

SC-03-03(01)

Annual National Report – Cook Islands

Relates to agenda item: 3

Working paper info paper

Delegation of the Cook Islands

Abstract

This paper provides an overview of the trawl fishing activities in the Southern Indian Ocean Fisheries Agreement area undertaken by Cook Islands vessels. It highlights activities during 2017 and takes the form of the Cook Islands National Report.

Recommendation

The meeting is invited to consider the Cook Islands Annual National Report



Ministry of Marine Resources

GOVERNMENT OF THE COOK ISLANDS

SOUTHERN INDIAN OCEAN FISHERIES AGREEMENT

Cook Islands National Report

2017

Prepared by Offshore Division

This report provides an overview of the trawl fishing activities in the Southern Indian Ocean Fisheries Agreement (SIOFA) area by Cook Islands vessels, and highlights activities during 2017.

In 2017 the Cook Islands authorised two vessels to operate in the SIOFA area, pursuant to High Seas fishing authorisations issued by the Ministry of Marine Resources (MMR). These vessels target deep-water finfish species, primarily Alfonsino (*Beryx splendens*) and Orange Roughy (*Hoplostethus atlanticus*) using bottom and midwater trawl fishing methods. A list of species is given in Appendix 1.

After recommendation by the First Scientific Committee to close Benthic Protected Areas, and the recommendation made by the Third Meeting of the Parties for all Contracting Parties to note this advice, Cook Islands vessels are not permitted to fish within the areas listed in Appendix 2 of this national report, and additionally do not fish on the Del Cano Rise.

Catch is unloaded in Mauritius and South Africa. Alfonsino are generally exported to Japan and Orange Roughy mainly to China or elsewhere in Asia. Some catch is sold in the local markets in Mauritius and South Africa.

1. CATCH DATA

In line with confidentiality restrictions that prevent the disclosure of fishing activity where only two vessels are active, catch data is not presented for Cook Islands operations in the SIOFA area, as these data would form part of the public record of SIOFA.

The three top species captured by weight in 2017 were: Alfonsino (57%), Orange Roughy (29%), and Cardinal (7%) (Table 1). These species comprised 93% of the total catch. Alfonsino is the species most commonly caught in this fishery since 2006. Fishing effort peaked in 2010 at 900 days fished by three Cook Islands vessels in the fishery. Effort has remained steady over recent years.

Table 1 Summary table of catch composition and fishing effort from 2011 – 2017.

Total Catch (mt)	No. Shots	Days Fished	BYX	BNS	BOE	SSO	SOR	ORH	CDL	BBF	BOR	OTHER
1997	215	42	89	0	0	0	0	1	0	0	16	0
1998	525	169	2,769	0	0	0	0	0	0	0	0	0
1999	723	246	556	5	0	101	187	2,242	41	0	4	0
2000	1,084	237	1,758	33	0	76	282	589	157	0	120	0
2001	1,231	272	1,424	1	4	98	514	1,593	185	0	1	0
2002	1,377	293	1,230	4	6	50	466	1,613	49	0	4	0
2003	1,254	292	927	5	0	41	269	619	79	0	1	0
2004	1,284	276	921	7	3	11	290	947	81	0	13	0
2005	1,175	256	1,165	4	2	76	133	2,355	305	0	1	0
2006	1,480	468	3,203	25	5	17	69	1,288	324	190	56	33
2007	1,262	537	2,813	132	2	11	88	2,402	167	5	309	0
2008	1,296	553	3,710	57	3	30	122	2,430	290	0	557	3
2009	1,890	673	6,017	50	1	170	67	1,999	844	347	866	20
2010	3,092	900	5,730	65	97	23	157	1,531	191	321	454	17
2011	1,816	599	3,193	15	7	10	140	1,676	372	281	217	25
2012	1,781	490	3,999	33	5	5	83	955	191	47	31	0
2013	1,601	524	3,914	92	3	1	75	1,484	266	280	286	23
2014	1,971	523	3,731	73	6	27	118	1,077	383	180	45	24
2015	2,729	501	3,901	23	2	2	0	1,444	464	161	123	173
2016	1,985	455	2,895	10	4	10	0	1,034	855	60	127	61
2017	2,230	495	3,882	23	6	8	184	1,978	467	30	54	166

2. EFFORT DATA

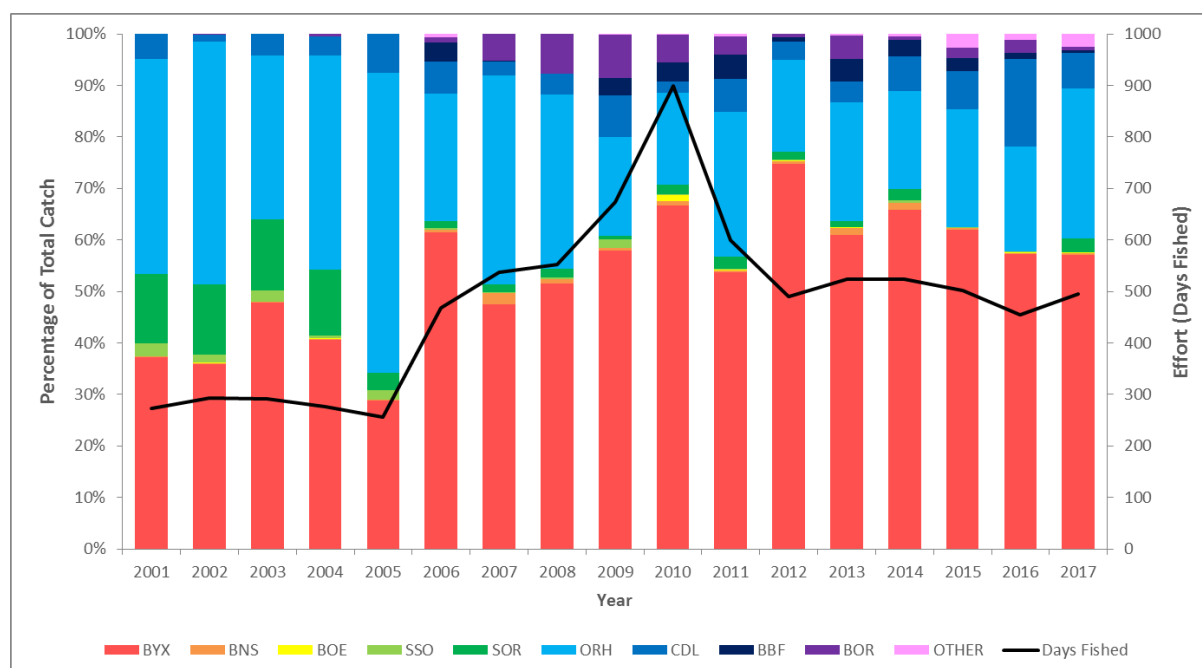
The split in effort between bottom trawl and midwater trawls (Table 2) varies between years, and is driven by changing markets and exchange rates. Both vessels actively fished throughout 2017, but downtime for five year maritime surveys for both vessels reduced operational sea days. The number of midwater trawl shots for Alfonsino has significantly increased from 2011 to 2017.

Table 2 Cook Islands Vessel Effort 2011-2017

Year	Total trawls	Midwater	Bottom	Days Fished	Days at sea
2011	1899	1088	728	590	664
2012	1781	1357	424	490	602
2013	1601	1118	483	524	636
2014	1971	1406	565	523	645
2015	2729	2050	679	501	604
2016	1999	1909	590	455	544
2017	2230	1779	451	495	627

‘Midwater trawl’ is defined as fishing with a pelagic net designed for off-bottom fishing, but may include occasional contact with the sea floor.

Figure 1: Trawl catch by species and effort in the SIOFA Area from 2001 – 2017.



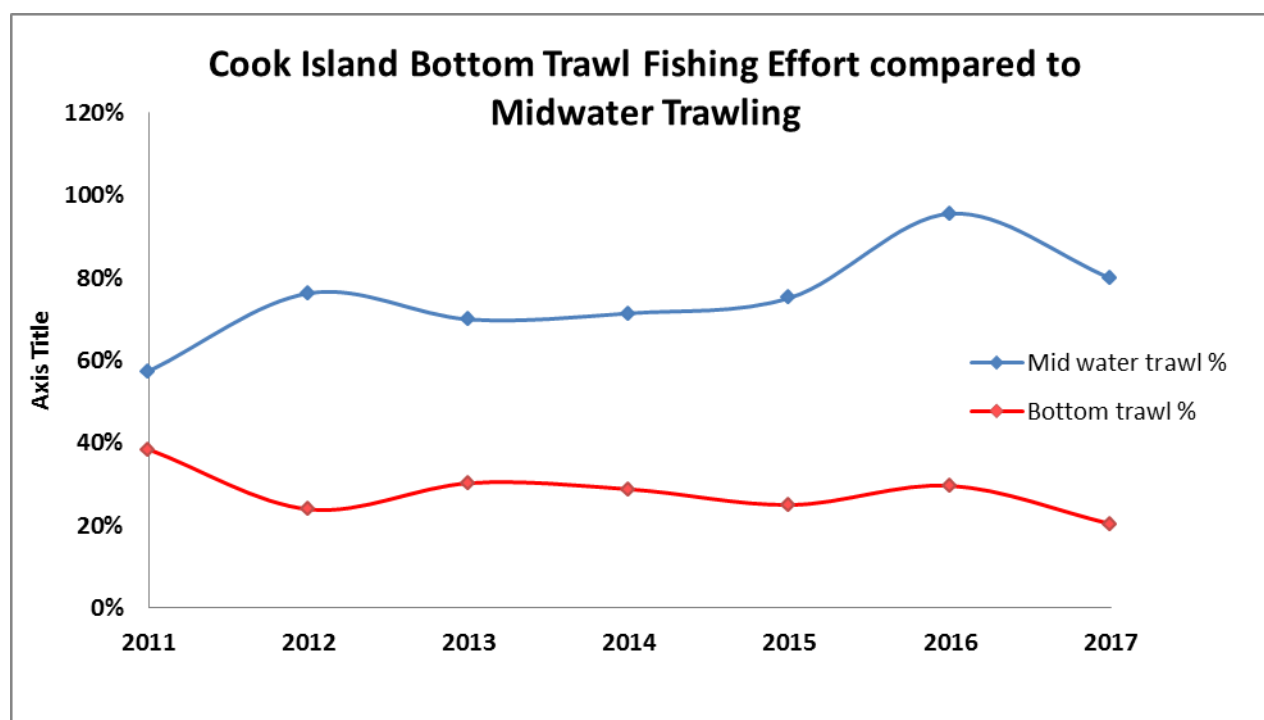
3. DESCRIPTION OF FISHERIES

In 2017, the Cook Islands authorised two vessels to operate in the SIOFA area. The two vessels have been the only Cook Islands vessels in the fishery since 2012. Prior to 2012 three additional vessels were authorised to operate in various years, however only limited data is available from these vessel operations. The two current vessels are the FV Will Watch and the FV Nikko Maru No.1.

4. CATCH PER UNIT EFFORT (CPUE) SUMMARIES

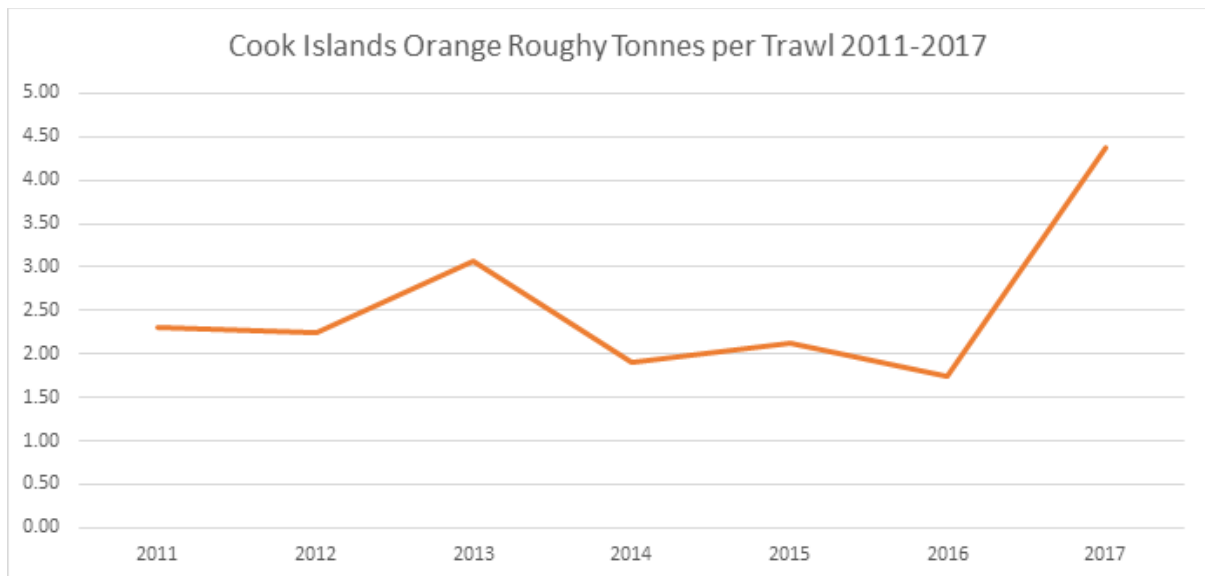
Bottom trawling comprised about 20% of the Cook Islands fishing footprint in the SIOFA area in 2017 (Figure 2). Midwater Trawling for Alfonsino remained the major target species in the fishery.

Figure 2: Cook Islands Bottom Trawl Effort 2011-2017



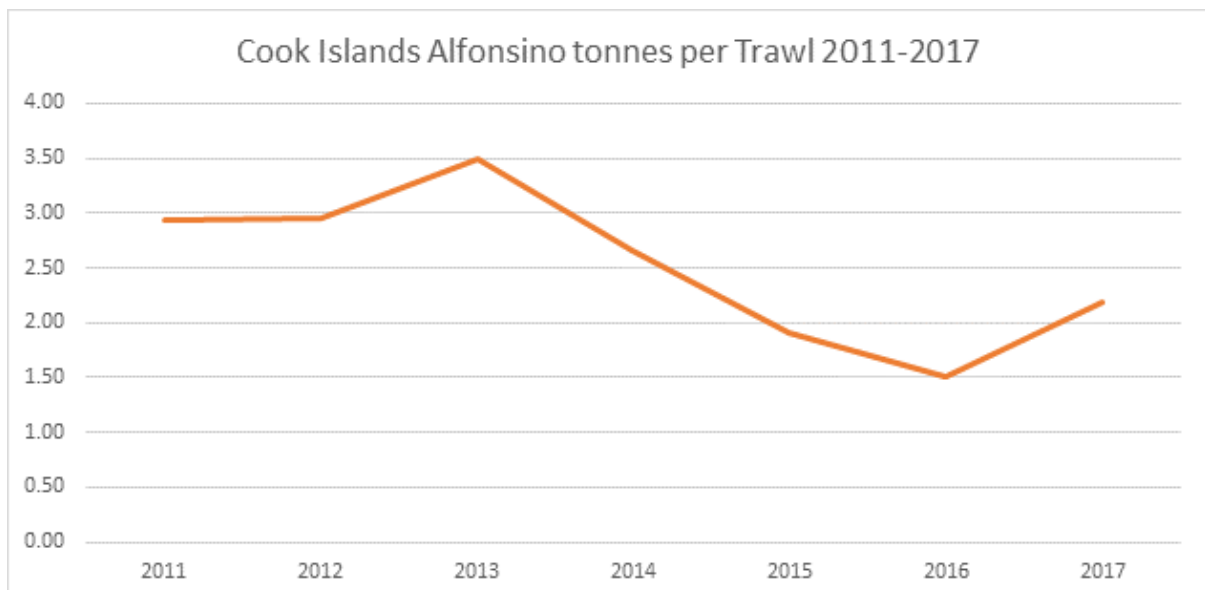
Orange Roughy CPUE (tonnes per trawl) remained relatively constant in 2017 (Figure 3). The Cook Islands position is that CPUE, by itself, is not an appropriate index to establish the status of Orange Roughy fish stocks. Interpreting catch per unit effort in targeted fisheries is complex and if not done correctly can result in errors of interpretation. It is informative to see how CPUE changes on an annual basis and, in the absence of other data, trends in CPUE then provide the only indicator as to the state of a stock. However, to increase fishing effort in any fishery where there is a decline in CPUE is not considered precautionary practice and is not supported by MMR. Decline in CPUE indicates that further management steps should be taken to assess the state of the fishery.

Figure 3: Orange Roughy Catch per unit Effort (tonnes per trawl) 2011-2017



Alfonsino catch per unit effort (tonnes per trawl) for Cook Islands vessels has steadily reduced over recent years (Figure 4). Despite the upward trend in both fishstocks last year, the Cook Islands remains concerned about the state of the fishery and has requested key work at Scientific Committee, under a working group for management and harvest strategies, which should have already commenced.

Figure 4: Alfonsino Catch per Unit Effort (tonnes per trawl) 2011-2017



5. FISHERIES DATA COLLECTION

Cook Islands vessels enter into access agreements with the Ministry of Marine Resources, valid for five years, allowing them to fish in areas beyond national jurisdiction, and are then issued High Seas fishing authorisations, valid for one year, in accordance with Section 21 and Section 35 of the Marine Resources Act 2005.

Cook Islands regulations require vessels carrying High Seas authorisations to record daily information on catch and effort, including position information. Original log sheets are sent to MMR and entered into a national database. In 2017 MMR commenced monitoring of landings in ports. Cook Islands vessels unload in Mauritius or South Africa and are monitored by Cook Islands Observers and officers from port state fisheries agencies. Landing information is sent to MMR for oversight and verification.

All vessels are required to carry automatic location communicators. Trawl vessels are prohibited from targeting sharks, but where sharks are caught in the normal operations of the vessel they are required to be handled in a manner that affords them the best chance of survival.

6. RESEARCH ACTIVITIES

All Cook Islands vessels follow the scientific data guidelines as described in 2006 FAO Fisheries Circular 1020, updated in 2012 (FAO 2012). The 2012 document includes sampling methods for Alfonsino and recommendations on how to conduct acoustic surveys. Acoustics methods are the standard approach to evaluate Orange Roughy and Alfonsino biomass in fisheries in New Zealand, Australia and Chile, using highly developed management procedures.

All Cook Islands vessels are required to undertake commercial fishing vessel surveys with calibrated echo-sounders, as recommended by the FAO Expert Consultations (FAO 2012) and the FAO Deepsea Guidelines (FAO 2009). A number of acoustic surveys on Orange Roughy were carried out in 2017 to overcome a quadrant failure in some data collected in 2016. In January 2017, FAO convened a workshop under the ABNJ program to review the acoustic studies in the Indian Ocean presented at SC-01, for review by the Meeting of the Parties at SIOFA III. The workshop provided an opportunity for experts to review and recommend further work in 2017.

In light of MSC Certification for Orange Roughy fisheries in New Zealand, Cook Islands Marine Stewardship Certification pre-assessment for Orange Roughy is planned for 2018.

7. VME THRESHOLDS FOR BOTTOM FISHING ACTIVITY

Cook Islands policy calls for protection of biodiversity, taking into account UNGA Resolution 61/105 and subsequent resolutions, which call on states to implement measures for the High Seas in accordance with the precautionary principle and ecosystem approaches to fisheries management.

The Cook Islands notes that other RFMOs have progressed to spatial management as a standardised conservation and management measure to minimise bottom fishing impacts as being more effective than move-on rules, and supports the use of Benthic Protected Area (BPA) conservation closures to meet the requirements of Resolution 61/105.

Many areas in SIOFA are already identified and closed to Cook Islands vessels due to the potential for significant adverse impact on known VMEs by bottom trawling activity. Others are closed to Cook Islands vessels as a precautionary measure to maintain and protect biodiversity.

Findings by FAO and Cook Islands Fisheries Observers on board who monitor benthic encounters indicate that there have been low encounter rates by Cook Islands vessels. MMR and Industry have together developed an advanced encounter protocol over a number of years to include holistic management approaches, either by moving off encounter areas, or more significantly by voluntary BPA fishing closures. The BPA closures were not generally implemented by the Meeting of the Parties in 2017 for a second year running, despite being recommended by the first Scientific Committee. The Cook Islands maintains that the Scientific Committee should strongly reiterate this recommendation to generally close the BPAs in 2018; to be achieved by an amendment of CMM 2017/01 to include BPA conservation closures.

MMR renewed the directive to vessels in January 2018 as follows:

“...vessels are hereby directed pursuant to paragraph 6 of SIOFA CMM2017-01:

The Cook Islands fully supports the use of Benthic Protected Areas (BPA) conservation closures to meet the requirements of UNGA Resolution 61/105. Many areas in SIOFA are already identified and closed to Cook Islands vessels due to the potential for significant adverse impact on known VMEs by bottom impact activity, and these are well known to Cook Islands vessels.

Move on Rule

In areas other than BPAs, the Cook Island VME encounter protocol requires that for a trawl tow, the presence of more than 60 kg of live coral and/or 400 kg of live sponge indicates a VME encounter that must be reported to the Director Offshore, Ministry of Marine Resources within 24 hours. The Fisheries Observer onboard must also be immediately informed. If any subsequent trawl within 1nm of the encounter trawl contains more than 30 kg of live coral/and or 200 kg of live sponge the vessel must not fish within 5nm of that area until the Ministry of Marine Resources has completed an investigation. However, if the vessel deploys an underwater camera system on the trawl net, and the Cook Islands Observer onboard verifies that no substantial VME structures (such as a cold water reef community) are present, fishing can continue, pending final outcome of the investigation.”

Due to the complex ridge and rocky benthic habitat and variable ocean currents in the Indian Ocean, the species targeted in SIOFA are often only accessible to fishing for short periods. The protocol is designed to avoid a fishery being closed unnecessarily because of a trawl net being pushed significantly away from a known trawl lane by currents and causing an accidental encounter.

The Transit rule imposed on vessels, as reported in the 2017 national VME report, remains in place.

In 2017 a total of 451 bottom trawl shots were carried out by Cook Islands vessels, and the threshold was not breached.

8. BIOLOGICAL SAMPLING AND LENGTH/AGE COMPOSITION OF CATCHES

Biological data has been collected from Cook Islands vessels since 2004. Data has been collected by vessel crews, Cook Islands Observers, or scientists on specific voyages. Length frequency distributions of Orange Roughy vary significantly within the SIOFA area, as reported in 2016 (SC-01-INFO- 15). In total 50,369 Orange Roughy were sampled for length, weight, sex and maturation from 522 target trawls shots between 2004 and 2015. This database has now increased to 66,400 samples following a major increase in sampling during 2017. A major new otolith sampling protocol was adopted in 2017, with sample sizes of 100 fish per trawl from the SB aggregation, and other samples of 40 fish per trawl. This was to provide data for age composition for the planned stock assessment. These fish were aged, and provide the first ever age composition data for a high seas orange roughy stock anywhere in the world. This report has been submitted to the SIOFA SAWG. The size composition data for a range of aggregations are not reported here, but have been provided to the consultant undertaking the stock assessment of orange roughy on the southern Walter's Shoal.

A review of Alfonsino data for 2017 has not been completed, due to the prioritisation of the Benthic Fisheries Impact Assessment for review in 2018, and the Orange Roughy stock assessment. Alfonsino are a priority for the SAWG in 2018-2019, and historical data compilation will be required for that assessment work.

9. OBSERVER PROGRAMME

In 2017 MMR established 100% Observer Coverage on Cook Islands vessels in the SIOFA area as an extension of the existing Cook Islands National Observer Programme (CINOP). With support from the FAO ABNJ Deep Seas Project, MMR and Cook Islands industry, seven experienced and high performing Pacific Islands Regional Programme (PIRFO) Observers from the Cook Islands, Kiribati, Nauru, and the Solomon Islands were selected to attend SIOFA trawler cross-endorsement training at the Sealord port facility in Nelson, New Zealand from May to June 2017. The Cook Islands implemented 100% coverage on schedule by 1 July 2017 with five trips covered between July and December 2017.

Additional training for SIOFA endorsed Observers, funded by MMR, has been scheduled for April 2018 in Rarotonga, Cook Islands.

A major issue SIOFA Observers and MMR staff have encountered is a significant tightening of visa restrictions to enter South Africa, including for Cook Islanders as New Zealand passport holders, making it impractical to easily deploy staff who do not hold Seafarers Books to vessels berthed in South Africa. MMR is investigating the requirements to issue Cook Islands Seafarers Books, as not all SIOFA programme Observers are current holders, and the possession of a Seafarers Book could overcome part of the problem, at least in relation to the deployment of Observers.



Plate 1: Observer Trainers and Trainees on the wharf at Nelson.



Plate 2: Cook Islands Observer Antin Tamwabeti checks the plate freezer aboard a trawler in port.

10. PORT SAMPLING AND INSPECTION PROGRAMME

In 2018 MMR has commenced planning to enable a comprehensive port sampling verification program of Cook Islands trawlers, staffed by MMR Officers. Dialogue with Mauritian Officials on the margins of MOPIV in 2017, resulted in an understanding around access for Cook Islands Fisheries Officers to Port Louis wharf areas. Vessels are monitored by the port landing state and in 2017 Cook Islands Observers began monitoring unloads for both vessels at Port Louis. Port Sampling by MMR Fisheries Officers may commence in 2018 or 2019 in conjunction with planned port inspections.

FV Nikko Maru No. 1 discharges in either Cape Town or Port Louis. *FV Will Watch* discharges in Port Louis. Entry and unloading at port is governed by the relevant Port State authorities under their domestic legislation.

11. VESSEL MONITORING SYSTEM (VMS)

Cook Islands vessels are required by law to carry and operate VMS systems. The installed systems poll once an hour via Inmarsat-C systems to the service provider (Marinecom) in Auckland. The vessels are monitored on a large screen at the National Oceans Monitoring Centre, MMR Rarotonga, using advanced track webmapping provided via internet from Marinecom. *FV Nikko Maru No. 1* uses a Blue Finger AZUR TRAC- SC (TT30220) and *FV Willwatch* operates a Sailor H16622D. The system is accurate to a few meters in normal operating conditions.

12. SOCIAL AND ECONOMIC INFORMATION

Cook Islands vessels in SIOFA are based in Port Louis, Mauritius and Capetown, South Africa.

Services obtained from operational bases in the two countries are:

- Support for the vessels, victualling, bunkering and supply of other vessel operations;
- Support for vessel maintenance including dry-dock, vessel repairs and maintenance;
- Service facilities for shore movements for crews, officers and management;
- Stevedoring for product discharge and cold store services;
- Product export services, including health and sanitation certifications, and;
- Local vessel agents

The economic activity associated with the operations of the vessels primarily accrues to the countries of operation in a risk free manner.

Vessel crews are mostly contracted from either Indonesia or the Philippines. Officers and Engineers are generally from New Zealand or Japan. Around 85% of crew are from developing countries.

Data collected shows that for many crew the fishery has afforded long-term stable continuity of employment, which is a strong indication of the social conditions of employment. Table 3 shows the distribution of length of employment in the fishery.

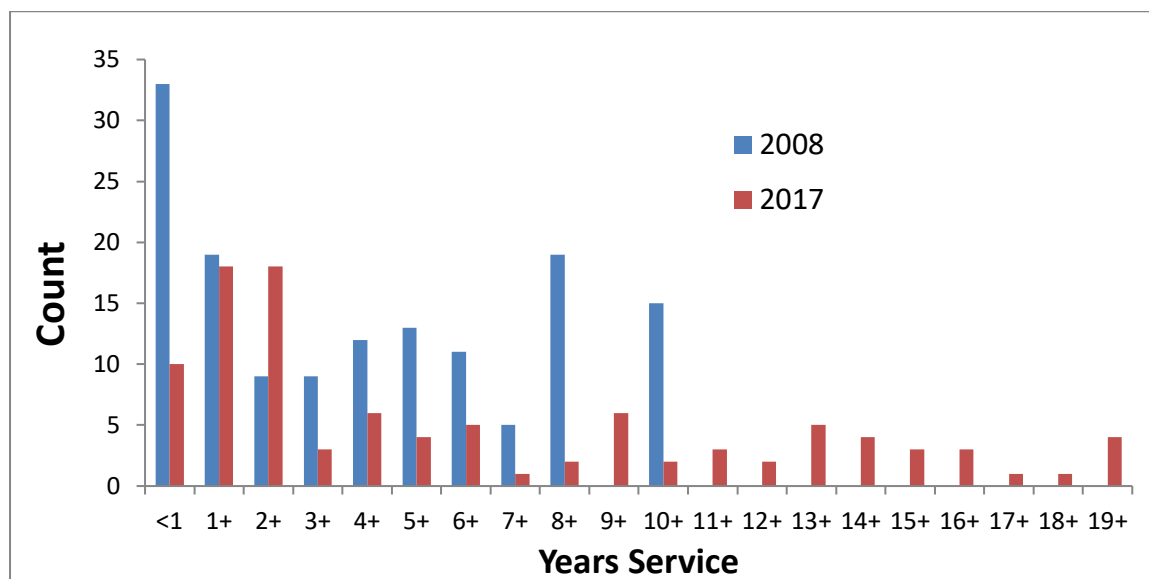
Table 3: Distribution of Periods of Number of Years of Employment

Table 4 below shows the total number of dependents of crew. Direct dependents here are defined as those living in the same residence as the crew member. Indirect dependents are those not living at home but receiving regular financial assistance on which they are dependent.

Table 4: Characteristics of Dependents of Crew Members

Vessel	Total Number of Dependents	Survey and estimate	
		direct dependents	indirect dependents
2007 – 146 staff	409	199	210
2017 – 122 staff	619	333	286

741 employees and dependents are currently directly supported by the operation of these two Cook Islands vessels. In addition there are socio-economic benefits created in the region by the vessel support and product handling services in Port Louis and Capetown.

Length of service and ability to provide for dependents both indicate a positive workplace environment aboard Cook Islands vessels.

Appendix 1

List of common and scientific names for main species caught by Cook Islands vessels.

FAO Code	Cook Islands Code	Common Name	Scientific Name
BYX	BYX	Alfonsino	<i>Beryx splendens</i>
BOE	BOE	Black Oreo	<i>Allocyttus niger</i>
BBF	BBF	Black Butter Fish	<i>Hyperoglyphe moselii</i>
BNS	BNS	Blue nose	<i>Hyperoglyphe antarctica</i>
BOR	BOR	Boarfish	<i>Pentaceros richardsoni</i>
CDL	CDL	Cardinal fish	Family Apogonidae
ORY	ORH	Orange Roughy	<i>Hoplostethus atlanticus</i>
SSO	SSO	Smooth Oreo Dory	<i>Pseudocyttus maculatus</i>
SOR	SOR	Spiky Oreo Dory	<i>Neocyttus rhomboidalis</i>

Appendix 2

Benthic Protected Areas.

	Area	Coordinates			
		Lat (S)	Long (E)	Lat (S)	Long (E)
1	<i>Gulden Draak</i>	28° 00'	98° 00'	29° 00'	99° 00'
2	<i>Rusky</i>	31° 20'	94° 55'	31° 30'	95° 00'
3	<i>Fools Flat</i>	31° 30'	94° 40'	31° 40'	95° 00'
4	<i>East Broken Ridge</i>	32° 50'	100° 50'	33° 25'	101° 40'
5	<i>Mid-Indian Ridge</i>	13° 00'	64° 00'	15° 50'	68° 00'
6	<i>Atlantis Bank</i>	32° 00'	57° 00'	32° 50'	58° 00'
7	<i>Bridle</i>	38° 03'	49° 00'	38° 45'	50° 00'
8	<i>Walters Shoal</i>	33° 00'	43° 10'	33° 20'	44° 10'
9	<i>Coral</i>	41° 00'	42° 00'	41° 40'	44° 00'
10	<i>South Indian Ridge (North/South) this region abuts the CCAMLR-managed one to the south and lies between the South African EEZ around Prince Edward and Marion Islands to the west and the French EEZ surrounding Crozet Island to the east. The estimated points of contact with the EEZ areas are: 44°S, 40.878°E: 44°S, 46.544°E: 45°S, 42.124°E: 45°S, 45.711°E.</i>	44° 00' 45° 00'	40.878° 00' 42.124° 00'	44° 00' 45° 00'	46.544° 00' 45.711° 00'
11	<i>Banana</i>	30° 20'	45° 40'	30° 30'	46° 00'
12	<i>Middle of What (MoW)</i>	37° 54'	50° 23'	37° 56.5. 5'	50° 27'

References

- FAO 2009. International Guidelines for the Management of Deep-sea Fisheries in the High Seas. Rome, FAO. 2009. 73p.
- FAO 2012. Fishing vessel execution of acoustic surveys of deep-sea species: main issues and way forward. FAO Fisheries and Aquaculture Circular. No. 1059. Rome. 91 pp.
- Shotton, R. (Comp.) 2006. Management of Demersal Fisheries Resources of the Southern Indian Ocean. Report of the fourth and fifth Ad Hoc Meetings on Potential Management Initiatives of Deepwater Fisheries Operators in the Southern Indian Ocean (Kameeldrift East, South Africa, 12 – 19 February 2006 and Albion, Petite Rivière, Mauritius 26-28 April 2006) including specification of benthic protected areas and a 2006 programme of fisheries research. FAO Fish. Circ. 1020. 90pp.