

CHAPTER – IV

HISTORY OF CATAMARAN, MECHANIZED BOATS AND FISHES IN INDIA.

4.1 HISTORY OF FISHING



Herring Buss taking aboard its drift net (G. Groenewegen)

In the 15th century, the Dutch developed a type of sea-going herring drifter that became a blueprint for European fishing boats. This was the Herring Buss, used by Dutch herring fishermen until the early 19th centuries. The ship type buss has a long history. It was known around 1000 AD in Scandinavia as a *büza*, a robust variant of the Viking longship. The first herring buss was probably built in Hoorn around 1415. The last one was built in Vlaardingen in 1841. The ship was about 20 meters long and displaced between 60 and 100 tons. It was a massive round-bilged keel ship with a bluff bow and stern, the latter relatively high, and with a gallery. The busses used long drifting gill nets to catch the

herring. The nets would be retrieved at night and the crews of eighteen to thirty men^[6] would set to gibbing, salting and barrelling the catch on the broad deck. The ships sailed in fleets of 400 to 500 ships^[6] to the Dogger Bank fishing grounds and the Shetland isles. They were usually escorted by naval vessels, because the English considered they were "poaching". The fleet would stay at sea for weeks at a time. The catch would sometimes be transferred to special ships (called *ventjagers*), and taken home while the fleet would still be at sea (the picture shows a *ventjager* in the distance).



A dogger viewed from before the port beam. c. 1675 by Willem van de Velde the Younger.

During the 17th century, the British developed the dogger, an early type of sailing trawler or longliner, which commonly operated in the North Sea. The dogger takes its name from the Dutch word *dogger*, meaning a fishing vessel which tows a trawl. Dutch trawling boats were common in the North Sea, and the word *dogger* was given to the area where they often fished, which became known as the Dogger Bank.^[7] Doggers were slow but sturdy, capable of fishing

in the rough conditions of the North Sea. Like the herring buss, they were wide-beamed and bluff-bowed, but considerably smaller, about 15 meters long, a maximum beam of 4.5 meters, a draught of 1.5 meters, and displacing about 13 tonnes. They could carry a tonne of bait, three tonnes of salt, half a tonne each of food and firewood for the crew, and return with six tonnes of fish.^[8] Decked areas forward and aft probably provided accommodation, storage and a cooking area. An anchor would have allowed extended periods fishing in the same spot, in waters up to 18 meters deep. The dogger would also have carried a small open boat for maintaining lines and rowing ashore.



A banks dory used for cod fishing from the Gazela



Typically schooners were used as dory mother ships

Dories are small, shallow-draft boats, usually about five to seven metres (15 to 22 feet) long. They are lightweight versatile boats with high sides, a flat

bottom and sharp bows, and are easy to build because of their simple lines. The dory first appeared in New England fishing towns sometime after the early 18th century.^[9] A precursor to the dory type was the early French bateau type, a flat bottom boat with straight sides used as early as 1671 on the Saint Lawrence River. The common coastal boat of the time was the wherry and the merging of the wherry design with the simplified flat bottom of the bateau resulted in the birth of the dory. Antecdotal evidence exists of much older precursors throughout Europe. England, France, Italy, and Belgium have small boats from medieval periods that could reasonably be construed as predecessors of the Dory.

The Banks dories appeared in the 1830s. They were designed to be carried on mother ships and used for fishing cod at the Grand Banks.^[9] Adapted almost directly from the low freeboard, French river bateaus, with their straight sides and removable thwarts, bank dories could be nested inside each other and stored on the decks of fishing schooners, such as the *Gazela Primeiro*, for their trip to the Grand Banks fishing grounds.



A smack near Brightlingsea

In the 19th century, a more effective design for sailing trawlers was developed at the English fishing port, Brixham. These elegant wooden sailing boats spread across the world, influencing fishing fleets everywhere. Their distinctive sails inspired the song *Red Sails in the Sunset*, written aboard a Brixham sailing trawler called the *Torbay Lass*. In the 1890s there were about 300 trawling vessels there, each usually owned by the skipper of the boat. Several of these old sailing trawlers have been preserved.

Throughout history, local conditions have led to the development of a wide range of types of fishing boats. The Lancashire nobby was used down the north west coast of England as a shrimp trawler from 1840 until World War II. The Manx nobby was used around the Isle of Man as a herring drifter. The *fifie* was also used as a herring drifter along the east coast of Scotland from the 1850s until well into the 20th century.



Seine Net Trawler, Hopeman 1958

The bawley and the smack were used in the Thames Estuary and off East Anglia, while trawlers and drifters were use on the east coast. Herring

fishing started in the Moray Firth in 1819. The peak of the fishing at Aberdeen was in 1937 with 277 steam trawlers, though the first diesel drifter was introduced in 1926. In 1870 paddle tugs were being used to tow luggers and smacks to sea. Steam trawlers were introduced in 1881, mainly at Grimsby and Hull. In 1890 it was estimated that there were 20,000 men on the North Sea. The steam drifter was not used in the herring fishery until 1897. The first trawlers fished over the side but in 1961 the first stern trawler was used at Lowestoft for fishing in Arctic waters. By 1981 only 27 of 130 deep sea trawlers were still going to sea. Many were converted to oil rig safety vessels.

Trawler designs adapted as the way they were powered changed from sail to coal-fired steam by World War I, and then to diesel and turbines by the end of World War II. During World War I and World War II, many fishing trawlers were commissioned as naval trawlers to be used as minesweepers, the activities being similar, with the crew and layout already suited to the task. Likewise, many commercial drifters were commissioned as naval drifters to be used for maintaining and monitoring anti-submarine nets. Since World War II, commercial fishing vessels have been increasingly equipped with electronic aids, such as radio navigation aids and fish finders. During the Cold War, some countries fitted fishing trawlers with additional electronic gear so they could be used as spy ships to monitor the activities of other countries.

4.2 COUNTRY BOAT

4.2.1 CATAMARAN



Catamarans are a relatively recent introduction to the design of boats for both leisure and sport sailing, although they have been used since time immemorial among the paravas, a fishing community in the southern coast of Tamil Nadu, India, and independently in Oceania, where Polynesian catamarans and outrigger canoes allowed seafaring Polynesians to settle the world's most far-flung islands.

In recreational sailing, catamarans, and multihulls in general, had been met by a degree of skepticism from Western sailors accustomed to more "traditional" monohull designs, mainly because multihulls were based on, to them, completely alien and strange concepts, with balance based on geometry rather than weight distribution. However, the catamaran has arguably become the best design for fast ferries, because their speed, stability and large capacity are valuable.



A present sweep row training on catamaran

This ban relegated the catamaran to being a mere novelty boat design until 1947. In 1947, surfing legend, Woodbridge "Woody" Brown and Alfred Kumalae designed and built the first modern ocean-going catamaran, *Manu Kai*, in Hawaii. Their young assistant was Rudy Choy, who later founded the design firm Choy/Seaman/Kumalae (C/S/K, 1957) and became a fountainhead for the catamaran movement. The Prout Brothers, Roland and Francis, experimented with catamarans in 1949 and converted their 1935 boat factory in Canvey Island, Essex (England), to catamaran production in 1954. Their Shearwater catamarans won races easily against the monohulls.

The speed and stability of these catamarans soon made them a popular pleasure craft, with their popularity really taking off in Europe, and was followed soon thereafter in America. Currently, most individually owned catamarans are built in France, South Africa, and Australia.

In the mid-twentieth century, the catamaran inspired an even more popular sailboat, the Beach Cat. In California, a maker of surfboards, Hobie Alter produced the 250-pound Hobie Cat 14 in 1967, and two years later the

larger and even more successful Hobie 16. That boat remains in production, with more than 100,000 made in the past three decades.

The Tornado catamaran was an Olympic class sailing catamaran, with a crew of two. It has been in the Olympic Games since 1976. It was designed in 1967 by Rodney March of Brightlingsea, England, with help from Terry Pierce, and Reg White, specifically for the purpose of becoming the Olympic catamaran. At the IYRU Olympic Catamaran Trials, it easily defeated the other challengers.

Other important builders of catamarans are Austal and Incat, both of Australia and best known for building large catamarans both as civilian ferries and as naval vessels.

4.2.2 CATAMARAN SAILING



A Hobie catamaran sailboat

Small recreational catamarans are typically designed to be launched and landed from a beach. They will come to rest on their keels without heeling over like a monohull. Additionally, their rudders can be retracted to the depth of their keels, which protects the fragile rudders from damage when the vessel is run aground.

Larger Catamarans make good cruising and long distance boats: The Race (around the world, in 2001) was won by the giant catamaran *Club Med* skippered by Grant Dalton. It went round the earth in 62 days at an average speed of eighteen knots.

Although the principles of sailing are the same for both catamarans and monohulls, there are some "peculiarities" to sailing catamarans. For example: Catamarans can be harder to tack if they don't have dagger boards or centre boards. All sailboats must resist lateral movement in order to sail in directions other than downwind and they do this by either the hull itself or else dagger boards or centre boards. Also, because catamarans are lighter in proportion to their sail size, they have less momentum to carry them through the turn when they are head to wind. Correct use of the jib sail (back-filling the jib to pull the bow around) is often essential in successfully completing a tack without ending up stuck in irons (pointing dead into the wind and sailing backwards, see: No-Go Zone).

They have a higher speed than monohulls of the same size due to the more needle-like hull shape having reduced hydrodynamic drag.

Catamarans are slower turning than monohulls as hull spacing is increased and hulls are narrowed to a more needle like shape.

Catamarans are less likely to capsize in the classic "beam-wise" manner but often have a tendency to pitchpole instead—where the leeward (downwind) bow sinks into the water and the boat 'trips' over forward, leading to a capsize. Other sources state that trimarans are more prone to "pitchpole", while catamarans can flip sideways. Either way, it is caused by sail overpowering (and not moving weight aft fast enough for smaller vessels). "Trim a monohull for the lull, ride the puff; trim a multihull for the puff, wait the lull" Teaching for new sailors is usually carried out in monohulls as they are thought easier to learn to sail, a mixture of all the differences mentioned probably contributes to this.

4.2.3 POWERED CATAMARANS



Maxi Catamaran Orange II

A recent development in catamaran design has been the introduction of the power catamaran. The 'power' version incorporates the best features of a motor yacht and combines it with the characteristics of a multihull.

Usually, the power catamaran is devoid of any sailing apparatus as demonstrated by one of the top-selling models in the United States, the Lagoon Power 43. This vessel has now been introduced to a number of charter fleets in the Caribbean and the Mediterranean and is becoming an increasingly common sight.

Smaller powered catamarans are becoming quite common in the United States with several manufacturers producing quality boats. A small "cat" will almost certainly have 2 engines while a similar sized mono-hull would only one engine. All mid-size and larger cats will have 2 engines.

The Swiss-registered catamaran Tûranor PlanetSolar which was launched in March 2010, is the world's largest solar powered boat and is planned to circumnavigate the globe.

4.3 MECHANIZED BOATS

4.3.1 FISHING VESSEL



Crab boat from the North Frisian Islands working in the North Sea



A robustly designed (and slightly paranoid looking) contemporary fishing boat

A fishing vessel is a boat or ship used to catch fish in the sea, or on a lake or river. Many different kinds of vessels are used in commercial, artisanal and recreational fishing.

According to the FAO, there are currently (2004) four million commercial fishing vessels. About 1.3 million of these are decked vessels with

enclosed areas. Nearly all of these decked vessels are MECHANIZED, and 40,000 of them are over 100 tons. At the other extreme, two-thirds (1.8 million) of the undecked boats are traditional craft of various types, powered only by sail and oars.^[1] These boats are used by artisan fishers.

It is difficult to estimate the number of recreational fishing boats. They range in size from small dingies to large charter cruisers, and unlike commercial fishing vessels, are often not dedicated just to fishing.

Prior to the 1950s there was little standardisation of fishing boats. Designs could vary between ports and boatyards. Traditionally boats were built out of wood, but wood is not often used now because of cost and the difficulty in obtaining suitable timber. Fibreglass is used increasingly in smaller fishing vessels up to 25 metres (100 tons), while steel is usually used on vessels above 25 metres.

4.4 FISHING NET



Fishing for salmon with a hand net on the Fraser River, Canada

A fishing net or fishnet is a net that is used for fishing. Fishing nets are meshes usually formed by knotting a relatively thin thread. Modern nets are usually made of artificial polyamides like nylon, although nets of organic polyamides such as wool or silk thread were common until recently and are still used.

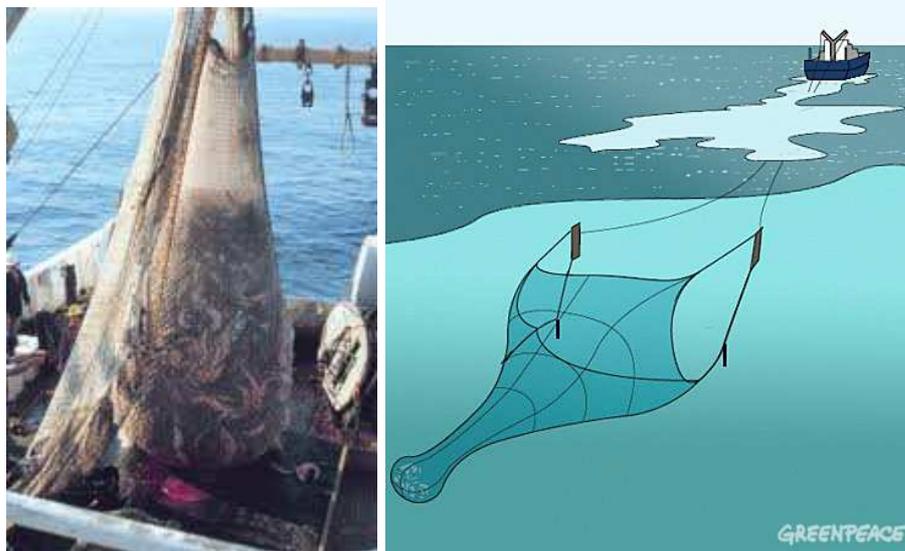
4.4.1 TYPES OF FISHING NETS



Gill Net



Seine Net



Trawl Net



A landing net



Casting a net in the Mahanadi River, India



Coracles net fishing on the River Teifi, Wales 1972.



Chinese fishing nets in Kerala, India



Three fykes at the Zuiderzeemuseum



Amateur fisher, Alanya, Turkey



Commercial trawl net

4.4.2 HAND NET

Hand nets are held open by a hoop and are possibly on the end of a long stiff handle. They have been known since antiquity and may be used for sweeping up fish near the water surface like muskellunge and northern pike. When such a net is used by an angler to help land a fish it is known as a *landing net*. In England, hand netting is the only legal way of catching eels and has been practised for thousands of years on the River Parrett and River Severn.

4.4.3 LAVE NET

A special form of large hand net is the Lave net now used in very few locations on the River Severn in England and Wales. The Lave net is set in the water and the fisherman waits till he feels a fish hit against the mesh and the net is then lifted. Fish as large as Sturgeon have been caught in Lave nets.

4.4.4 CAST NET

Cast nets are small round nets with weights on the edges which is thrown by the fisher. Sizes vary up to about four metres in diameter. The net is thrown by hand in such a manner that it spreads out on the water and sinks. Fish are caught as the net is hauled back in.

4.4.5 CORACLE FISHING

Coracle fishing is performed by two men, each seated in a coracle, plying his paddle with one hand and holding a shared net with the other. When a fish is caught, each hauls up his end of the net until the two coracles are brought to touch and the fish is secured.

4.4.6 CHINESE NETS

The Chinese fishing nets (Cheena vala) are used at Kochi in India. They are an example of *shore operated lift nets*^[4] because they are held horizontally by a large fixed structure and periodically lowered into the water. Huge mechanical contrivances hold out horizontal nets with diameters of twenty metres or more. The nets are dipped into the water and raised again, but otherwise cannot be moved.

4.4.7 GILLNET

The gillnet catches fish which try to pass through it by snagging on the gill covers. Thus trapped, the fish can neither advance through the net nor retreat

4.4.8 DRIFT NET

The drift net is a net that is not anchored. It is usually a gillnet, and is commonly used in the coastal waters of many countries.^[5] Its use on the high seas is prohibited, but still occurs.

4.4.9 GHOST NET

Ghost nets are nets that have been lost at sea. They may continue to be a menace to marine life for many years.

4.4.10 STAKE NET

A stake net is a form of net for catching salmon. It consists of a sheet of network stretched on stakes fixed into the ground, generally in rivers or where the sea ebbs and flows, for entangling and catching the fish.

4.4.11 DRIVE-IN NET

A drive-in net is another fixed net, used by small-scale fishermen in some fisheries in Japan and South Asia, particularly in the Philippines. It is used to catch schooling forage fish such as fusiliers and other reef fish. It is a dustpan-shaped net, resembling a trawl net with long wings. The front part of the net is laid along the seabed. The fishermen either wait until a school swims into the net, or they drive fish into it by creating some sort of commotion. Then the net is closed by lifting the front end so the fish cannot escape.

4.5 TYPES OF FISHES



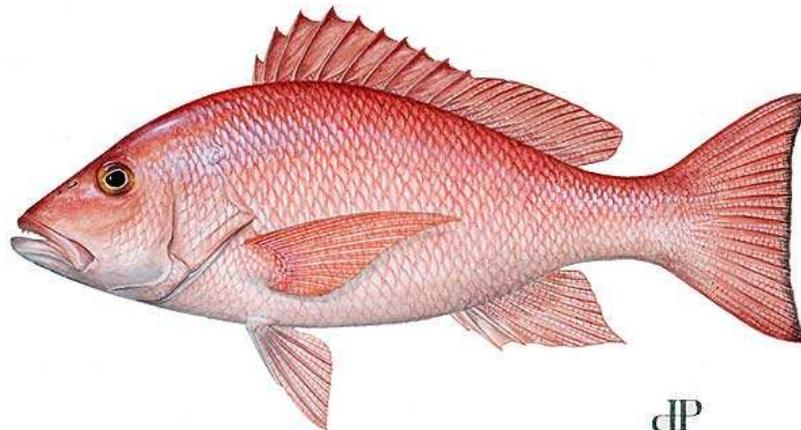
Seer Fish (Vanjiram)



Rainbow Runner (Kozuvai)



Pomfret (Vaval)



Red Snapper (Mazhuvan)



Reef cod (Kalava)



Tuna (Choorai)



Shark (Sorrah)



Catfish (Keluthi)



Mackerel (Kanakeluthi)



Ribbon fish (Valai)



Rays (Thirukkai)



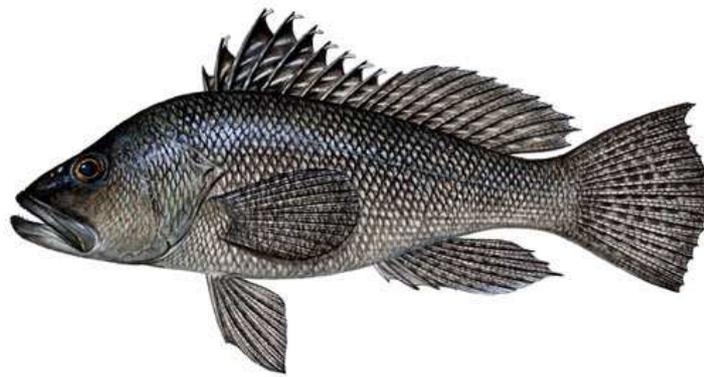
Sardine (Salai)



Pernaeid prawns (Eral)



Lobster (Singeral)



Sea bass (Koduvu)



Mullet (Madava)



Jew fish (Kilangan)



Anchovy (Thoga podi)



White prawn (Vella ral)



Brown shrimp (Sivappu ral)



Sea crab (Nedunkal nandu)



Stone crab (Kal nandu)