



Young Namibian Industry for Aged Fish

As easily accessible fish stocks become scarcer, fishermen turn to alternative and unexploited species. Heralding a new era for Namibia, the Ministry of Fisheries and Marine Resources has granted rights to companies for the exploitation of deepsea species in the Namibian exclusive economic zone (EEZ). To date research has concentrated on orange roughy, the most valuable deepsea species in the Namibian EEZ. Another species, alfonsino, will be subject to intensive research as the next target species.

The decision to target orange roughy on a commercial basis follows the success of Gendor Fishing which had been granted a sole deepsea exploratory fishing licence within the EEZ for a three-year period ending in December 1996.

Orange roughy

Orange roughy (*Hoplostetus atlanticus*) is found in depths ranging from 500 m to more than 1 200 m. The fish tend to concentrate over hard rocky ground such as sea mountains. They aggregate in a well-defined spawning season from June to September which makes the species vulnerable to overfishing. During the rest of the year the fish is more widespread. The biomass of these aggregations has been estimated at between 300 000 tons and 350 000 tons.

Being confined to such great depths, relatively little is known and stock assessment and management are exceedingly difficult. Orange roughy is believed to have a life span of more than 100 years and reach sexual maturity only at 32 years and therefore it is susceptible to overexploitation. Namibian orange roughy reach sexual maturity at an earlier age (24 years), which may indicate a higher reproduction rate. They are smaller at maximum size than those found off New Zealand and Australia. Very exciting was the discovery of shoals of very small young orange roughy, a sight that has never been observed elsewhere.

The flesh of orange roughy has a firm white texture, which can withstand temperature changes. Fillets are deep-skinned to remove the sub-dermal wax ester layer. Worldwide, orange roughy is ranked third and among the top five selling seafood products after shrimp and salmon. In the North American markets, orange roughy despite little market development by traditional suppliers, is a highly prized frozen fish fillet, ahead of species such as Chilean sea bass

and Alaskan halibut. For Americans, the pure white colour, even flake, delicate flavour, lack of bones and good size make orange roughy the ideal fish. Roughly 80% of the world's orange roughy production is consumed in North America.

Alfonsino

Alfonsino (*Beryx splendens*) is found in midwater above topographic features such as sea mountains at depths ranging from 300m to 700m in permanent aggregations. It is regarded as a fast growing species but as its otoliths are difficult to read little is known about its age. Namibian alfonsino has a high fat content and is generally smaller than specimens from the North Atlantic and New Zealand. It is a favourite in Asian markets, especially in Japan.

Also found in the Namibian EEZ at depths ranging from 600 m to 1 500 m are all four species of oreo dory, the black oreo dory (*Alloctytus niger*), smooth oreo dory (*Pseudocyttus maculatus*), spike oreo dory (*Neocyttus rhomboidialis*) and deepsea or warty oreo dory (*Alloctytus verrucosus*). They are thought to be slow growing and little is known about their age. Namibian oreo dories are smaller than those found off Australia. Although the dory is similar to orange roughy, the market demand is not as high as the fillets are smaller and oreo dory has a stronger fish taste. There seems to be less tolerance for processing and cooking dories. Relative to many other species, however, the fillet attributes are rated highly and the oreo dory is classed as a superior white fish.



Packing orange roughy fillets at Deep Ocean/Gendor. The firm white texture make it a highly prized commodity ranking third among the top five selling seafood products on North American markets .

Bruno Nebe

Cardinal fish

Cardinal fish (*Epigoniae*) is found at a depth range of 450m to 750m and is of a similar size to those found in New Zealand and the North Atlantic.

Exploitation of deepsea species

The Ministry of Fisheries and Marine Resources received 39 applications for deepsea rights, but only five were allocated.

A total allowable catch of 12 000 tons was granted for orange roughy and 10 000 tons for alfonsino. The five successful applicants were Atlantic Sea Products, Gendor Fishing, Glomar Fisheries, Continental Deepsea Fishing and Consortium Fisheries. Of these, the first three have been granted quotas for orange roughy and alfonsino in 1997. The others are expected to begin fishing when the fishery is more developed.



Bruno Nèbe

It is believed that orange roughy reaches sexual maturity at approximately 32 years and has a life span of more than 100 years. It is therefore more vulnerable to overfishing than other species.

All were granted four year rights except Gendor who received a 7 year exploitation right and a quota of not less than 33,3% of the overall TAC for any new stocks discovered during Gendor's exploratory fishing activity.

Atlantic Sea Products, a 60% Namibian-owned company, was awarded a catch of 3 000 tons orange roughy and 2 500 tons alfonsino. Atlantic Sea Products is a joint venture between Aonin Fishing, Rundu Fishing and Sandford Ltd. Aonin Fishing and Rundu Fishing are two relatively new Namibian owned companies with rights in the hake freezer fishery. Aonin Fishing represents the Topnaar people, who have traditional links to the sea. The shareholders of Rundu Fishing are largely from Rundu in the Okavango Region. Sandford Ltd is a New Zealand fishing company, which has diverse interests in aquaculture and fishing and is one of the two largest orange roughy fishing companies in the world.

Gendor Fishing received the largest quota of 6 000 tons for orange roughy and 5 000 tons for alfonsino. The company had pioneered the orange roughy industry in Namibia. In April 1994, Dr Andrew James joined Gendev of Namibia and founded Gendor Fishing (Pty) Ltd to develop a deep-water fishery in Namibia. Gendev provided venture capital to start the business whilst DORI provided research knowledge and expertise. In November 1994, the company was restructured to incorporate Sealord Products of New Zealand, which provided additional capital and deepwater catching, processing and marketing skills. The Namibian controlled company Gendev holds the majority shares of Gendor.

Le Garrec is involved in a number of fishing ventures around the world but is best known as a major participant in the development of the small fishery for orange roughy and other deepsea species in the North Atlantic.

Consortium Fisheries is a 98% Namibian-owned subsidiary of the Ohlthaver and List, Namibia's major industrial corporation with interests in tourism, brewing and farming. Consortium Fisheries, long established in Walvis Bay, is active in the pelagic and hake demersal fisheries.

Continental Deep Sea Fishing is owned by Namibian individuals and fishing companies with extensive interests in fisheries and other business areas in Namibia, under the leadership of Mr Frans Indongo.

The new fishery will target a number of species occurring in waters ranging from about 500 m to more than 1 200 m deep. So far orange roughy and alfonsino have been maintained at previous levels.

Catch (in tons) of the four major deepsea species during 1994, 1995 and 1996.

Year	1994	1995	1996
Orange roughy	158	6 825	12 463
Alfonsino	0	1 084	1 727
Oreo	19	80	46
Cardinal	0	66	653
Total	177	8 055	14 889