EVALUATING THE OPPORTUNITIES, CONSTRAINTS AND IMPLICATIONS OF ECO- AND ETHICAL FISH LABELLING ON THE OCTOPUS VALUE CHAIN IN SENEGAL

Charlotte Tindall (née Howard), Marine Resources Assessment Group, c.tindall@mrag.co.uk
Katrien Holvoet, Sustainable Fisheries Livelihood Programme, FAO, kholvoet@hotmail.com
Moustapha Kebe, Sustainable Fisheries Livelihood Programme, FAO, kebe_tapha@yahoo.fr
Papa Gora Ndiaye, ENDA/REPAO, gndiaye@gmail.com

ABSTRACT

This paper provides an overview of ongoing work undertaken in Senegal to understand the implications of fisheries certification on the octopus value-chain. It analyses the opportunities to increase social and economic benefits for poorer groups and to establish a more gender sensitive approach to eco labelling through the implementation of upgrading strategies addressing equity gaps. It will describe the octopus value chain and give details on how the introduction of certification, such as an eco- or ethical fish label, may affect different actors in the chain and their ability to capture benefits. Over the past few years there has been a large increase in the interest for eco- and fair trade labelled produce, and there is increasing interest both by the fisheries themselves to gain market access and by international buyers who are keen to protect their reputation on responsible sourcing. While there are a number of potential benefits of certification including a promotion of sustainable fisheries management and increased investment in development, there are also a number of challenges, potential unintended consequences and social and economic elements that will not be addressed by certification. For instance, octopus certification is constrained by the limited number of countries exported to and the interest of buyers to produce certified and ethical labelled octopus. This research provides an analysis of the key issues in Senegal related to the proposed octopus certification. It also proposes responses to encourage a pro-poor and gender sensitive approach through supporting upgrading strategies that will be explored within the ongoing project.

Keywords: value chain, Senegal, octopus, small-scale fisheries, certification, eco-labels, ethical procurement, upgrading

INTRODUCTION

Fisheries certification in developing countries

Over the last few years, there has been considerable interest in assuring sustainability of fish products. Pressure from Non Governmental Organizations (NGOs) and the media, as well as the high profile issue of over-fishing has led a number of retailers and suppliers to take measures to reassure customers of the sustainable sources of their fish products. One method of assuring sustainability has been the development of 3rd party certification schemes that set certain criteria for sustainability and communicate this to the customer through an eco-label.

A number of different eco-labels exist but one of the more established sustainability standard in fisheries has been set by the Marine Stewardship Council (MSC). This has been established since 1997 and is now available on over 1100 MSC labelled products in more than 25 countries, and has recently announced that fisheries that have either gone through or are currently going through assessment makes up 8% of the global wild-caught fisheries production. There are a range of other certification schemes that are emerging including Friends of the Sea (FOS) and Krav, or have been piloted e.g. Naturland (in Tanzania) and Fair Fish (in southern Senegal).
Very few developing countries have been certified to MSC standards to date. Certified fisheries include the South African Hake fishery and the Mexican Rock lobster. However, a new methodology that may be suitable for assessing data-deficient fisheries is being trialled in four developing country fisheries: National Park of Banc d’Arguin mullet fishery in Mauritania, Coastal and river sole in The Gambia, Samborombon Bay mullet fishery in Argentina and the mahi mahi (dolphin fish) fishery in Ecuador and Peru. The Friend of the Sea (FOS) scheme has certified a multi-species artisanal fishery in Senegal, Yellow-fin tuna fishery in Sri Lanka, sardine and mackerel fishery in Morocco and a prawn fishery in Indonesia.

The MSC and FOS certification schemes have focused on environmental sustainability, while Fair Fish and Naturland have attempted to integrate social and environmental issues. This is similar to forestry and aquaculture certification where social issues are considered as a matter of course. Economic sustainability and effective extraction of rents through well-defined rights is however rarely assessed, but may be critical to the ongoing viability of the fishery and its ability to sustain improved management. The Fairtrade mark, which is one of the most established ‘social’ labels, has not yet been applied to fish products, although Fairtrade and MSC are currently in discussion on whether joint-certification could be feasible for some developing country fisheries.

Some commentators suggest that the credibility of certification schemes rests on their ability to be effectively applied in developing countries as well as developed countries. There is concern that if this is not achieved certification can be perceived as a barrier to trade. Currently, there are a number of constraints for developing countries including the costs, low fisheries management capacity and difficulty in defining the unit of certification where multi-species fishery and artisanal fleets are targeting the same stock as industrial fleets.

With the potential to expand certification into developing countries it is important to consider what the implications of this will be for different actors in the value chain. Fisheries export may have implications of its own (e.g. competition with domestic markets and food security) and these can either be addressed (e.g. overfishing) or exacerbated (e.g. exclusion of small-scale traders) by certification. Certification may also have implications for livelihoods if it incentivises management practices that entail short-term social costs for a long-term gain of sustainability. However, a number of these issues will depend on the specific context, for while fisheries export has had implications for food security in Senegal, in other countries such as Egypt and India increasing fish exports is not correlated with per capita fish consumption.

**Approach to value-chain study of the Senegal octopus fishery**

This paper provides a case study of potential implications of certification within a developing country context by drawing on a project that is currently being undertaken in Senegal (in the department of Mbour) by ENDA Repao, MRAG Ltd and SFLP-FAO with support from IDRC (International Development Research Centre) and ODI (Overseas Development Institute). The project is working with the octopus value chain, and the objectives of the project are to i) support pro-poor and gender sensitive ‘upgrading’ strategies to improve the value chain and ii) support an approach to certification that address social and economic issues within the value chain. The first step of this project has therefore been to understand the current value chain and the inequalities within it, assess implications of certification and determine how the value-chain can be improved through upgrading.

Upgrading refers to improving the value and efficiency of a supply chain and can refer to i) vertical upgrading: doing better with the same product throughout the chain; or ii) Horizontal upgrading where improvements are made at one level e.g. management capacities at the production level.
Fisheries certification of the octopus fishery has been put forward recently by an independently conducted review [7] which determined that out of all the fisheries in Senegal the octopus fishery had potential given its: i) orientation towards export, and ii) relatively simple fishery with a defined production area. There is also potential for Senegal to achieve MSC certification through the planned improvements in management of the resource through local fishing committees (Conseils locaux de pêche artisanale, CLPAs). Another review of the World Bank supported fisheries management initiatives (the GIRMaC project) in four communities along the coast of Senegal [7] recommended that all cephalopods (i.e. octopus, squid and cuttlefish) within the department of Mbour should form the unit of certification because of the similarity in: i) the artisanal fleets targeting the stocks ii) their zone; and iii) the supply chain to export.

However, there are a number of important questions that arise. For instance can the octopus fishery be considered sustainable, and can a management area be defined when the stock is targeted by both artisanal and industrial fisheries? Further to this, is there sufficient incentive and demand for an eco-label for octopus products? It is likely that there will be no price premium for certified octopus and without significant demand from buyers there may not be sufficient short-term incentive for actors in the supply chain to invest in certification. There may be other important ways of upgrading the supply chain that will be more effective in adding value for producers, although these will always need to take into account management of the resource for the long-term sustainability of the industry.

This paper focuses on the initial results of the project related to the opportunities and constraints of certification and eco-labels. It will go on to describe how certain upgrading strategies may be effective in providing more benefits to the poor within supply chains, and which ones of these are compatible with different forms of certification.

OCTOPUS VALUE CHAIN

Fisheries in Senegal

The octopus fishery in Senegal is an important part of the artisanal fisheries sector which overall employs around 600,000 people and provides around 500,000 USD export revenue [8]. Octopus contributes to these revenues, since 90% is exported. As well as being important for the national economy, fisheries also provides a livelihood of last resort involving established fishing communities but also new entrants who have left agricultural areas following successive droughts. The largely ‘open-access’ nature of the artisanal fishery as well as fishing agreements signed with foreign fleets (licenses given in return for budget contributions) have been put forward as two of the key reasons for the over-exploitation of Senegal’s coastal resources. The FAO fishery sub-committee for the Eastern Central Atlantic have reported that the status of Octopus and Cuttlefish are critical [9].

Fisheries policies

At a national level, a new fisheries policy named “Fisheries and Aquaculture Sectoral Policy Letter” (Lettre de politique sectorielle des pêches et de l’aquaculture) was elaborated in 2007. This builds on the Senegalese Fishery Plan drawn up in 1998. One the main objectives of the new policy is sustainable management and restoration of fisheries resources through i) adjustment of marine fisheries capacities (drastic reduction of fishing effort), ii) control of access to fisheries resources (use of fishing permit and concessions of rights of access to resources), iii) introduction of fisheries management plans, iv) promotion of integrated management of coastal zones, v) reinforcement and adaptation of fisheries research, and vi) optimization of fisheries surveillance means.
The policy has not yet been implemented given the number of issues that still need to be resolved. For instance the introduction of permits has been met with considerable resistance owing to the social cost it will involve (excluding some from the fishery), the cost of the permit where artisanal fisheries are operating at low profit and disagreement between authorities and Local Fisheries Committees concerning the sharing of the revenues of the permits. The practicability of permits is further complicated by the fact that Senegal has reciprocal fishing agreements with the Gambia, Mauritania and Guinea Bissau.

Specifically for octopus, a process has been initiated to develop a management plan for the octopus fishery with support from the EU’s STABEX fund. There are a number of issues under discussion, including an understanding of the status of the stock, the use of the resource at sustainable levels and biological rest periods. A biological rest period for cephalopods was set for foreign industrial fisheries from 20th September and 20th October, and this has been taken up voluntarily for octopus by fishing communities of Nianing, Pointe Sarène and Ngaparu, but not yet across the entire coast of Senegal.

At a local level, different systems of fisheries co-management for artisanal fisheries have been emerging. In all cases, local communities share management responsibilities with the government. The building blocks of this approach are the establishment of local fishing committees known as Conseils locaux de pêche artisanal (CLPA) or Local Fishing Committees which bring together three principle groups i) fishing stakeholders; ii) traditional leaders and iii) representatives of the administration. They have a role in contributing to the elaboration of local and national management plans, limiting access to the resource (through the use of permits and introduction of rest periods), resolving conflicts and supporting the implementation of regulations through participatory surveillance, education and agreement with exporters.

While there are plans to set up 30 CLPA’s along the coast of Senegal, only a few of these are currently in operation and have been supported through external means (e.g. donor projects). In some instances the organizations that have been created vary in nature, for example following a World Bank funded project (GIRMaC) Comités locaux de pêche (CLPs) were created in some fishing communities in 2005. CLPs have an official recognition and most of them are integrated with the CLPAs. Following a JICA funded programme Comités de gestion de la resource halieutique (CGRH) were formed in three sites in 2006. These CGRHs will be integrated into the CLPA as soon as the latter are made operational. As well as financial constraints, there are also some ongoing concerns that are preventing progress in establishing CLPAs including the political risk of such empowerment and the potential conflicts it may create at the local level. The current initiatives that have taken place do not therefore cover the entire Senegalese coast and may not yet be able to cover the management required for certification.

Octopus production

Production of octopus in Senegal varies from year to year. There were very high quantities of octopus caught in 1999 reaching 37,257 tonnes (seven times higher than during the years 1996-1998) but these quantities have not been seen since. Production declined to 1,795 tonnes in 2001 but reached 8,148 tonnes in 2004, 7,472 in 2005 and 8,814 in 2006 (See Table 1). This is approximately 2.4% of global production. However, there is a discrepancy between declared catches and declared exports, with exports exceeding catches in recent years apart from 2006. Octopus forms 65-75% of the overall cephalopod catch, which also includes squid and cuttlefish.
Table 1: Octopus production ad export provided from different data sources

<table>
<thead>
<tr>
<th>Years</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Octopus production (tonnes)</td>
<td>37,257</td>
<td>6,057</td>
<td>1,795</td>
<td>12,796</td>
<td>10,861</td>
<td>8,148</td>
<td>7,472</td>
</tr>
<tr>
<td></td>
<td>Octopus export (tonnes)</td>
<td>32,180</td>
<td>12,567</td>
<td>4,351</td>
<td>14,237</td>
<td>13,010</td>
<td>10,039</td>
<td>8,560</td>
</tr>
<tr>
<td></td>
<td>Commercial value (Millions FCFA)</td>
<td>no data</td>
<td>no data</td>
<td>no data</td>
<td>19,206</td>
<td>20,377</td>
<td>13,805</td>
<td>9,332</td>
</tr>
<tr>
<td></td>
<td>Commercial value Euros (Million)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>29.28</td>
<td>31.06</td>
<td>21.05</td>
<td>14.23</td>
</tr>
</tbody>
</table>

Source: DPM (Direction des Pêches Maritimes) and [11].

Senegal’s octopus production is relatively small compared to that within other countries of the region such as Mauritania and Morocco. For example Morocco catches were 20,840 tonnes in 2007 [11]. Octopus production is concentrated around the regions of Dakar (42%) and Thies (56%). Production takes place all year round, although there is a peak in production during the rainy season from July to October. There are three important ports for octopus landings: Mbour, Joal and Kayar. The value chain described below focuses on the trade surrounding Mbour (which accounts for 12-30% of national production).

Octopus value chain

A simple view of the value-chain involves the fishers, traders and the factories that process and export the product. A more detailed view of the value chain reveals that there are a number of actors at each level (Figure 1). For instance, at the fishery level there is a distinction between boat owners who own the catch and engage in trade; and the boat crew, porters and boat haulers who receive a wage or a proportion of the catch for their work. There is also an important distinction between the artisanal fishers that target octopus and the industrial fishery. Both of these categories of fishers will also target other fish species, including other cephalopods (such as squid and cuttlefish). The artisanal fleet generally fish up to 400m, while the industrial fleet fishes at depths of more than 500m and are restricted by law to fish beyond 12 nautical miles of the coast.

Figure 1: Schematic diagram of the octopus value-chain in Senegal
The main export countries are Italy, Spain and Greece in Europe and Japan. Historically Italy has been the main destination and Senegal exported around 3,700 tonnes and 4,200 tonnes here in 2006 and 2007 respectively. Japan has been a regular export market with around 1,800 tonnes exported in 2005 and 1,000 tonnes in 2006. Exports to Spain were around 500 tonnes in both 2006 and 2007 (Table 2) [11].

Table 2: Quantities of exports of octopus from Senegal to different countries

<table>
<thead>
<tr>
<th>Years</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>2207.5</td>
<td>7029.5</td>
<td>2639.3</td>
<td>10189.3</td>
<td>8299.0</td>
<td>5855.5</td>
<td>4744.1</td>
<td>3666.5</td>
<td>4200</td>
</tr>
<tr>
<td>Japan</td>
<td>1174.8</td>
<td>1216.1</td>
<td>324.7</td>
<td>1787.1</td>
<td>1558.4</td>
<td>1905.2</td>
<td>1776.8</td>
<td>930.8</td>
<td>nd</td>
</tr>
<tr>
<td>Spain</td>
<td>5130.4</td>
<td>100.5</td>
<td>769.5</td>
<td>1255.1</td>
<td>1979.9</td>
<td>1447.4</td>
<td>738.6</td>
<td>522.5</td>
<td>500</td>
</tr>
<tr>
<td>Greece</td>
<td>1765.8</td>
<td>1539.7</td>
<td>87.0</td>
<td>423.5</td>
<td>711.5</td>
<td>255.9</td>
<td>730.0</td>
<td>336.3</td>
<td>nd</td>
</tr>
<tr>
<td>Thailand</td>
<td>664.4</td>
<td>606.6</td>
<td>213.7</td>
<td>133.8</td>
<td>70.3</td>
<td>85.8</td>
<td>116.0</td>
<td>172.5</td>
<td>nd</td>
</tr>
<tr>
<td>China</td>
<td>0.0</td>
<td>307.6</td>
<td>0.0</td>
<td>115.9</td>
<td>219.5</td>
<td>299.5</td>
<td>103.9</td>
<td>142.7</td>
<td>nd</td>
</tr>
<tr>
<td>Others</td>
<td>1417.5</td>
<td>867.0</td>
<td>316.6</td>
<td>332.1</td>
<td>171.6</td>
<td>190.5</td>
<td>350.1</td>
<td>258.1</td>
<td>nd</td>
</tr>
<tr>
<td>Grand Total</td>
<td>32180.4</td>
<td>12566.9</td>
<td>4350.8</td>
<td>12436.6</td>
<td>13010.2</td>
<td>10039.7</td>
<td>8559.6</td>
<td>6029.5</td>
<td>nd</td>
</tr>
</tbody>
</table>


The most important factories for octopus include Ikagel (based in Mbour), Africa Fish and Blue Fish (both based in Dakar). There are a number of other factories that deal in a range of different fish species but also deal with octopus. Different factories sell to different markets, for example Ikagel has links to importers in France (Ikagel-France), while Blue Fish sells mainly to the Italian market. Other factories such as Senegal Pêche export to Japan and have Japanese investment.

Between the fishery level and the factories, there are a number of different categories of traders: The wholesale traders (often based in regional centres such as Mbour) often have contracts directly with factories and either buy directly from fishermen (that they often finance at the beginning of the season), other large traders, or from smaller traders either based at the fish landing sites or in town. In addition to the wholesale traders, there are also large traders that will also buy from fishermen and sell on to factories. In some cases traders are employed directly by the factories. Lastly there are the small traders (often women) known as ‘laga laga’ that buy small quantities of octopus from fishers or porters and haulers and sell these on to the larger traders.

The traders are instrumental in financing the fishing activities, and will often give credit at the beginning of the fishing season and maintain an outstanding credit in order to assure regularity of supply. Often these funds are managed by an independent guarantor (e.g. a retired fisher) who assures that the fisher will honor their agreements to exclusively supply the trader.

The distinctions between these different categories and the value chain can often be blurred at times, for instance some boat owners also take part in trading if they have the financial means and while it is mainly the larger traders based in the regional centre (Mbour) that have contracts with the factory, some traders based at smaller landing sites (e.g. Pointe Sarene) have also negotiated contracts. The trade in octopus in Senegal is also not independent of that taking place in Mauritania and Morocco. In some cases Senegalese factories may buy product from Mauritanian to process, or Mauritanian traders may buy in Senegal and process and export this in Mauritania. The quantities produced in these other two important countries also affect the price on the European and Japanese markets.
The price of octopus in Senegal is partly a function of the supply and demand. While current factory purchase prices are between 1,000–2,000CFA/kg (€1.5–3 or 2.4–3.8 USD), the amount paid to fishers dropped to 100 FCFA/kg (€0.15 or 0.2USD) in 1999 during the explosion of octopus production. However, it is also a function of the size and the final market where it is sold (Table 3). Sizes of 300–500g per piece fetch around 10–12USD/kg (€6.4–7.7/kg) in the Japanese market, whereas sizes of 2-3kg are sold for 6–8USD/kg (€3.8–5.1/kg). In Europe (Italy and France) prices are around 8Euros/kg for pieces between 800g and 2kg. The type of processing will also affect the price, for example ‘hand-flowered’ octopus where the tentacles are arranged around the body fetch good prices on the European market.

### Table 3 Examples of prices for different sizes on different markets (for 2006)

<table>
<thead>
<tr>
<th>Country</th>
<th>Size kg/pc</th>
<th>Price/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>USD</td>
</tr>
<tr>
<td>Italy (wholesale)</td>
<td>Average</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>1 – 1.5</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>3 – 4</td>
<td>19</td>
</tr>
<tr>
<td>Spain (wholesale)</td>
<td>Average</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>0.3–0.5</td>
<td>10–12</td>
</tr>
<tr>
<td></td>
<td>2 – 3</td>
<td>7</td>
</tr>
<tr>
<td>Japan (wholesale)</td>
<td>0.8-2.0</td>
<td>12.6</td>
</tr>
<tr>
<td>France (market)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: [11], interviews with importers and 2007-2008 from Globefish (www.globefish.org)

In Senegal, the factories have a monopoly over the price because there is no local market for the product and only a few fish exporters trade in octopus. If the factories fix the price at 1,000FCFA/kg, larger traders will buy from the smaller traders for 900FCFA/kg and pay 800FCFA to the ‘laga laga’ who may offer 750FCFA to the fisherman (Table 4). This practice often causes problems for the traders if the factories change the price they will buy at, towards the end of the day after trading at the beach level has already taken place.

### Table 4: Average price of octopus as it moves along the value chain

<table>
<thead>
<tr>
<th></th>
<th>Fishers</th>
<th>Traders</th>
<th>Processors/Export</th>
<th>EU market</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCFA/kg</td>
<td>750</td>
<td>800-900</td>
<td>1,000</td>
<td>-</td>
</tr>
<tr>
<td>Euros/kg</td>
<td>1.1</td>
<td>1.2-1.4</td>
<td>1.5</td>
<td>3-12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(depending on size &amp; market)</td>
</tr>
</tbody>
</table>

Current inequalities within the value chain

There are a number of existing inequalities and social issues within the value chain. One of the key aspects that determine the benefits reaped by producers and the poor in the chain is the ability of the processing and exporting factories to fix the price at which they buy the octopus. As discussed earlier,
one of the reasons for this is the lack of competition between exporting companies, but it also reflects the low negotiation capacity of actors lower in the chain. This is likely to be related to lack of information on international markets and prices and a lack of access to independent credit. Access to credit is difficult given the centralization of credit organizations, the rigid criteria for accessing credit, and lack of flexibility in repayments as well as the modest amounts loaned [12]. The fact that exclusively ‘day caught octopus’ is bought also limits the fishermen’s negotiation capacity.

Another key concern for the value chain is related to quality issues. The quality of octopus from Senegal and reaching European markets is considered to be relatively high and it is possible for factories to use specific processing techniques to improve the texture of poorer quality produce. However, traders will receive lower prices for poorer quality octopus. In many cases the factories will collect directly from landing sites with their own lorries thereby assuring the quality, but octopus that goes via other routes (e.g. via fishermen to ‘laga lagas’ to traders and then to factories) has more time to deteriorate.

The actors in the value chain that are considered to be the poorest and most vulnerable include the fisher crew, artisanal processors (women), small-scale traders (women), and a large number of migrants. Medium poor groups include fishers that own some fishing equipment, traders that have some means of transport, traders and processors that benefit from family support or credit, and fishers involved in the industrial fishery; while well-off groups include boat owners (owning many units), traders and processors that have financial support of partners (e.g. factories or foreign exporters) or their own significant funds [12].

IMPLICATION OF CERTIFICATION

Opportunities of certification

As discussed above, there are a number of different options for certification schemes. Awareness-building workshops on the MSC scheme have already taken place in Senegal, and recent review reports on the octopus or cephalopod value chain [13] have recommended MSC certification. Other options include Friends of the Sea (FOS), which at first glance looks like an attractive proposition given its strengths in markets such as Italy and Spain where a high proportion of Senegalese octopus is destined. However, FOS does not have the additional benefits of NGO support (e.g. WWF and Greenpeace) or criteria on fisheries management that ensure sustainability of the stock into the future. While Fair-Fish proved to be an interesting approach when trialled in Southern Senegal, it lacks the market presence of other labels. Naturland may also be an interesting approach in the future although the market is currently focused on Switzerland and Germany where octopus is not consumed in large quantities, and there are still issues related to the draft criteria to iron out. Fairtrade certification, possibly in partnership with MSC, could be an option in the future as it provides for direct benefits to the producers.

One of the main benefits of certification is securing market access. However, while this is true for some products such as the white fish (where there is a very high demand for certified produce) this is not yet currently the case for octopus where market access to Spain and Italy is governed more by the quality and price than environmental or social issues. There may however, be increasing interest in MSC certification of octopus in Japan where the use of MSC is growing in popularity. Current estimates suggest that up to 20% of Japanese fish imports are from fisheries certified under the MSC standard or fisheries currently in assessment. However, it is important to bear in mind that octopus imports into Japan have been declining over recent years, which could affect demand for certified product. Price premiums for the product are not guaranteed, although this was achieved briefly under the fair-fish pilot and would be a characteristic of any Fairtrade labelling scheme.
Another key benefit of certification, such as MSC, is the requirement to have effective or improved fisheries management in place. It is clear that there is a need to improve the management of the octopus fishery, and a potential for improved yields if certain management measures such as biological rest periods and minimum landing sizes were effectively implemented. The strengthening of co-management bodies (i.e. the CLPAs) to achieve effective fisheries management could also have a number of knock-on benefits of a better organisation and improved negotiation capacity of actors in the value chain.

Lastly, it may be possible for Senegal to benefit from investment of donors into the fishery in preparation for certification. There has already been interest from GTZ (German Technical Corporation) and the World Bank in strengthening management capacity to support the certification process, but as of July 2008 neither of these programmes has yet been approved.

**Constraints of certification**

Despite the potential benefits of fisheries certification, there are a number of constraints. One of the key issues is the high cost and time required to improve management and achieve certification, for instance a proposal to the GTZ to support the certification process estimated a four year programme costing €682,631 which would in the first two years build up and establish co-management structures and in the second phase implement certification as well as improving the produce valorisation along the value chain [13].

The challenge in Senegal is the currently low capacity for management. For instance, co-management structures are not yet fully established and those that have been supported by JICA and GIRMaC funding have key differences in structure. There are also a number of on-going policy initiatives that need to be coordinated, such as the implementation of the new fisheries policy and the management plan for octopus. Current estimates consider that the octopus is already over-exploited and there would therefore need to be a dramatic improvement in management to prepare the ground for certification.

The ‘unit of certification’ is also problematic, as both artisanal and industrial fleets target the same stock, and the octopus fishery is spread down a significant proportion of the Senegalese coast. While it is possible to define a unit of certification that only targets a proportion of the overall stock, it is necessary for the status of the overall stock is sustainable. This allows for only the artisanal fishery (and possibly only specific areas) to be targeted for certification, but means that they will be reliant on responsible fishing practices of those outside of the scheme and over which they may have limited control. This also presents challenges for traceability, where it would be necessary to guarantee that the octopus could be traced back to the artisanal fishery rather than being a produce from industrial vessels or from regional countries such as Mauritania or Morocco.

However, the main economic constraint for certification of the Senegalese octopus is the current lack of interest by European buyers in Italy, Spain and France. While there is some consciousness on the importance of sustainability, buyers in France are not familiar with MSC certification and do not find that customers are asking for this type of product differentiation. There is similarly a lack of interest in certification among the actors in the value-chain within Senegal, unless it can guarantee a price premium. Such a premium looks unlikely in the current market, although it could be possible in the future.
Specific social issues associated with certification

The main ‘social impact’ of certification is related to the need to define access rights to the fishery and then restrict access (i.e. issue and enforce permits). Although this is likely to provide benefits into the future increasing value of the resource, improving management and securing livelihoods, there is a short-term social cost where some actors will not receive permits and will be excluded from the fishery. The extent of the social cost will depend on how equitably and transparent the process is. It is obviously a difficult and political process illustrated by the delay already experience in introducing such a system.

It is also clear that certification will not address a number of current inequality issues, such as the ability of factories to fix prices, the low negotiation power of traders with factories and of fishers with traders, and the lower quality of some octopus that gives producers or traders a lower price.

Pro-poor upgrading strategies (where the value of the product is increased throughout the value chain) have the potential to a) address current inequalities in the chain; b) mitigate social impacts of certification and c) reinforce environmental or social objectives of certification (Figure 2). Some of these can be addressed at the same time, for instance improving the organisation of community groups can promote the negotiation power of producers, give them a greater voice in resource allocations and assist in improved resource management. However, other upgrading strategies may be more orientated towards addressing current inequalities or moving towards the objectives of social certification (such as Fairtrade). For example, improving the quality of the product can improve the price paid to producers and traders, and increasing the transparency of the market can prevent factories fixing prices.

Figure 2: An illustration of upgrading actions and their contributions to different outcomes (A, B, C & D)
CONCLUSIONS

Before considering benefits or constraints of certification for developing countries it is necessary to consider whether importing countries are demanding certified product or are likely to in the future. If there is limited demand from the market, it is important to consider what the motivations for certification are (and by who) and whether these are likely to be realized. This also includes a consideration of the cost of certification and how it will be covered and by whom in long term (most of the certification schemes in developing countries are donor supported during the set up period). It is important to analyse the required functions that need to be taken up by government institutions and to understand if the willingness and commitment is there to sustain the initiative. A value chain analysis is instructive as it allows the implications for different actors (and relations between them) to be assessed, rather than focusing only on the implications of certification on the state of the resource.

In the case of the Senegal octopus export value chain, there is no immediate demand for certified product from importing countries, although this may change in the future. There are also relatively high costs of achieving certification and an effective management regime, which is one of the reasons that donor agencies have been involved in discussions to assist with covering the costs. There are a number of longer-term benefits of achieving environmental certification, including improved management and a more sustainable fishery. However, in the short-term there may be social costs including the need to reduce access to the fishery and set up a system of permits. Actors in the value-chain appear to be more aware of the short-term costs than the long-term benefits, and want to see short-term incentives such as a price premium to make it worth their while. Social certification (such as Fairtrade) could deliver such a premium but current developments are moving towards dual certification with an environmental standard to ensure that the stock sustainability is not undermined, so investment in management will still be required.

Certification schemes can have a number of benefits, but also constraints and potential social impacts as discussed above. They may also be unable to address all the current inequalities in the value chain. For instance environmental certification would not be able to address value-chain issues such as fairness of the pricing system. Social standards (such as Fairtrade) could address pricing issues, but would not be able to address quality issues or directly influence the allocation of access rights. It is clear however, that a combination of social and environmental certification could have the most overall benefits, although there may be additional areas that have to be considered that still fall out of the remit of both, such as the equitable distribution of access rights and potential short-term compensation for those negatively affected. Questions still remain however, such as how it is possible to limit the burden of certification and whether certification is in fact the best route for developing country fisheries.

Certification can be considered as one type of upgrading strategy, but there are other strategies that can also be used to improve the value chain and provide more benefits to poorer groups. Some of these strategies can be in line with certification requirements, but others such as quality upgrading and organisation capacity of actors are worthwhile achieving even without certification and can be used to address current inequalities and inefficiencies within the chain. Examples of upgrading strategies have been given here, and through the case study in Senegal selected strategies will be piloted and lessons shared nationally and internationally.
REFERENCES

5. MRAG, Soil Association & IIED (2000) *Relevance of certification to Fisheries in Developing Countries*, DFID Contract: 7381 CA

ENDNOTES

a Guidance for the Assessment of Small-Scale and Data-Deficient Fisheries: GASSDD
b Meeting notes from DFID workshop on Ethical sourcing of wild-caught fish from developing countries. 29th May 2008.
c Based on 2006 production levels, and estimates of global production of 360,000 tonnes per year given by [11]
e For example: Sénégal Pêche, Sangomar, Atlantic Trading, Pirogue Bleue, Amerger, Dragon, Ellen Pêche, Cinquomer and Dagar Ice
f Discussion with traders at Mbour on 7th April 2008.
g Telephone conversation with Lydie Pimpernelle from Ikagel-France on 25th June 2008.