

Fish container for BOBP

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It was 2nd, October, 1989: Gandhi Jayanti! A long possession had blocked the Bus. At last the Bus Conductor got some free time as bus was stuck! This was our best chance to get him! 'Rajan, Chalovuskoabhipakadenge!', 'Rajan let us catch him now!' I told MSG Rajan who had accompanied me to Nagercoil, a small town at the southern end of the Country. We soon engaged the conductor, telling him that we are coming from Bombay! And we want to know the problems of fish being carried in the Bus!'

The conductor gave us a small speech in 'Tamil'.

'Sir, every day there are fights in the bus. These fisherwomen bring stinking fish inside in open baskets and other commuters don't like the smell! What more many times the baskets drip and the bus floor gets wet making it dirty. Some of the fish baskets don't fit underneath the seats. And these are kept in the middle of bus. Other people have to jump over it.'

He further said, "Sir, the situation is so taxing for me here. I tell you even 'Gandhiji', if he had been in my place would have become violent...!"

He went on non-stop without giving data which we wanted like number of fisherwomen who come in to the Bus every day! But we realised that data we were trying to collect was rather academic! This man was giving a scene which was very vivid! Unfortunately in that short trip we were not able to experience the 'scene' ourselves.

In 'design' this recreation of a 'scene' is crucial. You can have your own point of view like an author! But you also understand and imagine other's point of view. A story teller or a film maker looks at the scene from the point of view of his/her characters: So also a designer! User or Persona becomes the centre of the scene! Understanding the emotional

status of a fisherwoman who needs to pull out her 'basket full of fish' after a fight with an unfriendly commuter who got upset because his lungi got caught in the fish basket kept in the way' is part of good-design! The problem needs to be addressed in shaping the handle to pull out the basket from the bus by the fisherwoman with anger in an irritated mood!

Learning how to make the durable solid aluminum handle, 'soft' with smooth transition in the middle and large radii at edges (and not 'hard' with angular edges) becomes suddenly meaningful in 'design'!

This also explains 'how a course on film making or film appreciation become relevant in design education'! Even product designers become story tellers of a different kind!

Encoding the story sensitively in to a 'physical object' demands special skills of 'design thinking'!

We were there to collect data for designing a 'fish container' for BOBP (Bay of Bengal Programme for Post harvesting). BOBP was funded by many international agencies as can be seen in their brochure given in the next page and managed by ODA. BOBP sent me an article on fish baskets in Palmera leaves by Antony Sanders which asserted the need for design input.



BAY OF BENGAL PROGRAMME

The Organization : The Bay of Bengal Programme is a regional fisheries programme, with FAO as the leading agency. It covers seven countries bordering the Bay of Bengal: Bangladesh, India, Indonesia, Malaysia, Maldives, Sri Lanka, Thailand. The main component of the Programme is the project "Small-Scale Fisherfolk Communities in the Bay of Bengal", which began in 1987. Funded jointly by SIDA and DANIDA, this \$ 8 million project succeeds the 8-year SIDA-funded project, "Development of Small-Scale Fisheries in the Bay of Bengal", which concluded 1986.

A project on post-harvest fisheries, executed and funded by ODA (UK), is part of the BOBP. So is a project for training activities, sponsored by AGFUND (Arab Gulf Fund for United Nations Development Organizations), and a project to improve the living conditions of fisherwomen and their families, sponsored by UNFPA (United Nations Population Fund). A few other projects including one on bio-economics of small-scale fisheries funded by UNDP, are also likely to join the BOBP.

The Goal : The BOBP's main thrust is socio-economic betterment of small-scale fisherfolk communities of the region — who suffer from poor incomes and living standards, low social mobility and limited political influence. The immediate goal is to develop and demonstrate new ideas or techniques, new technologies, methodologies or systems to help small-scale fisherfolk.

The Strategy : Experiments or pilot activities are carried out in member-countries, usually in one or more fishing villages or provinces, in cooperation with governments. These experiments may relate to community organization and extension, fishing technology, aquaculture, fishery resources, or post-harvest technology.

High emphasis is accorded to improving the role of women in fisherfolk families, to training and technology transfer, to winning the active participation of target groups in all activities, to tapping local expertise and materials, and to regular information dissemination.

The Set-up : The project staff is multi-disciplinary and spans a wide spectrum — sociology, economics, extension training, naval architecture, marine engineering, fishing technology, aquaculture, post-harvest technology, fishery resources, information.

Incidentally I met the official of BOPP at NID. I had gone there for a jury at that time. The gentleman who was also staying in the NID Guest house revealed that he is planning to visit IDC in Mumbai, for the fish container project. A letter had come a week back. He said BOBP wanted to engage both NID and IDC on the same project and take which ever design was better! Fortunately NID refused to take up the project when they came to know that the party is planning to engage IDC also on the same project. A kind of competition took place in the design of EVM earlier, and NID was not keen to get into another situation of competing with their own alumnus.

Design needs to be seen as a service of a doctor! One does not go to two doctors and choose a better medicine!

BOBP wanted the design, specially for fisher women at Kanyakumari, a coastal district in Tamil Nadu with Nagercoil as its Head quarters! They asked us to visit Nagercoil for a preliminary study. I wanted ‘quick data collection’ on fish container at Mumbai to understand the scope and quote the fee.

I involved M.S.G Rajan in the project from the beginning as he knew Tamil which was a great asset in the project! I had the habit of looking at any new project thoroughly as soon as it comes! Internet and Google were not there! But we had other ways, starting from the library! New data mostly came through contacts and physical action which was exciting! Myself and Rajan visited the sea shore in the outskirts of Bombay dock yard. This place was amazing! You need to go there in the early morning! It is a must visit if you are in Mumbai and are little adventurous! But most people do not know about this place! We reached there by 8 O'clock! We could see another world so near Bombay yet so far, so different! Busy activity was going on! Some boats just came. A group of people rushed towards it! There was lot of shouting.

Fishermen come back in the morning with 'catch of fish' from the sea. Each boat will be coming back with its booty! As soon as the boats land, there is an enormous activity which takes place. Fish has to be weighed first. Fish baskets are thrown into the boat and the baskets, filled with fish, are transported from one person to another in a 'human chain'! Speed is the essence. As soon as the 'baskets, filled with fish, reach the destination fish is dumped and the empty basket goes back. Last person runs back with the empty basket and throws it to the person in boat! He fills it up with fish and the 'chain activity' goes on till the lot gets emptied!

The baskets were of bamboo, light in weight and easy to throw, but were of poor quality. Some were broken which lead to fish falling on the way! But nothing seems to matter to the whole chain of activity. Soon the fish is weighed! There is an interesting system how the boats are hired and payments are made. Fish catch is an uncertain business. Sometimes the catch is full of 'pomfrets' the most expensive fish and sometimes it is 'zero catch' on an unlucky day! So the fishermen and owners of the boat have reached a 'Deal'. Fishermen pay in kind for hiring the boat! They share 50% of the catch with the boat owner! They share the 'luck' good or bad!

When we enquired about the baskets the fishermen said that the bamboo baskets are ideal though they don't last long. It seems if durable baskets are used they get stolen. That is the reason why plastic baskets have not made their entry!

It is interesting how one disorder (stealing) at one level can counter another disorder (indiscriminate use of plastics) at another level!

We also looked at how fish gets transported in and out of Bombay! For export it gets packed nicely in thermocol boxes with ice. For internal consumption fish gets transported in large bamboo baskets. We were aware of the large fish

baskets made in Boiwada, Lower Parel. A large bamboo craft community in Mumbai is dependent on making these fish baskets. But the demand for the bamboo baskets has been decreasing.

One more 'catch' in our search for data on fish transport was a 'Fisheries Research and Training Institute'(FRTI) in Mumbai, which we visited. Fish transport across the country. i.e. from coasts to central parts and coastal cities is still done in plywood boxes, packed with saw dust and ice. The emptied boxes do not get re-circulated.

We also saw imported samples of huge double walled plastic containers in the Institute. But those can't be used because transporting them back empty becomes expensive, whereas plywood boxes are thrown away or reused for other purposes.

The researchers at the Institute also revealed that 40% to 50 % of our fish gets wasted, as they become unusable after 8 to 10 hours if not stored with ice!

I started thinking about possible scope of the project. I normally do lot of initial work as soon as enquiry comes without worrying about the cost.

It is an investment in knowledge. You develop a holistic picture of the problem in national and international context!

Many times projects don't come through. Getting rough scope in our mind also helps to estimate the fees. I thought there was a wonderful scope to develop a double walled fish container with a provision for ice which can be used not only for fish but also for 'milk', 'medicines' and other 'perishables'!

BOBP officials called us for a field trip to Nagercoil. They were bearing the costs. I decided to make our trip via Trivandrum so that we get a broader picture of use of fish baskets. This was on our own initiative as the client was not

interested in any study outside Kanyakumari district. We stayed overnight with Mohan Chandra, one of our alumnus. He took us next day to show us how the fish gets handled in Trivandrum. Interestingly fish distribution in Trivandrum coast was highly organized. As soon as the boats come fisher women get their fish. They were able to buy ice in small quantities on the beach itself and carried iced fish for selling. Some men carried fish on bicycles in wooden boxes or baskets kept in metal frame clumsily. Water melting from ice keeps dripping .But there was a system to put ice and reduce the wastage due to fish becoming stale and unusable!

Next day we went to Nagarcoil and met a foreign volunteer who was the project manager and few local BOPP officials. She was also new to that place! She was managing the fish container project for last 6months.

Not knowing the local language puts some limitations in knowing the problem in depth.

MSG Rajan could speak fluently in 'Tamil'. This gave us an advantage in getting realistic picture of the ground situation in a short time!

We stayed in a hotel for 3 days in Nagercoil. It is a small town, smelling fish everywhere. Even vegetarian dishes in the Hotel carried smell of fish. Fish is brought from the coastal villages to the town for sale. If the fish does not get sold by lunch time, fisherwomen have to do a distress sale or take them back and eat themselves or throw. For these fisher women it is important to reach Nagercoil as early as possible to get a better price and sell off all the fish! Only a month back Tamilnadu Govt. had introduced an exclusive Bus, 'only for local fish transport'. But the problem was that the same bus will have to go back and forth to Nagercoil.

After bringing fisher women from 1stvillage the same bus would go to the 2nd village and bring fisherwomen to Nagercoil. The bus would go to a third village after this. The villages are distributed around. So only the first village gets the benefit. It becomes too late for the fisher folk from the

next village! Because of this the bus goes empty after the first trip defeating the very purpose of a special bus!

We visited '3' villages nearby. The BOPP was working with them. In the first village all the fisherwomen were using shallow aluminum baskets! Nobody was using 'bamboo or palmera baskets' as we read in the article which was sent to us! The fisher women said they get big fish, so they need a large basket with less depth. We wanted to take some pictures to study ergonomics of carrying. But the moment they came to know that we were going to take 'photos' there was a big commotion. They all went back to their houses from the BOPP office where they had assembled. After half an hour they came back in their best dresses, with powdered faces and empty shining aluminum baskets. Of course we took pictures with 'missing ergonomics'. They all said their earning was only 40 to 50 rupees per day. When we asked about the ice, they opposed the very idea of ice. They said people buy their fish because the fish was fresh. If they used ice, people would think that it was coming from powered boats with ice storage. Generally the mechanized boats take two to three week trips in to the sea to get larger, assured catch!

In the second village, all the fisher women were using metal buckets! They said they got mostly small fish and they preferred the buckets because they could easily carry them under the seat in the regular bus! The group in the third village had mixed sizes. Some were buckets and some were round aluminum baskets of larger size.

Next day morning we encountered an interesting scene at Nagercoil. We went to see the actual fish selling spot. On the way, to our surprise we saw four fisher women getting out of a taxi. They were hurriedly downloading their fish filled baskets. Fish were expensive. It made sense to come in a taxi costing as much as 150 to 200 rupees, to cater to the early demand! Four of them could share the fares! We also could take some pictures from distance, how they carried the fish in the containers! Some were carrying buckets full

of fish like a 'pot' on their waists in a traditional style, even though it was uncomfortable!

Some food for thought and fodder for new solutions!

We visited fish market where they sell the fish. We saw fisherwomen carrying a wooden plank and knife to cut and sell if somebody wants a smaller piece!

We visited local shops selling aluminum baskets. They were sold by weight. A kilogram of Aluminum basket irrespective of its size was costing Rs. 260/- at that time. So neither the containers nor the fish were inexpensive! The earnings of the fisher women seemed to be much higher than what they were telling!

We visited a local manufacturer who made the baskets by aluminum-spinning, using wooden moulds to control the shape!

A overall picture was forming in my mind with the data and the discussions with the BOBP officials. This is a crucial stage in Design. There is pressure to visualize a possible solution. No doubt it would be fuzzy with some clear attributes here and there. We were to go to Chennai and meet the Oxfam adviser for the project who had come from U.K. for the final discussion. Mr. Roy, project coordinator was also expected to be there! By the time we reached Chennai and got ready for the meeting in the morning my 'concept zone at strategic level' got crystallized. I explained my understanding of the problem based on our data at hand and suggested two options.

1. We should develop a double walled container which would change the scene dramatically. We could be putting some ice but with a 'BOBP fresh fish supply' campaign, to establish the fish were not from the powered boats and caught fresh!
2. I also suggested that we should deal the problem at system level. We should convince Tamilnadu Govt. to have 'Fish carrier space' in each of the buses in that area. They can modify interiors to provide for

fish carrying in the rear part. It could be adopted for normal sitting in the afternoons and reverse trips when fishermen don't carry fish baskets. This would eliminate the need for a special bus and help fish folk immensely.

The advisor from UK Mr. Walker was quite experienced. He carefully listened to me, praised my observations but said both suggestions were beyond their scope with their mandate in the available time frame. He requested us to just redesign the present container for better convenience of carrying and transporting. Field Manager Ms.Janineke Kristenson also suggested if it can be modular to stack it would be better! But they were keen that we also make a prototype and give in 3 months! So we came back, little disappointed at missing an opportunity for a 'break through' solution! But we had the challenge of making a prototype!

I started off with the concepts. I based my shapes on Indian type of carrying the basket like a pot. Worked out a size to go beneath the seats. Incorporated a Formica cladded plywood on the lid. We made a thermocol model in full size. There was a first presentation in November of 1989, for which Ms.Kristenson came to IDC. She was a fish technologist with some experience in projects of this kind. I presented the concepts and showed the model of thermocol built around an aluminum vessel. MSG Rajan took care of getting the models in time. We explained how we could achieve weight simulation by putting required quantity of water inside the vessel.

In Design simulation of weight and volume needs a creative approach. We searched markets and got a cylindrical aluminum vessel of the required size. We fixed thick thermocol layer around and shaped it to

the required form! The hallow vessel gave an advantage of adding any material to simulate the weight of fish!

She quite liked the idea. But said it would be nice if we incorporate stack ability for transportation. The new shape had recess in the middle which gave it an identity. A handle at that level on either side of the basket was provided. This made the basket easy to pull out or push into the buses. Handle also helped to lift the container. A ‘Formica cladded’ lid was provided. This became a cutting platform while selling the fish!

We had committed for a ‘Prototype’. It was not easy to get it spun without moulds. We found stainless steel sheets could be welded and formed into required shape with hand tools. We found a group skilled in this technique in Ghatkopar. MSG Rajan took over the charge and with his efforts we had a look alike prototype in stainless steel. We sprayed it with Aluminum paint to make it look like an aluminum vessel!

We also developed an alternative design in elliptical shape. This had a step with wide opening. Big fish could be carried easily in this. It had to be deep drawn in aluminum for production. Tooling costs would be high if it is not made in larger numbers. We fabricated a prototype for the second design also!

Both were presented to them! There was difference of opinions in them. My suggestion to make 10 numbers each and take a feedback was supported by Mr.Roy. But the budgetary issues were there! We came back. We got an acceptance letter by BOBP, which enabled us to close the project from our end.

We did not hear anything from them for long. Later

we came to know that project manager Ms.Kristenson had left as her term was over.

After a couple of years we received a pamphlet showing the part adoption of our concepts! The second solution was taken up. But the shape was changed to circular from elliptical. This would have been easy to get it spun by the local manufacturer. But it would not fit under the bus seats! So the buckets would have to be used by the villagers who want to go in the general bus!

Problems of such complexity may need multiple solutions, developed over a long time frame!

Quick solutions are not possible for such complex traditional problems, unless there is a major scheme and bigger financial commitment in a longer time frame!

As I was finishing this write up, I made a Google search. To my astonishment I found a report written for BOBP. A new basket in aluminum has been introduced(as seen in the picture below). It does not seem to have solved any of the problems which were identified earlier. But it got distributed with a subsidy as indicated in the report.

There has been no reference to the project given to IDC, IIT Bombay, officially. A line in report says a design company in Bombay was hired and the designs they give did not work. The basket which has been introduced has some similarity to our design. But the baskets do not fit under bus seats. Big fish can be carried. It is of round shape with a wider opening which seems practical.

I wish the new team had contacted us. We were ready to learn and work with them. IITB has been financially supporting such projects of such social significance. Yet it seems there is a lack of trust and

fear of coming together. Even to appreciate we need two hands to come together and clap!

*'Design is a Social process.
Design cannot happen in Isolation!'*

