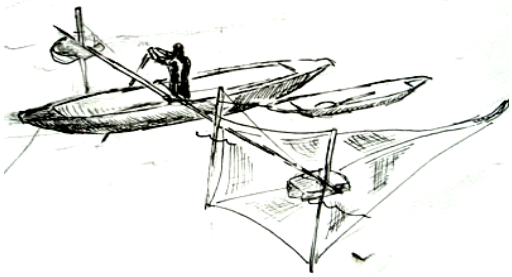
Information on ecolabelling and shrimp fisheries in Casamance, Senegal

félé-félé : 300m drift nets



mujas: standing nets at fixed sites

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Background

Casamance is the southern region of Senegal between Gambia and Guinea-Bissau. The Casamance Ria is the main artery of the region, forming high-biodiversity wetlands that are rich with water and natural resources. The Casamance estuary has both characteristics of a ria as of a funnel shaped estuary, namely a mixed tidal wave, small and seasonal river discharge, a hypersaline distribution which implicates a well-mixed estuary and a low Estuarine Richardson Number. An explanation for this can be that the Casamance has a ria shape which is slowly transforming into a funnel shape due to the strong sedimentation processes.

Small-scale fishing on wild shrimp in Casamance takes place with *pirogues*, wooden canoes. Fisherfolk are amongst the poorest people in Senegal, a West-African coastal state that itself is amongst the twenty poorest countries in the world.[1] While fishing meets a direct need for food, it can also provide the economic incentive to obtain hard currency for additional basic community needs. When treated under the appropriate conditions, shrimp may generate both high-value nutrition and the required cash. Top-quality shrimp can have the highest return amongst all fish products. Excellent sanitary and food safety conditions are a pre-condition to penetrate at the top end of European and US markets. Today markets in the north offer opportunities for products from fisheries that demonstrate to be sustainable. The growing demand for eco-labelled shrimp products goes hand in hand with high quality production in general. This offers an economic incentive to combat poverty in Casamance at the source and at the same time reassure that the fisheries contribute to a continuing healthy state of the shrimp resources in the wetlands with a rich biodiversity.

Shrimp regenerate quickly and it is not easy to overexploit shrimp. The remaining major issues for sustainability in shrimp fisheries are bycatch and adequate management. In most parts of the world the small mesh size of shrimp nets leads to high bycatches of other species, including juveniles of fish species of commercial interest. In addition it is necessary to regulate a fishery adequately, and this requires sufficient commitment and organisation of the fishermen and fish buyers.

Shrimp fisheries in Casamance

The southern pink shrimp (or Senegalese white shrimp) *Farfantepenaeus notialis* occurs in the estuaries and coastal waters of West Africa from Mauritania (Cape Blanc 21°N) to Angola. It mostly inhabits muddy sand bottoms at a depth of 2 - 100 metres. It prefers waters with temperatures of 18–24°C. The best season for shrimping is before and after the rainy season, from February to April and from August to October.

Commercial shrimp fishing in Casamance has a tradition of almost 50 years when fishermen from the north of Senegal moved into the area. The local ethnic group Diola were farmers/fishermen. Today, Casamance shrimpers use three techniques with their wooden canoes or "*pirogues"*: (1) *filet fixe or mujas:* standing nets at fixed sites, (2) *féle-félé*: 150m drift nets (although the legal maximum length is 30m) attached to pirogues, and (3) *kili*: beach nets, where fishermen wade through water of about 1.5 metres deep. Regular mesh size is 12mm.

Conflicts exist between fishermen using different techniques and where people do not keep to either the formal legislation or the 'local code'. The reported shrimp landings varied from 800 to 1 600 tonnes in the period 1984-2007, with an average of 1 107 tonnes.

In the last twenty years, Casamance has been suffering from a conflict between separatists and the government. Many people have gone on the move in their desperate search for food/income and

[1] UN human development index 2005

many extra men turned to fishing. In the same period, the Casamance Ria has faced less rainfall and a subsequent salinity increase, loss of mangroves, etc. Unlike in Asia and elsewhere, the African continent hardly produces any cultivated shrimp and fishing for wild shrimp remains the only access to these resources.

An estimated 10% is consumed on local markets and the rest is exported deep-frozen to Europe. Five factories in the Casamance region have export agreement to Europe of which three are actually active. In Dakar, capital of Senegal, processing plants mainly export shrimps fished by trawlers in the coastal waters of Guinea Bissau, Senegal, Mauritania and Gambia. All these shrimps, from coastal trawler fisheries and artisanal inland fisheries, are put deepfrozen on the European market as a product labelled "wild shrimp of the FAO 34 waters". We think we must take our Casamance artisanal fished shrimp out of this whole bulk and put it on a niche market as a high quality product, exploited by a sustainable shrimp fishery.

IDEE Casamance

In 2003, IDEE Casamance, a not-for-profit NGO registered in Senegal, started to assist the fishing communities in Casamance, with financial support from *inter alia* the Dutch donor agency. A study was conducted on the sector, its actors and the issues of the shrimp fishery in Casamance, aiming at encouraging dialogue and reinforcing structural capacity. It was recognised that economic opportunities in fisheries can help the associated communities in their development. A promising prospect may be an increased quality of the shrimp product, thus attracting other markets paying higher prices.

Shrimp quality is currently focussing on two aspects, sanitation and sustainability. The export markets in Europe and the US have very strict sanitation norms for the imported fish products and it proves to be a continuous struggle for export countries to meet those norms. Sanitary conditions require excellent treatment of the shrimp from the moment of catch until point of sale. High quality shrimp implies optimal protein and nutritional values and this is essential for both local consumption and export.

Collaborative management is a prerequisite for achieving sustainable fisheries. Sustainable fisheries imply that (1) the shrimp populations are healthy, (2) the impact of the fishery on the natural ecosystem is sufficiently low (limited bycatches) and (3) the regulation of the fisheries is shown to be in good order. Fisherfolk will need to resolve existing conflicts and work together in order to safeguard future shrimp availability. The relatively confined region of Casamance makes it easier to regulate the overall fishing pressure.

Artisanal shrimp fishery in the Casamance ria is a very basic activity with almost no negative environmental impact (see the Swedish Institute for Food and Biotechnology study on our website). We therefore believe that the product has a high potential once it is detached from the bulk as it is now commercialised in Europe: all shrimp fished in West African waters by estuarine fisheries or trawlers is commercialised as wild shrimp fished in the FAO 34 waters. And as we said earlier, the Casamance ria is an embedded area where certification restrictions can be easily imposed and controlled.

Our activities

In august 2007, IDEE Casamance started organizing fisherfolk in 10 rural communities. In close partnership with local fishers and their know-how an inventory is dressed of fishermen and their gear in each village, the fishmongers visiting these villages and the women active in the transformation of fish products. We then install in each village a co-management team whose members represent the fishing community and civil society. This committee corrects on village level all deviation of law or codes of conduct commonly agreed for the fishing area. Reunions of members of these committees of several villages form a management team of a larger fishing area. IUCN NL/EGP financially supported the initial activities that are supposed to prepare the field for labelling shrimp fishery in the future. With support of the USAID/Wula Nafaa project, IDEE Casamance enlarged the activities to 16 rural communities from February 2009.

Shrimp data

A study of the Fishery Department financed by IDEE Casamance in 2004 showed:

gear	fixed standing net	drift net	beach net	Total
number	3 736	1 034	296	5 066
fisher men	1 868	3 102	592	5 562

Dimensions of mujas nets:

Goudomp:

The net is fixed on poles in the middle of the river and has a length of 8 – 12 metres and an opening of 7/8 X 2,5/3 metres. Mesh size is 12mm.

Baghagha:

2 nets fixed on pirogue, each net has length 18m, height 3 m, large 8m

Ziguinchor:

2 nets fixed on pirogue, length 12m, height 2,5 m, large 8m

félé-félé are 150m length, with mesh size 12 and height between 110 (Goudomp) and 180 mesh sizes

Artisanal shrimp catches in the Casamance ria varied between 800 and 1 200 tonnes the last years.

The life cycle is of Farfantepenaeus notialis (Pérez Farfante, 1967) is about 20 months of which it spends only 4 months in the estuary. Reproduction is at sea. There are two stocks: one in front of Saint Louis in the North and one between Guinea Bissau and Casamance in the South.

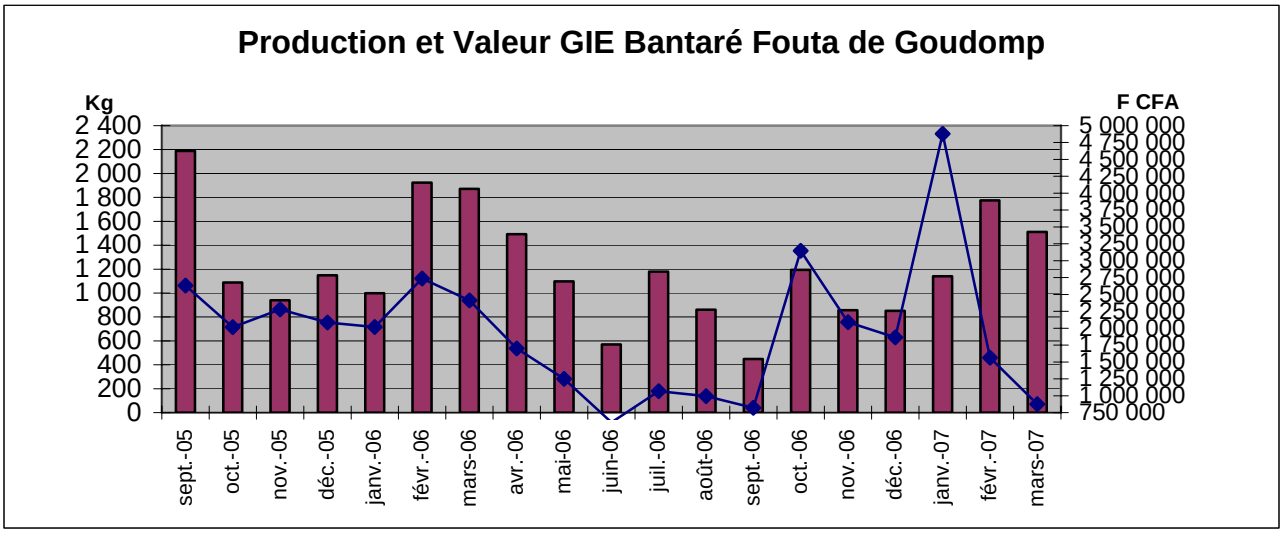
Max length: 23 cm (female), 17 cm (male).

Prices paid by the factories to shrimp fishers varied with a monthly average from 800 F CFA (€ 1,22) to 4 250 F CFA (€ 6,48) with an overall average of € 2,29 (1 500 F CFA).

The Bantare Fouta GIE of 20 fishermen in the Goudomp village. From 01 September 2005 to 31 March 2007 (19 months) they landed 23 430 kg shrimp for a total value paid by the factory of 37 262 185 F CFA (€ 56.805,83), that is 1.961.168 F CFA/month. Each fisherman with an unknown number of fixed nets (estimated 5/person) catches 1,99 kg shrimps/day and earns 98.058 Francs CFA/month.

Other data from 335 Days in 2002 on canal fishing in Goudomp show that shrimps were only landed 194 days (57,91% of fishing activity) with a nightly presence of an average of 38% for each member. An average fishing night, some 14 fishermen collect 29,2 kilo of shrimps, which means 1,8 kilo/person/night.

Félé-félé data from Baghagha village of 56 days in February/March 2007 show a fishing activity of 761 nets collecting 16.188 kilo of shrimp of which 12,4% is considered very small by the fishermen themselves. This means an average catch of 21,27 kilo per félé-félé net. Average presence on 56 days of fishing is 45,44%.



In the same 19 months (sept 2005 – march 2007) the average shrimp size was:

calibre	ind/kg	%
0	0/10	
1	11/20	0,13
2	21/30	3,76
3	31/40	11,79
4	41/60	14,70
5	61/80	15,74
6	81/100	9,77
7	101/120	12,60
8	121+	28,78