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An unconventional approach to estimating crew remuneration in fisheries

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ABSTRACT

Fishing is a labour-intensive activity and consequently labour is one of its primary costs. Labour costs refer to remuneration, which is almost universally paid by means of some kind of crew-share system. At the same time, remuneration is the most challenging socio-economic information to collect, owing to a combination of complexity, sensitivity and the frequency of informal transactions. Data on remuneration, when paid by means of crew-share systems, does not adequately capture the real value of income derived from fishing because it is collected as a singular monetary value. Furthermore, the remuneration of fishers' labour, as recorded in vessel or company financial statements were generally found to be underestimated. The main aim of this paper is to provide insight into the remuneration of fisheries labour so as to improve accuracy when estimating remuneration; the focus is on both the formula used for the calculation of remuneration and the data required, and an unconventional method that replicates the fishers' methods is proposed. This method allows for the sensitivity around discussions about remuneration, and the informal nature of these transactions, to be circumvented. The result is improved data quality. When remuneration is estimated in this way it naturally becomes an indicator for economic performance and livelihoods derived from fishing.

1. Introduction

Globally, labour costs have been identified as the main cost component of fisheries activities, ranging from 30% to 50% of the total costs [67]. The relative percentage of the total cost of labour is directly impacted by fuel costs, which are variable. For example, for the fishing fleet of the European Union (EU), labour costs were estimated to be 36% of total costs in 2012 [57] and they accounted for 39% of the total operating costs of the fleet in the eastern Mediterranean in the same year [20]. In Italy in 2012, the average labour cost was 33% of total costs [57]. In small-scale fleets, labour costs are even higher. For example, the small-scale fleet in the eastern Mediterranean recorded labour costs of 47% of total costs in 2012 [20].

When fisheries management is introduced, the first area of focus is usually to monitor the status of captured species through the collection of biological and landings data. With the exception of a few cases, largely found in Europe, the collection of data on socio-economic variables is usually afforded a lower priority [26] or not well integrated [34]. This has generally resulted in a low emphasis being placed on the collection of socio-economic data, and data on remuneration in fisheries [28], with consequences for data quality [30]. When compiling socio-economic data on fisheries, remuneration is one of the main costs collected [57,67]. Yet, when a crew-share system is in place, it often does not allow for a conventional measure of remuneration [26] and this makes it difficult to collect and accurately calculate information on remuneration. A further complication is the fact that boat owners are frequently engaged in work on board a fishing vessel [19,29,5,61,8]. This may confound reporting in the vessel or company financial statements (referred to here as "ledgers") because some of the boat owner's labour may be unpaid [29]. Added to this is the fact that many aspects of the fishing activity may be conducted informally, with transactions taking place outside formal markets [55] especially in small-scale fisheries [29]. In the case of the EU,[1] for example, it is not so much a case of vessels of under ten meters choosing to operate outside the formal system, but simply the absence of any obligation to keep logbooks and landing declarations. Payments are usually made in the fishing harbour or on board the vessels, and cash payments are the norm [22]. This is particularly true for small-scale fleets [22] and it is common, for example, for payments to be made at the end of a fishing trip, or after a period of fishing activity, which may be aligned to a seasonal cycle [24,37]. In addition, crews often receive a small percentage of the catch for their consumption and skippers may receive a

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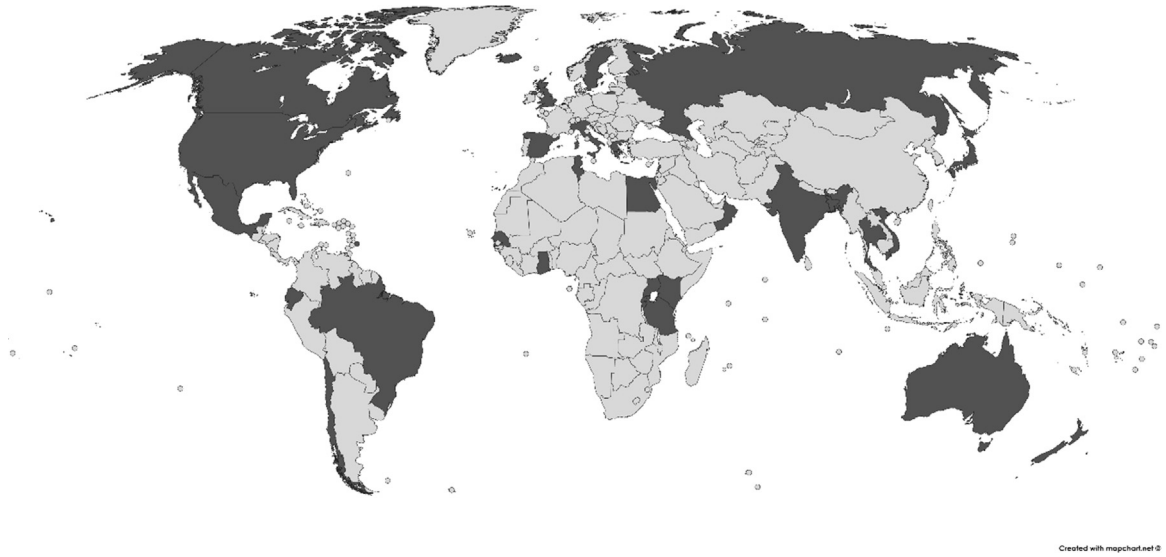

Fig. 1. Distribution of reported use of crew-share system in fisheries around the world with countries identified in the literature shown in dark grey. Map courtesy of www.mapchart.net.

portion of the owner's share as a bonus [24,47].

Underestimates of labour costs [63] are likely to lead to the underestimation of crew remuneration as reported in the ledgers. This is further compounded by a general reluctance to report remuneration among fishers and owners [14,48] so that what is reported in the official data may only reflect the minimum legal wage rather than actual wages paid. This is a global phenomenon and is not limited to the fishing sector [7].

Remuneration has typically been considered as a "personnel cost" and has been treated as an input item on the same basis as fuel or other activity costs [16,17]. Under this definition it was also considered in the classical bio economic models [29]. This limits efforts to gain insight into, among other considerations, the contribution that fishing makes to the livelihoods of people employed in the sector. When in place, crew-share systems allow all of the fishers to obtain a share of the rent [60] and this limits the extent of disparity on-board fishing vessels as all positions from skipper to deckhand are paid according to the same formula [26] unlike in other contexts.

This paper presents a method for calculating the remuneration of fishing crews in an indirect way, allowing the data to better capture the true nature of remuneration and thus improving data quality. Remuneration under a crew-share system is proposed as an indicator of economic performance because it is tied directly to the result of the fishing activity. The paper is organised as follows: Section 2 provides a concise description of the temporal and geographic distribution of the crew-share system. The various forms of crew-share payments are examined and the economic rationale behind the scheme is elucidated so as to explain the natural fit of the crew-share system in the fisheries sector. Section 3 describes the methodology used to collect remuneration data in an indirect way that replicates that used by the fishers themselves. The data collection procedure is also described. In Section 4, data from four Italian fishing fleets are used to highlight the effectiveness of this unconventional approach. The importance of remuneration as a key indicator for both livelihoods and economic performance is explored and the importance of good quality socio-economic data for fisheries management, is discussed. In the final section the conclusions are presented.

1.1. The extent of crew-share remuneration systems

"I was already aware that in the whaling business they paid no wages; but all hands, including the captain, received certain shares of the profits called lays…" *Moby Dick* [36].

For most fisheries around the world, and throughout history, remuneration has been made using some form of a crew-share payment, where the crew receives a share of the gross returns [27,28,68]. Crew-share payments may be based only on the gross returns, or they may be regarded as a "top up" of a fixed minimum wage [28]. Reference to a crew-share scheme is made in Moby Dick, penned by Herman Melville in 1851 and repeated above, and a study conducted by the International Labour Organization (ILO) nearly 80 years ago [60] found that the share system was the dominant method of payment in fisheries around the world. The use of crew-shares was described along the Adriatic coast of Italy in the late 19th Century [50] and again in the 1950s [51].

More recent literature suggests that crew-share systems have continued to be the dominant method of payment in fisheries and this is particularly the case in small-scale fisheries, as shown in Fig. 1: globally and Australia [35]; Bangladesh [38]; Bering Sea [1]; Brazil [32]; Chile (Salazar [49]); Egypt [19]; Hawaii [39]; Iceland [33]; India [12]; Japan [62]; Lake Victoria [46]; Lebanon [42]; New Zealand [10]; Oman [2]; Senegal [9]; Spain [45]; Thailand [6]; Viet Nam [61]; Ghana, Morocco, Senegal, Tunisia, Ecuador, Barbados, Mexico and Sweden [29].

Apart from the evidence provided in the global body of literature, various forms of the crew-share system are also reported to be the primary payment method in the grey literature – such as online job fora[2]– as well as experience in the field. The predominance of one or other form of crew-share system in fisheries contrasts with other industries where a variety of fixed wage systems, such as piece-work, bonuses and revenue or profit sharing systems [33] are some of the many remuneration systems used. The crew-share system has also been used as a top-up of pre-determined wages. However, a trend towards the payment of fixed wages has been observed in cases where non-local fishers are employed in fisheries [39]. This trend has been specifically noted in Europe in the past ten years [15,52,18]. The increasing use of non-local labour has resulted in a shift away from crew-share based remuneration to wage or flat-rate remuneration. A large proportion (> 80%) of non-European labour working in European fisheries, was found to be engaged through contracts rather than crew-share systems [18]. The shift observed in the EU has been driven by the dual factors of a declining availability of local labour and a desire to reduce labour costs [15]. A particularly worrying trend has emerged in some countries whereby fisheries employing non-local labour may be conducted outside of national waters in order to avoid paying legislated minimum wages [40].

[2] www.jobmonkey.com/alaska/getting_paid/.