



Paris, 02 November 2010

## APPENDICES

Our criticisms concerning the French deep-sea fisheries mission and the associated report are outlined below. The list cannot be exhaustive, given that a close reading of the report reveals the presence, on every page, of elements of language, analyses, data, and presentations or selections of facts that we wish to denounce and whose partiality we can demonstrate.

### 1. A FLAWED PROCESS

The elements detailed below explain why, today, we can assert that the process of the deep-sea fisheries mission was biased and dishonest. The final report itself is the unobtrusive demonstration of our assertions (see below). The presidency of the mission categorically **refused to follow** or even discuss **any working method** that would have prevented the **lack of integrity and transparency** that characterized the mission. In light of what followed, we now realize that the refusal of a methodology was a strategy enabling the manipulation of the process. It allowed for the various abuses that occurred throughout the mission.

- **The final report fails to even mention the resignation of the NGOs from the mission and their criticisms against the presidency** (despite the president's guarantee in session that our claims and criticisms would be reproduced). What is the legitimacy of the Grenelle consultation process between five stakeholder groups when the serious, long-considered accusations of one of the groups are flagrantly ignored?
- **The final report fails to integrate the NGOs' contributions**, despite NGOs having produced a very complete and time-consuming compilation of the major scientific works published in peer-reviewed journals concerning the various subjects that the mission was meant to address. When certain texts were used, they were distorted so as to change their meaning or impact (examples below).
- **The report fails to include the NGOs' contributions, even as appendices.**
- **The results obtained through the complementary questionnaires** sent mainly to researchers **were not integrated**, despite presenting the great advantage of having been submitted in writing, making them unambiguous, precise and rich in figures (however, many of these responses were contradicting the mission's bias).
- **Participants to hearings were chosen in near total opacity**: with individuals contacted without the consultation or consent of NGOs and often "discovered" as a *fait accompli*, at the last minute in session by NGOs. The system for selecting, meeting and interviewing experts was never debated in a plenary session except for the names proposed by NGOs. Those were either ignored or widely debated within the group.

- This created a **strong bias in the choice of speakers, in favor of the defenders of deep-sea fishing**, be they of a scientific, administrative, political or professional background. Only 3 of the 24 people heard were proposed by the NGOs.
- **Data that contradicted the mission's bias were systematically obstructed or discounted** (impact on habitats, disastrous economic situation of fishing fleets, collateral victims of deep-sea trawling such as sharks, etc.)
- **Comments from scientific reviewers were not taken into account**, except for the comments that suited the mission's presidency according to criteria that were subjective, unexplained and inexplicable. In particular, reviewers criticized the absence of bibliographical sources, which allowed extravagant assertions to be made. Irish scientist and member of the mission, Anthony Grehan, whose suggestions were almost systematically ignored, repeatedly emphasized this basic failing, which made the final work unusable and indefensible, because of its unjustifiable and unreferenced content.
- **The presidency unilaterally chose to accord a status of "super reviewer" to Pascal Lorange**, thus authorizing him to selectively choose which comments from other reviewers would be taken into account in the final report or not, without due process and without NGOs being informed. This occurred despite the fact that Pascal Lorange had already been heard by the mission and that NGOs had contested his contribution: for example, he asserted (falsely) that trawls could now precisely avoid corals, attempted to pass off the number of taxons discarded by trawls (around fifteen) as the number of species (actually around sixty) etc.

NGOs "discovered" Mr Lorange's presence at the meeting of 21 October 2009 – the meeting immediately before work was resumed (once the different groups had accepted the composition of the mission's presidency).

NGOs were clearly the only ones to be surprised by the hearing of Mr. Lorange (as was often the case later on) and expressed to the presidency their astonishment at the measures taken by the working group without consulting or even informing them. NGOs understood this as a deliberate move to "settle" matters scientifically from the very beginning of the mission's meetings, using the intervention of a seemingly completely objective researcher (which scientists are, by definition, expected to be) and whose status was thus "untouchable". NGOs were profoundly puzzled to see such strong bias on the part of a scientific representative of the IFREMER. They nevertheless made the connection with Mr Lorange's recent professional career (he had just become director of the European DEEPFISHMAN research project, which takes as its departure point the principle that deep-sea fishing will continue and aims to determine conditions for its sustainability) and the point of view that his position obliged him to defend.

The NGOs believe that since the mission aimed to determine whether or not deep-sea fishing could be sustainable from an ecosystem approach and a socio-economic perspective, the attempt to impose the views of a biased researcher as a reflection of those of the entire scientific community was dishonest.

### **Partiality of science.**

Overall, **NGOs were not surprised by the unwillingness of fishermen's representatives to recognize the damage caused by deep-sea fishing** from an ecosystem point of view (to target species, non-target species and habitats) since their objective was to defend their economic interests. Notwithstanding, NGOs have repeatedly condemned the methods they used to bias the process, which they have obviously successfully done. **However NGOs were outraged by the role that "science" played throughout the mission.**

In the context of such dramatically diverse and conflicting interests, **science had a specific and important role to play: to ensure the rigor and impartiality of the mission.** Yet the NGOs' main criticism precisely concerns the *lack of objectivity* of the process and particularly the **suspect role**

**played by the mission's rapporteur, Alain Biseau. Mr Biseau's bias in favor of the fishing industry became less and less discreet as the debates went on, to the point of becoming blatant and even insulting**, both towards NGOs and towards the Grenelle consultation process itself (see letter and press release dated 9 July 2010). **It thus became clear that the rapporteur was not chosen according to scientific criteria, but according to political ones.**

## **2. NON-EXHAUSTIVE ANALYSIS OF THE FINAL REPORT**

The main criticism concerns the multiple inconsistencies between the intentions and principles set out in the foreword, and the report's conclusions. It is as if the texts were entirely unrelated.

### **Inconsistency**

The mission refused to analyze deep-sea fisheries from an ecosystem perspective, despite this now being mandatory in fisheries management and despite the principle being mentioned in the foreword of the report (pages 16-17). Thus, sharks, some of which are critically endangered, were carefully left out in the debate. When certain elements were finally included following review by external researchers, their integration had no influence on the development of the report's logic or on its conclusions.

### **Obstruction, selection and distortion of data**

- The first version of the report had silenced the environmental impacts of deep-sea fishing – a feat (“tour de force”) corrected only by the review that the NGO group imposed.
- NGO contributions, which resulted from an immense work effort that the mission failed to produce, went out of the window, along with the following elements:

### **A) ECONOMIC DATA**

#### **➤ THE ECONOMIC ASSESSMENT**

**The economic assessment carried out by the NGOs strongly contradicted the “official” version drawn up by fishing professionals and ratified by the presidency** (see NGO press release of 9 July 2010). The NGO's economic assessment refers to sources which are publicly accessible and verifiable, unlike the aggregated and confidential data used by the fishing industry (which one should accept at face value, on a trust basis).

- i. The NGOs' analysis was easily carried out by studying the online operating accounts of the three largest deep-sea fishing fleets, who between them account for at least 90% of the French deep-sea fish catch, and by looking at profits and losses in the audited accounts. It thus became apparent that **the three deep-sea fishing fleets are chronically unprofitable**, despite their claiming otherwise during the mission.
- ii. A calculation of direct European subsidies publically accessible online was then carried out for each of the three fleets, showing that **subsidies for the construction, modernization or buy-back of vessels totaled several million euros** for each of the fleets, disproving the profitability myth.
- iii. An estimate was made of French government subsidies, notably those granted from 2004-2007 to compensate for the rise in fuel prices, via the “FPAP” fund for the prevention of hazards to fisheries. This aid, condemned by Europe, had to be repaid by fishing fleets in 2010. The large

fleets involved in deep-sea fishing are also the greatest consumers of fuel oil and the most vulnerable to rising fuel prices. This calculation revealed **fuel debt of several million euros, which endangers the survival of these fleets.**

- iv. It became very clear that **without the “extraordinary income”** (the sums taken from public finances), **the fleets would** not only be chronically unprofitable, they would **be completely unviable.**
- v. If an estimate of the total indirect aid (such as the French tax-break on fuel prices) is added to these direct subsidies, the losses become colossal. The **fleets, particularly Scapêche** (Euronor seemingly wants to move away from deep-sea fishing) **are kept afloat by public generosity.**

A 27-page analysis of the socio-economic aspect alone (which did not cover market aspects) was submitted to the deep-sea fisheries mission by the NGOs. None of these elements appear in the report, which devotes just two pages to the issue: one page on the fleets and one on the economic data (!). Half of the page, however, is taken up by the opaque and contested data from the fishing industry which naturally claims to be profitable.

Several other “abominations” in the report (besides the guilty silence concerning the disastrous economic profile of these fisheries) are to be noted:

- vi. The subsidies are not mentioned (despite the NGOs’ detailed analysis), except in the following phrase: “Fishing professionals emphasize that although subsidies, not specific to this type of fishing, may have been accorded for vessel construction, they receive no operating subsidies (note: repayments of the sums received via the FPAP have been requested).”

However, the NGOs’ analysis shows, for example, that **Scapêche’s three specialist deep-sea fishing vessels received construction subsidies of over a million euros each, and moreover that a fiscal economic interest grouping (EIG) was accorded by the French Ministry of Finance for the construction of the third vessel.** These subsidies were thus, in part “specific to this type of fishing”. Moreover, the NGOs’ demands concerning the exact sums of the fuel aid to be repaid and the repayment schedule went unanswered.

- vii. Tax-free fuel is nothing other than an operating subsidy – an indirect one, but one that the OECD and the WTO classify as a subsidy just like direct aid. However, the OECD highlighted the existence of a number of problems concerning the subsidies granted to deep-sea fisheries, particularly a lack of transparency concerning the subsidies received and an absence of evaluation concerning their harmful implications<sup>1</sup>.
- viii. The report did not mention fuel consumption by fishing vessels, despite this data being made available by the industry. The NGOs proposed that the report should include an IFREMER comparison of diesel consumption for different vessel sizes and métiers:

*Vessels under 12m*

Average consumption per day at sea: 30-120 liters

*Bottom trawlers measuring 16-24m*

Average consumption per day at sea: over 1000 liters

*Bottom trawlers measuring over 40m*

Average consumption per day at sea: **7049 liters of diesel**

This suggestion, like the other NGO proposals, was rejected. Instead, unverifiable data from the fishing industry were included, for example the phrase: “The consumption of diesel per

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<sup>1</sup> *Subsidies and deep-sea fisheries management: policy issues and challenges*, A. Cox OECD, Fisheries Division.

kilogram of fish landed has been falling since 2006". Besides attempting to "greenwash" the carbon footprint of fishing fleets, this statement, which is not based on any financial document, says nothing about the overall consumption by fishing vessels and thus nothing about their automatic and heavy reliance on low-priced fuel. The relative decrease in fuel consumption per kilo of fish landed (undoubtedly slight, no quantifiable data available to check) may well be due to the reduction of quotas and the resultant lower number of miles travelled to reach fishing zones. It may also be due to the zero quota for orange roughy, creating a slight decrease in the depth of trawling.

A correctly conducted socio-economic study would have at least shown that deep-sea fisheries are dependent on fuel prices and heavily subsidized, in spite of which they are still UNPROFITABLE. The debate avoided by the mission (which investigates the reliance of towed gears on fuel, the subsidies allocated to destructive and non-selective fishing methods, and their economic profitability) has begun to take place outside of the restrictive context of the deep-sea fisheries mission.

The French Prime Minister's Office (Matignon) report on the French maritime sector<sup>2</sup> thus notes that:

"Techniques like trawling are under question. Crippled in the long term by its high fuel consumption, trawling is criticized for its low selectiveness. Gillnets and longlines present less disadvantages in this respect, but sometimes have unexpected consequences (bycatch of birds). The complexity of these changes suggests that technical and financial assistance (via a dedicated organization) will be necessary;"

Additionally, last 8 October at the WTO, Australia called for nations to ban subsidies for destructive fishing methods, notably trawling.

**The debate should therefore have focused on what ecological losses are acceptable in order to maintain a residual and costly professional activity (11 subsidized boats), and on what constitutes acceptable usage of public monies. The mission was supposed to envisage the reconversion of these vessels, but in a whole year the word was never even uttered.**

## ➤ **TOTAL CATCHES**

It should also be retained that the statistical bases used for the total catch evoked allow for exaggeration. Thus, the report states that:

"At auction, deep-sea species make up **4% of the volume sold.**"

The sales referred to do not cover all French landings. The NGOs' calculation, despite being more representative (because it is based on more comprehensive figures), does not appear in the report:

"In 2009, deep-sea fisheries represented **1.48% of French fisheries in terms of volumes** landed (7300 of 491 720 tons), and 1.43% of sales (€17 M of €1182 M for fishing overall<sup>3</sup>.)"

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<sup>2</sup> Report by the POSÉIDON group, *Politique maritime de la France - Une ambition maritime pour la France*. Centre d'Analyse Stratégique/SG Mer, December 2006.

<sup>3</sup> Figures: FranceAgriMer, 2009

A lamentable secrecy surrounds these figures, which fit within the European average: *“In the EU as a whole, deep-sea species landings make up 1.5% of the volume of landings for all species (2004-2006).<sup>4</sup>”*

Obviously, these figures do not take into account the volumes of imported fish, which today allow French ports to survive, as observed by France’s General Secretariat of the Sea (SG Mer) (POSÉIDON group report<sup>5</sup>):

*“French fishing provides no more than 15% of what the country consumes. Lorient and Boulogne have become international seafood processing platforms, which have become largely autonomous of the French catch.”*

*“Although still heavily dependent on French fishing, [contributions from downstream activities] have diversified and today, the sector relies largely on processing imported fish. In Boulogne-sur-Mer, a European center for fish processing, 350 000 tons per year are processed, compared to 60 000 tons fished and landed in the port of Boulogne.”*

If, in light of this, the volume of deep-sea species is recalculated, it becomes apparent that **deep-sea species do not represent the “25% of volumes landed” in Lorient stated in the report, but around 5 to 6.25% for Lorient in 2008 and 0.65% for Boulogne.** (Out of 7300 tons of French deep-sea species catch, 5000 are landed and processed in Lorient, within a total processed volume of 80 000 to 100 000 tons.<sup>6</sup>)

## ➤ **FLEET REDUCTIONS**

The section entitled “Fishing fleet and companies” includes a footnote indicating that its only sources are contributions from fishing professionals and FranceAgriMer. This is regrettable, because if the presidency had wanted to include contributions from the NGOs, it would not have sacrificed richer, peer-reviewed sources. We would thus have seen that a scientific analysis of European fleets from May 2010<sup>7</sup> disproved the fishing industry’s claims throughout the mission that the decreased fishing effort for deep-sea species and the lower quotas meant that the management of deep-sea fisheries had become “sustainable”. The author shows that despite a 35% decrease in the number of European vessels practicing deep-sea fishing from 1990 to 2006, correction of the global figures through a more detailed analysis taking into account vessel tonnage and engine power demonstrates an overall rising trend. It is thus clear that there has in fact been a 34% to 44% increase in the fishing effort from 1990 to 2006.

1990: 550 vessels (81 French)

2006: 358 vessels (42 French)

Apparent decrease: -35% (**-48% for France**)

Real increase: + 34 to 44%

Vessel numbers have indeed decreased, but 65% of the EU fleet has increased its fishing capacity (tonnage and engine power), particularly in the UK, Ireland and France.

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<sup>4</sup> MRAG, MG Otero & PoIEM (2008), *Analysis of the economic and social importance of Community fishing fleet using bottom gears in the high seas*. London : MRAG Ltd.

<sup>5</sup> Report by the POSÉIDON group, *Politique maritime de la France - Une ambition maritime pour la France*. Centre d’Analyse Stratégique/SG Mer, December 2006.

<sup>6</sup> Lorient port website: <http://www.ccstilorient.org/pdp-b4-le-mareyage.php>

<sup>7</sup> S. Villasante, “Global assessment of the European Union fishing fleet: An update”, *Marine Policy*, Volume 34, Issue 3, May 2010, Pages 663-670.

Thus, for the three segments analyzed, France displays different trends:

500 to 999 GRT (tonnage per vessel)

1900	2006
63 vessels =>	13 ( <b>79% decrease</b> )

1000 to 2000 GRT

15	=>	18 ( <b>20% increase</b> )
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> 2000 GRT

3	=>	11 ( <b>266% increase</b> )
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It is therefore indispensable, as NGOs have emphasized repeatedly in their contributions, to correct the figures for the fishing effort in light of technical coefficients.

## **B) IMPACTS OF FISHING**

In-depth research using scientific literature about the various impacts of trawl fishing on habitats and fauna (over one hundred articles were read and compiled, to make use of the numerous studies on the changes caused by trawls to marine environments, the increased productivity of certain “opportunistic” species to the detriment of a more diverse fauna, decreased biomass and productivity of benthic ecosystems, etc.)

Our study was over 100 pages long and its content cannot, therefore, be summarized in a few lines. We nevertheless cite a few key points:

### ➤ **COMPARATIVE IMPACTS OF HUMAN ACTIVITIES**

NGOs persuaded English researcher Angela Benn to make the results of her groundbreaking and enlightening study available before publication. This study concerned the **impacts of various anthropogenic deep-sea activities in the North East Atlantic**, OSPAR zone, for the reference year 2005 (results published last September, Source: Benn et al., “Human Activities on the Deep Seafloor in the North East Atlantic: An Assessment of Spatial Extent”, *PLoSone*, September 2010 | Volume 5 | Issue 9.)

Benn’s comparison shows that:

**Of all human activities on the deep seafloor in the North East Atlantic, fishing is by far the most damaging.**

For the reference year (2005), high estimates each time:

- Waste deposits of all kinds affect 1.6 km<sup>2</sup>
- Underwater research 58 km<sup>2</sup>
- Oil and gas extraction less than 23.2 km<sup>2</sup>
- **Deep-sea fishing affects 1482 to 74 320 km<sup>2</sup>**, depending on the operating speed and the width of the trawls used.

**=> The annual footprint of deep-sea fishing covers an area 63 to 3200 times greater than gas and oil extraction and 25 to 1280 times greater than underwater research.**

No mention was made of these figures, despite them being largely based on VMS data obtained from French vessels and therefore particularly relevant to France.

### ➤ **HABITAT CHARACTERISTICS AND IMPACTS OF FISHERIES**

It is to be noted that the report only devotes two pages to habitats and one page to the impacts of fishing, whilst the inset concerning (or defending?) fishing gears (in session, Marc Ghiglia of the UAPF French fishing fleet union let slip that this section was written by professionals from the

fishing industry) takes up an entire page and dares to make outrageous statements, evoking for example “**self-supporting panels that fly over the seabed**”.

In other words, **the report omits reliable peer-reviewed information based on multiple published scientific observations concerning the inexorable destruction of the deep sea and its species, but finds ways to promote a scenario worthy of science fiction.** The technical developments of selective gear promised by the fishing industry are a joke between nations, which nobody now takes seriously. The trend has evolved, in fact, towards evaluating the impact of pelagic trawls on the seabed, because it has emerged that even supposedly “self-supporting” trawls (so called because they fish in midwater) actually spend a significant proportion of their time in contact with the seabed. This explains why vessels targeting hake in the North Pacific are known for catching Alaskan crab, which does not swim in midwater!

#### ➤ CORALS

The NGOs’ contributions on corals evoked, based on research consultations with specialists (our contributions provide numerous references), a particularly poorly understood situation which is nevertheless crucial to comprehending how trawls affect deep-sea biodiversity: there are over **3300 species of deepwater coral**, but **only 6 to 8 of these form reefs**. This means that **the vast majority of coral species are dispersed across the seabed, outside of the zones designated as “vulnerable marine ecosystems”, and that the destruction of deep-sea biodiversity by trawlnets passes unnoticed because corals only very rarely form dense masses or reefs.** This in turn means that **vulnerable marine ecosystems are not the only zones requiring attention and protection.**

Needless to say, these pieces of information were ignored. In their place, the report includes a few formulations such as:

*“A large number of species live dispersed across the seabed, but numerous species contribute to the formation of specific habitats...”*

**3300 species against 6 to 8** - the report uses phrases that barely differentiate the two cases (“a large number of species” and “numerous species”), whilst simultaneously minimizing the importance of the 3300 with a carefully placed and unjustifiable “but”.

No numerical data, no references: a flagrant example of how an absence of method can be twisted to serve any goal.

The report goes on to state that *“Coral habitats [...] form the habitat of a certain number of species...”*. NGOs gave a figure for this “certain number” and included it in their contributions: **at least 2000 species are associated with reefs.**

The report does mention the age of corals, but **makes no mention of the age of reefs** (an ecosystem necessarily takes longer to form than an individual species), despite the intervention of a Norwegian specialist on this subject: a deep-sea **coral reef takes around 8000 to 10 000 years to form**. Similarly, **the report does not mention the massive destruction caused by Norwegian trawlers to 30-50% of their corals** in the space of a few years, despite Jan Helge Fosså’s contribution emphasizing this destruction. It does, however, include the following data, revealed in the report without ever having been mentioned in session (figures unverifiable, sources unknown):

*“However, large colonies of corals have been observed on the pillars of the Frigg oil rig, withdrawn from the North Sea in March 2010 after 30 years of service. Certain colonies had reached 60 to 80 cm in diameter.”*

Why give figures for the regeneration of *certain* colonies and *certain* coral species (without references) and not for their formation time? And why choose this information over the dozens of published scientific references citing regeneration times of thousands of years?



Worse even, why silence the contributions of HERMIONE (Hotspot Ecosystem Research and Man's Impact on European Seas) - the European scientific group assigned to assessing the question of human impacts on the marine environment? This group of experts reached a unanimous consensus in response to the mission's questionnaire, writing that:

**“Deep-sea habitats take a very long time to establish (hundreds to thousands of years) and thus cannot regenerate following bottom impact fishing.”**

**“Certain ecosystems, such as deep-sea corals and sponge assemblages are certainly very slow growing, so that they are *unlikely to withstand trawling impacts even if they happen once.*”**

The report chooses to foreground information that conflicts radically with this assertion. On what authority? With what scientific legitimacy compared to that of organizations like HERMIONE?

The research group's answer to the question about the future of deep-sea fisheries leaves no ambiguity. The researchers describe the **incapacity of these fisheries to become sustainable, because of the failure already observed to manage productive surface stocks and the low catch rate required for a deep-sea fishery to be “sustainable”** (this response matches that of New Zealand fisheries scientist M. Dunn). They warn that **continued deep-sea fishing will lead to biodiversity loss and transform vast marine ecosystems into dead zones:**

***“Fishing to destruction (biological mining) or not fishing at all are the two economically viable options. Establishing economically viable sustainable fisheries seems unlikely. As this approach has failed with shallow-water species, its chance of success with deep-sea species is vanishingly small due to the higher cost of fishing and lower sustainable yields. ‘Business as usual’ will result in continued depletion of biodiversity and fishing down the marine food web will intensify leading ultimately to the transformation of marine ecosystems into dead zones.”***

- SANDY-SILTY BOTTOMS

The section on sandy bottoms, after hearing one of the world's greatest experts on sedimentary fauna, Les Watling, is worth its weight in gold. The report only mentions: “numerous animals live in the sandy-silty bottoms...”

In fact, the work of IFREMER, Les Watling, Grassle and Maciolek etc. (see references in the NGOs' report) has established that **90% of deep-sea biodiversity resides in the sediment, that a surface the size of an A4 page contains over 10 000 individuals of 1000 different species, and that there is little genetic connectivity between deep-sea species, such that the deep sea harbors a very high rate of endemism, with 50 to 70% of species change between any two deep-sea provinces.**

This fauna is small in size and found mainly in the “oxygenated” part of the sediment (the top five centimeters). It is thus **impossible to simply conclude, as the report does, that these animals “can be affected by towed fishing gears”.**

As demonstrated by Les Watling, trawls alter the structure of the seabed, making it mobile and unsuited to the establishment of hard-bodied species. As numerous works on the impact of trawls have shown, **this profound change in the substrate is devastating for biodiversity** and predisposes the sediment to the survival of a few opportunistic species such as polychaete worms, which are themselves the preferred prey of flatfish (see NGO contributions on the few species capable of adapting to deep-sea trawling).

- IMPACTS OF FISHERIES

The very short section on the impact of fisheries (less than a page) is a fraud considering that deep-sea fisheries are a subject of vigorous international debate, precisely because of their impact on target species, non-target species and habitats. It is a true “tour de force” to have minimized the impacts to such an extent, in spite of the mountain of information and evidence at the mission’s disposal. Moreover, the paragraph begins by hugely trivializing the impact of deep-sea fishing, which is presented as just one among many problems using the opening phrase:

“**Like all fishing activities**, deep-sea fishing has an impact etc.”<sup>8</sup> In reality, the impact of deep-sea trawl fishing is devastating, possibly irreversible and it does not compare to any other fishing method.

This section is truly scandalous and paves the way for the report’s conclusions. It aims to understate the impacts and make out that technical solutions exist. It also silences the contributions of researchers, as well as the plethora of scientific writings that condemn these practices and question their ecosystemic sustainability and their reliance on fuel and consequently on subsidies.

The “Impacts on fish” section begins with an inset which initially seems irrelevant, in the form of a lecture on the “dynamics of fish”. But intentionally placed there, this “speech” serves to justify the overfishing of deep-sea stocks and the dizzying reduction in biomasses compared to virgin levels. In fact, **the report never addresses the impact on fish**, and even Bailey’s recent and already very well-known study<sup>9</sup> on the long-term impacts of fisheries on deep-sea fish populations is not cited.

Interestingly, **one of the only references (perhaps the only reference) in the entire report**, occurring in the a footnote on page 43, is an **unpublished study by Pascal Lorange**, who is today the fishing industry’s only lifeline to justify targeted fishing for blue ling.

It should be noted that:

- Lorange’s study is the only study, or one of the only studies, cited in the report
- More space is devoted to it than to the impacts of fisheries on habitats
- It is supposed to answer the question of the impact on fish (although it only looks at blue ling, who are they trying to fool?)
- The NGOs’ critical analysis of the study (results and methodology) is not mentioned, even though it draws on warnings from the authors of the study themselves.

The NGOs’ analysis is reproduced below:

#### CRITICAL ANALYSIS BY NGOs OF P. LORANCE’S STUDY ON BLUE LING

Lorange *et al.* analyzed 26 000 hauls by the French trawl fleet from 1992 to 2008, with more comprehensive data for the 2000-2008 period.

This analysis concludes that **French landings of blue ling declined from 1985 to 1995, before stabilizing over the last ten years. It is based on this data that the authors envisage a “sustainable” exploitation of the stock.**

However, such exploitation would need to be based on:

- Robust, reliable scientific data (since those used come from the fishing industry alone and not from independent scientific surveys)

<sup>8</sup> This argument is used by the Ifremer rapporteur Alain Biseau to such an extent that if one types the French translation of “Like all fishing activities”, i.e. “Comme toute activité de pêche”, in Google, the first document that appears is a plea of the Ifremer written by Biseau in favor of deep-sea fisheries and against the EU Commission’s proposal to phase out deep-sea bottom trawling (from July 2012). See link: <http://www.ifremer.fr/peche/content/download/62817/851747/file/12-07-23-pêches-profondes.pdf>

<sup>9</sup> Bailey, DM et al. (2009) *Long-term changes in deep-water fish populations in the northeast Atlantic: a deeper reaching effect of fisheries?* Proceedings of the Royal Society B, published online 11 March 2009

- A biomass that has not declined by more than 50% compared to the virgin level, whereas the decline in blue ling biomass appears to be around 75% (see P. Lorance's data curves). It would thus be necessary to wait for populations to recover before envisaging any continuation of exploitation.
- Fishing depths and gears that allow for selectiveness, in order to avoid collateral damage to habitats and non-target species.

As stated by the authors, their study does not contradict the existing consensus that blue ling stocks have declined massively since the 1980s and that these stocks are easily overfished. **The authors signal the need to take into account certain important factors limiting the reliability of their data:**

1/ **Stocks are assessed according to ICES statistical rectangles, which do not necessarily correspond to the biological reality of the stock.**

2/ As for numerous deep-sea species, a major problem impedes the validity of stock assessments: the need to better understand their genetic structure. **There is currently a complete absence of certainties about the structure of blue ling stocks, but it seems that there are at least two different stocks in the North Atlantic.**

3/ **The age estimates are not validated or even collected**, despite being crucial for the sustainable management of stocks.

4/ The authors' main warning is that in general, **the data from European logbooks do not indicate depth**, despite it being a key structuring factor for abundance distribution. In their analysis, depth is only systematically indicated from the end of the 1990s, which gives too short a period on which to base estimates.

5/ **Data on the average length of fish caught indicate a 10cm decrease between 1984 and the 2000-2008 period** (from 99 to 89 cm). This is one of the indicators that **the fishery is unsustainable**. Canadian researcher Richard Haedrich, asked about this by the deep-sea fisheries mission, said that: *"A very useful indicator is the mean size of fishes from year to year; the simple metric is total weight divided by total number and fishermen themselves tend to notice this as well. If size declines, then the population is in trouble."*

6/ The abundance of populations varies between the zones studied and indicates great spatial variations. Extreme caution is therefore required in drawing conclusions about overall stock abundance.

7/ Crucially, it has been proven that CPUE stability is not a sign of stock "health": **in 22% of stock collapse cases, the quantities caught remained stable for around ten years, before falling sharply** ("plateau" collapse). Stable catch levels cannot be used as a sustainability indicator and can mask impending collapse. Such situations are in part explained by the increased efficacy of fishing.

8/ Finally, **the data on landings are not corrected according to increases in engine power and the analyses do not take into account one key factor: the increased efficiency resulting from the use of new technologies**. And yet an IFREMER study reveals that technological progress is evolving rapidly.

This study, which cites the FAO, shows that although the size of the world fleet has stabilized (or even decreased recently), **technical advances on vessels have led to increased fishing capacity (multiplied by 2 to 3 times between the start of the 2000s and the start of the 1980s)**, whereas world fishing production has increased by just 1.3% over the same period.

For this reason, it is indispensable that data be “corrected” to take into account technological performance per fishing unit, in order to obtain data truly representative of the fishing effort.

The authors state that analysis of logbooks from the 1989-2005 period reveals that **French vessels began exploiting new fishing zones in the 2000s**. This information is of paramount importance, because **geographical expansion** (and possibly also bathymetric expansion – the study does not say whether the bathymetric profile of fisheries changed over the period studied) **may explain the relative stability of landings**.

They also reveal that none of the vessels analyzed participated in the study from beginning to end (the fleet composition changed over the period concerned), making it difficult to take into account changes in fishing efficiency.

- **DISTORTION AND SELECTIVE USE OF NGO CONTRIBUTIONS: THE SHARK EXAMPLE**

Deep-sea sharks, which are almost entirely absent from the first report, were eventually mentioned in the final report, under NGO pressure. However, their substantial research on the extreme vulnerability and low resilience of deep-sea sharks was not included. The NGOs had notably listed the statuses of those sharks affected by deep-sea fishing in French fishing zones (the North East Atlantic), as well as the **decreases in biomass (which for certain species are spectacular, exceeding 90%)**. Instead, the half page dedicated to sharks contains a table using the global IUCN status, despite **those species most affected by deep-sea fishing being endangered in the NE Atlantic**. Is this to be considered a detail or a serious omission like those unfortunately found on every page?

The table below gives a few examples of the differences between the global status and the status in the North East Atlantic. The mission’s final report includes only the global status – yet another trick to minimize the impacts of fishing.

In reality, **26% of North East Atlantic rays and sharks are endangered** according to the IUCN, which, further to this, warns that the total number of endangered species is undoubtedly much higher, but that it cannot be assessed because of a lack of information. **The world average proportion of endangered shark species is 18%**.

Common name	Scientific name	Global conservation status	North Atlantic conservation status	East	Biomass decline since fishing began	Maximum lifespan
Kitefin shark	Dalatias licha	Near threatened				?
Portuguese dogfish	Centroscymnus coelolepis	Near threatened				?
Smooth hound	Mustelus mustelus	Vulnerable				24 years
Tope shark	Galeorhinus galeus	Vulnerable				55 years
Leafscale gulper shark	Centrophorus Squamosus	Vulnerable				21 to 70 years (Clarke et al. 2002)
Gulper shark	Centrophorus granulosus	Vulnerable	<b>Critically endangered</b>		80-95% in the North East Atlantic	> 30 years (Guallart 1998)
Spiny dogfish	Squalus acanthias	Vulnerable	<b>Critically endangered</b>		Over 95% in the North East Atlantic	40 years (ICES)

Table based on information available on the IUCN Redlist of Threatened Species website (<http://www.iucnredlist.org>), on the Fishbase database and ICES information.

Thus, although the report does finally mention deep-sea sharks, it does not mention the benchmark scientific article on the subject, which was summarized for the mission by the NGO group. This article

confirms that the **near extinctions of deep-sea sharks like the spiny dogfish (*Squalus acanthias*) in certain areas are not isolated cases, but are destined to occur repeatedly to species forming the group of deep-sea sharks.**

This study is the first to have calculated the resilience of deep-sea sharks and the time needed for their population to recover compared to continental shelf and pelagic species. The data produced are the direct outcome of an ecosystem approach to fisheries. The calculated times required for populations to double indicate that **once a stock is depleted, it needs decades or even centuries to recover.**

**The conclusions of the report establish no link between fishing practices and the near-extinction of certain deep-sea species, even though the inherent characteristics of these practices are the cause of this drastic decline in deep-sea biodiversity (by definition, trawls affect multiple species and are non-selective). Quite the reverse: the report envisages the maintenance and improvement of the existing framework! This proves that this work has failed to keep its promise to follow an ecosystem approach.**

- **EXCLUSION OF A DOCUMENT PROVING THE DESTRUCTION OF CORALS**

The mission chose to ignore a document provided by researcher and mission member Anthony Grehan. This document, dated 19 February 2010 and reporting on a routine on-board inspection by Irish naval operations of a French deep-sea trawler, tells of a large quantity of coral found on board. **The inspector writes:** *"On 17 February 2010, during a routine inspection of a French fishing vessel [...] I came across a large quantity of coral on deck [...] After a more in-depth inspection, I found more coral near the hold. Much of the coral had been crushed by the fishermen working on the deck. [...] There was more coral than I have even seen in this zone or in any zone, in my entire career at sea."*

**This document proves that even the traditional fishing zones of French trawlers still contain vulnerable ecosystems, either virgin or recovering. It also proves that fishermen are lying when they claim not to catch coral.** There has thus been a careful selection of information, to exclude that which is incompatible with the mission's bias.

- **CONCLUSION ON IMPACTS**

The fraudulent methods used in the report, particularly in the section concerning the impacts of fishing, were raised by the reviewers, but were not corrected. We will not dwell further on this charade. Each page of the report could provide material for several pages of analysis.

➤ **INTEGRATION OF WRITTEN CONTRIBUTIONS**

The written contributions, some of which are extremely clear (like that of Matthew Dunn, fisheries scientist and recognized specialist on deep-sea fisheries in New Zealand, and therefore an expert on the world's only supposedly "sustainable" deep-sea fisheries) were neither included in the report nor discussed. This is despite the enlightenment they provided, particularly the figures given by M. Dunn on the cost of scientific research, with regard to fleet profitability. This consideration is one of the Achilles' heels of deep-sea fishing. M. Dunn stated that:

*"New Zealand has spent over 50 million euro on deepwater scientific research over 20 years and **although** great progress has been made, New Zealand has still not been able to answer all of the questions necessary to **demonstrate** sustainable deep-sea fisheries".*

Furthermore, *"All [deep-sea fish species] could support some form of fishery. The question is how big will the fishery be? A catch of 1 tonne per year would be no problem – but 1 t per year **would not be an***

***economic possibility! It is a balance between sustainability, taking a precautionary approach, and the economics of harvesting.***

His answer to the questionnaire highlights several key problems:

- a) Deep-sea fishing, even if targeting the world's largest deep-sea fish stocks, fails to demonstrate its sustainability;
- b) This ***in spite*** of a colossal research investment supporting fisheries (50 million euros over 20 years)
- c) Deep-sea fish stocks could all theoretically be exploited, but the harvest levels possible would be so low as to pose problems for economic profitability.

Why does the inset on page 21 of the deep-sea fisheries report (on research in New Zealand) exclude critical and valuable data which are very rare and difficult to obtain, such as the sums indicated, or present them in such a way as to imply that ***further*** research would be necessary to achieve sustainability? For example: "according to Mr. Dunn (NIWA), *scientists still do not have enough knowledge to be able to manage fisheries sustainably*"

Mr. Dunn's comment means that even abundant research ***does not suffice to prove*** sustainability of deep-sea fisheries. Similarly, by indicating only that deep-sea fishing in New Zealand "***is highly developed, orange roughy being the main target species***", this short passage of the report leads the non-expert to understand that New Zealand deep-sea fishing is thriving. Yet Mr. Dunn sent us one of his articles entitled "Orange roughy. What might the future hold?", published in response to an article by Hilborn (2006) affirming that the New Zealand orange roughy fishery was sustainable. In it, he retraces the history of fisheries and shows that both stocks and catches have collapsed or declined dramatically. Thus, of the 8 orange roughy stocks, 3 have been overfished and consequently closed to fishing. Catch levels have fallen from 50 000 tonnes/year in the 1980s to 15 000 tonnes/year at present, and scientific recommendations envisage constantly decreasing quotas in coming years. Dunn emphasizes that the orange roughy's extreme longevity, late reproduction and low recruitment can hide population depletion for decades.

\* IN CONCLUSION \*

We regret that we are unable to provide an exhaustive critique of this report, but NGOs have already invested large amounts of time and resources in this mission in vain, because our contributions were not included in the report, not even as appendices. We have therefore decided to submit just a few key elements to your judgment. We repeat, with no hint of exaggeration, that each page of the deep-sea fisheries mission's report would require several pages of comments, in order to dissect the logic behind its production.

If the mission had not lacked human and moral competence, it would have assembled the various elements submitted for examination (like those brought forward by NGOs) and would have been able to objectively conclude that faced with the substantial quantity of data weighing against deep-sea fishing, it was impossible to give it "ecological" credit.

The only possible conclusions were that **deep-sea fisheries**, as conducted by French vessels (mixed, non-selective, bottom trawl fishing), **are unsustainable** not only **from an ecosystem perspective** because of the numerous collateral victims (species and habitats), but also **from a single-species perspective**. ICES reinforces this observation by classifying 100% of deep-sea stocks outside of safe biological limits.

The socio-economic analysis would have complemented the ecological picture by showing the disastrous situation of deep-sea fishing fleets:

- A chronic deficit despite substantial public aid
- The highest carbon footprint of all French fisheries, giving rise to a debilitating structural weakness: the inability to operate without tax-free fuel (fuel representing at least 30% of turnover).
- A reliance on "exceptional income" to reduce deficits.

In short, France's industrial deep-sea fishing fleets are not economically viable, despite public aid. It should nevertheless be noted that 2 of the 3 fleets are moving away from deep-sea fishing: Euronor is reconverting its vessels to target saithe and Dhellemmes has already turned several trawlers into Danish seiners. These two fleets would perhaps have benefited from discussing reconversion possibilities within the framework of the deep-sea fisheries mission.

However, Scapêche, the fleet of the Mousquetaires/Intermarché group, remains bound hand and foot to deep-sea fishing. In fact, Scapêche made the mysterious and non-visionary but highly-subsidized choice to reinvest massively in constructing three specialized deep-sea fishing ships, at a time when quotas were being applied to deep-sea species (but just before Europe stopped subsidizing vessel construction).

The degeneration of the deep-sea fisheries debate in France can thus be explained by the strategic errors of a lead player in mass distribution. The French find themselves forced to contribute financially to fishing practices denounced as the most destructive in the world.

It will be interesting to closely follow what comes of fuel debt (FPAP) repayments, which total 1 to 2 million euros for the large fleets, because it is clear that these fleets do not have the cash flow or the borrowing capacity with banks to repay the FPAP fuel subsidies granted by France between 2004 and 2007 and judged illegal by the European Commission on May 20, 2008.<sup>10</sup> These repayments are due in 2010. It would be useful to obtain from the DPMA (France's Directorate for Marine Fisheries and Aquaculture) information on possible transaction with the fleets that would cancel FPAP debt in exchange for vessels exiting the fleets.

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<sup>10</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:334:0062:0087:EN:PDF>

We repeat, based on the examples given above, that the mission has not fulfilled the obligations assigned to it: *“There is an urgent need to prove that deep-water fisheries are economically, socially and ecologically viable, in order that their maintenance, possibly with adaptations, might be envisaged. [...] Only if these three criteria are met will it be possible to continue exploiting these sensitive zones.”*

Given that deep-sea fishing is economically and ecologically unviable, it is difficult to imagine how it might meet the social viability criteria.

Moreover, the mission was called upon to *“propose reconversion possibilities for the French fishing vessels and fishermen concerned, and means of assisting these reconversions.”*

Not once was the reconversion possibilities broached. The mission sought to present deep-sea trawling as an acceptable fishing method when it is not (it is destructive, non-selective, and requires large quantities of fuel and subsidies). It attempted to portray **French deep-sea fishing** as sustainable and ecological, despite the sector’s **complete lack of ecological, economic and social sustainability**. The presidency’s position thus goes against strong international trends: decreasing quotas, questioning of destructive fishing gears, condemnation of fishing subsidies, reaffirmation (once more in Nagoya) of the objectives of ecosystem-based fishing, etc.

We consider that this report brings shame upon the French Republic and particularly on French research. We reiterate our disavowal of the way in which the deep-sea fisheries mission has been conducted, and bitterly regret the suspect role that “science” has played in it.

We believe that within an international scientific context, the same researchers would never have been able to behave in this manner without irreversibly compromising their scientific legitimacy. Similarly, if the report had been produced in English, it would have been impossible to distort the words of foreign scientists as the mission did (this is the case for Les Watling, Jan Helge Fosså and Elliot Norse, who would undoubtedly be horrified by the “recontextualisation” of their statements).

This report is thus an extremely dangerous document for France. Its ecological skepticism recalls other controversial documents, notably on climate change. It reveals that, in France, the process for producing scientific research independent of the fisheries sector is crippled and restricted. Allowing circulation of such a work would place France and its fisheries research in the same category as nations like Japan and Norway. This is perhaps not a desirable position to be in.

In conclusion, we consider that in 2010, international year of biodiversity, this work sends an extremely worrying message about the future of this issue.

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