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The Live Reef Fish Trade in the Pacific

Being Yeeting
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Presentation Overview

- The Live Reef Food Fish Trade
- The Marine Aquarium Trade
- Status
- Issues & Challenges
- How are these addressed
- The Future
The Live Reef Food Fish Trade

What:
- Luxury trade in live fish for food
- Mostly groupers and humphead wrasse
- Markets in HK, Southern China, and in the USA

Volume, Value & Trends:
- Global: 100,000 mt = US$830 (1998 peak)
- Pacific: only 10% of global
- Still high demand
- Prices of fish lower than anticipated by supplying countries
- Success in culturing of some species e.g. *Cromileptis* and *Epinephelus*
Target Species

2 main fish families, few species

Serranids (mostly):

- *Plectropomus areolatus*
- *Plectropomus leopardus*
- *Cromileptes altivelis*
- *Epinephelus fuscoguttatus*
- *Epinephelus polyphekadion*
- *Epinephelus lanceolatus*
- *Epinephelus coioides*

Labridae:

- *Cheilinus undulatus*

- Top level predators
- Long lived, mostly low growing species
- Naturally not abundant
Popular Species

Three most popular fish species with mean values in mid 2000s

*Cromileptis altivelis*
Wholesale = US$58/kg
Retail = US$100/kg

*Cheilinus undulatus*
Wholesale = US$55/kg
Retail = US$120/kg

*Plectropomus leopardus*
Wholesale = US$30/kg
Retail = US$62/kg
Typical Fishing Operations

- Fish are kept live in holding cages in the islands before transport vessels pick them up and take them to Hong Kong

- Need 20 to 30 tonnes to make a shipment economical
The Hong Kong market. Retail value estimated at just over US$300 million for 15,000 tonnes (mid 2000)
Typical Live Seafood Market

The main market is in Hong Kong and Southern China
The Spread of LRFFT into the Pacific
Why the Pacific?

- High demand not enough supply
- Depletion of supply sources in Asia
- Attractive income opportunity for rural local fishers
  - Fishers have new market for fish
  - Instant cash payments to fishers
- High value = Added value for resources = perceived higher return for local fishers
The Early Years: Issues and Problems

• Poor understanding and knowledge
• Lack of management framework
• Increased conflicts among resource owners (SI, Fiji, Vanuatu, PNG and Palau)
• Destructive fishing practices - traps and fishing spawning aggregations, and some cyanide fish poisoning suspected
• Seafreight based operations - minimum 15mt fish
• Resource wastage through high fish mortality (SI)
• 'Boom and Bust'
• Low prices for fishers
• 'Value-Adding' expectations not realized
Current Challenges and Issues

- Lack of capacity to implement and support management and monitoring
- High fisheries staff turnover = continuous capacity building required
- Understanding dynamics of market pricing to obtain fair value for fishers
- Limited and expensive air freight connections for most pacific countries
- Poaching - Illegal Unregulated Unreported Fishing
SPC’s Assistance

- Resource assessments
- Awareness and educational information
- Assistance in development of management plans
- Capacity building (resource assessment and monitoring)
- Development of regional database to support monitoring
- Looking at socio-economic implications (with ACIAR/ANU)
- Economics and Market Analysis (with ACIAR/ANU/WF)
- Conservation of spawning aggregations (with SCRFA/TNC)
Status of LRFFT operations in the Pacific

- 1991 PNG (on-going: 3 down to 2 operators)
- 1998 Fiji (on-going: 1 to 6 to 3 to 1 operator with export to US from 2005)
- 1996 Kiribati (on/off due to ciguatera problems: 3 to 2 to 1 operator - pending)
- 1984 Palau (banned)
- 1991 FSM (Yap 2005 negotiations stopped)
- 1994 RMI (on hold)
- 1996 Solomon Is (on hold)
- 2001 Vanuatu (ban)
Status of LRFFT in Pacific

• **PNG:**
  - 3 operators, 1 getting suspended due to cyanide use,
  - Species: coral trout and grouper
  - 2005 export estimate = 200 tons to HK
  - Management plan and monitoring being implemented
    • Species quota, allocated fishing area

• **FIJI:**
  - 1 operator
  - Species: coral trout
  - 2005 export = 2 tons by air to US market
  - Now fortnight shipment of up to 200kg
  - Management plan and monitoring being implemented,
    • Species quota, allocated fishing area, air freighting only

• **KIRIBATI:**
  - 1 operator, operation stopped end 2004, re-opened end 2005 and closed in 2006 - ciguatera,
  - Species: mainly groupers
  - 2004 export 70 tonnes-3 shipments to HK
  - Management plan and monitoring still in draft (not yet implemented)
The Future

Market Side:

• Demand for wild caught LRFF will continue to increase (consumer taste preference study)
• The market will continue to expand (as China opens up)
• Live fish prices will increase for some species (e.g. *Plectropomus leopardus* - wholesale: 2001 US$30/kg cf 2007 US$52/kg)

Supply Side:

• Lower priced fish species will be increasingly exported
• Better management of resources with improved monitoring and understanding
• Total ban of sea transport operations in PICTs and only air transport (use of oxygenated bins)
• Limited but higher valued wild caught LRFF exports
The Aquarium Fish Trade

What:
• Luxury trade in colourful tropical marine fish, invertebrates, live coral & live rock for hobbyists or decoration (homes & offices)
• Market in US, Europe, Japan and Canada

Volume, Value & Trends:
• Global: 15-36 million of pieces of fish = US$250m
• Pacific (2009): US$30m
  Fish: 600,000 pieces = US$8m
  Live Coral: 200,000 pieces = US$4m
  Live Rock: 700 mt = US$18m
• Increasing demand
• Shift from fish to live rock (live rock now banned in countries)
Target Species

- **Globally**: 50+ family 1000+ species
- **Pacific**: 150 fish species, 50+ coral species

**Fish**: (mostly non foodfish)
- Pomacanthids
- Labrids
- Pomacentrids, Chaetodons
- Blennidaes
- Gobidae and more...

**Coral**: (3rd generation)
- Pocilloporids
- Fungiids
- Acroporases...

**Invertebrates**:
- Clams (cultured)
- Shrimps

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Good community projects
Aquarium (Start & Status)

- 1970’s Fiji & Kiribati (ongoing)
- Mid 1970’s Solomon Is. (ongoing)
- Early 1980’s American Samoa (ongoing)
- Late 1980’s, Palau (ongoing)
- 1988 Cook Is. (ongoing)
- 1989 Tonga (ongoing)
- Early 1990’s RMI & Vanuatu (ongoing)
- Early 1980’s Samoa (on hold)
- Early 1990’s FSM (banned),

Active

New Interest
A Typical Catch on a Dive
Separating fish into jars and stored in the ocean holding facilities.

Checking and screening of fish in the land facility before packing.

Fish are packed in plastic bags with oxygen.

And then into live fish labelled cardboard boxes.
Fish packed in boxes ready to be transported to the airport

Offloading at the airport and preparing the documents

Weighing in at the airline airfreight services
Waiting to be loaded onto the plane

Loading onto the plane.
**Issues and Challenges:**

- **Multiple species (fish & invertebrates) - unknowns on fish life histories, demographics, vulnerability to over-exploitation, baseline status - research and monitoring**

- **Need to set up sustainable harvest limits** => need good CPUE data for stock assessment models
  - **Market driven**
    - Realistic value/return for resource?
    - Fair price setting?

- **Allocation of collecting areas - user conflict with tourist dive operators**

- **Need of effective management framework - legislation, regulations which includes industry & stakeholders**

- **Limited resources and capacity to support management and monitoring nationally and locally**

- **Maintaining best industry practices**
SPC assistance

• **Assistance in resource appraisals and feasibility studies**
• **Capacity building**
  - Survey methodology, data analysis and interpretation
  - Monitoring programs to collect both fisheries dependent and fisheries in-dependent data
  - Collection of biological data
  - Best industry practices training and upgrade training as needed
  - Technical training on setup and maintenance of holding facilities
  - Training of trainers
• **Assisting in development of management plans**
• **Interactive database to support monitoring and management**
  - Training on use of database and maintenance
  - Central data repository
• **Awareness materials, manuals and guidelines**
• **Market access – meeting international standards and requirements**
To Conclude:

• LRF trades will not go away & therefore need to be addressed
• They provide good income opportunities and better cash returns (in value) for the resources
• They have the potential to be sustainable fisheries if they are managed appropriately.

Thank you!