



Centurion
UNIVERSITY

*Shaping Lives...
Empowering Communities...*

Session 31

FISHING GEARS OF INLAND WATER BODIES IN INDIA

CLASSIFICATION OF FISHING GEARS

- Fishing gears may be classified based on
 1. **The place of their use** (pond, reservoir, river)
 2. **Their mobility** (e.g. whether active or passive)
 3. **Depth of operation** (surface, pelagic, demersal, mid-water, bottom gear, etc).

GEARS ACCORDING TO THE PLACE OF THEIR USE

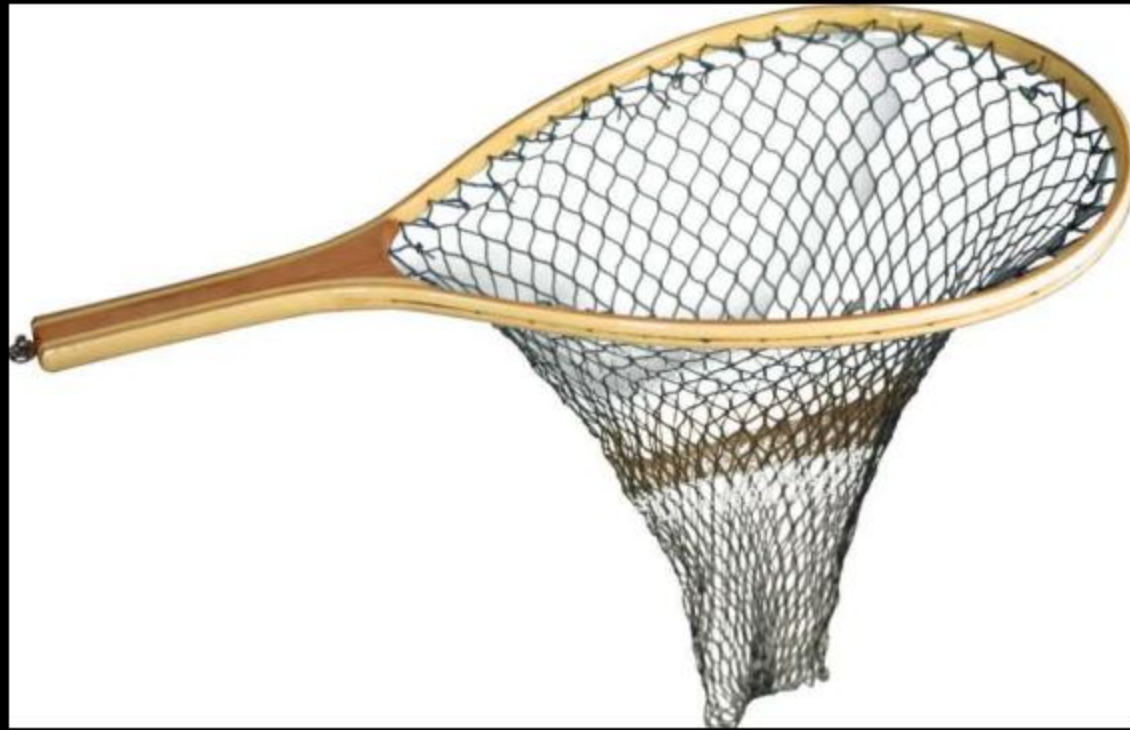
1. **For ponds:** Cast nets, stick-held seine nets, plunge baskets, tangle nets, traps, hand lines.
2. **For reservoirs and lakes:** Cast nets, gill nets, beach seines, stick-held seines, trap nets, scoop nets, hand lines, long lines
3. **For rivers:** Cast nets, drag nets, stick-held seine nets, gill nets, lift nets, bag nets, dip nets, cover pots, traps, hook and lines and long lines.
4. **For estuaries, lagoons and back waters:** Bag nets, bamboo screens or walls of netting, purse net, seine net, drag net, drift gill net, lift net, dip net, rod and lines

GEARS ACCORDING TO THEIR MOBILITY

1. Active nets:

These are moved by man-powers (group of persons) or machine power to encircle the shoal of fish and bring them to shore (bank). In active netting, the floats and sinkers are so adjusted as to keep the two ends of the net stretched apart during the entire operation. They include drag nets, bag nets, seine nets, trawls, purse seines, cast nets, scoop nets, movable traps, hook and line (angling).

SCOOP NET



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2. Passive nets:

These remain stationary at a place and the fish moving around are caught or gilled. The net is either set at the bottom with the help of anchors and stakes (stake net), or suspended at intermediate depths with the help of drop-lines from larger buoys at the surface or suspended near the surface by its own float line, but the net is attached by means of ropes to larger sinkers at the bottom. They include various kinds of gill nets, 'trammel' nets, hook and line

GEARS ACCORDING TO THE DEPTH OF OPERATION

1. **Surface** – Surface gill net, surface trawl net
2. **Mid-water** – Mid-water / column gill net, mid-water / column trawl net
3. **Bottom** - Bottom gill net, bottom trawl net

FISHING WITHOUT GEAR

1. Hand Gathering

- This is the simplest method used in both freshwater and marine environment. It is mainly done in shallow waters; particularly hill-streams, shallow channels, intertidal zone, lagoon, mangroves etc. In hill streams an isolated channel is dammed by putting the stones and then the flow is diverted to the other side. The fishes trapped in the dammed area are then picked up by hand.
- Generally, these fishes are not of much economic importance. Poor villagers or tribals usually adopt these tactics. In the intertidal zones, fishers mainly fisherwomen gather gastropods, clams, oysters, mussels, seagrasses, seaweeds etc.

- In the estuaries, they collect young ones of penaeid and non-penaeid shrimps. Sometimes they collect even marine ornamental fishes in the shallow waters. Molluscan shells are sold for making lime and for ornamental use. Seaweeds are used for preparing agar, algin and carrageenan.

2. Fishing by hunting

Spear is the earliest weapon employed by man and still in use to-day in many parts of the world. Besides spears, harpoons, lance, rake and rifles are used to catch large-sized fishes like Bagarius, Wallago, Pangasius, Mystus when seen trapped in shallow channels, irrigation channels, inundated fields, bundhies etc. during monsoonic floods.

A 'Spear' tip is fitted on a bamboo shaft of 1.50 to 2.0 m and operated by throwing on the target from a boat or standing on the bank. The harpoon has a shaft of about 3 m long to one end of which is attached a barbed iron point (single or double) of about 20 cm long. The rake is a highly specialized weapon consisting of a long and thin blade at each end (look like a double-bladed oar)

3. Fishing with animals

Fish and other aquatic animals are caught using trained animals like dogs, otters, cormorants (a bird), etc.

4. Grappling and wounding gears: Certain instruments are used to grapple and wound the fish prior to their capture. These instruments can be hand instruments or sharp projectiles.

- **Hand instruments:** These are broadly classified into clamps, tongs and rakes.
 1. **Clamp** is a stick with one end split into a few branches. Clamps are mainly used to catch mussels and snails.
 2. **Tongs** are similar to scissors with long handles and are used to operate slightly deeper than the clamps.
 3. **Rakes** are used to catch mussels and they rake and dig animals hidden in the mud.

- **Sharp projectiles:** Instruments with sharp points are used, thereby catching the fish in a damaged or injured condition.
 1. **Spears** are simplest form of sharp projectiles and they range from single pronged stick to many pronged barbed ones.
 2. **Fish plummets:** Metal weights with barbed points called fish plummets pierce the flatfish over the bottom as they are dropped down.
 3. **Fish combs** provided with prongs which pierce the fish when pressed into the mud are mainly used in eel fishery



5. Stupefying gears

Certain devices are made use of in stupefying the fish either mechanically, chemically or electrically to ease their capture. These methods are prohibited in responsible fisheries.

- **Mechanical stupefying** is done by throwing stones at the fish, beating with clubs or mallets and by using explosives like dynamite (Dynamite Fishing). However, the use of explosives is environmentally harmful for the entire fish population and also the fishing grounds.

- **Fish poisoning** - Chemicals like copper and lime are used to poison the fish. Plant poisons extracted from ichthyotoxic plants containing saponin are used to poison and stupefy the fish. Traditionally some tribals used to kill or narcotize fishes using latex or powdered parts of some plants. Some plant poisons are used in aquaculture programme to eradicate undesirable (weed) fishes from the nurseries or fish farms.

Derri's root powder (Roots of *Derris trifoliata*) containing an ingredient called 'Rotenone' is the most commonly used fish poison, acting like a contact poison which damages the respiratory system and ultimately causes death. The poison is effective in shallow waters up to 1.5 m depth on hot sunny days with water temperature above 25° C.

- **Electrical fishing** – Effect of pulsating electric field on fishes such as first reaction, electrotaxis (anode attraction), electro-narcosis and electrocution are utilized in electrical fishing equipment. Effect of electric field is also made use of in other fishing systems such as trawls and hook and line to enhance efficiency.

