Contents

Abbreviations and Acronyms

AP	Andhra Pradesh
Avg	Average
BDS	Business Development Services
CBO	Community Based Organization
CDI	Catalyst Development Initiatives
Coop	Cooperative
CSO	Civil Society Organization
Deptt	Department
Dy	Deputy
Govt	Government
Ha	Hectare
INGO	International Non Government Organizations
MC	Management Committee
MP	Madhya Pradesh
NGO	Non Government Organization
SME	Small and Medium Enterprises
ToR	Terms of Reference
UP	Uttar Pradesh
VC	Value Chain
WB	West Bengal

Developing Marketing Strategy for Fisheries Intervention aiming at Livelihood Promotion in Bundelkhand Region of India

-A Value Chain Based Assessment and Planning-

Draft Report

By Vrutti Livelihood Resource Centre[1]

1 Executive Summary

Inland fisheries in India provide livelihood options to a large numbers of poor families in India. Bundelkhand Region including Tikamgarh and Chhatarpur districts has large number of water bodies of varying sizes. As inland fishery became profitable, local elites started controlling these water bodies. Currently, most of the poor fishermen families do not have access or control over these critical resources i.e. water bodies. It has severely affected the livelihood of these poor families. Although with pro-fishermen leasing policy of Govt. of MP, cooperatives have leasing rights over these water bodies, in practice, local elites have control over these water bodies. Oxfam with support of its local partner has already made progress in liberating some of the fisheries cooperatives from the clutches of elite contractors. Till date, nearly 25,000 families associated with 250 cooperatives have been involved in this intervention. With progress in access and control over the key resource i.e. water body, the need for enhancing income through systematic interventions related to production and marketing has been felt.

This study conducted by Vrutti Livelihood Resource Centre relate to development of marketing strategy in context of two districts viz. Tikamgarh and Chhatarpur through a value chain based assessment and planning. The overall objective of the study was to develop a Marketing Strategy for fisheries intervention, aiming at livelihood promotion of poor fishermen households. Specific objectives were:

- To examine the marketing channels for fish in the region, state/s and National market

- To assess the market potential for fish from the Bundelkhand region with specific markets identified including processed fish products and the requirements of buyers
- To explore market margins involved and the possibilities of capturing value in different stages of the chain like wholesaling, processing and retailing
- To assess characteristics of the fish market at the end consumer level in terms of variety, quality, pricing, purchase behavior including channel preference and reasons for that
- To assess role and involvement of women at various stages of supply chain.
- To identify gaps related to market access and capacities of fishing community in Bundelkhand.
- To derive marketing strategy for the overall project to improve livelihood of stakeholders.

The study covered understanding experience of cooperatives related to marketing, functioning of local markets, linkages with distant markets like Delhi, Kanpur, Lucknow and Gorakhpur. There was interaction with direct actors like traders, commission agents, processors, retailers, consumers and members associated with marketing in cooperatives. There was also interaction with hatchery owners, fish seed suppliers, officials of coop & fisheries department. The focus of the study was to make qualitative assessment of current value chain and get insights (than generating data) on functioning of the value chain.

Summary Findings

In inland fish market, consumers prefer fresh fish i.e. mainly carps. In case, fresh fish is not available, they go for fish preserved in ice. The demand for fish is increasing day by day. This is mainly because of increase in purchasing power, increase in non vegetarian eating population and preference for fish as low cost protein (compared to meat). Study of different markets in the region revealed that, there is huge unmet demand for local fresh fish, which is currently being met by iced fish from AP. AP fish (as a second preference) gets sold at a lower price as an alternative to local fresh carps. Price margin of local fishes and also Andhra fishes is quite competitive. Overall, the fresh water fish market is operating at a competitive level. Traditionally and so also now, fishing communities are associated in catching/production of fish (through Coop) and in marketing at retail level (both men and women). They are not exposed to wholesale trade.

Broad estimates suggest that, optimal level of production in the project area can safely cater to demand for fish in the project area. While the demand for fish is through out the year, the supply is fluctuating in nature. Supply pattern do not match with demand pattern. Market is distorted by irregular harvesting and thereby irregular bulk supply. This results in dependency on supply of Andhra

fish and bulk sale of local fish in distant market at a lower price. In this scenario most of the actors in the value chain including Andhra based suppliers do not benefit. Experience of cooperatives relating to marketing also suggests that members get higher income, when fish gets sold at water body site. There has been occasional success and experience of failure, when there was attempt to sale in bulk in distant markets. Commission agent cum wholesale traders in distant markets expressed that in most of the cases, fish gets sold locally as it fetches higher price (thereby they are loosing income from commission and trade). They have expressed that based on their requirement they are open to the idea of buying fish from coop at pond site, which may be a win-win proposition for them and also the cooperatives.

There is limited scope for getting higher price through exports. As consumer prefers fresh fish and it fetches higher price, currently there is limited/no scope for value addition through preservation. Market for processed fish like pickles has not yet developed. The scenario is not likely to change in immediate future. Hence the overall focus for marketing of fish in the project area needs to be local followed by distant market at regional level.

Analysis reveal that, even if productivity reaches to optimal level (doubling of current level of production), there will be demand for fresh fish (carps) at local level thereby cooperatives having access to premium market (fresh carps). With direct linkage between local producers and consumers in the project area, through retailers, the current value chain can get shortened. The gains through shortening of value chain can benefit fishing communities – producers and retailers (particularly women fish vendors).

Suggested Marketing Strategy

The proposed marketing strategy is based on findings of the value chain assessment and relate to marketing of fish from the project area viz. Tikamgarh and Chhatarpur district in MP. The overall focus of the strategy would be to facilitate marketing than getting involved in marketing.

The following approach (mentioned in order of preference) could be taken while facilitating marketing of fish at cooperative level:

- On site sale to retailers
- On site sale to traders
- Bulk sale to wholesale traders in local town market including Jhansi
- Bulk sale to wholesale traders in Lucknow and Gorakhpur markets

In case of bulk sale to wholesale traders, negotiation needs to be made so that trader procures fish based on pre-decided floor price & quantity. In due course, auction of fish at water body site could be promoted.

The **core strategy** could focus on selling fresh carps (product), on site sale to retailers and traders (place), at competitive price preferable decided based on floor price/auction (price), through facilitation between coop and traders/retailers (promotion). This strategy would require proactive sharing of harvesting plan (date/time, quantity, floor price) to traders and retailers. There would also be need for technical training on scientific harvesting, handling of fish, icing and smoking. Besides technical skills, stakeholders are required to be trained on management skills like planning, enterprise management, negotiation and market facilitation skill. Implementation of core strategy would require handholding support of young professional team guided by leading practitioners that would focus on overall production enhancement and market facilitation.

In terms of the consumer profile, the coverage should be for all classes of the households, with primary focus being on families consuming carps; Sale of Fresh Carps. It is suggested that the focus be on the local markets, however other markets could be tried out over a period of time.

On-site sale to all market channels is suggested, with focus on sale to the retailers. The prices need to be based on pre-decided floor prices with option of auction depending on the numbers of buyers.

To improve incomes and increase invovlment of women, key suggestions are - Training of women on fish handling practices, preservation through icing, processing/preservation through smoking, product diversification to sale of carps, Entrepreneurship development.

Key areas of capacity building that have emerged are Technical training on scientific harvesting, handling of fish, icing and smoking, and orientation and training on management skills like planning, enterprise management, negotiation and market facilitation skill

Besides this core strategy, the following **pilot initiatives** could be tried on a small scale. Based on experiences, future scale up can be planned.

- Promoting groups for catching/harvesting of fish
- Sale of live fishes in major cities
- Sale of brooder fishes to hatcheries
- Sale of small fishes as fish seed for stocking in large reservoirs

- Tie up with ice factories for bulk purchase of ice so as to reduce cost
- Develop insurance product for fish stock, in association with insurance companies
- Developing market yards with infrastructure facility like water, storage facility and ice crushing units at weekly markets and whole sale markets
- Develop harvesting & post harvest infrastructure at water body sites like platform for grading, weighing facility, ice storage facility, etc
- Promotion of Ornamental Fish – production and sale

The proposed marketing strategy has evolved based on detail value chain assessment involving both direct and indirect value chain players. The strategy focuses on marketing of fish from two project districts. It is based on available resources and likely fisheries management (extensive farming) practices. The implementation of strategy relies on strong facilitation skill and positive social dynamics in the cooperatives.

2 About the Study

2.1 Inland Fisheries and Livelihoods in India

Inland fisheries in India comprises of production of fish from inland water bodies like streams, rivers, ponds, reservoirs and lakes and also related activities like processing and marketing. It provides livelihood options to large proportion poor families in India. Traditionally, most of these families (belonging to fishermen caste) were associated with catching of fish from these water bodies and selling in local markets. Besides streams, rivers and reservoirs, most of these water bodies are common property resources, under the control of Government.

Over the years, there has been a rise in demand for fresh water fishes. This has led to thrust on enhancing production through scientific cultivation practices. Increasingly, fish cultivation in such water bodies was viewed as a profitable enterprising activity. Local elites started encroaching and taking control of these common property resources mainly the ponds and tanks. In the process, many fishermen families started loosing their traditional occupation. Nevertheless, inland fishery has potential to enhance livelihood of large proportion of poor families in India.

2.2 Initiatives of Oxfam in Bundelkhand Region of India

Bundelkhand Region including Tikamgarh and Chhatarpur Districts has large number of water bodies of varying sizes. Large proportions of households in villages in these two districts belong to fishermen caste. Traditionally, fishing in these water bodies has been their primary livelihood activity. There was open access to fishing. As inland fishery became profitable, local elites started controlling these water bodies. Currently, most of the poor fishermen families do not have access or control over critical resource i.e. water body. It has severely affected the livelihood of these poor families.

Government of MP has preferential leasing policy in favor of fisheries cooperatives. Although in many cases, cooperatives have leasing rights over these water bodies, in practice, local elites have control over these water bodies.

Oxfam with support of its local partner has already made progress in liberating some of the fisheries cooperatives from the clutches of elite contractors. Sangathan – Federation of fisheries cooperatives – has been at the forefront of strengthening existing cooperatives and forming new cooperatives. Advocacy efforts of Sangathan and other organizations have also resulted in formulation of pro fishermen fisheries policy in State of Madhya Pradesh. In recent years, there has been some efforts related to productivity enhancement and marketing. Till date, nearly 25,000 families associated with 250 cooperatives have been involved in this intervention.

2.3 Context of the Study

Initial focus of Oxfam and its partner was on enhancing access and control over water bodies. With progress in access and control over the key resource i.e. water body, the need for enhancing income through systematic interventions related to production and marketing has been felt. There have been limited efforts on this front. Under the Agriculture Scale Up program of Oxfam, the current focus is on strengthening livelihood options of fishermen communities' dependent on these water bodies. In the immediate future, Oxfam is keen to involve most of the fishermen families in Tikamgarh and Chhatarpur districts in this intervention.

To move further, Oxfam and its partner felt the need for a comprehensive livelihood strategy. In this context, different studies have been commissioned that include mapping of ponds, institutional assessment of cooperatives, understanding policy environment and marketing. This study conducted by Vrutti Livelihood Resource Centre relate to development of marketing strategy through a value chain based assessment. The value chain based assessment leading to development of marketing strategy was conducted in context of two districts viz. Tikamgarh and Chhatarpur.

2.4 Vrutti Livelihood Resource Centre

Vrutti Livelihood Resource Centre is part of Catalyst Group[2]. Catalyst is a leading development support group in India. The group has more than 14 years of experience of supporting organizations working on livelihood promotion in India and South/Southeast Asia. In the past, Vrutti has worked with International Non Government Organizations (INGOs), bilateral and multi lateral organization, Govt., private companies and also Civil Society Organizations (CSOs). Vrutti focuses on micro Enterprise, micro Finance, natural resource based livelihoods and Small and Medium Enterprises (SME). It has worked in the areas of market research, consumer study and developing marketing strategy. Vrutti has taken up

2

different value chain based assessments in India like related to marine fisheries, traditional dairy, paddy, groundnut, black gram, coconut, flower, bamboo, handloom and metalware.

In response to the Terms of Reference (ToR) shared by Oxfam, Vrutti submitted the proposal for this study. Oxfam entrusted Vrutti to undertake the study. The study was spread over few months, mainly during the last quarter of 2008. This study had advantage of inputs from other concurrent studies commissioned by Oxfam. Mr. Tiwari, Consultant to Oxfam, associated with "market facilitation" shared his inputs during joint field visits.

2.5 Study Objectives

The overall objective of the study was:

- To develop a Marketing Strategy for fisheries intervention, aiming at livelihood promotion of poor fishermen households

The specific objectives were:

- To examine the **marketing channels** for fish in the region, state/s and National market
- To assess the **market potential** for fish from the Bundelkhand region with specific markets identified including processed fish products and the requirements of buyers
- To explore **market margins** involved and the possibilities of capturing value in different stages of the chain like wholesaling, processing and retailing
- To assess **characteristics** of the fish market at the **end consumer level** in terms of variety, quality, pricing, purchase behavior including channel preference and reasons for that
- To assess **role and involvement of women** at various stages of supply chain.
- To identify **gaps** related to market access and capacities of fishing community in Bundelkhand.
- To derive **marketing strategy** for the overall project to improve livelihood of stakeholders.

2.6 Scope & Methodology

The study focused on developing marketing strategy for fish produced in Tikamgarh and Chhatarpur districts of Madhya Pradesh. The idea was to explore options for interventions related to marketing that would enhance livelihood of poor fishermen households. It covered understanding the consumer preferences, demand for fish and fish products, comparing current market channels and exploring potential markets (including exports). The study also involved analyzing experience of cooperatives related to marketing. Overall the study followed value chain based assessment and planning.

"Value Chains generally refers to production to final consumption of a particular produce and it includes activities, actors, and enterprises including Business Development Service (BDS) providers associated with it. Value chain analysis involves getting an overview of industry, developing a flow diagram, identifying actors, activities & enterprises and understanding roles of Business Development Service (BDS) providers. During the field study, one to one interaction is held with different direct and indirect actors associated with the specific value chain. Analysis of data obtained through literature review and interaction with value chain actors help to identify key gaps and potential opportunities. Further analysis and interpretation with stakeholders lead to developing pointers for intervention."

As this study relates to marketing, the value chain analysis in this case primarily focused on harvesting of fish from water bodies in the two project districts till its final consumption. The field study went through an iterative process of data collection, validation and triangulation in identifying the value chain linked to fish produced in the region.

The field study covered studying of experience of cooperatives related to marketing, functioning of local markets, linkages with distant markets like Delhi, Kanpur, Lucknow and Gorakhpur. There was interaction with direct actors like traders, commission agents, processors, retailers, consumers and members associated with marketing in cooperatives. There was also interaction with hatchery owners, fish seed suppliers, officials of coop & fisheries department. The focus of the study was to make qualitative assessment of current value chain and get insights on functioning and dynamics of the value chain. Collection of data and information happened through free flow interaction with VC actors. Checklists were used in the data collection process to remain focused on the study objectives.

3 Findings of Literature Review

3.1 Inland Fisheries in India

Inland water bodies in India comprises of 2.35 million hectares of ponds & tanks, 3.15 million hectares of reservoirs, 0.2 million hectares of floodplain wetlands and 29, 000 km of rivers[3]. The production from fish from inland water bodies in India is estimated to be 3.6 million metric tons. Currently, the production of fish is growing at a rate of 6 percent per annum. Carps contribute 87 % of inland fish production in India. The current level of productivity of fish from inland water bodies is very low. Considering easily achievable level of production of 1 ton per ha per year, fish production from existing inland water bodies like ponds, tanks and reservoir can easily go up to 5.5 million metric tons in a year. In India, fish cultivation was originally confined to eastern region of India like West Bengal, Assam, Bihar, Jharkhand and Orissa. In due course, cultivation of fish in existing water bodies started in States like MP, UP, Rajasthan & Tamil Nadu. During last few decades, there has been substantial growth in scientific fish cultivation in coastal Andhra Pradesh, West Bengal and Haryana.

In context of India, primary responsibility of fisheries rests with State Governments. In context of inland fisheries, most of the State Governments including Government of MP focuses on optimizing production and productivity and improving welfare of fishermen. In recent years, some of the State Governments have come out with fishery policies and also exclusive reservoir fishery policies. Most of the policies relate to leasing of water bodies for purpose of fisheries and introducing scientific farming practices. There has been thrust on production of fish seeds. Despite efforts by Government, inland fishermen continue to suffer from plurality of ownership, lack of credit facilities, lack of technical know how, illegal poaching and deliberate poisoning.

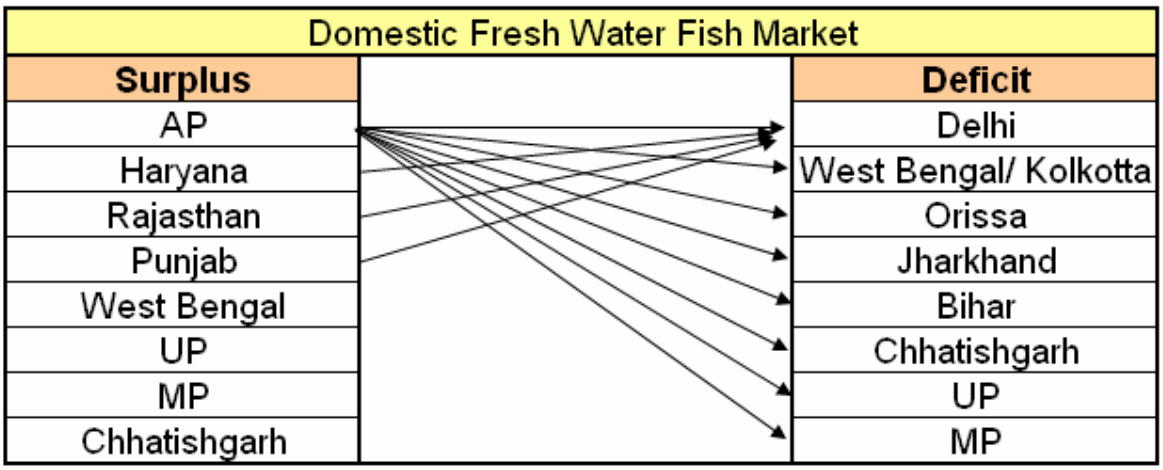
Overall, there has been an increasing trend in demand for fresh water fishes. Demand is primarily for Indian Major Carps (Catla, Rohu and Mrigal), Hilsa and Chinese Carps. Most of the fishes are sold fresh. There have been very limited efforts related to value addition through processing like drying, smoking, canning and pickle making. Usually, fresh fish fetches premium price in the retail market. This demand is being met either by increasing trend in production through semi intensive fish farming in fish ponds or through extensive farming in other water bodies. Despite continuous efforts by Governments, semi intensive farming in exclusive fish ponds has not gained momentum across the country. It is only

distinctly visible in AP. Hence further demand for fish can only be met through extensive fish farming in other water bodies.

Most of these water bodies are Common Property Resources (CPR) meant for other purposes like irrigation, water conservation or for common use at village level. There is potential to take up fish cultivation in such water bodies. With minimal inputs and scientific management practices, the current level of production can be doubled. However, the community associated with these water bodies are new to cultivation of fish. Overall, there is need to enhance access and control of fishermen associated with these water bodies, renovate these water bodies, introduce scientific cultivation practices and link to market.

3.2 Freshwater Fish Market in India

The annual per capita availability of fish in the World is 12.1 kg. In context of India, it is 3.2 kg. The annual per capita consumption of fish is increasing every year. This is mainly due to increase in purchasing power of consumers and their preference of fish being a low cost animal protein. Overall, there is a steady domestic demand for fresh water fish i.e. mainly Carps and Hilsa. Consumers generally prefer fresh fish. There is very limited processing of fresh water fishes in India. Inland fish market is quite informal in the country. Marketing channels are generally short. Producers' share in retail price is estimated to be more than fifty percent. The following diagram details the overall surplus and deficit scenario of fish across India.



Overall, there is a gap in demand and supply of fresh water fishes in North and East India. There is surplus of fish in States like AP, Haryana, Punjab and Rajasthan. Overall the deficit in fresh water fish is met by AP. Neighbouring surplus States like Haryana, Punjab and Rajasthan caters to the requirement for fresh water fish in capital city of Delhi. There is very limited export of carps from

West Bengal in India to Bangladesh and also import of Hilsa from Bangladesh to West Bengal in India. Inland fish market in India has evolved on its own. There has been limited intervention by Government to strengthen the inland fish marketing. In few instances, Government has constructed market yards in wholesale markets.

4 Existing Value Chain

4.1 Predominant Inland Fish Value Chains in the Project Area

Broadly, there are three predominant channels in the fish value chain functioning in the project area.

- In most of the water bodies, the harvested fish goes to the **local towns** including Jhansi city for auction, from where it goes to the local retail market in rural and urban areas. This mainly happens in case of **small and medium water bodies** and those controlled by cooperatives.

- In case of **large water bodies** usually associated with contractors, fish is harvested in lot and sent to **distant markets** like Gorakhpur and Lucknow. In this case, the whole sale trader buys fish at mutually agreed rate (decided based on prevailing price and mutual trust) and sale to local retailers.

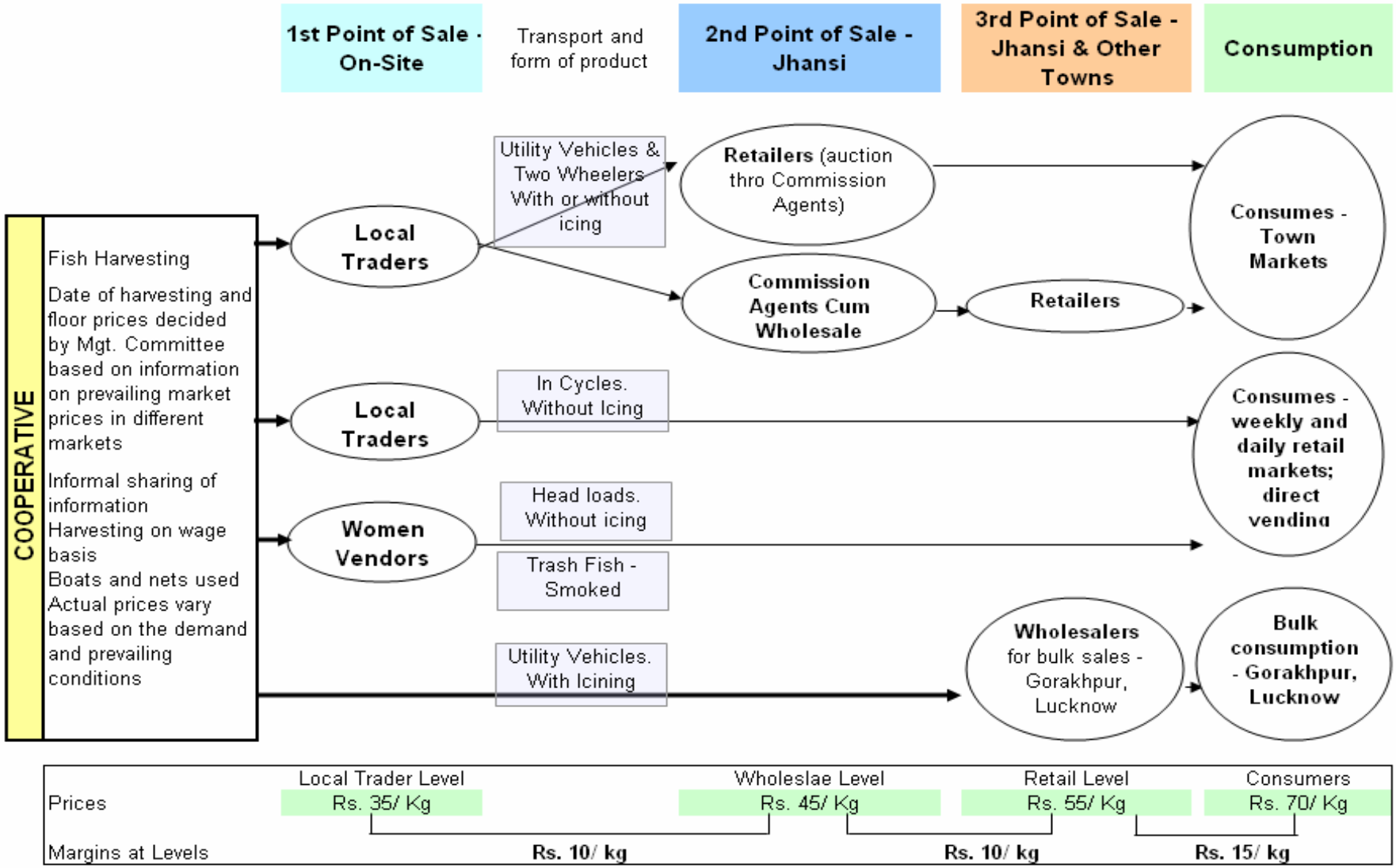
- Depending on extent of deficit, fish from **coastal Andhra Pradesh** gets delivered to commission agents cum wholesalers in wholesale markets and local markets, from where it goes for retail sale in rural and urban areas.

In all the cases, whole fish is marketed. Fish is preserved mainly through icing. The level of application of ice/packing depends on travelling and storage time.

4.2 Current Marketing Practices by Cooperatives

In most of the Cooperatives, initially, the key members try to collect information on prevailing price from different markets. The Managing Committee decides on floor price for sale of fish and the date of harvesting. The floor price is applicable to traders and retailers who would like buy fish from pond site. The actual price of sale varies, which depends on amount of fish harvested and participation of retailers and traders. The information gets disseminated informally. Fish is harvested on wage basis with use of boats and nets. In a year, most of the fish gets harvested in 2 to 4 lots. Fish is generally graded into two groups i.e. Carps and trash fishes. The following details the mode of sale (in order of preference) of carps and related market channel:

Current Practice by Cooperatives - Marketing of Fish - Markets, Channels, Players and Practices



- Key members carry fish in bulk to the market in local towns and cities, where it is auctioned (facilitated by commission agent) or sold to commission agent cum wholesalers. Local retailers either participate in auction or buy fish from wholesalers.

- Traders buy fish at pond site and sale through auction in key local markets. Fish from these local markets further goes for local retail sale.

- Key members carry fish in bulk to distant market like Gorakhpur and Lucknow, where it is auctioned or sold to wholesalers. Further the fish goes for retail sale in the area.

- Local retailers (mainly male) buy fish at pond site and sale in weekly markets, regular retail markets in towns and vending (in cycle) in both urban and rural areas. A large proportion of retailers belong to fishermen community.

The trash fishes are sold to women vendors. The trash fishes are burnt/ smoked on floor (near the water body) to enhance the shelf life. The women vendors' sale the smoke fishes in regular retail markets in towns or in weekly markets in rural areas. Most of the women vendors belong to fishermen caste.

Besides this, certain quantity of fish goes for consumption at family level. There is incidence of poaching and poisoning of fish. At times, the local elites ask for fish as gift or at a subsidized price.

4.3 Activities, Actors and Enterprises

The key activities along the value chain include harvesting, auctioning, wholesale buying and retailing. After the harvest, small proportion of fish directly goes for retailing. In this case, fish does not go through auctioning and wholesale buying. Similarly, at times there is wholesale buying of fish at mutually agreed price, without routing through auctioning. This happens when bulk quantity of fish is sold to wholesale buyers at distant market (mainly in case of contractor controlled ponds) like Lucknow and Gorakhpur.

Transportation is an interlinked activity in the value chain. The mode of transportation depends on quantity of fish and travel distance. For example cycles used by local retailers; motor bikes & autos used by traders; and utility vehicles are used for transportation to more than 100 km. Fish from AP is usually transported in heavy trucks and gets unloaded. **Icing** is the only preservation practice observed in the value chain. Cat fishes like Magur is kept as live in water tanks.

Grading of fish is observed at different levels. It is observed after harvesting, before auctioning and before retail sale by wholesalers. After harvesting, fish is graded based on their broad variety (linked to price range) like carps and trash fishes. Usually, grading depends on quantity of fish. Carps are further graded into two sizes i.e. large and small. Carps could be also graded based on variety like separately selling the Rohu (as it fetches premium price) and Chinese Carps (fetches lower price). Overall, grading relates to final price of fish. Grading of fish based on weight range is not practiced. This is because price of carps (predominant group of fish) prevails in a range.

Value addition through processing is not prevalent. This is because fresh whole fish fetches premium price in the market. At retail level, value addition through sale of cut fishes is observed. This is observed only in case of large carps and practiced more as a convenience to both consumer and retailer. Consumers prefer to buy large carps but in small quantity. However, **trash fishes are processed** through smoking. This is practiced for preservation than for value addition. Traditionally, smoking is practiced as a low cost preservation technique to store trash fishes for few days.

Harvesting of fish is done by persons who have control on the water body. This could be cooperative or contractor. In some cases, there is mix scenario on decision for harvest where in contractor has an influence on harvesting of fish. This may be linked to indebtedness of cooperative to contractor. There are local traders who buy fish and sale in wholesale markets.

The **commission agents cum traders** are the key players in the wholesale market. Some of them concentrate more as commission agents, while others concentrate as traders. This depends on demand and supply of fish in specific market. In small towns, there is practice of retail sale (in their counter) by the commission agent cum traders. Some of the leading commission agents cum traders also get associated with **providing credit to water body owners** (key member of coop & contractor), **supply of fish seeds** and **institutional bulk sale** (like to Army). During the field study, we witnessed commission agent who have set up hatchery for fish seed production. Earlier, some of these commission agent cum traders were into leasing water bodies (formally or informally), but now days they do not prefer to get into production of fish.

Actors at retail level include those having open retail outlets in towns, practicing cycle vending and selling in weekly market. There are also exclusive class of women vendors who sell in weekly markets in rural areas and in regular market in towns. Some of the wholesalers are also involved in bulk sale to institutions, which is not considered as a premium segment.

The **other actors** in the value chain include the transporters, labourers and ice factories. In large wholesale markets like Jhansi, Gorakhpur, Delhi, Lucknow and Kanpur there are transporters who mainly concentrate on transporting fish. The vehicles are used by wholesalers for movement of fish from one market to other or by group of retailers to jointly carry fish to their retail points. At local level, vehicles are used on occasional basis. Most of the wholesalers have 1-3 labourers to handle fish. Based on demand, ice factories supply ice in whole sale markets. In large wholesale markets there are units to crush the ice into flakes. In these markets, both ice flakes and ice blocks are sold to wholesalers and retailers.

Apart from water body owners, commission agent cum traders and retailers are two key actors observed in the value chain. The following sub sections further explains their strengths, weaknesses and opportunities.

4.4 Key Actor – Commission Agent cum Trader

Most of the commission agents cum traders are recognized in the market. They are an integral part of the wholesale markets. Being with the trade over generations, they have strong linkages between traders in the region and are quite aware about intricacies of the trade. Their strength lies in being able to finance water body owners for assured supply. Most of them are able to recover their basic cost through income from commission.

Despite long association in trade, they find it difficult to predict supply of fish from local area, which is a key factor influencing their trade. Most of them are keen to sell fresh fish, but unable to locally source fresh fish. They find it difficult to deal with a group of people. They prefer to deal with specific person in the coop. With increase in interest on fish cultivation at local level (by contractor and Coop), they find it difficult to take water bodies on lease and manage it. Earlier, they were informally or formally taking water bodies on lease.

Most of them feel that buying from water body site is an opportunity for them to cater to the premium segment i.e. fresh fish (carp) market. They are open to having linkage with cooperatives, but would be comfortable in dealing with specific person in the cooperative. They can use real time market information to their advantage. In the process, coop may get higher price for their fish. They do not consider Andhra fish supply as competitor to local fish/their trade. Margin obtained by being involved in wholesale trade of Andhra fish, helps them to meet their regular expenses.

They feel that due to high demand for fresh fish, the local fish gets sold at pond site and do not reach the market. This affects their income from commission. At times unforeseen bulk harvesting and dumping of fish from local reservoirs seriously

affect their trade. Overall, the commission agents cum traders feel that marketing of fish in the region is quite competitive.

4.5 Key Actor – Retailers

Different types of retailers cater to different markets like those associated with urban areas and with villages. Those associated with rural areas sell both in weekly markets and also though cycle vending. Women retailers are usually associated with sale of smoked trash fishes and small carps. Some of the retailers are not associated with retailing on a regular basis. The retailers know their local market well. They have good linkage with wholesale traders. They are able to operate with low investment. Irrespective of fluctuation in price, they get steady margin of Rs.10 per kg in case of carps. They have low negotiation skill while dealing with wholesalers. In case of a rise in price, they find it very difficult to convince the consumer.

The retailers in rural areas spend considerable amount of time and cost in accessing fish from wholesale market. Most of them feel that, accessing fish from local water bodies would enhance profitability of their business. With this some of them who are occasional retailers, would prefer to take up retailing as a full time activity. There is also potential to diversify the product profile like women retailers getting into sale of carps. Similarly, there is potential to enhance income by selling cut fishes, which is currently not widely prevalent.

The retailers feel that nexus between some of the retailers and wholesalers is affecting the auctioning process. Some of the retailers suffer from problems like not getting a retail space in semi urban areas, snatching of fish by influential persons and harassment by police. These problems are more prevalent amongst retailers belonging to fishermen communities.

4.6 BDS Providers

State Government is mainly associated with providing business development services. The focus of State Government is more on enhancing production through culture fisheries (including production of seed) and facilitating leasing right of water bodies controlled by Govt. There is very limited support of Government related to marketing of fish. In few instances, Cooperative Department has facilitated formation of Marketing Society of commission agents and constructed market yards in wholesale markets like Lucknow and Gorakhpur. Under a World Bank aided project, Fisheries Department, Government of UP has financed construction of market yards, provided cycles and kiosk to retailers.

Banks provide credit linked to subsidy schemes. Most of the schemes relate to production. There is hardly any Govt scheme related to marketing either by Coop or individual traders. Nevertheless, established traders are able to access cash credit, like any other business. Wholesale traders are providing working capital finance to contractors or Coop associated with water bodies. Hatchery owners and fish seed suppliers also provide seeds on credit. Except for initiative of Oxfam/Vikalp, study team did not come across any NGO or CBO working on inland fisheries in the region. Government functionaries associated with Coop and Fisheries Department are aware about activities of Vikalp. There are no leading corporate entities directly associated with the value chain or providing any BDS services.

4.7 Experience across Cooperatives in Marketing

Current effort in the project area is to enhance practical access and control of Cooperatives on the water bodies. Cooperatives go through a transformation process from being controlled by contractor, to being controlled by few MC members and finally by members. It was observed that contractors generally prefer to control large water bodies. Usually, the decision on harvesting is taken by those controlling the water body, like MC/Members in case member controlled cooperatives. In case of Contractor/few MC member controlled cooperative there is preference for harvesting by outsiders, selling in bulk to distant markets, confusion on decision relating to floor price for sale. However, the scenario is reverse in case of member/MC controlled cooperatives. In these cases there are preferences for harvesting by members, selling small quantity in local markets, sale to local retailers and clarity in decision relating to sales price of fish.

It was observed that, irrespective of level of access and control by Cooperatives, women retailers have access to only trash fishes. Except for smoking of trash fishes, icing in case of bulk transportation to distant markets, other preservation practices like drying and freezing is not practiced. Preference for on site sale was not observed across water bodies/coop. Information on harvesting is not widely disseminated across traders and retailers. It only gets disseminated informally and reaches to specific traders and retailers. There have been attempts by key members to take fish in bulk and sale in distant markets like Gorakhpur. Many a times, experience has not been good. They were not able to get the expected price for fish and overall income for the lot. By the time they reach the market, the price fluctuates downward. At times they are affected by exploitative practices of traders and even vested interest of members who have taken the fish to the distant market. Traders also complain of improper handling and thereby spoilage of fish by the time it reaches the market.

5 Findings of the Study

5.1 Consumer Profile & Fish Markets

Household consumer profile relates to purchasing power i.e. also a factor of income at household level. Low income households generally buy local trash fishes (smoked), while others prefer to buy carps, preferably local fresh fish. Amongst carps, there is preference for large size carps and Rohu. Live Magur (because of its freshness) is also preferred by these consumers. Institutional consumers like hotels, hostels, army cantonment and railways prefer to buy carps. While buying carps, institutional consumers give value to lower price than on freshness of fish.

Extent and Kind of Fish Produce/ Product Sold in Different Markets

Produce/Products	Markets						
	Local - Rural	Local - Towns	Jhansi	Gorakhpur	Lucknow	Kanpur	Delhi
Local Rohu							
Local - Other Carps							
Andhra Carps							
Andhra Magur							
Local Magur							
Local - Small Size Carps							
Carps - Cut Fishes							
Marine Fishes							
Marine Dry Fishes							
Mix Riverine Fishes							
Live Carps							
Frozen Fishes							
Canned Fishes							
Fish Pickles							

Colour Codes used	
	Product is not sold/ observed in the market
	Very limited sale
	Some quantum of sale
	High sale of produce observed

There is high incidence of sale of local carps in all the key markets including the local markets. The deficit in local carps is met by supply from Andhra Pradesh. This deficit is to an extent of 50% in Delhi, while in other markets the deficit varies in the range of 20 to 40 %. Sale of live Magur is seen to be prevalent in key markets and not so much in local retail markets. However, the sale of smoke fishes is observed in local markets and not so much in key wholesale markets. Wholesale

sale of marine dry fishes was observed in Gorakhpur wholesale market that serves as a terminal transit market for movement of fish from States like Gujarat and Maharashtra to North East/East India.

Value addition like freezing, canning or making pickles was not observed in any of the fish markets. In general, there is preference for fresh fish. Incidence of value addition relates to grading like sorting small and large carps; and also varieties (trash fishes and carps; carps and magur). In some cases, at retail level, value addition is observed through sale of cut large carp fishes. This is mainly practiced to meet preference of consumers who would like buy small quantity of preferred large carps.

Overall, the consumer preference across markets is similar, except for Delhi, where there is also a small consumer segment i.e. south Indian population, that prefers marine fishes. The profile of sale of fish in the market also relates to supply of fish like availability fishes from rivers in Kanpur and cultivation of Magur in and around Delhi in case of Delhi market. Irrespective of market, there is first preference for local fishes. To start with, local fishes (carps and trash) meet part of the demand of local markets. The deficit in key markets like Kanpur, Lucknow, Gorakhpur and Delhi after local supply is met by supply from distant places. The overall gap in supply of carps in all the markets is met by Andhra Carps. In this context, it is important to note that supply of local fish is not uniform across the years. Many a times, huge supply of local fishes (for example when fish is harvested in a big reservoir) distort the demand supply scenario in different market.

5.2 Market Channels

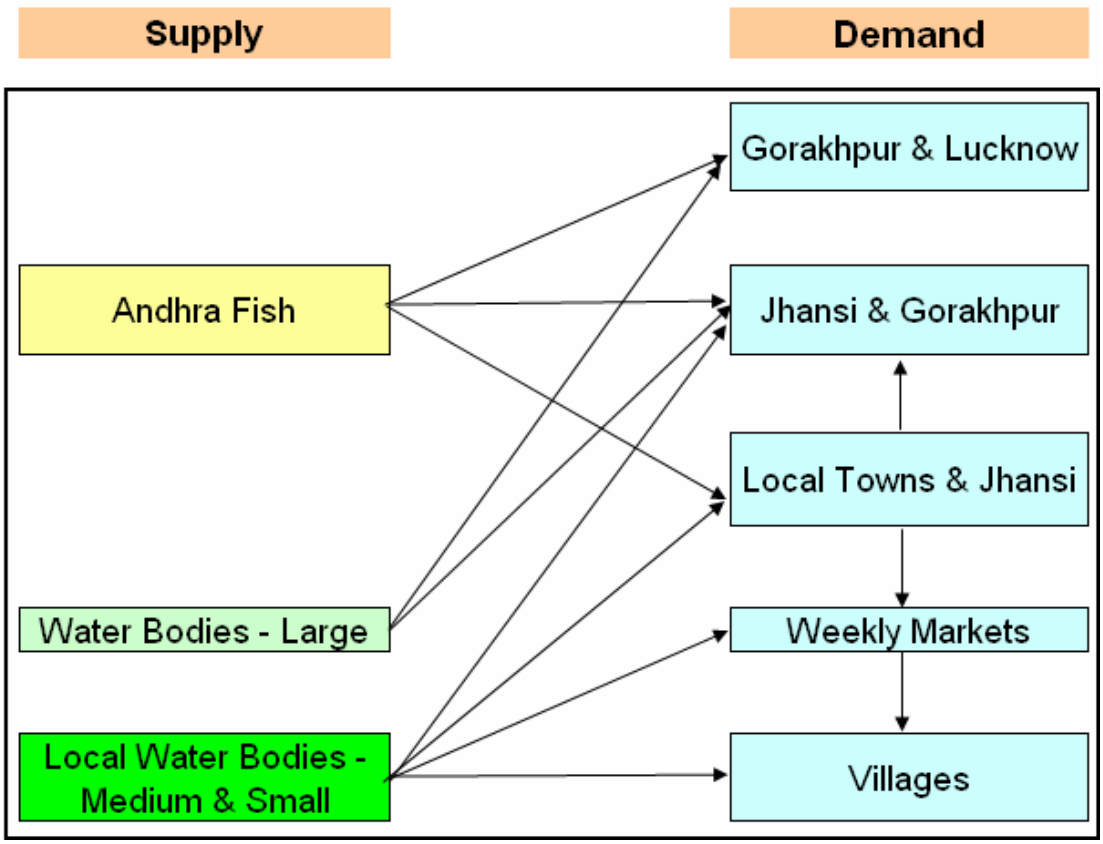
Marketing channels relate to the demand and supply scenario across markets, and the consumer preference. The key marketing channel in the region includes harvesting of fish from water bodies and bulk sale in different markets, which depends on quantity of fish harvested. In case of higher quantity of harvest, fish is transported to wholesale markets. Irrespective of control of water bodies (Coop or Contractor) there is general preference to carry fish to distant wholesale markets. However, there are variants of this market channel, which has been explained in the earlier section of the report.

At an all India level, fish from Andhra plays an important role in meeting the overall deficit in the country. AP supplies fish to metro markets like Kolkotta and Delhi; and deficit States like West Bengal, Orissa, Jharkhand, Bihar, UP, Chhatishgarh and MP. Fish supply from Punjab, Haryana and Rajasthan can be seen as local supply that meets the requirement in Delhi market. At all India level, States like MP, UP and Chhatishgarh presents a scenario of both surplus and

deficit of fish. In recent years, in these States there is an increasing consumer preference to eat fish. This is due to rise in non vegetarian population, increase in purchasing power and fish (being low cost) as substitute to meat. The gap in fish supply is currently met by supply by AP. Unlike other markets like Delhi where there is assured demand for AP fish, the demand for fish in UP, MP (includes project area) and Chhatishgarh fluctuates. In case, there is low quantity of fish harvested, it is taken to local market.

Interaction with market players in the project area and in distant markets revealed the key channels of marketing of fish. Local fish supply includes fish harvested from small & medium water bodies; and from large water bodies like reservoir. Fish catch coming from rivers and stream is very small proportion of supply. Fish from small & medium size local water bodies is generally sold in local towns, Jhansi and Gorakhpur market. Fish from large water bodies usually, harvested in large quantities gets sold in key markets like Jhansi, Gorakhpur and Lucknow. These water bodies are generally controlled by contractors, who are at times financed (for leasing cost, seed stocking) by big wholesale traders.

Picture Showing the Movement of Fish from AP and Project Area to Different Markets



The other key marketing channel is supply of Andhra fish. Depending on day to day demand and supply scenario, Andhra fish trucks gets unloaded directly in local town markets and also for retail supply from key markets like Jhansi, Gorakhpur and Lucknow. Usually Andhra fish do not move from key wholesale markets to local town markets.

In few instances, when the market demand fluctuates due to festivals and social functions like marriage, there is movement of local fish supply between towns. This movement of fish takes place at very low margin (At around Rs. 1 per Kg) with high risk (fish being highly perishable & change in market scenario by the time fish reaches) purely based on trust between the traders.

Once, local fish and Andhra fish reaches the wholesale market in local towns it gets sold through retail outlets & retail vendors in the town and neighboring rural areas. However, these retailers prefer to sale fresh carps, which is a premium product at consumer level. Whenever there is harvesting of fish in local water bodies, they try to purchase fresh fish from water body site. This also leads to saving in time and higher margin for the retailers. However, as frequency of harvesting of fish in local water bodies is very less, most of the times the retailers purchase fish from nearest local wholesale market. It may be important to note that, many of these retailers belong to fishermen community, who are associated with water body (being members of Coop) but they normally do not have continuous access to purchasing fish from Coop. Generally, cooperatives do not practice frequent harvesting and sale of fish.

Besides these key marketing channels in project area, the other predominant exclusive market channel relates to local women vendors belonging to fishermen communities. After harvest of fish in local water bodies, they purchase the trash fishes at lower price, smoke (burn) the fishes and sale in weekly markets. Mainly low income household consumers buy such fishes. Compared to marine dry fishes, this is considered as a premium product for low income families. Hence, there is negligible marine dry fish market in the project area.

5.3 Margins

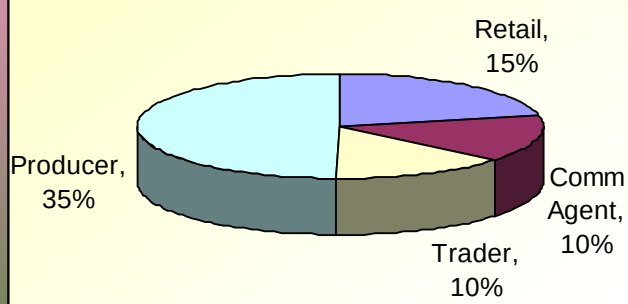
Both retail and wholesale prices of fish was observed to be similar across markets in region. Similarly, the difference in retail and wholesale price was similar across markets and also type of fishes. The following table details the price of different fishes at wholesale and retail level.

Wholesale & Retail Prices of Fishes

Produce/Products	Wholesale Price - Rs. Per Kg	Retail Price - Rs. Per Kg
Andhra Carps	40 - 45	50 - 55
Andhra Magur	55 - 60	60 - 70
Local Magur	55 - 60	60 - 70
Local Rohu	55 - 60	60 -70
Local - Other Carps	50 - 55	60 - 65
Local - Small Size Carps		40 -- 45
Carps - Cut Fishes		70 - 80
Mix Riverine Fishes	5 - 50	Extra Rs. 5 to Rs. 10 per Kg
Mix Riverine Fishes		
Live Carps		80 - 100
Marine Fishes	Varies	Varies
Marine Dry Fishes	25 - 30	35 - 40
Prices of different varieties of fishes is similar across markets in the Region		

The price range of different fishes at wholesale and retail level was observed to be Rs.5 to Rs.10. It depends on extent of spoilage of fish. Price of fishes from river and marine sources varies based on variety and consumer preference. Prices of carp fishes except for Rohu (fetches Rs.5 to Rs.10 higher price) remain with in a range. Cut Carp fishes are sold at a higher price of Rs.10 per Kg than whole fishes. After taking into account the loss in weight due to wastage, the retailers normally earns higher margin of Rs.2 to Rs. 3 per Kg. Further analysis of margin across the key channels i.e. sale of local fish through wholesale markets and sale of Andhra fish in the project area is detailed in the following paragraphs.

Share of Consumer Price at Each Level in Value Chain (includes costs and margins)



In case of local Rohu routed through wholesale market channel, the consumer pays Rs. 70 per Kg, while the producer receives Rs.35 per Kg (50 %). The key expenses at wholesale level include icing, handling, rent & interest on capital. Besides 6% commissions he gets 3% margin on sales of fish. The expenses at retail level include transportation, icing and interest on capital. The margin for retailers is generally Rs.10 per Kg of Rohu which works out to 14 % of sales price.

Andhra Carps are bought at Rs.25 per Kg at pond site and sold at Rs.43 per Kg at wholesale level. The cost of transportation is estimated to be Rs.8.5 per Kg (Rs.3.5 at local level and rs.5 for long distance transportation). Other expenses include Rs. 4 per kg of fish as cost of ice, Rs.0.5 as cost of husk (packing material in the truck), Rs.2 as labour for loading and unloading. In this case, the Andhra based trader is able to get margin of Rs.2 per kg while the local wholesale trader buying fish is earning margin of Rs.1 per Kg.

The cost structure of both Andhra fish and local fish seems to be quite competitive. The margin to the value chain players like commission agent cum wholesalers & retailers is at a reasonable level that compares to the level of risk associated with the VC player. Compared to other agriculture and allied commodities, the price the producer gets vis a vis paid by final consumer is quite reasonable.

Prices and Margins Across the Value Chain

Actors in VC	Heads of Costs	Rs./ Kg	% to Cons Price
Consumer	Price (for Rohu; avg)	**70.00**	100%
Retailer	Margin	**10.00**	14%
	Transport	3.00	4%
	Ice	1.00	1%
	Interest on Capital	1.20	2%
Comm Agent	Margin	**2.00**	3%
	Transport	4.20	6%
	Handling	2.00	3%
	Rent and Interest	2.00	3%
Trader	Margin	**2.00**	3%
	Ice	1.00	1%
	Handling	2.00	3%
	Transport	5.00	7%
Producer	Price Received	**35.00**	50%

However, if we relate with findings of the market channels (Retailer purchasing fish from local town market when fish is available locally) with price margins, there is potential for higher return to both producers and retailers by removing the wholesale market i.e. doing away with transportation of fish to wholesale market and further fish coming back to local market.

During the field study, some of the Commission agent cum Wholesale Traders expressed that there is high demand for fish. Producers are getting better price by selling fish locally. As fish is not coming to wholesale market, they are losing their earning as commission agent. Most of the VC players including producers, traders and retailers expressed opinion that, the producers would get better price by marketing fish locally. In this context, it is important to estimate the overall market potential for fish in the region.

5.4 Market Potential

The fish from local areas is the primary source of fish supply in all the key wholesale markets like Jhansi, Kanpur, Lucknow and Gorakhpur; except in case of

Delhi where Andhra fish supply dominates. Fish from project area including from Cooperatives is supplied mainly to Jhansi (from Tikamgarh area) and Gorakhpur (from Chhatarpur area) wholesale markets. In some instances, fish from local area also gets sold in Lucknow and Kanpur market. However, sale of fish from project area to Delhi was not observed during the study.

Particulars	Jhansi	Gorakhpur	Lucknow	Kanpur	Delhi
Profile of Commission Agents	Commission Agents	Commission Agent cum Wholesale Traders	Commission Agent cum Wholesale Traders	Commission Agent cum Wholesale Traders	Wholesale Traders
Active Commission Agents (Approx)	20	60	40	35	100
Avg qty of Fish handled by Commission Agent in a Day - in Qtls	5	15	15	20	40
Size of Market - Tons per Days	10	90	60	70	400
Supply of AP Fish - Truck Loads	2 in a week	2 per day	2 per day	2 per day	10 per day
Supply of AP Fish - Tons per Day	3	20	20	20	200
Supply of Local Fish - Tons per Day	7	70	40	50	200

During the field study, an attempt was made to understand primary activity of commission agents across key markets. Commission Agents in Delhi primarily function as wholesale traders that imply that it is a deficit market. Most of the commission agents in Jhansi do not get involved in trade that implies that the Jhansi market witnesses both surplus and deficit scenarios. In other key markets, there is incidence of auction and wholesale trade. The above table details the current size of the market. Moreover, the demand for fish is increasing day by day. These are potential markets for bulk sale of fish at a lower price (being iced fish), as practiced by Andhra based producers.

With increase in availability of fish and once local fresh fish demand (premium segment) in the project area is met, there would be need for strategies to compete with Andhra based fish traders. In this context, an estimate of demand for fish in project area and likely supply of fish at optimal level production has been estimated.

Local markets include villages, weekly markets, local towns and also Jhansi market. These markets mainly receive fish from local areas, followed by fish supply from Andhra (through local town markets & Jhansi). The demand for fish in the project area is estimated to be 5250 Tons in a year.

Particulars	Villages	Weekly Markets	Local Towns	Jhansi Market
Villages/Towns - approx	2000	500	10	1
No of Retailers	1 in 2 Villages	80 Retailers	10 in a Town	20 per Commission Agent
Retailers	1000	100	100	200
Avg Sales per Retailer - in Kgs per Day	10	15	20	20
Total Sales in a Day - in Tons	10	1.5	2	4
Total Sales in a Year - 300 Days - in Tons	3000	450	600	1200
Total Demand in the Project Area - Tons per Year				**5250**

An attempt has been made to estimate the likely production (thereby supply) of fish in the project area. In the project area, there is approximately 1,600 water bodies of which 10 are large (Avg. 100 hectares), 100 are medium size (Avg. 20 hectares) and 1,490 are small (Avg. 5 hectares).

Particulars	Large	Medium	Small	Total
No of Water Bodies - Approx	10	100	1490	1600
Average Water Area - in Ha	100	20	5	
Total Water Area - in Ha	1000	2000	7450	10450
Fish Production - Tons per ha in a Year	0.1	0.2	0.5	
Total Fish Production - Tons in a Year	100	400	3725	4225

Productivity of water bodies varies in the range 1 quintal to 5 quintal per ha in a year. Productivity in case of large water bodies is lower than small water bodies, as it is difficult to ensure quality stocking and management practices in case of large water bodies. The optimal level of fish production in the project area is estimated to be 4225 tons in a year. With inputs from K Link study on mapping of water bodies, this data can be further refined. The estimated demand for fish in the project area is higher than the likely optimal production in the project area.

Overall, there is potential to market fish locally and also in distant markets like Lucknow, Kanpur and Delhi. The margin in case of marketing fish locally is much higher than marketing in distant key markets. This is because price of fresh fish is higher than iced fish. There is no role for wholesalers (there by higher margin) if fish is marketed locally.

5.5 Role & Involvement of Women

Traditionally, women are involved in processing and marketing of trash fishes. Once fish is harvested, they purchase the trash fishes (generally at a lower price) and burn/smoke it at the water body site. They also buy trash fishes (fresh or

smoked) from nearby wholesale markets in local towns. Thy carry the smoked fishes on their head and sale in local weekly markets or in daily markets in local towns. These women belong to lower income families within the fishing community. The consumers associated with women vendors also belongs lower income families in both rural and urban areas. At times, women vendors also get associated with sale of small size carps. Unlike involvement of women in handling and processing of fish in case of wholesale marine fish markets, it is not observed in case of inland fish markets.

Usually, women are not associated with production and harvesting of fishes. There has been effort by Sangathan to promote cooperatives involving women and enhance women's membership in existing cooperatives. Interaction during field survey revealed that women are yet to be active in management of water body that includes stocking, feeding, watch & ward and harvesting. It is also practically difficult for women to get involved in such activities. However, involvement of women is significant in context of allied activities associated with water bodies like cultivation of Singada (when water is there) and cultivation of vegetables (when water is not there).

With regards to marketing, currently women vendors are associated with an exclusive value chain (dealing with trash fishes). Because of their lower socio economic status and not having access to wholesale market, they are not associated with the sale of carps. Traditionally, they do not have access to high value fish (carps) harvested at pond site. They also find it difficult to travel long distances and face harassment while carrying fish. Some of them get involved in vending as an occasional activity, mainly when there is no scope for agriculture wage earning.

Unlike other agriculture and allied commodities, wherein women are usually involved in production, in this case women (more so poorest women) are associated with marketing. They have some access and control over the income. There is potential to systematically work with women vendors so that they play a key role (marketing) in the value chain, and in the process, enhance their livelihood status. There is potential to associate them in marketing of high value fishes like carps. Similarly, with technology inputs, the current preservation method through smoking could also be further improved. Broad analysis of value chain also reveals the scope for active involvement of women in rearing of fingerlings.

5.6 Gap in Market Access

Assessment of markets, market channels, margin and market potential reveals that, there is demand for fresh carps like Catla, Rohu and Mrigal. Except for festive seasons, the demand for fishes is more or less similar throughout the year. Although there is demand for fresh fish through out the year, currently bulk

supply of fresh fish from local areas is fluctuating and thereby distorting the market. Icing of fish is generally not practiced and there is also delay in supply of fish. All this leads to low realization of income in case of local fishes.

Currently, supply of fish from AP, meets the overall unmet demand and also the unforeseen fluctuation in demand. Although consumers prefer to buy local fresh fishes, due to non availability of local fishes, they go for iced fishes from AP. Meanwhile, there is emergence of clear market segment (from product point of view) for local fresh water fishes. However, the consumer profile in case of fresh and iced carps is similar. Hence, it can be safely interpreted that, there is no competition from AP fishes, and there is huge unmet demand of fish in the region. Assessment of market potential and likely production in the project area also revealed that the supply of local fish is not likely to cross the likely demand.

Lack of systematic harvesting (harvesting in small lots with more frequency) seems to be critical gap in the value chain. Besides this, there is poor handling of fish during harvest (use of appropriate nets, where fish is not killed), and inadequate/no use of ice in short distance transportation. There is scope for introducing scientific icing practices. There is limited practice of grading of fish (with regards to variety) which can be improved. At times, preference for bulk sale in distant market (than selling locally) leads to spoilage and low realization of fish. Currently, there is no preferential treatment for supply of fish to local retailers, who may be able to offer higher price. As mentioned earlier, there is also scope to improve the smoking process of trash fishes.

At retail level, retailers continue to struggle to get space in markets for selling fish. There is need for advocacy effort so that local authorities designate space in markets for sale of fish. Basic infrastructure like for keeping ice, water supply, common weighing facility and facility for storage of fish could be provided. Similarly, there is no market related infrastructure for handling of fishes at water body sites.

The study also attempted to explore market access beyond the current value chain. Review of literature and also interaction with leading VC players revealed that there is limited/no demand for export. There is demand for fresh fish from Bangladesh, which is currently being met from West Bengal. Considering the long distance from project area, it would be difficult to supply fresh fish to Bangladesh.

Like marine fishes, inland fishes can be preserved for long duration by freezing, canning, smoking and drying. Freezing and canning is preferred in case of high value fishes (it could be carps). As fresh/iced fish is more or less available, consumers do not prefer frozen and canned fishes. Smoking of low value fishes already in practice. As there is no bulk availability of low value fishes, drying of

inland fishes is not practiced. Overall, low income families prefer smoke fish (compared to dry fish) and other income families prefer fresh fish or ice fish as alternative to fresh fish (compared to frozen fishes). However, in the long run if demand goes up manifold (not likely), and the local production is not able to meet the requirement, high cost preservation like freezing may become part of the value chain. Currently, preservation and processing of fresh water fishes would lead to value reduction than value addition.

Like Magur, live sale of carps can fetch higher price. Unlike Magur, carps are not hardy species. They need more Oxygen and also clean water for transportation. This could be done for short distances as is practiced some of the farmers in Haryana selling live carps to five star hotels. The technology is not standardized. Cost would also be higher. This can be attempted in a small scale, in places close to metro markets, which may not be feasible in the project area. Door step delivery of fish (like through internet marketing) in case of metro cities like Delhi could be an option. However, quality remains a concern in case of door step delivery. This also requires systematic brand promotion, logistics and planning.

5.7 Gap in Capacities of Fishing Communities

Value chain assessment also focused on understanding the experience of cooperatives with regards to marketing. Ability to supply fresh fish of different sizes and varieties through out the year is one of the core strengths of cooperatives. They have access to information on price in different markets, but not on quantity of fish arrived in the markets. Commission Agent cum Traders also face difficulty in predicting the supply of fish in their market, which is a key factor influencing price. In many cases, cooperative members are not aware of advantage of periodic harvesting. Those who are aware, find it difficult to practice, because of negative social dynamics (often conflicts & vested interest). They are forced to harvest in large quantity and at times sale bulk in distant market at a lower price. Lack of trust among members, MC members combined with negative influence of elites in the village and lack of commitment from bulk buyers affects marketing the process. There is need for strengthening the cooperatives through systematic member education.

During field study, both members and MC members in different cooperatives expressed that there is local demand for fish. Experience of bulk marketing has yielded limited success. Local retailers directly or indirectly associated with these cooperatives, also felt that their income (and also income to coop) can increase substantially, if they have continuous access to fish in local water bodies. However, this requires a strong social reengineering process. Hence the current practices of bulk selling in different markets, also needs to be further strengthened. There is need for promoting win-win market interface between wholesale traders and

coops. The following table further details the gap in capacities of fishing communities like women fish vendors, retailers, coop members and MC members with regards to technology/skills, marketing and management. *(Cells with green colour show that the gaps are highest and are of high priority, Blue denotes next level of the gap. Blanks mean that the capacity is not applicable for the particular group)*

Particulars	Women Fish Vendors	Retailers	Coop Members	MC members
Technology/Skills				
Harvesting				
Icing Practices				
Smoking - improved				
Staggered Harvesting				
Marketing				
Grading				
Negotiation Skill				
Facilitation				
Sourcing Information - Demand & Supply				
Management				
Planning - Harvest				
Coordination/Linkages				

6 Recommendations

6.1 Summary Findings

In inland fish market, consumers prefer fresh fish i.e. mainly carps. In case, fresh fish is not available, they go for fish preserved in ice. The demand for fish is increasing day by day. This is mainly because of increase in purchasing power, increase in non vegetarian eating population and preference fish as low cost protein (compared to meat). Study of different markets in the region revealed that, there is huge unmet demand for local fresh fish, which is currently being met by iced fish from AP. AP fish (as a second preference) gets sold at a lower price as an alternative to local fresh carps. Price margin of local fishes and also Andhra fishes is quite competitive. Overall, the fresh water fish market is operating at a competitive level. Traditionally and so also now, fishing communities are associated in catching/production of fish (through Coop) and at retail level (both men and women). They are not exposed to wholesale trade.

Broad estimates suggest that, optimal level of production in the project area can safely cater to demand for fish in the project area. While the demand for fish is throughout the year, the supply is fluctuating in nature. Supply pattern do not match with demand pattern. Market is distorted by irregular harvesting and thereby irregular bulk supply. This results in dependency on supply of Andhra fish and bulk sale of local fish in distant market at a lower price. In this scenario most of the actors in the value chain including Andhra based suppliers do not benefit. Experience of cooperatives relating to marketing also suggests that members get higher income, when fish gets sold at water body site. There has been occasional success and experience of failure, when there was attempt to sale in bulk in distant markets. Commission agent cum wholesale traders in distant markets expressed that in most of the cases, fish gets sold locally as it fetches higher price (thereby they are loosing income from commission and trade). They have expressed that based on their requirements they are open to the idea of buying fish from coop at pond site, which may be a win-win proposition for them and also the cooperatives.

There is limited scope for getting higher price through exports. As consumer prefers fresh fish and it fetches higher price, currently there is limited/no scope for value addition through preservation. Market for processed fish like pickles has not yet developed. The scenario is not likely to change in immediate future. Hence the overall focus for marketing of fish in the project area needs to be local followed by distant market at regional level.

Analysis reveal that, even if productivity reaches to optimal level (doubling of current level of production), there will be demand for fresh fish (carps) at local level thereby cooperatives having access to premium market (fresh carps). With direct linkage between local producers and consumers in the project area, through retailers, the current value chain can get shortened. The gains through shortening of value chain can benefit fishing communities – producers and retailers (particularly women fish vendors).

6.2 Proposed Marketing Strategy

The proposed marketing strategy is based on findings of the value chain assessment and relate to marketing of fish from the project area viz. Tikamgarh and Chhatarpur district in MP. The overall focus of the strategy would be to facilitate marketing than getting involved in marketing.

The following approach (mentioned in order of preference) could be taken while facilitating marketing of fish at cooperative level:

- On site sale to retailers
- On site sale to traders
- Bulk sale to wholesale traders in local town market including Jhansi
- Bulk sale to wholesale traders in Lucknow and Gorakhpur markets

In case of bulk sale to wholesale traders, negotiation needs to be made so that trader procures fish based on pre-decided floor price & quantity. In due course, auction of fish at water body site could be promoted.

The **core strategy** could focus on selling fresh carps (product), on site sale to retailers and traders (place), at competitive price preferable decided based on floor price/auction (price), through facilitation between coop and traders/retailers (promotion). This strategy would require proactive sharing of harvesting plan (date/time, quantity, floor price) to traders and retailers. There would also be need for technical training on scientific harvesting, handling of fish, icing and smoking. Besides technical skills, stakeholders are required to be trained on management skills like planning, enterprise management, negotiation and market facilitation skill. Implementation of core strategy would require handholding support of young professional team guided by leading practitioners that would focus on overall production enhancement and market facilitation.

In terms of the consumer profile, the coverage should be for all classes of the households, with primary focus being on families consuming carps; Sale of Fresh Carps. It is suggested that the focus be on the local markets, however other markets could be tried out over a period of time.

On-site sale to all market channels is suggested, with focus on sale to the retailers. The prices need to be based on pre-decided floor prices with option of auction depending on the numbers of buyers.

To improve incomes and increase invovlment of women, key suggestions are - Training of women on fish handling practices, preservation through icing, processing/preservation through smoking, product diversification to sale of carps, Entrepreneurship development.

Key areas of capacity building that have emerged are Technical training on scientific harvesting, handling of fish, icing and smoking, and orientation and training on management skills like planning, enterprise management, negotiation and market facilitation skill

Besides this core strategy, the following **pilot initiatives** could be tried on a small scale. Based on experiences, future scale up can be planned.

- Promoting groups for catching/harvesting of fish
- Sale of live fishes in major cities
- Sale of brooder fishes to hatcheries
- Sale of small fishes as fish seed for stocking in large reservoirs
- Tie up with ice factories for bulk purchase of ice so as to reduce cost
- Develop insurance product for fish stock, in association with insurance companies
- Developing market yards with infrastructure facility like water, storage facility and ice crushing units at weekly markets and whole sale markets
- Develop harvesting & post harvest infrastructure at water body sites like platform for grading, weighing facility, ice storage facility, etc
- Promotion of Ornamental Fish – production and sale

7 Risk Factors

The proposed marketing strategy has evolved based on detailed value chain assessment involving both direct and indirect value chain players. The strategy focuses on marketing of fish from two project districts. It is based on available resources and likely fisheries management (extensive farming) practices. The implementation of strategy relies on strong facilitation skill and positive social dynamics in the cooperatives. The following are potential risk factors:

- Substantial increase in fish production due to acceptance of semi intensive farming practices and increase in water bodies under aquaculture
- Continuous drought in the area affecting fish production, thereby influencing the marketing channels and affecting the local demand (low income) for fish; Disease outbreak in fish may affect local production and sale of fish
- Negative social dynamics like conflicts and vested interest affecting member's interest in the cooperatives
- Sudden change in macro market scenarios like export market and demand/supply of fish across States in India, may affect the proposed strategy
- Intervention in the project area not being taken up at a scale. This would influence negotiation skill. It is expected that Oxfam and its partners would involve 50 % water bodies and the associated fishing communities in the two project districts.

8 Limitations of the Study

Value chain assessment and planning has been taken up in context of two project districts in Bundelkhand region. It is based on interaction with direct and indirect VC actors in the project area and across the region. The study is primarily qualitative in nature. At the time of study, there was limited experience of cooperatives with regards to marketing. The field study did not have the benefit of on-site observation of harvesting and marketing of fish by cooperatives. The proposed marketing strategy is generic in nature. It does not relate to specific cooperative, water body or particular context. Hence it is suggested to continuously refine the marketing strategy and go for detail planning (as part of business plan) with regards to specific cooperatives or cluster of cooperatives.

Annexure 1: Profile of Respondents

- Key Members of Sangathan
- Members of Bir Sagar coop; Members of Coop - Near Vikalp Office
- Observation and interaction at Jhansi Market
- Traders in Lucknow Market
- Observation and interaction at Gazipur Wholesale Market, Delhi
- Observation at Chittaranjan Park (Delhi) Retail Market
- Members - Keripura Women Coop
- Retailers - Kakaoni Weekly Market
- Local traders - Niwari
- Local persons - Rotara Water Body
- Members - Matwa Coop
- Moorty - Coop Leader
- Hatchery Owner - Baldebgarh
- Goushalya Fish Centre - Badebgarh
- Retailers at Tikamgarh fish market
- Moonmoon Fish Centre
- Retailers & Workers at Naugaon
- Members - Rogouli coop
- Dist Fisheries Office, Chhatarpur
- Coop Deptt. Officials, Chhatarpur
- AK Fish Company, Chhatarpur
- Members - Kulua Pond
- Retailers, Pruthvipur Market
- Mr. Yadav, Vikalp
- Mr. Sriram, Vikalp
- Members, Pruthvipur Water Body
- Staff and Federation Leaders Meeting
- K Link Team at Chhatarpur (Achhilal, Maniram, Harikishan, Mayaram, Halkeram, Ramsebak and Rakesh; Saket - Team Leader)
- Women Fish Retailers - Shantibai, Kamalabai, Sobha, Anita and Gayatri
- Weekly Hat Retailers - Chhotelal, Dhaniram, Mahesh, Suresh & Girdhari
- Cycle Vendors - Naogaon
- Ali Hassan, Commission Agent , Chhatarpur
- Sanjay Khare, Hatchery Owner
- Ashok - Seed Supplier - sourcing seed from Kolkotta
- N P Jowaria - Field Inspector; Chhatarpur Dist Fisheries Office
- Truck Driver - Andhra Fish, Lucknow Wholesale Market
- Staff of Commission Agent, Lucknow Wholesale Market
- Observation - Lucknow wholesale Fish Market
- HAH Fish Company, Gorakhpur
- Observation - Gorakhpur Market
- Dr Suman, Dy. Director, Fisheries - Gorakhpur
- Haji Israr Khan Fish Company, Lucknow
- Mohd Hasif, Secretary, Lucknow Mandi Samity
- Trader, Kanpur Wholesale Market
- Observation and interaction, Kanpur Wholesale Market