



The role of patron-client relations on the fishing behaviour of artisanal fishermen in the Spermonde Archipelago (Indonesia)



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ABSTRACT

Patron-client systems are ubiquitous in small-scale fisheries and are thought to have an important role on the way marine resources are exploited. With the aim of identifying key differences between fishermen with a patron and independent fishermen, questionnaires were used to obtain individual socio-demographic characteristics and perceptions of fishing behaviour of fishermen in Spermonde (Indonesia). Catch assessments of landings were carried out and differences between dependent and independent fishermen evaluated. Fishermen with patrons had more valuable catch with a higher portion of live fish while independent fishermen were more engaged in subsistence fishing. Fishermen with patrons had higher turnovers than independent fishermen, but this result was contested after accounting for additional costs resulting from their indebtedness. Comparison between perceived and empirically measured data showed that fishermen with patrons underestimated their expected daily catch. The results suggest that belonging to the patron-client system affects fishing behaviour by making fishermen use less diversified gears and increase their focus on commercial fishing. The consequence of this is an apparent reduced amount of seafood provision for the household and possibly greater ecological impact due to the use of cyanide, a destructive fishing method. While the patron-client system has gained attention as a potential institution to promote sustainable exploitation practices, the data analysed here suggest that the patron-client relationship indirectly causes a worse environmental impact by encouraging higher exploitation rates. The implications are that bringing the patron-client system on board sustainable fishing policies may require context-dependent considerations of cultural obstacles and social complexities.

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1. Introduction

Wild catch fisheries are the most important sector contributing to food security and nutrition for seafood-dependent countries [31]. Indonesia has the second largest marine capture fishery in the world with more than 8 million people depending on marine-based economic activities [33]. While Indonesia hosts more than 2.7 million fishers and produces 7 million tons of fish and seafood [23], its fish stocks are overexploited [64]. Overexploitation is the leading cause of extinction of marine species, followed by habitat loss [20]. Even “low pressure” artisanal fishing methods have been shown to modify the trophic structure of coral reef ecosystems through cascading effects as a result of sequential depletion of

keystone species [7,8,11,21,41]. Challenges posed by enforcing fishing regulatory laws in such a widespread and decentralized archipelago and the fragmented nature of authority in Indonesia have facilitated the rise of illegal fishing [18,34,58]. Instead, local actors, especially the patron-client system, play a large role in structuring fishery dynamics and the flows of marine products through the reef fish food trade [4]. Small scale, reef-based fisheries contribute to most of the total catch in Indonesia, and make it one of the top exporters of coral reef wildlife [18]. However, cumulative impacts such as overexploitation, pollution and structural damage mean that only 6% of coral reefs in Indonesia are considered to be in good condition [33]. Depleted fishery resources and the high dependence on goods and services provided by coral reefs [10,44] lead to risks for the sustainability of the reef fishery, the livelihoods of coastal communities and the conservation of the remarkable marine biodiversity of the region. Understanding the complex drivers of fishery dynamics and targeting its central actors is essential to develop effective management initiatives

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aiming at an all-round sustainability of marine resources.

In Spermonde, the local fishery is temporally and spatially diverse employing a wide array of fishing methods and target species across its islands [27]. The fishery is partly organised by patron-client relationships, where patrons provide the link between artisanal fishers (clients) and national and international buyers. Patron-client systems are widespread throughout tropical small scale fisheries in India [38], Southeast Asia [55], East Africa [16,25], Mexico [6] or Brazil [60,68]. They are informal credit systems that bond powerful individuals with numerous subordinates in a reciprocal agreement; in exchange for favours ranging from loans to protection, patrons receive labour and other benefits such as political support [38]. Fisheries patronage has detractors and defenders. While some studies point out patrons' instrumental instigation of destructive fishing [40,47] and the asymmetric relation that potentially traps fishermen in a perpetual debt situation (summary in [1,36], others regard the arrangement as a pseudo social security system which provides fishermen and their families with readily available resources to cope with, for instance, bad fishing seasons [26,38]. The relational ties between patrons and clients are not only economic but also family and neighbourhood-based, and they reinforce each other generating a feeling of "moral duty" from fishermen to their patrons [1].

In the Spermonde fishery, networks established between fishermen and patrons are flexible and diverse, and their structure varies according to the logistics of the fishing activity. For instance, in purse-seiners there are various levels of patronage, starting with one patron on board (the captain), a second patron staying on the island (the boat owner), and finally a patron in the city (the fish exporter). This is not a rule, as the boat owner can be the captain, and more middlemen can act as patrons in the city or in other cities in large networks [19]. This paper focuses on the relationship between fishermen and their direct patrons, the fish collectors on the island. In our case study, some fishermen have patrons while others are independent. Fishermen with a patron – also referred to as dependent (Fig. 1) – are those indebted to a seafood collector or patron on the island (referred to as patrons hereafter), with the relationship typically starting with a loan for the fisherman to purchase a boat. The fisherman agrees to sell his fish exclusively to this collector [53], who becomes his patron. On days when the catch is large enough, part of the income is used to pay off part of the debt (Fig. 1). When the outstanding amount is paid in full the fisherman becomes independent, although this is not common because the debt relationship produces certainty for

both fishermen and patrons [1]. Not all independent fishermen were once dependent as some are able to enter the fishery using their own savings or borrowing from relatives. Independent fishermen do not have long-term debts and can sell their fish to a collector of their choosing. Fish collectors sell the products in the city to their own patrons (also called *Punggawa*) to whom they often owe money [46]. The patrons in the city have no direct relation to the fishermen and this study did not cover their activities.

The fishery in Spermonde is mainly artisanal and has become more export-oriented following a "fashion-driven" preference for specific marine species [58]. Destructive fisheries and overfishing have been fuelled by increasing export market demand, passed down to the fishermen by middlemen and patrons. Fish are taken from the islands to Makassar and from there exported to Malaysia, Singapore, Taiwan, and Hong Kong [63]. Patrons respond to market fluctuations by providing their clients with the necessary equipment for fishing and by buying the most marketable species from the fishermen, or alternatively, the species in which they specialize [12,27,47]. In the latter case, fishermen working for a patron are expected to specialize in catching the fish that the patron specialises in selling [1]. The heterogeneous distribution of patrons across the archipelago produces a diversification of the target species amongst the islands [27] with potentially different local ecological impacts. For instance, the island of Barang Lompo is famous for its sea cucumber or *trepang* fishery [58] while fishermen on the islands of our study focus on groupers and the seasonal octopus fishery. Not only do patrons influence the fish species caught and sold but they also determine fishing techniques. Destructive fishing practices are widespread in Spermonde. For instance, [47] report that 65% of the fishermen on the island of Karanrang use destructive fishing tactics - bombs and poison - on coral reefs. They also found evidence that the patrons were involved in distributing the illegal materials needed for these activities amongst their client fishermen.

In sum, informal patron-client relationships have been referred to as a *de facto* governance system in Spermonde and recognised as an important driver of fishery dynamics [19,26,27,47]. But despite their potentially notable role in ecological sustainability and fisher wellbeing, the impact of patron-client relations on resource exploitation has been given limited attention in the fisheries literature [38], particularly in Indonesia. This paper aims at identifying key differences between fishermen with a patron and independent fishermen focusing on three questions:

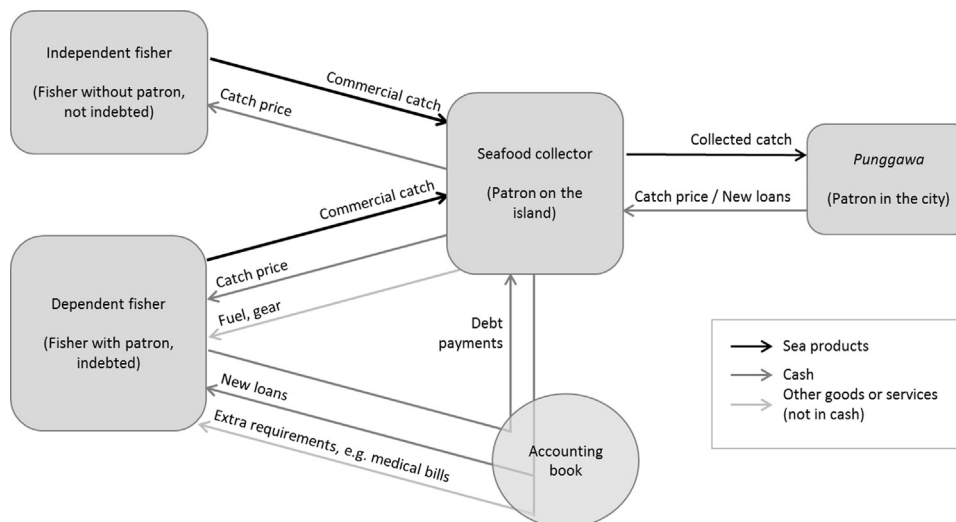


Fig. 1. Diagram of the cash and good flows between actors of the Spermonde reef fishery value chain: the two groups of fishermen, the seafood collectors and the patrons in the city.

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