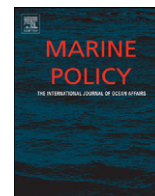




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## Who gets what? Developing a more equitable framework for EU fishing agreements

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## ABSTRACT

The reform of the European Union's Common Fisheries Policy (CFP) is focusing attention on EU distant water fishing activities, including the agreements signed with developing coastal states. Here, the EU's fishing agreement with Madagascar, among the poorest countries to hold such an agreement, is examined. Incomes received by Madagascar since the first agreement with the EU in 1986 are documented, in both nominal and real terms, and discussed in the context of other conditions tied to the agreement, in particular support provided by the EU to improve Madagascar's fisheries management capacity. Results indicate that since 1986, EU quotas increased by 30% while the fees paid by the EU decreased by 20%. Yet, Madagascar's treasury income from these agreements decreased by 90%. This shows that the EU agreements with Madagascar are in direct contradiction to the goals set forth by the CFP, which states that benefits of agreements should be directed towards developing countries, and not towards private EU entities. This raises profound ethical questions that the CFP reform must address. A new framework is proposed, prioritizing fisheries sustainability and equitable benefit sharing, in which reasonable quotas are set, fees are indexed to the landed value of catches, and all costs of agreements are borne directly by the benefiting industries. EU development assistance should be decoupled from these agreements, and should focus on enhancing the host countries' monitoring and enforcement capacities. This new framework would increase the benefits to Madagascar while reducing costs to EU taxpayers.

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### 1. Introduction

Before the acceptance and near-universal ratification of UNCLOS, the United Nations Convention on the Law of the Sea [1], maritime countries with distant water fleets (DWF) were free to fish outside the territorial boundaries of any country (generally 12 nautical miles offshore). UNCLOS restricted this free access by authorizing the formal declaration of Exclusive Economic Zones (EEZ), whose existence provided coastal states with rights to and control over their marine resources. Article 62 of UNCLOS further states that if a country cannot "harvest the entire allowable

catch" within its EEZ, it shall<sup>1</sup> permit other countries regulated access to such 'surplus' marine resources [1], hence obliging both distant water fleets (DWF) and potential host countries to sign fishing agreements. This situation applies to many developing countries, as they either do not possess the resources and infrastructure to exploit pelagic and offshore species independently, or do not have the data or expertise to sufficiently contest foreign claims of excess resource availability. Thus, within the UNCLOS framework, many coastal developing countries are effectively obliged to establish fishing agreements to allow DWFs to exploit the resources within their EEZs.

Partly as a result of declining stocks in domestic waters and increasing global demand for seafood [2–4], the European Union (EU) has developed one of the largest DWFs in the world and has established foreign fishing agreements with twenty developing

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<sup>1</sup> 'Shall' has a legal meaning of 'obligation'.

African–Caribbean–Pacific (ACP) countries<sup>2</sup>. Twelve of these agreements are specifically designed for the exploitation of tuna, while the others are “mixed” and also encompass shrimp and demersal fish species. These EU agreements<sup>3</sup> typically consist of a package comprising access fees and financial aid for development. Other countries operating DWFs, such as Russia, China, Japan and various other Asian countries also pay access fees, however, their amounts and negotiated details are generally kept confidential and are largely unavailable. Despite this uncertainty about non-EU agreement benefits to host countries, EU fishing agreements may be more beneficial to the fisheries sector of host countries, given that they are coupled with fisheries development assistance. However, other countries’ agreements may also be directly or indirectly linked to other—mostly non-marine-projects [5]<sup>4</sup>. Notwithstanding the financial benefits provided by the EU agreements, there is growing concern over the subsidies paid by the EU for fishing agreements for its DWF. Such subsidies are widely recognized as being fundamentally harmful, contributing directly to overcapacity via reduced fishing costs, and thereby contributing to global overfishing [6–8].

Throughout the history of its fishing agreements with third countries [9–16], and more recently in its green paper on CFP reform [17,18], the EU states that it is its to help improve livelihoods in developing countries in an equitable and sustainable manner. Yet, to date, few studies have enabled the public or policy-makers to ascertain whether this stated duty is being fulfilled. For example, it has been shown that the access fees paid by DWF states are rarely commensurate with the value of landed catches [19]. Also, a number of ex-post evaluations of EU agreements have recently been released, including the EU–Madagascar agreement, (see [www.transparentsea.co](http://www.transparentsea.co)) [20]. However, these assessments, funded by the EU, focus primarily on EU interests and do not present meaningful trends over time.

Using the Republic of Madagascar as a case study, these earlier assessments were complemented in the present study by examining the evolution of the country’s agreements with the EU since 1986, using inflation-adjusted price data to ensure comparability to present-day values. The relative distribution of benefits to the different stakeholders derived from the agreements was analyzed, and the implications of the linked development assistance were considered. Finally, the present findings were used to propose a new approach for negotiating future agreements to ensure more equitable distribution of benefits in line with the EU’s stated goals for fisheries reform.

### 1.1. Madagascar

Madagascar’s tuna fishery is a good example of a large-scale fishery dominated by DWFs operating within the EEZ of a developing country, in this case one of the poorest on Earth.

<sup>2</sup> Other agreements based on an exchange of fishing opportunities also exist with several developed countries, namely Norway, Iceland and Faeroe Islands. All agreements are publically available at: [http://ec.europa.eu/fisheries/cfp/international/agreements/index\\_en.html](http://ec.europa.eu/fisheries/cfp/international/agreements/index_en.html). It is also worth noting that agreements are pending with Tanzania and Kenya, and that the EU is currently exploring options in several Caribbean countries. Each agreement’s protocol follows the same framework, i.e., fishing effort, target species, fees, quotas and other conditions. The latter section usually varies from country to country (e.g., landings of bycatch, additional fees), while the former sections are usually less flexible between countries.

<sup>3</sup> Called ‘Fisheries Partnership Agreements’ since 2002. ‘Agreement’ is used throughout the paper to simplify.

<sup>4</sup> We ignore the likely high potential for corruption associated with confidential and unpublished agreements. The fisheries sector was ranked the 9th most corrupt sector (out of 19) in the Bribe Payer Index Report published in 2011 by Transparency International (see [http://issuu.com/transparencyinternational/docs/bribe\\_payers\\_index\\_2011/25](http://issuu.com/transparencyinternational/docs/bribe_payers_index_2011/25)). This organization recommends full transparency and public disclosure of subsidiaries to avoid corruption.

Madagascar, located in the western Indian Ocean, one of the most important tuna fishing grounds in the world (in both volume and value of catches [21]), presents an interesting and highly relevant example for three reasons: (1) it was the first Indian Ocean country to sign, in 1986, a fishing agreement with the EU [22,23]; (2) it is the poorest country involved in such agreements with the EU [24]; and (3) it retains strong economic links with its former colonial ruler, France, one of the countries which benefits most from these fishing agreements, as evidenced by its large DWF present in most agreements.

Furthermore, Madagascar’s domestic fisheries legislation is currently under review, and the country’s agreement with the EU (the 8th such agreement) was recently renewed for a further 2-year period scheduled to start in January 2013 [25]. This latest agreement was reached in a negotiation closed to independent observers, and preceded the outcome of the ongoing CFP reform process<sup>5</sup>.

Today, Madagascar plays an important role in the Indian Ocean tuna trade, both through the exploitation of stocks by DWFs in its waters and through its national processing hub at the Antsiranana port and cannery (Fig. 1). This trade has recently been impacted negatively by the increase and spread of Somali piracy, as EU vessel owners, known to carry weapons aboard their vessels to repel pirate attacks (a practice that is promoted by the EU [26]), can no longer legally dock in Malagasy ports, where weapons are prohibited<sup>6</sup> [27]. Beyond Madagascar, Somali piracy now affects the whole western Indian Ocean region [28,29], notably through southerly displacement of fishing fleets resulting in increased port activity in southern countries. Whilst active in these more southerly waters, an increasing number of longline vessels are also switching target species from tuna to billfish and sharks<sup>7</sup>, a trend that is of considerable conservation concern [30].

## 2. Methods

Other than the official agreement text, publically available documents relating to fishing agreements and the underlying negotiations between contracting parties are generally scarce. Consequently, a broad range of sources was considered in the present analysis in order to understand how the negotiations and agreements between the EU and Madagascar took place. In particular, the focus is on how these agreements can be perceived by the different parties, and what the benefits and disadvantages are for each stakeholder.

The principal source of information regarding the “EU side” of agreements was the European law database, available at <http://eur-lex.europa.eu>, which contains all agreement texts (agreements, Council regulations, and protocols). This source was used to extract data relating to fees paid by EU members (i.e., taxpayer subsidies) and by EU industries, and to identify related trade benefits received by Madagascar (e.g., duty-free status for exports).

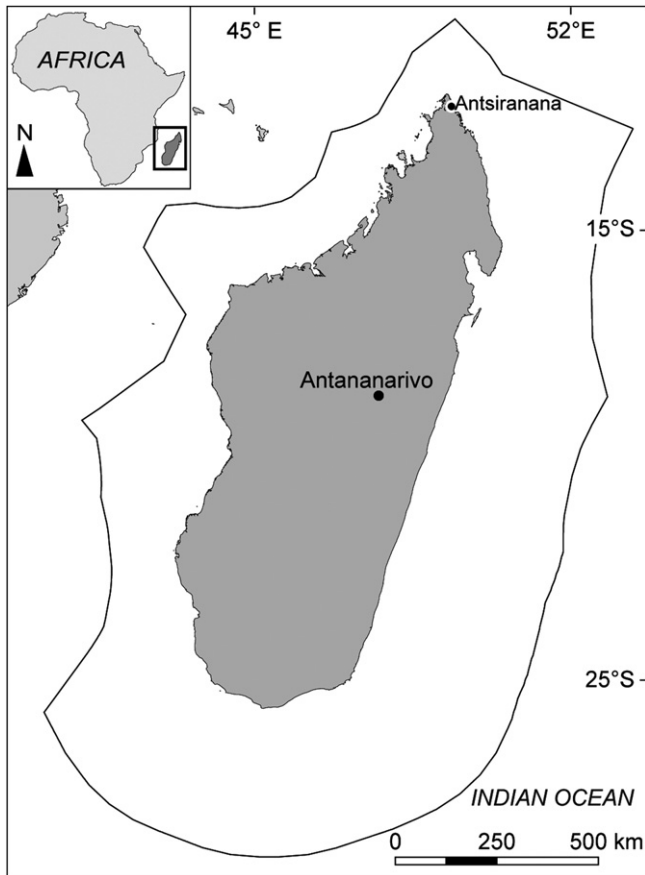
Most of the other sources of information used to understand Madagascar’s position were based on gray literature. Reports issued by government bodies, research theses, conference papers, media articles, and many personal communications from government representatives<sup>8</sup> were used to assess financial benefits and

<sup>5</sup> While this article was being revised the authors learned that the EU has agreed renewal terms in a closed negotiation in which independent observers were unable to participate. The new agreement covers the period 2013–2014, and allows for an increased quota of 15,000 t per year, with a proportionate increase in financial contribution to 2.1 million Euro per year.

<sup>6</sup> However, it is doubtful if this prohibition is enforced at Antsiranana (F. Le Manach, personal observation).

<sup>7</sup> G. Hosch, personal observation.

<sup>8</sup> Most sources of personal communication requested anonymity out of concerns for personal or professional ramifications. This has also been shown to be the case in other areas of fisheries data; see e.g., Zeller D, Rossing P, Harper S,



**Fig. 1.** Map of Madagascar and its exclusive economic zone (solid line). The major tuna port of Antsiranana is also shown.

disadvantages for the government, industries and population of Madagascar. This gray literature was also used to help understand how the EU agreements are perceived by both sides.

Results were compiled to identify key stakeholders, and understand their respective roles and potential benefits in the agreements. In order to compare the EU financial contributions throughout the time-period, and how its present-day value has evolved, two adjustments of the nominal values were required. For both the EU and Madagascar, Consumer Price Index (CPI) time-series were extracted from the World Bank database (<http://databank.worldbank.org>; Table 1). CPI is year- and country-specific, and accounts for inflation, as it represents how the price of a basket of goods and services has evolved over time. From this CPI, a deflator factor was calculated and used to convert the nominal values listed in each agreement to real 2010 values:

$$\text{real value}_i = \frac{\text{nominal value}_i}{\text{deflator}_i}$$

where  $i$  represents year, and

$$\text{deflator}_i = \frac{\text{CPI}_i}{\text{CPI}_{2010}}$$

However, in order to capture the true value of the Euro in Madagascar, a second adjustment was carried out using the Purchasing Power Parity exchange rate (PPP; <http://databank.worldbank.org>; Table 1). This PPP-adjusted real value of a Euro is given by:

(footnote continued)

Persson L, Booth S, Pauly D. The Baltic Sea: estimates of total fisheries removals 1950–2007. Fisheries Research 2011; 108: 356–363.

**Table 1**  
Summary of the parameters used to convert nominal values to real values.

| Year | EU    |          | Madagascar |          |       |
|------|-------|----------|------------|----------|-------|
|      | CPI   | Deflator | CPI        | Deflator | PPP   |
| 1986 | 57.5  | 0.51     | 7.4        | 0.05     | 0.67  |
| 1987 | 59.6  | 0.53     | 8.5        | 0.05     | 0.69  |
| 1988 | 63    | 0.56     | 10.7       | 0.07     | 0.65  |
| 1989 | 64.7  | 0.58     | 11.7       | 0.07     | 0.61  |
| 1990 | 66.1  | 0.59     | 13.1       | 0.08     | 0.49  |
| 1991 | 68    | 0.6      | 14.2       | 0.09     | 0.45  |
| 1992 | 68.8  | 0.61     | 16.3       | 0.1      | 0.5   |
| 1993 | 70.4  | 0.63     | 17.9       | 0.11     | 0.38  |
| 1994 | 72.4  | 0.64     | 24.9       | 0.16     | 0.33  |
| 1995 | 75.1  | 0.67     | 37         | 0.23     | 0.32  |
| 1996 | 77.9  | 0.69     | 44.4       | 0.28     | 0.36  |
| 1997 | 80.7  | 0.72     | 46.4       | 0.29     | 0.32  |
| 1998 | 84.3  | 0.75     | 49.2       | 0.31     | 0.36  |
| 1999 | 86.1  | 0.77     | 54.1       | 0.34     | 0.38  |
| 2000 | 88.4  | 0.79     | 60.5       | 0.38     | 0.33  |
| 2001 | 91.2  | 0.81     | 64.7       | 0.41     | 0.34  |
| 2002 | 93.4  | 0.83     | 75.1       | 0.47     | 0.41  |
| 2003 | 95.4  | 0.85     | 74.1       | 0.47     | 0.34  |
| 2004 | 97.6  | 0.87     | 84.4       | 0.53     | 0.35  |
| 2005 | 100   | 0.89     | 100        | 0.63     | 0.32  |
| 2006 | 102.5 | 0.91     | 110.8      | 0.7      | 0.32  |
| 2007 | 105   | 0.93     | 122.2      | 0.77     | 0.34  |
| 2008 | 108.6 | 0.97     | 133.5      | 0.84     | 0.37  |
| 2009 | 110.3 | 0.98     | 145.4      | 0.92     | 0.41  |
| 2010 | 112.4 | 1.00     | 158.9      | 1.00     | 0.3.0 |

Through these adjustments, it was possible to conduct the analysis in PPP-adjusted real value, which is necessary for carrying out economically meaningful comparisons of costs and benefits that accrue over time.

Finally, current access fees were compared to the actual landed-value of the tuna, to put the access-derived revenue received by Madagascar into perspective, and see how this compares with estimates of rent for similar fisheries in other parts of the world. A literature review of economic studies was therefore undertaken to gather data on rent for several tuna fisheries, and is presented in the discussion. Ex-vessel prices of tuna landed in Madagascar were obtained from Malagasy fisheries institutions.

### 3. Results

#### 3.1. European Union fishing agreements

Total treasury income for the Republic of Madagascar from European fishing corresponds to the “financial compensation” stipulated within each agreement, and comprises three elements: (1) access fees for the exploitation of fisheries resources within the EEZ; (2) financial support for management purposes (e.g., monitoring, gear improvement, scientific research); and (3) fishing fees paid on a quota-basis<sup>9</sup>. Both (1) and (2) are covered directly by the EU (i.e., they are taxpayer subsidies), whereas (3) consists of fees paid by vessel owners. Table 2 summarizes these different elements of compensation, and shows their evolution since the first fishing agreement in 1986, in nominal Euro. Table 3 summarizes these different elements of compensation in real value (PPP-adjusted, year 2010 Euro).

Over the whole time-period (1986–2012), Madagascar’s annual total treasury income (payment elements 1, 2 and 3) from agreements increased in nominal terms only slightly from 1.1 million Euro

<sup>9</sup> The term ‘quota’ is used throughout this study, however, its actual meaning in the context of these agreements is as catch limit guides that can be exceeded, providing additional payments are made.

**Table 2**

Summary of annual fees (nominal value) paid by the European Union (i.e., subsidies) and vessel owners during the different agreement periods. Note that all tonnage fees are based on tuna tonnage only and not affiliated bycatch such as sharks or billfish (even if landed and sold).

| Time period | Quota (t year <sup>-1</sup> ) | European Union  |  | Vessel owners<br>payment element 3<br>Fishing fees (Euro t <sup>-1</sup> ) | Total (Euro year <sup>-1</sup> ) |
|-------------|-------------------------------|---|--|--|----------------------------------|
|             |                               | payment element 1<br>EEZ access fees<br>(Euro t <sup>-1</sup> ) | payment element 2<br>Financial support<br>(Euro year <sup>-1</sup> ) |  |                                  |
| 1986–1989   | 10,200                        | 50  | 350,000  | 20   | 1,064,000                        |
| 1989–1992   | 12,000                        | 50  | 370,000  | 20   | 1,210,000                        |
| 1992–1995   | 9,000                         | 50  | 275,000  | 20   | 905,000                          |
| 1995–1998   | 9,000                         | 50  | 275,000  | 20   | 905,000                          |
| 1998–2001   | 9,500                         | 32  | 456,000  | 20   | 950,000                          |
| 2001–2004   | 11,000                        | 28  | 517,000  | 25   | 1,100,000                        |
| 2004–2006   | 11,000                        | 30  | 505,000  | 25   | 1,110,000                        |
| 2007–2012   | 13,300                        | 65  | 332,000  | 35 <sup>a</sup>  | 1,662,000                        |

<sup>a</sup> Does not account for the potential discount of 10 EUR for half of the catch, if sold to the Malagasy cannery.

**Table 3**

Evolution of the fees, as perceived by both parties from 1986 to 2010. All values are in real 2010 Euro.

| Year | EU=access fees, CPI-adjusted                                    |  |  |                         | Madagascar=treasury<br>income, PPP-adjusted<br>(million EUR) |
|------|---|--|--|-------------------------|--|
|      | payment element 1<br>EEZ access fees<br>(Euro t <sup>-1</sup> ) | payment element 2<br>Financial support<br>(Euro year <sup>-1</sup> ) | payment element 3<br>Fishing fees<br>(Euro t <sup>-1</sup> ) | Total<br>(million Euro) |  |
| 1986 | 98  | 684,354  | 39   | 2.1                     | 34.1   |
| 1987 | 94  | 660,279  | 38   | 2                       | 29.1   |
| 1988 | 89  | 624,439  | 36   | 1.9                     | 24.3   |
| 1989 | 87  | 607,854  | 35   | 1.8                     | 23.5   |
| 1989 | 87  | 642,588  | 35   | 2.1                     | 33.7   |
| 1990 | 85  | 629,337  | 34   | 2.1                     | 32.3   |
| 1991 | 83  | 611,805  | 33   | 2                       | 27.2   |
| 1992 | 82  | 604,820  | 33   | 2                       | 31.5   |
| 1992 | 82  | 449,528  | 33   | 1.5                     | 26.4   |
| 1993 | 80  | 439,160  | 32   | 1.5                     | 25.4   |
| 1994 | 78  | 427,188  | 31   | 1.4                     | 15.9   |
| 1995 | 75  | 411,506  | 30   | 1.4                     | 12   |
| 1995 | 75  | 411,506  | 30   | 1.4                     | 10.8   |
| 1996 | 72  | 396,935  | 29   | 1.3                     | 8.5  |
| 1997 | 70  | 383,122  | 28   | 1.3                     | 9.4  |
| 1998 | 67  | 366,633  | 27   | 1.2                     | 8.6  |
| 1998 | 43  | 607,944  | 27   | 1.3                     | 7.5  |
| 1999 | 42  | 595,188  | 26   | 1.2                     | 8.1  |
| 2000 | 41  | 579,926  | 25   | 1.2                     | 7.2  |
| 2001 | 39  | 561,959  | 25   | 1.2                     | 7.2  |
| 2001 | 35  | 637,133  | 31   | 1.4                     | 8.6  |
| 2002 | 34  | 622,243  | 30   | 1.3                     | 6.9  |
| 2003 | 33  | 608,999  | 29   | 1.3                     | 6.3  |
| 2004 | 32  | 595,670  | 29   | 1.3                     | 5  |
| 2004 | 35  | 581,844  | 29   | 1.3                     | 6.9  |
| 2005 | 34  | 567,777  | 28   | 1.2                     | 5.4  |
| 2006 | 33  | 553,777  | 27   | 1.2                     | 4.9  |
| 2007 | 70  | 355,358  | 37   | 1.8                     | 5.4  |
| 2008 | 67  | 343,673  | 36   | 1.7                     | 4.2  |
| 2009 | 66  | 338,429  | 36   | 1.7                     | 4.2  |
| 2010 | 65  | 332,000  | 35   | 1.7                     | 3.8  |

to 1.7 million Euro (nominal value, Table 2)<sup>10</sup>. In reality, however, treasury income decreased from the equivalent of 34.1 million Euro to 3.8 million Euro when adjusted for inflation and Malagasy currency devaluation (i.e., PPP-adjusted real value, Table 3)<sup>11</sup>. When considered from the EU perspective, EU taxpayer contributions to EEZ access fees

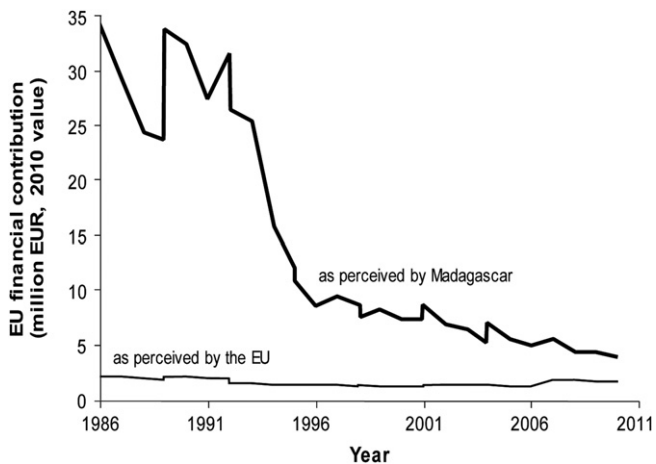
(i.e., subsidies) decreased in nominal value from 50 Euro t<sup>-1</sup> to 28 Euro t<sup>-1</sup> between 1986 and 2004, but then increased to 65 Euro t<sup>-1</sup> by 2007, while vessel owners' contribution increased from 20 Euro t<sup>-1</sup> to 35 Euro t<sup>-1</sup> between 1986 and 2012, for total annual quotas ranging from 9,000 t to 13,300 t (Table 2). In terms of real value adjusted for European inflation (i.e., 2010 Euro equivalent), the EU taxpayer contribution actually decreased from 98 Euro t<sup>-1</sup> to

<sup>10</sup> During the first agreement period (1986–1989), a separate agreement for deep-water crustaceans was also signed, but it was not included in this study which only focuses on tuna agreements.

<sup>11</sup> One can argue that it is not the responsibility of the EU to take into account devaluation of local currencies (which was done here by using Purchasing Power Parity exchange rates). However, it is worth noting that if this PPP adjustment is

(footnote continued)

ignored, then Malagasy treasury income would have decreased even more drastically, from 23.0 million Euro in 1986 to 1.7 million Euro in 2010.



**Fig. 2.** Real value (CPI-adjusted; thin line) of access fees paid by the EU to Madagascar, as part of the EU agreements for tuna fishing within Madagascar's EEZ, as opposed to treasury incomes perceived by Madagascar, CPI- and PPP-adjusted (real 2010 value; thick line).

65 Euro  $t^{-1}$ , and vessel owners' contribution decreased from 39 Euro  $t^{-1}$  to 35 Euro  $t^{-1}$  between 1986 and 2010. Therefore, the overall EU contribution (payment elements 1, 2 and 3) decreased in real terms from 2.1 million Euro to 1.7 million Euro between 1986 and 2010 (Fig. 2; Table 3).

Based on data from the 2007–2012 agreement, Madagascar should receive a total financial compensation of around 1.7 million Euro each year (i.e., 125 Euro  $t^{-1}$ ), of which 75% is based on EU taxpayer subsidies (payment elements 1 and 2). This assessment is corroborated by first-hand data from Madagascar's treasury, as Madagascar received on average 1.8 million Euro per year from 2008 to 2010.

This agreement also states that, for up to 50% of total catches, vessel owners can benefit from a 10 Euro  $t^{-1}$  discount if they sell catches taken within Madagascar's EEZ to a Malagasy collection company based in Madagascar [31,32]. Therefore, vessel owners attracted by this financial incentive would only pay 25 Euro  $t^{-1}$  for half of their catch, equivalent to the same maximum tonnage fee they paid during the previous 1986–2006 agreements (Table 2). Such incentives, if implemented, correspond to a subsidy paid by the Malagasy government (through forgone tonnage fees) to its processing industry<sup>12</sup> and to EU vessel owners, as it may contribute to larger volumes of tuna being landed and processed in Madagascar before being exported. However, many high-ranking Malagasy officials confirmed that this tonnage fee discount measure is rarely implemented<sup>13</sup>, therefore, it was not considered further in this study.

### 3.2. Tuna trade from Madagascar

Over the past decade, around 40,000 t of albacore (*Thunnus alalunga*), skipjack (*Katsuwonus pelamis*), and non-sashimi grade yellowfin (*T. albacares*) and bigeye tuna (*T. obesus*) have been processed in Antsiranana's tuna cannery, *Pêche et Froid Océan Indien* (PFOI), and sold principally to Europe [33]<sup>14</sup>. The cannery provides up to 2000 jobs and generates approximately 10 million

USD annually (about 7 million Euro) of net revenue [34–36]. However, PFOI has always been managed by foreign stakeholders (primarily European) and is presently owned by French-based *Thunnus Overseas Group* [37,38]. The cannery is therefore not domestically controlled, and as such revenues and economic benefits brought to Madagascar are likely to be limited to local employment, and, at best, potential income and business tax levied on the company<sup>15</sup>. Most of the output of Madagascar's PFOI cannery is exported to Europe, benefiting from EU duty-free status, thus entering European markets without any import duties being collected [39–42]. This effectively represents a subsidy benefiting EU fishing and processing industry interests, at the expense of EU taxpayers. The Malagasy people is also harmed, given that the factory is foreign-owned, and its revenues are not likely to remain in Madagascar [43,44]. This lack of actual domestic economic contribution is likely the norm for EU-owned processing establishments located in developing countries. Even in the Seychelles (recognized as the western Indian Ocean country benefiting the most from tuna fisheries), an undisclosed and highly sensitive study stated that the Seychelles' IOT cannery contributed essentially nothing to the Seychelles' economy and treasury, due to various tax breaks and transfer pricing activities<sup>16</sup>.

## 4. Discussion

### 4.1. Why foreign fishing agreements?

One strategy for developing countries to increase revenues from their pelagic fisheries is to develop domestic capacity to exploit domestic tuna resources themselves, transitioning away from the present resource rental model in which the largest benefits are received by foreign operators via fishing agreements. However, with maintenance costs for a tuna vessel typically ranging from 200,000 Euro to several million Euro per year [45], the investment costs of building, operating and maintaining an industrial tuna fleet are so high that such a development would be unlikely to succeed, especially in countries such as Madagascar that are ranked amongst the poorest in the world [24]. Moreover, Madagascar currently does not possess the technical capacity to operate or manage such a fleet, and years of development, education, training and investment would be required before the country could hope to reach full exploitation capacity to effectively compete with the industrial efficiency of European DWFs. Few examples of sustainable and profitable domestic pelagic fisheries exist in developing countries, the most well-known being the Namibian fisheries [46]. Only two coastal states have managed to create domestic industrial tuna fleets in the western Indian Ocean region to date. These are Seychelles and South Africa, both economically relatively developed countries. In both cases, building domestic fleet capacity required substantial effort, time, and a favorable policy environment<sup>17</sup>. Under current circumstances, it is extremely unlikely that poorer developing countries such as Madagascar would be able to develop their fishing industry for effective targeting of offshore tuna resources. Thus most of the large pelagic species will continue to be exploited by foreign interests.

<sup>12</sup> However, the Malagasy tuna cannery is foreign-owned, which is likely to limit Malagasy benefits to employment alone. This, effectively results in the Malagasy government providing a subsidy to a foreign-owned company.

<sup>13</sup> F. Le Manach, personal observation.

<sup>14</sup> The tuna so processed were either landed by EU vessels or shipped from the Seychelles via container. Sashimi-grade yellowfin tuna caught by longliners is frozen onboard and exported directly to Japan for the fresh sashimi market.

<sup>15</sup> Doubts have been raised whether any taxes are levied against this company at all (F. Le Manach, personal observation).

<sup>16</sup> Anonymous, personal communication. Source has first-hand and extensive knowledge about this study and the associated report, and wishes to remain anonymous out of personal and professional concerns.

<sup>17</sup> Jan Robinson, personal communication. Seychelles Fishing Authority; David Japp, personal communication. Capricorn Fisheries Monitoring.

Confirming and ensuring equitability of fishing agreements presents a significant challenge to host country fisheries representatives, particularly when the terms of such agreements may be obfuscated by composite payments, including various subsidies and linked development support. Therefore, given the bundled nature of payments in these agreements, host countries may not perceive the 'subsidized difference' between the access fees paid by the EU and those paid by EU vessel owners.

Madagascar's negotiating position is further weakened by the country's poor capacity for fisheries monitoring and enforcement. This weakness may be taken advantage of during negotiations, and represents a further handicap to fair and equitable trade and exchange. DWFs are known to make strong use of Article 62 of UNCLOS to defend their position, while developing countries may have little, if any information or empirical data from which to justify their position to counter Article 62 arguments [47,48]. Indeed, few developing countries have the means to carry out stock assessments to estimate the size of the accessible resource or the surplus that, under UNCLOS, might be granted to third countries. Although the precautionary principle would suggest that, in the absence of good data or under conditions of incomplete knowledge, countries should not be coerced into permitting access, the reality looks different. Such problems of data deficiency, and differences in perceptions of the real benefits derived from access fees, may account in large part for the inequitable nature of EU agreements.

#### 4.2. Fees: Madagascar vs. EU

Notwithstanding current Malagasy treasury revenues from European fishing of around 1.7 million Euro per year in exchange for 13,300 t of tuna (i.e., 125 Euro  $t^{-1}$ ), the current agreement is much less favorable for Madagascar than it has been in previous years. Indeed, the total annual financial contribution by the EU, in terms of real value, dropped by almost 90% between 1986 and 2010 (Fig. 2). This decline is explained by a much lower inflation rate in Europe over the last 2 decades (Table 1), and also by the substantial currency devaluation seen in Madagascar. Furthermore, while the EU claims that the actual fishing fees (i.e., not including direct financial support for management purposes, which is essentially foreign aid) increased from 70 Euro  $t^{-1}$  in 1986 to 100 Euro  $t^{-1}$  in 2010, in real terms (adjusted for inflation) these fishing fees actually declined, from 137 Euro  $t^{-1}$  to 100 Euro  $t^{-1}$  by 2010. In essence, the EU is receiving 30% more tuna than a quarter century ago (quota increase from 10,000 t to 13,300 t) for a total fishing fee that has declined by 20%. Conversely, Madagascar is now selling 30% more of its tuna resource at a price that has decreased by a factor of nine (CPI- and PPP-adjusted treasury income). This differential perception of the same fee by both parties raises serious concerns of equity and ethical conduct of international trade.

#### 4.3. Benefits to EU operators

The declining real fees being paid for Madagascar's resources contrast sharply with the European ex-vessel price (the price received by fishers at first sale) for Indian Ocean tuna, which has fluctuated between 300 Euro  $t^{-1}$  and 1400 Euro  $t^{-1}$  during the period 1980–1998 [49], and in early 2012 has reached 1500 Euro  $t^{-1}$  [50]. This ex-vessel price is similar to the price Madagascar's cannery (PFOI) pays European vessels for tuna for processing. PFOI currently purchases skipjack tuna at between 1100 Euro  $t^{-1}$  and 1350 Euro  $t^{-1}$ , and yellowfin tuna for between 950 Euro  $t^{-1}$  and 1850 Euro  $t^{-1}$ <sup>18</sup>. Revenue margins for EU

vessel owners under the 2007–2012 agreement are therefore substantial, with the actual fee paid by vessel owners for accessing Madagascar's resources representing only about 2.7% of the landed value (35 Euro  $t^{-1}$ ; Tables 2 and 3, assuming an average ex-vessel price of 1313 Euro  $t^{-1}$ ). Clearly, EU vessel owners are the dominant beneficiaries of the current arrangements, with the host country receiving a comparatively meagre return.

### 5. A more equitable framework for EU agreements

This analysis indicates that the EU's current agreement with Madagascar is in direct conflict with, and complete contradiction to the goals set forth by the EU CFP [17], which states that benefits of agreements should be directed mainly towards developing countries, and not towards private EU entities. These findings raise profound ethical questions that any reform of the Common Fisheries Policy should address. Given the EU's stated commitment to help improve livelihoods in developing countries in an equitable and sustainable manner, a new framework is proposed, in line with current global thinking on fisheries sustainability and equitable benefit sharing [51].

#### 5.1. Fees

Given that treasury income received by host countries has decreased over time, while both quotas and ex-vessel prices have increased, a re-balancing must be sought for fishing agreements and fees. In addition, EU subsidies must be reviewed in order to reduce the EU fleet's current overcapacity. These recommendations are included in the new framework as follows, and summarized in Fig. 3.

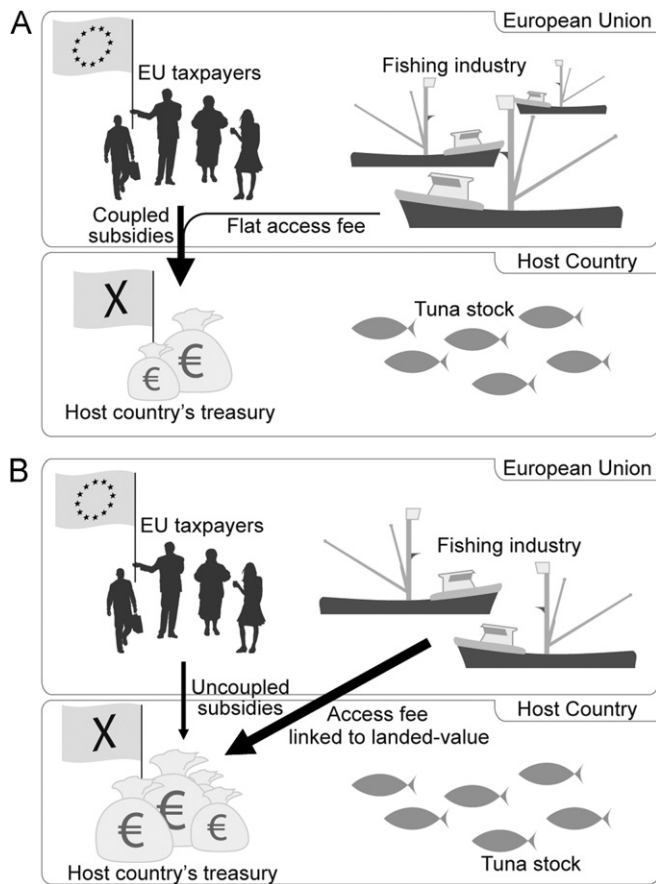
In an ideal world, fees should be based on the actual economic rent generated by vessel owners (total revenue minus actual costs), thereby reflecting both the landed-value as well as the costs associated with the fisheries. Globally, costs of fishing vary considerably from one tuna fishery to the other. For example, the total costs of fishing the highly overfished bluefin tuna (*Thunnus thynnus*) in the Mediterranean Sea are estimated to represent over 90% of gross revenue [52]. Although no specific cost data are available for EU purse-seiners in the Indian Ocean, total average costs for purse-seiners worldwide are around 37% of gross revenue [45], which provides a fair approximation of the situation in the Indian Ocean.

However, in the real world, negotiations based on economic rent are not practical for two reasons. First, basing access fees on rent (revenue minus costs) requires access to reliable industry financial data, which are generally confidential and virtually impossible to obtain, especially by host countries. Vessel data may also be manipulated by vessel owners, who may not consider transparency to be in their commercial interests. Second, existing fishing costs are heavily distorted by EU subsidies. Therefore, a more realistic, more transparent and rapidly implementable approach would be to index access-fees to annual average ex-vessel prices of tuna (Fig. 3), since such data are more readily available and are less subject to manipulation and falsification.

It has been suggested that access fees for purse-seiners operating in the Pacific Ocean could realistically be as high as 50% of the gross revenue [53]. For Madagascar, this 50% level would mean a treasury income of 8.7 million Euro annually, five times higher than the current sum (assuming a total quota catch of 13,300 t and an ex-vessel price of 1312 Euro  $t^{-1}$ ).

Ex-vessel prices are also likely to be biased by subsidies, since subsidies decrease costs of fishing, thereby potentially lowering ex-vessel prices (everything else being equal [54]) and likely

<sup>18</sup> Data obtained by F. Le Manach from the Tuna Statistical Unit (USTA) and the PFOI cannery in Antsiranana.



**Fig. 3.** Diagram representing the structure of (A) the current, and (B) the proposed framework for EU Fishing Partnership Agreements. Plain arrows represent money flows: subsidies (payment elements 1 and 2 of the total financial contribution), and fishing fees (payment element 3). The new framework shifts the burden from subsidies provided by EU taxpayers to the actual beneficiaries of such agreements, namely EU vessel owners, and ensures fairer and more equitable fees in line with the landed value of resources caught.

increasing fishing pressure. Therefore, in addition to negotiating access fees indexed to the landed-value (ex-vessel prices), the reduction and eventual elimination of all subsidization of access fees is also recommended. Thus, vessel owners should be liable for 100% of actual access fees. EU taxpayers should not be paying to increase revenue for the EU fishing industry, since such subsidies are recognized as a primary driver of overcapacity and overfishing by industrial fleets [55,56]. In order to minimize speculative pricing behavior by EU vessel owners, an annual average ex-vessel price can be determined, based on the previous year's average EU ex-vessel price for each species (or a 2–3 year running average price). This would reduce within and between season speculative behavior and provide annual consistency in fees levied.

It could be argued that such a measure would create a direct incentive to underreport catches. However, these proposed changes to the allocation and determination of access fees would present a straightforward implementable and transparent mechanism to achieve a fairer compensation for host countries that have weak bargaining power.

From the perspective of the host country, such an index-linked fee system would result in fairer and more equitable treasury revenues, given that access fees would more accurately reflect the value of the resource. If coupled with the establishment of reasonable effort limits by host countries, this would bring about synergistic ecological and economic impacts, likely to result in

decreased fishing capacity, and consequently reduced fishing pressure on tuna stocks, contributing to stock growth and eventually generating more income for vessel owners remaining in the reduced fleet [57]. Enforcement of effort limits by the host country would provide a safeguard against the arbitrary increases in catch quotas or runaway license sale motivated by short-term profit<sup>19</sup>.

## 5.2. Development assistance for management and enforcement

The direct payment from the EU in support of fisheries management and enforcement (payment element 2) constitutes a beneficial subsidy [7], and as such should be separated entirely from fishing agreements to resources (Fig. 3). Such management and enforcement support represents institutional development aid and not payment for foreign access to domestic fisheries resources<sup>20</sup>. The current *status quo*, in which institutional development support is bundled with access fees, confounds donor aid with resource rent payment. Discussions on development assistance should not be conducted by the same EU representatives that negotiate fishing agreements. Instead, the EU should provide such aid directly and independently of, and not tied to any negotiations of the EU's commercial access to Madagascar's fisheries resources. Once financially removed from fishing agreement negotiations, the EU could also consider recovering part of this development assistance by levying a direct fee on all EU vessel owners benefiting from Madagascar's fisheries resources.

Such a fundamental change in approach and perspective would address the concerns over equitability, whilst aligning the agreement more coherently with current CFP reform principals, and in so doing signaling a strong move by the EU towards promotion of more sustainable and equitable global fisheries.

## 5.3. Monitoring, control and surveillance system

Madagascar's Monitoring Control and Surveillance (MCS) system is currently critically under-resourced, comprising at the time of writing just 18 inspectors and 22 observers, for an EEZ of over 1 million km<sup>2</sup>. According to the Ministry of Agriculture and Fisheries, only a dozen EU vessels were inspected<sup>21</sup>, and officials are increasingly relying on the good-will of vessel owners to report their catches rather than on the effectiveness of monitoring systems<sup>22</sup>. It is therefore unlikely that present tuna catches are limited to official quotas (10,000–13,300 t per year). A more likely catch for the early 2000s has been estimated as at least 18,000 t · year<sup>-1</sup> [58]. Indeed, EU vessels are known to underreport their EEZ tuna catches throughout the Western Indian Ocean, as highlighted by numerous recent reports and media coverage of this issue [59–61]. The Government of Madagascar drafted a National Plan of Action to Combat, Deter and Eliminate IUU fishing (NPOA-IUU) in 2008, however the final version of the plan has not been published or implemented [62,63].

<sup>19</sup> Madagascar recently increased the annual quota stipulated in the EU agreement from 13,300 t to 15,000 t, with the sole purpose of increasing treasury income. This new agreement is set for the period 2013–2014, however, we suggest that the EU refrains from signing such a quota increase unless adequate scientific evidence shows that such an increase is sustainable in the overall context of tuna exploitation in the western Indian Ocean. The burden of proof should rest on the EU in this regard.

<sup>20</sup> In addition, in its current form a part of this financial aid is used for employment of EU resources (e.g., goods, companies, consultants), rather than unrestricted support, supporting EU domestic services as much as it might help the recipient.

<sup>21</sup> F. Le Manach, personal observation.

<sup>22</sup> Anonymous, personal communication. Ministry of Agriculture and Fisheries representatives who wish to remain anonymous.

Given that EU vessels often remain far offshore (except when offloading catch) and do not undergo physical inspection at Malagasy ports, stationing observers onboard vessels can be logistically challenging for host country officials. However, this difficulty is easily overcome by incorporating into all fishing agreements a requirement for compulsory port calls prior to and upon completion of each fishing campaign within the host nation EEZ, together with observer cost recovery through vessel-based fishing-day fees (independent of and in addition to access fees). Observer salaries need to be sufficiently high to discourage on-board bribery by fishing vessel operators. All associated costs should be covered by vessels themselves, and should be considered part of the cost of fishing. Interestingly, a similar strategy played a key role in South Africa's efforts to address its MCS problems<sup>23</sup>.

Although the case study presented here focuses on Madagascar, the analysis and policy recommendations should also be valid for many other developing countries engaged in EU fishing agreements, since such agreements typically follow a standardized model with only minor changes in the specific clauses making up the agreement. Therefore, the reform framework presented here could be applied to other agreements with African, Caribbean and Pacific countries.

Given that many fleets cross several EEZs during fishing a season, and recognizing the challenges of trans-boundary management, the western Indian Ocean countries should ideally work together and create a 'Forum Fisheries Agency'-type institution, as exists in the Pacific. Continuous and compulsory<sup>24</sup> satellite Vessel Monitoring System data (currently collected by the Institut de Recherche pour le Développement and the Instituto Español de Oceanografía, and synthesized in IOTC reports) should be directly and continuously available to all countries where licenses are held, independently of whether the vessel is within or outside a given EEZ. Surprisingly, the EU has continuously blocked such consideration in previous agreement negotiations, which goes against the fundamental principles of transparency, accountability and sustainable resource use. Here, too, a united front provided by western Indian Ocean countries could drive the necessary change. Ideally, such a system should be expanded to all DWFs operating in these waters.

#### 5.4. Side agreements

It is worth noting that side agreements, made outside the EU's agreement framework, have been negotiated between Madagascar and two French companies (*Compagnie Française du Thon Océanique* and *Sapmer*)<sup>25</sup>. These agreements were signed during closed and confidential negotiations between operators and license distributors (at the Ministry of Fisheries), with no public records of fees paid to individuals or the state. As such, these negotiations and resultant side agreements may not have followed the principles of good fisheries governance or accountability. Worryingly, the EU has noted its disapproval of such 'side agreements'<sup>26</sup>, without having the means to prevent them from happening.

## 6. Conclusions

Madagascar's domestic coastal fisheries are reaching a plateau or may already be declining [64]<sup>27</sup>, a pattern seen across many

developing world coastal states hosting DWFs. Given the threats to fisheries sustainability, and the country's severe poverty and declining *per capita* GDP, the issue of ensuring fair and transparent revenues from foreign fishing agreements is a matter of national importance, affecting both economic and food security. Furthermore, as the EU "encourages open and frank debate" about fishing agreements [17], it is helpful to examine the fisheries relationships between the EU and developing countries, in order to develop recommendations for fairer and more equitable frameworks, as proposed here. Although much remains to be done, it must be acknowledged that this debate is only possible because of the relative transparency of information regarding EU agreements.

This analysis shows that rather than providing Madagascar with a means of obtaining equitable and fair benefits from its fisheries resources, its agreement with the EU currently constitutes little more than a direct economic benefit to EU vessel owners. By subsidizing the European DWF, the EU agreement is likely to also contribute directly to fleet overcapacity, threatening the long-term ecological and economic sustainability of a resource that plays a crucial role in national food security.

This study also highlights a problem never explicitly considered before, through the conversion of access fee payments from nominal values to real values. By considering only nominal values, the EU is creating an effective but largely unethical 'revenue illusion', in which host countries seem to gain more now than from earlier fishing agreements. The reality, however, is just the opposite, since present day 'resource rental' compensation is only a fraction of historic real values.

These findings also show that EU taxpayer subsidies constitute the majority of the total fees paid to the host country. Consequently, EU vessel owners generate revenues at the expense of both the host country and the EU taxpayer (Fig. 3). Moreover the greatest share of profits from the exploitation of Madagascar's tuna is received by the EU fishing industry, in clear contradiction to the stated objective of the EU CFP, which stipulates that benefits of agreements should be directed mainly towards developing countries, and not towards EU vessel owners [4,17]. These highly subsidized agreements should be considered a 'free lunch' for the EU fishing and processing industry.

The new framework proposed here ensures a more equitable distribution of benefits, in particular enhanced contributions to the socio-economic development of host countries. It is recommended that agreements shift the onus of costs for access away from EU taxpayers and on to vessel owners, reducing and eventually eliminating EU subsidies in fishing agreements. The reform should index the annual access fees to the annual average landed value of tuna in Europe and Japan, thereby increasing access fees paid by vessel owners from the current estimated 2.7% of landed value to a level more in line with the 50% suggested by Bertignac et al. (2000) [53]. In addition, development assistance for management and enforcement should be separated from fishing agreements and associated negotiations. Lastly, effort limits and quotas should be based on scientific studies and follow the precautionary principle.

The findings of this study are of relevance to many developing countries holding or negotiating fishing agreements with the EU, and the conclusions and recommendations reached here should be considered in future negotiations regarding fisheries trade and subsidies, including the Common Fisheries Policy (CFP) reform.

Finally, beyond revision of bilateral agreements, a regional solution for fairer and more equitable partnerships with Europe and other DWF countries would see ACP host countries developing single multilateral regional agreements, an approach that has been pioneered in the Pacific region [6,65]. Crucially, a regional approach could help coordinate vessel monitoring and enforcement activities.

<sup>23</sup> D. Japp, personal communication. Capricorn Fisheries Monitoring.

<sup>24</sup> For EU vessels only.

<sup>25</sup> Two purse-seiners and one seiner, respectively.

<sup>26</sup> Although no clear evidence can be shown, corruption was cited as a problem during discussions with several officials.

<sup>27</sup> Note the erratum published in Marine Policy 36(2): 564–564.



This would also give more leverage and negotiating power to the regional developing countries, as has been illustrated by the United States being rejected from the South Pacific Tuna Agreement for refusing to reconsider its access fees [66,67].

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