

A Spectre that Haunts Fisheries

Individual transferable quotas are prescribed to reduce fleet capacity in the Octopus fishery of Mauritania, but capacity is not structural as in Europe

In May 2006, three years after discussions between key local actors and a panel of international experts from countries like Australia and New Zealand, where fisheries are managed by individual transferable quotas (ITQs), a management plan for the octopus fishery was adopted by Mauritania.

Management of this fishery is more than necessary, given its economic predominance, and the decline in profits in recent decades. The outputs from the international working group of the Mauritanian

of fishery resources, and in maximizing the potential economic benefits of octopus resources.

The Octopus Plan also suggests the introduction of ITQs as the solution to these problems, conditional on the implementation of an impact study, programmed for 2007, but which has yet to be carried out.

Nevertheless, in the “Strategic Fisheries Framework 2008 - 2012” it is stated that for the Octopus Plan, “the aim of regulation and capacity-adjusting measures is, through a system of ITQs, to reduce, in a sustainable way, the fishing capacity targeting octopus so as to attain a balance that assures resource sustainability and the optimization of rent”. So, without going through the planned step of an impact evaluation, the adoption of ITQs has become effective.

The principal objective of the Octopus Plan is to maximize the benefits (in terms of resource rent) extracted from the natural octopus resources, while respecting the constraints of environmental, economic and social sustainability of fisheries activities.

The aim is to reduce the fishing capacity that targets octopus—currently around 40 per cent in excess—to attain a balance that guarantees the sustainability of resources and the optimization of the rent that is extracted.

Strengthening management

To achieve this, a series of steps are envisaged. First of all, to strengthen existing management, a monitoring system and an annual review of the plan are to be put in place, and a

The objective of the Octopus Plan is to maximize the benefits extracted from the natural resources...

Institute for Marine and Oceanographic Research (IMROP), corroborated by the Food and Agriculture Organization (FAO) Fisheries Committee for the Central Eastern Atlantic (COPACE), show that octopus is increasingly overexploited, with an excess of effort, which rose from 25 per cent in 1998 to 31 per cent in 2002.

According to the Octopus Plan, the government should have tried to curb this overcapacity. However, its attempts have not worked, because they are based on traditional methods of managing fishing effort, which have demonstrably failed wherever they have been used since they are ineffective in curbing overexploitation

*This article is by **Ahmed Mahmoud Cherif** (mahmoud.cherif46@gmail.com), a former Director of Fisheries in Mauritania (1976-1979), and Director of the Mauritanian non-governmental organization, PECHECOPS*

method for fixing fishing possibilities introduced. This is to be based on an evaluation of the allowable catches, undertaken twice yearly during the two regulatory biological rest periods in the octopus fishery (October-November and May-June) and the fixing of the total allowable catch (TAC) for the following season. There are also measures governing the improvement of the system to regulate catches (electronic log books, vessel monitoring systems, compulsory use of landing centres arranged for artisanal fishing) and technical management measures designed to protect juveniles (biological rests, mesh size, zoning, minimum allowable size, etc.).

The plan equally has implications for the different fleets targeting octopus, and for controlling catching capacity. It envisages freezing the capacity of European cephalopod vessels, reconverting excess national capacity to other fisheries that are underexploited such as small pelagics, and freezing capacity in the artisanal fishery.

The plan also has two secondary objectives. The first is to favour the managed development of coastal and artisanal fisheries, by freezing the number of canoes and restricting artisanal activities within an enlarged, but well-defined, coastal area.

The second is to accrue value addition in the country; but this objective is not considered a priority, given the risks of overexploitation that it could provoke and given that the sustainability of production is not guaranteed. It is worth highlighting here that this takes the opposite view to that of 'fishing less, but earning more', where the creation of local added value may compensate for the decline in revenues associated with a voluntary reduction in fishing capacity. Allowing distant markets to extract added value is a model that has shown its limits: distant markets, which control value addition and demand for raw materials, in general, exert greater fishing pressure on resources.

Once this framework is in place, the Octopus Plan foresees the

implementation of several different elements necessary to enable the system to be shifted towards managing catches, based on ITQs. The main advantage of this system, according to its promoters, is that it provides a genuine possibility for controlling product flows. This system should allow "the extraction of resource rent, where an equitable sharing must be guaranteed between public and private sectors", between fishers and the State.

The plan envisaged putting ITQs into place in the second quarter of 2008, beginning with the national industrial sector. For the most part, five years after its adoption, the Octopus Plan has not been implemented, apart from the two biological rest periods. It would, therefore, seem premature to say whether or not the introduction of ITQs for managing this fishery has been positive, given that the first stages of the plan, particularly the provisional evaluation designed to fix the TAC, must take place over four years, and its start date is not yet fixed.

Meanwhile, one can already note several lacunae in the plan, some of which may well prevent its success. In the first place, we must cite the inadequate analysis of key factors, notably, how the national fleet is comprised: its origin, its funding, its management, its crew composition,

FAO/S. GARCIA



Small-scale octopus pot fishermen fishing at Nouadhibouâ, Mauritania. Artisanal fishing for octopus currently provides 80 per cent of the jobs in the entire fisheries sector

all elements that could provide useful information from the point of view of introducing ITQs.

The creators of the Octopus Plan are wrong in describing the problem of overcapacity, derived from a comparison with what is happening in Europe, as a structural phenomenon which the Mauritanian government had tried, without success, to get rid of. In Mauritania foreign vessels are authorized to fish despite the provisions of the United Nations Convention on the Law of the Sea (UNCLOS), which oblige foreign fleets to fish only the surplus resources that cannot be exploited locally.

The problem of overcapacity in Mauritania is a direct consequence of the financial requirements of the government, linked to structural adjustment programmes. The government sees the financial compensation associated with the fisheries agreement with the European Union (EU), which allows a fleet of Spanish cephalopod vessels to fish in Mauritania, as a rapid way to respond to these financial needs, and the interests of the European fishing fleet

has its limits. Due to lobbying pressure from industrial fisheries, TACs are often set at levels above what can be caught. Another aspect is that operators tend to discard into the sea species for which they have already fished their quota: in fact, the quotas only apply to the volumes landed, and so have absolutely no limiting effect on the quantities caught and then discarded.

Finally, one of the most important questions is how to share the quotas amongst the different users. An allocation based on poor research could skew competition between sectors and compromise the priority for developing coastal and artisanal fishing. Artisanal and coastal fishing for octopus currently provides 80 per cent of the 40,000 jobs in the entire fisheries sector, and supplies work for around 40 factories and 15 small workshops producing canoes and fishing gear.

The artisanal octopus fishery also provides the best quality products for export and is recognized as the most apt for maximizing the resource rent. It has proven its competitiveness compared to industrial fleets, and it accounts for more than half of the octopus production.

However, it has failed to expand due to an arbitrary and premature distribution of TACs. In fact, in 2006, on the basis of 'historic catch records' over the period 2000-05, it had been envisaged to reserve only 4,000 tonnes of octopus out of a total TAC of 30-35,000 tonnes. On the basis of the share-out proposed, the industrial trawler owners, despite their harmful impact on resources and the marine environment (destruction of undersea hills and rocks around Cap Blanc, huge quantities of rejected fish and marine animals), get the lion's share.

Early development

The lesson to draw from this is that, in a general sense, in a fisheries sector which is still in the early stages of its development, the introduction of ITQs could constitute a hurdle to the natural development of different segments, notably the

...one of the most important questions is how to share the quotas amongst the different users.

override the imperative of managing the octopus resources sustainably. The question, therefore, arises as to whether the introduction of ITQs will bolster this foreign overcapacity to remain in Mauritanian waters, thanks to the possibility of acquiring quotas, to the detriment of a managed development of the local coastal and artisanal fleet.

Another weak point is the fact that, essentially, the Octopus Plan is constructed around the annual fixation of the TACs by species and fishing zones, and through quotas. As has been shown in many fisheries that use this system, notably in Europe, the TAC and quota system



Industrial fishing vessels anchored off Nouadhibou harbour, Mauritania. Overcapacity in Mauritania's fisheries is a direct consequence of the financial requirements of the government

artisanal fishing sector, by fixing them in their current state.

Another problem with the national trawler fleet, which is of foreign origin (Chinese and European), targeting octopus is the huge opacity that prevails in the sector. This opacity is not new. In 1988, the fraudulent registration of 30 Spanish cephalopod vessels was discovered, which led to the imprisonment of two ministers (responsible for fisheries and finance) and the Governor of the Central Bank.

In 2005, a study financed by German Co-operation (GTZ) found that the status of 100 cephalopod vessels was irregular. Up to now, no strong measures have been taken, and the registry and ownership of the 130 national cephalopod vessels are still hazy. Often derelict, these trawlers have been acquired secondhand by some businessmen who obtained 'acquisition permits' from their friends in high places, and for whom fishing is not a way of life, but a tool for speculation.

If the registration of vessels and the provision of licences and the conditions set for catching octopus by these trawlers are not made transparent, there is no doubt that the introduction of ITQs will only serve to favour such speculation, to the detriment of establishing sustainable fishing.

These questions, prompted by the eventual future introduction of ITQs in the Mauritanian octopus fishery, point to the need for, above all else, the planned impact study, with the

participation of all the actors in the sector.

The Octopus Plan consultative technical working group, in its final synthesis report of 2004, concludes, amongst other things: "The system of user rights which is currently enjoying the most success worldwide is the ITQ system, but this system is not always feasible... experts conclude that, given the characteristics of the Mauritanian fishery, such a system is feasible if the Government decides on it (and if the actions envisaged in the first part of the plan are undertaken). It is, therefore, advisable to deepen discussions and studies so as to identify the system which is best suited to Mauritania."

For more



www.imcsnet.org/imcs/docs/mauritania_fishery_profile_apr08.pdf

Mauritania fisheries profile

www.odinafrica.org/learn-about-odinafrica/74-mauritania

IMROP

firms.fao.org/firms/resource/10132/en

Marine Resource Fact Sheet: Octopus Mauritania

Balancing priorities

It is essential that a fishing zone reserved for artisanal fishing be created in Mauritania

In most countries of the South, artisanal fisheries provide the basis for centuries-old traditional ways of life associated with the sea. Most studies show that such fisheries are highly valuable, contributing to income generation and food supplies, and, in addition, provide the basis for a wider range of economic activities in areas lacking in alternative resources.

This article looks at the artisanal fisheries of Mauritania, which (with the notable exception of the Imraguen) have only developed in a major way since the late 1980s. In Mauritania, the artisanal fishery is, therefore, in the main, a highly modern sector, targeting mainly species for export. As discussed below, like artisanal fisheries in other parts of the world, artisanal fisheries in Mauritania make a vital contribution to the economy and a unique and indispensable contribution to the country at large.

For several years, the Mauritanian government has sought to provide “ring fence” protection for the artisanal fishery through a zoning scheme. This provides exclusive access for small-scale fisheries in denoted areas. As noted in *The Twilight Zone* (SAMUDRA Report No 27): “One of the suggestions made to protect the livelihoods of small-scale fishermen throughout the world is the installation of special artisanal fishing zones.” This article looks at the issue of the artisanal fishing zone in Mauritania in the context of the wider fishery, and from the perspective of the unique and indispensable contribution fisheries make to the country.

“Ring fencing” the artisanal fishery through zoning regulations may provide much-needed protection. However, such ring fencing can also pose a major

constraint to development, particularly if controls are not applied to industrial fishing activities, and if the zone is the only area where artisanal fishing is allowed to take place.

In the case of Mauritania, given the recent alarming developments in the octopus fishery, such ring fencing clearly needs to be combined with strict limitations on the access allowed to distant-water fishing vessels throughout the Exclusive Economic Zone (EEZ).

Octopus and other cephalopods represent the most valuable resources in Mauritanian waters. However, a recent international working group meeting, organized in Nouadhibou by the National Centre for Oceanographic and Fisheries Research (CNROP), with the participation of the FAO, EU and several of the top international experts on octopus, discussed the management of fisheries resources in Mauritania and highlighted the vulnerability of these stocks. In particular, they noted that octopus stocks, which provide 80 per cent of the annual turnover of the national fisheries sector, have declined to alarmingly low levels. These are under dangerous pressure from both national and international fleets.

New restrictions

Noting the warning signals, the Minister of Fisheries has placed a restriction on the deployment of any new cephalopod vessels. However, it seems that this restriction only applies to the local sector. The EU and other distant-water fleets are not being so restricted. In the context of closed-door and secretive negotiations with the EU on a new fisheries agreement, from which the local sector is barred, the prospects for similar restrictions being applied to the international fleet seem remote.

Those in the administration who favour the signing of a new agreement use the departure of the Chinese trawler fleet as justification. In fact, the departure of this fleet, which stopped fishing long back, does not seem to have had any beneficial effect on the fishery, which is still in a very poor state. Whilst these justifications were used for the last agreement, CNROP estimates that there is now a surplus fishing effort of 30 per cent! The crisis affecting the fisheries sector since the signing of the current agreement in 1996 has confirmed CNROP's worst fears.

Worryingly, it seems that Mauritania is ready to renew the provisions of the existing protocol with the EU. People from the profession, mainly artisanal fishworkers, are completely opposed to this.

When discussing the issue of the fishing zone in Mauritania reserved for artisanal fishing, one must, therefore, look at the local context, and, in particular, the fisheries sector in its entirety.

The World Bank has placed Mauritania in the list of the least developed and most heavily indebted countries. Evaluated against the UNDP's Human Development Index, the country occupies the 150th position amongst 175 countries.

The rural sector, traditionally the main source of occupation for Mauritians, is still the most important one for the national economy, with the mining sector representing one of the pillars of the modern sector. The latter challenges the fisheries sector for first place in the country's exports, which has become the main engine driving national development. It provides more than 50 per cent of the foreign exchange earnings, 10 per cent of the GDP, between 25-30 per cent of the government revenue, and some 30,000 jobs.

The waters of the East Central Atlantic that border 700 km of Mauritania's territory in the west are well known for the abundance and diversity of their biological resources. This is thanks to the existence of an intense upwelling in these waters (the phenomenon of deep waters rich in mineral salts rising to the surface,

where, in contact with the sun's rays, an intense photosynthetic activity is produced). Thus, Mauritania's EEZ is one of world's richest in fishery resources.

The Mauritanian EEZ has a surface area of 230,000 sq km, with a continental shelf area of 39,000 sq km. Of this, 9,000 sq km is entirely taken up by Bay of Levrier the Arguin Bank. Level with Cap Blanc, the continental shelf extends for 64 km. It reaches its maximum width of up to 128 km off the Arguin Bank. Beyond Cap Timiris South, it never reaches more than 48 km.

The Arguin Bank is one of the most remarkable features of the Mauritanian coastline. It consists of a zone of shallow banks about 80 km wide, bounded in the west by breaking surf, except in the region of Cap Blanc. It comprises a series of sand and mud banks, covered with seagrass beds and some rocky outcrops; the depth never exceeds more than 4 m except in the eastern area, where it reaches up to 14 m. The southern part contains several islands that are home to one of the most important populations of sea birds, and where some of the world's rarest species have evolved.

The Arguin Bank forms part of the Parc National du Banc d'Arguin, a protected area created in 1976, with a coastal length of 180 km, covering a land and maritime area of 12,000 sq km.

The ecology of the site is remarkable, being designated as a wetland of international importance under the Ramsar Convention, a UNESCO World Heritage site, and recently classed as a "gift to the world". Thanks to its vigorous biological productivity, it contains abundant biodiversity. So, today the Parc National du Banc d'Arguin is governed by a special law, which, compared to the rest of the coast, enhances its protection, its autonomy and its unique features.

Ancient communities

The park is the territory of the Imraguen, the country's most ancient fishing communities. The population of around 2500 to 3000 is divided into seven villages. As far as the fishery is concerned, it is only the Imraguen who have access rights. Increase in their activities is restricted, and they must only use their traditional gears,

notably their sailing launches, as motors are strictly forbidden.

The park does not contain such large quantities of fishery resources as the neighbouring areas: the main species of the EEZ are practically absent (e.g. cephalopods). Those that are present are poor in number, and consist of small-sized individuals with a low market value.

According to CNROP, the total Maximum Sustainable Yield (MSY) of Mauritania's fishery resources is 1.5 mn tonnes, of which 1 mn tonnes are pelagics and 0.5 mn tonnes are demersal. In terms of volume and value, the most important resources are the cephalopods (50,000 tonnes) and small pelagics (980,000 tonnes).

Cephalopods provide nearly 70 per cent of the foreign exchange earnings from the fisheries sector. In terms of volume and value, the most important species is the octopus (*Octopus vulgaris*), which accounts for half the turnover of the sector. The rest is shared equally between several demersal and pelagic species.

In recent years, fishing effort has been poorly controlled. This has resulted in the overexploitation of certain stocks such as the octopus, the potential of which has been reduced by 30 per cent. In general, demersal stocks are considered to be either overexploited or fully exploited,

whilst the fishing pressure on the pelagics should be eased. The main concentrations of fishery resources are found in the coastal zone between the 10 and 80 m isobaths. Throughout the EEZ, from north to south, these concentrations are found both within and beyond the 12 nautical miles that demarcate the extent of the territorial waters.

The depths found here are easily accessible to the modern *pirogues* used in the artisanal fishery that, using lines and nets, target both demersal and pelagic fish with scales (i.e. fin fish), and catch cephalopods with pots (in the case of octopus) and traps.

But this is also the preferred fishing zone for demersal trawlers, particularly those that supply the shore-based factories. As a result of this, there are frequent conflicts between industrial and artisanal fisheries. For the latter, this is costly both in terms of human life and fishing gear. For several years, these conflicts have become increasingly acute due to declining catches.

No tradition

Apart from the Imraguen communities who dedicate themselves to their ancient livelihood traditions of subsistence on the Arguin banks, the Mauritanian peoples have no maritime traditions. Several thousand young people coming from rural areas have now taken up fishing as a

profession. This is subsequent to the rural exodus caused by the drought affecting the country during the decades of the 1970s and 1980s, the appearance of significant urban settlements along the coast, and the State-led development of fishing as an important activity, first in Nouadhibou, the economic capital situated in the extreme north of the country, and then Nouakchott, the political capital. Currently, the sector employs 30,000 young Mauritians, of whom 25,000 are associated with the artisanal fishery.

Despite making weak progress during the 1960s and 1970s, the Mauritanian artisanal fishery started its rapid expansion only after the 1980s, with the development of the octopus fishery through a pot-based sector, and the expansion of the export sector sending fresh fish to Europe, supplied by line fishing.

The landings of octopus from the artisanal fishery have shot up, increasing from less than 100 tonnes in the mid-1980s to more than 9,000 tonnes in 1993. But this expansion halted in 1994, following a very sharp increase in fishing pressure from cephalopod trawlers, and the increasingly frequent and destructive incursions of fresh-fish trawlers into the coastal zone where trawling is forbidden.

At present, the octopus production of the artisanal fleet fluctuates at around 4,500 tonnes, with the *pirogues* being thrice the number in 1993.

Despite its youth and the difficulties it is experiencing, the subsector plays a major role in the economy and society. Apart from the usual contributions made to employment, income generation and wealth distribution, to nutrition and food security, artisanal fishing makes a very important contribution to foreign exchange earnings.

The main reason is that high export prices are obtained for its better value-added products, markedly superior to the earnings of the industrial fishery. With foreign exchange earnings worth more than several millions of dollars, the subsector has a very important role to play in levelling the balance of payments.

The raw material supply needs of the several dozen processing factories constructed in Nouadhibou and Nouakchott depend on this subsector, as does the supply of fish for local consumption.

The development of the artisanal fishery for octopus shows how important it is for the Mauritanian artisanal fishery to establish their own fishing zone, with effective surveillance. Decree 89-100 of 26 July 1989 under the old 1987 fisheries code, defines artisanal fishing thus:

“Artisanal fishing boats are vessels which lack any means for trawling and any onboard freezer installations, and with a maximum horsepower less than or equal to 200; boats that do not correspond to this definition are industrial fishing boats.”

A decree from the Fisheries Minister should define, where necessary, the different categories of artisanal and industrial fishing boats. No such decree has been issued.

Of note is that this definition is based purely on technical criteria. The decree in the process of development is probably going to introduce new categories of vessels. The proposal submitted by the Technical Consultative Commission with the responsibility for this subject, anticipates three categories: artisanal vessels, decked vessels for coastal fishing, and industrial vessels.

In reality, the tendency in the developing national vessel fleet is for the intermediate category of small-decked vessels to disappear, with only a few rare old specimens surviving. Due to their low profitability, these will, in all probability, not get their licences renewed. In future, it could be that the coastal fishery category will not contain many units. The fleet will basically then be made up of cephalopod freezer trawlers and modern *pirogues*.

Complementary

The *pirogues* are currently aluminium or fibreglass boats mainly targeting the octopus fishery, and with a complementary fishery outside the octopus season using nets for sole, *courbines* (bass/perch) or sharks. Wooden boats of Senegalese design fish with lines



for the high-value bottom fish destined for the fresh-fish export market, and with purse seines for mullet and small pelagics.

The territorial sea has a width of 12 nautical miles, measured from the following baselines:

The area extending from Cap Blanc (20° 46'N) to Cap Timiris (19° 21'N): a straight line joining the point of Cap Blanc with the point of Cap Timiris. Cap Timiris South as far as the Southern border (16° 04'N): low tide level.

The zonal divisions of fishing activities are fixed by decree. The rationale for these zones is generally based on resource conservation needs, but equally takes into account the supply needs of the local factories and the national fish market, and has broader aims of integrating the sector into the national economy. Also, the vessels that unload in Mauritania are the ones generally authorized to fish in the zones closest to the coast.

The zone specifically reserved for artisanal fishing is a narrow band of territorial sea of little significance, situated in the northern part of the territorial waters, but *de facto*, the artisanal fishery enjoys an exclusive zone because of the prohibition on the use of certain fishing gears in one part of the coastal fringe. Industrial fishing is effectively banned in the north, west of a line 4.8 km from the

baseline, and, in the south, 9.6 km from the baseline. In this way, the artisanal fishery benefits from a not inconsiderable exclusive zone. The limits are defined by the zone where industrial fishing is permitted, by the coast, and by the selectivity criteria applied to the protected areas in the Parc National de Banc de l'Arguin.

Proposals submitted to the Fisheries Ministry by the Technical Commission for including in the Decree on the application of the January 2000 fisheries code include the banning of demersal trawling in depths less than 25 m, and pelagic trawling in depths less than 50 m.

In the southern zone, it is proposed that the following exclusions be adopted:

	Restricted zones for trawling (Distance from the coast)	
	Pelagic trawling	Demersal trawling
Cap Timiris to Nouakchott	28.8 km	14.4 km
Nouakchott to Senegal Border	19.2 km	9.6 km

However, the maritime authorities are convinced of the need to create an exclusive zone for artisanal fishing, legally reserved for this activity, and effectively protected, as a key part of the government's fisheries policy.

The technical committee dealing with this issue had proposed a zone with a width of 12 nautical miles, measured from the baselines. But this proposal came up against the opposition of the industrial sector, in particular, the foreign pelagic vessel owners with local interests, who say that the main concentrations of sardines are to be found inside this zone.

The growing social and economic importance of the artisanal fisheries subsector, and the worsening situation of competition and conflicts with the industrial fishery over the fishing zone, makes it essential that a fishing zone reserved for artisanal fishing is created, sufficiently large to allow for its expansion, and efficiently surveyed to protect its activities.

This zone was one of the main demands made by artisanal fishery representatives from the West African subregion, following a workshop organized in October 2000 in Nouakchott by the NGOs CFFA (Europe) and PECHECOPS (Mauritania), who proposed the adoption of an exclusive artisanal fishing zone of 12 miles, measured from the same baselines as used for defining the limits of the territorial waters. ¶

This article, by Ahmed Mahmoud Cherif, a former Director of Fisheries in Mauritania, and Director of the Mauritanian NGO PECHECOPS, has been translated by Brian O'Riordan