

EXPERIENCES IN IMPROVING FISH WELFARE IN ARTISANAL FISHERY

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ABSTRACT

In a project carried out together with artisanal fishermen in Senegal in the years 2004 to 2010, fair-fish established a certification scheme that embraces also fish welfare criteria. Certification is restricted to fishing methods which guarantee that no fish is kept in the fishing gear longer than 30 minutes before being stunned and killed. From the fishing methods on place, four have been accepted: Handline, encircling gillnet, beach seine (only if dragged not to the beach, but off the beach, to the boat), and the cast net. To ease stunning and killing, fair-fish developed a tool yielding a heavy stun head at one end and a rounded blade at the other.

Several small-scale fisheries in Senegal passed certification. Unfortunately the project had to be closed down in 2010 when it turned out that no partner in the European market was willing to actively cooperate in building the bridge between small scale fishermen in developing countries and retail chains in industrial countries.

The idea behind the certification of fishing methods has later been integrated in the "Fischtest" (Fish Test) developed by fair-fish which evaluates not only the methods' impacts on the fish stocks and the environment but also on the welfare of the fishes caught (see presentation of Janika Lutz).

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The fair-fish association, officially founded in Switzerland in 2000, has always been interested in detecting and fostering ways of fishing with less impact on the welfare of the fishes, in order to:

- reduce harm to fishes caused by the fishing gear
- reduce the time of captivity in the gear
- render each fish unconscious the time it is taken off the water
- and kill each fish under anaesthesia

First experiences in Switzerland (2000-2003)

In 1999, after two years of investigation in cooperation with some Swiss professional artisanal fishermen working with gillnets, fair-fish issued a first guideline. Its core requirement was to give each fish a blow on its head, by thumping it on the boat's edge, as soon as it had been freed from the meshes. Usually, the supposedly dead fish was then put on ice.

When fair-fish decided to make its initially voluntary guideline the basis of a true certification scheme, the few fishermen who had cooperated so far left the project as they had experienced that in too many cases not being able to follow the rule, be it due to a big number of fishes caught or to stormy weather. Only one fisherman was ready to undergo the audit as he had the rare advantage of being helped by a second person on board. Three years later however he went into retirement.

Improvements in Senegal (2004-2009)

At that very time fair-fish was contacted by colleagues who carried out projects in fishing villages in the Saloum estuary, a remote region in southern Senegal. Could we open them a fair access to the European market? We took the chance as, different from their colleagues in Europe, artisanal fishermen in developing countries usually work in groups on a boat, and we knew it would be easy to get one or two additional persons on board who could concentrate on stunning and killing each fish.

To prepare the project, we critically reviewed our guideline with a veterinarian specialised in slaughter. We wanted to reduce the time of captivity, which in gillnets of Swiss fishermen could easily mount to one night in summer and two days in winter. And we wanted to make sure that each fish was really stunned and killed, which was not really sure with the method we had been accepting so far.

As a result, we tightened the measures:

- Stunning and killing must be carried out as two distinct actions. Only when stunning is proven to be effective, the fish may be killed.
- To ease this additional work for the fishermen, we developed a specific tool for stunning and killing.
- We observed the practices of Senegalese artisanal fishermen to understand the period of captivity given by the fishing methods.

fair-fish directives¹ for fish welfare in artisanal fisheries

Based on experience in cooperation with artisanal fishermen in Senegal, in the Saloum estuary as well as along the Atlantic coast, these are the directives developed:

- **Period of captivity:** Each fish must be stunned and killed within a maximum time of 30 minutes after being caught.
- **Percussive stunning:** Each fish must be stunned with a blow from the *fair-fish club* immediately after being taken out of the water. No other stunning method is permitted. Any fish caught by a hook must be stunned before being released from the hook.
- **Killing:** Each fish must be killed while stunned by gill cutting in order to sever the main artery.

The fair-fish club

The tool for stunning and killing had been designed by a Swiss student who had been an amateur angler since his youth. Once tested in Switzerland and then in Senegal, the club was produced in stainless steel by a Senegalese Catholic school during their manual training lessons. The club answers to two demands:



Left: The fair-fish club, aluminium prototype.

Left, bottom: The first lot produced in Senegal.

Top centre: Blow on the fish's head.

Top right: Cutting the gills.

¹ <http://fair-fish.net/guidelines/>

- Ease stunning and killing with an all-in-one instrument avoiding crips changes. One end of the club provides a heavy top for stunning, a curved blade is integrated in the other end for killing.
- Enable a posterior controls, at the reception point and in the factory, on the correct performance of stunning and killing: The screw thread of the stunning top leaves a distinct mark on the fish's head, detectable by a simple thumbnail over, and traces on the fish of blood flown out (which would not be the case if the fish was bled after dying).

SGS-auditor in the fish factory in Dakar controlling a sample of incoming fish before processing.



The fishing methods approved by fair-fish

In the Senegal project, we observed the practice with various fishing methods and gears used by artisanal fishermen to figure out which of them could cope with the fair-fish directives.

In a first step, four methods have been accepted, based on the fact that duration of captivity can easily be limited to 30 minutes max.



Encircling gillnet (Félé-félé), casted out by one or two boats in a circle. From the boat that remains in the circle, the fishermen make noise so the fishes flee into the net which then is hauled in step by step.



Beach seine, usually casted in shallow water by one or two boats to form a circle and the dragged to the beach. fair-fish prescribes the seine to be dragged to the boat in order not to harm the coastal habitat (Mangroves). By dragging, the seine is divided into parts, each of which is emptied separately.



Hand line, a much used technique on smaller boats at the cost. The line carries up to 10 hooks but is hauled as soon as one fish bites into one of them. Therefore the captivity duration is ver short. In addition, hand-lining is probably the least impacting method overall, with the cheapest gear.

(All photos: Studer)



Cast, in some cases used by few fishermen in Senegal.

Photo: Euku, Wikimedia Commons)

General evaluation of fishing methods by fair-fish

As a consequence of the latest reform of the European Common Fisheries Policy, the consumer must be informed about the fishing method/gear used for the catch². The problem is that the mandatory information is worthless, as it embraces e.g. under the term "Hooks and lines" everything from handlines to 100 km long longlines. The voluntary information

according the EU regulation is slightly more detailed, but does still not allow the consumer to make a true choice in order to support methods with least impact on fishes and environment.

In 2013, fair-fish Switzerland started a campaign to win over importers and retailers to inform their clients in more details. Some companies showed interest but in the end contented themselves with the EU regulation, unfortunately. The scheme we proposed (see at the right), based also on the pioneering study carried out by Fish-count³, was a groundwork for the Fish Test which will be presented now by Janika Lutz.

EU mandat.	EU voluntary	Proposition fair-fish
Seines	Beach seines	dragged to the boat
		dragged to the beach
	Danish seines	
Trawls	Beam trawl	
	Bottom trawls	conventional
		Light rollers and escape windows
	Midwater and pelagic trawls	conventional
		Escape windows
Gillnet	Set gillnets	
	Driftnets	
	Encircling gillnets	Captivity period max 30 min.
		Captivity period over 30 min.
Surrounding nets, lift nets	Purse seine	
Hooks and lines	Handlines, pole lines	Without barbs
		With barbs
	Troll lines	Captivity max 10 min, no barbs
		Captivity max 10 min, no barbs
		Captivity over 10 min
	Long lines	Captivity max 60 min., no barbs
		Captivity max 60 min., with barbs
		Captivity over 60 min.
Muschelbagger	Dredges	
Fallen und Reusen	Pots and traps	conventional
		with escape windows
	Harpoons	on smaller species
		on bigger species
	Dynamite	

Impact on fishes and environment:

light
 medium
 heavy
 very heavy

² Regulation (EU) 1379/2013 on the common organisation of the markets in fishery and aquaculture products

³ <http://fishcount.org.uk>