STATUS REPORT

Hoplostethus atlanticus

2012

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1.   Description of the fishery

1.1   Description of fishing vessels and fishing gear

The nature of the fishery has changed over the last couple of years. Exploration for Orange roughy first started in South Africa prior to 1994 but emphasis soon shifted to Namibia when an exploratory fishing license was given to a Namibian fishing company to search for commercial deep-water fish species. The fishery expanded, extending their fishing range into SEAFO CA. By 2008, a three year moratorium on orange roughy was enforced and the fishery has not been re-opened yet.

Table 1 shows vessels that operated between 1995 and 2005 in the SEAFO CA. These vessels were also involved in the Alfonsino fishery during the same period.

Table 1 – Orange roughy: Fleet information, Sub-Division B1.

Name	Length	GRT	Built	HP	IRCS
Southern Aquarius	54		1974	3000	V5SH
Emanguluko	31	483	1990	1850	V5SD
Petersen	43	650	1979		V5RG
Will Watch	69	1587	1972	2116	ZMWW
Hurinis	37	784	1987	1680	V5SW
Bell Ocean II	57	1899	1990	3342	3BLG
Seaflower	92	3179.75	1972	4800	V5HO

The vessels employed the standard New Zealand "Arrow" rough bottom trawl with cut-away lower wings. Sweep and bridle lengths were 100 meters and 50 meters respectively. A "rockhopper" bobbin rig was used. The net had a 5-6 meter headline height when towed at 3- 3.5 knots and had an estimated wingspread of 15 meters. The cod end had a mesh of 110 mm. Each vessel spends on average 12 days at sea.

1.2   Spatial and temporal distribution of fishing

The Namibian orange roughy fishing mainly occurred on the four grounds within the Namibian Exclusive Economic Zone (Fig. 1). In some years, fishing vessels extended their range into SEAFO area at Valdivia and Ewing seamounts (red circles). These operations started in 1995 and continued until 2005, with the exception of 1998 when no fishing took place. Seven Namibian vessels (Table 2) were involved during this nine year-period and a total of 1270 trawls were made landing about 290 tonnes of orange roughy.

The fishing season usually extends from January to December and catches peak in winter months (May to July), which coincides with the spawning season of orange roughy.

Figure 1 – Geographical location of the Namibian fishing grounds. Circles indicate where fishing occurred in SEAFO area (source: DEEPFISHMAN Case Study Report 1 A 2010).

1.3   Reported landings and discards

Table 2: Catches of orange roughy made by Namibia, Norway and RSA.

Main species	Orange roughy catches (tonnes)		
Management Area	B1	A1	B1
Nations	Namibia	Norway	RSA
Fishing method	Bottom trawl	Bottom trawl	Bottom trawl
1976			
1977			
1978			
1993			
1994			
1995	39	N/F	1
1996	8	N/F	0
1997	5	22	27
1998	N/F	12	
1999	0	N/F	
2000	75	0	
2001	94	N/F	
2002	9	N/F	
2003	27	N/F	
2004	15	N/F	
2005	18	N/F	
2006	N/F	N/F	
2007	N/F	N/F	

For all the fishing grounds the home port is the same as the landing port, with Walvis Bay and Lüderitz the most important ports. All available landing information is presented in Table 2. However, the bulk of orange roughy catches were recorded within the Namibian EEZ. In 2005, the Namibian fishing vessels landed over 10 t within the SEAFO CA; caught at the Valdivia and Ewing seamounts (Figure 2).
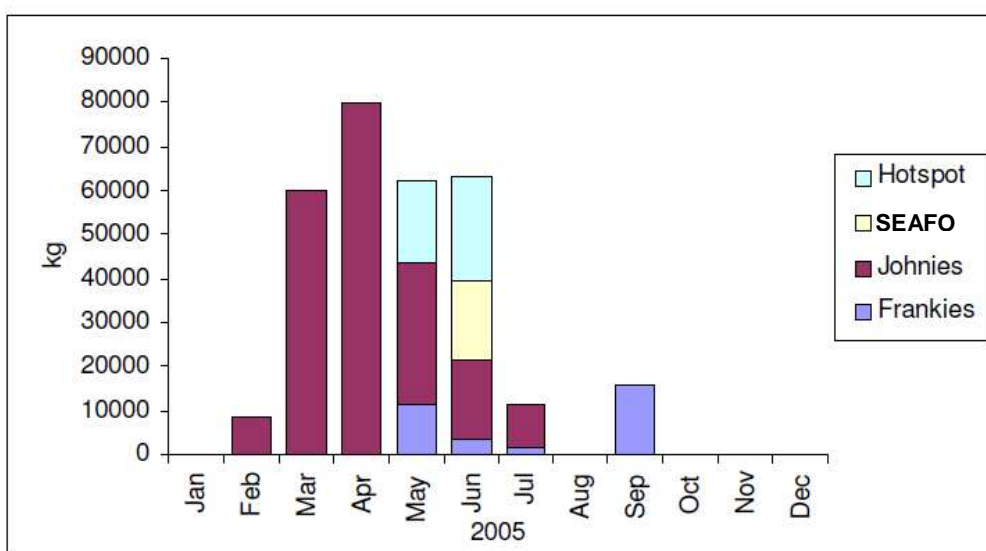

Figure 2 –   Monthly orange roughy catches in the different Namibian QMA's as well as the SEAFO CA for 2005.

1.4 IUU catch

Apparent IUU fishing activity in the SEAFO CA has been report by vessel to the Secretariat, but the extent of this is at present unknown.

2. Stock distribution and identity

Orange roughy (Hoplostethus atlanticus) are distributed globally (Figure 3), but are found predominantly in the Southern Oceans. In the south eastern Atlantic orange roughy is most probably a single stock. In the BCLME region they have been found within the economic zones of each of the coastal states as well as in the SEAFO CA. The only commercially viable fishery occurred in Namibian waters (Figure 2).
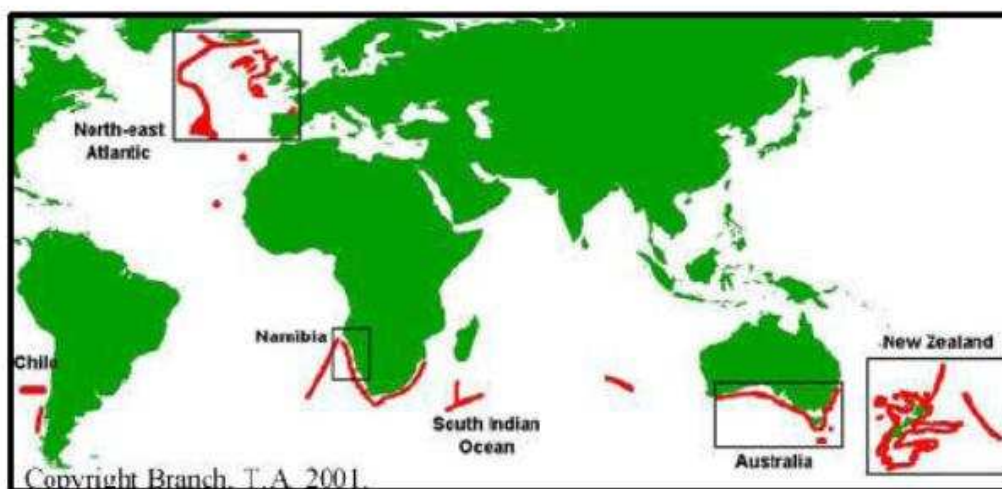

Figure 3 – Global orange roughy distribution.

The aggregating behaviour of orange roughy contributed to its vulnerability to over exploitation globally. Spawning aggregations of orange roughy have been targeted in Namibia during winter. Outside the spawning seasons catches were found to be lower due to a more dispersed resource. Orange Roughy are also extremely slow growing with estimates of maximum age in excess of 100 years.

Recruitment to the fishery is poorly understood as juveniles are not found in significant quantities. Adults have been caught in small amounts in both Angolan and South African waters, but not in large spawning aggregations as in Namibia. Orange roughy distribution also extends beyond the economic zones of the BCLME countries with good catches reported for example on the Valdivia Bank on the South Atlantic Ridge as well as on the fringes of the Agulhas Bank and Walvis Ridge in the southern Benguela.

3. Life history parameters and information

3.1 Length frequencies

No information available for SEAFO CA.

3.2 Length-weight relationships

No information available for SEAFO CA.

3.3   Age data and growth parameters

No information available for SEAFO CA.

3.4   Reproductive parameters

No information available for SEAFO CA.

3.5   Natural mortality

No information available for SEAFO CA.

3.6   Feeding and trophic relationships (including species interaction)

No information available for SEAFO CA.

3.7   Tagging and migration

No information available for SEAFO CA.

4.   Stock assessment

4.1   Available abundance indices and estimates of biomass

No stock assessment done for orange roughy found within the SEAFO area.

4.2   Data used

4.3   Methods used

4.4   Results

4.5   Discussion

4.5   Conclusion

Since there is no fishery or any other independent data available within the SEAFO CA, no assessment can be done at the moment. However, future assessments for orange roughy should be separated according to fishing ground, similar to what has been done for the the New Zealand orange roughy resource.

5.   Ecosystem implications/effects

5.1   Incidental and bycatch statistics (fish, invertebrates, seabirds, cetaceans, turtles)

No information available for the SEAFO CA.

5.2 VME incidental catch

No information available for the SEAFO CA.

5.3 Incidental and bycatch mitigation methods

No information available for the SEAFO CA.

5.4 Lost and abandoned gear

No lost and abandoned gear data have been reported for the deep-sea red crab fishery in the SEAFO CA.

6. Biological reference points and harvest control rules

No biological reference points and/or harvest control rules have been established for this stock as yet.

7. Current conservation measures

⇨ Conservation Measure 04/06: On the Conservation of Sharks Caught in Association with Fisheries Managed by SEAFO
⇨ Conservation Measure 07/06: Relating to Interim Measures to Amend the Interim Arrangement of the SEAFO Convention
⇨ Conservation Measure 08/06: Establishing a List Of Vessels Presumed To Have Carried Out Illegal, Unreported And Unregulated Fishing Activities in the South-East Atlantic Fisheries Organization (SEAFO) Convention Area
⇨ Conservation Measure 13-09: Interim Prohibition of Transshipments - at – Sea in the SEAFO Convention Area and to Regulate Transshipments in Port
⇨ Conservation Measure 14-09: To Reduce Sea Turtle Mortality in SEAFO Fishing Operations.
⇨ Conservation Measure 15-09: On Reducing Incidental By-catch of Seabirds in the SEAFO Convention Area.
⇨ Conservation Measures 18/10 on the Management of Vulnerable Deep Water Habitats and Ecosystems in the SEAFO Convention Area
⇨ Conservation Measures 19/10 on Retrieval of Lost Fixed Gear
⇨ Conservation Measure 20/10: on Total Allowable Catches and related conditions for Patagonian Toothfish, Orange Roughy, Alfonsino and Deep-Sea Red Crab in the SEAFO Convention Area in 2011 and 2012
⇨ Conservation Measure 22/11: on Bottom Fishing Activities in the SEAFO Convention Area

8. State of stock and management advice

There is no data available for orange roughy within the SEAFO area, as a result SC cannot provide a reliable state of the stock assessment within the Convention area. SC recommends that orange roughy assessment should be done separately for each aggregation area found in the SEAFO CA and subsequent quotas. SC therefore recommend a status quo for the 2013-2015 TAC: Zero (0) tonnes in Sub-Division B1 and 50 tonnes in the remainder of the Convention Area.

9. References

- Boyer, D.C., Kirchner, C.H., McAllister, M.K., Staby, A. & Staalesen, B.I.(2001). The Orange Roughy Fishery of Namibia: Lessons to be learned about managing a developing Fishery. *South African Journal of Marine Science*, 23, 205-221.
- Anon, 2010. Social economic studies. Deepfishman. Case Study 1A Report. Namibian Orange Roghy. Instiute of Ecomics Studies. University of Iceland.
- Anon, 2011. Capricon Fisheries Monitoring. State of Stock Review Report No. 2. In: Japp D.W., M. G. Purves and S. Wilkinson, *Status of the Fishery Resources in the Benguela Current Large Marine Ecosystem*. Cape Town.
- Anon, 2008. Ministry of Fisheries and Marine Resources. State of the Resource TAC recommendations report; Orange roughy. Namibia

APPENDIX – CPUE for orange roughy

The catch per trawl trend was used as an indicator of the CPUE trend and was the highest in 1995 and thereafter decreased rapidly to reach the lowest CPUE in 1999 after which it stabilized at a low level (Figure 4).
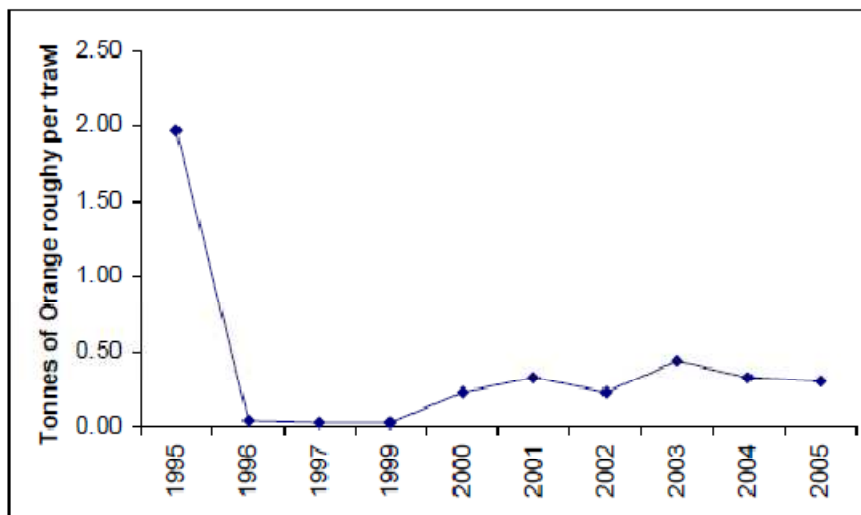

Figure 4 – CPUE of orange roughy in tonnes per trawl in Sub-Division B1.