



Secure Fisheries  
Secure Futures



# HANDLING OF SMALL PELAGIC FISH

## Illustrated Operator's Manual

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#### CREDITS

Illustrations: Gabriel Morin  
Graphic Design: Shirley Chan

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## 1. Personal hygiene

### 1.1. Everybody



Always wash your hands after visiting the toilet,  
and before handling material or product



### 1.2. Processors



✓ Hairnet

✓ Clean  
clothes



✓ Apron

- ✗ No long nails
- ✗ No rings on finger, ears
- ✗ No bangles
- ✗ No wristwatches
- ✗ No facial make-up
- ✗ No dirty hands



- ✓ Cut your nails
- ✓ Remove nail polish
- ✓ Wash your hands before processing
- ✓ Wash your hands after processing



## 2. Prepare before you go fishing

### 2.1. Keep your boat and fishing tools clean and well maintained at all stages



### 2.2. Safety requirement:

Always take life jackets and a whistle for everybody on board



### 2.3. Schedule timing

The boat should be back as agreed before departure (as soon as possible after fish being captured)



### 2.4. Check the weather forecast

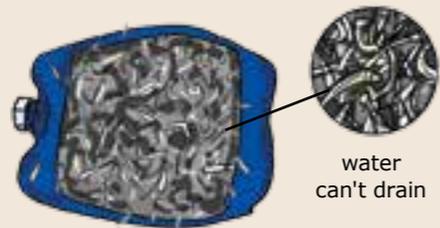


### 3. On the boat : using crates

#### 3.1. Use plastic, perforated, clean and handable crates



Cans are hard to handle



Filled too much, fish are crushed



water  
can't drain



Can't be stacked one on top of the other



Perforated crates allow water to  
flow/ drain out of the crate



Crate is not  
filled: fish are  
not crushed



Crates can be stacked  
to prevent fish from  
being crushed



sprinkling water to  
keep the cloth cool

#### 3.2. Using crates in an ordered boat

Do not spread fish on bare  
wooden floor of the boat



You can stack the crates  
but be careful not to fill  
the crates too full



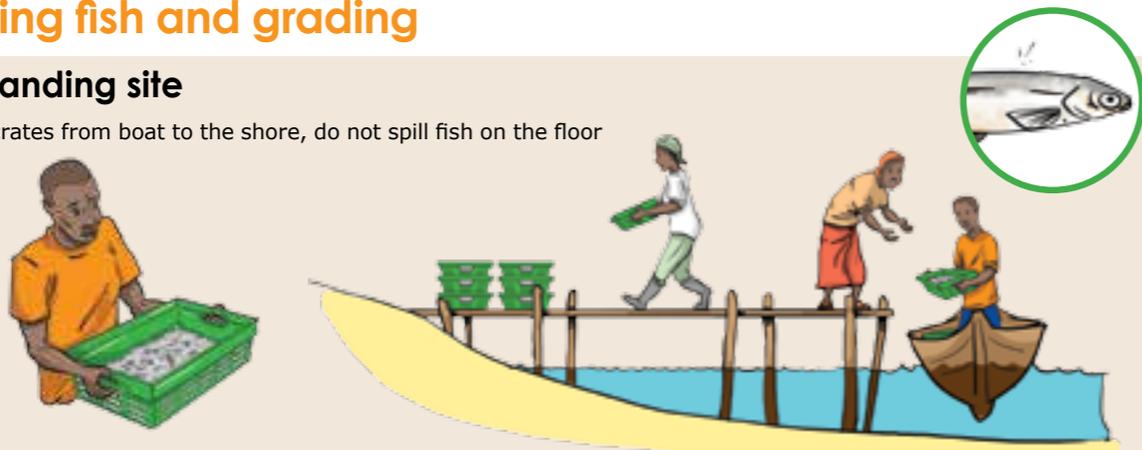
Fuel and oil must be  
separated from fish



## 4. Unloading fish and grading

### 4.1. Boat to landing site

Carefully transfer crates from boat to the shore, do not spill fish on the floor



### 4.2. Weighing

Using the crates is easier than the cans for weighing

Beware of personal hygiene of persons who weigh and manipulate the crates



Weighing using crates and on cleanable soil

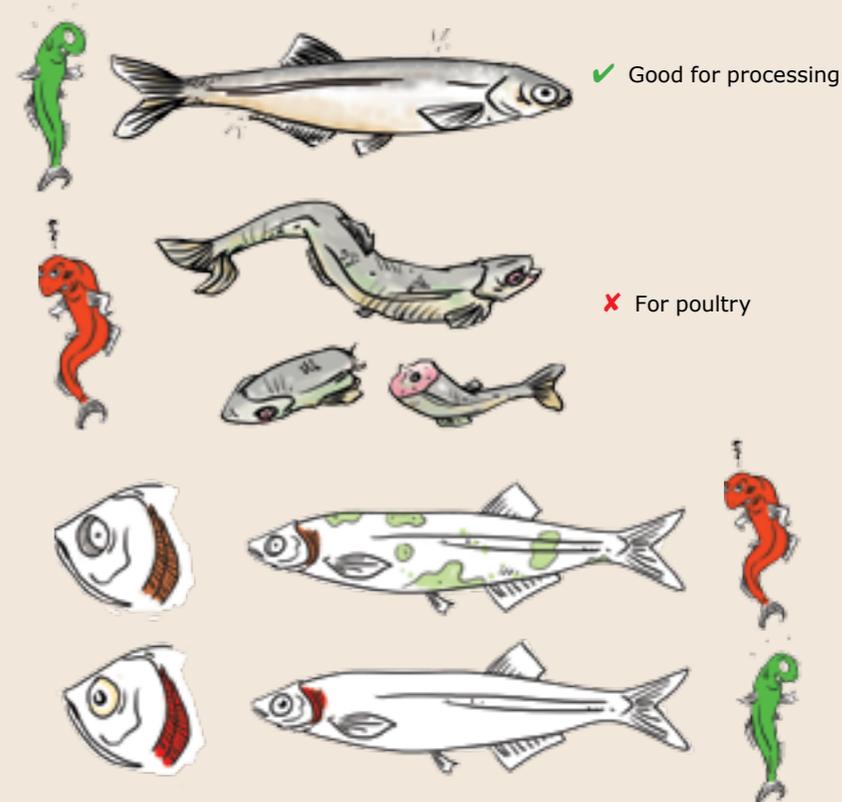
### 4.3. Grading of fish to determine quality & price of catch:

Glossy, silvery fish with straight bodies are better quality and need to be sorted for processing

The eyes should be bright and clear - not cloudy or sunken in.

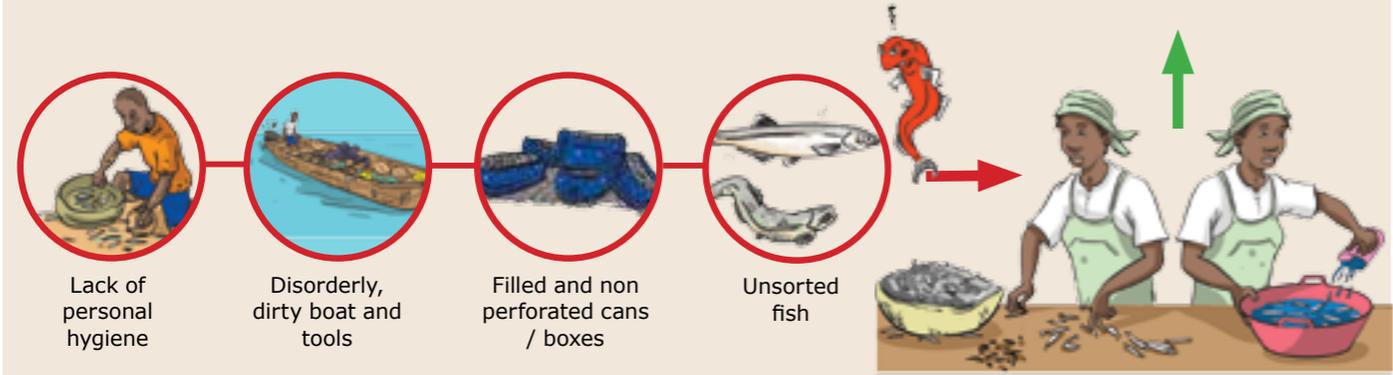
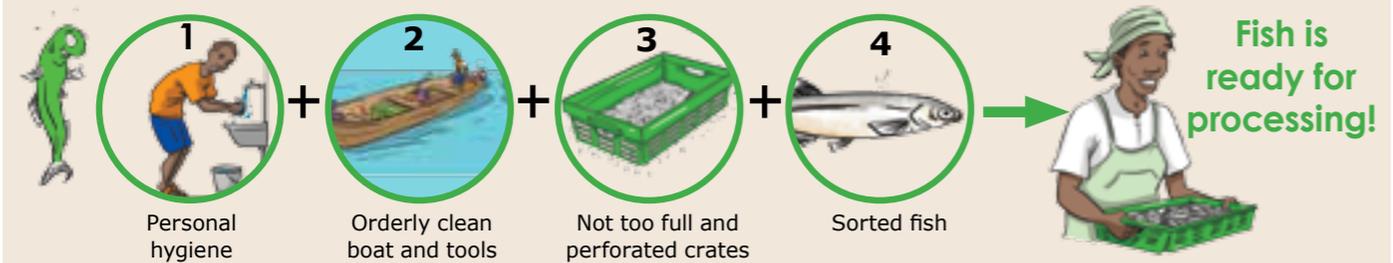
The gills of fresh fish are deep red, not brownish.

The skin should be firm, clear, and bright with no trace of slime.



### 5. Prepare for processing

#### 5.1. After the first four steps, you should have a clean fish ready for processing



If needed, wash it and sort it. Always use clean/ fresh sea water to wash the fish to remove dirt or other foreign matter.

#### 5.2. Four (4) options of process\*



#### 5.3. Safety during process

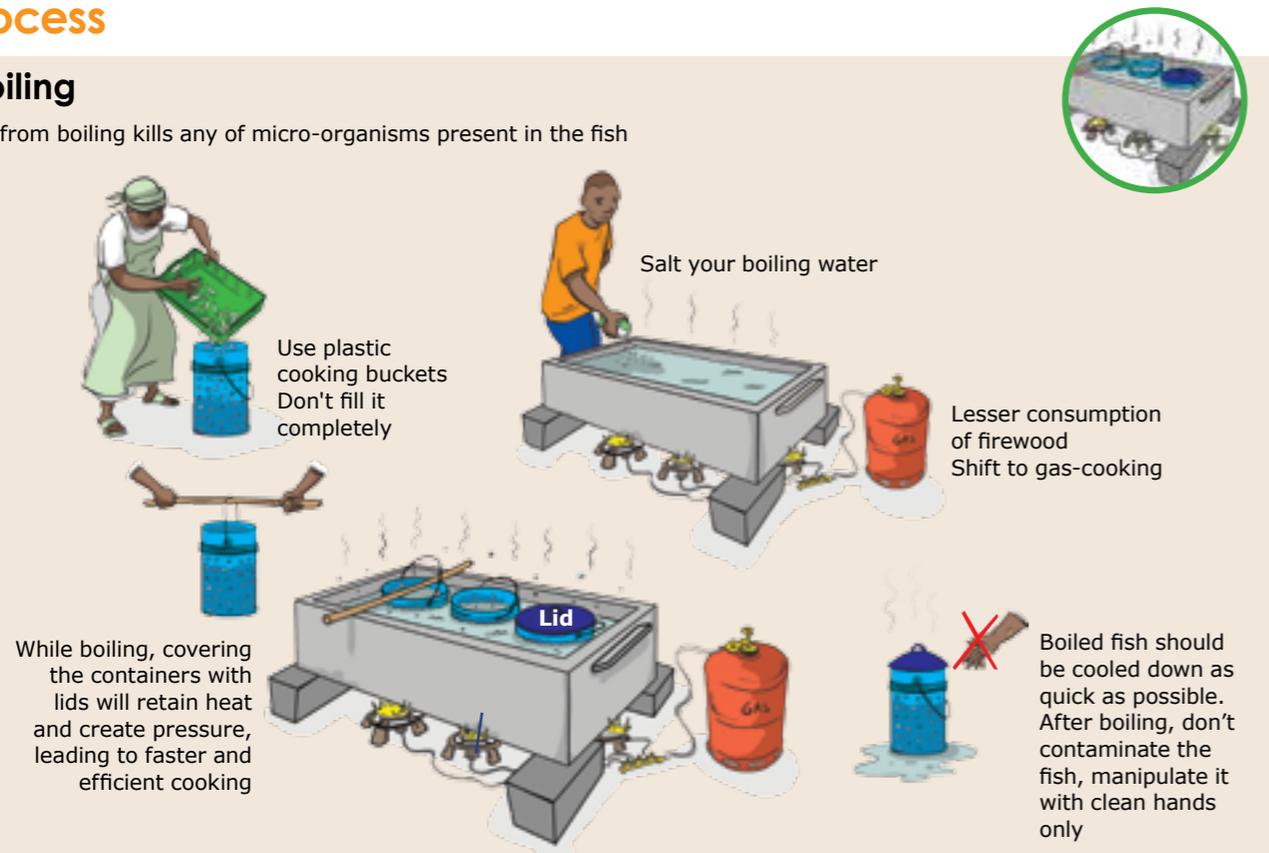


\*Detailed pp. 14-15-16-17

## 6. Process

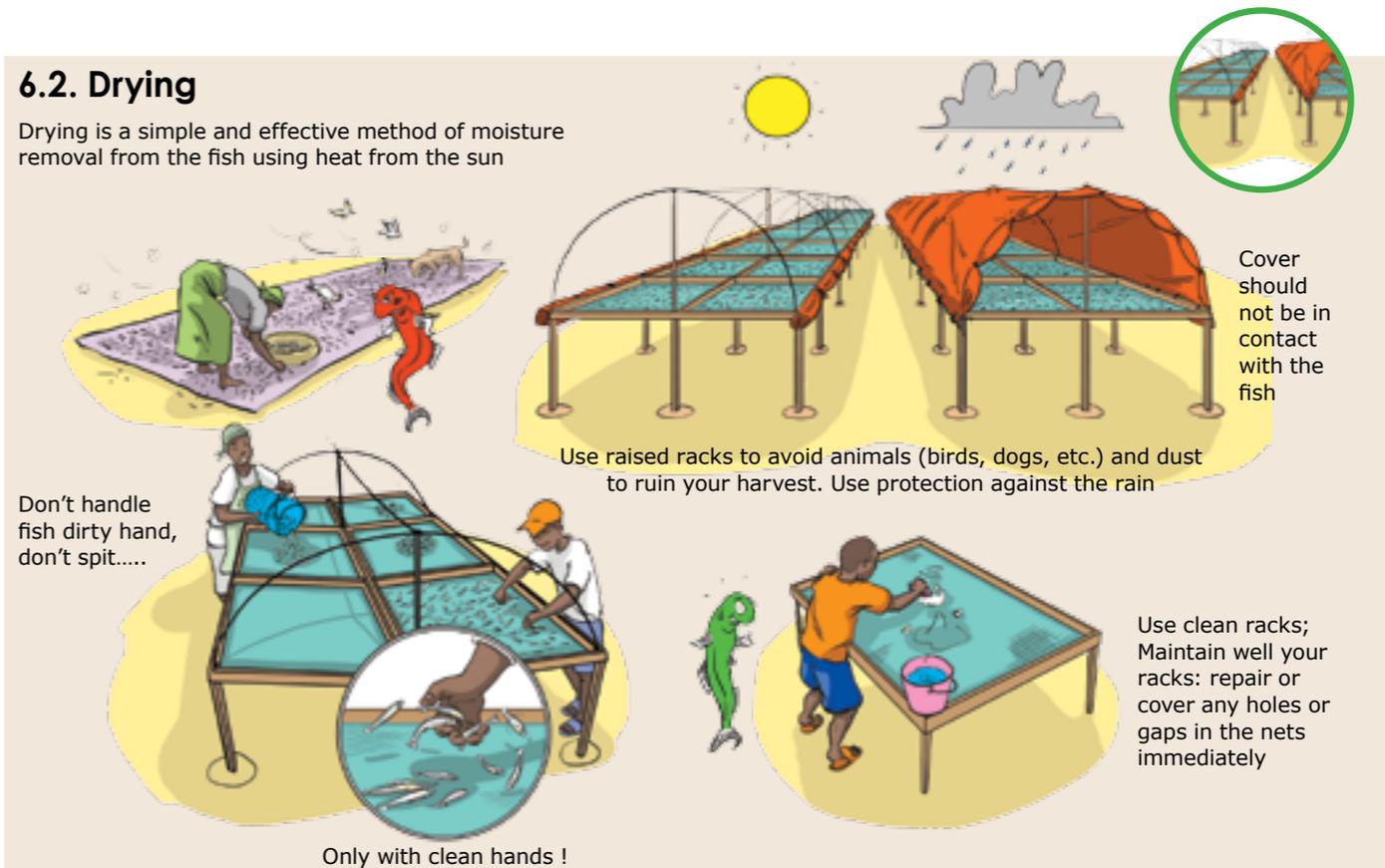
### 6.1. Boiling

The heat from boiling kills any of micro-organisms present in the fish



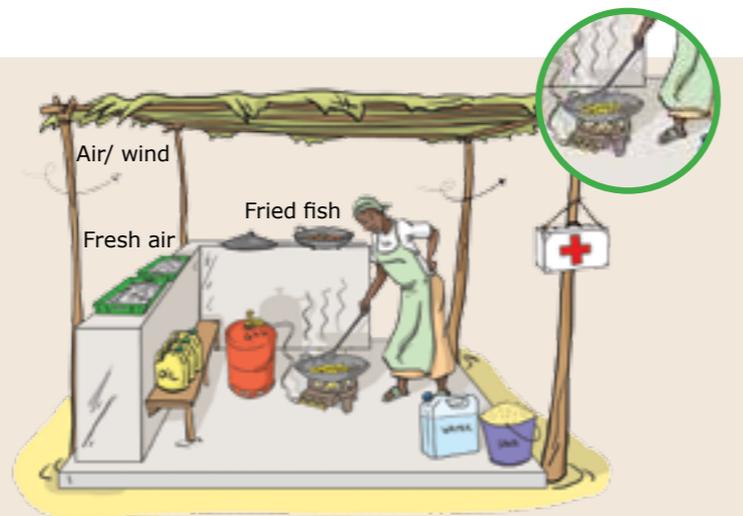
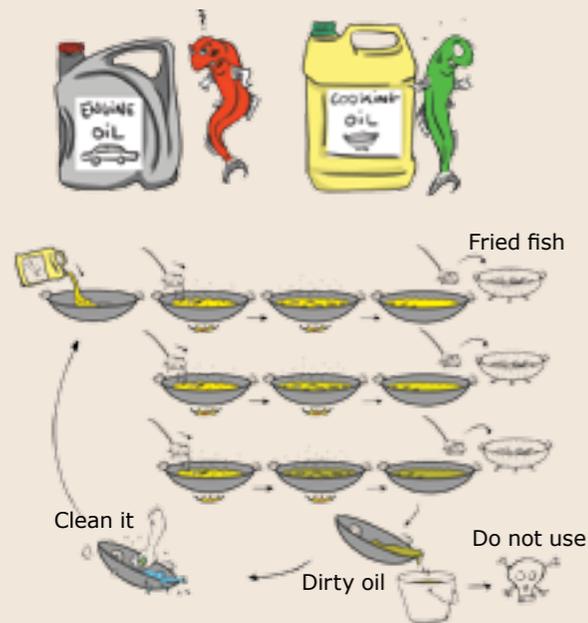
### 6.2. Drying

Drying is a simple and effective method of moisture removal from the fish using heat from the sun



### 6.3. Frying

- Covered space is preferable but ONLY if the space is well ventilated
- Use only cooking oil (engine oil or other type of non food grade oil is highly toxic)



- Use clean oil: replace the oil regularly and remove impurity at the top with a clean strainer.
- Oil is to be replaced before it starts to become dark, brownish/black color;
- Bad oil has an impact on the quality of the end product and on human health.

### 6.4. Smoking

- Use only natural wood/fibers to generate smoke
- Don't smoke the fish longer than necessary
- Move trays up/down to ensure evenly smoking
- If needed turn the fish on each tray during smoking
- Smoked fish of good quality should have a golden color, not dark/black color



## 7. Packing and storage

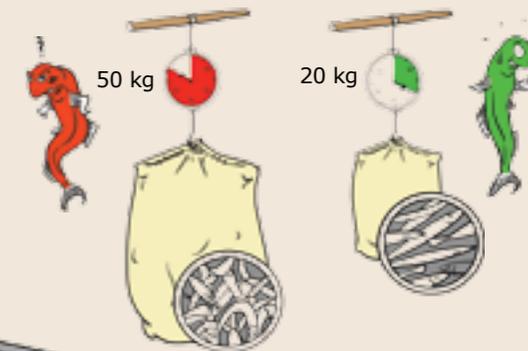
### 7.1. Inspect product before packing

- You must remove discoloured, charred fish and use it for poultry feed
- Remove any other foreign matter in the product – such as sand, stones and dispose immediately
- If you have too much foreign matter or altered fish, try to find out what step in the process you need to check and do better



### 7.2. Small bags better for storage:

- Smaller bag is better to avoid crushing the fish at the bottom of the bag
- Packs should weigh less than 20 kg



### 7.3. Storage

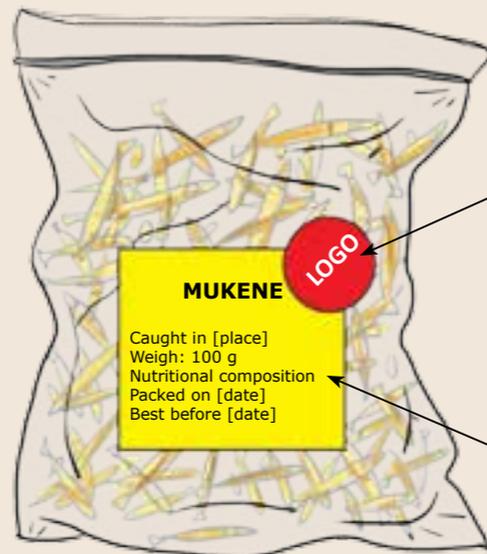
- When a warehouse is used for storing finished product, take measures to prevent rats, bugs enter the storage area. Inspect daily
- Do not use chemical products in the room of storage. Add a sign: "For food storage only. No chemicals permitted"



## 8. Packaging

### Package information

- Good packaging is important for maintaining quality of processed fish for longer periods
- Package the processed fish and seal in air-tight containers – transparent, re-sealable zip-lock, self-standing containers, tins or in bulk
- Double-check if the sealing has been properly done



The logo being a sign that the processors is following certain standards of quality processing and hygienic practices

Ensure that the product description, quantity, ingredients, nutritional composition, price, date of packing & best before

## 9. Transport

- Keep the products dry
- Use a clean truck
- Same requirements as for storage (don't put other stuff in your truck, keep clean), bumpy roads can affect the products. To prevent so: use shelves to store in the transportation mode
- If covered truck, use small bag not one on each other (for example in installing shelf on the truck)
- If truck uncovered: use clean and covered crates to protect from sun and dust and rain





IOC-SmartFish is a regional fisheries project managed by the Indian Ocean Commission, funded by the European Union and co-implemented by the Food and Agriculture Organization of the United Nations. SmartFish, which operates in twenty countries throughout the Indian Ocean Region, Southern and Eastern Africa, focuses on fisheries governance, management, monitoring control and surveillance, trade, and food security.

This illustrated manual is intended for operators of the small pelagic value chain to adopt hygienic practices for a good quality product. The manual exemplifies all stages of the handling chain: fishing, landing, sorting, processing, packaging, storing and transporting.



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