A Value Chain Analysis of Fish Products from Pantar Island, Eastern Indonesia

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Background

- Fish products are critical to livelihoods of rural and remote coastal dwelling people in Pantar island and neighbouring islands.
- They contribute to food security and source of cash income.
- Fish trade at local level is one way to improve the value of fish.
Objectives

• To understand how the trade in key fish species operates

• To identify interventions to enhance position and participation of local communities along the value chain as one way to improve their livelihoods (in terms of income and food)
Key issues in VCA

- The core processes of a VCA (e.g. input, production, collection, intermediary trade, wholesale and retail marketing, and consumption)
- Actors who provide services and goods at each point of the value chain.
- The relationships and power differential among actors
- How price is determined
Method

- Participatory Rural Appraisal (PRA)
- Focus Group Discussion (FGD)
- Interviews with key informants
- Observation

Duration: June 2008 - July 2010
Main fish species traded
Halfbeak value chain

**Core process**
- Inputs
  - Fresh
- Production
  - Fresh
- Collection
  - Sundried
- Bulk buyers
  - Fresh
- Exporters
  - Sundried
- Intermediary trade
- Retailers
  - Sundried
- Consumption
  - Fresh

**Activities**
- Supply equipment and logistic:
  - Preparing fishing equipment
  - Fishing
  - Deliver to landing spot
  - Selling at village market
- Receiving
  - Sorting the size
  - Sundrying
  - Delivering
  - Selling
- Selling at Wolu, Weiriang, Lamallu, Bakalang market
- Receiving
  - Sorting the size and quality
  - Delivering
  - Selling
- Sorting
  - Delivering
  - Selling
- Receiving
  - Selling

**Actors**
- Kiosk in the village and Kalabahi
- Fishers: Papalele kiosk owners
- Bulk collectors in Labuhan Bajo, Kalabahi
- Buyer with boat from Atapupu
- Exporter based in Atambua
- Sellers/Shops in Kalabahi, Atapupu, Dili and at the mountainous village in Pantar
- Consumers:
  - in the village
  - villages on Pantar
  - Kalabahi
  - Atambua
  - Dili
Round scad

**Core process**
- **Inputs**
  - Supply equipment and logistic
    - Preparing fishing equipment
    - Catching fish
    - Deliver
    - Selling
- **Production**
  - Fresh
- **Collection**
  - Fresh
  - Chilled/sundried
- **Intermediary trade**
  - Receiving
  - Sorting to improve quality
  - Processing
    - Chilling with ice
    - Slicing and sundrying
  - Deliver to market on Pantar or Weiriang market or Kalabahi
  - Selling at Wolu, Weiriang, Lamallu and Bakalang market
- **Retailers**
  - Receiving
  - Sorting to improve quality
  - Distributing to retailers
  - Selling
- **Consumption**

**Activities**
- Kiosk in the village, Kalabahi, Weiriang
- Fishers
- Village traders *Papalele*
- Kiosk owners
- Bulk buyers in Labuhan Bajo Kalabahi
- Sellers at Kalabahi market
- Consumers:
  - in the village
  - villages on Pantar
  - Kalabahi
Coral trout, parrot fish and red snapper value chain

Core process

Activities

Supplies equipment and logistic
- Preparing fishing equipment
- Catching fish
- Processing:
  = slicing
  = sundrying
- Deliver to market
- Selling directly at market or to kiosk owners

Collection
- Receiving
- Sorting to improve quality
- Processing:
  = chilling with ice
  = slicing and sundrying
- Transporting to market
- Selling at Wolu, Weirliang, Lamalu and Bakalang market

Intermediary trade
- Receiving
- Sorting to improve quality
- Distributing to sellers in the market/shop
- Selling

Retailers
- Receiving
- Sorting
- Processing:
  = fillet
  = head only send to restaurants in Jakarta
- Packaging
- Exporting
- Selling

Consumers

Aactors

Sellers of inputs in the village/Kalabahi
Fishers
Village traders: Papalele, Kiosk owners
Bulk buyers in Weirliang, Kalabahi Kabir
Processor based in Makassar, Kupang, Surabaya
Shops, markets
Eastern little tuna, skipjack tuna and trevally

**Core process**

**Activities**

**Autors**

**Inputs** → **Production** → **Collection** → **Processing** → **Fillet** → **Canned** → **Retailers** → **Consumption**

- Fresh
- Chilled/smoked/sliced

**Supply equipment and logistic**

- Preparing fishing equipment
- Capturing fish
- Deliver to landing spot
- Selling

**Fishers**

- Receiving
- Sorting to improve quality
- Processing
- Transporting to market
- Selling at Labuhan Bajo and Baranusa market

**Village traders:**

- *Papalele*
- Kiosk owners

**Processors based in Kalabahi/Kupang/Makassar/Surabaya**

**Retailers**

- Receiving
- Sorting to improve quality
- Processing: = filleting = canning = branding = delivering
- Delivering
- Sorting to improve quality
- Repackaging
- Selling in smaller pack

**Consumers in**

- the village
- Pantar
- Kalabahi
- Kupang/Surabaya/Makassar
Locations of markets and route of fish products in and out of Pantar Island

- < 50 sellers
- 50-100 sellers
- > 100 sellers

- Fish from Labuhan bajo
- Fish from Blangmerang
- Fish from Kayang
- Fish from Marisa
The Key Actors

• Input providers
• The fishers
• village traders (*Papalele*)
• bulk buyers
• processors
• Retailer
• Consumers
Papalele
Relationship among actors

- Business relationships
- Trust and personal connections
Price setting

- Barter
- Sale for cash
  - the volume of the fish captured and the sizes of the fresh fish
  - quality sun-dried fish (i.e., based on moisture content).
### Average selling price for fresh fish at village level in Pantar in 2009
(fishers and papalele)

<table>
<thead>
<tr>
<th>Fresh fish</th>
<th>Fishers sell to papalele</th>
<th>Papalele sell to end consumers or bulk collectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halfbeaks in Labuhan Bajo and Baranusa (low catch of fishing season)</td>
<td>Rp5000/10 fishes (A$0.625)</td>
<td>Rp10,000/10 fish (A$1.25)</td>
</tr>
<tr>
<td>Halfbeaks in Labuhan Bajo (west monsoon)</td>
<td>Rp1000/6 fish (A$0.125)</td>
<td>Rp5000/12 fish (A$0.625)</td>
</tr>
<tr>
<td>Round scad in Marisa Village 25 cm in length</td>
<td>Rp10,000/15 fish (A$1.25)</td>
<td>-</td>
</tr>
<tr>
<td>Round scad in Labuhan Bajo, Marisa and Kayang Villages</td>
<td>Rp1000/4 fish (A$ 0.125)</td>
<td>Rp5000/8 fish (A$0.625)</td>
</tr>
<tr>
<td>Coral trout in Labuhan Bajo 35 cm at length</td>
<td>Rp10,000/fish (A$2.50)</td>
<td>Rp15,000-20,000/fish (A$1.875-2.50)</td>
</tr>
</tbody>
</table>
Cost and margin of a trader selling halfbeaks in Kalabahi and Atapupu in 2009

<table>
<thead>
<tr>
<th></th>
<th>Bh sold to buyer in Atapupu</th>
<th>Bh sold to buyer in Kalabahi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Indonesian Rupiah (Rp)</td>
<td>A$</td>
</tr>
<tr>
<td>Bh purchased at this cost:</td>
<td>16,000,000 (@10,000/kg)</td>
<td>2,000 (@1.25)</td>
</tr>
<tr>
<td>1600 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bh sold to buyer at this price:</td>
<td>27,200,000 (@17,000/kg)</td>
<td>3,400 (@A$2.125)</td>
</tr>
<tr>
<td>Marketing cost:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rental boat:</td>
<td>1,500,000</td>
<td>187.50</td>
</tr>
<tr>
<td>Petrol:</td>
<td>500,000</td>
<td>62.50</td>
</tr>
<tr>
<td>Payment for goods (@Rp50/kg):</td>
<td>300,000</td>
<td>37.50</td>
</tr>
<tr>
<td>Seaport fee:</td>
<td>120,000</td>
<td>15</td>
</tr>
<tr>
<td>Truck:</td>
<td>200,000</td>
<td>25</td>
</tr>
<tr>
<td>Labour:</td>
<td>100,000</td>
<td>12.50</td>
</tr>
<tr>
<td>Total:</td>
<td>2,720,000</td>
<td>340</td>
</tr>
<tr>
<td>Bh’s income</td>
<td>8,480,000</td>
<td>1,060</td>
</tr>
</tbody>
</table>
## Price differences for fresh fish species purchased by traders from Kupang/Makassar and village **papalele**

<table>
<thead>
<tr>
<th></th>
<th>Bulk buyer from Kupang/Makassar*</th>
<th>Papalele**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Rp)</td>
<td>A$</td>
</tr>
<tr>
<td>One tuna at 30 kg</td>
<td>180,000 (@ 6000-9000 per kg)</td>
<td>22.50 (@0.75-1.125 per kg)</td>
</tr>
<tr>
<td>Grouper at 60 cm length</td>
<td>60,000 (@ 12,000/kg)</td>
<td>7.50 (@ 1.25/kg)</td>
</tr>
<tr>
<td>Other grouper at 20 cm length</td>
<td>8,000/kg</td>
<td>1.00/kg</td>
</tr>
<tr>
<td>Coral trout</td>
<td>8,000/kg</td>
<td>1.00/kg</td>
</tr>
</tbody>
</table>
Results

• The value chains of the fish production were diverse and complex, with a number of village, island and regional and international linkages.
• Fish (fresh and sun-dried) were bartered.
• Sold as fresh, chilled, salted, smoked or sun-dried, and were sold whole or filleted.
• Sold for local consumption in Pantar and sold for local consumption in inter-regional island markets.
## Main FISH species fished and traded

<table>
<thead>
<tr>
<th></th>
<th>Sold in village</th>
<th>Sold outside of village but on island</th>
<th>Sold on another island</th>
<th>Sold internationally</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halfbeaks</td>
<td>Fresh, chilled</td>
<td>Chilled, sun-dried</td>
<td>Sun-dried</td>
<td>Sun-dried</td>
</tr>
<tr>
<td>Round scad</td>
<td>Fresh, chilled</td>
<td>Chilled, sun-dried</td>
<td>Sun-dried</td>
<td>-</td>
</tr>
<tr>
<td>Coral trout</td>
<td>Fresh</td>
<td>Chilled, sun-dried</td>
<td>Chilled, sun-dried</td>
<td>Frozen</td>
</tr>
<tr>
<td>Parrot fish</td>
<td>Fresh</td>
<td>Chilled, sun-dried</td>
<td>Chilled, sun-dried</td>
<td>Frozen</td>
</tr>
<tr>
<td>Red snapper</td>
<td>Fresh</td>
<td>Chilled, sun-dried</td>
<td>Chilled, sun-dried</td>
<td>Frozen</td>
</tr>
<tr>
<td>Eastern little tuna</td>
<td>Fresh smoked</td>
<td>Chilled</td>
<td>Frozen, canned</td>
<td>Canned</td>
</tr>
<tr>
<td>Skipjack tuna</td>
<td>Fresh, smoked</td>
<td>Chilled</td>
<td>Frozen, canned</td>
<td>Canned</td>
</tr>
<tr>
<td>Trevally</td>
<td>Fresh, smoked</td>
<td>Chilled</td>
<td>Frozen, canned</td>
<td>Canned</td>
</tr>
</tbody>
</table>
Results

• Three main products traded:
  – Fresh or iced fish
  – Smoked fish
  – Sun dried fish
Opportunities

- The integrated chain of products from Pantar to the international market shows the potential for producers to capture higher value.
- However, bulk buying traders who have links with national and international markets are also a threat to the natural assets.
- This type of trading was not favoured by papalele, due to the decreased number of fish landings in the actual village and subsequent impact on the papalele earnings.
- Affect the availability of local fish and consumption, and thus food security, as fish were an affordable source of protein in Pantar.
Risk faced by actors in each chain

• the fishers: poor bargaining power to get better prices and reduced stocks.

• *Papalele*: fish decaying due to the limited availability of ice and salt and poor transportation from land sites to local markets.

• Limited access to credit for new initiatives or product expansions
### Constraints expressed by fishers and village traders in four villages

<table>
<thead>
<tr>
<th>Stage in the value chain</th>
<th>Labuhan Bajo</th>
<th>Blangmerang</th>
<th>Kayang</th>
<th>Marisa</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inputs</strong></td>
<td>No concern</td>
<td>No concern</td>
<td>No concern</td>
<td>No concern</td>
</tr>
<tr>
<td><strong>Production</strong></td>
<td>- the catch is unpredictable</td>
<td>- only one mid-water mini trawl to catch pelagic fish</td>
<td>No concern</td>
<td>No concern</td>
</tr>
<tr>
<td></td>
<td>- FAD construction is not</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>strong to survive from current and wave</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- fishing business is not</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>favoured for bank loans</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Collection: By village traders (papalele)</strong></td>
<td>- poor road condition to Bakalang market</td>
<td>- poor road condition to markets?</td>
<td>- poor road condition to Wolu market</td>
<td>- poor road condition to Wolu market</td>
</tr>
<tr>
<td></td>
<td>- scarcity and high price of ice</td>
<td>- scarcity and high price of ice</td>
<td>- lack of ice</td>
<td>- lack of ice</td>
</tr>
<tr>
<td></td>
<td>- poor storage to carry the chilled fish to the market</td>
<td>- poor storage to carry the chilled fish to the market</td>
<td>- during rainy season, fish are not dried properly</td>
<td>- during rainy season, fish are not dried properly</td>
</tr>
<tr>
<td></td>
<td>- during rainy season, fish are not dried properly</td>
<td>- during rainy season, fish are not dried properly</td>
<td>- lack of credit to purchase more fish</td>
<td>- lack of credit to purchase more fish</td>
</tr>
<tr>
<td></td>
<td>- lack of credit to purchase more fish</td>
<td>- lack of credit to purchase more fish</td>
<td>- lack of credit to purchase more fish</td>
<td>- lack of credit to purchase more fish</td>
</tr>
</tbody>
</table>
Potential strategies for upgrading the product

- Methods;
- Other interventions:
  - Resource management
  - A reliable supply of ice and salt
  - strengthening the capacity in a group
Conclusions

• Pantar was strongly linked with the macro-economy in the region
• Actors with different roles were involved at every level of the value chains
• Addressing the constraints and upgrading the products are key in strengthening the participation of the communities along the chain.
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