Chapter Six
Chapter—Six

Summary Of Findings, Conclusions and Suggestions

The study on marketing of fisheries in the coastal areas of Uttara Kannada district has provided a good insight into the marketing dimensions of this growing industry and has revealed some significant trends in the problem areas of the fisheries management. The growth potentials of this industry have been constrained by some of the inherent weaknesses particularly of the post harvest infrastructural inadequacies. The study has identified all such areas of weaknesses and has been able provide a comprehensive picture of the marketing scenario of the marine fisheries in the district. The study has resulted in some useful findings and conclusions based on which the researcher has tried to provide some practical suggestions towards the improvement and streamlining of the marketing system of the fisheries in general and the marketing of the fisheries in the district in particular.

Hypotheses and the Results

The findings of the present study have been very useful in testing the three hypotheses assumed before the field investigation commenced. The results of the study has led to the following major findings in relation to the hypotheses.

i. The first hypothesis that the cooperative marketing of fisheries has been a success has not been vindicated in the light of the research
study. The study has revealed that the fisheries cooperative societies lacked some of the basic marketing facilities like cold storage facilities, processing equipments, trained graders or grading facilities and the other infrastructure for effective and efficient marketing.

ii. The second hypothesis that high cost of marketing infrastructure of fisheries has resulted in limiting the role of intermediaries in the marketing operations has been found to be vindicated by facts of the research study. The marketing costs related to cold storage, transport, high cost of marketing finance, processing costs, etc have led to quick sales rather than wait for attractive price in the market for the fisheries.

iii. The third hypothesis that fishermen in the study area have been the price takers due to their financial weakness and lack of infrastructure has been found correct in the wake of the prevailing market conditions. The poor fishermen obtain advances from the intermediaries or money lenders and accept the price offered by these buying agencies. Hence their ability to obtain better price is almost nil. They are forced to accept the price offered by the intermediaries due to their prior financial commitment with the former.
iv. The fourth hypothesis is not fully vindicated since a few fishermen would get adequate infrastructure.

v. This hypothesis is partially correct since some of the fishermen depend on outside sources of finance for meeting their marketing cost.

vi. This hypothesis is not found correct fisheries cooperative societies did resort to credit sales of the fish.

Findings

1.1 Fisheries management in the modern context had its origin in Europe. Historically fishery management has focused primarily on the biological aspects of the fisheries and concerned primarily with the protection and conservation of fish stocks.

1.2 Huge potential exist for both production and marketing of India's fisheries industry with the declaration of Exclusive Economic Zone in 1977. The area available for India's marine fisheries has gone up to 2.02 million sq. kms. on the East and West coast and around the Andaman and Nicobar islands. The harvestable potential of marine fisheries resources in the EEZ has been estimated at about 3.921 million tones.

The current annual production is estimated at 6.180 million tones of which 2.980 mt from marine sector as against a potential of 3.934 mt and 3.20 mt from inland sector against a potential of 4.5 mt. The growth
of marine fisheries is slow at 2.19 percent during 1991-92 to 1999-2000 compared to inland fisheries at 6.55 percent.

1.3 Presently only 25 percent of production is by the artisanal sector and 74 percent is from small motorized boats and only one percent is from deep sea fishing vessels. Fishing efforts is currently concentrated in the 0 to 80 – 90 m depth zone and approximately 99 percent of the landings are obtained from the zone. Open access nature of marine capture fisheries is one of the major reasons for depletion, economic waste and conflict among user groups.

1.4 Post harvest infrastructure and marketing are the major weakness in India’s fisheries trade. Inadequate storage preservation and prompt disposal or transport services have been major marketing problems of fisheries. The consequences of these problems is the high level of wastage in the fishery due to spoilage. The wastage is around 30 percent during monsoon. There is need for strengthening post harvest infrastructure such as storage facilities, ice plant cold chams, roads and transportation etc. Effective marketing is another important imperative.

1.5 Management and marketing aspects in the fisheries sector have not received the necessary attention with the result that the potential markets for Indian sea food have remained unexploited largely. Greater
market potentials exist in the US and Europe. The US market alone is worth $10 billion.

There is urgent need for value addition to our exports of fisheries. At present the bulk of Indian supplies consists of block frozen materials that are used for processing consumer products at the importing end. Hereafter the focus should be on shipping value added products to all major markets including Europe.

2.1. The area available for fisheries in India after the declaration of the Exclusive Economic Zone (EEZ) in 1977 has gone up to 2.02 million sq km comprising of 0.86 million sq km on the East Coast and 0.60 million sq km around the Andaman and Nicobar Island. The EEZ has created a harvestable potential of marine fishery resources of about 3.921 million tonnes.

2.2. India’s marine fishing fleet comprises of 0.281 million traditional craft. This includes 44578 motorised traditional craft. There are 53684 mechanised craft and about 170 large fishing vessels of 27 m over all length (OAL) and more. The major fishing activities are still concentrated in the areas within 0 to 70-80 m depth zone.

2.3. The production of marine fisheries rose from 2.69 million tonnes in 1994-95 to 2.83 million tonnes in 1999-2000. The average growth of marine fisheries during the period 1991-92 to 1999-2000 was 2.19 percent compared to 6.55 percent for inland fisheries.
Paneled shrimps are at their optimum exploitation levels. They also dominate the export front. Tuna and cephalopods are the two least exploited fisheries owing to limited operational range of majority of the present fleets.

2.4 Exclusive Economic Zone of India comprises of different depth zones viz 0.50 m extending to 0.18 million sq kms, 50.200 m extending to 0.27 million sq kms, and 200 m and beyond extending upto the limits of the zone 1.57 million sq km. Presently 25 percent of the production is by artisanal sector and 74 percent by small motorised boats. Only about 1 percent is from the deep sea fishing vessels now in operation.

2.5 Taking into account the harvestable potential for deep sea resources the first step is to fix the fleet size for different category of resource specific fishing vessels. The activity is capital intensive. Hence equity participation with sound guidelines must have to be considered.

2.6 It is necessary to arrange for proper storage preservation and prompt disposal or transport services since spoilage of fish starts from the time it is caught. Greater attention should be given towards the strengthening of post harvest infrastructure viz. (i) Storage facilities (ii) ice plants (iii) cold chains (iv) roads and transportation and (v) effective marketing system in identified areas.
Most of the harbours lack proper hygiene and sanitation conditions. Fish landing centers are below the normal specifications due to inadequacies in the design and construction of the facilities and partly due to poor maintenance.

2.7 Export of marine products in terms of the value registered a level of Rs 5114 crores in 1999-2000 against Rs 960 crores in 1990-91. Exports rose by more than eight times from Rs 217 crores in 1980-81 to Rs 960 crores in 1990-91.

India's share in world exports of fish and fish preparations rose from 0.2 percent in 1990 to 0.4 percent in 1998. There is a diversification in the export of fisheries which includes now frozen squid, cuttle fish/ fillets etc in large quantities.

Japan accounts for the single largest market for about 46 percent of the total value realisation although exports now go to more than 70 countries South East Asian countries have emerged as the second largest market in recent years realising about 21 percent of the value.

2.8 The Marine Products Export Development Authority has been alerting the exporters about the stringent quality control in importing countries especially in European Union MPEDA wants exporters to tap the full potentials of US market. The world market for sea food has doubled in value during the last decade reaching $ 52 billion. The share of sea
food in India's export of all commodities is 3.16 percent. The MPEDA is motivating processors to produce more value added shrimp based products for exports.

2.9 Karnataka has a rich continental self of 2700 sq kms with an Exclusive Economic Zone of 87000 sq km. It has a fishermen population of 3 lakhs of which active population of fishermen is 1 lakh. There are 5 fishing harbours in 3 districts of Dakshina Kannada, Udupi and Uttara Kannada. There are 182 ice plants, 36 cold storages, 17 freezing plants, 14 frozen storages, 7 canning plants and 17 fish meal plants.

2.10 The important species of fish in Karnataka are Elasmo branchs, Oil Sardines, Other Sardines, Other Clupeids, Promfrets, Silver Belies, Sciaenids, Ribbon fish, Cat fish, Flat fish, Prawn, Cephalopods, Lizards Fish, Perches and others.

The total landings of marine fish in the year 2002-2003 was 82074.00 metric tonnes valued at Rs 26608.44 lakhs in Dakshina Kannada, 66213.14 metric tonnes valued at Rs 10597.10 lakhs in Udupi, and 32877.15 metric tonnes valued at Rs 5204.54 lakhs in Uttara Kannada district. The total marine fish landings in Karnataka in 2002-03 was 180161.30 metric tonnes valued at Rs 33653.08 lakhs.

2.11 There has been a fluctuating trend in the production of marine fish during 90s. The value realised by marine fish production has gone up
considerably during the same period. The growth rate in terms of quantity of marine fish catch is positive with a maximum at +40 percent in 2002-03 while it is maximum at +2 percent in 1996-97. The growth rate is negative at a maximum of −28 percent in 2001-02 while it is minimum at −1 percent in 1994-95. The unit value per kg of marine fish was the maximum at Rs 18.68 per kg in 2002-03 while it was minimum at Rs 2.56 per kg in 1989-90.

2.12 Monthwise marine fish landings are low during the three months of the year i.e. June, July and August. Fish landings during two months of the year i.e. September and October are much higher compared to the fish landings during the other months of the year. These trends are noticed in all the three coastal districts of Karnataka.

2.13 Marketing of fresh fish accounts for the maximum quantity of the marine fish catch followed by curing, fish manure, freezing, canning and reduction. The disposition of marine fish catch indicates a decline in marketing of fresh fish between 1999-2000 and 2002-2003 moderately, while curing of fish and freezing rose substantially during the same period. Reduction and canning rose substantially but fish manure declined marginally.

2.14 Maximum quantity of marine fish landings have taken place from trawlers during 8 years from 1995-96 to 2002-03. Pure-seiners accounted for second largest quantity of marine fish landings in
Karnataka. Marine fish landings by other mechanised boats rose during the same period. There is sharp decline in the quantity of fish landings through 'Rampani' boats and through other non-mechanised boats during the corresponding period.

2.15 There has been a perceptible decline in the growth rate of export of marine fish and fish products from Karnataka despite a substantial increase in the quantity of exports of fish and fish products during the 90s and early 21st century. Maximum earnings came from shrimp exports followed by cuttle and squids.

3.1 Maximum number of fishermen covered by the study were in the middle and advanced age group of 36 to 50 years. Male population of the fishermen respondent families totaled 1126 with an average of 1.35 per family. Female population of 831 respondent families was 1126 with an identical average per family of 1.35. The average number of children per family of respondent fishermen was 2.86. The average size of the respondent fishermen's family was 5.56 persons.

3.2 The total number of family members engaged in fisheries was 1370 of which male members were 858 and female members of the family engaged in fisheries was 512. The average family members engaged in fisheries was 1.37 with male members 1.16 and female members being 0.21.
3.3 A total of 831 hired workers were employed by the 831 respondent fishermen. It is significant to note that 500 fishermen did not employ any hired workers while 233 fishermen employed 1-5 hired workers. A small number of 21 fishermen employed more than 20 hired workers.

The fishermen covered by the study did not do any subsidiary occupation.

3.4 Maximum of 524 respondent fishermen had only primary education while 282 respondent fishermen had secondary education. There were 8 diploma holders, 12 degree holders. However there were 5 illiterate fishermen too among the 831 selected respondents.

It is significant to note that only 18 fishermen had professional training in fisheries.

3.5 Maximum number of 754 respondent fishermen were Hindus. There were 72 muslims and 5 christians. Harikantra fishermen were in majority (312) among the 754 Hindus followed by Ambigas (179), Gabit (135) and Kharvis (126). It is interesting to note that 2 fishermen among the respondents were Brahmins.

3.6 The annual family income of maximum number of 286 fishermen was Rs.5000 to Rs.10000. The annual family income of 197 fishermen was
Rs. 11000 to Rs. 15000, while or 151 fishermen the annual family income was Rs. 16000 to Rs. 20000. A good number of 93 fishermen had a family income of Rs. 36000 to Rs. 50000. A small number of 12 fishermen had family income of Rs. 100000 and more.

3.7 The respondent fishermen had made an investment ranging from Rs. 800000 to Rs. 2250000 in purse seciners type of mechanized boats. Other areas of investment of fishermen were in Gillnetters, Trawlers, Nets, Jackets and others.

3.8 The fishing has been a seasonal one. The fishing range of the fishermen was from 40 kms to 250 kms for purse seciners, 30 kms to 180 kms for Trawlers, 30 kms to 100 kms for Gillnetters and 1 km to 10 kms for other type of fishing boats.

3.9 The major type of fish caught by the respondent fishermen were Prawns, Squids and Mackerel.

There has been a decline in the value of fisheries caught by the fishermen during the period from 1997-98 to 2002-03. The quantity of fish of all the three major type has also declined during the corresponding period.
4.1 Large majority of respondent fishermen assembled their fisheries at the seashore. A small number of fishermen assembled their fish at the fisheries cooperative society.

Different type of fish is assembled at different places. Assembling of fish is also done as per the preferences of the buyers. Availability of place has influenced the assembling of the fish by the fishermen.

The fish is kept in assembled form for a period of 1-4 days before the sale takes place.

Annual cost of assembling is not borne by 806 fishermen. For the rest the annual cost of assembling ranged from Rs.10,000 to Rs.50,000 and above.

4.2 Fish is stored in well prepared warehouses before it is sold in case of only 4 fishermen out of 831 respondents. These 4 fishermen used cold storage facility for the storing of fish. The usual duration of storage of fish is 1 week.

The annual cost of storage varied from Rs.100,000 and more. The storage facilities are not considered adequate and hence the majority of fishermen (827) sold their fish quickly due to storage inadequacies.
4.3 The fishermen did not undertake processing of their fish 'catch'.

4.4 Large majority of fishermen (730) did not feel the need for grading of fish while a smaller number (101) did express the view that their fish required grading. These fishermen did the grading themselves.

The method of grading depended on size, type and quality of fish and also on the demand for different type of fish. Cooperative society premises and the premises of the fishermen were the locations for grading of fish.

Grading of fish was helpful in getting better price for the fish. More demand and more sales, better product image and more income were the gains of grading the fish.

4.5 Trucks and tempos were used for the transport of fish in addition to other type of vehicles. Majority of the fishermen (828) did not own their vehicles. The three fishermen owned rikshaws. The majority of the fishermen hired private transport for their transport requirement.

The annual cost of transport varied from Rs.1000 to Rs.5000 in case of large majority of fishermen. The annual cost of transport for others ranged from Rs.5001 to more than Rs.10000.
The fishermen themselves or the members of their families looked after the sales operations. Fisheries cooperative societies, wholesale merchants, cold storage owners and retail merchants are the buyers of the fish from the fishermen covered by the study.

Local market and places within the taluka are the places where the fish sold by the fishermen are distributed. The small part of their 'catch' of fish goes to other places in the district and outside the district.

More than 50 percent of the fish sold by 50 fishermen is sold to cooperative society. Sales to fisheries cooperative society is beneficial due to prompt payment, proper weighing and reasonable price offer from these societies. However only 10 fishermen felt that fisheries cooperative societies indulge in price discrimination and delay in payment.

A small number of 30 respondent fishermen faced the problem of 10 percent of their fish 'catch' remaining unsold. They attributed lack demand, excess supply as the reasons for the unsold stock of fish. These fishermen resorted to drying of the unsold part of the fish and then sell it.
A small number of 56 fishermen sold their fish on credit. The reasons for credit sales were to dispose off excess stock, avoiding of storage cost, avoiding of quality deterioration, avoiding of price fluctuations etc. The usual duration of credit sales ranged from one month to three months. The credit sales of fish to the total sales ranged from 10 percent to more than 30 percent.

The main channels of distribution of marine fish by the respondent fishermen were fisheries cooperative societies commission agents, wholesale merchants and retail merchants. The selected channels of distribution were preferred because of quick payment, advance payment, better price and more sales of their fish. A small number (19) of the fishermen sold their fish to more than one channel of distribution.

Commission agents, wholesale merchants, fisheries cooperative societies and TV news were the sources of market information for the fishermen covered by the study. Market information did influence the sales operations of the fishermen. The respondent fishermen did not incur any expenditure on obtaining market information.
4.10 Market supply and demand largely determine the price of fisheries as mentioned by majority of the fishermen. However the role of cooperative societies, wholesale merchants and commission agents also influenced the price of fisheries.

Many fishermen (513) mentioned that they negotiated with the buyers for price. Others accepted the price offered by wholesale merchants or fisheries cooperative societies. The fishermen felt that the cost and demand were the main factors considered for fixing the price of fisheries. Influence of market intermediaries was another factor which was considered while fixing the price. All the 831 fishermen felt that prices of fisheries were not stable but were fluctuating.

The average price of fish of different varieties have gone up continuously during 1997-98 to 2001-2002. The average price of prawns rose from Rs.20500 per quintal in 1997-98 to Rs.29500 per quintal in 2001-02. Similarly the average price of squid fish rose from Rs.2500 per quintal in 1997-98 to Rs.2600 per quintal in 2001-02. The average price of macrel rose from Rs.1650 per quintal in 1997-98 to Rs.1825 per quintal in 2001-02.

4.11 Payment of commission for the cooperative societies and cost of assembling the fish were the major marketing costs of fishermen
covered by the study. Cost of transporting was mentioned as a component of marketing cost by a few respondent fishermen.

The annual requirement of marketing finance was mentioned at Rs(upto) 20,000/- by a maximum number of 666 respondent fishermen. A higher range of marketing finance requirement of Rs.20001 to Rs.50,000 and more than Rs.50000 was mentioned by 125 and 39 respondents respectively.

For a large number of respondent fishermen their 'own funds' were the main source of marketing finance. Other major source of marketing finance was the fisheries cooperative society. A small number of fishermen obtained loans from banks money lenders, wholesale merchants and commission agents for meeting their requirement of marketing finance.

A good number of 135 respondents expressed the view that they could not obtain adequate marketing finance.

4.12 The cost of assembling and the cost of payment of taxes, fees and commission were at a higher side among the different marketing costs of the respondent fishermen. The average cost of these two components were Rs.20500 and Rs.21250. The average cost of grading and the average cost of transporting were Rs.6500 and 5500
per year respectively. Other marketing costs per year were Rs.11000. The total average marketing cost of the fishermen was Rs.84750 per year.

There has been a continuous rise in the average annual cost of marketing during the six years from 1997-98 to 2002-03. A steep rise in average cost of marketing is observed during the last two years i.e. 2001-02 and 2002-03

5.1 Members' share contributions and the shares held by the State Government, Cooperative Societies, Zilla Panchayat and the federation of fisheries cooperatives constitute the major part of the capital resources of the 21 fisheries cooperative societies covered by the study. The loan component of the fisheries cooperatives is kept within safer limits. Hence debt-equity ratio of these societies is favourable and safe.

5.2 The major areas of investment by the 21 fisheries cooperative societies are the 3 fishing boats, buildings, cold storage and warehousing. Investment in other infrastructure, other equipments, vehicles, electronic weighing machine, communication equipment has been substantial.

5.3 Marketing facilities provided by these fisheries societies relate to cold storage, weighing equipment, transport, packaging, credit and other facilities.
5.4 Assembling of fish by the fisheries cooperative societies is done on the basis of type of fish, size of fish and quality of fish. The societies did not incur any cost in the assembling of fish.

5.5 Only 2 of the 21 fisheries cooperative societies had cold storage facilities. The capacity of these cold storages ranged from 6 tonnes to 10 tonnes.

It is suggested that 30 to 40 percent of the capacity of the 2 cold storages remained unutilised. These societies did not provide their cold storage facilities to others on rental basis.

The annual cost of one cold storage ranged from Rs 25,000 to Rs 100,000. In case of another the annual cost ranged from Rs 38,000 to Rs 1,50,000.

5.6 It is indicated that 7 fisheries cooperative societies had their sales depots in other areas. These societies did not have separate sales organisation nor did they have trained salesmen. They did not have separate export sales department.

These societies sold their fisheries to customers in local areas, taluka areas, district areas, outside the district areas and in areas outside the state.

The sales of fisheries by these societies ranged from 10 to 30 percent in local areas 10 to 20 percent in taluka areas, 10 to 40 percent in areas within the district, 10 to 30 percent in areas outside the district and 10 to 30 percent in areas outside the state.
The sales of mackerel fish has been the largest compared to sales of squid and prawns varieties of marine fish by the fisheries cooperative societies. Maximum sales of prawns was in 1999-2000 and maximum sales of squid and mackerel were in 1998-99.

The sales value of prawns has been higher compared to squid and mackerel during the first five years from 1997-98 to 2001-02. However the sales value of mackerel was higher in 2002-03 compared to the sales value of prawns and squid fish.

There is a trend of fluctuations in purchase and sales in quantity and value of all the three types of fisheries - prawn, squid and mackerel during the six years from 1997-98 to 2002-03.

Majority of the fisheries societies purchased fish from fishermen. A small number of 3 societies purchased from commission agents.

The purchase of fish from fishermen ranged from 31 to 100 percent and the purchase of fish from commission agents ranged from 31 to 75 percent of the total purchase of fish by the fisheries cooperative societies.

5.7 The main channels of distribution of the fisheries cooperative societies were commission agents, wholesale merchants, retail merchants and hotels.
Commission agents accounted for 75 percent of total sales of fish of 10 fisheries societies. Wholesale merchants accounted for 25 percent of 14 societies and retail merchants accounted for 35 percent of sales by 4 societies. Hotels purchased 35 percent of fisheries from 3 fisheries cooperative societies.

5.8 It is found that 10 fisheries cooperative societies sold their fish on credit while 11 societies did not resort to credit sales. The main reasons for credit sales of fish were (i) to dispose of excess stock (ii) to avoid storage cost (iii) to avoid quality deterioration (iv) to avoid downward price fluctuations in future and (v) to increase sales.

The duration of credit sales of fish by the 10 respondent fisheries cooperative societies was one week. The credit sales of fish by these societies accounted for more than 30 percent of their total sales. These societies did not face any difficulties with their present channels of distribution.

5.9 The respondent fisheries cooperative societies obtained market information from wholesale merchants, commission agents, salesmen and others. All the 21 fisheries cooperative societies based their marketing decisions on the marketing information obtained from the above sources. The societies did not incur any expenditure in obtaining market information.
5.10 The pricing of marine fish was based on market supply and demand and on negotiations with the buyers according to the 21 fisheries cooperative societies.

The prevailing price of fish in the market is accepted according to 8 respondent fisheries societies. But the oligopoly position was used in influencing the price of fisheries according to 6 respondent fisheries societies. Negotiated price of fisheries was affirmed by another 6 respondent fisheries societies.

Cost and demand constituted the basis of market price of fisheries according to 13 fisheries while the influence of intermediaries was affirmed by 7 fisheries societies. Export price influenced the price in the local market according to one society.

The average price of prawn fish ranged from Rs 16,500 per quintal in 1997-98 to Rs 20,100 per quintal in 2002-03. The average price of squid fish ranged from Rs 3200 per quintal in 1997-98 to Rs 3800 per quintal in 2002-03. The average price of mackrel fish ranged from Rs 1750 per quintal in 1997-98 to Rs 2100 per quintal in 2002-03.

5.11 The marketing finance for the fisheries cooperative societies was needed to meet the wages and salaries of salesmen, to pay taxes and to pay the commission to commission agents.

The total amount of finance needed to meet the market operations of the 2 societies ranged from Rs 100,000 to Rs 10,00,000 for 3 fisheries.
cooperative societies required marketing finance ranged from Rs 10,00,000 to Rs 100,00,000 and for one society the amount ranged from Rs 100,00,000 to Rs 10,00,00,000.

All the 6 respondent fisheries cooperative societies borrowed money for marketing finance from banks and federation of fisheries cooperatives. All the 6 fisheries cooperative societies mentioned that they got adequate finance for their market operations.

5.12 The marketing costs incurred by the fisheries cooperative societies related to assembling, transporting, payment of taxes and fees and other marketing costs.

The assembling cost of marketing was 1.56 percent of the total marketing cost. Transporting cost amounted to 7.81 percent of the total marketing cost. Payment of taxes and fees amounted to 12.50 percent of the total marketing cost. Other costs of marketing amounted to 78.13 percent.

The total annual cost and average cost of marketing have gone up continuously during the last six years from 1997-98 to 2002-03. The average annual cost rose from Rs 2887.43 in 1997-98 to Rs 30476.19 in 2002-03.

5.13 Major marketing problems mentioned by the fisheries cooperatives were price fluctuations of fish, slack in demand and flaws in government policy towards the fisheries industry.
5.14 The fisheries cooperative societies have been helping the fishermen /merchants in buying fish and in providing marketing facilities as asserted by 8 societies. Financial assistance is given by fisheries societies to fishermen and merchants according to the 8 societies.

The fisheries cooperative societies have been helping fishermen /merchants in other areas like cold storage facility, processing facility, weighing facility, transport facility and market information.

Conclusions and Suggestions

1 Marketing functions of the large number of fishermen operating with their age old non-mechanised boats and traditional method of fishing with the crude equipments used in catching the marine fish is almost limited to selling the raw fish to the intermediaries immediately after the fish is brought to share. These large number of fishermen are unorganized and financially weak. Their financial dependence on the marketing intermediaries is so intense that they almost function as contract fishermen after obtaining advance money towards the sale of their fish. These fishermen do not undertake any marketing operations like storage, processing, grading or sales organization etc.

They assemble the fish at the seashore as per the stipulations of the buyers viz wholesale merchants commission agents, cooperative societies, retail trades and others. None of the fishermen have any
arrangements for storage facilities. They do not follow any method of
scientific grading. They don’t have any knowledge of packing the fish
for sales to different type of buyers. They do not have their own
transport facilities. Their market information is confined to their regular
sales to the set buyers locally as per a prior agreement with the
intermediaries. They have little or no influence in the pricing of their
produce. For most of the small and individual fishermen fishing is a
traditional family business and not a commercial venture.

In view of the marketing inadequacies of the fishermen in the
study area it is necessary that these large number of ethnic fishermen
should organize themselves into marketing cooperative societies, or
organize themselves into business partnerships and enter into
wholesale and retail selling of their produce with proper infrastructure.
Necessary guidance and financial help should be extended to these
fishermen by the banks and the state Government through the State
Fisheries Development Corporation. Proper arrangements should be
made for post harvest infrastructure to these fishermen in organizing
their marketing operations on large scale. A network of cold storages
should be set up by the state government to help preserve the fisheries
of these fishermen to enable them to sustain during the demand
recession and price fluctuations so that they can sell their fish at a
better price when prices are stabilized and demand pickup. The
fishermen should be assisted by the government and financial institutions in modernizing their fishing operations and provide them necessary training in production and marketing operations. The dependence of fishermen on private money lenders and commission agents for their financial needs should be reduced through supply of credit at concessional rate of interest is a felt need in the promotion of this growing industry.

2. The role of 21 fisheries cooperative societies in the study area has been circumscribed by severe limitations. These limitations have naturally reduced the effectiveness of fisheries cooperatives evolving an efficient fisheries marketing system.

The assembling of fisheries after they are taken possession of from the fishermen is not organized in well prepared premises. It is found that only 5 of the 21 fisheries cooperative societies have provided for assembling the fisheries in their society premises while the rest of the 16 societies assembled the fish at the sea shore and arranged for its sale from there. This inadequacy needs to be rectified by proper assembling arrangement.

3. The most important function of cold storage of fish is neglected by a majority of 19 of the 21 fisheries cooperative societies covered by the study. It is found that only 2 fisheries cooperative societies have their own cold storage facilities. Cold storage facilities are an important
component in the marketing of fish since fish is vulnerable to spoilage quickly. The private storages are costly and hence it adds to the total marketing costs and ultimately taxes the consumers by way of high prices. In the absence of cold storage facilities the capacity of producers and traders to wait for a better price is limited and they are forced to sell at their stock at uneconomical price. Hence it is necessary for all fisheries cooperative societies to go in for adequate cold storage facilities. The two societies having cold storage facilities should try to increase the storage capacity from their present level.

4. The 21 fisheries cooperative societies in the study area have not been providing grading facilities to the fishermen. This is another lacuna in the functioning of these societies. Grading is one of the important processing and marketing functions. Individual fishermen cannot afford to undertake the scientific grading of a large varieties of marine fish. Hence as cooperative organisations these fisheries societies should maintain the expert staff for grading and consider this as an important marketing function since grading helps the fishermen in getting a better price and larger income.

5. The sales organization of the fisheries cooperative societies needs to be streamlined. It is a sad reflection on these societies that they did not have well organised sales organizations to conduct and guide fisheries sales in the area. Further these societies have not entered export sales
of fisheries though there is great potential for export of special type of marine products particularly the prawn variety of fish which has vast demand in western countries. Majority of these societies have confined their sales within the district. Hence it is necessary that these societies widen their market and enter the export market.

6 Packaging of fisheries in tune with the marketing preferences for different type of fisheries is another area where these fisheries cooperative societies have remained uninvolved. Modern methods of packaging is an important component of marketing system. These societies should try to induct a packaging system which would help the sale of fisheries on a scientific basis. They should make necessary investment through installing of packing machinery and use of suitable packing materials. Well packed fish has better appeal to the high income buyers in cities and sophisticated markets.

7 The fisheries cooperatives sell their fish to the usual channel of distribution like commission agents wholesale merchants, retail merchants and hotels. These societies would better have a network of their depots in important marketing centers and distribute their fish through them. This would help in economy of sales and a better price for the consumers.

8 The fisheries cooperatives have not developed a proper system of obtaining market information. They have been depending on the market
intermediaries like commission agents, wholesale merchants, salesmen etc. The societies should try to obtain accurate market information through appropriate print and electronic media. They should make use of internet and other such modern sources of information on various aspects of marketing.

Marketing finances of these fisheries cooperative societies have been largely met through bank borrowings. The capital resources of these societies should be enlarged through increased membership and share capital. There is need for reducing the magnitude of loan financing through NCDC etc. Marketing costs too needs to be optimized by reducing the cost of distribution through intermediaries. Cost of marketing could be further reduced through owning different marketing facilities instead of hiring the services of private agencies in matters of storage transport and processing. Fisheries cooperatives should try to meet the credit needs of the fishermen on a much larger scale and prevent them from going in for high cost borrowings from money lenders and other private agencies.

The modern methods of marketing of fish involves many interrelated processing aspects of fishing and designing of fish products which have to be integrated with one another. Handling of fish at the sea itself for its maintenance of quality, initial grading and processing, packing and sorting fishes from amalgamated catches on board and processing
them necessarily have to be taken care of in modern methods of marketing of fish.

Marketing expenses are determined by transportation of fish, icing and frozen costs. These problems have to be reckoned with since seasonality of fish production limits the possibilities for marketing of fish throughout the year unless it is frozen, dried or smoked or canned. All this requires better processing techniques.

In the traditional marketing system the producer or a member of his family approaches the consumer and sell the product directly. But the producer has to move out mostly concerned with fishing. In such circumstances, the distributive machinery has to be organized particularly some bigger commercial organisation which can invest bigger capital outlay. Though the involvement of middlemen in the trade is much necessary in the big network of distribution of fish, it may be replaced by development of better and progressive machinery and proper institutional frame work are developed. Here in comes the important role that can be played by fisheries marketing cooperative or state Fisheries Development Corporations.

Proper storage, preservation and prompt disposal or transport services are essential since spoilage of fish starts right from the time it is caught. Our study and other various studies have shown that there is a high level of wastage in the fishery due to spoilage. This is particularly acute
during the monsoon when up to 30 percent of the fish catch would be lost. Therefore strengthening of post harvest infrastructure such as storage facilities, ice plants cold chains, roads and transportation etc is essential.

It is equally important to identify effective marketing system in appropriate areas which would go a long way in ensuring higher profit margins to the producers enabling faster fisheries development.

13 Quick movement of fish catch from the fishing areas to the shore by mechanical boat is the obvious solution to the slow movement of indigenous craft. To get better economic returns it is necessary that the fishing boats are well designed and diesel powered. As a short term measure it is necessary to motorise the local fishing crafts which does not require much capital investment. The fishermen should be given extensive training to handle these boats.

Fishing operations too should have to be done by mechanical methods. This would cut down the costs considerably and increase fish yield.

14 There is need for encouraging the use of selective fishing craft and gear for resource specific fishing in the offshore areas for under exploited/unexploited resource. Towards this end the requisite financial and technical support to the fishing community for modification of the existing trawlers gill netters for funa or deep sea shark or squid/
lobsters/ deep sea shrimp fishing or mid water trawling should be provided.

Government should initiate a programme for providing the basic infrastructure facility for fish marketing at vantage points along the coast line where there are no proper fish landing centers.

15 There should be a regular exchange of information and data on coastal and marine area management practices biodiversity development of viable technologies for resource enhancement (sea farming, sea ranching etc) and their application among the countries.

16 Wholesale fish market should be developed as part of infrastructure development for fishermen around Karwar for facilitating wholesale and retail trade of fish. It would help for better remuneration for fishermen in that they would have an exclusive platform to market directly their catches eliminating the middlemen.

There is need for improving information services training for small scale fishermen and women and increasing education and public awareness on importance of fishing communities.

17 The focus of the fisheries management in the country should be on an integrated approach to sustainable development. The aim should be on optimizing production and productivity, augmenting of export of marine products and generating of employment. The strategy should be to improve socio-economic conditions of the fishermen and fish farmers,
conserve aquatic resources and genetic diversity and increase per capita availability and consumption of fish. Further marine fishing policy needs to be formulated by keeping in mind past experience the capacity of the present fishing fleet and the availability of funding for the acquisition of resources specific vessels.

**Scope for Further Research**

The study has revealed that there is scope for further research in the following areas


2. Pricing and Price Spread in the fisheries trade in the Coastal Karnataka.

3. The Role of Intermediaries in the marketing of marine fisheries in Coastal Karnataka.