then I could relax at home sometimes while others went out and did the fishing for me! But now I have to fish for every single* centavo *I earn!'* (Fabinyi 2012: 71-72). These fishers have few household assets and will live in basic, thatch huts with no electricity. These fishers will often depend heavily on social networks for finding work, and crew on several different boats for neighbours or kin. Dante, for example, was a married man in his early twenties who alternated work among various fisheries depending on who was going fishing. Over the year, he worked as a crew member on a boat owned by his cousin that used a bottom-set gillnet; occasionally he worked on a boat for live fish owned by another neighbour, and during the squid season he worked on several different boats.

Moderately poor, middle-income fisher households will own a somewhat larger boat with an engine: using various types of gillnets for the capture of small fish, using squid jigs to capture squid, or hook and line to capture live grouper. These households will often rent these boats out, and may gradually capitalise their enterprise with new technology and boat crew. At this level of capitalisation, how people choose which particular fishery to engage depends on a mixture of factors include expertise, personal preferences and tolerance for risk. For example, fishing for live grouper is usually conducted by younger fishers. These trips involve three days out at sea in difficult and cramped conditions, which are physically challenging. If fishers catch several live groupers during a trip this will be considered a 'jackpot', but it is not uncommon for fishers to catch no live groupers at all and make a loss. In contrast, net fishing trips are preferred by those with lower tolerance for

physical and economic risk, as they involve fishing for shorter periods of time closer to shore and tend to provide steadier, more consistent catches (c.f. Fabinyi 2012: 158-160).

Wealthier, upper income fisher households tend to own significant fishing related assets such as several or many smaller boats, or a ring-net fishing vessel. Considerably more choice is involved in livelihood activities, and these households can choose to invest heavily in one fishery, or multiple fisheries, in trading, or even outside of the fishery sector – in farming, tourism or out-migration. Jojo, for example, was an owner of two boats. He uses these boats to participate in four different fisheries: live fish and squid for the smaller boat, and ring-net and driftnet for the larger boat. When asked which of the four types of fishing he preferred the most and was the most important for him, he replied that 'they are all equally as good, as they operate best in different seasons'. He noted that now and in the future, he had no wish to move into the trading and financing of other fishers, and preferred to stay as a fishing operator: 'it is difficult to sell your fish sometimes if you have too much supply. It can also be a lot of work to manage your suppliers, it can be very risky. So I prefer to keep the roles separate and just stay in fishing.' His strategy was not to 'upgrade' along one commodity chain, but to spread his assets across multiple commodity chains. Jojo's experience again highlights how households often seek to maintain a high level of diversification, and engage in multiple types of fisheries trade. Others may be also involved in fish trading and financing the operations of other fishers.

For Jojo and other fishing households, the type of fishing and the length of the commodity chain are far less important than how many assets the household possesses, and how these assets are deployed. These assets are frequently employed across a diversified portfolio: sometimes they may be deployed in fisheries for domestic trade, at other times for international trade. Small boats with an engine, for example, are used to capture either live fish or squid for international markets, or small fish with nets for domestic markets. The key point, however, is that households are

differentiated in their ownership of fishing assets, and hence in their ability to obtain profits from fisheries trade – whether domestic or international.

5. CONCLUSION

In this paper we have used the strong distinctions between domestic and international fish trade prevalent in the literature as a starting point for our analysis of the empirical complexities of fish trade. We acknowledge that the characteristics of international fish trade in other locations – where products are exported to markets with stricter regulatory conditions than the East Asian markets for squid and live reef fish of this case – may be quite different. Additionally, we recognise that from a national perspective, there may indeed be many good reasons to devote greater policy attention to domestic fish trade (HLPE 2014).

However, from a livelihood perspective that focuses on the perspectives and priorities of fishing households, diversification across multiple fisheries tends to reduce the distinctions between domestic and international fish trade. The emphasis on diversification among fishing households means that all fisheries present a range of opportunities for fishers. Understanding how well fishers can take up these opportunities depends instead on differentiation, based on the possession of fishing assets. These assets are typically deployed across a range of different types of fisheries.

Our emphasis on diversification and differentiation means that the focus shifts from whether a particular type of fishery is domestically or internationally oriented, and to how these types of fish trade integrate with particular local contexts. Key are the linkages between fisheries trade and some of the broader drivers of diversification and social differentiation that originate in the wider economic, social and political context. In many fishing communities in developing countries the ability to diversify and patterns of social differentiation are heavily influenced by issues such as human rights concerns, institutional norms, and factors outside the fishery sector (Béné and Friend

2011; Jentoft and Eide 2011; Ratner et al. 2014; Jentoft and Chuenpagdee 2015). In the rural Philippines, for example, social differentiation in fishing communities is strongly linked to issues such as land use changes, labour relations in the agricultural and fisheries sectors, government policies on poverty alleviation, local political dynamics, ethnic relations, and so on (Eder 2008; Fabinyi 2012; Knudsen 2012). Focusing on the potential linkages of fisheries trade with these wider contextual issues may help to understand where interventions designed to promote specific types of fish trade may be more beneficial for poverty alleviation and/or food security: domestic fish trade, international fish trade, or alternative policy interventions that are not focused on the commodity chain length or even the fishing sector at all.

6. REFERENCES

Adhuri, D., L. Rachmawati, H. Sofyanto, N. Hamilton-Hart. 2016. Green market for small people: Markets and opportunities for upgrading in small-scale fisheries in Indonesia. *Marine Policy* 63: 198-205.

Allison, E.H. & Ellis, F. 2001. The livelihoods approach and management of small-scale fisheries. *Marine Policy*, 25(5): 377–388.

Allison E, Horemans B. 2006. Putting the principles of the Sustainable Livelihoods Approach into fisheries development policy and practice. *Marine Policy* 30: 757–66.

Andrew, N, L. Béné, C. Hall, S.J., Allison, E.H., Heck, S. and Ratner, B.D. 2007. Diagnosis and management of small-scale fisheries in developing countries. *Fish and Fisheries* 8: 227-240.

Asian Development Bank. 2014. *Economics of fisheries and aquaculture in the Coral Triangle*. Manila: Asian Development Bank.

Béné, C. and Friend, R. 2011. Poverty in Small-scale Inland Fisheries: Old issues, new analysis. *Progress in Development Studies* 11(2): 119–44.

510 Béné, C., Lawton, R., Allison, E. 2010a. “Trade matters in the fight against poverty”: Narratives,
511 perceptions, and (lack of) evidence in the case of fish trade in Africa. *World Development* 38 (7): 933-
512 954.

513 Béné, C., Hersoug, B. and Allison, E. H. 2010b. Not by Rent Alone: Analysing the pro-poor functions
514 of small-scale fisheries in developing countries', *Development Policy Review* 28(3): 325–58.

515 Béné, C., Arthur, R.; Norbury, H.; Allison, E.H.; Beveridge, M.; Bush, S.; Campling, L.; Leschen, W.;
516 Little, D.; Squires, D.; Thilsted, S.H.; Troell, M.; Williams, M. 2016. Contribution of Fisheries and
517 Aquaculture to Food Security and Poverty Reduction: Assessing the Current Evidence. *World*
518 *Development* 79: 177-196.

519 Bernard, H. R. 2006. *Research methods in anthropology: qualitative and quantitative approaches.*
520 Lanham, MD: Altamira Press.

521 Bernstein, H. 2010. *Class Dynamics of Agrarian Change*. Halifax, Canada: Fernwood Press.

522 Born, B. and M. Purcell. 2006. Avoiding the Local Trap: Scale and Food Systems in Planning Research.
523 *Journal of Planning Education and Research* 26:195-207.

524 Brown, J.C. and M. Purcell. 2006. There's nothing inherent about scale: political ecology, the local
525 trap, and the politics of development in the Brazilian Amazon. *Geoforum* 36: 607-624.

526 Campling, L., E. Havice and P. M. Howard. 2012. The Political Economy and Ecology of Capture
527 Fisheries: Market Dynamics, Resource Access and Relations of Exploitation and Resistance. *Journal of*
528 *Agrarian Change* 12(2-3): 177-203.

529 Carr, E. R. 2013. Livelihoods as intimate government: reframing the logic of livelihoods for
530 development. *Third World Quarterly* 34(1): 77-108.

531 Carrier, J.G. (ed.). 2012 *A Handbook of Economic Anthropology*. Second Edition. Cheltenham, UK:
532 Edward Elgar.

533 Cinner, J.E., N.A.J. Graham, C. Huchery, and A.M. MacNeil. 2013. Global effects of local human
534 population density and distance to markets on the condition of coral reef fisheries. *Conservation*
535 *Biology* 27(3): 453–458.

536 Coe, N.; Dicken, P.; Hess, M. Global production networks: realizing the potential. *Journal of Economic*
537 *Geography* 2008, 8, 271–95.

538 Crona, B. I., Van Holt, T., Petersson, M., Daw, T. M. and Buchary, E. 2015. Using social–ecological
539 syndromes to understand impacts of international seafood trade on small-scale fisheries. *Global*
540 *Environmental Change* 35: 162-175.

541 Cunningham, S., A. E. Neiland, M. Arbuckle, T. Bostock. 2009. Wealth-based Fisheries Management:
542 Using Fisheries Wealth to Orchestrate Sound Fisheries Policy in Practice. *Marine Resource Economics*
543 24: 271-287.

544 Dressler, W.H. 2009. *Old Thoughts in New Ideas: State Conservation Measures, Development and*
545 *Livelihood on Palawan Island*. Quezon City: Ateneo de Manila University Press.

546 Eder, J.F. 2003. Of fishers and farmers: Ethnicity and resource use in coastal Palawan. *Philippine*
547 *Quarterly of Culture & Society* 31: 207–225.

548 Eder, J.F. 2006. Gender relations and household economic planning in the rural Philippines. *Journal*
549 *of Southeast Asian Studies* 37: 397–413.

550 Eder, J.F. 2008. *Migrants to the Coasts: Livelihood, Resource Management, and Global Change in the*
551 *Philippines.* Wadsworth (CT): Cengage Learning.

552 Ellis F. 1998. Household strategies and rural livelihood diversification. *Journal of Development*
553 *Studies* 35(1): 1-38.

554 Ellis F. 2000. *Rural livelihoods and diversity in developing countries.* Oxford: Oxford University Press.

555 Fabinyi, M. 2012. *Fishing for Fairness: Poverty, Morality and Marine Resource Regulation in the*
556 *Philippines.* Canberra, ANU Press.

557 Fabinyi, M., Pido, M., Harani, B., Caceres, J., Uyami-Bitara, A., De las Alas, A., Buenconsejo, J., and
558 Ponce de Leon, E. 2012. Luxury seafood consumption in China and the intensification of coastal
559 livelihoods in Southeast Asia: The live reef fish for food trade in Balabac, Philippines. *Asia-Pacific*
560 *Viewpoint* 53(2): 118-132.

561 Ferrol-Schulte, D., M. Wolff, S. Ferse, M. Glaser. 2013. Sustainable Livelihoods Approach in tropical
562 coastal and marine social–ecological systems: A review. *Marine Policy* 42: 253-258.

563 Firth, R. 1966 [1944]. *Malay Fishermen: Their Peasant Economy*. Second Edition. W.W. Norton and
564 Company, New York.

565 Hamilton-Hart, N.; Stringer, C. Upgrading and exploitation in the fishing industry: Contributions of
566 value chain analysis. *Marine Policy* 2015, 63, 166-171.

567 Henson, S. J., Brouder, A.M. & Mitullah, W. 2000. Food safety requirements and food exports from
568 developing countries: the case of fish exports from Kenya to the European Union. *American Journal*
569 *of Agricultural Economics* 82(5): 1159–1169.

570 High Level Panel of Experts (HLPE). 2014. Sustainable fisheries and aquaculture for food security and
571 nutrition. A report by the High Level Panel of Experts on Food Security and Nutrition of the
572 Committee on World Food Security, Rome 2014.

573 Hoegh-Guldberg, O., D. Beal, T. Chaudhry, H. Elhaj, A. Abdullat, P. Etessy, M. Smits. . 2015. Reviving
574 the Ocean Economy: the case for action. Geneva: WWF International. 60pp.

575 Jackson, J.B.C., M.X. Kirby, W.H. Berger, K.A. Bjorndal, L.W. Botsford, B.J. Bourque, R.H. Bradbury, R.
576 Cooke, J. Erlandson, J.A. Estes, T.P. Hughes, S. Kidwell, C.B. Lange, H.S. Lenihan, J.M. Pandolfi, C.H.
577 Peterson, R.S. Steneck, M.T. Tegner, R.R. Warner.2001. Historical overfishing and the recent collapse
578 of coastal ecosystems. *Science* 291(5530): 629–638.

579 Jentoft, S. and R. Chuenpagdee. 2015. *Interactive Governance for Small-Scale Fisheries*: *Global*
580 *Reflections*. Dordrecht: Springer.

581 Jentoft, S., and A. Eide (eds). (2011) *Poverty Mosaics: Realities and Prospects in Small-Scale Fisheries*.
582 Springer: Netherlands.

583 Kaczynski, V.M. & Fluharty, D L. 2002. European policies in West Africa: who benefits from fisheries
584 agreements? *Marine Policy*, 26(2): 75–93.

585 Kerkvliet, B.J., 1990. *Everyday Politics in the Philippines: Class and Status Relations in a Central Luzon*
586 *Village*. Berkeley (CA): University of California Press.

587 Knudsen, M. 2012. Fishing families and cosmopolitans in conflict over land on a Philippine Island.
588 *Journal of Southeast Asian Studies* 43(3): 478-499.

589 Marschke, M. and G. Betcherman. 2015. Vietnam's seafood boom: Economic growth with
590 impoverishment? *Environment, Development and Sustainability* DOI 10.1007/s10668-015-9692-4.

591 McGoodwin, J. 1991. *Crisis in the World's Fisheries: People, Problems and Policies*. Stanford: Stanford
592 University Press.

593 McLean, J.E. 2015. Beyond the pentagon prison of sustainable livelihood approaches and towards
594 livelihood trajectories approaches. *Asia-Pacific Viewpoint* 56(3): 380-391.

595 Neumann, R.P. 2009. Political ecology: theorizing scale. *Progress in Human Geography* 33(3): 398-
596 406.

597 Palawan State University. 2011. Strengthening Governance and Sustainability of Small-Scale Fisheries
598 Management in the Philippines: An Ecosystem-based Fisheries Management Approach (Phase 2).
599 Region 4B – San Vicente, Palawan Component. Project report. Puerto Princesa City.

600 Pido, M.D. 1995. The application of rapid rural appraisal techniques in coastal resources planning:
601 Experience in Malampaya Sound, Philippines. *Ocean and Coastal Management* 26(1):57-72.

602 Platteau, J-P. 1984. The Drive Towards Mechanization of Small- Scale Fisheries in Kerala: A Study of
603 the Transformation Process of Traditional Village Societies. *Development and Change* 15: 65-103.

604 Ponte, S. 2012. The Marine Stewardship Council and the making of a market for 'sustainable fish'.
605 *Journal of Agrarian Change* 12(2-3): 300-315.

606 Ratner, B.D., B. Åsgård, E.H. Allison. 2014. Fishing for justice: Human rights, development, and
607 fisheries sector reform. *Global Environmental Change* 27: 120-130.

608 Ratner, B.D., Allison, E.H. 2012. Wealth, rights, and resilience: an agenda for governance reform in
609 small-scale fisheries. *Development Policy Review* 30 (40: 371-398.

610 Russell, S.D. 1997. Class Identity, Leadership Style, and Political Culture in a Tagalog Coastal
611 Community. *Pilipinas* 28: 79–95.

612 Russell, S.D. and R.T. Alexander. 2000. Of Beggars and Thieves: Customary Sharing of the Catch and
613 Informal Sanctions in a Philippine Fishery. In E.P. Durrenberger and T.D. King (eds), *State and*
614 *Community in Fisheries Management: Power, Policy and Practice*. Westport (CT): Bergin & Garvey.

615 Russell, S.D. and M. Poopetch. 1998. Petty commodity fishermen in the Inner Gulf of Thailand.
616 *Human Organization* 49(2): 174-187.

617 Sadovy de Mitcheson, Y & Yin, X. 2014. Cashing in on coral reefs?: The implications of exporting reef
618 fishes. In Mora, C. (ed.): *Ecology of Fishes on Coral Reefs*. Cambridge: Cambridge University Press,
619 pp. 166-179.

620 Scoones, I. 2009. Livelihoods perspectives and rural development. *The Journal of Peasant Studies* 36
621 (1): 171-196.

622 Segi, S. 2014. "Losing at Sea, Winning on Land": A Case Study of Philippine Small-Scale and Industrial
623 Fisher Resource Competition. *Society and Natural Resources* 27: 1227-1241.

624 Swyngedouw, E. and N.C. Heynen. 2003. Urban political ecology, justice and the politics of scale.
625 *Antipode* 35(5): 898-918.

626 Van Mulekom, L., A. Axelsson, E.P. Batungbacal, D. Baxter, R. Siregar, I. de la Torre. 2006: Trade and
627 export orientation of fisheries in Southeast Asia: Under-priced export at the expense of domestic
628 food security and local economies. *Ocean and Coastal Management* 49(9-10): 546-561.

629 Wamukota, A., Brewer, T.D., and Crona, B. 2014. Market integration and its relation to income
630 distribution and inequality among fishers and traders: The case of two small-scale Kenyan reef
631 fisheries. *Marine Policy* 48: 93-101.

632 World Bank/FAO**.** 2009. *The sunken billions: the economic justification for fisheries reform*.
633 Washington, DC, Agriculture and Rural Development Department - Sustainable Development
634 Network. 130 p.

635 WorldFish 2015. Fish trade for a better future. Program brochure 2015-04. Accessed online 1/3/2016
636 at: http://www.worldfishcenter.org/content/fish-trade-better-future-program-brochure

637