



NATIONAL FISHERIES AUTHORITY

Fisheries Management Act 1998.

No. 48 of 1998.

The National Live Reef Food Fish Fishery Management Plan

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The National Fisheries Authority, under Section 28 of the *Fisheries Management Act* 1998, hereby set out the National Live Reef Food Fish Fishery Management Plan to take effect immediately on and from the date of notification in the *National Gazette*.

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1. BACKGROUND

PNG is the new frontier for the Live Reef Food Fish (LRFF) trade as proclaimed by keen buyers in Hong Kong. The LRFF trade started in PNG in 1991 and has operated in Central, Milne Bay, Manus, East New Britain, Bougainville and New Ireland Provinces. Experience in Southeast Asia and initial forays into the Pacific have shown LRFF fisheries to be prone to a boom and bust cycles with one area after another being over-fished for high valued species. Of particular concern in Papua New Guinea is the potential for unsustainable targeting of grouper spawning aggregation sites by LRFF operators and the use of cyanide (and other chemicals) to stun and capture fish. These activities have wreaked extensive damage on the reefs of Indonesia and the Philippines. Operators in PNG and in other Pacific Island countries have already been caught targeting aggregation sites and using poisons.

The LRFF fishery presents PNG with potential opportunities and problems. As a relatively small-volume, high-value fishery, it has the potential to contribute significant income directly to fishing communities.

An operation on the remote Hermit Island, in Manus, exported 24 tonnes of Live Reef Food Fish during the 18 months fishing period. Annual exports of LRFF from PNG have remained below 50 tonnes. Peak export of Live Reef Food Fish was recorded in 1997 with over 30 tonnes. The relative catch per unit effort (CPUE) in Papua New Guinea ranged from 0.5 to 20kg/fisherman/day. Annual world production of Live Reef Food Fish is 25,000 tonnes and valued at more than US\$1 billion.

The use of cyanide by operators in Milne Bay in 1998 resulted in the cancellation of their licenses and a moratorium on the issuance of new license for LRFF exports in PNG by the board. This moratorium halted operations in Goodenough area of Milne Bay Province and Djaul and Tigak islands on New Ireland Province.

The National Fisheries Board, in one of its regular meeting no. 4/2000, decision no: 59/2000 recommended to trial a live reef food fish project in Kavieng and Manus. The board concluded that the results of the project would be used to assess the viability of the fishery and formulate management plan for the sustainable harvest of live reef fish in PNG.

A trial project was centered on Tigak, Soson and Tingwon islands in New Ireland Province from February to October 2001. A total of 6.1 tonnes of live fish were exported to Hong Kong for the 6 months fishing period. Over K130, 000.00 was made during the export. About K11, 000.00 was paid to fishers from the three management areas and an average of K4, 500.00 was paid to community accounts for the affected communities. Fishing was restricted to traps and handlining.

The trial project in part concluded in general, a desire for the resource owners in the trial areas to participate in the Live Reef Food Fish fishery, which they believe had provide the much needed ability to make money in this growing economic environment. The National Fisheries Authority believes the fishery has the potential to improve the living standards of the rural population by providing income for individuals in the rural community *if* managed sustainably.

It is for this reason that the National Live Reef Fish Fishery Management Plan is formulated to provide the broad management framework of the live reef food fish fishery (LRFF) in PNG. Site-specific management guidelines for each operational area will also be developed to compliment the national plan.

2. APPLICATION

- a) The National Live Reef **Food** Fish Fishery Management Plan (NLRFFMP) is prepared under the authority of, and in accordance with section 28 of the *Fisheries Management Act 1998*.
- b) The National Live Reef **Food** Fish Fishery Management Plan shall be cited as the "national management plan" or "the plan". The plan shall cover all aspects of commercial live reef food fish fishing in Papua New Guinea.
- c) The national plan apply to all activities by way of "fishing" as defined in *the Fisheries Management Act 1998*, including hand lining, single line fishing, use of fish cages and traps, storage of caught fish, transportation of live fish, fish handling and transshipments of live fish.
- d) The plan shall cover the following:
 - (i) all target reef fish **food** species included in schedule 1; and
 - (ii) all other non-target fish species not specified in schedule 1 or by-catch.
- e) The plan shall form the broad framework of commercial live reef food fish operation in PNG and will provide provisions for site-specific licensing conditions to be developed to compliment this national plan.
- f) This plan shall take effect upon approval by the Fisheries Minister (the Minister).

3. INTERPRETATION

In this Plan, unless the contrary appears, each word or group of words has the same meaning, if any, as it has in the *Fisheries Management Act 1998*, except where this differs as provided below: -

"Act" means the *Fisheries Management Act 1998* as amended from time to time;

"Area specific management guidelines" means fishery management guidelines that shall be enforced for the specific fishery management area.

"By-Catch" means all other species of fish caught in the course of fishing where live reef food fish is the target species;

"Fishery Management Area" means the specified area to which the fishery is to operate from with boundaries clearly demarcated;

"Closed area" means a specific area where no fishing shall take place;

"Closed season" means a time period when no fishing shall take place;

"Station" means a land area including a sea boundary selected by the company to set up fish holding cages for the purpose of holding live reef food fish.

"Customary tenure" means traditional management regimes practiced by the indigenous people that have been passed down from generation to generation.

"Plan" means the live reef food fish fishery management plan;

"Live reef food fish Stock" means a discrete breeding population of a particular live reef food fish species;

"Total Allowable catch (TAC)" means the set amount of catch that is allowed to be taken in any one-year, season or area. The TAC is calculated as the basis of sustainable fishing with

biological and economic inputs (level below MSY).

“Traditional resources owner” means individual, families or clan who have traditional fished or utilised the finfish resources and are recognised by the village community in which they live as traditional ownership rights to the finfish, specific species to type or specific area.

NMAC is the National Management Advisory Committee as specified in the National Beche-de-mer Management Plan. The functions of the committee specified in the NBMP are recognized by this plan.

4. OBJECTIVES

The broad objective of this national plan is to ensure that use of the LRFF resource is sustainable and well regulated.

The national plan objectives are specifically:

- a) To manage the LRFF fishery in the management areas so that the size of the stock tends towards one that will give the maximum sustainable economic yield (MESY).
- b) To ensure the LRFF Fishery in the management areas is viable in biological, social and environmental terms.
- c) To ensure the promotion of sustainable fisheries development practices for the participation and benefit of the traditional resource users;

5. PRECAUTIONARY APPROACH

A precautionary approach will be applied to the management of the Live Reef Food Fish resource, non-target, associated and dependent species, taking into account the best scientific evidence available on the status of the stocks and the uncertainties inherent in that data;

6. MANAGEMENT ARRANGEMENT

- a) The live reef **food** fish fishery shall be managed nationally. A Management Working Committee (MWC) should be established to provide advice to NFA and or NMAC on the management of the live reef food fishery.
- b) The role of the MWC will be to review the site specific licensing conditions including; total allowable catch, size limits, gear restrictions, reporting, closed seasons and areas and any other relevant issues directed by the NFA or NMAC and or PEC. The final decision on the fishery management remains with the Managing Director.
- c) The committee shall meet twice in a year preferably one in June and the other at the end of the year or unless directed by the Managing Director.
- d) MWC shall be a voluntary job and the Managing Director shall approve the appointment of the members.
- e) The MWC shall consist of the following persons, upon approval of the Managing Director;
 - i) One National Fisheries Authority representative or his nominee who shall be the chair,
 - ii) Two resource owner representative from each of the identified communities affected,
 - iii) One representative from the Provincial Fisheries headquarters from each of the affected province,
 - iv) One dive association representative or a tourism officer.
 - v) One representative from the marine conservation related non-government organisation whose objectives include conservation of the marine

- environment and resources and,
- vi) A representative from the operator.
- f) Only one representative from each organisation shall be allowed to cast a vote.
- g) A MWC maybe established in each of the province where live reef food fish fishery intends to operate.
- h) Prior to taking up membership, representatives will be required to disclose any direct or indirect personal or pecuniary interests in the fishery. The nature of his/her interest shall be recorded in the minutes of the first meeting of the committee.

7. MANAGEMENT MEASURES

7.1 Catch Limits

- a) Total Allowable Catch (TAC) for the target species may be set for each management area and/or shall be set based on the new information.
- b) If a TAC for the target species in a management area is approached, fishing shall cease and total TAC for that management area be reviewed.
- c) The NFA shall review the level of catch for the Live Reef Food Fish species every three months or when:
 - (i) The TAC for the target species is being approached for a particular management area;
 - (ii) An opportunity to expand the management area is presented;
 - (iii) New information on the status of the stocks shows a reduction in the level of fishing effort is needed due to significant interaction with subsistence fishing, or localised depletion; or
- d) The NFA reserves the right to cease operation in a management area if it considers necessary to maintain a healthy LRFF stock

7.2 Fishing Methods

- a) Fishing for live reef food fish shall be restricted to handlining only.
- b) The licensee shall be allowed one station with a series of fish holding cages not exceeding 20 in number for each management area. Each fish cage shall have minimum dimensions of 10 feet x10 feet x12 feet with a holding capacity not exceeding 500kg.
- c) For transshipment purposes, fish cages may be towed to one management area only upon receipt of written approval from the Managing Director at least fourteen days prior to actual transshipment.
- d) A quarantine cage shall be constructed separately from fish cages for storing diseased fish for observer and quarantine purposes.

7.3 Restrictions

- a) Export by the licensee of target species of sizes less than the approved size limit as in schedule 2 is prohibited.
- b) Fishing for live reef food fish within or close proximity of a declared spawning aggregation site is prohibited
- c) Fishing for live reef food fish or other related activities within or close to the known diving spots is prohibited
- d) Fishing for live reef food fish within the Torres Strait Protected Zone is prohibited.

- e) Fishing for live reef fish shall be restricted to only resource owners employing fishing methods specified in section 7.2 (a).
- f) The use, storage and transportation of explosives, noxious substances (including cyanide and naturally derived substances in any form) for the purpose of killing, stunning, rendering disabled or capturing of fish is prohibited.
- g) The use of hookah gear and SCUBA for capturing fish for live reef **food** fish is prohibited.
- h) Feeding diseased fish to fish kept in cages is prohibited.
- i) Diseased fish shall be incinerated or buried under ground.

7.4 Areas of operation

- a) The operator in consultation with the resource owners shall demarcate specific fishing areas and submit a written approval from the resource owners. The approval shall have the consent of the entire community.
- b) The NFA shall require an "area specific management guidelines" as part of the licensing conditions. These conditions shall include;
 - (i) Spawning grounds identified by NFA or the local community to be declared as prohibited areas for fishing or other related activities.
 - (ii) Any traditional ground or area of sea identified by the local community as a no fishing zone.
 - (iii) Fishing pattern as approved by the communities in the management areas.
 - (iv) A set total TAC for each of the target species.
 - (v) Closed seasons and areas
- c) NFA in consultation with resource owners shall require specific areas in the management areas to be closed to fishing, as it considers necessary for the health of the resource or marine environment.

7.5 Licensing

- a) Under this plan, the following licences are applicable;
 - (i) Export
 - (ii) Aquaculture
 - (iii) Carrier Vessel
 - (iv) Storage facility
- b) Licence fees as set out in (a) are as prescribed in schedule 1 of the Fisheries Management Regulation 2000
- c) Under this plan, only three (3) operators will be issued licences. Total number of licences is subject to review as necessary.

7.6 Conservation

- d) Fish holding cages shall be located at a distance of at least 20 metres from any land or reef area.
- e) Fish cages shall be located in water deeper than 5 metres.
- f) Fish holding cages shall be located in areas that have constantly circulating water.

- g) The NFA may require the operator to move fish cages to locations it considers more suitable if measures set out in (a), (b) and (c) have not been met.
- h) In an event an operator wishes to cease operation in a management area, all gear and equipment used for fishing and other related activities shall be taken away or disposed in an environmentally friendly manner.

7.7 Monitoring

NFA shall determine the percentage of observer coverage for each management area. The licensee is required to cooperate with observers in all aspects of sampling and monitoring.

7.8 Reporting

- a) The licensee shall report to NFA the following information: all fish (target and non-target species) bought, the weight of each fish (in kilograms), how much it was bought for (in kina), when it was bought and when and where it was caught. This information shall be set out in the form in schedule 3.
- b) The licensee shall keep record of daily fish mortality in holding cages, including reasonable attempts to specify the cause of deaths. This information may be submitted upon request by NFA.
- c) Licensee shall report to NFA each time LRFF is to be exported detailing the species, weight (in kilograms) and value (in US dollars). All the details of the export shall be contained in the certificate of fitness for the export of fish and fishery products as contained in appendix D of *Fisheries Management Regulation 2000* or any other form approved by the NFA Audit and Certification Unit.
- d) The information required in paragraphs (a) and (b) shall be submitted at the end of each month to NFA's Information and Licensing Section.
- e) Failure to submit the required reports set out in (a), (b) and (c) above by more than ten (10) days or submitting incorrect or false data may result in suspension or cancellation of the fishing licence under Sections 19 and 20 of the *Fisheries Management Regulation 2000*.

8. AMMENDMENT

The National Live Reef **Food** Fish Fishery Management Plan shall be kept under review from time to time when necessary.

9. RESEARCH

- a) NFA may carry out, in collaboration with reputable national or regional or international organisations, a program of research on Live Reef Food Fish stocks in every management area. Parameters for research may include inter-annual variability, reproductive aspects, catch per unit effort, the species breakdown of catches, and size structure by species in the catches.
- b) Baseline surveys for the purpose of assessing the standing stocks of LRFF, determining spawning aggregation sites and monitoring shall be carried out. These surveys shall form the baseline information held by NFA.
- c) NFA shall continue to work with regional management bodies and non-government organizations interested in the live reef fish trade in research and monitoring of the Live Reef **Food** Fish fishery.

Approved this.....day of.....2002

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HON. ANDREW BAING
MINISTER FOR FISHERIES AND MARINE RESOURCES

Schedule 1

Export size limits

| Common name | Scientific name | Size limit |
|---------------------------|------------------------------------|-----------------|
| Coral Cod | <i>Cephalopholis miniata</i> | no minimum size |
| Tomato rockcod | <i>Cephalopholis sonnerati</i> | no minimum size |
| Hump head Maori Wrasse | <i>Chelinus undulatus</i> | 65cm |
| Black spot tusk fish | <i>Choerodon schoenlenii</i> | 30cm |
| Barramundi cod | <i>Cromileptis altivelis</i> | 40cm |
| Flowery cod | <i>Ephinephelus fuscoguttatus</i> | 55cm |
| Trout cod | <i>Ephinephelus maculatus</i> | no minimum size |
| Camouflage grouper | <i>Ephinephelus polyphekadion</i> | 37cm |
| Potato cod | <i>Ephinephelus tukula</i> | 65cm (>120cm) |
| Maori grouper (Maori cod) | <i>Ephinephelus undulostriatus</i> | 45cm |
| Red throat emperor | <i>Lethrinus miniatus</i> | 35cm |
| Managrovejack | <i>Lutjanus argentimaculatus</i> | 40cm |
| Red bass | <i>Lutjanus bohar</i> | no minimum size |
| Stripery sea perch | <i>Lutjanus carponotatus</i> | 25cm |
| Saddle tailed sea perch | <i>Lutjanus malabaricus</i> | 40cm |
| Moses perch | <i>Lutjanus russelli</i> | 25cm |
| Red emperor | <i>Lutjanus sebae</i> | 55cm |
| Maori Perch | <i>Lutjanus rivulatus</i> | 55cm |
| Squaretail coral trout | <i>Plectropomus areolatus</i> | 36cm |
| Chinese footballer trout | <i>Plectropomus laevis</i> | 60cm |
| Leopard coral trout | <i>Plectropomus leopardus</i> | 36cm |
| Bar cheecked coral trout | <i>Plectropomus maculatus</i> | 36cm |
| High fin coral trout | <i>Plectropomus oligocantus</i> | 36cm |
| Coronation trout | <i>Variola louti</i> | no minimum size |

