

Designing a human powered watercraft for fishing and relaxing purpose on a lake and pond

Submitted in partial fulfillment of the requirements

of the degree of
Masters of Design

by

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Approval Sheet

The Mobility and Vehicle Design project report titled - "Human-powered Watercraft for fishing and relaxing", by Pratyush Mahapatra is approved in partial fulfillment of the requirements for a Master of Design degree in Mobility and Vehicle Design

Approved by

Guide:



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Declaration

This is a declaration that this M.Des Project report titled Human-powered Fishing Watercraft submitted to IDC School of Design, IIT Bombay, contains my original ideas and my own words. The report adheres to all principles of academic and research ethics and no data provided has been misinterpreted, or falsified. It is understood that violation of the above will cause disciplinary actions by the institute and can also lead to penal actions from the sources that have not been appropriately cited or from whom proper permission was not taken.



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Acknowledgement

I would like to express my sincere gratitude to IDC School of Design, the Head, the Course coordinator, and our professors, Prof. Sugandh Malhotra and Prof. Nishant Sharma for their kind support and encouragement throughout the project. I would like to thank my guide, Prof. Unni Mohan, for his constant guidance and support throughout the course of this project and insightful comments that guided me in the right direction.

I am grateful to my family and friends who provided me with moral support and encouragement that kept me motivated throughout the duration of this project.

Abstract

I'm Pratyush, and I'm thrilled to introduce a groundbreaking concept designed to transform fishing in our scenic landscapes. Picture a human-powered fishing boat tailored for our tranquil lakes and ponds. This innovative vessel not only enhances the fishing experience but also promotes fishing as an exciting sport across India. It doubles as a sustainable tourism attraction, highlighting the natural beauty of our water bodies. Join me in exploring how this idea can blend leisure, adventure, and aquatic conservation, while encouraging a vibrant fishing culture. Let's envision a new era where fishing becomes a recreational pursuit and a boost for eco-friendly tourism in India!

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Introduction

I am pratyush and I'm incredibly enthusiastic to introduce a unique concept aimed at revolutionizing the fishing experience in our beautiful landscapes. Imagine a human-powered fishing boat meticulously designed for our serene lakes and ponds, offering not just a means of angling but a gateway to promoting fishing as an exciting sport across India. This innovative vessel serves a dual purpose, not only enabling enthusiasts to engage in the art of fishing but also doubling up as a sustainable tourism attraction, showcasing the natural beauty of our water bodies. Join me in exploring how this concept can intertwine leisure, adventure, and the conservation of our aquatic ecosystems, while fostering a vibrant fishing culture in our country. Let's cast our vision towards a new era where fishing becomes both a recreational pursuit and a catalyst for eco-friendly tourism in India!

Why did I choose this topic ?

I enjoy being in the water, and I've tried a variety of water sports including surfing, kayaking, rafting, and scuba diving, so I could relate to the theme of designing a pedal-powered canoe for Powai Lake.

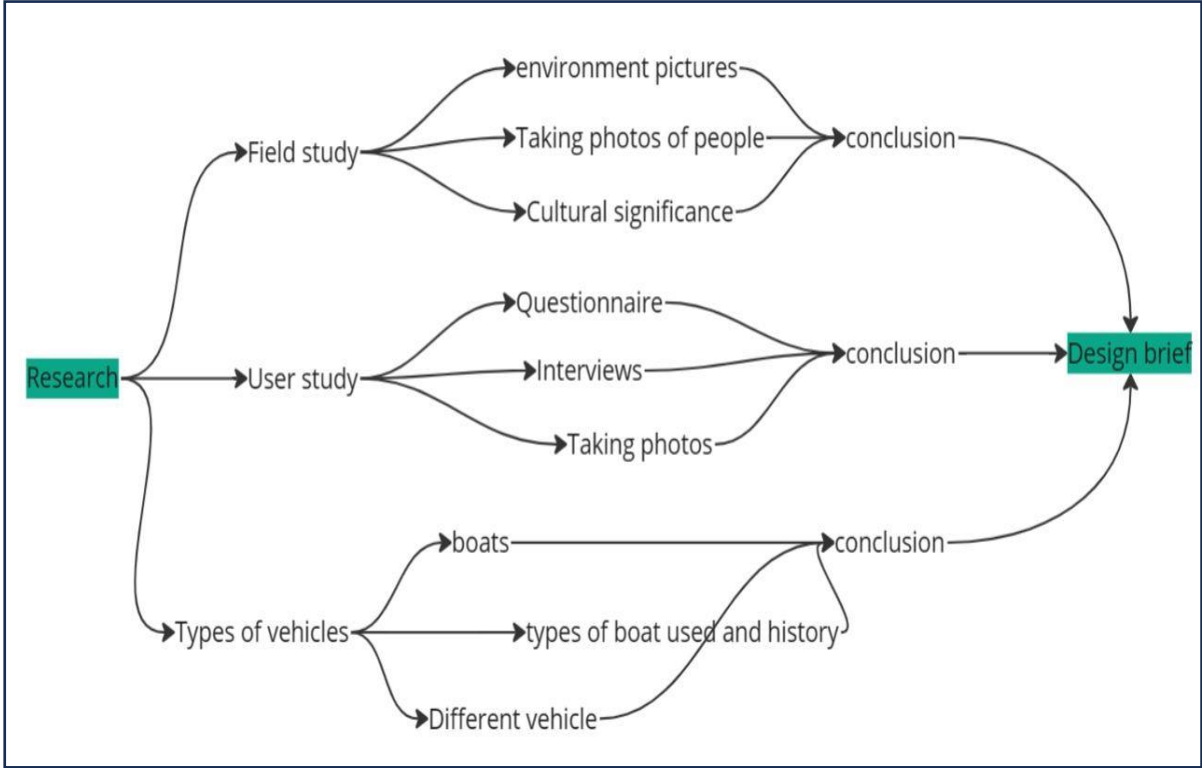
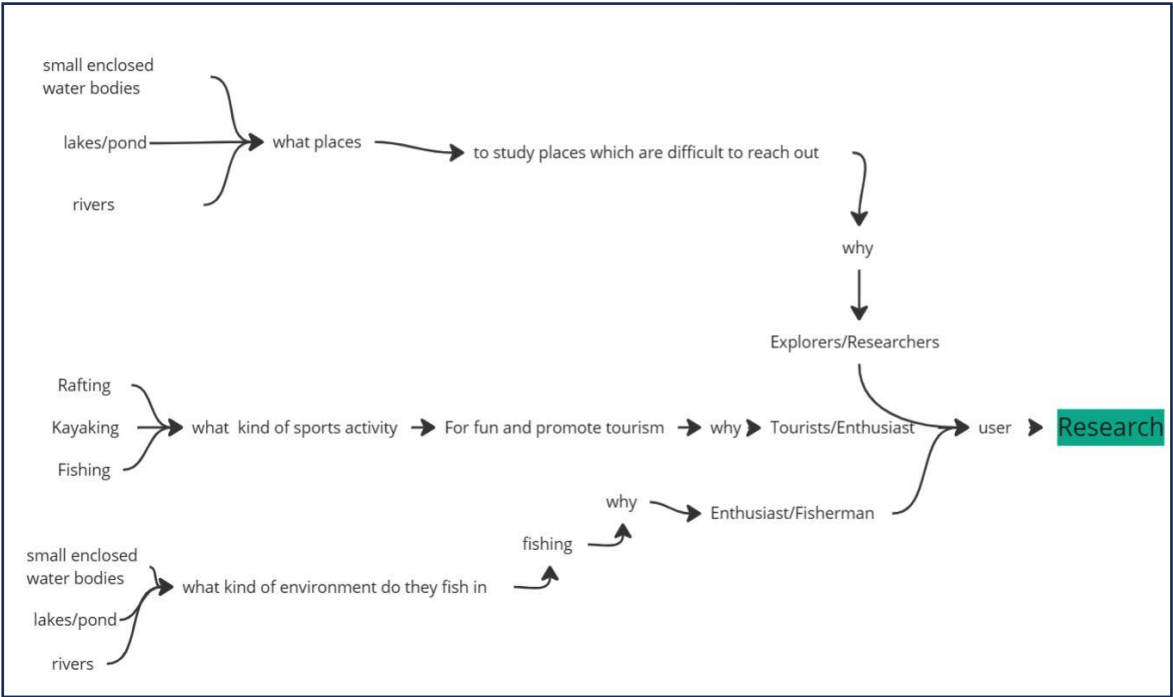
Design Methodology

The research process was conducted in three parts.

1. Context/Environment Research.
2. User research.
3. Technical/Product research.

Then this research was further divided into various different parts asking why, where, who, what, and how. These questions were answered in the process itself. Throughout the process of interviewing & collecting images, some insights were collected and through these insights, a Design brief was made. After Brief a user persona was created to have a set direction as to whom the product was going to be made. With the user persona set in place, the first set of ideations was made to explore the possibilities of what and how the problem could be solved.

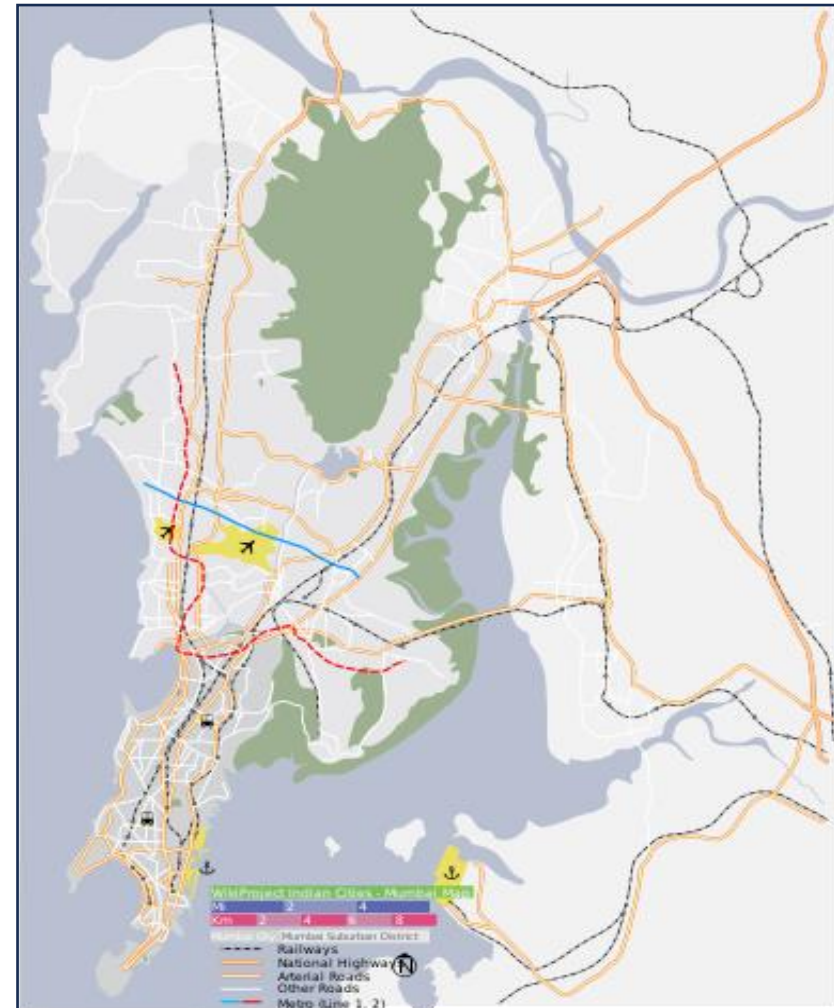
Then the packaging of the vehicle was made by taking the 95th and 50th Percentile as reference points and the vehicle was developed around these dimensions. A mood board was made after this process. Then the concepts were further explored and some new ideas were created. The external forms were explored. Finally, the concepts were shortlisted and one concept was finalized. A 3D model was made using Blender to further envision the product. In the end, a prototype was created.



Research

Importance of Powai lake

- Powai Lake is an artificial lake, Lake was built in 1891 has a depth of approx. 3m near the shore and 12 m at its deepest
- . • A project called” Revitalization of Powai lake was started by 1980 batch of IITB to restore its natural beauty using eco friendly measures
- In 1995 the national lake conservation plan include Powai lake among “10 main lakes” of the country to be revived and improved
- Government of Maharashtra reports due to eutrophication the lake is unfit for drinking.



Why did iitb boat house shutdown

- Powai lake was under the custody of IIT Bombay authorities (now its entirely under control of BMC), it was a functional Boat-house from where boats used to sail in the lake. Presently, as due to improper maintenance and **eutrophication** much of it is covered.
- Initially, there was an active boating club catering to enthusiasts and organizing competitions. However, activity ceased due to obstacles like the presence of a crocodile and rapid construction, leading to sedimentation and shallowness in the lake. A fatal accident prompted immediate closure. The article discusses the hindrances caused by sediment, including water hyacinth growth and unclean water.

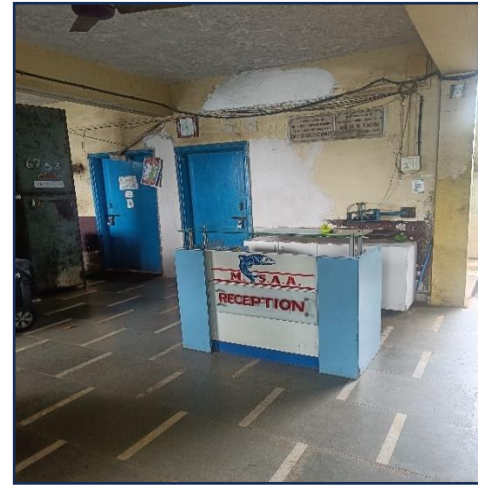
Eutrophication is the process by which an entire body of water, or parts of it, becomes progressively enriched with minerals and nutrients, particularly nitrogen¹ and phosphorus. It has also been defined as "nutrient-induced increase in phytoplankton productivity Water bodies with very low nutrient levels are termed oligotrophic and those

with moderate nutrient levels are termed mesotrophic. Advanced eutrophication may also be referred to as dystrophic and hypertrophic conditions. Eutrophication can affect freshwater or salt water systems. In freshwater ecosystems it is almost always caused by excess phosphorus. In coastal waters on the other hand, the main contributing nutrient is more likely to be nitrogen, or nitrogen and phosphorus together. This depends on the location and other factors.



MSAA

- The Maharashtra state angling Association formed in 1936 currently controls and manages the lake.
- If a fishing enthusiast wants to fish legally in Powai lake then he should be a part of MSAA club and owns a Pontoon house boat or rent it.
- Lake is now used for recreation, gardening, cattle washing and fishing water is also supplied to aarey colony and Larsen and turbo for non domestic purpose.
- The project is being planned together by the state's tourism and forest departments. Authorities are exploring the option of having slow motorized rides so that the Indian Marsh crocodiles living in the lake are not disturbed



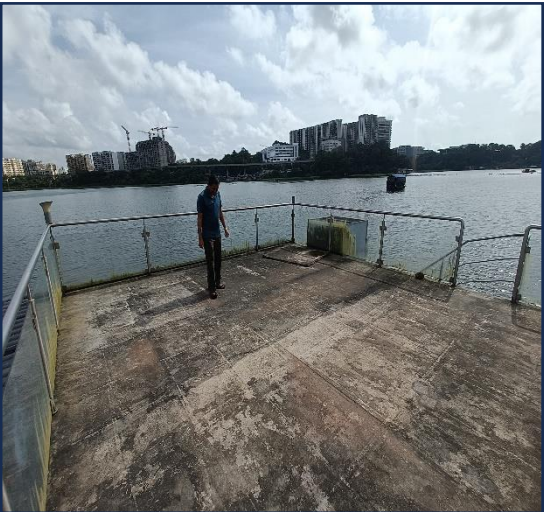
Activities that happen in Powai Lake

- Right in the heart of the city in the very famous Powai Lake is the Maharashtra State Angling Association. It's a government-run organization that allows you to indulge in some fishing and spend some time relaxing in a small houseboat. And these amazing perks can be availed via an annual membership program for INR 17,025. Unfortunately, they don't allow any of the club members' privileges to non-members, not even for one-time purposes.
- Powai Lake have alleged that the poachers, who have been carrying out illegal mass fishing, could be the main reason behind the declining population of crocodiles in the lake.

Crocodiles that are a Schedule-I and protected species have made Powai lake their home for several decades now. However, according to those monitoring the lake on a regular basis, the number seems to have reduced significantly as the once ample sightings seems to have now become a rare thing.

When poachers are not afraid to fish illegally they might also be removing the crocodiles eggs or young ones from nest to ensure the number of crocodiles does not increase as it will make fishing for them difficult," alleged Kamlesh Sharma, joint secretary, Maharashtra State Angling Association (MSAA)

Activities that happen in Powai Lake



Fishing in Powai Lake



Types of Boats

Rowboats: Traditional rowboats are often available for recreational purposes, allowing visitors to paddle around the lake at their own pace.

Pedal Boats: Pedal boats, which are propelled by pedaling, can be a popular choice for families and groups looking for a leisurely and interactive boating experience.

Shikara Boats: In some lakes, including Powai Lake, you might find Shikara boats, which are traditional wooden boats with ornate designs, offering a more cultural and scenic boating experience.

Motorized Boats: Depending on local regulations and services, there might be motorized boats available for activities such as sightseeing or fishing.

Jetty and house boats :House boats are presently for members of Msaa ,members can build their house boats and can place on Powai lakes



All India Game Fishing Association (AIGFA)



All India Game Fishing Association", a non-profit-making, charitable organization is a result of the effort from "The league of gentlemen anglers" across India with the sole intention to promote "Sport Fishing" and to protect the fast-depleting stock of sport fish by active participation of angler community in protecting the environment of water bodies it resides.

It is our commitment to make "AIGFA" the encyclopedia of ethical and established

practices of sport fishing in India by chronicling game fish, their habitat, safe methods to target them and to promote catch and release by publishing, educating, record keeping and involvement of other organizations which are also committed to the same cause.

Here at AIGFA we recognize the value of sport fishing and its multi-dimensional benefits to our lives and society, and we are committed to zealously guard the tradition so that our next generation can also enjoy the thrill of this wonderful sport

Association aims for

Non-profit AIGFA promotes ethical sport fishing, safeguards aquatic environments actively.

Mission involves documenting game fish, habitats, safe methods, promoting catch-and-release practices.

AIGFA values sport fishing, commits to safeguard tradition for future. Collaborates with organizations, aims for collective effort in environmental protection.

Sports fisheries of India

Recreational Fishing, also called Sport Fishing, is fishing for pleasure or recreation. It is the fastest growing segment in the tourism industry with an annual growth rate of 5% globally. Recreational fishing techniques include hand gathering, spearfishing, netting, angling and trapping. "Angling", fishing with rod, line and hooks, is one of the most common forms of recreational fishing.

Another commonly practiced sport fishing is Big Game Fishing in which speed-boats are used to catch large open-water species such as Tuna, Sharks and Marlin. A less common technique is Bow-Fishing using a regular bow or a crossbow. The effective use of fishing techniques often depends on knowledge about the fish habit and habitat, their behavior including foraging, migration, etc.

India has a long coastline, large number of rivers and streams, lakes, reservoirs etc. which offers vast opportunities for Sport Fishing and Angling. Fishing in India is possible throughout the year, but the best time for Sport Fishing is from October to November and mid-February to mid-May when the rivers and the streams are replete with all varieties of fish. Due to the different climatic conditions in diverse regions of India, best fishing season may however vary. October to November and April to June is the best season for Sport Fishing in the Himalayan Rivers while in South

India it is April to September. The biggest advantage for Sport Fishing in India is that all the major river stretches are easily reachable from major towns and cities.

Some of the major rivers and their tributaries where Sport Fishing are common are River Mahanadi, Yamuna, Cauvery, Ganges, Brahmaputra, Sutlej and smaller rivers and streams of the Himalayas. A wide variety of fishes such as Mahseer, Trout and Carps are the commonly caught species in the inland waters. Streams feeding the Beas River in the Kullu Manali region are home to some of the biggest varieties of Trout. Indus and Lidder Rivers, their tributaries and a network of smaller rivers of Kashmir are famous for Sport Fishing of Trout and is often referred to as an "Angler's Paradise". Dodital Freshwater Lake nestled in the Uttarkashi Himalayas, Ramganga and the Sharda Rivers in the range of Jim Corbett National Park and rivers and

streams of North-Eastern parts of India are known for Mahseers – "King of Indian Sportfish".

The Golden Mahseer or Himalayan Mahseer [Tor putitora, Hamilton, 1822] is a popular game fish and an angler's delight. It is acclaimed as a world famous, outstanding game and food fish of India. As a sport fish, Golden Mahseer provides unparalleled recreation to anglers from all over the world, better than salmon. It is known as the 'Tiger in Water', because of the fight it musters to wriggle off the hook maximum size recorded is 2.74 m and maximum weight recorded is 50 kg. The Dept. of Fisheries, Govt. of Himachal Pradesh, have established a Golden Mahseer Hatchery, succeeded in captive breeding and stocking/ranching to augment its population and promote Sport Fisheries.

River Beas waters in Kullu, Himachal Pradesh, were planted with Brown Trout (*Salmo trutta fario*) in 1909. A Trout Angling Association was formed in 1914 to propagate, conserve and

promote Angling. Anglers were attracted in large numbers for nearly half a century. Trout hatcheries of Kullu became the hub for spreading it into different streams across length and breadth of Himalayas. Habitat in Tirthan and Jibhi streams are world famous for Wild Brown Trout. The Himachal Angling Association (HAA) at Palampur was formed in 1978 to conserve the migratory passage of Mahaseer and Trout.

The Trout Conservation and Angling Association (TCAA), constituted in Kullu Valley in the year 2010, has been continuously striving to improve the biodiversity and environment of the valley streams on all fronts. The 'All India Open Catch-n-Release Trout Angling Championship' is held annually during April in Kullu Valley, Himachal Pradesh. The total catch during three sessions in two days may be up to 90 Brown Trout which are duly released back into the streams after recording length, weight, etc. Those catching the largest size and the

highest number of Trout are declared winners of the Championship.

An 'Aqua Tourism Centre', has been established at Jasingfa in Nagaon district, Assam, to promote 'Recreational Fisheries and Eco-tourism in Northeast India'. Mahseer as an important sport fish is being propagated here. An Angling Festival is also organized during October where anglers from different Northeastern States participate.

Sea Sport Fishing has not developed in India. But there is a good variety of game fish off the coasts of India like Baracuda, Mullet, Perch, Tuna, Marlin, Sail Fish and Seerfish. The Government allows "Sea Game Fishing" especially along Andaman Islands since 1993. Andaman & Nicobar Islands are often referred to as "the best game fish destination" in the world. Besides, there are few principal coasts where open Sea Game Fishing setup exists in some form, e.g., Odisha,

Lakshadweep Island, Goa and Kerala coasts. Chilka Lake in Odisha offers fishing for Tuna, Prawn, etc., while waters of Lakshadweep and Andamans are known for Tuna, Blue Marlin, Barracuda and Grouper resources.

In short

Recreational Fishing Boom: Fastest-growing tourism segment, global 5% annual growth rate.

Technique Diversity: Methods range from angling and spearfishing to bow-fishing, catering to preferences.

Indian Fishing Bounty: Abundant opportunities with a long coastline, rivers, and lakes open year-round.

Golden Mahseer Prestige: Acclaimed world-famous game fish, Himachal Pradesh's conservation efforts lauded.

Fishing Seasons in India: Varied, October to November best in the Himalayas, April to June in South India.

Major Fishing Rivers: Mahanadi, Yamuna, Cauvery, Ganges, Brahmaputra, Sutlej, offering diverse angling experiences.

Trout Conservation: Kullu Valley's TCAA works on bio-diversity improvement, hosting an annual angling championship.

Aqua Tourism in Assam: Jasingfa center promotes recreational fisheries, eco-tourism, hosts October Angling Festival.

Angling Associations: Himachal Angling Association (HAA), TCAA focus on conservation, bio-diversity improvement.

Sport Fishing Championships: All India Open Catch-n-Release Trout Angling Championship in Kullu Valley annually

Fishing locations in india

Himalayan Rivers: October to November and April to June.

Kullu, Himachal Pradesh: planted with Brown Trout in 1909, and the region is known for its Trout Conservation and Angling Association (TCAA).

Jasingfa, Nagaon district, Assam: An 'Aqua Tourism Centre' has been established at Jasingfa in Nagaon district, Assam, promoting recreational fisheries and eco-tourism in Northeast India. This location also hosts an Angling Festival during October.

Tirthan and Jibhi streams: These streams are mentioned as world-famous for Wild Brown Trout and are located in the Himalayas.






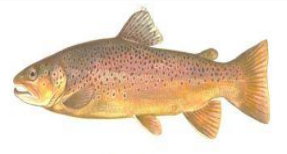

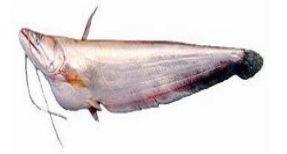
Dodital Freshwater Lake: This lake, nestled in the Uttarkashi Himalayas, is known for sport fishing.







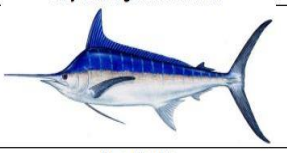
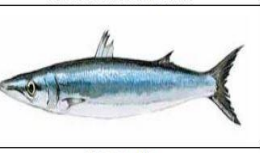
Jim Corbett National Park: The Ramganga and Sharda Rivers

North-Eastern parts of India: are known for Mahseers, referred to as the "King of Indian Sportfish."



Fishes that are caught during sports fishing in freshwater as well as sea water

Freshwater Game Fishes	
	
Golden Mahseer or Himalayan Mahseer <i>Tor putitora</i>	Chocolate Mahseer <i>Neolissachilus hexagonolepis</i>
	
Deccan Mahseer <i>Tor khudree</i>	Tor Mahseer <i>Tor tor</i>
	
Rainbow Trout <i>Oncorhynchus mykiss</i>	Brown Trout <i>Salmo trutta fario</i>
	
Snow Trout <i>Schizothorax richardsonii</i>	Freshwater Shark <i>Wallago attu</i>

Marine Game Fishes	
	
Tarpon or Oxeye Herring <i>Megalops cyprinoides</i>	Greasy Grouper <i>Epinephelus tauvina</i>
	
King Seer <i>Scomberomorus commerson</i>	Yellowfin Tuna <i>Thunnus albacares</i>
	
Red Snapper <i>Lutjanus argentimaculatus</i>	Croaker <i>Protonibea diacanthus</i>
	
Blue Marlin <i>Makaira nigricans</i>	Barracuda <i>Sphyrna sp.</i>

User research

Questionnaire (for users)

How did you get to know about this place?

What all activities are available?

How many activities have you tried?

Which one was your favorite?

If we make a vehicle would you be interested in buying it?

What kind of activities is available here that is currently not available anywhere else?

What kind of activities would you wish were available here that are available at other places?

If you could design a water activity what would you want it to be?

How was your experience?

What all problems occurred while using the boat or the watercraft?

Was it difficult to paddle?

How different is it from a cycle, bike, or car (whatever is relevant)?

Does it take a lot more effort to paddle by hand than with feet?

If yes then why?

Have you visited any other similar places to this?

What were those places? How was the experience there?

Have you tried rafting in a river or a canyon?

Would you like to visit one of these places?

If there was a personal vehicle that you could take to places like this for having fun would you buy it?

Or would you like to have a service system where you are able to rent the vehicle for a said time period?

How often do you go out on trips like this?

At any point did you feel that the boat would topple?

Would you want to have a two-person vehicle or a single person?

Would you want to be able to carry the vehicle around?

Would you prefer it to be completely human-powered, Or would you like to have it be electric-assisted?

(Manager)

When was this service started?

What all activities do you provide?

How long have you worked here?

Do you know other places that provide these kinds of services?

What all activities are here that are not available at other places?

What all activities are at other places that you would like to bring here or are planning to bring?

Was there any trouble caused by the customers?

Was there any emergency situation that you ran into?

How was the situation handled?

If we designed a vehicle for fun activity would you provide this service too?

How are the working hours divided?

At what time does the service close?

What is the best time of the year to visit these places?

What activity would you recommend for a person that has never done this before?

How is the customer's safety taken care of?

What activity is preferred by the customer?

In terms of what is it that they enjoy more? What sells more tickets?

What is the cost of the activities?

What other places are there in Mumbai and elsewhere that you know about that provide these kinds of services?

What is the age limit for a customer?

Is there any other factor that is considered before a person enters the watercraft?

What is the age group that you see the most?

How are the boats maintained?

What if something breaks down how is the situation handled?

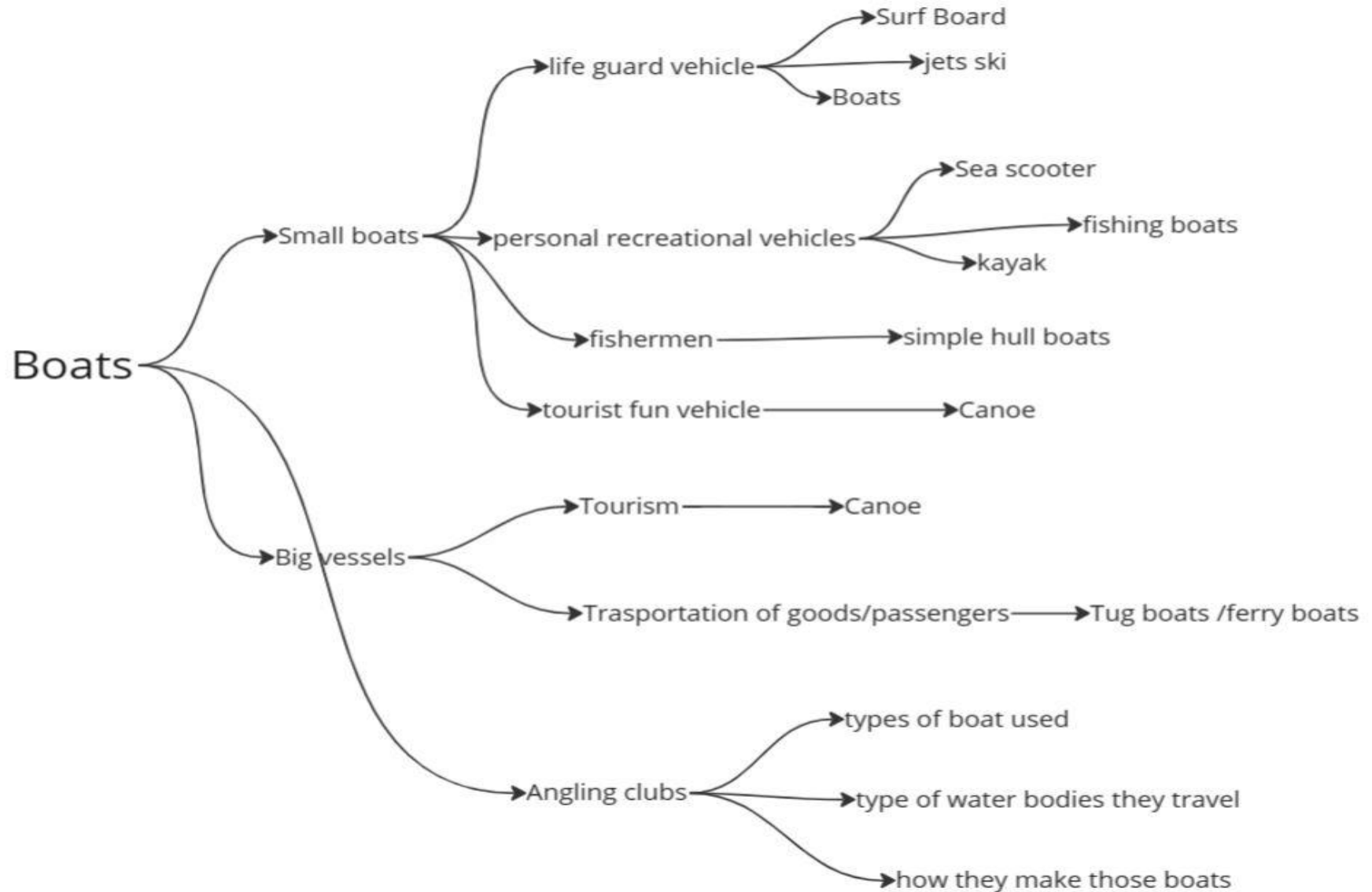
When were these boats made?

Where did you buy these boats from?

What was the cost of one unit?

How are these boats made?

Product Research



Current boats in markets

There were many different vehicles in the market that were used by people to explore the water bodies. The vehicle was studied to find out the possible areas of intervention. A lot of these vehicles were paddle driven. Some of the vehicles used different types of mechanisms to propel them vehicle.

The main two portions of the vehicle were studied the seating position of the rider and the propulsion system that could be used. In the deep water, there is a big possibility of toppling while fishing because of stability and less leg space if it's a kayak or canoe.



Traditional gillnetar



Plastic Boats



Coracle



FRP Boats



Fishing boats in foreign markets



Propulsion mechanism

(I am looking into manual propulsion)

- 1.Manual
- 2.Wing
- 3.Mechanical

Pedal drive mechanism for a human powered boat

A pedal drive mechanism for a human-powered boat is an efficient way to propel a watercraft using leg power, similar to how a bicycle operates. Here's a basic overview of how such a mechanism might work:

Pedals and Crank System: The boat would be equipped with pedals similar to those on a bicycle. These pedals would be connected to a crankshaft.

Drive Shaft or Propeller: The crankshaft would then be connected to a drive shaft or a propeller system beneath the boat's hull. This drive shaft could turn a propeller, or in some designs, it might directly move fins or paddles in the water.

Housing or Enclosure: The drive mechanism might be housed within a protective enclosure or housing beneath the boat to prevent damage and to streamline the movement through water.

Gearing Mechanism: Depending on the design, there might be a gearing system involved to optimize the transfer of energy from the pedals to the propeller, allowing users to adjust their effort level while maintaining an efficient speed.

Steering Mechanism: A separate steering mechanism would likely be required, such as a rudder or oar, to control the direction of the boat.

Materials and Design: The mechanism needs to be designed considering factors like water resistance, durability, and ease of maintenance.

Lightweight but sturdy materials, such as aluminum or certain types of plastics, might be used to construct the drive system.

Several existing pedal-powered boats use variations of these mechanisms. Designs can vary based on the purpose of the boat, whether it's for leisure, recreation, or competitive racing. Some designs may focus on speed and efficiency, while others prioritize stability and ease of use.

When building or designing such a mechanism, it's essential to consider safety, ease of use, and the overall ergonomics to ensure that users can comfortably pedal for extended periods without undue strain or discomfort. Additionally, waterproofing and corrosion-resistant materials are crucial due to the exposure to water.

Many pedal-powered boats on the market incorporate these principles in various ways, so looking at existing designs and innovations can provide valuable insights into how to create an

efficient and effective pedal drive mechanism for a



Boat Hull Types ,Shape and Design

Displacement Hulls

Large ships and traditional recreational sail boats have displacement hulls. They are slower moving but quite steady under way and are capable of carrying large loads with relatively small propulsion units. Displacement hulls are usually round on the bottom with ballast placed

low in the center. At rest, round hulls tend to roll with the waves and swells.

Flat Bottom: Flat-bottomed boats are very stable and can carry a heavier load. They require only a small engine to get on plane but can ride rough and wet in chop or heavy weather. Small aluminum or fiberglass bay and fishing often benefit from flat hulls, which have a shallow draft and provide a good amount of deck space both of which are ideal for fishing on calm bodies of water such as small lakes and ponds or slow rivers.



like center consoles tend to have a V bottom so they can run fast on open water to get to the fishing grounds quickly.

Tri-Hull or Tunnel Hull: Popular with fisherman as well as with sport boat enthusiasts, tri-hulls, also called cathedral hulls, have a combination M-shaped bottom. They're quite buoyant and stable and they get on plane quickly. They offer good volume below and significant deck space above. At speed, they tend to pound when they encounter choppy water so they're ideal for lakes of calm bays.

Pontoon: ride on (typically) aluminum tubes. Traditional pontoons have two tubes but newer designs have three and are called tritoons. Pontoon boats are all about deck space and make excellent boats for families and entertaining on the water. The newer tritoons can carry large outboards and so



they've become planing boats capable of towing for water sports or reaching distant fishing spots.

Semi-Displacement Hulls

Semi-displacement hulls combine rounded sections for increased storage and tankage, and flatter hull sections to partially lift the forward part of the hull out of the water, thereby decreasing drag at high cruising speeds. They generate large bow and stern waves and may need high horsepower engines to get on plane. Large cruising motor yachts lean toward the semi-displacement design.

Multi hulls

Boats with separate and distinct hulls are called multi hull and can be catamarans or trimarans. Multi-Hulls can be either power or sailboats and have displacement or planing hulls depending their shape and the size of their engines.

Catamarans: Catamarans have two hulls with a deck or trampoline in between. Their benefits include excellent stability and depending on size and type, significant living space aboard. Large cats (35 feet and over) have become popular in charter use because they offer more interior and

deck space and an easier motion to induce less seasickness. With two engines, catamarans are very maneuverable but they do require more room to turn and berth. Small catamarans usually have just a trampoline in between the hulls and make fun day Sailers.

Trimarans: Trimarans are often (but not always) sailboats. They have three hulls: a main hull and two amas (side hulls used for stability). On some smaller trimarans, the arms that hold the amas can fold inward, making the trimaran narrower and in some cases trainable. Trimarans require smaller engines and they sail faster primarily due to the reduced wetted surface (the area in contact with the water), which cuts down on drag.

Advantages of pedal kayak over traditional paddle while fishing

Hands-Free Operation: Pedal kayaks allow anglers to propel the kayak using their legs, leaving their hands free for fishing activities. This is particularly advantageous for casting, reeling, and handling fishing gear without the need to put down a paddle.

Stability and Maneuverability: Pedal kayaks are designed for stability and maneuverability, providing anglers with better control over their position on the water. This is especially important when fishing in areas with varying currents or when trying to navigate through tight spaces.

Positional Control: Pedal kayaks often feature advanced steering systems that allow anglers to maintain a specific position more easily. This is crucial when fishing in specific spots, such as over a particular structure, along the edge of a weed bed, or in a precise location where fish are known to congregate.

Covering More Water: Pedal kayaks can cover water more efficiently than traditional paddle driven vessels. Anglers can move forward while keeping their hands on the fishing rod, enabling them to explore larger areas and increase their chances of finding productive fishing spots.

Reduced Fatigue: Pedaling is generally less fatiguing than paddling over long distances. This can be beneficial for anglers who spend extended periods on the water, allowing them to conserve energy for casting and fishing.

Ability to Fish Standing Up: Some pedal kayaks are designed to provide a stable platform, allowing anglers to fish while standing. This elevated position can enhance visibility and casting accuracy.

Technology Integration: Pedal kayaks often come equipped with modern technology, such as fish finders and GPS systems, which can assist anglers in locating fish and navigating the water more effectively.

Bench marking



Diameter: **72" (6 ft)**

Height: **20"**

Weight Capacity: **360 Lbs**

Hull Weight: **123 Lbs**

Detachable Pedestal Mount Weight: **5 Lbs.**

Product Material: **Roto-molded UV Resistant**

Polyethylene

Transom Plates: **Stainless Steel**

Doors: **Starlite**

Made in the U.S.A.



Weight - 58 kg

Dimensions - 3200 * 2100 * 680mm .

Capacity - 228 kg

Material - Catamaran 0.9 mm PVC + Aluminum frame

Motor-500 watts

Battery life - 3-6 h

Battery-25.9 V 15,600 mAh ,333 Wh



- Weighs only 57 Lbs (without battery)
- Stores in a carry bag
- Maximum capacity 1 person 300 Lbs
- Made from our advanced AirCore composite
- Storage bungees
- PVA non-slip foam deck
- 4 grab handles for easy transportation
- 2 T-slot rails for accessories
- Capacity for 2 group U1 batteries
- Room for cooler behind the seat
- Perfect for cruising, exploring, and fishing

Conclusion

With the different inputs from the interviews and the insights that were collected throughout the research process. Some problems were identified in the vehicle that is currently available in the market. Intervene in the problem that was identified was the next step in the process.

A lot of the problems circle around the vehicle not being able to perform to its full potential, due to the environmental conditions or the weather that would not allow the vehicle to operate.

Design Brief

To design a single seater manually operated watercraft which can be used

for fishing and relaxing purpose on a lake/Pond

Insights

Fishing as sports in india is slowly developing but it on premium side, you need to be a part of fishing clubs who provide certain amenities like licensing and organize fishing tournament , (AIGFA) All India game fishing association is very well know.

Fishing can be looked as sports activity and can be used for leisure purpose, It's a very similar sports like golf. In India the boats which are mostly motor-powered and paddle powered, there are no peddle powered boats which can be used by single person for fishing, on the other hand there are peddle powered kayaks/canoe but the stability and maneuverability needs a skill before using it.

User Persona

Jonas Joy
32,Pune
Software Developer
Status:Married

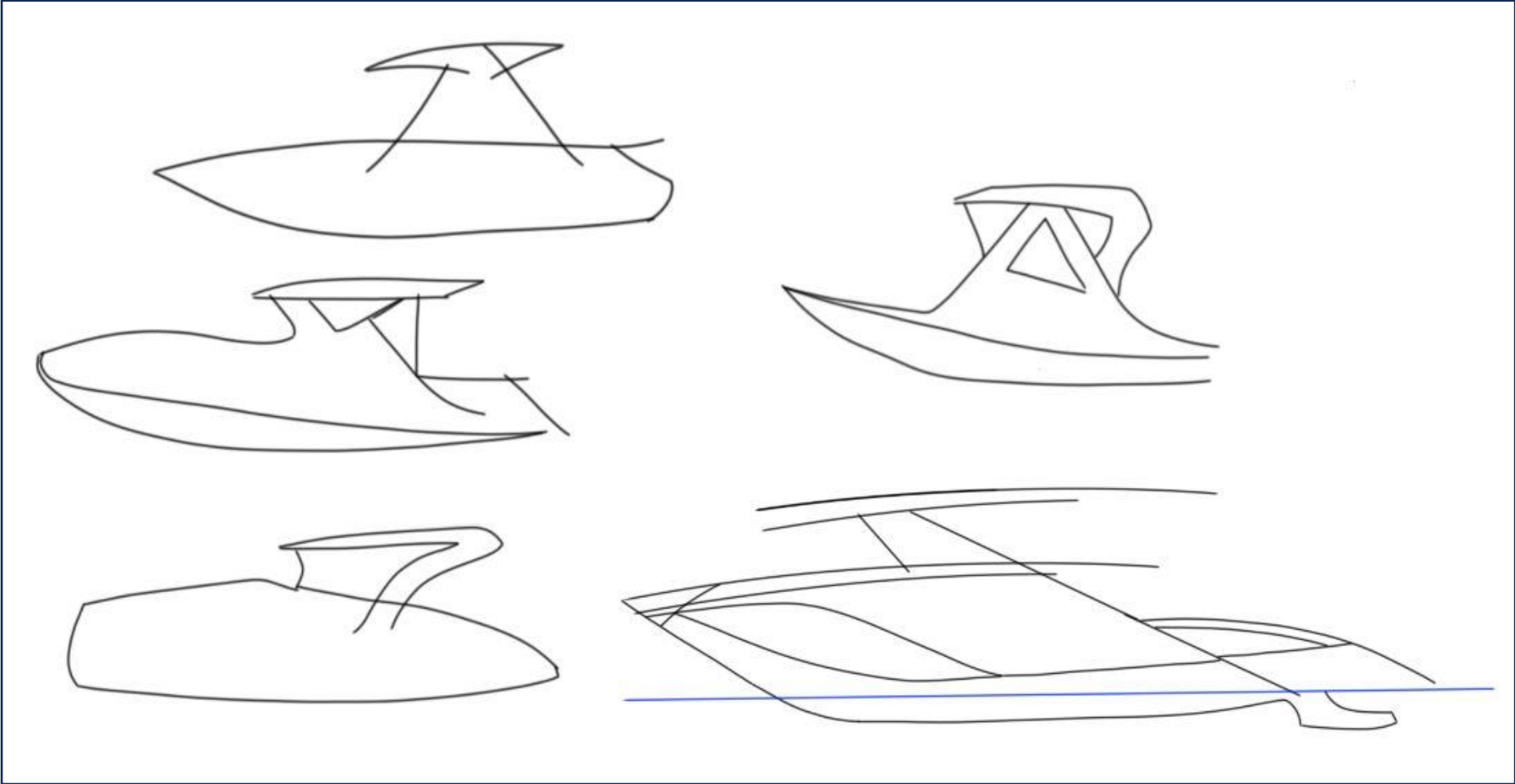
Hobby
Photography
Golf
Outgoing
Friendly
Fun loving

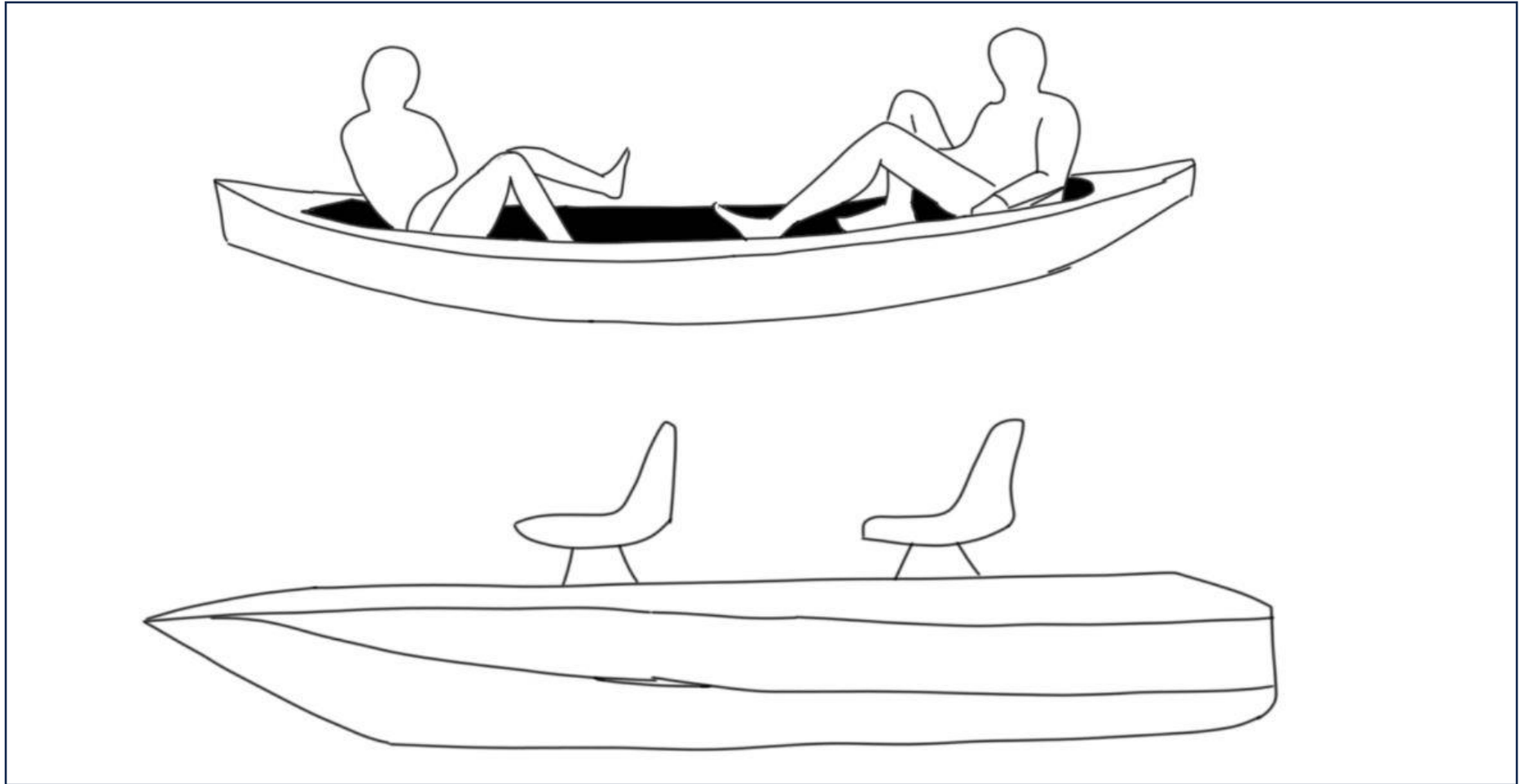


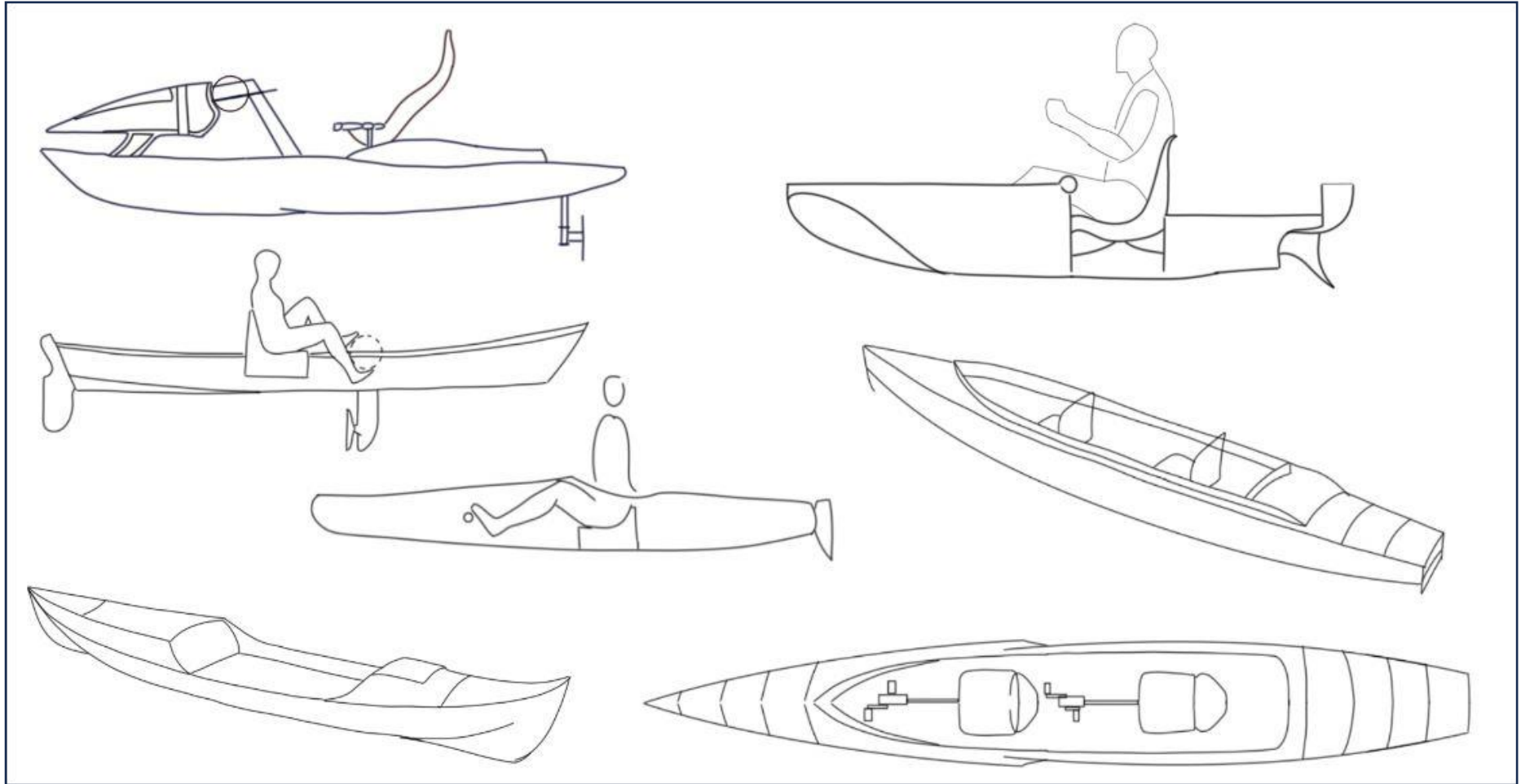
Mood Board

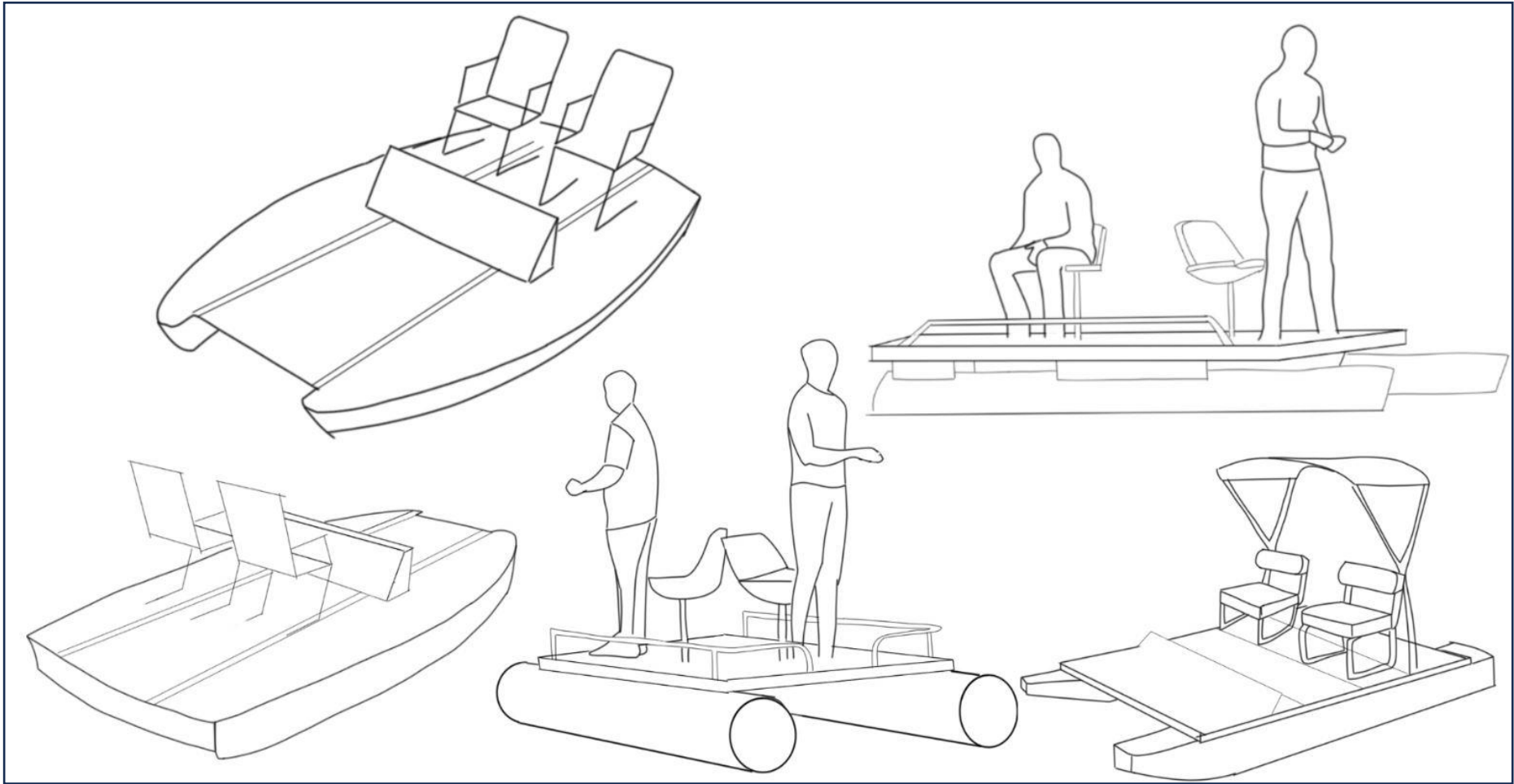


Ideation

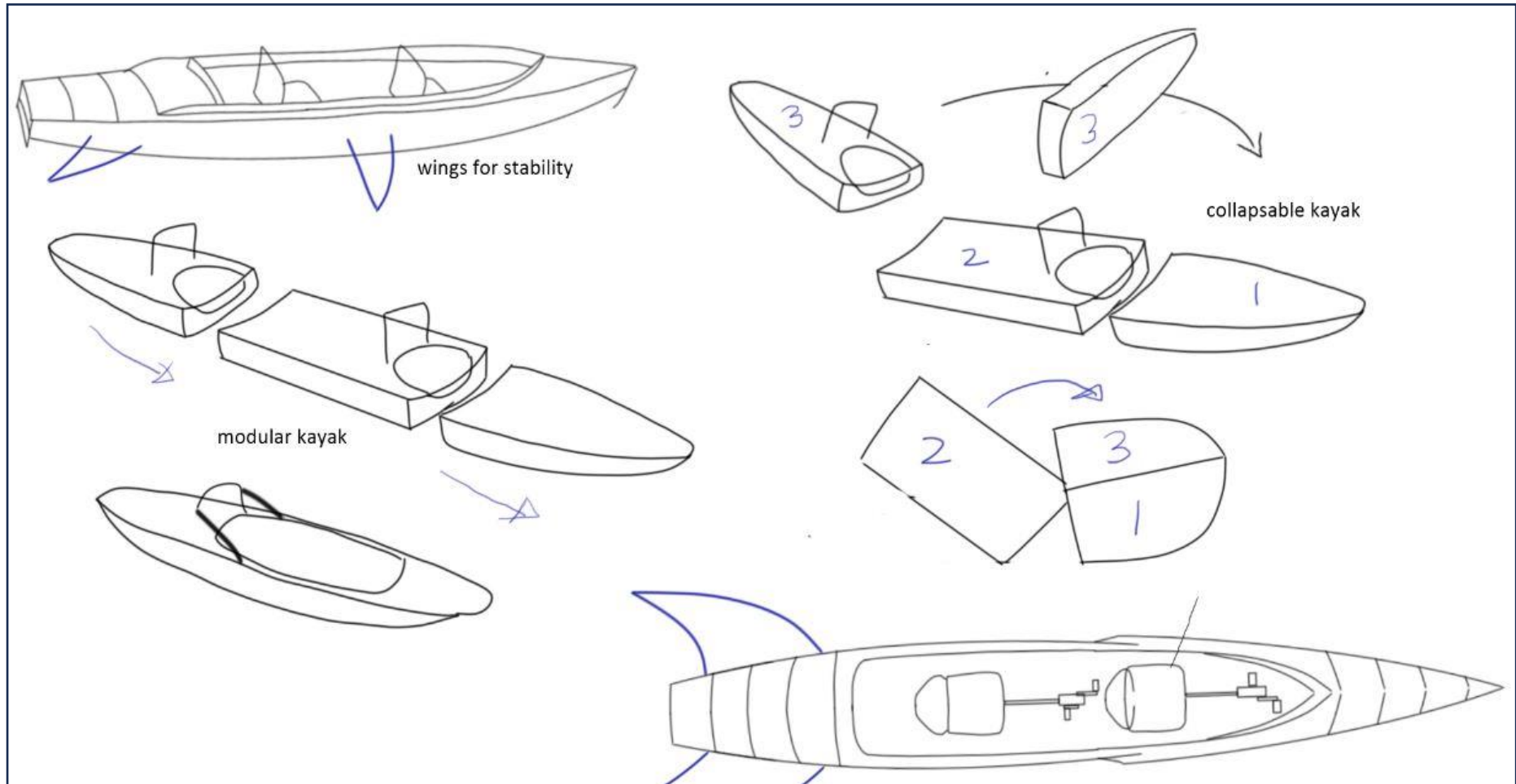




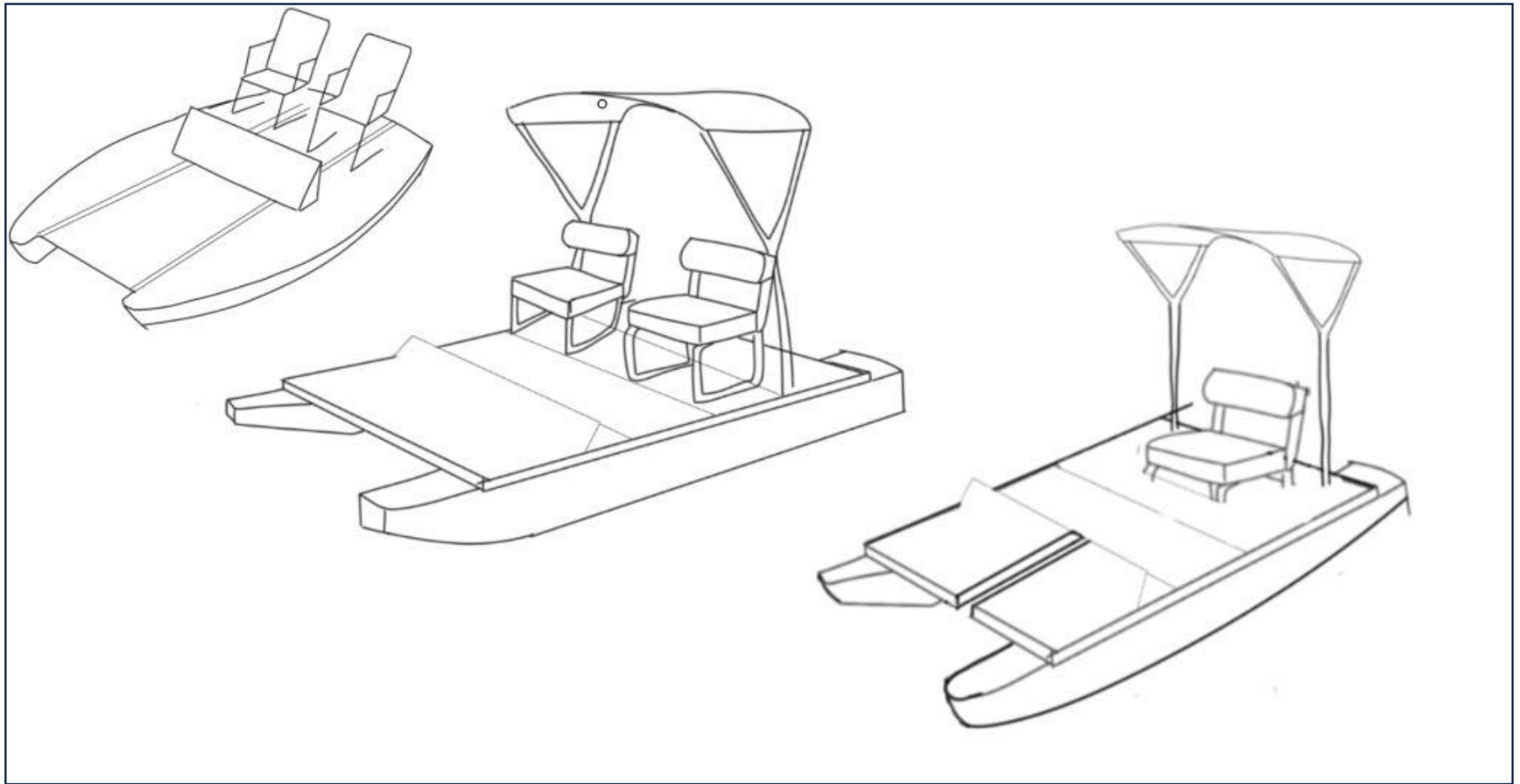


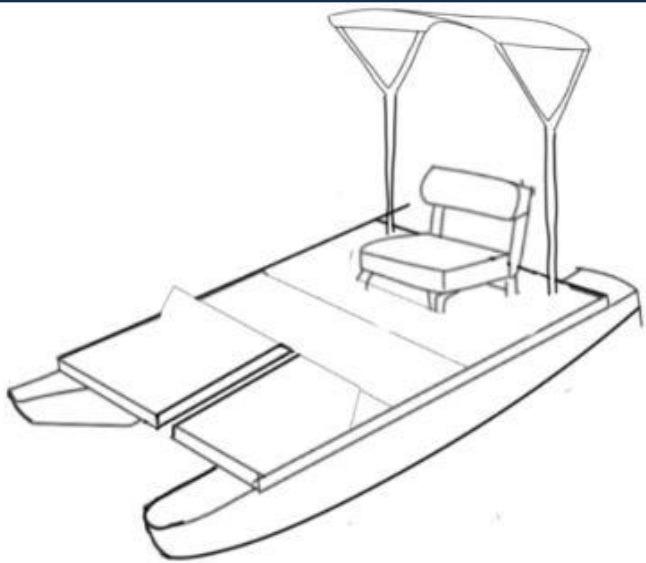


Direction 1

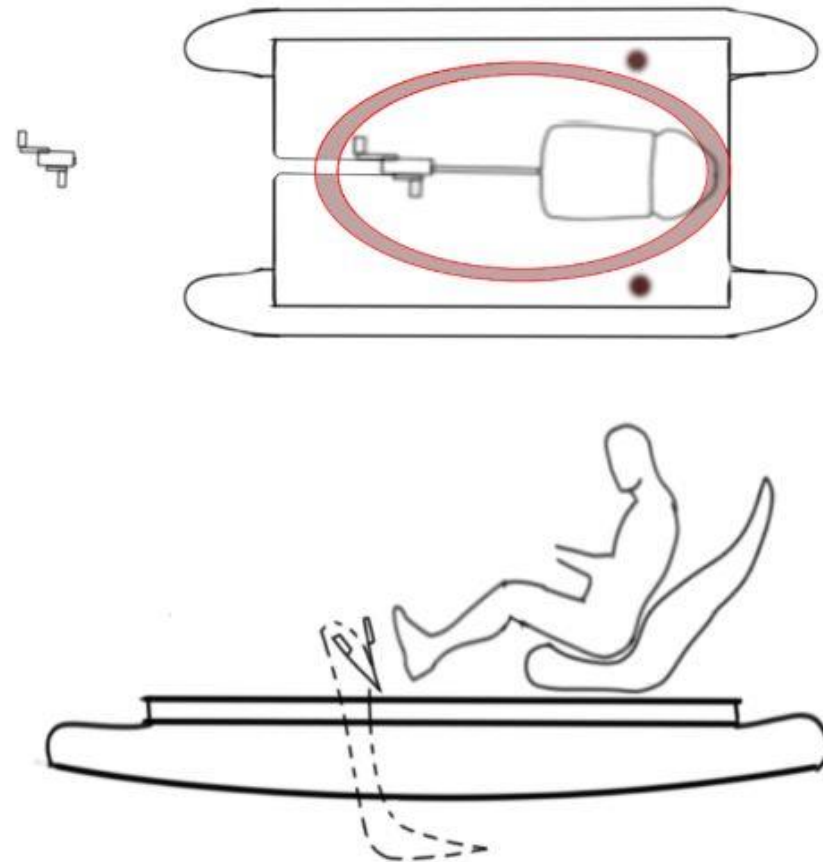


Direction 2

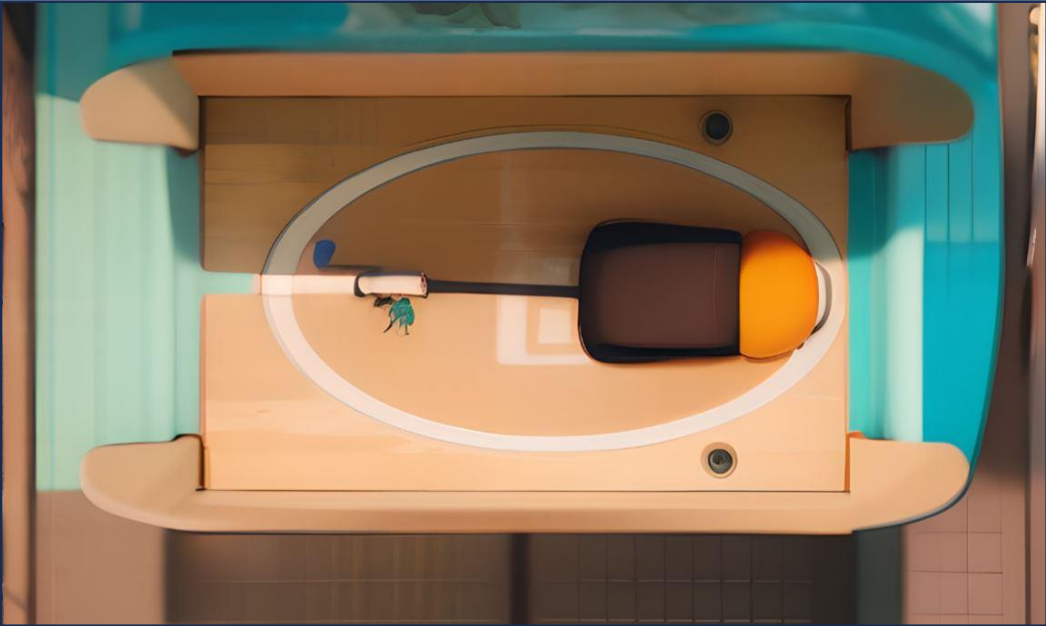




There is detachable peddaling for easy maintainence
The circular highlated area is a lifted angular plantform
for foot rest while fishing to maintain stability and center
of gravity



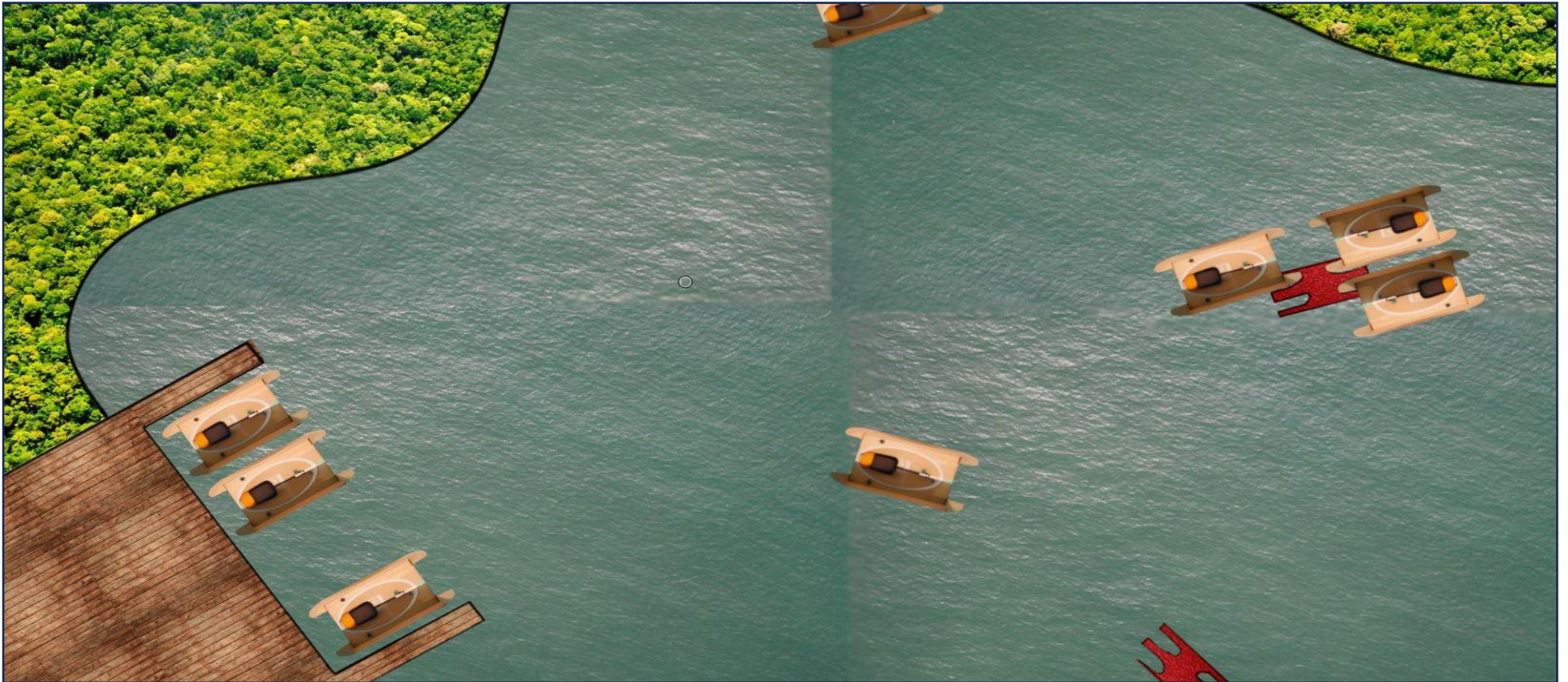
Visulisation of concept
through Vizcom Ai



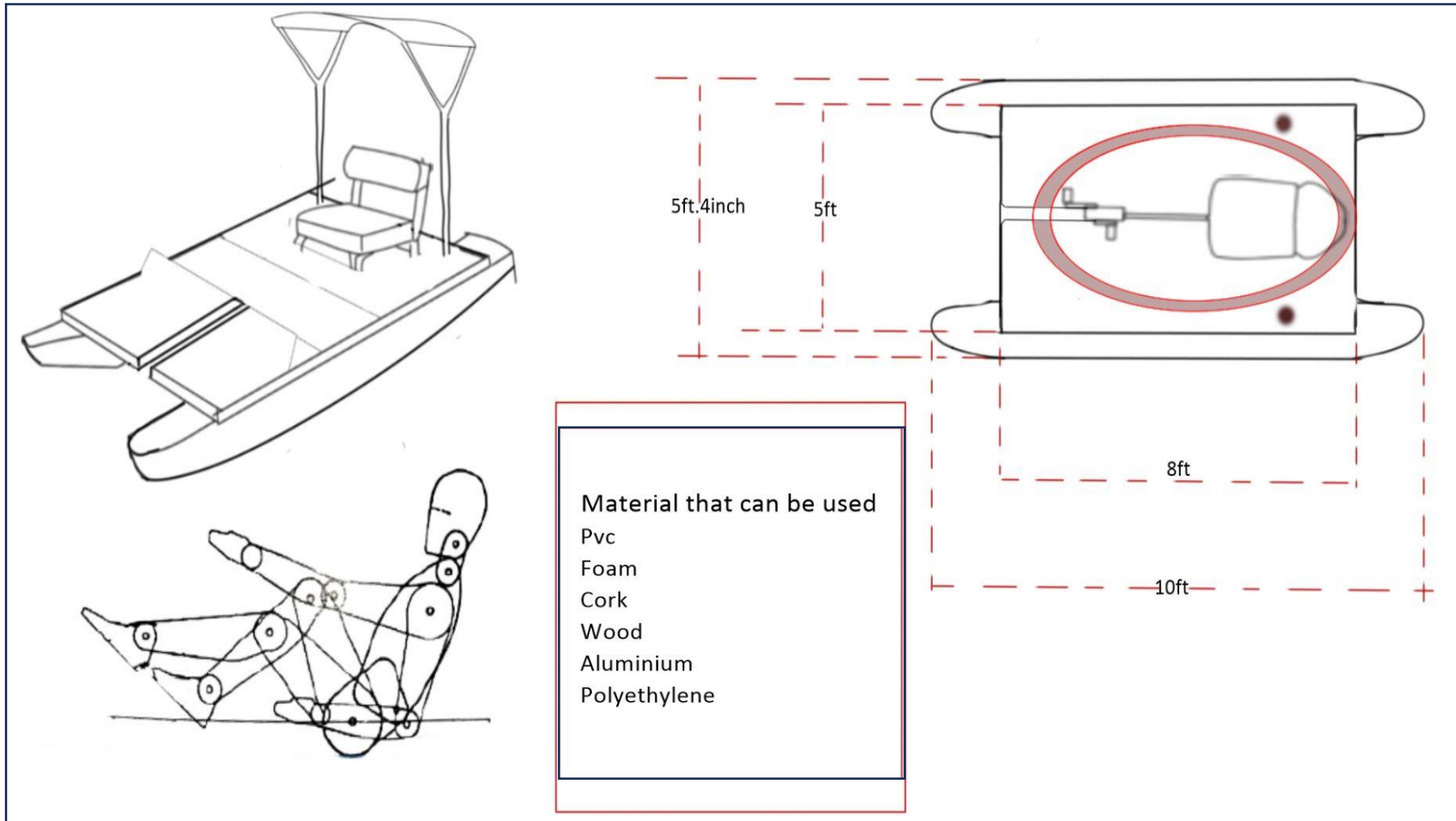
Scenario

Usually docking of the boat is done on the edge of land, but I think in future there will be few checkpoints set up in middle lake for docking as I have shown in the image (red checkpoint) this check point will be equipped with light to make fishing easier in night time.

The fishing boat that I have designed is single seater but the boat can be attach to similar boat parallely making it two seater .



Packaging and material



Renders







