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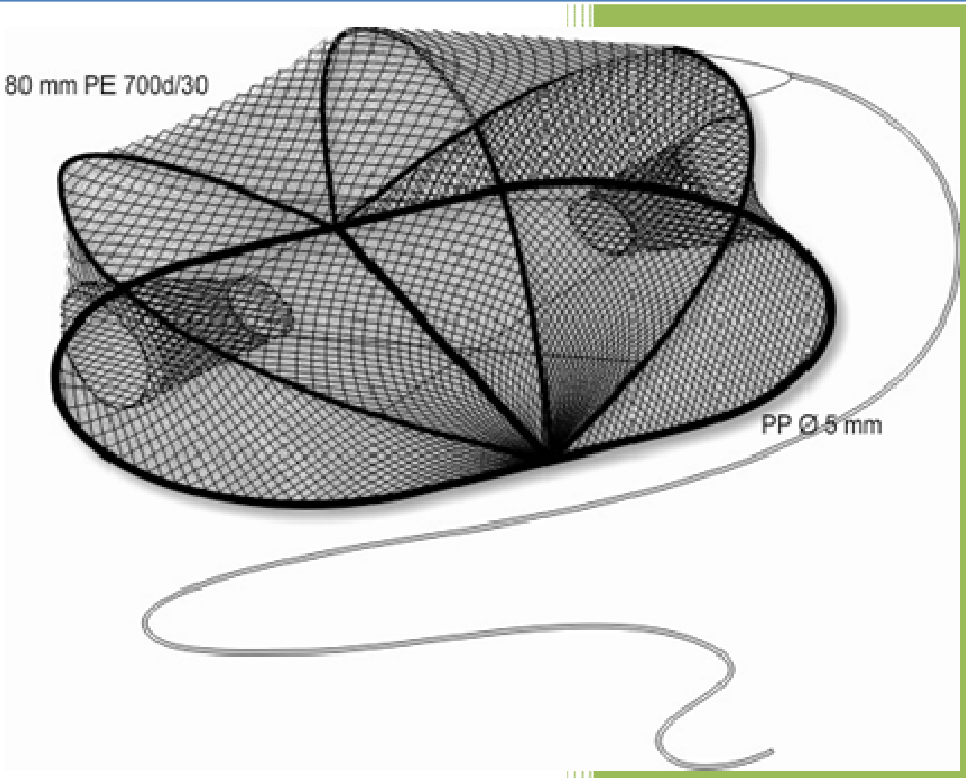
Standard Operating Procedures of

Collapsible Fish Trap



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Standard Operating Procedures of Collapsible Fish Trap

1) Introduction:

In early times, flowing water caused by tidal movement and changes in river and lake levels were probably used to trap fish behind rudimentary barriers, often made from sticks and stones. It is likely that early humans found that fish catches could be improved by driving fish into these barriers. They would have found that catches from these barriers decreased over time, as fish became accustomed to them, and would have had to move the traps to fresh areas where more fish could be caught. It would have been hard work to construct new traps, either by moving stones from the old trap or finding new ones. Primitive fishers probably tried making barriers from lighter, more readily available material such as tree branches, brush and vines. This led to the fishers inventing lighter, movable traps made from brush and nets made from vines which they could carry with them when they moved to new areas. They may even have tried bigger, more complicated corral-type fish traps in lakes, rivers and coastal waters.

Either by accident or by inspiration, fishers then found that:

- fish were caught in traps as the tide fell, were forced into them by the current or could be chased into them by the fisher;
- fish entered the trap for protection or simply followed other fish seeking shelter;
- objects in the traps such as white stones attracted the fish;
- bits of fish or meat would attract more fish.

It is from such beginnings that modern traps and pots have developed.

Traps and pots do not seem to have developed in only one part of the world. As fish became an important food source, many types of traps and pots were developed. We will look at some of this variety later in the manual, concentrating on portable traps and pots and giving less detail about corrals and other herding devices.

2) Type of traps and pots:

People in different parts of the world are not always referring to exactly the same things when they use the words "trap" and "pot". In general, traps are large structures fixed to the shore. Pots are smaller, movable traps, enclosed baskets or boxes that are set from a boat or by hand.

A simple system for the naming of traps and pots was produced by von Brandt in 1959 for FAO and is used in this manual. General types of traps and pots include:

- traps that form barriers to fish movement, including walls or dams, fences, fyke nets, gratings and watched chambers that can be closed by the fisher after the fish enters
- traps that make hiding places (habitat traps), including brush traps and octopus pots
- tubular traps, which are narrow funnels or hoses that stop the fish from getting out backwards; eel tubes fall into this category
- traps that are mechanically closed by the fish, including gravity traps or box traps, bent-rod traps (whipping bough traps), torsion traps and snares;
- baskets, which are enclosed traps and pots usually with a structure to make escape difficult; they include pots made of wood, wire or plastic, conical and drum-like traps made of netting with hoops and frames (e.g. drum nets) and box-like traps made with strong frames
- large open traps or corrals with a part or mechanism to stop fish from escaping, which can be fixed on sticks or anchors, set or floating
- Collapsible traps, which are easy to transport and operated. The oval shape of collapsible fish trap is designed by TD/SEAFDEC.

In this SOP will focus on how to make and use the various types of transportable traps, the "collapsible" type. The making and use of other types will be looked at only very briefly.

3) SEAFDEC Collapsible Fish Trap:

The construction of collapsible fish traps are shown in Figure 1. A mainline at least, shall be contained 30-50 traps and series of mainline could be deployed in an operation and number of trap shall be constant in every operation during research cruise.

Interval distance of each trap in longline shall be 25 – 50 meters and interval distance shall be constant in every operation.

Locations will depend on the target species. Recommended station interval is every 30 nautical miles for every degree of latitude or longitude. Every second degree will be sampled. Station interval will depend also on such factors as survey budget and oceanographic survey activities. In cases where oceanographic data must be collected, this data can be obtained at the end of each fishing operation. Depend on other fishing activities.

Hydro-acoustic equipment such as an Echo Sounder should be used to determine depth. Oceanographic equipment such as the Grab should be used to survey bottom condition, which will be considered when determining distance between traps.

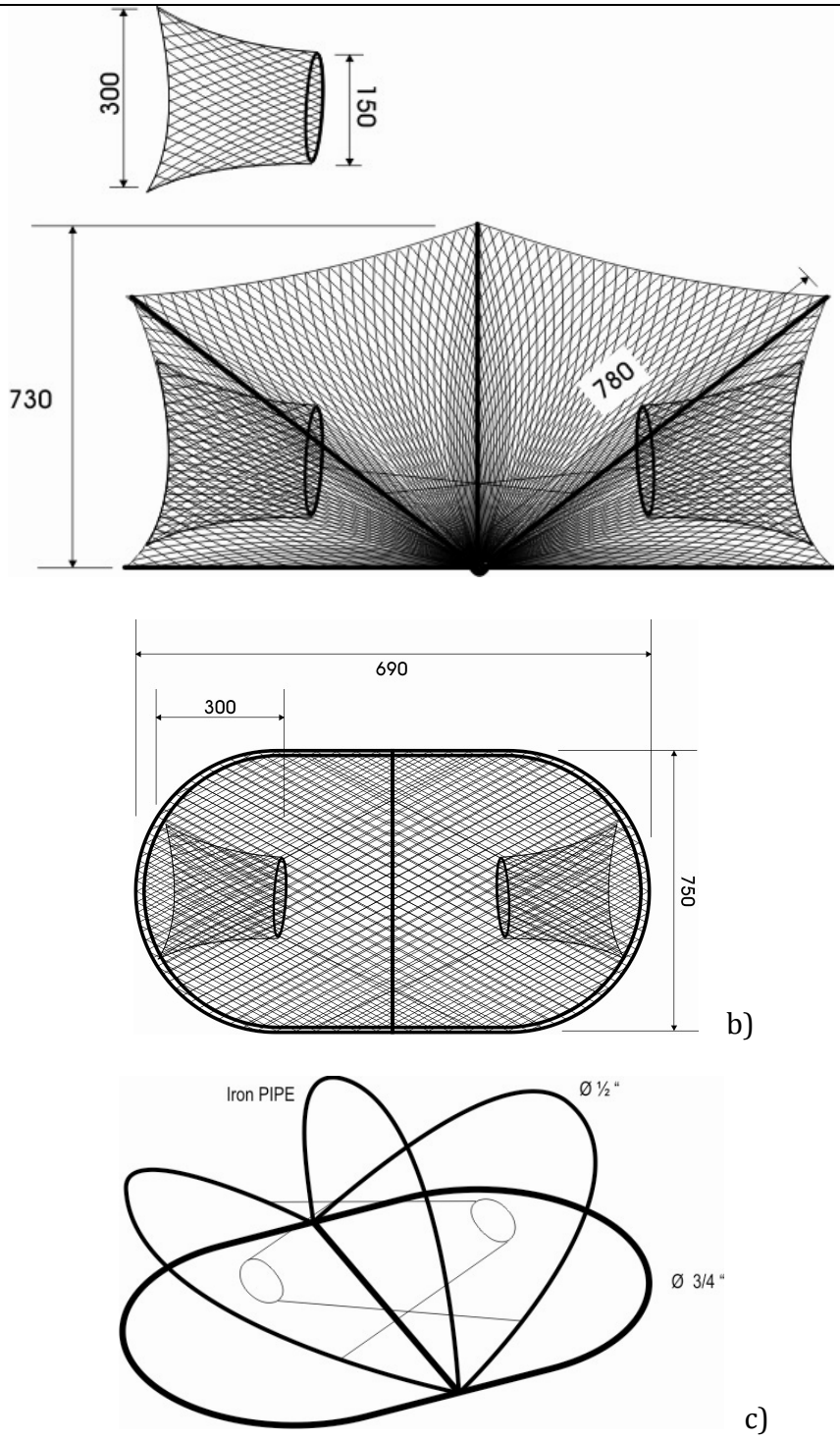

Figure 1 Diagram of collapsible fish trap a) Side view, b) Top view and c) Trap frame

Operation

Time of Fishing Operation:

At shallow depths, most target species are nocturnal animals and therefore, night catch rates can be expected to be higher than day catch rates. In deep water, there is little difference in day and night catches. Depending on target species and their behavior, operation time should start at Day operation or Night operation

Number of Traps:

Number of traps will depend on bottom condition. It is suggested that 50 traps per line and/ or use two line per operation be used for rough bottom areas. Because most of fish and crustaceans are concentrate by the reefs and rough bottom (see Figure 2).

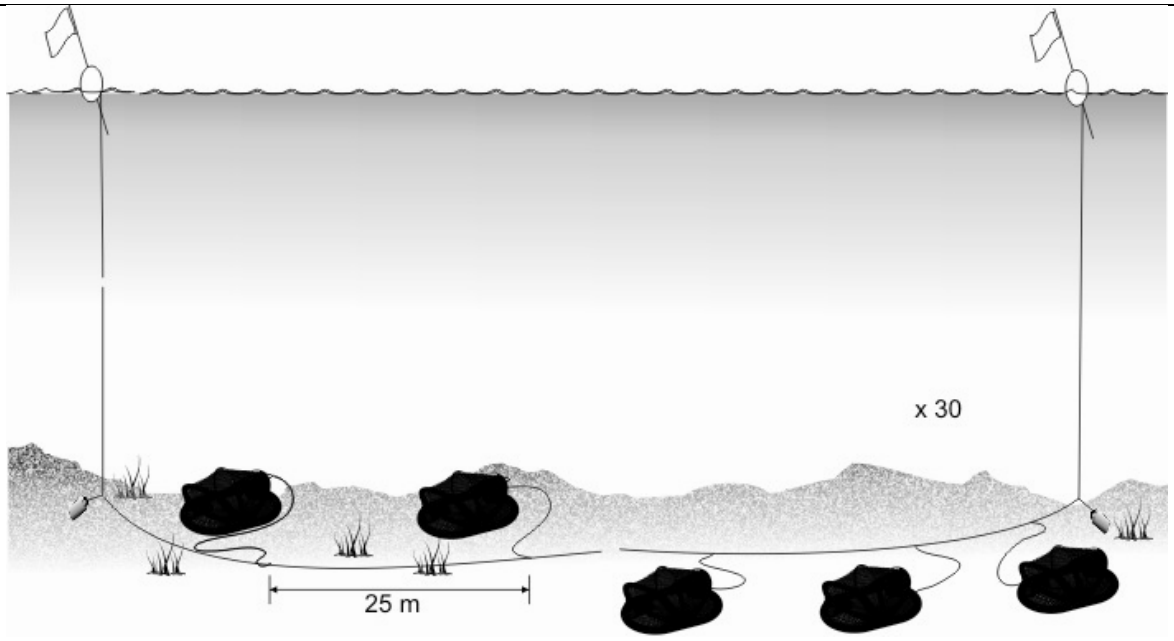

Figure 2 diagram of the operation of collapsible fish trap in longline type.

Fishing Depth:

Fishing depth will depend on many factors. As a guideline, < 500 meters should be used.

Boat Speed (Shooting) / Direction:

Boat speed should remain consistent during shooting. Setting traps near reefs should be against the tide and current of direction. Depend on the weather condition and safety in operating

Type of Bait:

Bait can be minced or used whole. Small pieces of bait should be placed in perforated bait box or mesh bag to allow the odour to escape. As a general rule, bait made from fish, especially oily fish, is the most reliable and effective

Soak Time:

Soak time will depend on research activities. For both fish and crab traps, a soak time shall be at least 6 hours and not exceed 72 hours is suggested.

Soak time is calculated from time spent on shooting divided by two plus time spent on hauling divided by two and plus waiting time (period between finish shooting to start hauling)

Target species:

Fish and crustaceans (lobster, shrimps, crabs)

Data Recording for Location Surveys:

- ✓ Record position of each station using Global Positioning System.
- ✓ Record position and start and stop times for shooting
- ✓ Record position and start and stop times for hauling

The recording of Start shooting : start shooting time is the time when any part of the gear reaches the sea.

The recording of Finish shooting time: Fishing shooting time is the time when the last part of the gear shot overboard.

The recording of Start hauling time: Start hauling time is the time when operator hauled any part of gear on board.

The recording of Finish hauling time: Finish hauling time is the when operator hauled all part of gear on board. Setting distance shall be calculated from position of start shooting and finish shooting compare with length of mainline deployed.

The recording of fishing position: Fishing position shall be recorded by using the GPS or an equally accurate navigation system. Position recording will be in Latitude and Longitude format.

The recording of Start fishing position: the position that any part of the gear reaches the sea.

The recording of finish fishing position: the position that last part of the gear shot overboard. Deep sea trap is a kind of stationary fishing gear, so that information of start hauling position and finish hauling position are not required.

Gear malfunction:

If the malfunctioning of lost of gear, main line usually found entangled with under water rocky during hauling operation. Details of entangling and lost of trap shall be recorded numbers and position.

Catch sampling and recording procedure:

Catch hauled on board should be individually classified and measured all target catch (recommended). Fishing log sheet is essential for recording the operation and catch information. Catch data should include number of trap (in the consequence of trap on the mainline)

Measurement procedure:

Catch hauled on board should be identified to specie. Common name and scientific name shall be recorded in log sheet. Catch hauled on board must be weighted (in unit 'gram' with one decimal place).

Indicator of abundance:

Other data (if any) should be recorded such as condition of catch (dead, alive or bitten by other fish), condition and/or quantity of bait left and etc.

Catch Per Unit Effort (CPUE) is calculated by total weight of target species caught per trap-hauled (Concerned researcher must specify 'target species' and 'non-target species' in research proposal). Number of trap to use calculated is from the trap hauled on board.