Labour Mobility in the Small-scale Fisheries Sector of Kerala

J. B. Rajan

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J. B. Rajan*

1. Small-scale Fishery in Kerala: An overview

The Background

The Programme for Community Organisation (PCO) has been working with the fishing community of Kerala since the 1970s involving in community organisation and development, training and education, and research and documentation. The Fisheries Research Cell (FRC), the research wing of PCO, was constituted with the main purpose of conducting action-oriented research. PCO's continuous interaction with the people throws up problems on which research is conducted and their results disseminated with a view to helping people understand technical facts and social and economic realities. The emphasis of the FRC is mainly on three areas: monitoring the relevant issues relating to the fisheries sector; conducting studies on micro-aspects of fishery; and disseminating information to people's movements.

The FRC of PCO has conducted several micro-level studies. Two major studies conducted during the late 1980s (PCO and SIFFS, 1991; Nalini, 1993) provided an understanding of the rapid changes taking place in the sector¹. During the course of these two studies and their subsequent dissemination and a few follow-up studies, a growing tendency on the part of fishermen to move from one place to another for fishing activities was noticed. In the course of carrying out the two projects on fisheries sector, namely the Census of artisanal fishing fleet in Kerala (SIFFS, 1991)

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and Ring-seine fishing in Kerala (Rajan. J. B, 1993), the tendency of labour migration was increasingly encountered by the present researcher. The present study was conceived in this context.

The perceived problem

The small-scale fishing in Kerala is a household enterprise in which men, women, and children in the family play important roles in fishing and related activities. While men involve mainly in fishing, women members take the responsibility of selling the catch. Women and children also engage in net-making and repairing of fishing gear. The traditional fishermen undertake fishing primarily for subsistence with a sense of camaraderie and community participation and therefore as a way of life. The community has its built-in system of work organisation, kinship, and sharing pattern. Not all the fish caught are sold. When an artisanal fishing unit lands, the first allocation of fish goes to the households of the crew for their consumption. Then the non-crew owners of the fishing unit are given a share. They comprise people whose services are paid, in general, in kind, such as barbers and old and physically handicapped persons of the village. Fishing for the traditional community was not merely a vocation but a village-based activity undertaken with a feeling of togetherness for the sustenance of the community as a whole.

The sector is undergoing rapid internal changes and facing an even more rapidly changing external environment. Changes are caused in the external environment by a variety of factors: production getting increasingly oriented towards export and upmarkets, and consequently experiencing capital/ technology build up; changes in social attitudes, work ethics, labour patterns, and government policies, and increasing competition (Rajan J. B, 1994). Excessive injections of capital into fishing and rapid strides made in technological advancement have drawn a variety of responses from traditional fish workers. Fishing, once considered a community-based occupation, is now reckoned as a lucrative commercial activity. While the traditional practices of fishing continue to be community-based, the commercial potential of fishing is getting increasingly exploited along noncommunity patterns as is happening in the rest of the traditional sectors as well. At the same time, the younger generation of the community is looking for alternatives outside the sector. There are some coastal villages which are more prone to the modernisation process than the rest. While in some places the traditional technologies are still relied on, there are coastal villages where the majority of the population finds employment in other (non-fishing) sectors. In some villages the pressure of the fisherfolk on fish resources is increasing. From some such villages, the fishermen move to distant places for finding better fishing opportunities.

The tendency of moving from place to place or from one occupation to another may be due to various reasons viz. geographic, oceanographic, demographic, and ethnographic; differences in skills, knowledge and abilities; demand and supply conditions of resources; socio-economic characteristics; political and religious forces; employment potential; market orientation, etc. These tendencies, unevenly distributed within and among places, create inequalities within the community and result in a series of interlinked economic and social consequences. The adverse consequences of this phenomenon both within and outside the family, *inter alia*, include:

(i) Continuous absence of fishermen from their families increases the burden of housewives

in looking after the families and the caring of children; it also leads to familial, employmentrelated, and income-related problems.

- (ii) Irregular inflow of remittances to households: the socio-economic milieu of the families concerned is disturbed.
- (iii) Capital-deepening of fishing crafts: motorisation of boats has increased the economic burden of the traditional fishing units; consequently polarisation of fishermen into owners and workers has taken place; also fishing efforts get concentrated in selected regions.
- (iv) Labour in the traditional sector moves towards modern fishing technologies; the movement results in a situation in which the traditional fishing sector gets integrated into the global economy and labour loses its traditional skills and knowledge systems.
- (v) Reorganisation of work and division of labour: this has resulted in the disappearance of the traditional sharing system and the emergence of an inequitable distribution of incomes among participants in the fishing activity.
- (vi) Loss of income source to women: women have lost their major source of living with the introduction of nylon nets in the place of hand-made nets.
- (vii) Change over from fishing to non-fishing activity: the shift made by several households to non-fishing activity in the expectation of better living conditions results in a situation of unemployment or under-employment. Lack of opportunities for occupational diversification on the one hand and of the employment potential on the other hand are the underlying reasons.

The traditional community pattern of sharing in kind now seems to be gradually fading. The new modes of fish production and distribution influence the work relations and income-sharing systems. The family-based system of occupation is replaced by worker-owner relationships. This type of change is likely to affect seriously small-scale village-based fishing. In this context, the following questions emerge:

What are the causes, magnitudes, and forms of labour mobility in the fisheries sector?

How does labour mobility affect work organisations and the village-based small-scale fishing sector?

Studies on fisheries and related aspects have not addressed these questions; hence this exploratory exercise.

Project mission

The mission of the present project is to gain perspectives for the fish workers' movement and their community organisation.

Output expected

Inputs for training and awareness programmes, for capacity building of social activists, and for the development of alternative methodological approaches are some of the results expected from this study. The results and ideas generated by this study would be disseminated to all the stakeholders;

they would constitute an important input for PCO's training programmes and community organisation. This study would ensure capacity-building of the Community Organisers (COs) of PCO as they are actively involved in the data collection process. This study would help to activate the interaction process with villagers and the concerned local groups/organisations. This process would also ultimately strengthen the community organisation work of PCO. The services of the small team of youth trained as part of this study would also be fruitfully utilised in future research. The collection, analysis, and interpretation of alternative sources of data are an added dimension of the study which, to be sure, would be of great use to social scientists and activists.

Changes in small fishery scenario of Kerala

From time immemorial, the fisherfolk along the coasts of India depended for their living on the marine fishery resources in the inshore waters; they used indigenous and traditional techniques which required expertise and specialisation. The fishing and allied activities were followed by specific communities as an artisanal occupation. With the advent of the era of development, the traditional fishing techniques began to be replaced by modern capitalintensive methods. Fishing technology and socio-political and economic scenario are undergoing drastic changes. Phenomenal growth in, and vast changes in the mix of factors of production and output are observed. Fish marketing and financing have expanded in scope and size. Technology, production, marketing and other related factors have undergone changes beyond recognition.

The history of technological changes in the fisheries sector of Kerala reveals that change was not at all of an abrupt event but a long-drawn process. This process encompassed improvements in communication and transport, opening up of new areas, changes in oceanographic features, and growth and diversification of the skills of fishermen. It influenced labour mobility of the fishing community too. It is in this context that an attempt is made to trace the major changes in the fisheries sector over time.

Fisheries in olden days

Fishing, especially marine fishing is an age-old vocation of certain communities living along the coast. The small-scale fishing in Kerala has remained a household enterprise. The traditional fishermen continue to remain socially and economically marginalised; they undertake fishing primarily for subsistence.

"Through continuous interaction with the ocean and fish, the artisanal fishermen accumulated trans-generationally a treasure of scientific knowledge on diverse marine eco-systems and fish behaviour. The technical capability of artisanal fishermen is based on this knowledge, the application of which has proven their worth by enduring for thousands of years like the *Ayurveda*, the indigenous form of medicine and health system. The traditional fishing technologies had evolved to suit marine terrain and the specific local fishing conditions" (Fernandez. J, 1994). "If one tries to name all the skills that a fishermen requires to go fishing we will be amazed to find that they cover a wide range of techniques" (Nalini. N and Gabriella. D 1989). These skills, capabilities, and the daring nature of fishermen were well recognised and accorded during the Sangom Era. With the arrival of Aryans, the caste

system became strong and the people were categorised based on caste. The working class people, like fishermen, were treated as low caste and given low dignity in the society. With the coming of Westerners in 15-16 Centuries, mass religious conversion took place within the fishing community. The fishermen thus were divided by religious line into Muslims, Christians, and Hindus. The sub-castes of Hindu fishermen comprised *Arayan*, *Valan*, *Mukkuvan*, *Marackan*, *Malayan*, and *Bhararhan*. Records show that the fisherfolk along the south coast of Kerala had been converted into Christianity under the initiative of St. Francis Xavier and Rev. Vyas. The fisheries scenario changed drastically with the coming of the British and the problems became increasingly complex thereafter. The fishermen were polarised and pushed into the lowest stratum of the society (Ghosh .S, 1998).

Kerala fisheries after India's independence

After India became independent in 1947, concerted developmental efforts began for the upliftment of the fisheries sector. Training the traditional fishermen on modern technologies and mechanisation were the major steps taken in this direction. The experiments were commenced first in Kerala. The fisheries scenario underwent significant transformation by such development efforts (Ghosh.S, 1998). The major projects introduced in Kerala, aided by foreign agencies, were:

- (i) Technical Co-operation Mission Programme (TCMP)
- (ii) FAO Technical Assistance Programme (FAO-TAP)
- (iii) Indo-Norwegian Project (INP)

The TCMP was aimed at providing marine diesel engines, a variety of nets and nylon threads, insulated iceboxes and van, etc. As part of TCMP, one gillnet boat, one trawler, one Danish Seiner and one big boat for dory fishing were introduced. Also, two ice factories were constructed – one at Vizhinjam and the other at Kayamkulam.

The FAO-TAP was initiated to provide training to fishermen on new fishing methods, develop appropriate crafts and gears, construct new fishing harbours, etc. The initial steps for fishing harbours in Vizhinjam and Beypore were commenced. The Malabar fishermen were trained to operate purse-seine.

The Indo-Norwegian Project (INP) for the development of the fisheries community in the erstwhile State of Travancore-Cochin came into existence in January 1953 following a tripartite agreement signed in New Delhi between the United Nations, the Government of Norway, and the Government of India. During its first phase (1953-'63), INP primarily covered three fishing villages in the district of Kollam. During its second phase (1963-'72) INP was extended partly to the rest of Kerala and to Tamil Nadu. The INP aimed at mechanisation of fishing and training of fishermen. As part of INP, a training centre was established in Neendakara in 1955; a boat-yard at Sakthikulangara commenced functioning in 1957; 22ft mechanised boats were supplied in 1958; trawler boats were constructed and supplied in 1961; ice factory and refrigeration plant were established in Neendakara in 1957; a sales organisation commenced operations in 1961 through which linkages with co-operatives were established, for the sale of fish and issue of nylon threads; and, a pipe factory began functioning in 1957

for supplying water. Besides, toilets were built and a health centre established in the project area.

It was INP, which evolved new kinds of crafts, gears and fishing methods and introduced them in Kerala. Gillnets and trawl nets became popular. Cotton nets and coir nets were replaced by nylon nets. Similarly local varieties of floats and weights were replaced by plastic/rubber floats and zinker weights. The fishery realm outside the Indo-Norwegian project remained largely unaffected by the activities that went on within the project area. With the initiation of Five-Year Plans, the fisheries sector also moved into the domain of planned development (Kurien .J, 1985).

At the time when the INP began functioning in Kerala, a private merchant took the bold step of exporting 13 tonnes of frozen penaied prawns to the USA. This was followed by a swift increase in the foreign demand for frozen prawns from Kerala leading to a quantum increase in export. The early 1960s heralded the export-oriented approach to fisheries development. The project shifted its emphasis to new designs for mechanised boats to be operated from harbours when the attempt to introduce motors for country craft failed. The INP introduced trawling and purse-seining, but the latter gained momentum only in the 1970s. The high market for prawns and the Government's interest in promoting exports gave a boost to trawling. The Government's attempt to supply trawlers to the actual fishermen proved a failure. Even middlemen and outsiders, who had a long-term stake in fishing, reaped the benefits.

The effect of the over-powering demand-pull for prawns had its repercussions in Kerala's fish economy as a whole. The fishing sector, which had remained relatively outside the mainstream of the economic and social processes in the Kerala society, was suddenly transformed into a respectable venue for investment and involvement. The possibilities of a "modernised" fishery sector emerged quickly breaking down the traditional barriers of entry into the sector (ibid).

The injection of capital by the new business class which came to the fishing sector and the technological advancements taking place in the sector became causes of concern about the deprivation of the traditional fishermen of their customary rights. To protest against the ill effects of modernisation on traditional fishermen, fishermen movements emerged. The artisanal fishermen countered the technological onslaughts on their traditional fishery by motorisation of their country crafts, but only by the Eighties.

Kerala fisheries – After 1980

In September-November 1980, the Kerala Fishermen's Welfare Corporation introduced a pilot experiment in motorisation of large country crafts in Purakkad in Alappuzha district (Kurien J and Jayakumar S. R. J, 1980). This was the first attempt in this direction by the State. Its importance emerged from the fact that it was introduced at a time when fish catches in the artisanal sector declined and reached its lowest ebb (Achari T. R. T, 1986).

After the advent of motorisation, the artisanal sector witnessed a series of further technological changes. They include introduction of plywood boats in 1982; construction of artificial fish

habitats (AFHs) in 1983/84; introduction of mono-filament gillnet (*Kangoose vala*), trammel net (*Discovala*), mini trawl net, ring-seine (*Thanguvala* and *Ranivala*) in the mid-1980s; and fish-attracting lanterns in 1987 (Rajan J. B, 1994a).

Present trend

Though the artisanal fisheries sector in Kerala had been witnessing many changes in fishing technology for several decades, the changes during the 1980s were drastic and rapid. However, these changes were influenced and accelerated by the developmental efforts made in the earlier years. It is said that the changes in Kerala fishing technology had started with the fisheries development approach since the 1950s (Kurien. J and Achari .T. R. T, 1988).

It seems that the sector has been moving from a passive-gear to an active-gear technology; from a low-cost to a high-cost technology; and from an eco-friendly to eco-destructive technology. Now it has reached a crisis state. At the same time, experiments involving reversion to earlier techniques in some areas and adoption of modern techniques in some other areas, have also been taking place. Going back to *Catamaran* in some of the villages in the south and adoption of the old version of ring-seine and boat-seine in the northern districts are examples of this technology reversion. Adoption of fish-attracting lanterns by almost all the units in the Thiruvananthapuram coast (Rajan J. B, et al, 1997), use of advanced electronic instruments for finding fish habitats in Marianad village and use of winch for ring-seine operation in Ernakulam and Alappuzha are examples of modern technology adoption.

Changes in fisheries scenario and labour mobility

Having reviewed the major changes in the traditional fisheries sector, we may now examine the influence of such changes on labour mobility. The major technological changes in the fisheries sector of Kerala since 1947 are recapitulated in Exhibit-1. A major technological shift in the sector came about by the implementation of three foreign-aided programmes in Kerala fisheries. A clear-cut distinction within the sector into mechanised sector and traditional sector becomes visible.

Of the major technological changes in the small-scale fisheries, motorisation of country crafts, introduction of ring-seines, and adoption of electronic instruments for finding fish habitats, for operating ring-seines have had direct impacts on labour and work organisation. Motorisation replaced manual propulsion of craft with the mechanical propulsion. The country crafts were motorised on the assumption that the catch would sharply increase leading to higher return to fishermen. Factors contributing to increased production were presumed to be increase in fishing time by reducing trip time, access to deeper and potential fishing grounds, increase in the efficiency of active gears as the result of better manoeuvrability of craft and increase in number of trips per day (Rajan, J.B, 1994b).

The operation of ring-seine reduces labour strain but requires labour strength (Rajan J. B, 1993). The use of electronic device for finding fish habitats and winch for ring-seine operation save labour time in fishing. But it also renders human capabilities and skills of fishermen accumulated trans-generationally, redundant.

The technological changes resulted in new modes of production and marketing. They created new avenues of diversified employment within the fisheries sector such as OBM repairing centres, boat yards, spare parts dealers, kerosene suppliers, and dealers of webbing and other materials. They also led to increasing intra-generational or inter-generational mobility of labour.

1997	Use of identification device for fish habitats at Marianad
1996	Winch for ring-seine operations in Ernakulam and Alappuzha
1987	Fish Attracting Lanterns (FAL) in Trivandrum.
1985	Kangoosevala (monofilament net) in Kerala
	Discovala (trammel net) in Trivandrum
	Mini-trawl net in Alappuzha and north wards
	Ring-seines in central and north Kerala
1983	Artificial reefs in Thiruvananthapuram
1982	Plywood canoe in Thiruvananthapuram
1981	Out Board Motors (OBMs) in Kerala
1976	Introduction of purse-seine in north Kerala
1962	Introduction of nylon nets (Singapore nets) in Kerala
1957	Indo-Norwegian Project (INP)- introduction of trawling boats
1953	Indo-Norwegian Project (INP)- introduction of gillnet boats
1947	TCM Programme and FAO Technical Assistant Programme - modernisation

Exhibit 1	Historical	Transect of	f Changes i	in Fishing	Technologi	es of Kerala

The overall changes in the social, political, cultural, educational, and economic scenario of the fisheries sector due to increase in market opportunities, greater access to communication and transport and such other factors must also have widened the scope for employment in other related sectors. It is true that the tendency of spatial mobility has existed among fishermen from time immemorial. But the developmental efforts and subsequent changes must have reinforced the tendency.

2. Labour Mobility: Concepts and theories

Definition and concepts

Mobility has two dimensions: time and direction. Time mobility may be inter-generational or intra-generational. Directional mobility may be vertical, horizontal, and spatial. Vertical mobility refers to movements up and down in the social ladder. Horizontal mobility is movement across socially. Spatial mobility is related to changes in the geographical location of occupations of the respondent (Hall H. Richard, 1969). While each of these movements is analytically distinct, they are frequently found in reality to be inter-related.

Inter-generational mobility

Inter-generational mobility is measured in terms of father's and/or mother's occupation. The respondent is asked his own occupation and then that of his father/mother. Comparison across generations encounters difficulties while making measurement of this form of mobility. The difficulty arises from the fact that at any point in time, both the respondents (sons/ daughters) and their fathers/mothers are at different periods in their careers. Blan and Duncan (1969) recognise this methodological problem. What is important in terms of inter-generational mobility is the extent of movement from social origins on the part of the respondent (son/ daughter).

In the present study, with a view to understanding the extent to which our respondents have moved away from the occupation of their fathers, the present/major occupation of the respondents (household head) are compared with the major/last occupation of their fathers.

Intra-generational mobility

This form of occupational mobility refers to the transition of an individual from one occupation to another. This may occur in two different directions, both horizontally and vertically. Horizontal mobility or shifting explains the transition of an individual from one social group to another situated on the same level. By vertical mobility is meant the relations involved in a transition of an individual from one social structure to a higher/lower social structure (Sorokin, 1959).

In the context of the fisheries sector, the forms of intra-generational mobility noted are basically two: inter-sectoral mobility denoting movement from fishing to non-fishing and vice-versa and intra-sectoral (technological) mobility referring to moving from traditional technology to modern technology or from small scale to large scale. These two forms may be either vertical or horizontal, depending on occupational status.

Spatial mobility

There are various terms in vogue in relation to spatial mobility: migration, circulation, commutation, etc. In practice, it is not easy to distinguish between migration and circulation, since one would be unsure as to what kind of migratory movement one is dealing with, only after the event.

Commuters are persons who leave home to return in the evening or the next day and who do so regularly. Migrants are those who go away and stay away, even if this was not their intention at the time of departure. The term 'migration' remains appropriate when this movement acquires a permanent character in time, and merges into a wandering existence. Circulation is a persistent, continuous return to the starting place, accidental or not, for a short while or for a longer period. Seasonal migration is the clearest example of circulation. Migration is more than a movement of factors of production.

The determinants of spatial mobility

Migration and circulation may be subsumed under the term 'mobility'; hence, migration and circulation are subsets of human mobility, usually termed as spatial mobility. Migration is a long-term residential shift and circulation is a short-term movement. The home or usual place of residence is the centre of gravity of an activity space that determines the forms of migration. The term migration is commonly used in the literature explicitly, but more commonly, to cover both types of movement. A pragmatic differentiation can be made by considering the spatial and temporal dimensions of the movements.

i. The spatial dimension

The first issue is the definition of the spatial extent of a population movement. Mobility may be measured only if some boundary is crossed. This is normally defined by the politicoadministrative structure of the country. The smaller the administrative unit, the greater the volume of mobility that will be captured by the census or survey. The density of the population, the distribution of the population within the administrative units, and the shape of the units also clearly influence the volume of mobility that is captured. In the present study, considering the pattern of migration, Thiruvananthapuram district is taken as the boundary. Hence, moving out of Thiruvananthapuram district for economic activity is considered circulation, in this study.

ii. The temporal dimension

Just as a person has to move across some boundary in space to be considered a mover or migrant, so too a person has to cross a dimension in time to be considered so. At the simplest level, a movement must have an origin and a destination. The place of destination or current residence may be designated by one of two census enumerations at origin or destination. The place of origin may be defined as (a) place at time of birth, (b) place at a specified fixed time in the past, or (c) place at an unspecified time in the past. As this study considered only movements for economic activity, moving during the reference period alone is monitored. Hence the question of origin and destination does not arise in the present study. We have considered the spatial mobility of labour as the movement of labour for fishing or for economic activity. It may be commutation, circulation or migration (Exhibit 2).

 Commutation - the expansion of work space: fishermen used to move out of their village as part of their fishing activity and even land their craft in other villages. E.g. moving to Vizhinjam for fishing.



Exhibit 2 Operation of Spatial Mobility of Labour in Fishing

- (ii) Circulation the expansion of workspace for a longer period: This moving out constitutes not only the expansion of workspace for longer periods, but the residence of mover, may also be shifted for a longer period in connection with the occupation. E.g. moving to central and northern regions of Kerala or elsewhere for fishing.
- (iii) Migration permanent settlement: Migration is a broader term than circulation in which the movers settle in the destination village with family. i.e. both place of work and place of residence are shifted.

In its general sense, 'migration' is defined as the relatively permanent movement of persons over a significant distance (*Encyclopaedia* vol.10, P.286). In order to determine permanency, the minimum duration of stay should be specified.

In the present study circulation and migration only are monitored. As far as fishermen are concerned, commutation is considered a usual and regular activity. The question then remains as to which move constitutes circulation. The assumption taken in the present study is that moving for a minimum period of one week out of the Thiruvananthapuram district for fishing or other economic activity constitutes 'circulation'.

What leads to mobility?

The present day Indian society is not compartmentalised with regard to the various forms of mobility consequent on industrialisation and urbanisation. Whereas inter-generational and intragenerational mobility are conventionally treated as two separate processes, they may be treated simultaneously because the influences of social origin (father's position) and career origin (first job) on occupational changes are not independent of each other. Blan and Duncan (1969) noted that a person's social origin exerts a great deal of influence on his/her occupational career. However, a person's own training and early (work) experience exert a pronounced influence on his/her success chances. Moreover, as a person grows older, the importance of his/her past career to subsequent career increases at the expense of other factors. While studying occupational mobility (inter or intra), the question to be addressed is whether the transition in occupational status is equal in all sectors or it varies from sector to sector. It is likely that the degree of transition varies from sector to sector. This inference is given by studies in general. The hereditary transition of occupation was found to be stronger in those occupations, which demand a greater technical expertise and specialisation or a more or less large amount of capital for their performance than in occupations which do not demand either of these conditions. The reasons for spatial mobility are explained in several theories:

- (i) Lee's Push-Pull Theory;
- (ii) Vroom's Expectancy Theory;
- (iii) Todaro's Human Capital Theory;
- (iv) Mitchell's Economic Model; and
- (v) Marxist Approach to Capitalist Development

Lee's Push-Pull theory

This theory focuses on factors, which could 'push' people out of one area and factors, which could 'pull' them into other areas. There are also other factors which might encourage potential movers to stay in their places of origin (home 'pulls') or discourage them from moving to a possible destination (reverse 'pushes'). The push-pull explanation of migration has been one of the principal themes of a substantial portion of the migration literature. The list of factors, which might push or pull a migrant, is lengthy. The factors which would pull migrants towards other areas tended to be the converse of the push factors so that the approach basically breaks down to the lack of opportunity (pushes) and availability of opportunity (pulls).

Vroom's Expectancy theory

One of the classic expositions of the individual approach is Wolpert's 'Behavioural aspects of the decision to migrate' in which migration is considered to be the result of differences in

'utility' associated with different places. 'Utility' is a measure of an individual's level of satisfaction or dissatisfaction with a place and, where there is a difference between a person's aspirations and a place's utility, then migration is likely to occur. The individual then proceeds to search for a place of higher utility. The search process is often elaborated into a complex series of 'boxes' that represent the separate decisions those individuals are said to make before the final choice to migrate or to stay back is made. This approach is essentially a behavioural interpretation of pushes and pulls.

An elaboration of this approach is Vroom's 'value-expectance' model, which was designed to identify the full range of motives for migration and which endeavours to unravel the process by which mobility decisions are made. Migration behaviour is viewed as one based on an underlying general desire of individuals and families to improve or maintain their quality of life.

Todaro's Human Capital theory

Todaro considered migration to be the result of an investment decision, which was the result of a balancing of expected costs and returns over time. This approach, known as the human investment or human capital theory of migration, is perhaps best known through the formulation by Sjaastad (Skeldon. R, 1990). The costs and benefits include economic as well as social and psychological variables, but the latter are difficult to measure objectively. The assumption is that people are income-maximisers who will migrate to achieve this objective. The fundamental premise is that migrants as decision makers consider the various market opportunities available to them as between, say, the rural and the urban sectors, and choose the one which maximises their 'expected' gains from migration.

Mitchell's Economic Model

Mitchell considered economic differences between one area and another, which were necessary for migration to occur and those micro-level social factors that could actually trigger individuals to move. While economic differences are necessary, they are not sufficient to explain migration. Mitchell, following the classical sociological arguments of Durkheim, thus distinguished between the economic factors that could explain the rate of migration, and the individual motivations that could explain the particular incidence of migration, or exactly who moved when. This two-fold division has often become polarised to represent the intellectual gulf between those favouring a structuralist interpretation on the one hand and those favouring an individualist interpretation on the other; between those emphasising sociological explanations and those adopting psychological reasoning.

There are two very different issues here: the reasons why a person moves out and the reasons for the social mobility. The analysis of the reasons why a man joins the army will tell us little about why a nation has an army. In the field of migration too, many have attempted to explain the reasons for mobility using information derived from the actual movers. This is not to deny the importance of collecting information from individual migrants on why they moved or if they intend to move, but these can more profitably be consolidated into group values or norms towards mobility rather than taken as motives for action.

Marxist Approach of Capitalist Development

Karl Marx tried to explain the changing pattern of human mobility by the emergence of a new mode of production.

The emergence of a new mode of production or what is often termed as the 'penetration of capitalism' is the heart of this approach. It considers the changing nature of the macro-level linkages of migration and development. It brings a global perspective to bear on the whole issue of human mobility - a perspective that introduces the questions of resource allocation, the international distribution of power and government policy, and the whole field of development. If these aspects are examined, it would be possible to come to an understanding of why people move to particular destinations, even at the local level. The disadvantage of the macro-level structural approaches is that the explanations developed tend to be deterministic and do not take into consideration the variety of cultures and forms found in the real world. The "macro-reductionism" would flatten "micro-specificities" which are so relevant to explain the influencing forces of mobility.

Difficulties in studying labour mobility

The three factors of population change are fertility, mortality, and migration. Of these, only the definition of migration is subjective. Births and deaths are discrete, observable and universal events in that they affect everyone once and once only. While migration involves movement as a process with time and space dimensions. It is clear that every individual moves throughout his or her life; it is not clear which moves constitute migration. Ideally, migration has implications of permanency and a definite change of residence from one place to another (Skeldon.R, 1990).

The fundamental issues of spatial mobility thus revolve around the definition of the limits of space and time within the movement. It might theoretically be desirable to pose certain space and time conditions. For example, a movement over a minimum distance of 10 km which involves a stay of at least six months or more might be considered 'migration'. While any other movement, of long or short distance, might be classified as `circulation'. It would be virtually impossible for any measurement tool to capture all shifts in usual place of residence and all the points in the fields of circulation around each residence. Censuses and most large-scale surveys capture only a small part of total mobility and that part varies much depending upon the design of the census or surveys.

Conceptual directions of the present study

Considering the theoretical aspects, attention is given in the present study to identify the push and pull factors of migration, utility associated with different places, expected gains of migration, sociological explanations and psychological reasoning of migration, and the influence of penetration of capitalism. These aspects are studied by tracing the life histories of selected labourers.

Other issues relating to the study of labour mobility are definition and measurement. Labour

mobility in the fisheries sector is varied in nature such as labour moving to distant places for fishing, fish vending and fish processing; fishermen moving to distant places in search of other employment; moving of labour within the sector but from one technology to another, and moving to other sectors of the economy. Following the definition from the literature, labour mobility in fisheries may be classified broadly into two: spatial mobility and occupational mobility (Exhibit 3).

Labou	ır Mobility	
Ţ		
Occupational Mobility	Spatial Mobility	
		Minutia
Inter-generational Mobility	Intra-generational Mobility	

Exhibit-3: Forms of Labour Mobility*

* Different forms of labour mobility are not mutually exclusive

Inter-sectoral

Measuring the magnitude of labour mobility

As the present study is mainly centred on the fishing activity, only the labour mobility of male workers is considered. Involvement in multiple activities by a person is not taken as labour mobility. The magnitude of various forms of labour mobility is measured in this study with the following assumptions.

Intra-sectoral

Inter-generational

For measuring inter-generational mobility, the proportion of households which have changed occupation from their parental occupation, and the occupations of two generations are

considered - the present/major occupation of the head of the household and the last/major occupation of their fathers. For the purpose of convenience, occupations are broadly classified into three: fishing, fish-related, and non-fishing. Inter-generational mobility is calculated by the proportion of households engaged in that particular occupation to the total number of households *vis-à-vis* their parental occupation.

Inter-sectoral

Occupational shifts of labour have to be taken for calculating inter-sectoral mobility. But in the absence of sufficient data, the proportion of workforce involved in non-fishing activity is considered inter-sectoral (outward) mobility. This is calculated by dividing the workforce involved in non-fishing activity by the total workforce.

Intra-sectoral (technological)

The intra-sectoral (technological) mobility has to be assessed by considering the technological changes in occupation by fishermen. However, in the absence of the required data, the changes in fishing craft type between two points of time are taken as an indication of technological mobility in fisheries. Available data on fishing fleet of 1991 and 1997 (SIFFS, 1991 and SIFFS, 1998) are used for calculation of technological mobility. This is done by dividing the number of craft in 1991 by the number in 1997.

Commutation

For the purpose of the present study, moving for work from the home locality and coming back within a reasonable period, i.e., not more than a week, is considered commutation.

Circulation

Moving for work from the home locality in Thiruvananthapuram and staying in another place for more than one week is treated as circulation.

Migration

Moving out of home place (Thiruvananthapuram) in search of work and permanent settlement in some other places is treated as migration.

3. Objectives and Data

Scope

This study is limited basically to the mobility patterns of fishermen of the Thiruvananthapuram district. Thiruvananthapuram provides a microcosm of all types of mobility of fishermen in Kerala.

Objectives

The specific objectives of this study are the following: understanding the various forms and magnitudes of labour mobility in the fisheries sector, and finding out the underlying factors, causes, and their implications.

Method of data collection

Data are proposed to be collected by utilising the existing local facilities of the parish structure, since almost all the fisherfolk in the study area belong to the Christian community.

Primary data collection - New dimensions*

A new decentralised system of administration with people's participation was introduced recently in the Thiruvananthapuram diocese. Every Parish is sub-divided into small geographical segments called *Kudumba* units (Family units) comprising 20-25 families. Each family unit has an elected committee with office-bearers known as *Kudumba nathan* and *Kudumbanatha*, the Secretary, and the Treasurer respectively. The office-bearers are elected from among the heads of households.

Since the office-bearers of the family units are well-informed of the details of all the families that come under them, it was easy to collect demographic data. In order to check the accuracy of the data collected through Family units, a house-to-house survey of a systematic random sample of 10 percent of the Family Units of the study centres was undertaken. The survey results indicated only negligible levels of variation. Data on labour mobility were collected through the house-to-house survey. The life history approach was used to assess the causes and effects of labour mobility. For identifying the various factors relating to labour mobility and its impacts on work organisation and small-scale fishing, participatory analysis was also attempted.

Sampling Plan

The study unit was selected in three stages:

First stage - the fishing village: Three coastal villages of Thiruvananthapuram were selected purposively taking into consideration the representative nature of the centres, the availability of contacts, information base taken from earlier studies, known variations in labour mobility and their geographic spread. The centres selected are Pozhiyoor, Vizhinjam South, and Anjengo.

Second stage - the household: From the selected villages, the following data were collected through the questionnaire method.

- (i) data on household members comprising age, sex, education, usual economic activity and the details of fishing activity were collected by the investigators directly from the office-bearers of *Kudumba* (Family) units.
- (ii) data on labour mobility, mainly spatial mobility and inter-generational mobility were collected by investigators directly from the households.

Third stage - the workers: A sub-sample of the workers was studied in detail through the life history approach.

Data collection

The data required for the study were collected through observation, focus group discussions, semi-structured interviews, and questionnaire. The Rapid Rural Appraisal / Participatory Rapid Appraisal method for evolving various aspects through and with the participation of those concerned was also attempted. The guidance of RRA/PRA experts was utilised for this exercise. The household data were collected from the office-bearers of *Kudumba* (family) units by the Community Organisers of PCO with support from local people. Detailed information on mobility was collected from households using a pre-tested schedule by a trained team of youth recruited for the purpose. The field personnel were entrusted with the responsibility of maintaining tour diary and preparing field report concurrently. The semi-structured interview of selected workers was made by using a checklist. The Community Organisers were provided training in data collection, interview techniques, RRA/PRA, etc. One-day training was also provided to the team of youth. The life histories of a few selected labourers were collected personally by the Project Co-ordinator himself.

The major types of data and their sources are mentioned below.

Definition of terms, sources, and types of data

Some of the important terms used in the present study are explained below.

- (i) Study Centre Boundary: The boundaries of study centres are taken as the boundaries of the respective Parishes. Hence, the administrative boundaries fixed by the Department of Fisheries are not applicable to our study centres.
- Reference Period: It is the project period for data collection. The demographic data were collected during April 1997 and the data on labour mobility were collected during February 1998.
- (iii) House Any structure used for residential purposes only. The *Kudumba* (Family) unit-wise houses are enumerated with the help of the office-bearers, viz. Secretary / Treasurer of the Family unit.
- (iv) Family: Based on the relationship among members, a family is categorised as nuclear, joint, or extended. A nuclear family comprises husband, wife, and children. A nuclear

Types of Data	Sources
Village Profile	Observation, Focus Group
	Discussion & RRA
Theories on Labour Mobility	Literature Review
Survey on Fishermen Families	Office bearers of Family Units
	of the Parish
Survey on Labour Mobility	Household Interview
Causes and Implications of	Focus Group Discussions
Labour Mobility	
Historical Profile and Factors	Life histories of select groups
Influencing Labour Mobility	

 Table 3.1
 Types and Sources of Data

family with their close relative, staying in the same house is considered a joint family. A family in which distant relatives or friends stay together in the same house, with or without separate kitchen, is considered an extended family.

- (v) Total population: The total number of persons staying in the homes within the study centre during the reference period.
- (vi) Sex ratio: The number of females per 1000 males. The ratio of more than thousand is considered favourable and vice-*versa*.
- (vii) Activity status: Activity status denotes the usual activity performed by a person during the reference period. If the reference period is one year, the usual activity is the activity engaged in during the major part of the year. If a person is engaged in multiple activities during the reference period, preference is given to major activity of working. The activity statuses are categorised into 16 groups viz. fishing, fish vending, fishrelated activities (such as repair of fishing equipment, procuring and transportation of fish, fish auctioning, money lending for fishermen, kerosene supply for fishing craft, OBM repairing, supply of OBM spare parts, webbing, etc), share in fishing fleet (investment in fishing fleet without going for fishing), employed in the Gulf, government employment, private employment, self-employment, pensioner, housewife, student, unemployed, too young, too old, handicapped, and others. For the purpose of analysis, the activity status is clubbed mainly into the following three groups.
- a. Workforce: Population involved in any kind of work viz., fish vending, other fishrelated work, government employment, private employment, or self-employment.
- b. Work Seekers (Persons not working, but seeking work): Unemployed persons in the age group of 15-59 years.
- c. Persons not available for work: Students, persons too young or too old, pensioners, and housewives.
- (viii) Labour force: working force plus work seekers.
- (ix) Employment status: The actual category of employment the worker is engaged in such as the following:

Fishing: Capture fishing in the marine sector.

Fish-related: fish vending, other fish-related activities (OBM repairs, craft repairs, ice supply, kerosene supply, fishing fleet carpentry (*Oodaavi*), seine setting (*Madikettali*), and dealing of webbing;

Non-fishing: Gulf employed, Government employed, Private employed, Self-employed, Professionals, and other categories.

- (x) Participation Rate (PR): Working population as a proportion of total population. It is calculated as a percentage obtained by dividing the number of working persons by the total population and multiplying by 100.
- (xi) Education status: Education status of persons above the age of five years during the reference period. The main categories are illiterate, studied up to primary school, studied up to upper primary school, completed SSLC, completed PDC, and reached graduation and above. A particular education status indicates that the person has reached that level but not necessarily has passed that level.
- (xii) Literacy rate: The number of literate per 100 persons of population of age 5 and above. Those who attended schools are assumed as literate.
- (xiii) Active fishermen: If the main activity of a person is fishing, he will be referred to as active fishermen.
- (xiv) Ownership status of active fishermen: The ownership status of active fish workers of fishing fleet is categorised into three:
- (a) owner-worker group: fishermen who own the fishing fleet and work on it.
- (b) non-owner worker group: those fishermen who do not own the fishing fleet with which they operate, but work as labourer.
- (c) owner non-worker: persons who neither own fishing fleet nor engage in fishing, but get a share of income for part investment on fishing fleet.
- (xv) Inter-generational occupational mobility: Changes in occupation as between generations. This has been captured by assessing the occupation of the head of households during various stages in his career and the major occupations of his parents. For this, main occupation is categorised into fishing, fish-related work, and non-fishing activities.
- (xvi) Intra-generational occupational mobility: Transition from one occupation to another of the same generation of workers. This could not be traced in the present study. However, some indications are made.
- (xvii) Commutation: expansion of the work space (commutation is not considered in the present study)
- (xviii) Circulation: expansion of work place by larger period of stay at another place. The magnitude is measured in terms of the number of households with migrant members and the characteristics of the migrants.

- (xix) Migration: permanent shift of the place of work and place of residence .
- (xx) Crew-Boat (C/B) Ratio: the ratio of total number of the crew to the total number of the craft in a village indicating the intensity of labour use. For calculating C/B ratio, the fishing operations are mainly categorised into three viz. fishing with plywood canoe, with catamaran, and with other crafts. The same categorisation is applied to the active fishermen by their fishing base.
- (xxi) Work organisation and village-based fishing: These terms are used in the context of fishing activity. Work organisation relates to crew formation, sharing pattern of earnings between the fleet owner and the crew, etc. Village-based fishing is referred to as fishing operations and related activities centred on a fishing village.

Work Plan

Organisation of the project

The project was manned by a team of six persons comprising a Project Co-ordinator, four Community Organisers (one woman), and a Research Assistant. The services of local support personnel, Advisors/ Consultants, Secretarial / Clerical staff were also utilised. The Research Co-ordinator attached to the Fisheries Research Cell functioned as the Project Co-ordinator on a part-time basis.

The whole responsibility of the project was entrusted with the Project Co-ordinator who has been supported by the project personnel. The Community Organisers were entrusted with task of collecting both the quantitative and the qualitative data according to the instructions from the Project Co-ordinator. The filing, tabulation, field- report writing, etc were carried out by the Community Organisers and the Research Assistant. The necessary training was provided to them. The services of local support personnel and the team of youth were also utilised. For secretarial and clerical work, services of PCO's regular office staff were used. The work has been closely supervised by the Project Co-ordinator. The project team in their periodical meeting reviewed the progress of the work. The advisory and consultative capacity of specialists was ensured in the periodic meetings. The Fisheries Research Sub-Committee (FRSC) of PCO also reviewed the study process at intermittent stages.

An internal workshop with PCO members was organised initially to sound the concepts and methodology of the study. An interim workshop with KRPLLD Faculty was also organised to share the findings of the socio-economic survey and to sound the methodology for data collection on labour mobility.

Constraints and Limitations

The major constraints and limitations of the study are indicated below:

Dependence on parish data on family units; births, deaths, and marriages affected the smooth conduct of the study adversely in some of the centres.

In the absence of similar earlier studies using an inter-disciplinary approach, formulation of the methodology became a major task.

One of the merits of the present project is the capacity-building of social activists (including Community Organiser of PCO). Training the study team, clarifying concepts, and convincing them of the methodology caused delays.

Non-availability of secondary data on the topic has seriously constrained the scope of the study. The scope of the present study is limited to a small geographical area of the State and that too only to male workers.

4. Area, Population, and Socio-economic Characteristics

In this section, the general features of the study centres and the characteristics of their population are presented. Fifteen coastal wards (4 from Paruthiyoor and Kollemcode of the Pozhiyoor village of Kolathur *panchayat*, 6 from Vizhinjam *panchayat* and 5 from Anjengo *panchayat*) have been selected as the study centres (Table 4.1).

Pozhiyoor and Vizhinjam are on the south and Anjengo on the north of Thiruvananthapuram, the capital city of Kerala State. Pozhiyoor is the southern-most coastal village of the State, situated at about 40 km south of the State capital (Figures 4.1 and 4.2). Vizhinjam lies at about 17 km south of Thiruvananthapuram and Anjengo at around 40 km north of the city (Figures 4.3 and 4.4).

The sample coastal wards had a total population of about 38.6 thousand in 1991 (10.5 thousand in Pozhiyoor, 18.2 thousand in Vizhinjam, and 9.9 thousand in Anjengo) which formed more than two-fifths of the population of the three *panchayats* concerned, taken together. Population density is higher in the coastal wards (3623 per sq km) than the overall density in the selected *panchayats* (3254 per sq km).

According to Parish records, there were a total of 198 family units in the study centres, living in 4507 houses and consisting of 7271 households (Table 4.2). It is these family units and the houses and households in them which were taken up for our study.

Name of Sample Panchayats	Kolathur	Vizhinjam	Anjengo
Area (sq km)	11.24	12.62	3.36
Area of Sample Coastal Wards (sq km)	3.75	5.05	1.87
Total no. of wards in the panchayat	12	15	9
No. of sample wards	4	6	5
No. of houses in the panchayat	5763	7876	3103
No. of houses in the sample wards	1722	2961	1776
Population in the panchayat	29417	42402	16742
Population in the sample wards	10499	18252	9907

 Table 4.1 Indicators of panchayats in which the selected coastal centres are situated

Source: (i) Parish Data, (ii) 1991 Census, Government of India

* Coastal area is estimated based on the ratio of the number of coastal wards to total number of wards

Latin Christians constitute the major fishing community in all the study centres. However, in Vizhinjam, there is also a community of Muslims engaged traditionally in fishing. Only the southern part, inhabited by the Christian fishermen, is included in the study.

Infrastructure

Infrastructural facilities such as transport and communication are in general poor in the selected villages. Pozhiyoor is the most backward among them. Institutions available here include





Fig 4.2 Paruthiyoor





Fig 4.3 Vizhinjam South

Fig 4.4 Anjengo



	Pozhiyur (Kolathur pa	unchayat)	Vizhinjam South (Vizhinjam <i>panchayat</i>)	Anjengo (Anjengo <i>panchayat</i>)	
	Paruthiyoor	Kollemcode			
Name of the church	St. Magdelene Mary's	St. Mathews	Sindhu Matha	St. Peter's	Total
No. of family units	32	50	75	41	198
No. of Houses	743	755	1824	1185	4507
No. of Hou- seholds	1281	1573	2768	1649	7271

 Table 4.2
 Village Indicators: Pozhiyoor (Kolathur panchayat)/Vizhinjam (Vizhinjam panchayat)/ Anjengo (Anjengo panchayat)

lower primary school (in Kollemcode), an upper primary school (in Paruthiyur), and a high school and an upper primary school at Pozhiyoor junction. A public library, a post office, and a football stadium also exist in Pozhiyoor. The other institutions in the area include the office of Matsyafed (Federation of Fishermen, an agency of the State government), a primary health centre, and a few co-operative banks.

In Vizhinjam, the facilities are much higher. It has a lower primary and a high school in the fishing village itself. Besides, a government medical centre, a post office, and a police station under a Circle Inspector also function here. There are also a few fisheries institutions such as Marine Survey Station, Fisheries Training Centre, Lobster Culture Centre, Pearl Culture Centre, CMFRI substation, Vizhinjam Fishing Harbour and Boat-building Centre in the Vizhinjam *panchayat*. In addition, a private clinic and a government hospital exist here.

Educational, health care, and banking facilities are well-developed in Anjengo. A high school and an upper primary school run by the Church and a lower primary school in the government sector, are available here. A private homoeo clinic functions in the area, but the majority of patients depend for their medical treatment, on the hospitals situated in the neighbouring areas of Chirayinkeezh and Kadakkavoor. The South Indian bank has branches in this area and caters to the credit requirements of the local fishermen effectively. Shops and establishments for supply of fishing gear, repairs of boat-engines, and supply of diesel for engines also exist in this area. Institutions include two Ice Plants and two Boat-building centres.

Demographic characteristics

Households are of three types: nuclear, joint, and extended. Almost 70 percent is of the nuclear type. Extended families account only for an infitesimablly small proportion (of nearly

0.2 percent). The rest is of the joint type. Variations are observed among the selected study centres in terms of types of households, household population size, and sex ratio (Table 4.3)

Total population

About 69 percent households in Paruthiyoor and 62 percent households in Kollemcode are of the nuclear type with an average household size of about five members. The average household size of a joint family is about eight members. The male population outnumber the female population in both the villages, with a sex ratio (females per 1000 males) of 952 in Paruthiyoor and 966 in Kollemcode. Total population in Pozhiyoor during the reference period was 8693 (4267 in Paruthiyoor and 4426 in Kollemcode).

About 72 percent households in Vizhinjam South are of the nuclear type with an average household size of 5 members. The average household size of joint family had about 8 members. The population of the extended family type is marginal, at 5 percent. The male population outnumbers the female population in this village with 5375 males as against 4905 females. The sex ratio is 913.

Nearly 70 percent of households in Anjengo are nuclear families with an average household size of 4 members. The average household size of joint family comes to about seven members. The male population outnumbers female population in this village also, with 3269 males as against 2987 females, the sex ratio coming to 914.

	Pozhiy	ur	Vizhinjam South	Anjengo
	Paruthiyur	Kollemcode		
1) Households				
(i)Nuclear	513(69%)	458(62%)	1322(72.5%)	871(70%)
(ii) Joint	228(31%)	285(38%)	496(27.0%)	378(30%)
(iii)Extended	-	-	10(0.5%)	1()
Total	741(100%)	743(100%)	1828(100.0%)	1250(100%)
2) Household size				
(i)Nuclear	4.94	4.78	4.72	4.24
(ii) Joint	7.58	7.83	7.99	6.75
(iii)Extended	-	-	7.80	7.00
Total	5.76	5.96	5.62	5.00
3) Population				
(i)Male	2186	2251	5375	3269
(ii)Female	2081	2175	4905	2987
Total	4267	4426	10280	6256
4) Sex ratio (no. of females per 1000 males)	952	966	913	914

 Table 4.3 Centre-wise Distribution of Households and Population

Source: Survey data, 1997

Age Structure

The age-structure of the total population in all the study centres taken together, according to sex, is given in Table 4.4.

Age Group (years)	Total P	opulation (nu	umber)	Total Population (percent)		
	Male Female Total		Male	Female	Total	
0-4	1240	1173	2413	51.4	48.6	100.0
5-14	2791	2799	5590	49.9	50.1	100.0
15-34	5184	4877	10061	51.5	48.5	100.0
35-59	3022	2541	5563	54.3	45.7	100.0
60+	844	758	1602	52.7	47.3	100.0
Total	13081	12148	25229	51.8	48.2	100.0

Table 4.4 Age Structure by Sex of the Total Population

Source: Survey data, 1997

The population in the working age, defined as 15 to 59 years comes to 62 percent. The sex ratio is found to be unfavourable in almost all the age groups. There are marginal variations in the age structure and the sex ratio among the different centres as may be seen from Table 4.5 and 4.5a.

Literacy

The literacy levels of the population above five years of age are between 61 percent and 75 percent for males, 63 percent and 78 percent for females. The difference in the literacy rates as between men and women does not exceed three percentage points in any of the centres. Naturally, literacy rates are lower for the higher age groups (Table 4.6).

Activity status

About 43 percent of the population in the study area constitutes the labour force: 34 percent working and 9 percent seeking work. Among males, labour force comes to more than three-fifths of the population as against a mere 23 percent among females. The proportion of work seekers is about 9 percent of the population both among men and women. Nearly two-fifths of the female population is found to fall in the category of housewife (Table 4.7). Significant differences are observed in the relative magnitudes of the working force, the work-seekers and the non-working population, among the different study centres (Table 4.8). For example, the proportion of the labour force is quite low in the Kollemcode village (43 percent). The low rate is explained to a large extent by the extremely low work participation rate among women which comes to only about 7 per cent.

Non-fishing activities

Only about 13 percent of the working population is engaged in activities outside the fishing sector. The major venues of non-fishing employment are the Gulf region, the State government, and the private sector. Self-employment also plays a not-too-insignificant role. Details of males and females employed in the non-fishing sector by sector of employment are given in Table 4.9.

Age Group	Age Group Pozhiyur				Vizhinjan	1	Anjengo					
(years)	I	Paruthiyur		K	ollencode			-				
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	224	196	420	189	200	389	574	505	1079	253	272	525
5-14	479	510	989	481	517	998	1164	1180	2344	667	592	1259
15-34	849	820	1669	919	869	1788	2108	1981	4089	1308	1207	2515
35-59	471	414	885	510	429	939	1214	955	2169	827	743	1570
60+	163	141	304	152	160	312	315	284	599	214	173	387
Total	2186	2081	4267	2251	2175	4426	5375	4905	10280	3269	2987	6256

 Table 4.5 Centre-wise Age Structure of the Population

Source: Survey data, 1997

Table 4.5a Centre-wise Sex Ratio (Females per	: 1000 males) by Age Group
-----------------------------------------------	----------------------------

Age Group	Poz	hiyur	Vizhinjam	Anjengo
(years)) Paruthiyur Kollemcode			
0-14	875	1058	880	1075
5-14	1064	1075	1013	887
15-34	966	946	940	923
35-59	879	841	787	802
60+	865	1023	902	808
Total	952	966	913	914

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Source: Survey data, 1997

Age Group (years)	Pozhiyur							Vizhinjam			Anjengo		
	I	Paruthiyur		Kollencode									
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	
5-14	93.0	95.7	94.3	97.6	97.3	97.0	94.8	97.9	96.3	94.5	95.0	94.7	
15-34	81.7	85.6	83.7	89.0	92.5	91.0	87.5	91.8	89.7	82.7	89.6	86.2	
24-34	49.3	42.3	46.1	73.3	66.6	69.5	76.4	70.0	73.4	66.7	66.5	66.6	
35-59	33.3	30.0	31.1	49.5	49.2	49.4	53.8	54.8	79.4	56.0	54.8	51.4	
60+	16.9	15.0	16.0	40.6	29.0	34.6	37.5	32.7	35.2	34.0	38.7	18.4	
All	61.0	63.0	62.0	75.0	74.0	75.0	75.0	78.0	76.0	72.0	74.0	73.0	

 Table 4.6
 Literacy Rates by Age Groups (for population above 5 years of age)

Source: Survey data, 1997

(1) Working Population				Percentage		
(a) Fishing	Male	Female	Total	Male	Female	Total
(i) Fishing	5819	-	5819	44.5	-	23.0
(ii) Fishing-related	174	71	245	1.3	0.6	1.0
(iii) Fish-vending	66	1242	1308	0.5	10.2	5.2
Total (a)	6059	1313	7372	46.3	10.8	29.2
(b) Non-Fishing	831	285	1116	6.4	2.3	4.4
Total $(1a + 1b)$	6890	1598	8488	52.7	13.1	33.6
2) Work seekers	1135	1147	2285	8.6	9.4	9.0
3) Not in the labour force						
(i) Student	3339	3393	6732	25.5	27.9	26.7
(ii) Housewife	-	4625	4625	-	38.0	18.3
(iii) Pensioner/Renters						
including remittance						
receivers	23	9	32	0.2	0.1	0.1
(iv) Too Old/Too young/						
Invalid	1694	1376	3069	13.0	11.4	12.2
Total(3)	5056	9413	14470	38.7	77.4	57.4
Grand Total (1+2+3)	13081	12148	25229	100.0	100.0	100.0

 Table 4.7
 Activity Status of the Total Sample Population

Source: survey data, 1997

Though variations exist among the study centres in the distribution of workers among the different venues of employment, employment in the Gulf countries is the more important among them. Employment in the Gulf countries accounts for nearly 52 percent of male employment in the non-fishing sector. Among women, the major sector of non-fishing activity is self-employment (which accounts for two-thirds of women's work in the non-fishing sector).

Age composition of the workforce

Workers below the age of 15 (1.4 percent) and above the age of 60 (8.8 percent) constitute only about one-tenth of the workforce in the sample areas taken together. The proportion varies from 8 percent in Vizhinjam to 14 percent in Paruthiyoor. While about two-fifths of the work force falls in the age group of 35-59 years, the proportion in the younger age groups of 25-34 years and 15-24 years are 28 percent and 21 percent respectively (Table 4.10). The age group-wise pattern of distribution of the workforce does not vary significantly as between the two sexes and among the different study centres.

Workers as proportions of the population in the respective age groups are furnished in Table 4.11. The overall work participation rate comes to 33.6 percent, 52.7 percent for males and 13.1 percent for females. The highest rate is observed in the age group 35-59. Workers of less than 15 years of age form only about 1.5 percent. In this case not much difference is observed as between male and females. The rates are lower in Paruthiyoor, Kollemcode, and Vizhinjam than in Anjengo, for
Activity Status		Pozhiyur					Vizhinjam			Anjengo		
	Parut	hiyur		Kolle	emcode							
(1) Working Population	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
(a) Fishing												
(i) Fishing	979	-	979	922	-	922	2301	-	2301	1617	-	1617
(ii) Fishing-related	7	4	11	2	8	10	144	49	193	21	10	31
(iii)Fish-vending	13	213	226	9	100	109	17	349	366	27	580	607
(iv) Fleet share Total (a)	999	217	1216	933	108	1041	2462	398	2860	1665	590	2255
(b) Non-Fishing	65	32	97	135	49	184	355	111	466	276	93	369
Total(b)	1064	249	1313	1068	157	1225	2817	509	3326	1941	683	2624
2) Seeking Work	228	240	468	182	107	289	470	728	1198	255	72	327
3) Not in the labour force												
(i)Student	582	607	1189	729	771	1500	1280	1309	2589	748	706	1454
(ii)Housewife	-	713	713	-	910	910	-	1718	1718	-	1284	1284
(iii)Pensioner/Renters including remittance receivers	1	1	2	9	2	11	10	4	14	3	2	5
(iv)Too Old/Too young/ Invalid	311	271	582	263	228	491	798	637	1435	322	240	562
Total (3)	894	1592	2486	1001	1911	2912	2088	3668	5756	1073	2232	3305
Grand Total	2186	2081	4267	2251	2175	4426	5375	4905	10280	3269	2987	6256

 Table 4.8 Centre-wise Activity Status of the Population

Source: survey data, 1997

Sector of							Stud	y Centr	es						
Employ-			Poz	zhiyur											
ment	P	'aruthiyu	ır]	Kollencoo	de	Viz	hinjam		A	njengo			Total	
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Gulf	37	-	37	62	3	65	226	7	233	110	26	136	435	36	471
Countries	(56.9)		(38.1)	(45.9)	(6.1)	(35.3)	(63.7)	(6.3)	(50.0)	(39.9)	(27.9)	(36.8)(523)	(12.5)	(42.2)
C	13	3	16	48	12	60	46	12	58	23	20	43	130	47	177
Government	(20.0)	(9.4)	(16.5)	(35.6)	(24.5)	(32.6)	(13.0)	(10.8)	(12.4)	(8.3)	(21.5)	(11.6))(15.6)	(16.5)	(15.9)
Private	3	3	12	1	13	11	1	12	9	5	14	3	5	7	42
Sector	(4.6)	-	(3.1)	(8.9)	(2.0)	(7.1)	(3.1)	(0.9)	(2.6)	(3.3)	(5.4)	(3.8)	(4.2)	(2.5)	(3.8)
Self-	11	29	40	9	33	42	70	87	157	134	42	176	224	191	5
Employment	(16.9)	(90.6)	(41.2)	(6.7)	(67.4)	(22.8)	(19.7)	(78.4)	(33.7)	(48.5)	(45.2)	(47.7))(27.0)	(67.0)	(37.2)
Professionals	1	_	1	4		4	2	4	6				7	4	11
	(1.6)		(1.0)	(2.9)	-	(2.2)	(0.5)	(3.6)	(1.3)	-	-	-	(0.8)	(1.4)	(1.0)
Total	65	32	97	135	49	184	355	111	466						
	(100.0)	(100.0)	(1000)	(100.0)	(100.0)	(100.0)	(1000)	(100.0)	(1000)	276	93	369	831	285	1116

Table 4.9	Employment in	the Non-Fishing	Sector by Sex and	d Sector of Employment
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Source: Survey data, 1997

(Figures in parentheses indicate percentage)

both males and females. Surprisingly, work participation is quite high among old people, of more than 60 years of age. In Paruthiyoor and Kollencode of the Pozhiyoor centre, the rates for population above 60 years of age, for both men and women, are even higher than the corresponding rates for the age group 15-34 years.

The educational status of the labour force is given in Table 4.12; the status is indicated separately for the workforce and the unemployed. In general, educational status of the employed is found to be lower among the employed than among the unemployed, both for males and females. Illiteracy among workers is found to be the highest in Paruthiyoor, 59 percent among males and 74 percent among females.

Educational status of fish workers

Fishing and fish-related occupations being the mainstay in all the four sample centres, we furnish in Table 4.13 the educational status of fish workers. As indicated in Table 4.12, illiteracy among fish workers is also the highest in Paruthiyoor. In the other centres, illiteracy varies in a narrow range among workers between 40 percent in Vizhinjam to 46 percent in Kollemcode. Among the others who are literate, the education level is low, the percentage having entered the secondary and higher levels being, on the average, less than 10 percent.

Fishing crafts

The number of fishing crafts in the non-motorised sector has declined during the period 1991-1977 by more than half, largely due to the disappearance of Catamarans. The centrewise details of the change in the number of fishing crafts during this period are given in Table 4.14. In the process of change in fishing crafts, the ownership status of fishermen has also undergone changes. For example, in Paruthiyoor, some fishermen have changed from the status of owner fishing crew to non-owner fishing crew. In Kollemcode, mechanised fishing declined due to decline in catch. Out of the 10 mechanised boats which used to operate from this centre in the waters of central and northern Kerala, 8 have become dysfunctional. Vizhinjam – an important and well-established fishing centre, in which a fishing harbour, and an international tourist centre are coming up – has witnessed a large increase in the number of motorised crafts (from 379 in 1991 to 203 in 1997). Anjengo though poor in fish-landing facilities, faces high fishing pressure. In this centre also, the number of motorised crafts in the non-motorised sector, particularly *Catamarans*, declined from 446 to 228.

The *Catamaran* and transom plank canoes use different varieties of small gillnet and / or boatsiene. Hook and line operation is also prevalent among *Catamaran* operators.

Ownership of fishing crafts by active fishermen

The three categories into which fishermen fall on the basis of their ownership status in fishing fleet are owner-worker, non-owner-worker, and owner non-worker (Table 4.15). The majority of fishermen (72 percent) fall in the non-owner worker group. The

14010 4.10	Age composition of workforce by Sex														
AgeCroup			P	ozhiyu	r										
Ageoroup		Paruthiy	ur		Kollen	code		Vizhinj	jam		Anjengo			Tota	al
(year	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
<15	1.2	0.8	1.1	1.0	5.7	1.6	1.3	1.6	1.3	0.9	3.4	1.5	1.1	2.6	1.4
15-24	19.2	15.7	18.5	21.2	31.8	22.5	21.6	14.2	20.5	24.8	14.8	22.2	22.1	16.4	21.0
25-34	28.5	34.1	29.6	25.8	17.2	24.7	30.0	15.9	27.8	27.4	32.8	28.8	28.4	26.1	27.9
35-54	41.4	22.1	37.8	43.5	29.9	41.8	41.7	54.0	43.6	40.1	33.4	38.4	41.5	37.9	40.8
60+	9.7	27.3	13.0	8.4	15.3	9.3	5.4	14.3	6.8	6.8	15.6	9.1	6.9	17.0	8.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

 Table 4.10
 Age Composition of Workforce by Sex

Source: Survey data, 1997

 Table 4.11 Age-group-wise work participation rates by sex

		Pozh	Pozhiyur								
AgeGroup	Pa	ruthiyur	Kolle	ncode	Viz	hinjam	An	jengo	To	tal	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
<15	2.7	0.3	2.3	1.6	3.1	0.7	2.7	3.1	1.9	1.1	1.5
15-34	59.7	15.1	54.6	8.9	69.0	7.7	77.5	26.9	67.1	13.9	41.3
35-59	93.7	13.3	91.4	11.0	96.8	28.7	94.2	54.9	94.6	23.8	62.3
60+	64.1	47.9	62.5	15.0	48.6	25.5	62.3	35.6	56.5	35.9	46.8
Total	48.7	11.9	47.6	7.2	52.4	10.3	59.3	22.8	52.7	13.1	33.6

Source: Survey data, 1997

Education-	Pozhiyur															
al Level		Paru	thiyur			Ko	llencoo	le		\mathbf{V}	izhinja	am		Anjeng	0	Total
	Emp	loyed	Unen	nployed	Emp	loyed	Unem	ployed	Emp	loyed	Unen	nployed	Emj	ployed	Unem	ployed
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1) Illiterate	58.7	73.9	23.1	25.4	39.9	47.8	14.4	16.8	35.5	48.5	13.2	11.1	37.7	47.7	16.9	30.6
2) Literate, belowsec-																
ondary school	30.6	18.1	45 3	52.9	32.3	26.8	37.4	31.8	477	42.2	64 5	68 7	454	46.0	59.6	569
3) Secon-	0010	1011			0210	2010		0110			0.110					0.017
dary school	9.4	8.0	24.9	19.2	21.5	19.1	41.4	50.5	14.1	6.9	21.7	19.6	16.1	4.8	22.0	12.5
4) Graduate																
(i)Genl.Edn.	0.5	-	4.4	1.7	3.8	5.7	-	-	1.5	1.2	-	-	0.6	1.0	1.2	-
(ii)Profess- ional/																
Technical Edn.	0.5	_	0.4	0.4	1.0	0.6	_	_	0.2	1.0	_	_	0.1	0.1	-	_
5) Postgr-			1.0	0.4	1.4		6.0	0.0		0.0	0.4	0.6	0.1		0.4	
aduate	0.3	-	1.8	0.4	1.4	-	6.9	0.9	0.9	0.2	0.4	0.6	0.1	0.3	0.4	-
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

 Table 4.12 Educational Status of Labour Force (in percentage)

Source: Survey data, 1997

Educational Level	Р	ozhiyoor	Vizhinjam	Anjengo
	Paruthiyoor	Kollemcode		
1) Illiterate	61.0	46.4	39.8	43.0
2) Literate, below secondary school	31.0	36.5	51.3	47.8
3) Secondary school	6.8	14.4	8.7	8.7
4) Graduate	0.2	2.7	0.2	0.5
Total	100.0	100.0	100.0	100.0

 Table 4.13 Education Status of Fish Workers (%)

Source: Survey Data, 1997

Table 4.14 Number of Fishing Crafts

Type of		Pozhi	iyoor		Total		Vizh	injam	Aı	ıjengo]	Fotal
Craft	Paruth	iyoor	Koller	ncode				South				
	1991	1997	1991	199	7 1991	1997	1991	1997	1991	1997	1991	1997
1) Non-motorised												
Catamaran	672	388	388	125	1060	513	567	192	446	228	3133	446
PlankCanoe	27	23	19	15	46	38	10	11	16	16	118	103
Total	699	411	407	140	1106	551	577	203	462	244	3251	1549
2) Motorised												
Plywoodcanoe	170	154	113	163	283	317	379	669	140	307	1085	1610
Plank-transom	13	-	7	-	20	-	45	-	8	-	93	-
Total	183	154	120	163	303	317	424	669	148	307	1178	1610
Grand Total	882	565	527	303	1409	868	1001	872	610	551	4429	3159

Source: SIFFS, 1991 and 1997

proportion of owners who are non-workers is negligible. Owner-workers account for the rest 28 percent.

Plywood-based fishing accounts for about 63 percent of the labour, 17 percent of the ownerworker type and 46 percent of the non-owner worker type. The proportions vary from centre to centre. The centre-wise distribution of plywood canoes according to gears used is given in Table 4.16.

Crew-Boat (C/B) ratio

The size of crew per boat varies with the type of craft, and that too from one centre to another (Table 4.17). While Paruthiyoor employs only 1.63 persons per craft, the other centres employ higher numbers, the highest being in Anjengo with 4.49 persons.

Ownership Status	Poz	hiyur		Vizhinjam	Anjengo	Total
Craft Types	Paruthiyoor	Kollemcode	Total	South		
1) Owner Worker						
Group						
(a)Plywood	114	123	236	480	234	950
(b)Catamaran	130	35	165	121	113	399
(c)Others	51	20	71	113	36	220
Total (1)	295(32%)	177(24%)	472(28%)	714(28%)	36383(26%)	1569(28%)
2) Non-owner						
Worker Group						
(a)Plywood	290	346	636	1674	346	2656
(b)Catamaran	175	56	231	93	658	982
(c)Others	159	156	315	87	89	491
Total (2)	624(68%)	558(76%)	1182(71%)	1854(72%)	1093(74%)	4129(72%)
3)Owner Non-						
Worker Group						
(a)Plywood	1	2	3	4	-	7
(b)Catamaran			-	-		
(c)Others			-	-		
Total (3)	1 (neg.)	2 (neg.)	3 (neg.)	4(neg.)	-	7
Grand Total (1+2+3	920(100%)	737 (100%)	1657(100%)	2572(100%)	1476(100%)	5705(100%)

 Table 4.15
 Fishermen by Craft Type and Ownership Status

Source: Survey data, 1997

Gear Base	Pozh	iyoor	Vizhinjam	Anjengo
	Paruthiyoor	Kollemcode		
Plywood canoe with:				
Drift net	48.30	79.28	50.30	33.66
Hook and line	21.03	15.23	49.70	33.50
Other net	30.67	5.49	-	32.84
Total	100.0	100.0	100.0	100.0

Table 4.16 Gear-base Pattern of Fishermen using Plywood Canoe

Source: Survey Data, 1997

Table 4.17 Crew / Boat Ratio

Craft Type	Pozh	iyoor	Vizhinjam	Anjengo
	Paruthiyoor	Kollemcode		
Plywood	2.62	2.88	3.28	5.15
Catamaran	0.79	0.73	1.11	3.38
Other	9.13	11.74	18.18	7.81
All	1.63	2.43	2.99	4.49

Source: Survey Data, 1997

5. Forms and Magnitudes of Labour Mobility

Labour mobility of fishermen in the study centres is examined in terms of (a) spatial mobility and (b) occupational mobility. Spatial mobility in these centres takes predominantly the forms of commutation and circulation. The various forms of spatial mobility taking place in each centre is shown in the charts 5.1 (a to d). Every fisherman moves during fishing as the prey moves. This move may be considered commutation (Table 5.1). Commuters constitute more than 76 percent of all fishermen.

Circulating fishermen form 14 percent of the male population, 26 percent of the male working population, and 31 percent of the total number of fishermen in all the study centres taken together. However, significant variations in these proportions are observed across the different study centres (Table 5.1).

Information Tree 5.1 (a) Patterns and Magnitudes of Spatial Mobility of Labour in Paruthiyoor





Information Tree 5.1 (b) Patterns and magnitudes of Mobility of Labour in Kollemcode

In Kollemcode, 87 percent of workforce is engaged in fishing and related occupations. Of this, the number of fishermen circulating is 555. Of the 34 persons who circulate for non-fishing activity, 13 are in the government services and 21 are working in the Gulf countries. A further examination of the data reveals that 521 out of 741 households in Paruthiyoor and 557 out of 743 households in Kollemcode have circulators. This forms 70-75 percent of the total number of households in these centres. It is clear that both in Paruthiyoor and in Kollemcode of the Pozhiyoor village, circulation is predominant.

The proportion of circulators for fishing to male population is given in Table 5.2.

Circulation begins in September and lasts till the end of May. It is found to be more widespread among fishermen in Pozhiyoor villages, Paruthiyoor, and Kollemcode. Fluctuations are observed in the magnitudes of circulation of fishermen due to technology and skill factors; also in conflicts arising between them and the mechanised boat workers in different parts of the State. For example, during the survey period of 1998, the magnitudes of circulation to the fishing areas of Neendakara and Sakthikulangara in Kollam district were unusually low due to such conflicts.



Information Tree 5.1 (c) Patterns and Magnitude of Spatial Mobility of Labour in Vizhinjam South

Information Tree 5.1 (d) Magnitude of Spatial Mobility of Labour in Anjengo



Forms of spatial Mobility	Pozhiyo	oor		Vizhi.South	Anjengo
	Paruthiyoor	Kollemcode	Total	-	
1. Commuters	479	378	857(44)	215 (87)	1247 (75)
2. Circulators	520	555	1075(56)	311 (13)	418 (25)
3. Migrants	-	-	-	-	-
Total (1 to 3)	999	933	1932 (100)	2462(100)	1665 (100)

 Table 5.1 Spatial Mobility of Labour for Fishing

Source: Survey data, 1998

Table 5.2	Male Popula	tion and Fis	hermen Circulations
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Particulars	Pozhiyoor			Vizhinjam	Anjengo	Total
	Paruthiyoor	Kollemcode	Total			
1. Male Population						
Working	1064	1068	2132	2817	1941	6890
Fishermen	979	922	1901	2301	1617	5819
Total Population	2186	2251	4437	5375	3269	13081
2. Fishermen Circulators	520	555	1075	311	418	1804
3. Percentage of						
Circulators to:						
a) Male Population	24	25	24	6	13	14
b) Male Working Population	49	52	52	11	22	26
c) Fishermen	53	60	57	14	26	31

Source: Survey data, 1998

These labour movements are primarily for availing the landing facility for their fishing vessels during the monsoons or during days of heavy rain. The circulation in Vizhinjam South is on the lower side. This is because Vizhinjam is the only centre in Thiruvananthapuram where fishing takes place for almost 12 months of a year. Hence inward circulation of labour is high in Vizhinjam, especially during the monsoon season (June to August). It may be interesting to see why there is circulation from Vizhinjam. Some of the reasons noted in our study are hook-and-line base, exposure to outside world, and marital relations. The life history of George from Vizhinjam South, who is basically a hook-and-line fisherman, reveals that during lean seasons of hook-and-line, he used to circulate to Rameswaram and north of Kerala in search of opportunities for maximising income (Case Study 3). The life history of Dasan, who had the working experience in fishing vessels in the Gulf area, had exposure to the mechanised sector. This inspired him to circulate to other places in search of employment. He married from Thuthoor, where almost all fishermen are circulators (Case Study 5).

The pertinent question to ask in this context would be: why do fishermen circulate and whether the circulation is the cause or the result of some phenomenon.

The reasons for circulation differ from centre to centre. In Pozhiyoor, the reasons relate to technological and oceanographic factors. In Vizhinjam South, circulation, though not substantial, is influenced by marital relations of fishermen through whom work relations are created with the in-laws of other areas. In Anjengo, on the other hand, the lack of landing/ berthing compels the fishermen to circulate during specific seasons. As seen earlier, Lee, Vroom, and Mitchel have given the theoretical explanation of these factors.

In Pozhiyoor, those who mainly base on Driftnet units do circulate and those who base on variety of gears (especially varieties of small gillnets) do not usually circulate. The benefits envisaged from circulation are higher and more regular income and that too received in lumpsum, which could provide a sound financial base. The circulation was the result of technology upgradation with respect to gear. The introduction of Drift net all along the coast of Kerala and elsewhere, fuelled the demand for labour to operate the same and ultimately the exposure through marketing network bridged the gap between demand for and supply of labour. The lack of appropriate skills of fishermen in the receiving villages to tap the available resources pulled the skilled labour from other areas.

Main reasons for circulation for fishing

Focus Group Discussions and life histories revealed that the initial inspiration for circulation to the north of Kerala and elsewhere in Pozhiyoor came from fishermen of Kanyakumari district, especially of Neerodi and Vallavila who used to circulate to other places for several decades. They are well-versed in the operation of Driftnet (*Ozhukkuvala*) and hook and line (*Mattu*) which are not practised by fishermen of the 'receiving' villages. The fishermen of Kanyakumari moved to other places by capitalising on this opportunity (PCO/SIFFS, 1991). Fishermen of Pozhiyoor who used to work as *coolie* in the fishing crafts owned by fishermen of Kanyakumari district accompanied them on their trips to other places for fishing.

Zacharias (aged 45), a regular seasonal circulating fisherman of Paruthiyoor, moved to Badagara of Kozhikode district in Kerala for the first time when he was 18 years of age. There was only one Driftnet fishing unit in Thoothoor. Zacharias was invited by the owner of that fishing unit for accompanying the team to Badagara (Case Study I). The passion for circulation for fishing on the part of Cletus (Alias Ettus) was stirred mainly by his travels with father in his fish-vending errands to other areas (Case Study II). Fishermen of Kanyakumari district, especially of Neerodi village, are the pioneers in circulation for fishing towards north of Kerala and elsewhere.

Pioneering attempt for circulation of fishermen from lower south-west coast

It was reported that Ambrose and a few others are the pioneers of circulation for fishing in the South West Coast of Kanyakumari district. Ambrose was a fish merchant who hailed from Neerody. His younger brothers Marchose, Lucas, and Yanose are traditional fishermen. Ambrose, now 65 years of age, used to sell salted and dried fish in the Madras market. Ambrose was told by Ibrahim, a fish merchant from Mancheswaram of Kasargod district, that he had purchased a Drift net, which he was operating from Kappu, a fishing village near Uduppi of Dakshina Kannada district of Karnataka State. The net was being operated by crew hired from the Malappuram district of Kerala. Ibrahim expressed his desire to obtain crew with expertise in Drift net operation and enquired the possibility of getting such experts from Neerody. Within a few days, Ambrose and his younger brothers, all experts in Drift net operation, and a few other fishermen from Neerody went to Kappu. This was in December 1964. They worked in the fishing unit of Ibrahim and stayed in a *Chappa*, a local hutment on the coast, erected to store dried fish. The stay in the *Chappa* was arranged by Ibrahim free of rent. The agreement between Ibrahim and the crew was to divide income, net of food expenses, in the 1:1 ratio. After one month, two members of the crew of eight came back to their home village due to the language problem. The rest of the crew remained at Kappu till May of 1965 and came back home only after the fishing season was over.

Again in August 1965, they went to Kappu, but this time with their own Drift net. When the news of their venture spread in their native village, four or five other groups of fishermen also went to Kappu with their Drift nets. At that time, there were only four or five Drift net units in all in Neerody. They hired Dugout canoes from the fishermen of Kappu on a rent of Rs 50 per month. From 1966 onwards more and more fishermen from Neerody began to travel to the fishing villages of the Uttara (northern) Kannada and Dakshina (south) Kannada districts of Karnataka State. In 1966 Ambrose and brothers purchased a Dugout Canoe from Karwar of Uttara Kannada at Rs 400. In course of time fishermen from neighbouring villages of Neerody also commenced circulation for fishing when information reached them from the fishermen of Neerody.

According to Marchose fish moves towards the north-west coast from the month of August onwards when water in the south-west becomes clear and sunlight easily passes through it. As the sea bottom is sandy, the water gets hot. Hence fishes do not stay in that area. The sea bottom in the north-west coast being muddy and cool, fishes like pomfret, mackeral, sardine, and anchovy move from south-west towards north-west. They swim back to the southwest during June-July. Fishermen have realised this fact only after they commenced circulation towards the north-west coast. Published sources reveal that mackerel is predominant in the inshore waters of Uttara Kannada. To quote from Bala Murali Krishna, the Uttara Kannada district is also called 'Mackerel-Coast'*, Asia's largest 144 km of coastline with rich marine resources.

It is evident that the resource richness in the north-west, the moving of fishes towards this region, the oceanographic factors and the prevailing differences in the techniques of fishing force the fishermen of the lower south-west coast to move towards north-west. The fishing technologies employed in the latter were not efficient to tap the available resources. The fishermen in Kannada district had only *Rampani* net (a kind of shore seine) and *Veeshuvala* (Cast net). The fishermen in the lower south-west had even prior to the 1960s *Peruvala* (made of jute fibre) for catching fishes like pomfret. The coming of Drift net (made of nylon) into use in the early 1960s coupled with the receipt of the new information about opportunities in the north-west coast helped fishermen to explore new and uncharted avenues.

Thus, we find that it is oceanographic features, technology upgradation, and the spread of information through marketing networks that influenced circulatory movements of fishermen from the extreme south-west of the country towards the northern parts.

The question remains as to why fishermen from the region extending from Kolachal in Kanyakumari district to Paruthiyoor in Thiruvananthapuram district alone resorted to circulation and even then, not all the fishermen in the region did not do so. Obviously, fishermen who mainly work on Driftnet only circulate. Fishermen who work on a variety of small gillnets usually do not. As the investment on Driftnet unit is on the higher side, the operation of the same in the home villages from August onwards would not normally cover costs. Hence the owners of driftnet circulate to the north of Kerala and to the Karnataka belt for making economic gains. Interestingly, fishermen have increasingly turned to investment in drift nets in the expectation of economic gains and circulation to the north. It is reported that in one single season which lasts for about nine months, a driftnet owner would be able recoup almost the entire investment on his fishing fleet. The surplus amount gained from fishing during circulation is utilised usually for acquiring land, depositing in the banks or money lending at usurious rates of interest (*vatti-palisha*).

While the owner-crew of Driftnet units want to maximise profit from investment, the workercrew want to maximise their share of income from fishing. While sharing of income in the home villages is done on a daily basis, sharing in the destination villages of circulation takes place once in a week. The crew members receive income in larger sums under the weekly sharing system. This helps them save from their earnings or make capital investments. Also the number of working days is comparatively more during circulation than in the home villages. In the villages north of Pozhiyoor, small Gillnets of comparatively high variety exist. Hence they rely on a variety of fishing methods without resorting to circulation.

While it was Ambrose of Neerody fishing village who first went to Kappu fishing village (a village situated 10 km north of Mangalapuram), it was a Muslim merchant from Manjeswaram, who invited Ambrose to fishing with 'Chain hook-and-line' (*changala-choonda*). After a few years, Ambrose commenced the operation of driftnet in the villages of his destination. Persons with craftsmanship in fishing and willingness to move out of home village and stay

away in the destinations for long periods are invited by merchants in the destination centres. Over time, circulation has become a routine process for fishermen of Neerodi, Vallavila, Thuthoor, and Pozhiyoor.

Expert fishermen in Driftnet operation inevitably circulate. Fishermen of the destination villages neither know the operation of Driftnet nor do they have Driftnets. They use only Shore-seine (*Rampaninet*) and castnet (*Veeshuvala*). Making use of this opportunity, the circulating fishermen from the south operate Driftnets in the northern villages during November-December period; they engage also the Hook-and-line fishing method.

Of the total number of Plywood Canoes (PC), about 100 in Paruthiyoor and 110 in Kollemcode operate mainly with drift net. It is these crafts which usually circulate. The distribution of circulatory fishermen by the type of crafts in operation is given in Table 5.3.

Craft Type	Pozhiyu	r	Vizhinjam	Anjengo
	Paruthiyoor	Kollemcode	South	
Plywood Canoe	455(87%)	528(95%)	255(82%)	316(76%)
Mechanised Craft	65(13%)	22(4%)	20(7%)	74(18%)
Catamaran	-	-	4(1%)	17(4%)
Other Crafts	-	5(1%)	32(10%)	11(2%)
Total	520(100%)	555(100%)	311(100%)	418(100%)

 Table 5.3 Distribution of Circulating Fishermen by Type of Craft of Operation

Source: Survey data, 1998

Almost all fishermen who circulate from Paruthiyoor and Kollemcode uses Plywood canoes. Mechanised crafts are used only 13 percent in Paruthiyoor and 4 percent in Kollemcode among the circulating fishermen. Other crafts are used only by a mere one percent in Kollemcode.

The proportion of circulating fishermen is only 14 percent in Vizhinjam South. The urge to move is low here due to the fact that Vizhinjam is a fishing centre which has facilities for fishing operations throughout the year. In fact, fishermen from other villages move to Vizhinjam during the south-west monsoon season of June-August. Circulation to other fishing centres from Vizhinjam is mostly confined to non-owner wage workers (*coolies*) who work in Catamarans to eke out a hard living. These workers, most of them experts in the use of different gears, move to other places during the lean season in Vizhinjam. A few plywood canoe owners also do move to the northern fishing centres due to inhospitable oceanic features or due to unfavourable market conditions for fish in the south. The majority (82 percent) of fishermen who circulate are workers in Plywood canoes; only 7 percent are workers in mechanised boats. The phenomenon of fishermen circulation has increased after the motorisation of country fishing crafts began.

For about five months in a year – June-August to December-January, fishermen of Anjengo move out to other places for fishing. They usually move to the adjoining Thangassery, a

fishing centre in Kollam district, with which they had marital relations. Owners of fishing crafts, mainly Plywood canoes, and workers in them move to their destinations with their crafts and gears.

All fishermen of Anjengo do not out-migrate. Fishermen, especially the young among them, who dare to work even during the rough season (Monsoon season) remain in Anjengo itself and go for fishing from their home village. These fishermen mainly engage in fishing with hook-and-line (*Mayakka*). Those afraid of strong surfs and rough waters move to Thangassery neither know the operation of drift net nor do they have Driftnets. They use only small gillnets with thread no.1 and 2 (*Edakettuvala*). Hence, the circulating fishermen from Anjengo operate Driftnets during December-January. Alternatively, they also operate Hook-and-line and other nets according to the availability of fish and the seasons. Circulation to Thangassery has increased after the construction of the Thangassery harbour. Earlier, fishermen used to move to the Thangassery harbour, landing facilities have improved. Also, Thangassery is a convenient place for the fishermen to stay. As leaving Plywood canoes with OBM on the sands unattended is not safe, the fishermen used to stay at Thangassery. In this context, one important point is that the duration of the period of annual circulation has changed after the introduction of OBM and Plywood.

The majority of fishermen who circulate in the Anjengo village are those who work on mechanised boats during circulation. A few fishermen work on *Catamarans* and on other crafts. Before the advent of Plywood canoe and OBM, the fishermen used to move to Thangassery with their *Catamarans*. But nowadays, only very few carry *Catamarans* to Thangassery.

It is observed that the commencement of circulation had started much earlier than 1980; however, more than four-fifths of the circulation began after 1980. The percentages vary from 75 percent in Pozhiyoor to 91 percent in Vizhinjam. Obviously, differences in the technology of fishing and in fishing skills must have been the major reasons for circulation.

Destinations of circulation

The destinations of the circulating workers of the different study centres are indicated in Table 5.5 and Figures 5.2 (a to d).

Fish workers (who constitute 92 percent of the circulating labour) go mainly to destinations within Kerala. Places in India outside the State attract about 23 percent; places outside India are the destination of nearly 5 percent.

Fishermen from Pozhiyoor circulate to northern districts of Kerala and also to the neighbouring States for fishing. The usual places of stay in the northern districts of Kerala are Kottukulam, Baikkal, Pallikara, and Kanjangad in Kasargod district; Puthiyangadi, Azheekkal, Kannur city *Kadappuram*, and Gopalpet in Kannur district; Badakara, Vellayil, and Beypore in Kozhikode district; and Kadalundy and Parappanangadi in Malappuram district. The usual places of visit outside Kerala are Malappa, Gaangoli, and Karwar in Karnataka; Mumbai in

Period				Pozhiyoor			Vizhinjam			Anjengo		Total
	Par	uthiyoor	Kol	lemcode	То	tal	South					
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Before 1980	101	20	162	30	263	25	35	9	46	11	344	19
After 1980	404	80	378	70	782	75	335	91	372	89	1489	81
Total	505	100	540	100	1045	100	370	100	418	100	1833	100

Table 5.4 Distribution of Fishermen by Period of Commencement of Circulation

Source: Survey data, 1998.

Maharashtra; and Rameswaram in Tamil Nadu; and Goa. A small number of fishermen also work in the Gulf countries on deep-sea fishing vessels.

Fishermen from Vizhinjam circulate mainly to the fishing villages in the northern districts of Kerala, as in the case of their counterparts of Pozhiyur; some also move to Rameswaram in Tamil Nadu.

Information Tree 5.2 (a) Destinations and Magnitudes of Labour Circulation in Paruthiyoor



Information Tree-5.2(b) Destinations and Magnitudes of Labour Circulation in Kollemcode





Information Tree-5.2 (c) Destinations and Magnitude of Labour Circulation in Vizhinjam South

Information Tree-5.2(d) Destinations and Magnitude of Labour Circulation in Anjengo



Fishermen circulators within Kerala and those who go to neighbouring states stay in sheds (known as *chappa*) erected for keeping dried/salted fish or in rented rooms either individually or in small groups. Some even sleep in the open sands of the beach. The distribution of workers by places of their stay while working in the different destinations is shown in Table 5.6.Most fishermen working in destination villages within Kerala or the adjoining live in *chappa* or *koodu* (sheds erected for keeping fishing craft), in open beach, or in relatives' houses. Fishermen of Anjengo who circulate only to nearby areas take food usually from local houses; they pay Rs 25 per day for lunch and supper. There are also a few who eat from restaurants. These Anjengo fishermen return to their homes every week. Some of their destination such as the ones, their counterparts from the Pozhiyoor and the Vizhinjam centres live in.

	Pozhiyoor			Vizhinjam	Anjengo	Total
Total circulating/ migrating	Paruthoyoor	Kollemcode	Total	-		
Labour	531	589	1120	370	464	1954
(i) Fishing labour	520	555	1075	311	418	1804
(ii) Non-Fishing Labour	11	34	45	59	46	150
Destination of circulation/						
migration						
(1) Fishing Labour	275	383	658	280	342	1280
(i) Kerala	230	157	387	25	15	427
(ii) Other states in India	15	15	30	6	61	97
(iii) Outside India						
(2) Non-Fishing Labour						
(i) Kerala	-	-	-	6	-	6
(ii) Other states in India	6	13	19	13	6	38
(iii) Outside India	5	21	26	40	40	106

Source: Survey data, 1998

Table 5.6 Distribution of Fish workers by Places of Stay at Destination

Place of Stay	Pozhiyoor			Vizhinjam	Anejngo	Total
	Paruthiyoor	Kollemcode	Total			
Open space/chappa	424(84%)	181(34%)	605(58%)	154(50%)	214(51%)	973(55%)
Private House	81(16%)	288(53%)	369(35%)	126(40%)	204(49%)	699(39%)
Rented Rooms	-	71(13%)	71(7%)	31(10%)	-	102(6%)
Total	505(100%)	540(100%)	1045(100%)	311(100%)	418(100%)	1774(100%)

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Source: Survey data, 1998

Circulating fishermen usually carry their Plywood canoes (PC) fitted with outboard engines in lorries and trucks, to the destinations. For the fishermen in the Paruthiyoor village, the transportation charge of a PC to Mangalapuram in south Kannada district came to Rs 6000. In addition, they incur expenses for food on their way. The food and related expenses are treated as common expenses recoverable from the sale value at the time of settling of returns by division of income between the owner of the canoes and the crew of fishing fleet.

Not all fishermen go straight to the destinations. For example, about half of the fishermen of Paruthiyoor who circulate, move in their own canoes towards their destinations and engage in fishing on their way. Wherever they find opportunity to do fishing, they halt temporarily. When the size of the catch in a particular locality dwindles they move on. In Vizhinjam this practice is not prevalent as circulation is not intense or regular in this village. The majority of persons who circulate are *coolies*. The few of the circulators who are owners of plywood canoes and who operate with drift net move their craft by lorry or truck. In Anjengo circulators take their craft and gear in tempos, lorry or truck. But their destinations being not very far, transportation charges are lower. For example, the charge for moving wares to Thangasseri comes only to Rs 500. Since the destinations for the circulating fishermen of Anjengo are not far off places, they receive information about the peak and the lean fishing seasons in the destinations from commuting women fish vendors of Anjengo who trek daily to Kollam for marketing fish.

Problems for circulators

Fishermen who circulate often face opposition from the destination villages. In Kannur and Parappanangady in North Kerala, fishing crafts from other places are not allowed to land. In Beypore, landing is allowed but the catch can be sold only through local auctioneers. The kerosene price is comparatively low in the villages of in-migration. However, the kerosene dealers in these villages insist on the right to auction the fish catch. They charge exorbitant rates on the in-migrant fishermen in various forms viz., basket charge, auction floor charge, auction commission, and value of offerings to temple/church. These impositions come to about 25 percent of the catch value. Also, fish is taken away by the "market leaders" for their home consumption. The drinking habits, "callous" nature, and daring attitude of fishermen from south Kerala are resented and feared by the villagers in the destinations. Often squabbles arise between the locals and the circulators.

Spouses of circulating fishermen are burdened with additional responsibilities of managing the household. Education of children goes haywire. Instances of infidelity on the part of the circulating fishermen while in the destination villages are not rare, particularly in areas such as Mangalapuram and Malpey.

Over time, some of the local fishermen in the northern fishing villages have mastered Driftnet operation from the circulators. In Mangalore and Kannur areas, local fishermen/merchants have begun to invest on fishing units with Driftnet and to hire fishermen from the south. In Mangalore area, fleets of immigrants are surreptitiously registered with the Karnataka Fisheries Department in the name of local residents, with a view to availing the benefits of the government schemes. Also, "unions' of circulating fishermen are formed with control and management in the hands of local merchants. The merchants arrange for the supply of kerosene, and grant working capital for the fleet but retain control over the catch.

Circulation of fishermen to Rameswaram in Tamil Nadu was common among fishermen of Vizhinjam from the 1960s onwards. This was for work in mechanised boats during the lean season in Vizhinjam, undertaken with the expectation of regular income. However, when in the late 1980s the malaria epidemic broke out in Rameswaram area, the in-migrant fishermen from Vizhinjam also fell pray to malaria and became bedridden for long periods. Circulation to Rameswaram declined thereafter. However, circulation to the north of Kerala continued. Usually, agents of merchants from the north visit the village and invite the fishermen to their native villages. Often the payment of wages remains irregular. Recently, a few agents have begun to come to recruit fishermen to work on Deep Sea Dorry Fishing Vessels operating in Mumbai. The wages offered comes to Rs 2000 per week.

Some of the problems of Anjengo fishermen who circulate to Thangassery are the following:

- (i) Theft: The nets and fishes get stolen frequently. As fishermen from several villages arrive in this village during circulation season, it becomes difficult to trace the culprits.
- (ii) High fishing pressure: The high fishing pressure during the circulation season in the inshore water of Thangassery causes damage to nets due to entanglement or to craft due to collision with other crafts.
- (iii) Double payment of auction commission: The fishermen who circulate make double payment in respect of auction commission. They are obliged at their home village to the moneylender or *Sangom* and at the destination village to the merchant. Some efforts to put an end to this excess burden are reported to have begun.
- (iv) Comparatively low prices: The native fishermen of Thangassery use mainly *Edakkettuvala* (a kind of gillnet) the operation of which gets finished earlier than *Ozhukkuvala* (drift net). And these units land fish at around 8 pm. The fishermen who circulate arrive late because of the tediousness and tardiness of their drift net operation. This delay fetched them comparatively low prices.

However, it is reported that kerosene is available at a low price of about Rs 8 per litre (in the "Black Market") in Thangassery. The circulation to Thangassery during the rough season reduces mishaps and casualties too. The circulating fishermen usually come home once in a week, on Saturdays.

Occupational mobility

Occupational mobility takes place across generations, within the same generation, across sectors, and within the same sector. All these processes have been at work among the fisherfolk in our study too.

Intergenerational mobility

Table 5.7 shows that the proportion of fishermen to total workers has decreased in all

centres; correspondingly, the proportions working in fish-related and in other activities have increased. For example, in the past generation, more than 96 to 99 percent of the workers were fishermen; in the present generation, the corresponding range is seen to be 82 to 90 percent. Fish-related activities accounted for much less than one percent of the occupation of the previous generation; the corresponding proportions at present are seen to be in the range of less than one to more than four percent. The shift of workers into the non-fishing activities has been rather significant; in the previous generation they accounted for only less than one to about four percent of the workers; in the present generation, they provide employment to as large as 6 to 17 percent.

The shifts in intergenerational occupational distribution are indicative of the diversification of the economy, mobility of workers rendered possible by educational expansion, and technological changes within the fishing sector itself. In the process of change, reallocations have taken place among the different sectors, the major shifts being from fishing to fish-related and from fish-related to other activities. Shifts from the fish-related and the other sectors to the fishing sector are also observed; but their magnitudes are quite small in all the study centres.

Fishing Centre	Occupation of Father	Occupation of Son	Change
		(head of the household)	
Paruthiyoor			
Fishing	98.79	89.50	(-) 9.29
Fish-related	0.22	4.20	(+) 3.98
Other	0.99	6.30	(+) 5.31
Total	100.0	100.0	
Kollemcode			
Fishing	98.29	82.42	(-) 15.87
Fish-related	0.12	0.61	(+) 0.49
Other	1.59	16.97	(+) 15.38
Total	100.0	100.0	
Vizhinjam			
Fishing	97.71	85.08	(-) 12.63
Fish-related	1.07	3.23	(+) 2.16
Other	1.22	11.69	(+) 10.47
Total	100.0	100.0	
Anjengo			
Fishing	95.55	85.08	10.47
Fish-related	0.28	3.23	2.95
Other	4.17	11.69	7.52
Total	100.0	100.0	

Table 5.7 Inter-generational Occupational Mobility (in percentage)

Source: Survey data, 1998

The following example may help to get a taste of the type of intergenerational occupational shifts taking place in the fishing centres. Mr Vincent D'Costa of Vizhinjam South retired as

Head Draftsmen in the Public Works Department of the state government. He is now running a stationery store at Vizhinjam. His father was a fish vendor who had business connections with Ceylon. His father's exposure to the outside world had inspired him to provide his children good education. Young Vincent used to help his father in his fish-vending business. This experience gave him exposure to opportunities available in the other economic sectors. He did the Chain Survey Course in Madras during his lengthy stay there in connection with the fish-vending business. It was based on this qualification that he joined as a Surveyor in the government services (Case Study 4). Such cases as of Mr D' Costa are few and far between. There exist cases of mobility failures too. For instance, father of Mr Cletus (Alias Ettus), a fisherman from Kollemcode, had been a fish vendor. He failed in his business in the face of cut-throat competition from his competitors. When he incurred huge losses in fish-vending business, he reverted to his ancestral occupation, the fishing activity. His son Ettus also continued in fishing activity (Case Study 2).

It is understood that the occupational mobility towards non-fishing activity from a previous generation to the present generation has taken place among owners of shore seine or persons who had a trade base; mobility towards fishery-related or non-fishing activities increased after motorisation and the consequent changes.

Transition probability of future generation's occupation

Based on the information of the occupation of the present household-heads and the occupation of their fathers, transition probabilities can be calculated to estimate the occupation of the future generation, when the father's occupation is known. The transition probabilities are calculated by taking the average data on occupation of the heads of households and their fathers in the study centres (Table 5.8).

Occupation of son	Occupation of father				
	Fishing(Pc1.)	Fish-related(Pc2)	Others(Pc3.)		
Fishing (pr1)	87.2	31.4	28.3		
Fish-related (pr2.)	2.9	31.4	4.5		
Others (pr3)	9.9	37.2	67.2		
Total	100.0	100.0	100.0		

Table 5.8 Transition Probability

Source: Survey data, 1998; Pci = probability of the ith column Prj = probability of the jth row

If the father's occupation is fishing; the probability that the son would become a fisherman is 87 percent; the probability that he would take up fish-related activity is 3 percent; and the probability that he would move to other occupations is 10 percent. The fishing pressure in Kerala especially in Thiruvananthapuram is higher than the national average (Rajan, J. B, 1998). In the context of the increasing population pressure, the question arises as to how labour could be absorbed by the sector; unemployment and disguised unemployment are likely to mount in the sector in the years to come.

Intra-generational mobility

Intra-generational occupational mobility can be of two forms: inter-sectoral and intra-sectoral. For intra-sectoral occupational mobility to take place, technological changes in the occupation of a labourer have to be taken into consideration. In this exercise, we have taken only a few of the indicators of intra-sectoral (technological) mobility such as changes in the number of motorised and non-motorised crafts between two time periods that indicate the shift of labour from one technology base to another. In the following paragraphs we examine two forms of intra-generational occupational mobility.

Inter-sectoral distribution of the workforce

Inter-sectoral mobility can be inter-generational or intra-generational; here we examine only the proportions of workers engaged in the different occupational categories. The distribution of the male population by activity status is given in Table 5.9.

Labour Components	Paruthiyoor	Kollemcode	Vizhi. South	Anjengo
1.0.Outside Labour force	894 (41)	1001(45)	2088 (39)	1073 (33)
2.0.Labour force:				
2.1.Seeking work	228 (10)	182 (8)	470 (9)	255 (8)
2.2.Working Population				
Fishing	999 (46)	933 (41)	2462 (46)	1665 (51)
Non-Fishing	65 (3)	135 (6)	355 (6)	276 (8)
Sub-Total(2.2)	1064 (49)	1068 (47)	2817 (52)	1941 (59)
Total (2.0)	1292 (59)	1250 (55)	3287 (61)	2196 (67)
3.0.Total				
Population [1]+[2]	2186 (100)	2251 (100)	5375 (100)	3269 (100)

 Table 5.9 Distribution of Male Population by Labour Component

Source: Survey data, 1997

The male population is the highest in Vizhinjam South at 5375, followed by Pozhiyoor at 4437 (comprised of 2186 at Paruthiyoor and 2251 at Kollemcode), and Anjengo at 3269. Of this, the proportion of labour force is the highest in Anjengo at 67 percent, followed by 61 percent at Vizhinjam South, 59 percent at Paruthiyoor, and 55 percent at Kollemcode. The proportion of the working population also keeps the same pattern. The proportion of population engaged in fishing is 51 percent in Anjengo, 46 percent in Paruthiyoor and Vizhinjam South, and 41 percent in Kollemcode.

The distribution of the population by labour component is not substantially different among the centres. However, the proportion of labour force and working force in Anjengo and in Vizhinjam South are comparatively high. The proportion of population outside the labour force is comparatively high in Pozhiyoor -41 percent in Paruthiyoor and 45 percent in Kollemcode. Two major groups among the population outside the labour force are students, and persons who are too young, or too old, or are handicapped. Of this two groups, student population is numerically the largest, an indication that in future, more persons are likely to take up non-fishing activities.

About 13 percent of total male workforce in the study centres, except in Paruthiyoor, is engaged in non-fishing activity. The number of persons engaged in non-fishing activity is comparatively high in Vizhinjam South and Anjengo.

Among the male workforce engaged in non-fishing activity, the number of persons working in the Gulf countries outnumber those having other kinds of activity. Persons working in the Gulf countries are more, in absolute and relative terms, in Vizhinjam. The other activities comprise employment in government service and self-employment. Government employees are mainly school teachers, military personnel, policemen, etc.

The majority in Kollemcode has a flourishing business of illicit-liquor-brewing-cum marketing. While the majority of them in Paruthiyoor are involved only in brewing, fishermen of Kollemcode provided them the market for their products.

Intra-sectoral mobility

Intra-sectoral occupational mobility – the change of labour from one technology to another – is assessed with the help of the available data on motorised and non-motorised crafts in two years, 1991 and 1998 (Table 5.10). The number of motorised crafts has increased and the number of non-motorised crafts decreased in the study centres, at the district level and in the State as a whole during 1991-1998. These changes are seen to have been much higher in the Thiruvananthapuram district than in the State.

In the study centres also the district-level trend is broadly reflected with the exception of Paruthiyoor. The number of motorised crafts has tremendously increased in Anjengo by about 107 percent, followed by in Vizhinjam South by 65 percent. The number of non-motorised craft has decreased in all the four centres in 1998; there were only 47 percent of the number of non-motorised boats which had existed in 1991. In Vizhinjam and Anjengo, the decrease in non-motorised craft has been more than compensated by increase in motorised craft decreased. It seems that many of the former owner workers have deteriorated to the category of non-owner worker.

Changes taking place in the crafts are seen to be in the same direction throughout the State. The Catamarans are replaced by Plywood canoes and the sail and oar is replaced by OBM. Especially in Anjengo, the degree of change is higher than in the centres and in the state as a whole. Intra-sectoral mobility is seen to be generally on the increase in recent years.

Centre-wise time series data on fishing crafts are not available; however, the State-level figures at two points of time show that not only have the number of crafts been increasing, but a progressive shift also has been taking place towards upgraded technologies.

We saw earlier that the Crew-Boat ratio in Paruthiyoor, Kollemcode and Vizhinjam is about three, while the corresponding figure is five in Anjengo (Table 4.17). In the former three centres, fishing with Plywood Canoe is mainly Drift net-based. In Anjengo, the variety of nets is much larger. The investment on a Driftnet unit as well as income from the same is on

Place	Motorised			Non-Motorised		
	1991	1998	Increase (+) or	1991	1998	Increase (+) or
			Decrease (-) (%)			Decrease (-) (%)
Paruthiyoor	183	154	(-) 16	699	411	(-) 41
Kollemcode	120	163	(+) 36	407	140	(-) 66
Vizhinjam						
South	424	699	(+) 65	577	203	(-) 65
Anjengo	148	307	(+) 107	462	244	(-) 47
Total	875	1323	(+) 51	2145	998	(-) 53
Trivandrum						
Dist.	1654	2906	(+) 76	14271	8179	(-) 43
Kerala State	9914	13219	(+) 33	205045	14979	(-) 93

 Table 5.10
 Number of Crafts by Propulsion in 1991 and 1998

Source: SIIFS, 1991 and 1998

the higher side. In Pozhiyoor due to the high circulation rates of the fishermen and in Vizhinjam due to the possibility of year-round operation because of the presence of the harbour, investment on Drift net unit ensures viability and reduces financial risk. The return on investment (RI) of a Plywood canoe in Vizhinjam South based on average expected catch value was 40 percent (Rajan J. B., 2000). Hence, in tune with the labour supply, more Drift net units are introduced. The crew-boat ratio in Anjengo shows that there exists disguised unemployment, as the crew size per boat is more than the optimum.

Thus, we find that intra-sectoral mobility is on the increase on two aspects: propulsion and gear. With respect to propulsion, the trend is rising but with respect to gear it is fluctuating since it depends on various factors which ensure viability and security. The intra-sectoral mobility – technological upgradation – leads to a kind of vertical occupational mobility. But the question whether this form of intra-sectoral mobility in terms of technological upgradation results in upward or downward social mobility of the fishing community needs further probing.

6. Summary and Conclusion

The specific objective of the present study has been to unravel the underlying factors of labour mobility in the fisheries sector of Kerala. Three centres from Thiruvananthapuram district were selected viz. Anjengo, Vizhinjam, and Pozhiyoor. Surveys were conducted at two stages – the first, on demographic profile and the second, on labour mobility. RRA and FGD were also relied on. The various forms of labour mobility in the fisheries sector are broadly classified into spatial mobility and occupational mobility.

Spatial mobility

The forms of spatial mobility are commutation, circulation, and migration. The form of spatial mobility varies from centre to centre.

Commutation is a common phenomenon as fishermen track the moving fishes. The nature and forms of commutation are fast changing with the advent of modern technologies. Considering the fact that every fisherman commutes in his fishing activity, this study has focused on circulation.

Circulation is of mainly two kinds: (i) short-term and short distance; (ii) long-term and long distance. The former type of circulation extending for a period of three months and confined to adjoining neighbouring districts is influenced mainly by natural phenomena. During the time when the sea is rough, fishermen of villages which lack landing facilities, move to villages where landing facility is available. Vizhinjam and Thangassery are the two destinations of short-term circulation for the fishermen of Thiruvananthapuram district (because of natural harbours that provide landing during all seasons). The latter type of circulation, on the other hand, extends for a period of more than three months and involves travel to far off districts such as the northern districts of Kerala and the districts of neighbouring States. This latter type of circulation is more centre-specific. The phenomenon of long-term circulation is influenced by biological and technological factors. Long-term circulation is more in Pozhiyoor because the fishermen in this centre mainly have Driftnet base. The nexus fishermen in Pozhiyoor have with their counterparts in the Kanyakumari district of Tamil Nadu, especially of the Neerody-Thuthoor belt, has influenced their circulation significantly. They find good opportunities for Driftnet operation in the destination areas where fishermen lack the required skills.

Days of employment and income of fishermen have increased as a result of long-term circulation. The savings of fishermen have also tended to improve. Investment in fishing equipment and expenditure on consumer durables has become more common than earlier.

In Vizhinjam, long-term circulation is comparatively low due to the scope for year-round fishing operation in this village. A few fishermen do circulate, but mostly those who use hook-and-line. The marital relations that some of the fishermen have with Tamil Nadu and elsewhere, also result in long-term circulation. Vizhinjam is the only centre in Thiruvananthapuram where inward circulation is high during June, July, and August. This is due to the Vizhinjam harbour which provides landing and berthing facilities even during the season when the sea is rough and other centres lack landing facilities.

The fishermen in Anjengo circulate between Thangassery and Vizhinjam during the two fishing seasons of a year due to lack of landing facility in Anjengo. The harbours at these destination centres provide landing facility when the sea is rough.

The majority of families in the survey centres are nuclear families and their proportion varies between 62 percent and 70 percent. This indicates that the responsibility of looking after the family will be vested with the housewives or the elder members as the fishermen, especially in Pozhiyoor, circulate for nine months of a year. This means that the workload of housewives increases, education of children gets affected, and child care gets indifferent.

Occupational mobility

There are mainly two forms of occupational mobility, inter-generational and intra-generational. Intra-generational mobility is further categorised into inter-sector and intra-sector.

Inter-generational occupational mobility is studied by comparing the occupation of the head of household of the present generation with the occupation of his father. As the focus of the present study is mobility in village-based small-scale fisheries, only the mobility of male members is monitored. In the senior generation (fathers of present household heads), 96 to 99 percent are found to have engaged themselves in fishing, while in the present generation (present household heads), 82 to 90 percent engage in fishing. It is clear that a large proportion of the present generation has entered their parental occupation. However, the proportion of workforce involved in fishing has come down.

Inter-generational occupational mobility is low in the study centres varying from 11 to 17 percent. It has mainly taken place mainly in the form of fishing to fish-related or other activities. Change in occupational mobility is likely to be greater in future, given the radical changes taking place in the technology and organisation of all productive activities in the State.

Intra-generational occupational mobility takes place in two forms: inter-sectoral and intrasectoral. The former is low in the study centres while the latter is relatively high.

Inter-sectoral occupational mobility is studied by looking at the employment status of the male workforce (As mentioned earlier, occupational mobility of women is also increasing nowadays, but it has not been monitored in the present study). Among the male workforce, 6 to 14 percent are employed in non-fishing activities. A major component of this is employment in the Gulf countries, followed by employment in the government sector.

Since the educational status of the coastal community remains dismally low, inter-sectoral occupation mobility has also remained low.

Of the total population, the proportion of students forms 23 to 33 percent. This is an indication that in future, occupational mobility towards non-fishing activities would tend to increase, as the present student population would, after completion of their studies, look for alternative employment opportunities.

In the given conditions the probability for the next generation of the present-day fishermen, to get employed in non-fishing activities is only 10 percent. The probability is 37 percent for the sons of persons now engaged in fish-related activities, and 67 percent for the sons of those engaged in non-fishing activity. This indicates that the scope for employment diversification for the next generation of fish workers would continue to be low.

The intra-sectoral occupational mobility between 1991 and 1998 show that motorised craft (except in Paruthiyoor) has increased in the range of 36 percent to 107 percent and non-motorised craft decreased by 41 percent to 66 percent. The figures at the district as well as at the State level also show the same trend. This is an indication that the degree of mobility of labour from non-motorised to motorised fishing craft is high.

Technology upgradation in the small-scale fisheries sector has mainly taken place in the form of changes in propulsion of craft and changes in webbing of gears. For example, the change has been from non-motorised craft to motorised craft and from cotton nets to nylon nets. The life histories reveal that the fish merchants played a major role in the diffusion of technology in fisheries.

Technology upgradation has not resulted in complete abandonment of older crafts. Catamarans are still in vogue. However, with respect to gear, a complete shift has taken place from webbing made of cotton to nylon or other synthetic materials.

Present trends

Spatial mobility

Commutation is a natural and day-to-day phenomenon as far as fishing activity is concerned. But due to commercialisation in fisheries, the nature and form of commutation has changed. This will result in a situation in which even those who have no stake in fishing could enter fishing.

Circulation for small-scale fishing by traditional fishermen is a centre-specific phenomenon. However, there is an emerging trend of circulation for working in mechanised and deepsea vessels, especially to far away places such as Veraval, Mumbai, and Vishak. This would probably result in bi-polar classes in traditional fishing community and create labour problems.

There is opposition on various grounds in some of the centres to the circulation of traditional fishermen. Local fishermen in some places have learned and adapted the Driftnet operation techniques from the circulators. This poses a major threat for the traditional, circulating fishermen. Also the emerging developmental interventions in the coastal area would affect the circulators adversely. For example, the proposed Naval project in Karwar taluk of Uttara Kannada district is estimated to displace about 8000 fishermen families in the local area. Karwar is one of the major destinations for circulators from the fishing centres of south Kerala.

In some places such as Ratnagiri, fishing fleets of circulators are registered in the name of local fishermen to avail the benefits of government schemes. There are chances that the *benami* owners may gradually take control over the fleet.

In some of the centres, the circulators are provided with credit and marketing facilities by local merchants. Through this credit-marketing linkage, the merchants are taking control of the catch, thus exerting *de facto* control. There are a few circulators who absconded without repaying the debt, an unsavoury act for which other circulators are harassed.

Malaria and Cholera are spread in the coastal area through labour circulation. Chances of diffusion of Sexually Transmitted Diseases (STDs) through fishing labour circulation cannot be ruled out either.

Occupational mobility

Occupational mobility as indicated by both inter-generational and inter-sectoral mobility is very low. The low education status, lack of exposure to the outside world, lack of skills, and lack of the required economic motivation are the major stumbling blocks to occupational mobility. If the same trend continues, fishing pressures would further increase resulting in chronic unemployment and disguised unemployment.

Since the education status of work seekers is not high, the scope for occupational mobility for the youth from fishing is limited.

Intra-sectoral mobility with respect to change in technology is, in general, higher. The number of motorised plywood canoes has increased substantially. Though small in number, fish finders have come into use. These in future may result not only in industrial dependency but unhealthy competition and social tension as well. The traditional knowledge systems are vanishing gradually. The formation of capital in the labour-intensive sector like fisheries cannot be neglected. Commercialisation may also contribute to the growing pool of coastal unemployment, substituting capital for labour.

There is no indication as yet of abrupt discontinuance of traditional technologies and knowledge. Gradual changes are at work, however, in the coastal society and economy. Over time, traditional practices would be abandoned and substituted by a commercial economy. The problems created by circulation of fishermen such as labour and fishing problems in the destination, management of the family during the absence of the head of the household, utilisation patterns of additional income by the circulators and their families, the health hazards of circulation and the consequences of new technologies on the patterns of circulation need to be studied in greater detail.

Other areas which would need further research include women's spatial and occupational mobility, prospects for occupational diversification and spatial mobility being opened up, liberalisation of the economy, and modernisation of the fishing sector.

Conclusions

The major findings of the present study are

- (i) Labour mobility in the fisheries sector may be broadly categorised into spatial (commutation, circulation, and migration) and occupational (inter-generational and intra-generational).
- (ii) Commutation of labour for fishing is a common phenomenon as far as fishing is concerned; however, the nature and form of the same has changed after the advent of motorisation of fishing crafts.
- (iii) Circulation of labour for fishing is a centre-specific phenomenon and is influenced by oceanographic, technological, and skill differences.
- (iv) In the survey centres, the phenomenon of labour migration (for periods longer than of circulation) is not found.
- (v) The proportion of workforce in fishing and related activities has declined in the present generation.
- (vi) The transition probability of inter-generational mobility shows that the scope for employment diversification for the future generation from the fishing community is small.
- (vii) The proportion of male-workforce in non-fishing activities forms 6 to 14 percent of total male workforce in the three centres surveyed; non-fishing or fish-related activities are mainly employment in Gulf countries or in state government service.
- (viii) A massive labour shift has taken place during the past decades from non-motorised to motorised fishing craft.

Different forms of labour mobility in the fisheries sector show that inter-generational and inter-sectoral occupational mobility have not been pronounced; however, intra-sectoral technological mobility has vastly increased. Circulation, one of the forms of spatial mobility, is found to be a centre-specific phenomenon. The impact of labour mobility on small-scale village-based fishing has been different in different fishing centres. Their cause and effect relationships need further inquiry. The present exercise is a modest beginning in this direction.

Appendix

Case Studies

Case-I	:	Zacharias, Circulating Fisherman, Paruthiyoor
Case-II	:	Cleetus (alias Ettus), Circulating fisherman, Kollemcode
Case-III	:	George, Non-regular Circulating Fisherman, Vizhinjam South
Case-IV	:	Vincent D'Costa, Non- fisherman, Vizhinjam South
Case-V	:	Dasan, Circulating Fisherman, Vizhinjam South

Case-I: Circulating Fisherman, Paruthiyoor

Personal Particulars			
Name	:	Zacharias	
Native Place	:	Paruthiyoor	
Age	:	45 years	
Education	:	4 th Std	
Activity Status	:	Employed	
Occupation	:	Fishing, Owner of a mechanized boat	
Children	:	Six: Two daughters and four sons	
Wife	:	Household work	
Parents	:	Father was a fisherman, Mother, housewife	

Life History

- 1953 Born in Paruthiyoor
- 1958 Joined Pozhiyoor school
- 1962 While reaching 4th std sent back to 1st std on the ground of poor performance.
- 1965 Again reached 3rd std and then dropped out. Started fishing with father using *Thattumadi*, Small Gillnets, etc. Even earlier he had engaged himself in *kalimeen pani* (Children, as a hobby use to catch small fish from near the shore using hand lines. These fish are used for home consumption. This practice helps them get acquaintance with the sea and fishing. This sort of fishing by children at near-shore waters is locally called *Kalimeen pani*).
- 1971 Circulated to Badagara accompanying fishermen from Thoothoor. Ventured with Drift net. The sharing ratio of the catch was 50:50 for fleet owner and the crew. Slept in the open beach. Took meals from a house for Rs 12 per day. Worked there for 3 months.
- 1972 Circulated to Goa accompanying 3 other fishermen. Sold the Drift net for Rs 14,000 to a fisherman in Goa. The gear was a borrowed one. One of them returned

to Paruthiyoor and remitted cash to the real owner. He purchased acres of land with this cash. The other three remained there for 6 months and worked as coolie for the gear which was sold.

- 1974 Purchased a *Kattamaram* (*Chillamaram*) for Rs 1,000 and *Ayalavala* for Rs 5,000.
 For this, Rs 2,000 was raised from personal savings made from fishing income and Rs 4,000 from the sale of an old craft.
- 1978 Married from Paruthiyoor. Received dowry of Rs 2,000. Purchased a Dugout canoe for Rs 3,000 and Drift net for Rs 5,000. Borrowed Rs 8,000 at 24 percent interest. The craft was bought from Kasaragod. Circulated to Goa. After 2 months of use, sold the craft to a fisherman in Goa for Rs 14,000. Returned to Paruthiyoor and deposited Rs 4,000 in SBT at Thoduvatti (The Bank Manager was from Paruthiyoor). Acquired four acres of land for Rs 10,000.

Case-II: Circulating fisherman, Kollemcode

Personal Particulars

Name	:	Cleetus (alias Ettus)
Native place	:	Kollemcode
Age	:	56 years
Education	:	2 nd std
Activity status	:	Employed
Occupation	:	Fishing
Martial status	:	Married from Kollemcode
Children	:	11 Children, 9 alive
Wife	:	Household work
Parents	:	Father was originally a fisherman who had also engaged in
		fishing; mother, housewife

Life History

- 1942 Born in Kollemcode
- 1951 Completed 2nd Std (parents were not interested in educating children).
- 1953 Started fishing with the help of father on *Kattamaram* and hook-and-line. Also started working on *Thattumadi, Karamadi*, Gillnet, Drift net, etc. (Those who mainly engage in hook-and-line fishing start with hook-and-line, and those who mainly engage in gillnet start with *Thattumadi*).
- 1959 Started *Thattumadi* (It was a tedious work).
- 1962 Acquired a *Thattumadi* as '*Tharavad*' property (jointly by father and brothers).
- 1964 Father brought '*Thazhthuvala*' from north (originated in Kannore/Kasaragod area). There arose tension on the use of this net. (This net targeted big fish which frighten small fish). Some of the nets were set fire to. Parish banned the use of the net.
- 1965 Father brought '*Pattuvala*' from north. Thereafter others also brought it. But the net went out of use when production declined drastcally.
- 1966 Married from Kollemcode
- 1967 Purchased a *Pattuvala* and *Kattamaram* using the dowry and partly borrowed capital at 24 percent interest. Father was a fishvendor selling fish mainly to Changanassery and Koilpetty area. His father incurred a huge loss, as he was not able to compete with other merchants. Hence he continued with fishing.
- 1970 Purchased plank canoe, paddles, etc. (Plank canoe carry more nets than *Kattamaram*).
- 1972 Purchased a Dugout canoe from Vallavila. Sold the plank canoe to those who use as *Aattu-vallom*. Usually dugouts are not brought to sea but kept at sea.
- 1975 Dugout canoe got damaged while at sea. Received Rs 500 from government.
 Circulated to Malppey with drift net. Hired a dugout canoe from there at a rent of Rs 150 pm. Worked there for about 5 years.
- 1980 Purchased a dugout canoe from Malppey and Johnson brand engine from Unnavaram and operated there.
- 1983 The engine brought to Kollemcode. Purchased a Yamaha engine.
- 1994 Sold the dugout to *Aattuvallakaar*. Also sold nets and OBM to fishermen in Vizhinjam.

Case-III: Non-Regular Circulating fisherman, Vizhinjam South

Personal Particulars

Name	:	George
Native place	:	Vizhinjam
Age	:	44 years
Education	:	2 nd std completed
Activity status	:	Employed
Occupation	:	Fishing, owner of a Kattamaram
Marital status	:	Married from Kaikkara
Children	:	4 children: 2 sons and 2 daughters

Wife	:	Household work, formerly fish vendor
Parents	:	Father was a fisherman (owner of Kattamaram). Mother
		housewife

Life History

- 1954 Born in Vizhinjam South as son of a fisherman. Studied upto 3rd Std in an old school, which was functioning near *Puthiapally* (new church).
- 1961 Stopped schooling when the school headmaster beat him with bamboo stick for quarrelling with his friend Moideen. After that learned cycling and roamed about for about two years. During this period, helped father in fishing and allied activities such as bringing food/water while he involved in the maintenance of gear, moving of craft from the shore, etc.
- 1963 Started learning to fish to help father. The main gear was handmade sardine net of '*Panjinool*' (cotton thread) with thread count of 3.5. The craft used was *Kattamaram*. Operated upto a depth range of 12 fm.
- Started learning hook-and-line method of fishing with the help of his elder brother. Fishing operation upto the range of 40-to 45-fm depths. Went for fishing at around 2 am and returned to shore at around 10 pm the next day. At times returned after one day. Fish such as *Netholi, Chala, Mural, Ayala* and *Kozhiyala* were caught using *Kangoose choonda* (monofilament hook). Average of 25 hooks are stretched with a distance of 1.5 *muzhom* between hooks. The main rope length is 2.5 fm. The hooks are applied without any bait. Continued to fish with his brother for about 6 years. During this time learned oceanographic features, peculiarities of water currents, star locations, etc.
- 1974 Started hook-and-line fishing independently with a *Kattamaram* of his father. Learned more about oceanographic features from personal experience. The stories fed by his grandfather substantiated his experience.
- 1975 Purchased one set of *Kattamaram* and hook-and-line by investing Rs 950. The amount was raised from savings of fishing income. The savings had been kept in the safe custody of grandmother.
- 1977 Married Karmaly, a native of Kaikkara and settled there. His in-laws promised dowry but the amount is not yet received.
- 1979 Purchased a large *Kattamaram*, which can carry a crew of 4 to 5 persons. A total of Rs 2000 was invested for this. The money was raised from his savings from fishing income.
- 1982 Dispute with brother-in-law. Came back to Vizhinjam south. Purchased a *Thattumad* and two *Kattamarams* with a total investment of Rs 17000. Of this Rs 5000 was

from *Udampadi* and remaining Rs 12000 was from his own personal savings. Circulated to Rameswaram (Tamilnadu) with his family and stayed in a rented house for two weeks. After two weeks stayed in a *Chappad* became *e*ngaged as fishing labour in a mechanized boat. The major task was *Kaippiduthom* (hand labour of pulling net). The reason for circulation was the bad fishing season in Vizhinjam and fishing labour opportunities in Rameswaram with a regular wage payment. But no wages were received. Only got allowance of Rs 20 per day and food. This is because there was acute famine in the destination village and fishermen from Enayam – Thoothoor area were willing to work even for a meagre income. Returned to Vizhinjam after two months, and became bed-ridden with malaria. In General Hospital for about two months. Did not migrate to Rameswaram for fear of malaria.

- 1987 Circulated to Thottappally when told that there is good season there. Did fishing on receiving a villager's fleet with drift net and hook-and-line. Stayed in a *Chappa*. Since the payment was irregular, went to Kochi after 10 days. But the season was bad there also. After one week went to Vellayil of Calicut. Returned home after two months with cash saving of Rs 1,500.00. Not interested to stay at Calicut due to language problem.
- 1991 Sale of *Thattumadi* set for Rs 950. Purchased old and new *Kattamarams* and 2.3 HP Evenrode. Total cost was Rs.24500 with a subsidy of Rs.10000. To get subsidy bribe of Rs 2000 was given.
- 1994 Sale of *Kattamaram* bought in 1991; purchased another two sets of *Kattamaram*, 1 Evenrode engine, 1 *Kangoose vala*, and 1 *Discovala*.
- 1995 Fish Attracting Lantern was purchased.
- 1997 Circulated to Beypore and worked as a fishing labour on a plywood canoe owned by a native villager (passive investor). Engaged in hook-and-line fishing. The owner gave money for purchasing hooks, lines, etc. With help of peers from the home village set the gear and went for fishing. The sharing pattern is 2 shares for fleet and one share for each crew. The crew number per craft ranges from 4 to 8 persons.

At present there is a demand from Bombay to work as a fishing labourer on a Dorry fishing boat. Salary promised is Rs 2000 per week; voyage trip extends for about one week.

Case-IV: Non- fisherman, Vizhinjam South

Personal Particulars

Name	:	Vincent D'Costa
Native place	:	Vizhinjam
Age	:	55 years

Education	:	Pre-Unversity (Kerala)
Activity Status	:	Employed
Occupation	:	Retd.Govt.servant (Draftsman), presently running stationery store
Martial status	:	Married from Vizhinjam
Children	:	Four children: 2 sons and 2 daughters
Wife	:	Housewife
Parents	:	Father was a fish merchant. Mother housewife.

Life History

- 1943 Born in Vizhinjam.
- 1948 Primary school at Vizhinjam
- 1952 Middle school at Vizhinjam
- 1955 Secondary schooling in St.Joseph school at Thiruvananthapruam. Neighbours used to pay money to purchase medicines, fruits, etc.
- 1957 Completed High school education
- 1957 Helped father in his business. Travelled to different places for purchase and sale of fish. The was the time demand for *Chemeen* emerged. Earlier fishermen used to throw away or dump the catch if it was prawn. The price was Rs.3 per 100 prawns. Purchased prawn from Kanyakumari and Anjengo areas. Prawn caught in fishing was sold at Kollam and Kochi. Fish was sold at Madras and Kottayam. The salted fish vended at Palghat, Trichur and Madras. During his stay at Madras in connection with fish-vending, joined for a short term course on plate-making conducted by one of the business groups of fish exporters.
- 1958 Joined for pre-university at M.G.College, Trivandrum.
- 1959 Pre-University completed. Continued to help father in business.
- 1965/66 Chain survey course completed. Continued to help father in his business.
- 1971 Joined in Govt.service as draftsman. Continued to help father.
- 1974 Promoted to I grade draftsman based on his special qualification in plate-making.
- 1976 Father died. Continued the business of father along with Givt.job. But due to constraint in time, the business was not successful.
- 1977 Abandoned the business
- 1996 Promoted to head draftsman

1998 – Retired from Government service. Running stationery store managed by his son. Son went for employment in the Gulf region.

Case-V: Migrant fisherman, Vizhinjam South

Personal Particulars

Name	:	Dasan
Native Place	:	Vizhinjam south
Age	:	44 years
Education	:	Illiterate
Activity status	:	Employed
Occupation	:	Fishing, owner of a plywood canoe
Marital status	:	Married from Thoothoor
Children	:	One child: Son
Wife	:	Housewife
Parents	:	Father was a fisherman (owner of Kattamaram) Mother housewife

Life History

1954 –	Born in	Vizhinjam	south
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- 1962 Started fishing with father. Fishing techniques used were *Kai choonda*, *Mattu choonda*, *Sravu choonda* and *Thattumadi*. Hook-and-line was applied without bait.
- 1969 Circulated to Moothakara (Kollam) with his father on Kattamaram
- 1970 Started fishing independently with his younger brother
- 1971 Stayed at Quilon with family in a rented house for a period of 4 years.
- 1972 Circulated to Alleppey
- 1973 Purchased a *Vanchi* (dugout canoe) from Kollemcode for Rs 2000. (This was sold by his family when he was in the Gulf region).
- 1976 Married from Thoothoor (Tamilnadu). Purchased a *Kattamaram* for Rs 650 using dowry money. The design and size of his *Kattamaram* was very attractive so that fishermen from other villages expressed their interest to buy it. Hence after 6 months sold it to a fisherman in Anjengo. (He purchased and sold about 15 *Kattamarams during his career*).
- 1980 Went to Dubai and did construction work; After two years shifted to Sharjah and became involved in fishing. Worked as coolie in a OBM-fitted boat (2 OBMs of 70 HP) owned by an Arab. Fishing techniques applied were gillnet and hook-and-

line. Engaged in fishing on an average depth range of 15 fm in the area where *thitta-kadal* is found. The hook-and-line designs in the Gulf countries are different from those back at home. They do not use *minusum*. Hence *minusum* was arranged from those who came from Kerala.

1984 – Returned from Sharjah and went to Calicut for engaging in fishing on mechanized gillnet boat owned by his family. (When he was abroad, his family bought a second-hand mechanised gillnet boat from Tamilnadu and did fishing along the coast of Alleppey, Calicut, Cannanore and Kasaragod districts. Meantime he also purchased a plank canoe from Thoothoor and borrowed an engine. After sometime purchased an *Echavala* on credit.

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