

Fish Container for BOBP

design: a g rao

product developnt: a g rao, MSG.Rajan

A project on design of a Fish Container for rural fisher women in Nagercoil was an interesting problem. the challenge was to design with in the technological constraints of production and user requirement. Problem could be seen in larger perspective of reducing wastage as well as system level of solving problem of local transportation of fish from village to town by the fisherwomen. We were required to look at design with incremental change in resources for production.



BOBP-NGO co-operation in post-harvest technology:

CAN WE IMPROVE ON THAT PALMYRAH BASKET?

by Antony Sanders

NGOs of Kanyakumari district, Tamil Nadu, India, may with BOBP support try out two innovations among fishing communities there: a better fish container than the ubiquitous palmyrah baskets, and anchovy-drying during the monsoon. Both innovations have wide relevance and application.

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.

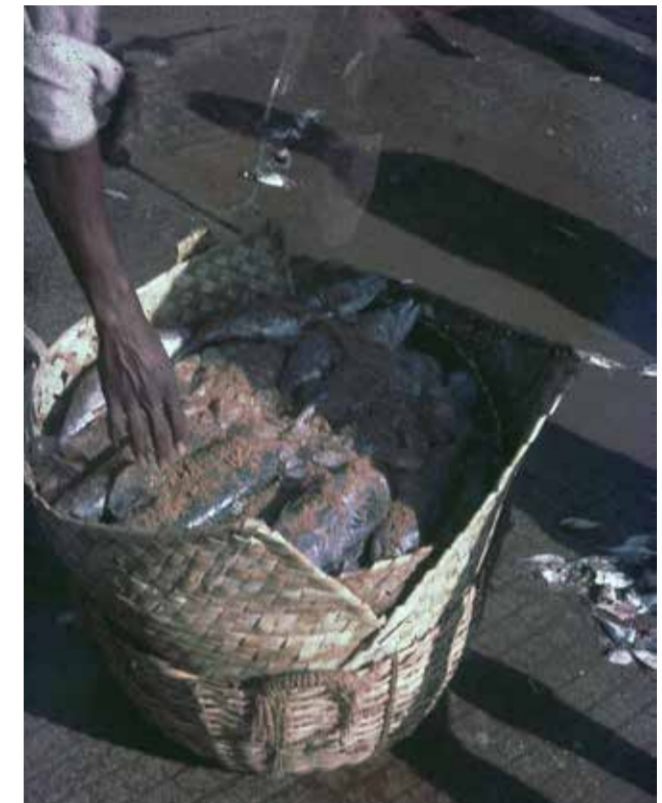
High emphasis is accorded to improving the role of women in fisherfolk families, to training and technology transfer, to winning the active participation of target groups in all activities, to tapping local expertise and materials, and to regular information dissemination.

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.



Carrying of Fish in Kerala

In Trivandrum we saw use of ice by everybody. Use of ice can reduce the estimated 50% wastage Nationwide! Carrying iced fish as head load with basket leads to the water dripping problem. But on cycles boxes are used with saw dust to keep the ice intact.





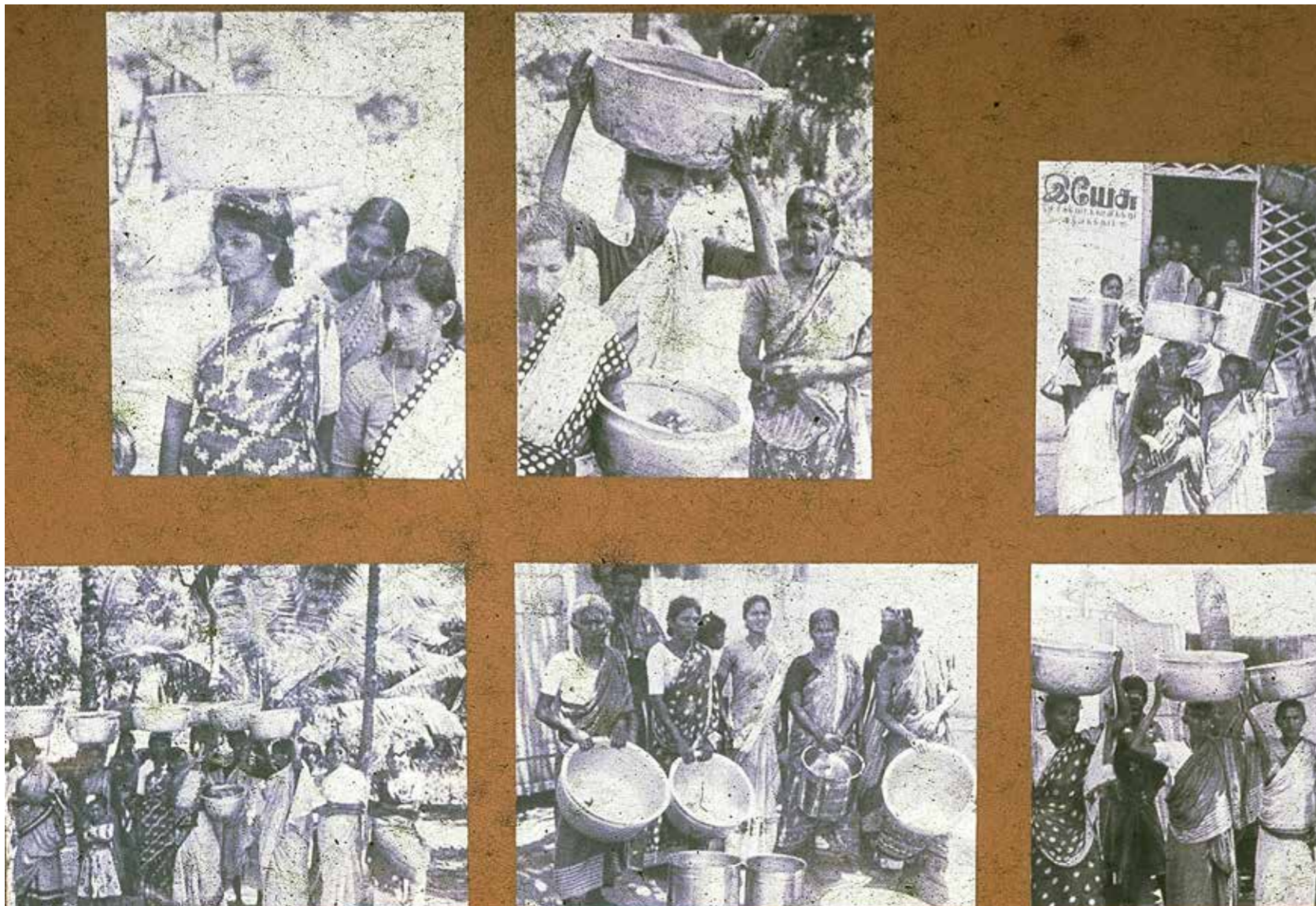
Meeting villagers along with BOBP officials

We visited 3 villages around Nagercoil. Each had different requirement.

1st village wanted large size shallow baskets as they get big fish!

2nd village preferred bucket type as they get small fish. Buckets are inconvenient to carry but fit under the bus seats.

3rd village had both requirements!



Ms. Jeningen Christenson, field manager along with a colleague arranged our meetings in three village groups.



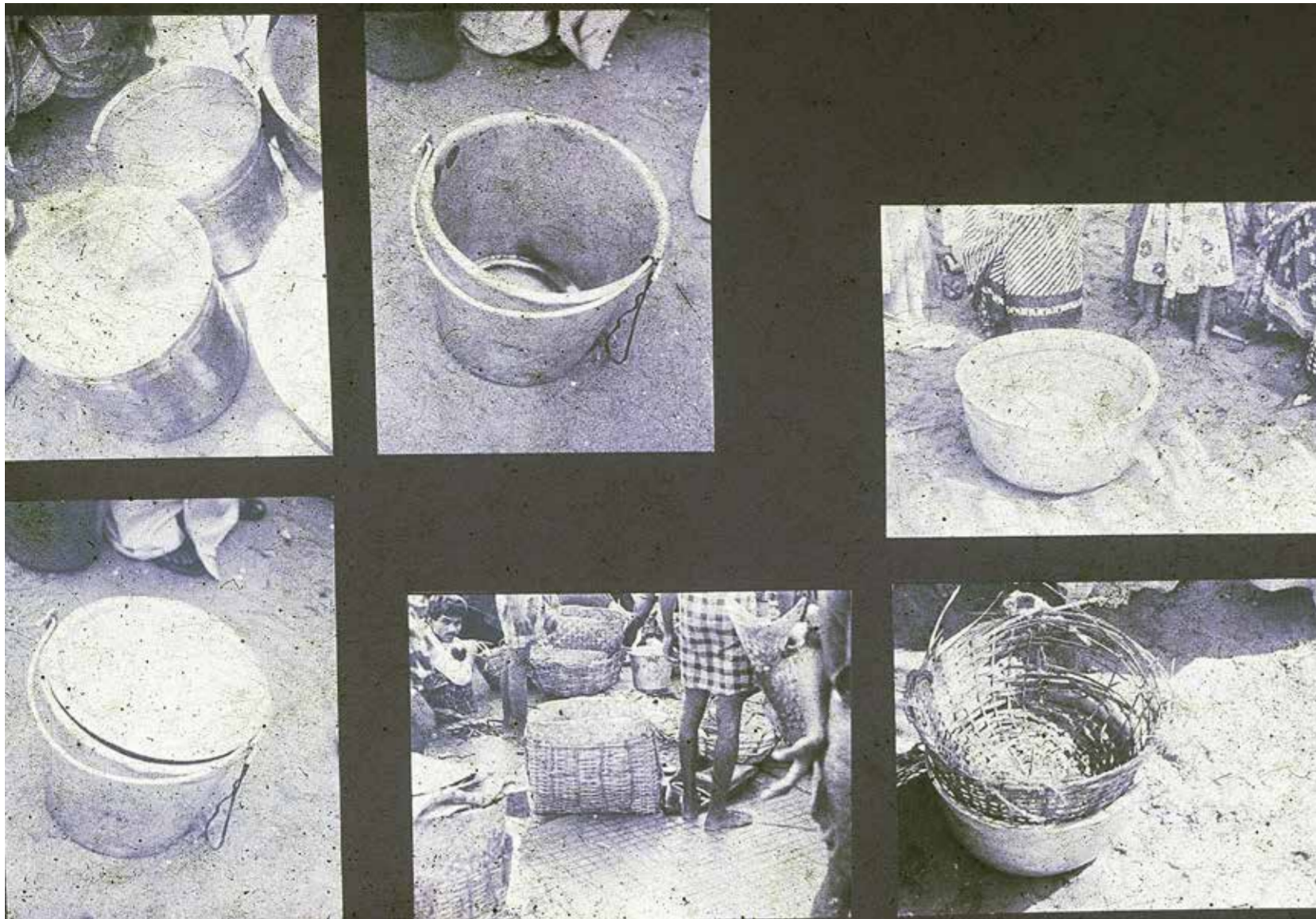


Transportation of Fish in Buses

Fish has to reach Nagercoil from the villages. Fisherwomen carry them often in buckets which can be kept under the bus seat. But carrying the buckets on hips or heads is a painful process.

Bus conductor had his own story how he has to face the ire of other passenders as bigger fish containers were kept on the way.





Fish container size

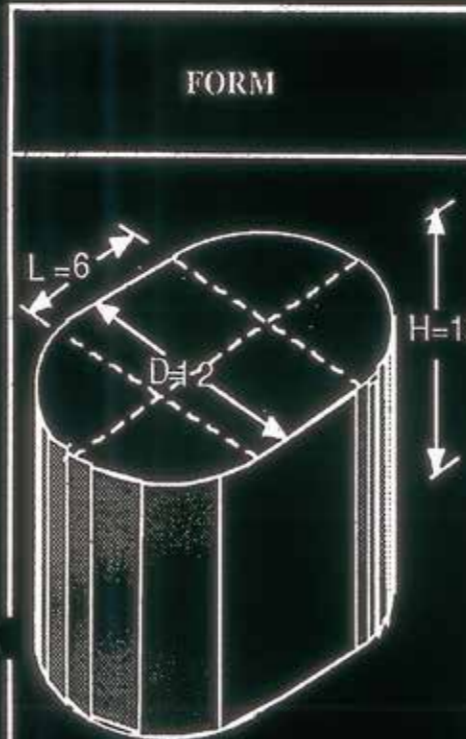
Fish basket sizes were worked out studying the currently used containers and considering the weight they can carry. 35kgs was considered as maximum and volumes were worked out to create a base for thinking of different shapes

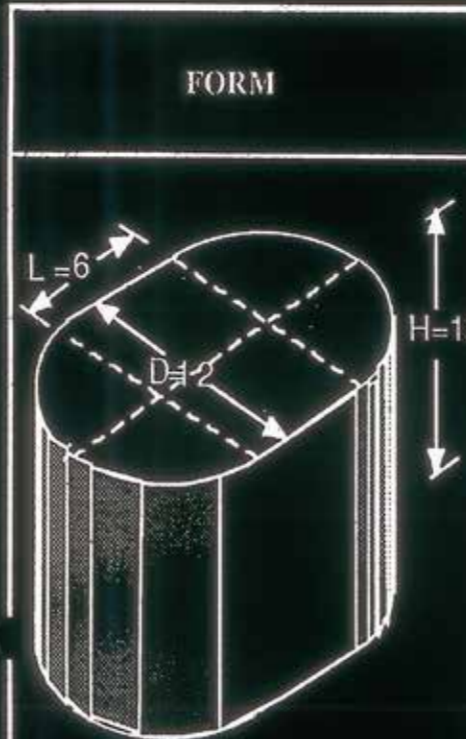
Cylindrical shape has the advantage of aluminium spinning, an easy way of making.

FORM	PARAMETERS			VOL. Of Curved Portion	VOL. Of Straight Portion	VOL. of Hd	TOTAL VOL. IN LITERS
	CASE	A/D	B/L				
		20	-	9 1/2	-	-	32.0
		22	-	9	-	-	38.0
		22	-	9	-	-	48.0

FORM	PARAMETERS			VOL. IN Cu. in	VOL. IN liters	VOL. of Hd	TOTAL VOL. IN LITERS	
	CASE	A/D	B/L					C/H
	X	13	12	2	1591	75 Lit	4	29
	Y	14	12	2	1846	29 Lit	5	34
	Z	15	12	2	2119	33 Lit	5.5	38.5
	X ₁	13	1	-	132	2.0	-	-
	Y ₁	14	1	-	153	2.4	-	-
	Z ₁	15	1	-	176	2.75	-	-

Elliptical shape can give higher volume with a larger base, making it easier to keep under bus seats. Manufacturing this shape would demand more expensive tooling.. This would make it difficult to introduce in small numbers for trials.



FORM	PARAMETERS			VOL of Curved Portion	VOL of Straight Portion	VOL of lid	TOTAL VOL IN LITERS	
	CASE	A/D	B/L					C/H
	A ₁	12	6	12	21	13.5	-	34.5
	A ₂	12	8	12	21	18.0	-	39.0
	A ₃	14	6	12	20	15.75	-	45.0 ✓
	L ₁	12	6	1	1.7	1.125	-	2.8
	L ₂	12	8	1	1.7	1.5	-	3.2
	L ₃	14	6	1	2.4	1.3	-	3.7

BASIS FOR NEW CONCEPT

VOLUME

EASE OF CARRYING

ERGONOMIC PROFILE+

POSTURES - ON HEAD, ON HIP.

PULLING OUT FROM BUS

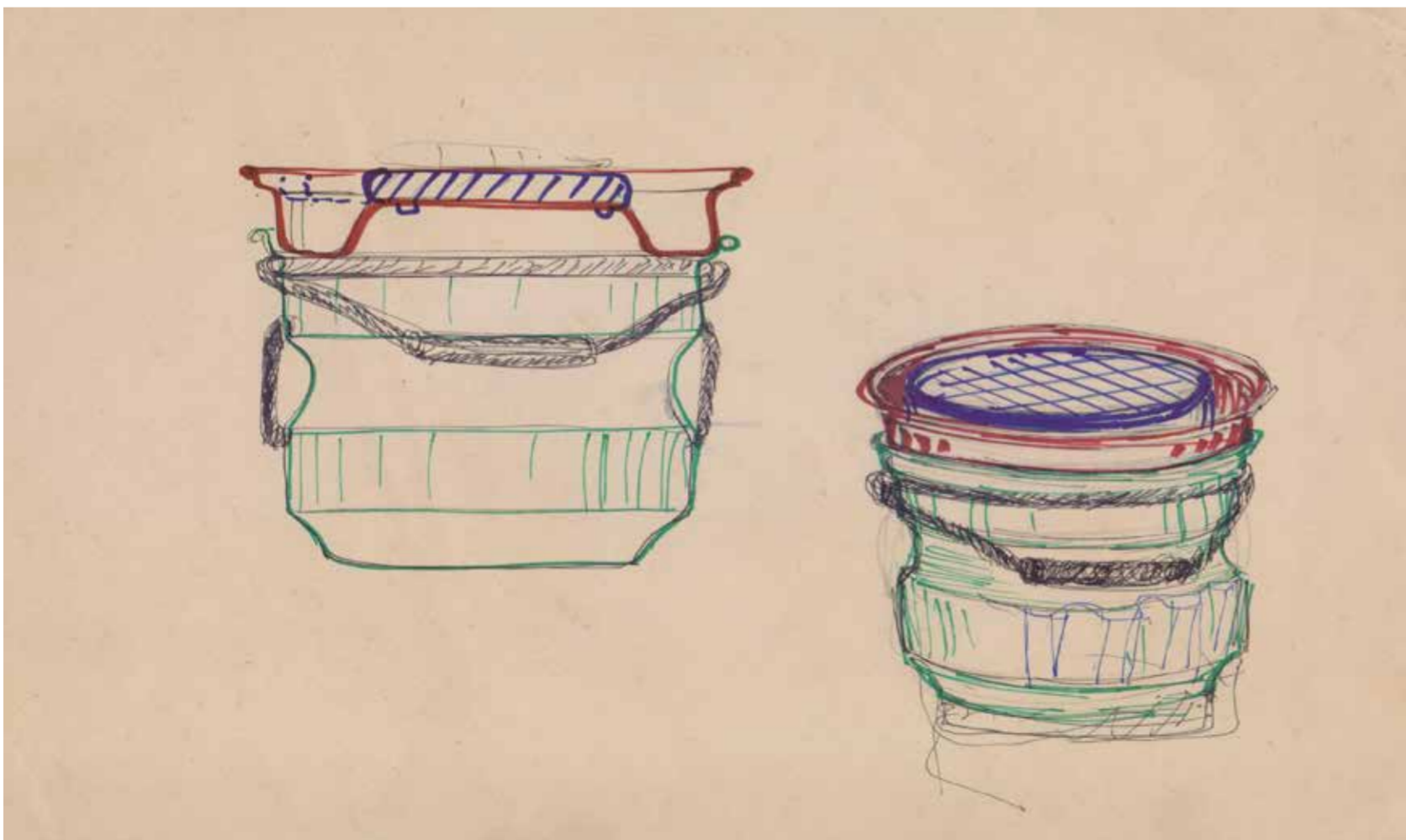
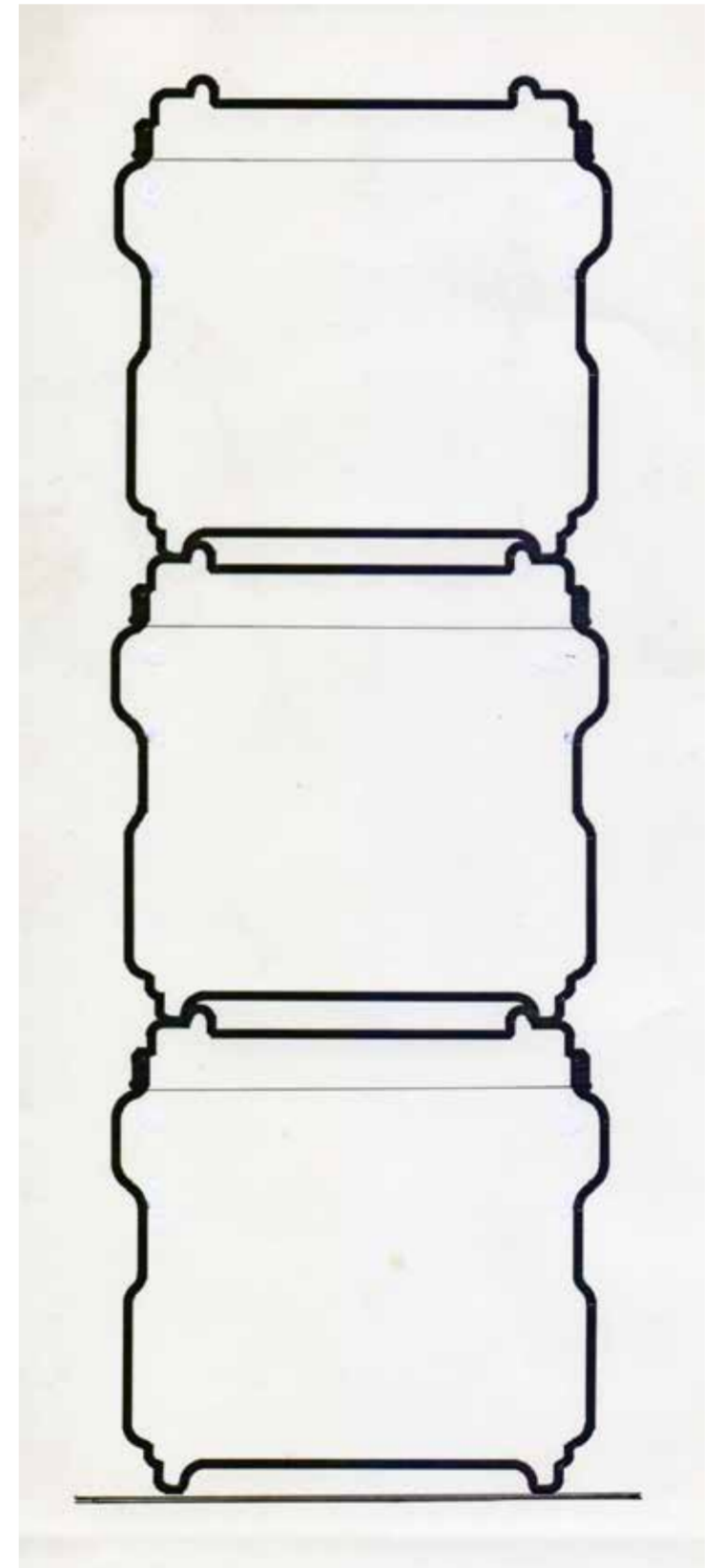
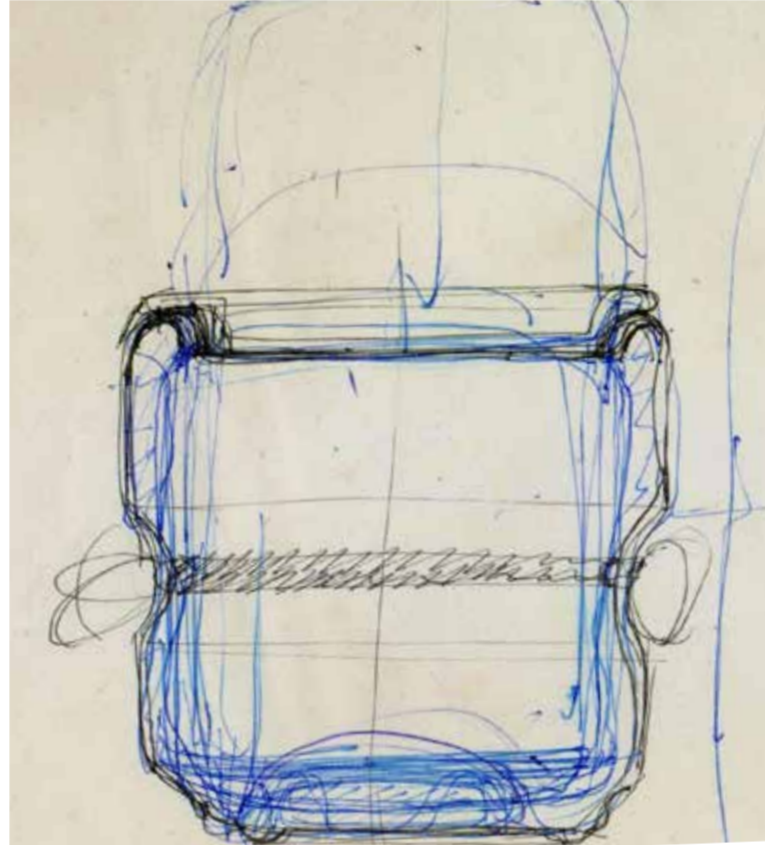
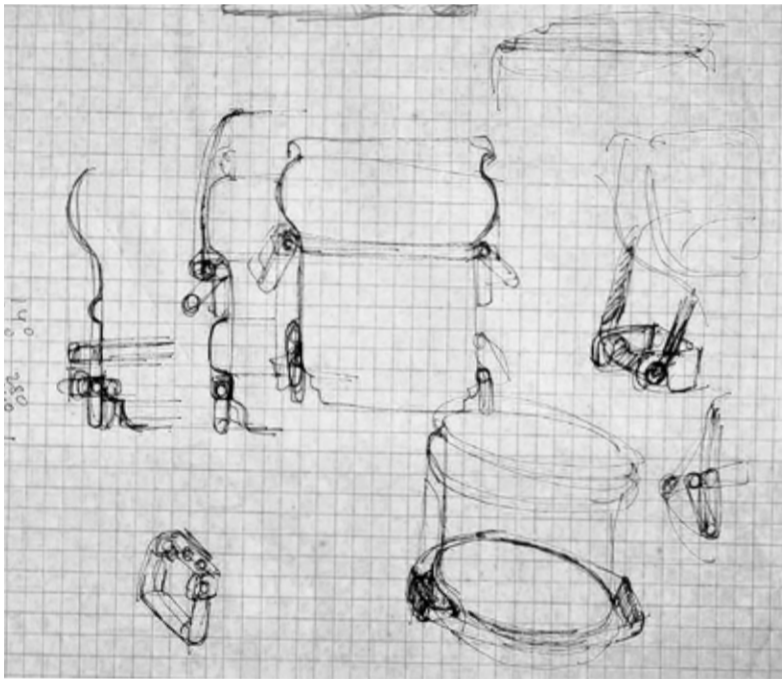
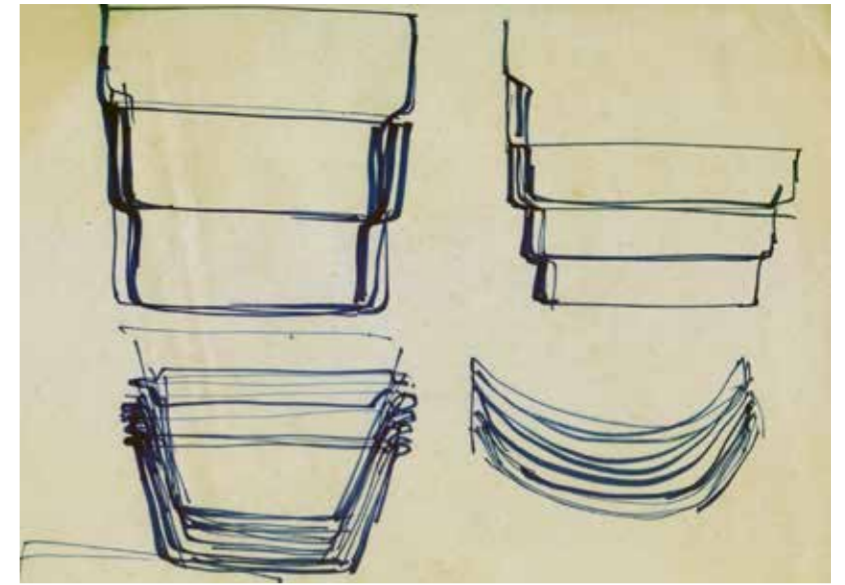
HOLDING THE LID.

USE OF LID FOR DISPLAY OF FISH

BOTTOM SIEVE

OTHER USES: WATER

Some ideas were generated with double wall moulding possibility. But after initial meeting problem was well defined. ideas on stackability, position , new identity with possibility to carry on hip as well as head started taking shape.



A preliminary presentation took place when Ms. Jenenke Christenson visited IDC. Mockup models made to full size in thermocol were shown. She was happy with our approach. A hollow model with aluminum vessel was built to the shape by cladding thermocol around. This helped in weight simulation by putting required amount of weight inside. 30 to 35 kgs fish was carried on the higher side. Later a prototype was built in stainless steel as it was easier to weld. This was painted with aluminum paint to give look alike simulation.



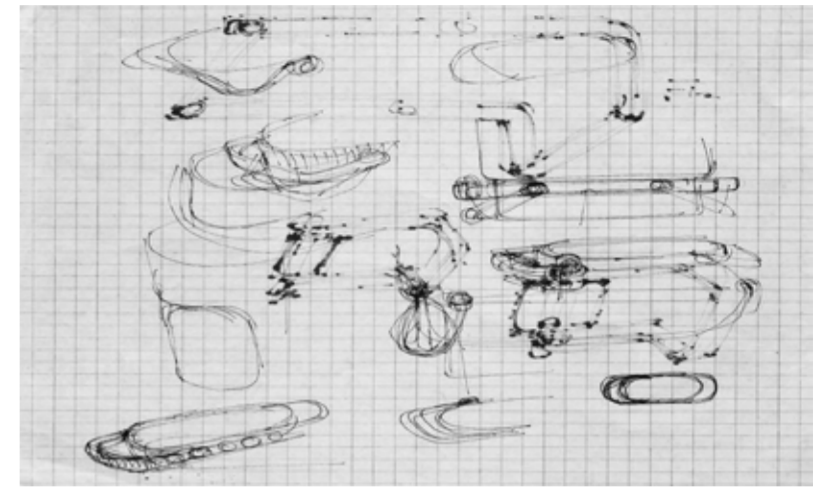
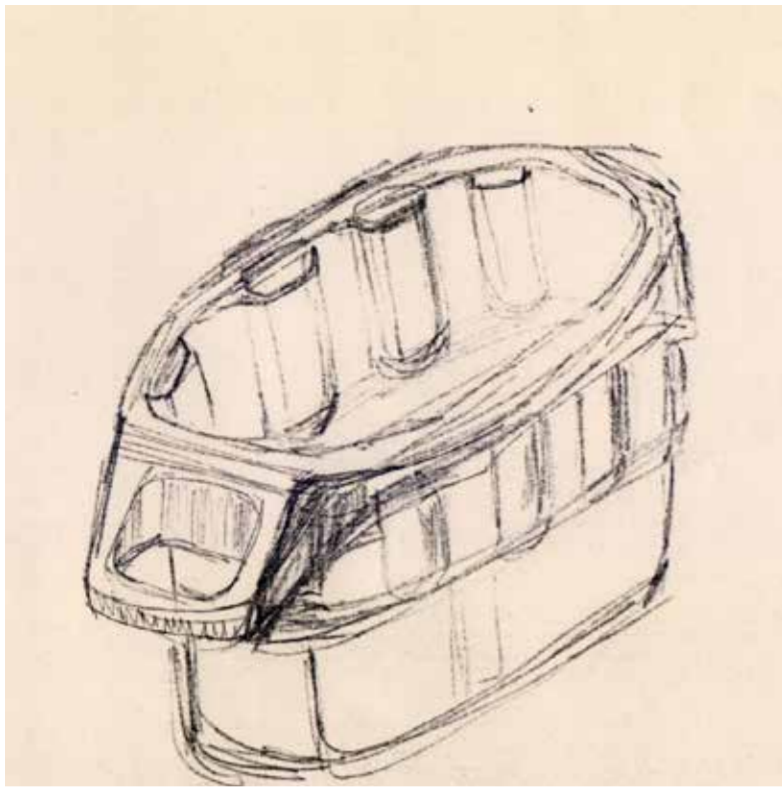
The new shape had recess in the middle which gave it an identity. A handle at that level on either side of the basket was provided. This made the basket easy to pull out or push into the buses. Handle also helped to lift the container. A 'Formica clad' lid was provided. This became a cutting platform while selling the fish!



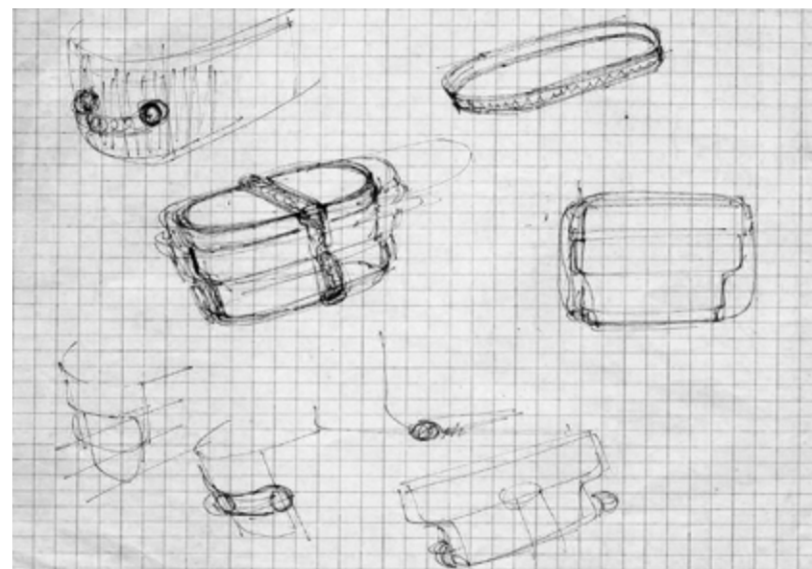
Handles introduced on either side of basket had a demand coming from a story articulated in the 'Design narrative 8'

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'!





We also developed an alternative design in elliptical shape. This had a step with wide opening. Big fish could be carried easily in this. Injection moulding or Roto-moulding would have been better options for the elliptical basket. Aluminum was suggested considering the feel of hygiene it can offer! It had to be deep drawn in aluminum for production. Tooling costs would be high if it is not made in larger numbers.





Prototype of 2nd solution was also made in stainless steel and painted with aluminum paint. A drainage for water was provided in both solutions. These were presented to BOBP! There was a difference of opinions in them. Our 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 from BOBP. We closed the project. We did not hear anything from them for long.

After a couple of years we received a pamphlet showing the partial adoption of our concepts! The second solution was taken up. But the shape was changed to circular from elliptical. The size was too big to go under bus seats. Even as I write this I saw another report showing the introduction of a Fishbasket by BOBP. Some resemblance is there to our first solution. We could see no reference to the project assigned to IDC, IITB.

Read Narrative 8 for more details.

