THE PROBLEMS AND PROSPECTS OF PAPER-BASED INDUSTRY IN KUNNAMKULAM
(A Local Level Study)

2000 - 01

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Abstract

Literature on informal sector focuses its potential of employment generation and efficiency in the allocation of resources – broadly its social objectives like income generation and poverty alleviation. The clusters at the same time, counts for the 'collective efficiency', - its strength through a unique state of togetherness, the key of dynamism in clusters of small firms.

This study provides evidence on paper-based industrial clusters in the informal sector of Kunnamkulam in Kerala. The industry exhibited strengths in the socio-economic development at the local level, when the other sectors failed to provide livelihood. One cannot simply view this sector, as a refuge for marginalized populations, there appears to be a heterogeneous momentum with a hierarchy of its own. However, the focus towards this segment has been defensive, resulting to insulate the sector from the typology of competitive growth.

For a cross-section analysis, the investigator has conducted a primary investigation in the 31 municipal wards of Kunnamkulam. Sample surveys in two stages covering 20% of households involved in this industry and 40% of small and tiny units merge anecdotal experience from qualitative deliberations of the different strata of focus groups. Using this information rudimentary estimates of the cluster, dependence of households upon the industry, composition of workforce, the elements of dynamism in subcontracting, and the socio-economic background of workers, have generated. The benefits of sub-contracting in this industry include specialisation and cost advantage, insulation from market fluctuations, managerial, and infrastructural benefits. The residential prototype provides a distinctive benefit in subcontracting in this industry.

The paper addresses the issues of modernization, diversification in product mix, the need for setting up inter-firm linkages and backward linkages to procure raw materials, and increased value addition.

Abbreviations

PBI	-	Paper-based industry
HHs	-	Households
HHIs	-	Household industries
HHEs	-	Household Enterprises
VRP	-	Vidya Ratna Prabha
ARP	-	Akshara Ratna Prakasini
SSI	-	Small Scale Industry
AKExMA	-	All Kerala Exercise book-Manufacturers Association
KSCCF	-	Kerala State Co-operative Consumer Federation - Ltd.
GSM	-	Gram per Square Meter.

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Preface

Kunnamkulam, the only municipality in Thalapilli taluk, situated in 10º 40' N latitude and 76º 4' E longitudes, lies some 23 Kms. away from the North-West of Thrissur. The area of the municipality is 34.18 sq. kms. Total population is 51585 of whom 24396 are males and 27189 females. It was in fact the chief centre of the Orthodox Christians in the State, and there are several of their old churches in the town and its neighbourhood, Arthat. It was a place of trade mainly, areca nut and other local produce. Cheralayam, Kakkad and Manakulam, the suburbs of Kunnamkulam, were the seats of the Thalapilly Rajas; Nambidis of Cheralayam, Kakkad Karanavapad, and Manakulam respectively.

Kunnamkulam has a rich tradition both in printing and in the manufacturing of paper based products. Koothur Paramel Iyyu Uttoop started the first printing press Vidya Ratna Prabha (VRP), in the 1860's. Followed by this, ARP Press (Akshara Ratna Prakasini) and Panjangom Press enriched the printing and publishing activity in Kunnamkulam in the domains of literature, ayurvedam, architecture and religion.

Now, the place is well known for the production of paper-based goods particularly exercise notebooks. While passing through Kunnamkulam during the season January- June, one can see that bundles of papers have kept in front of a large number of households, transportation of papers in bullock carts, tricycle barrows and other vehicles. In the inner areas of the town women and children, take bundles of papers on their own from the nearby production units for piecework. The people actively participate in the manufacturing of exercise books during this season.

The streets of the municipality are exceedingly narrow. A discrete residential pattern, ‘Line Houses’, houses built in 3-5 cents of land on both sides of the street is found. These people do not have cultivation or job opportunities in the agricultural sector. The paper-based industry accommodates a large number of people in the area by providing employment and income.

By realizing the significance of the industry as a source of income, livelihood of a large number of people and its future prospects, an attempt has made in this study to analyse the problems and prospects of paper based industry in Kunnamkulam.

In this study, the first section furnishes an introduction of the paper-based industry. A brief profile of the industry and its cluster has shown in the second and third sections. Major findings regarding the nature of the industry, workers, the economic aspects of production, and the socio-economic background of workers have displayed in the forth section. The problems and future prospects of the industry has mentioned in the fifth section and, lastly summery and conclusions.

ACKNOWLEDGEMENT

I am grateful to Dr. V. Mathew Kurian, Principal M.D.College Pazhanji, for guidance throughout the study and to Dr. K. Narayanan Nair, Dr. P.R. Gopinathan Nair and Dr. K.K. Subramanian for comments on earlier draft.

I am also grateful to Mrs. Lellu Sunny for excellent research assistance**:** to the authorities and librarians of Centre for Development Studies Thiruvananthapuram, Cochin University of Science and Technology, Dr. John Mathai Centre Thrissur, Kerala Institute of Local Administration (KILA) Thrissur, Appan Thampuran Memorial Library Thrissur, Panjangom Press Library Kunnamkulam, and especially to Shri. K.M. George Kannanaikal for co-operation on the informal sector surveys and participation in the deliberation programmes throughout this study**:** and to many others; Adv. Ipe Paramel, Shri. C.J. Peter Cheruvathur, Shri. P.C. Tharukutty Paramel, Adv. P.C. Mathew, for providing valuable information and advice. I am thankful to Shri. P. Gangadharan Nedungayil, for the constant inspiration and support in this study.

The financial support of KRPLLD, Centre for Development Studies Thiruvananthapuram is gratefully acknowledged.

Rajeev.G

Paper and related products currently manufactured in the small-scale industry in India

1. Adhesives
    1. Black Insulating Adhesive Tapes
    2. Glue
    3. Paper Gum Tapes
2. Paper Products
    1. Bituminised Papers
    2. Cartons & Boxes from Cardboard & Corrugated Boards
    3. Cloth Lines Papers
    4. Corrugated Papers & Boards
    5. Drawing Papers & Filter Papers
    6. Duplicating Stensils
    7. Embossed & Leatheroid Papers
    8. Exercise Books, Accounts Books, Registers etc.
    9. Fancy Cover Papers
    10. Ferro & Ammonia Printing Papers
    11. Gum Tapes
    12. Monotype Paper Rolls
    13. Paper Bags & Envelopes
    14. Paper Capacitors
    15. Paper Cones & Tubes
    16. Paper Cups & Saucers
    17. Paper Straws
    18. Playing Cards, Calenders etc.
    19. Printed Cartons from Duplex & Triplex Boards
    20. Sensitised Photographic Papers
    21. Straw Boards
    22. Teleprinter Papers
    23. Toilet Papers
    24. Transfer Labels
    25. Waterproofing Papers, & Packing Papers
    26. Wax Papers
    27. Book Matches
    28. Chart Paper (Recording)
    29. File Folders
    30. Facial Tissues

31. Laminated Papers
32. Multiwall Paper Bags
33. Paper Napkins

Certain Research Institutes

Regional Research Laboratory, Jorhat.

(1) Reclamation of Old Newspapers for manufacture of New Paper.

(2)Particle Board and Hard Board,

(3)Parchment Paper

Ministry of Defence

(1)Anti-Corrosive Packing Papers

Some Journals

(1)Indian Print and Paper,
1, India Exchange Place, Calcutta.

(2)Colourage Paint India,
Rajan House, Worli, Bombay-25

***Source*:** "Handbook of 2000 Small Industry Lines", by An Indo-Japanese Panel of Industrial Consultants, Productivity Services International Publications, Bombay.

Executive Summary

Kunnamkulam municipal region and its nearby places at Thrissur District in the state of Kerala, witness a number of traditional, informal and household manufacturing activities. It comprises mainly the creation of rock-cut products, metallic and clay utensils, screw-rings and screw-hooks and paper-based products. Among these, the manufacturing of paper-based products is the bandwagon of these activities for which Kunnamkulam has a unique place in the state. The different paper-based products include, exercise books, X'mas stars, greetings card, paper files, envelopes, cartons and millboards. Printing and binding are the related activities.

As per the Development Report of Kunnamkulam municipality for the year 1996, approximately 10,000 tonnes of paper are being used annually and 10,000 people are involved in its activities. In printing process, nearly 3000 workers are involved directly and an equal number of people engaged indirectly. For X'mas stars and greetings card, 400 tonnes of paper are used every year. The industry started its operations around 150 years ago.

The sector has exhibited strengths to accommodate a large number of people as a source of income and employment when the other sectors failed to provide it. The features like the industrial cluster, residential prototype, sub-contracting at different stages of production, the predominance of female labourforce, non-unionised relationship between entrepreneurs and workers, the convenient mode of transportation etc. are conducive for the development of the industry. However, the focus towards this segment has been defensive, resulting to insulate the sector from a model of competitive growth. Our objective is to identify the major problems faced by the industry and to focus on the issue of how to rejuvenate the industry in the changing scenario.

For the investigation, 15546 households in the 31 municipal wards were surveyed in the initial stage. Through this, we could locate; the region where 87% of paper-based production units lies, the zone where the largest number of households depending on this industry and, the municipal wards having special significance related to this industry. We have classified the workforce on gender basis in the three categories of work; main, part-time and piece-rate.

In the second stage, 20% of households doing piece-rate work and 40% of barefoot production units were surveyed to estimate the socio-economic background of workers and the problems faced by the industry. To get more insight into the industry qualitative deliberations of the different strata of focus groups were perceived.

The cluster of tiny bare-foot entrepreneurs and small-scale entrepreneurs has engaged in its operations. One cannot simply view this sector as a refuge for marginalized populations, there appears to be certain elements of dynamism and the resulting momentum within the industry. The subcontracting system facilitates flexible level of operations according to the demand needs of the market. The production units and subcontractors are in the ratio 1:8. Moreover, the subcontractors undertake the work from 3 – 4 production units at a time during the busy season. Thus, it is a highly supporting flexible manufacturing mechanism or a vibrant system to meet the flexible manufacturing levels of the industry. With this 'Flexible Manufacturing System', they have acquired capability to compete with big production units in the market. This system attracts the attention of many because it co-ordinates a number of households in the production processes, an exercise book manufacturing region has formed.

The important findings of the study can be summarized as follows.

Weak points.

1) The industry has gained very low degree of modernization since its commencement.

2) 98% of workers in the exercise book segment acquired on-the-job training – no training was given to the workers in the fabrication of diversified product mix of paper-based products.

3) It faces seasonal nature of production – the industry cannot operate at its full capacity level during the period July – December because of the deficiency in the demand for exercise books. The products have demand determined short-term market. Concerning the workers, 84% of piece-rate workers do only seasonal work.

4) An important raw material – laminated wrappers – is not manufactured domestically.

5) Exists vivid discrimination of wages based on gender, season, and region. Moreover, the average rate of change of wages of part-time skilled workers are higher than that of piece-rate workers during the busy season showing a higher demand for part-time skilled workers.

6) The educational background of piece-rate workers are very poor. 52% had schooling below 7^{th} standard, 40% in between 7^{th} and 10^{th} standard, and only 8% have secured education above 10^{th} standard.

7) This industrial cluster possesses very low degree of internal dynamism by way of inter-firm linkages.

8) The industry depends upon the indigenous money market for working capital requirements at a high rate of interest.

9) Long-term trade cycle – i.e., the time taken by the manufacturers to convert raw materials into output, sales (cash/credit), and realise cash is much delayed.

10) Organized financial institutions consider small-scale and tiny units at par, neglect low conditionality credit support to the tiny sector, even if it supplement the 'priority sector'.

11) The average earnings and socio-economic background of piece-rate workers are very poor. The individual earnings of piece-rate workers during the peak season range from Rs. 10/- to Rs. 70/- per day. However, the average earnings is Rs. 21/- per day. Their dwelling condition shows that approximately 78% of households reside in line houses or residential colony type houses. About 59% of these dwelling roofs have tiled and 23% thatched.

12) Intermediaries play a significant role in the distribution of raw materials.

Strong points:-

1) Household enterprises(HHEs) play an active role in the industry. Out of 182 production units in the industry, 20% are exclusively HHEs. Moreover, a number of the remaining units are located within the vicinity of the households.

2) Almost equal importance to direct and indirect workforce. 47% of the total 4397 workers constitute main workers, while the remaining 53% are piece-rate workers. Thus the industry provides a strong support system for household income either as total or partial.

3) There exists predominant role of the female workforce. Among piece-rate workforce 74% contribute women. The share of female-workforce in the industry as a whole is 53%.

4) The wage rates of the direct labours are fixed by the bargaining between manufacturers and workers. There is no contractual agreement between direct labourers and entrepreneurs. However, some permanent workers are paid bonus and limited number of casual leave. The relationship between piece-rate workers and entrepreneurs are also good.

5) The workers are not unionized. Absence of strained labour relationship is an exceptional gain of this industrial cluster.

6) The industry provide good opening to new entrants. It has observed that nearly 44% have commenced their paper-based activities within 5 years.

7) Accommodate 11% of households in the entire municipal area. The dependence is about 17% in the industrial cluster zone of the municipality.

8) The industry possesses subcontracting practices and enjoys its peculiar advantages of residential pattern and family composition.

9) The ratio of Production units to Subcontractors is very high i.e., 1:8. This facilitates flexible manufacturing practices in the industry.

10) The industry provide livelihood to a large fraction of participants. Their option to do the work reveals that 85% can devote more time into this industry and 96% of piece-rate workers are willing to keep on in this work.

11) It exhales low wastage.

12) The products are biodegradable.

Problems faced by the industry:-

The problems faced by the industry include, seasonal nature of production, internal and external competition in production and marketing, absence of a common marketing agency, unfavorable and inadequate credit support, absence of internal cluster dynamism or inter-firm linkages, low level of skill, lacks modernization and innovation, absence of a single window agency, absence of university- industry linkage and low range of product mix.

Prospects of the industry:-

The paper-based industry in Kunnamkulam has an incredible future because of its peculiarities like eco-friendly products, household welcoming production pattern, residential prototype and family composition, mode of transportation, subcontracting at different stages of production, market potential for diversified biodegradable paper-based product mix and the advantages of cluster.

Attention needs to be focused on to synchronize this cluster to generate inter-firm linkages, modernisation and the diversification of product mix. The potential for diversified biodegradable paper-based products together with the existing informal and cluster distinctiveness opens a favourable climate for the development of the industry. This should be exploited adequately on the lines of Sivakasi experience.

Section-1

INTRODUCTION

- **The Rationale**
- **The Features of Paper-based Industry (PBI)**
- **The Problem**
- **Objectives**
- **Methodology**
- **Conceptual Framework**
- **A Brief Review of Literature**
- **Genesis of PBI**

Introduction

The 'formalisation thesis', viewed that the informal sector activities is a sign of 'backwardness', will disappear as economic advancement or modernisation takes place. However, the findings of a sequence of direct surveys of informal employment undertaken in the advanced economies showed that the path of economic development is neither following the course of formalisation or informalisation but more diversified (Collin.C.Williams and Jan Windebank, 1998) [1]. Studies on levels of employment in the European Union in 1993 revealed that one in three employees worked part-time and the lifespan of many permanent jobs are rapidly declining. The share of the working-age population with a job fell from 65.2 to 60.4 percent between 1965 and 1995 (European Commission 1996a)[2], reveals the rising trend of adults working age without employment. Such statistics does not disclose the extent to which permanent full-time jobs are replaced with temporary and part-time employment. As per the report of the European Commission (1996 a), the average life of a job is 4-5 years in European Union, which is now similar to that of USA. As Castells and Portes (1989: 13) assert, what is new about informal employment in the contemporary period is that it is growing at the expense of already formalized work relationships[3].

[1] Colin C Williams and Jan Windebank, "Informal Employment in The Advanced Economies", Routledge pub., London and New York (1998).
[2] *given in Colin C Williams...
[3] * given in Colin C Williams...

In developing countries, the informal sector is an important source of employment. In the urban areas of many developing countries, it varies from 25 to 70 percent[4]. Since the benefit of general development process hardly trickle down to the poorest section of the population, particularly in developing countries, the role of urban informal sector for generation of income and employment and efficient allocation of resources is important. Moreover, the informal sector use low amount of capital, local resources, recycling of waste, and, provide goods and services, which are otherwise not available. The goods produced by this sector range from the production of instantly consumable food products to light industries; the services provided by this sector range from simple personal and household services to the repair of vehicles and consumer durables. Studies on informal employment in Kumasi city (Ghana) estimated that the informal sector employment was 60 – 70 percent, and in Jakarta (Indonesia), it was 41 percent [5].

In India, there are a number of studies on various aspects of urban informal sector. The studies of Breman (1977) in the Valsad district of South Gujarat, Barbara Harriss (1978) in her empirical study in certain urban centres of South India, the study in Ahmedabad by Papola (1977)[6], the role of informal sector and the migration factor in urban Delhi by Atreyi[7], and, the works of Sethuraman S.V[8], and Kishor C. Samal[9], the significance of the concept of informal sector have been recognized on various grounds.

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[4] Kishor C. Samal, "Urban Informal Sector (An Exploration of the Informal Sector in a Small City of Orissa)", Manak Publications.
[5] S.V. Sethuraman, "The Informal Urban Sector in Developing Countries: Some Policy Implications".
[6] Papola, T.S., "Informal Sector in Urban Economy, A Study in Ahmedabad", Giri Institute of Development Studies, Lucknow, (1977).
[7] Atreyi Mazumdar, "Employment in Urban Delhi", Economic Times, Calcutta, April 30, 1981.
[8] Sethuraman S.V., "The Informal Sector in Developing Countries: Policy Implications", Social Action, July-September, 1977.
[9] Kishor C Samal, "Urban Informal Sector; An Exploration of the Informal Sector in a Small City of Orissa", Manak Pub. Pvt. Ltd.,

Emphasising the need to improve the lot of workers in the unorganized sector, the Labour Bureau of the Government of India launched a series of studies based on the recommendations of National Commission on Labour. The first of its kind was on the working and living conditions of workers in the building construction industry in Delhi[10]. They include Jari Industry at Surat, Matches and Fire Works industry in and around Sivakasi, Metal-ware industry in Moradabad, Agarbatti industry in Karnataka and Graphite Crucible industry in Andhra Pradesh. These studies indicate that informal/unorganized sector accommodates a major share of the labour force. As per 1971 census, 91% of the total work force was engaged in various informal sector activities. It accounts for about 99% in agriculture, 78% in manufacturing, 34% in mining, 58% in construction, 70% in trade, 46% in transport and 67% in services. The 1981 census data shows that the informal sector employment was about 90.74% of the economically active population[11].

Although the precise meaning of the concept 'informal sector' has remained a subject of controversy, the importance of informal sector is crucial as a source of income and employment and efficient allocation of resources. The surplus labour force unable to find their livelihood in the modern formal sector depends upon a variety of productive activities in the urban areas, now designated as informal sector.

In Kerala, attempts have made by many to explore and highlight the different aspects of the informal sector. The aspects of income, consumption, employment, wage levels, indebtedness and working conditions of women workers in the unorganized sector of

[10] Government of India, Ministry of Labour, Labour Bureau, Unorganised Sector Survey Series No.1, Report on the Working and Living Conditions of Workers in the Building Construction Industry in Delhi, 1977-78, Chandigarh, 1979.
[11] Satya Raju, "Urban Unorganised Sector in India", Mittal Publications.

coir industry[12], the casual and irregular, contractual nature of women's employment in Kerala's informal sector[13] have studied. It has been observed that, casual labourers in agriculture, construction, brick-making, coir, or as own account workers in handloom weaving, basket weaving and vending fish/vegetables and, the newer activities like floriculture, poultry and livestock rearing, garment-making, food processing and fish processing can be inferred as informal in the state.

In Thrissur district, the Kunnamkulam municipal area and its nearby places, witnesses a number of traditional, informal and household manufacturing activities. These include the creation of rock-cut products, metallic and clay utensils, production of screw-rings and screw-hooks, leather goods, synthetic pearl goods, toys, and, paper-based products. Among these, paper-based activities are the backbone of household enterprises for which Kunnamkulam has a unique place in the State**.** As per the Development Report of Kunnamkulam Municipality for the year 1996, the role of paper-based industry in the local level development is crucial.

In this context, an attempt has made to explore facts regarding the nature and organisational structure of paper-based industry, the composition and socio-economic background of workers, the problems and future prospects of the industry.

1.1 The Rationale

A bird's eye view into the Development Report of Kunnamkulam Municipality for the year 1996 gives us some information about the role of paper-based industry in the area. It says that, the 150 year old paper-based industrial activity includes the production of exercise books, X'mas stars, greeting cards, paper files, envelopes, cartons, and millboards. Printing and binding are the related activities.

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[12] Mally Mathew, "Survey on Women Workers in the Unorganised Sector of Coir Industry in Kerala", Indian Institute for Regional Development Studies. Kottayam, 1980. Given in R.Satya Raju, "Urban Unorganised Sector in India", Mittal Pub., Delhi.

[13] Mridul Epen, "Women in Informal Sector in Kerala; Need for Re-examination", Economic and Political Weekly, June 30, 2001.

In the production of exercise books, as per the report, approximately 10,000 tonnes of paper have been using annually. Nearly 10,000 people are involved in its production of which 75% is women. In printing process, there are around 3000 workers directly involved and an equal number of people engaged indirectly. For X'mas stars and greeting cards nearly about 400 tonne paper is using every year. This shows that among paper-based products, the manufacturing of exercise books is the 'bandwagon' of the industry, the production of which begins in January every year and continues until June.

This industry consists of small and tiny units, household enterprises, normal households doing piece-rate work and marketing outlets for the paper-based products. The product mix in the exercise book segment, are ledgers, registers, pocket books, passbooks, and diaries, apart from exercise books in different dimension and class. In the binding process- a work associated with the manufacturing of exercise books, there are hardboard binding, leather binding, and ordinary binding. Ordinary binding is being used for exercise books. The other paper-based products like X'mas stars and greeting cards comprise only a minor role in the industry. All these activities are so household friendly; male-female, old-young, and literate-illiterate people participate in these work.

A particular residential replica 'line houses' (*angadi veeducal*), found in Kunnamkulam is an added advantage of this industry. This facilitates the distribution of raw materials into these houses easily and frequently for piece-rate work. Since the exercise book segment took a major share of the paper-based industry in this area, the study focuses more towards into this segment.

1.2 The Features of the Industry.

1. Active participation of women in the different stages of production.
2. It requires comparatively less fixed capital.
3. Less wastage of raw materials.
4. Unique method of hauling has followed for the distribution of raw materials between production units and households for piece-rate work.
5. Subcontracting of piecework.
6. Majority of the piece-rate workers reside in 'line houses' or residential colonies provided by government.

1.3 The Problem.

The '150-year-old' paper-based industry in Kunnamkulam, which played a significant role in the local level development as an important source of income and employment to the households, is now facing certain problems because of the revolutionary changes in technology, modernisation and, competition in production and marketing.
How can we rejuvenate this industry in the changing scenario?

1.4 Objectives.

Explore facts regarding;

(1) the industrial cluster - the distribution of production units and workers in the different municipal wards,

[by this, we want to show how tiny units and household enterprises are scattered in the 31 municipal wards and, the spread of different categories of workers]

(2) the nature of the industry, its characteristics, and organisation,

.

To study,

(3) the socio-economic background of workers in the industry

(4) the problems facing the industry,
(5) the future prospects of the industry.

1.5 Methodology.

The units in the industry are sprinkled in and around Kunnamkulam municipality. However, for convenience of the study, the area has been limited to the 31 municipal wards of Kunnamkulam. (Appendix-1) The reference period is 1/1/2001 to 1/1/2002. We have used both primary and secondary data for analysis. Primary data have obtained from the 31 municipal wards through primary investigation (census) by using a set of structured questions in the first phase. In the second phase, a sampling methodology on proportionate basis from different municipal wards was adopted to get data regarding production units and to study the socio-economic background of workers.
Secondary data have obtained from various published sources of the central, state and local government.

Phase-1. A Primary Investigation in the 31 Municipal Wards.

This envisages the identification of the distribution of production units – the cluster, work participation of men and women in the different stages of production, the nature of the industry, and, its organisation. A schedule with a two-way classification for obtaining quantitative data has designed. We have decided to obtain data from each and every household in the 31 municipal wards so that the number of production units in the different segments of paper-based industry, number and nature of male and female workforce can be collected. To get a clear picture of the main, part-time and piece-rate workforce we have planned the investigation during the period February-June 2001. As the industry is very sensitive to market demand, we understood that data regarding part-time and piece-rate workforce would be more reliable by conducting a population enumeration in the whole municipality. For this purpose, we have used municipal ward maps and official records of approximate number of households in it.

Earlier, there were only 16 municipal wards. The municipality extended its area in 2001 and now it has 31 wards. The study, therefore considered 31 wards.

Phase- 11. A Sample Survey of the paper-based production units and normal households doing part-time and piece-rate work.

This is to bring to light the major problems facing the industry and the socio-economic background of the workers. The survey was designed to cover 20% of the households doing piece-rate work and 40% of the paper-based production units (exercise book) on a proportionate basis in the 31 municipal wards. Separate schedules were prepared to obtain data from these two segments.

For qualitative data deliberations with the focus groups, interviews with the selected members of the units and households, intellectuals - religious, academic, legal backgrounds were conducted.

1.6 Conceptual framework

Informal sector:

ILO has conducted a number of studies on the socio-economic characteristics of the informal sector in Africa, South America and Asia. Though there is no consensus on the concept 'informal sector' and its standards of measurement, certain features are found to be applicable to the urban informal sectors in India. The formal sector is characterized by relatively large scale operations, capital intensive techniques, high-wage and salary levels; while in the informal sector, small scale operations, labour-intensive techniques, low-income levels and indigenous ownership exists.

Sethuraman S.V (1981) used an exhaustive list of different criteria for identifying informal sector enterprises in different sub-sectors. It has broadly divided into size criteria and mode of production criteria.

He defined informal sector in a general way as; "it consists of small-scale units engaged in the production and distribution of goods and services with the primary objective of generating employment and incomes to their participants notwithstanding the constraints on capital,

both physical and human and know-how"[14]. He distinguishes the formal and informal sectors based on certain severe constraints like access to credit, lack of adequate business premises, indigenous technologies, simple skills, and methods of training.[15]

Papola (1981) distinguished formal and informal sectors based on mode of production and defined informal sector as, "a segment of the economy having certain characteristics which lead to unfavourable conditions for the growth of enterprise and activities in this segment". He includes in a broad sense, independent workers, casual workers working for households, shops, eating houses and repair units in manufacturing sector in the informal sector.

Jan Breman defined informal sector as, "a disparate, irregular and fluid labour system functioning in the lower ranks of the economy"[16].However, the studies of Breman (1976), Barbara Harriss (1978), Bose (1978), Romatet (1983) gives us a clear-cut picture of informal sector, about its scale of operation and mode of production.

The size criterion assumes that an enterprise employs less than 10 workers including owner-operator, unpaid family labourers and casual workers. Moreover, the institutional factors have no role in the determination of wage. It is determined based on the bargaining between the employer and employees. In India, it has also classified into organized and unorganized sectors.

The ILO mission to Kenya defines: " informal activities are the way of doing things, characterized by (a) ease of entry, (b) reliance on indigenous resources, (c) family ownership of enterprises, (d) small scale of operation, (e) labour-intensive and

[14] S.V.Sethuraman : 1981
[15] S.V.Sethuraman, The Informal Sector in Developing Countries.
[16] Breman .J, (1996): Footloose Labour, Cambridge University Press, Cambridge. Given in Louise Waite, "Kerala's Informal Labour Market Interventions; From Work to Well-Being?", Economic and Political Weekly, June 30, 2001.

adapted technology, (f) skills acquired outside the formal sector system, and (g) unregulated and competitive markets"(ILO:1972).

S.Vemkataratnam, (Bureau for Employers Activities, ILO, Geneva) in a background paper for the ILO, South Asian Employers' Symposium at Colombo (1989)[17], enumerated the possible distinctions between formal informal sectors. They are;

Informal sector	Formal sector
Ease of entry	Barriers to entry
Unregulated	Regulated
Labour-intensive	Capital intensive
Crude/adapted technology	Imported technology
Self/family labour	Paid labour
Skills acquired outside formal school-system	Skills acquired through formal school-system
Tiny/small scale operations	Fairly large scale operations
Reliance on indigenous resources	Use of resources from domestic/foreign- sources
Individual/ family ownership	Corporate ownership
Non-unionised	Unionized
Some activities/items are usually reserved exclusively for being undertaken in this sector	Some industries/activities are expressly forbidden to be undertaken (eg. Industries listed in Schedule A of the Industrial Policy Resolution of Government of India)
Absence of standards for quality of equipment, environment and output	Fairly rigorous standards in respect of all the three aspects
Illegal (due to official limitation of access to formal sector)	Legal entity
Highly competitive market licences	Protected through tariffs, quotas and trade

However, in the empirical studies on the various aspects of informal sector, efforts have made to demarcate the informal sector from the formal sector. It includes the types of working class, types of occupation, the size of the firm, income, place of work and more often a combination of these. In our study, we have considered the composite set

[17] Given in Damodar Panda, "Labour in Unorganised Sector: The Devalued and The Deprived", Manak Pub. Pvt. Ltd (1999).

of characteristics mentioned above to identify the informal sector activities.

Small-scale industry:

The term small-scale industry has been defined in three ways; the conventional definition, the operational definition and the third definition relates to national income accounting. The conventional definition includes cottage and handicraft industries, which employ traditional labour-intensive methods to produce traditional products, largely in village households. They employ none or a few hired hands. The operational definition includes all those undertakings having an investment in fixed assets in plant and machinery not exceeding Rs. 60 lakhs. The third definition includes all manufacturing and processing activities, including maintenance and repair services, undertaken by both household and non-household small-scale manufacturing units, which are not registered under the Factories Act.

Thus, a small-scale industry is defined as "a unit engaged in manufacturing, servicing, repairing, processing and preservation of goods having investment in plant and machinery, at an original cost not exceeding Rs. 60 lakhs."[18]

Ancillary industry:

An ancillary undertaking is defined as "a unit having investment in fixed assets in plant and machinery not exceeding Rs.75 lakhs and engaged in the manufacture of parts, components, sub-assemblies, tooling or intermediates or the rendering of services and supplying or proposing to supply or render 50 percent of their production of other articles, provided that no such undertaking shall be subsidiary of or owned on controlled by any other undertaking." [19]

Tiny Units:

Tiny units come under the umbrella of small-scale industries. A tiny unit is one whose investment in fixed assets in plant and machinery does not exceed Rs. 5 lakhs. (SSI Policy Statement, 1991).

Household Industry (HHI)

[18] Vasant Desai, "Small-Scale Industries and Entrepreneurship", Himalaya Pub. House, third revised ed.1997.
[19] Given in Vasant Desai, ibid.

As per Census of India 2001, a 'Household industry' is defined as an industry conducted by one or more members of the household at home or within the village in rural areas and only within the precincts of the house where the household lives in urban areas. The larger proportion of workers in the household industry should consist of members of the household. The industry should not be run on the scale of a registered factory, which would qualify or has to be registered under the Indian Factories Act.

In our context, we have used the term 'Household Enterprise' instead of 'Household Industry'.

Normal Household

A group of persons live together and take their meals from a common kitchen. Normal households usually undertake piece-rate work in this industry. Thus, in our context, the term 'normal households' stands for the 'normal households doing piece-rate work'.

Definitions of Small-Scale and Ancillary Industries*

Date	Defining Authority	Main Features	
		Capital investment In plant and machinery	Number of persons employed
Small-scale Industries			
July 1980	Industrial Policy Resolution, GoI	Rs. 20 lakhs	50(if using power) or 100 (without the use of power) per "multiple shift" irrespective of the no. of persons employed.

March 1985	-Do-	Rs. 35 lakhs	-Do-
August 1991	SSI Policy Statement	Rs. 60 lakhs (Rs. 75 lakhs for export oriented units)	-Do-
Ancillary Industries			
July 1980	Industrial Policy	Rs. 25 lakhs	List of industries covered 26 items
March 1985	Resolution, GoI	Rs. 45 lakhs	-Do-
April 1991	-Do-	Rs. 60 lakhs	-Do-
August 1991	-Do-	Rs. 75 lakhs	-Do-
	-Do-		
Tiny Sector			
July 1980	Industrial Policy Resolution, GoI	Rs. 2 lakhs	Industries situated in towns and villages with a population less than 50,000. Cover cottage industries in rural and semi-urban areas.
March 1988	Budget, 1988-89	Rs. 2.5 lakhs	-Do-
August 1991	SSI Policy Statement '91	Rs. 5 lakhs	All places.

*Vasant Desai, "Small-Scale Industries and Entrepreneurship", Third Revised Ed.1997, Himalaya Publishing House.

Enterprise:

An enterprise is broadly defined to include any economic unit engaged in the production of goods and services- whether it employs only one person (the proprietor) or more; whether or not it uses fixed capital; whether or not it has a fixed location for conducting business.

Clusters

Schmitz[3] defines clusters as, "a group of producers making the same or similar things in close vicinity to each other". This definition

identifies a cluster as a sectoral and geographical concentration of firms within the same industry.

Sub-contracting

UNIDO (1974) defined sub-contracting as a relationship that "exists when a company (called a contractor) places an order with another company (called the sub-contractor) for the production of parts, components, sub-assemblies, or assemblies to be incorporated into products to be sold by the contractor. Such orders may include the processing, transformations, or finalising of materials or parts by the sub-contractor at the request of the contractor"[20]. Sub-contracting can be classified into; component sub-contracting, activity sub-contracting, assembly sub-contracting and product or marketing subcontracting, depending upon the stages at which sub-contracting is undertaken.

Work

Work is defined as participation in any economically productive activity with or without compensation, wages or profit. Such participation may be physical and/or mental in nature. It includes part-time help or unpaid work on farm, family enterprise, or in any other economic activity[21].

Worker

A 'worker' means a person who is engaged by an 'employer' directly or through an intermediary to do any skilled, semi-skilled or unskilled manual work for salary or reward. It is classified under three heads – main, part-time and piece-rate.

Main, part-time and piece-rate workers

Workers of the paper-based industry are classified into main, part-time and piece-rate. A person who works for six months or more during the last one year in a production unit and receives reward on a monthly/weekly basis is considered as main worker.

Part-time workers can find job less than 6 months in a year but work in any production unit at regular intervals. They undertake other activities during off-season in the industry.

[20] NPC Research Division, "Sub-Contracting: Emerging Issues in the Indian Context", Productivity, Vol.35, No.4, Jan-Mar, 1995.
[21] Census of India 2001, Ministry of Home Affairs, Government of India, NewDelhi.

Piece-rate workers undertake work on a piece rate basis. They carryout these work at home or in the production unit. People usually subcontract the piece-rate work.

Household Listing:

We have followed Census definition of the Government of India for the listing of households in the area. As such, 'Normal Households' and 'Household Industries' (Household Enterprises in our context) are listed separately. The small scale and tiny units have listed under the head 'Production Units'.

Total Production Units:

Includes small units, tiny units and household enterprises.

Households related to the Paper-Based Industry (PBI):

Include production units, household enterprises, normal households doing piece-rate work and shops for the paper-based products.
['HHs Related to the Industry' = Production Units + Household Enterprises + Normal HHs doing piece-rate work + Shops for Paper-based products]

Trade Cycle

Time taken by the manufacturers to convert raw materials into output, sales (cash/credit), and realise cash.

1.7 A Brief Review of Literature

There is a vast body of theoretical, empirical and policy aspects of literature on informal sector, industrial clusters and subcontracting. Literature on informal sector focuses its social objectives like

employment generation and poverty alleviation. The striking achievement of clusters counts in accelerating exports, maintaining high product quality and its 'collective efficiency'. They also benefit from backward and forward linkages, specialisation, inter-firm linkages, division of labour, and sharing of information/experiences. The benefits of sub-contracting include specialisation and cost advantage, easy implementation of Flexible Manufacturing System (FMS) and Just-in Time (JIT), insulation from market fluctuations, take advantage of benefits of government policy, technological and managerial benefits, reduction in transaction cost, and develop specialisation.

Here, we have reviewed literature mainly on informal/unorganised sector, industrial clusters and sub-contracting.

S.V.Sethuraman[22] in an article on 'The Informal Urban Sector in Developing Countries: Some Policy Implications', points out that the informal sector is an important source of employment in many developing countries. It has played and continues to play a vital role in employment generation in urban areas despite the generally hostile attitude of Government policies. In Kumasi (Ghana) and in Jakarta (Indonesia) the number of enterprises seems to be growing by about 12 percent per year. The study further shows that the informal sector enterprises are subject to severe constraints, which make it difficult to expand into viable units and capable of competing successfully with other formal sector enterprises. The enterprises in this sector lack access to adequate business premises and tend to be small in terms of volume of output, employment and investment. They resort to indigenous technologies, seek simple skills through informal training, labour intensive products and services, lack of sophistication and quality finished products, limited market, low accessibility of credit from formal sector financial institutions and so on.

More over, the study analyses the forward and backward linkages of the informal sector with the formal sector. In the case of Kumasi, even though the direct linkages with the formal sector are small, there is a significant strengthening as the size of the informal sector firm increases. The backward linkages, on the other hand are much stronger. In Ghana, the linkage takes the form of sub-contracting to other informal sector enterprises. Such linkages implies more efficient use of available capital

[22] S.V. Sethuraman, "The Informal Sector in Developing Countries: Some Policy Implications", Social Action, July-Sept., 1977, pp. 344.

and other resources. It also explains why the informal sector enterprises are clustered together within a given city. The study concludes by emphasizing the need for favourable policy resolutions from the government, rather than a negative, neutral or mildly positive attitude towards the informal sector.

Kishor. C. Samal studied the origin of the concept, features, the linkage and growth of formal and informal sectors in his 'Urban Informal Sector'[23], and observed the views of many. While analyzing the linkages and growth, he highlighted the study of slum industries in Calcutta by Boss, A.N. (1978), in which the informal sector has been divided into traditional and modern and its two types of characteristics namely, external and internal. The basic internal factor, which interconnects the external characteristics, is its relative inability to get resources at relatively cheaper prices and then selling its product. The other observations of Boss like the exploitation of informal sector by formal sector, the purchase of goods by the formal sector from the informal sector and sells it under its brand name at a higher price, have also mentioned. Moreover, the informal sector units purchase inputs very often in black market at higher price contrast to formal sector purchase at controlled price.

He considered another study of Rometet (1983) in the same city of Calcutta to observe the economic aspects of the sector, where he says that, "the survival and development of informal sector is due to the very low wage of hired workers, full dependence on market determined price and supply of considerable amount of low priced goods". Further, the study has analyzed how the parent company through subcontracting system sells under its brand name the product manufactured in informal sector. The studies of Papola and Mathur (1983) on a Metal Engineering Industry at Kanpur and, Barbara Harriss (1981) on Engineering Industry in Coimbarore, Tamilnadu also support the exploitative nature of informal sector by formal sector, he adds.

[23] Kishor C Samal, "Urban Informal Sector: An Exoloration of the Informal Sector in a Small City of Orissa", Manak Publications Pvt. Ltd,

Kishor C Samal summarise the concept by specifying the first order and second order conditions for a unit in any sub sector to be in informal sector. The first order condition is that it must satisfy the size criteria: an employment of 10 workers including owner operator unpaid family labour and casual workers, a cut-off point for a unit to be in informal sector. The second order conditions are the observance of some features. They are, (a) informal relationship of the unit with its employees and customers, (b) determination wage on the basis of bargaining between the employer and employees, no security and certainty in employment and income, (c) the workers makes use of machines and tools and not the machines make use of labour and, (d) two modes of production in the manufacturing sub sector- petty mode of production and simple or small capitalist mode of production.

On socio-economic profiles of informal sector workers, it observed that though a few entrepreneurs in the informal sector earn a comfortable income, approximately 88% of households doing piece-rate work are poor. On earnings, about one-fifth of own-account workers and wage labourers earn below the legal minimum wage fixed by the Government of Orissa. More over, there exists earnings differential between wage workers and own-account workers.

P. Nayak, S. Krishna Kumar in 'scale, technology and Economies in Textile Power Processing; Case of Tirupur Cluster'[24], examined the interrelationship among scale, technology and other economic characters in the Indian textile power processing sector. They have tried to find out the relationship between size and technology; in re-establishing the fact that the small-scale units are capital intensive. Secondly, they examined the relationship between size and productivities to uncover whether small units have lower labour productivity. Thirdly, the quality of output by correlating the unit value of output to the size and technology of units.

The study was based on census data of textile power processing industries in India during 1999 and resurvey of selected units in 2000. They have

[24] P.Nayak, S. Krishna Kumar, 'Scale, Technology and Economies in Textile Power Processing; Case of Tirupur Cluster', Economic and Political Weekly, September 27, 2003.

considered 58 units, classified into four groups based on number of labour employment. They observed that as the scales of the unit go up, the average investment level and average output level also go up. That is, the larger the scale of the unit (employment), the larger is the investment level and larger the output levels. This re-establishes the fact that output-labour ratio increases with the increase in the size of the industry. But the industrial cluster of Tirupur, the smallest category of the units are proved to be most efficient and rest of the units exhibit an increasing trend of labour productivity with scale. They found that the efficiency of these small units are due to the efficiency of the management, optimal machine operational levels, shift working of labourers and manage operation according to the demand orders. Hence, they accepted the hypothesis that the labour productivity increases in relation to the increase in scale in the power processing industrial cluster of Tirupur.

The study of M.Van den Bigaert[25] about tribal entrepreneurs in the informal sector of Ranchi city, in Bihar, based on the data collected by the Xavier Institute of Social Service, shows that the concept of the urban informal sector has brought new insights into the structure of the urban economy. It provided a better understanding of the immense contribution, which the urban poor make to the maintenance, and development of the economic life of the city. Moreover, the demarcation of the 'tiny sector' from the 'small scale sector' in the industrial policy of the government was a step in the right direction. This helped the barefoot entrepreneurs whose investment is usually well below Rs. 10,000. The study further observed that the tribal informal entrepreneur create fifteen jobs against one job in the large and 7.5 jobs in the small-scale sector.

Investigation into the factors responsible for the 'success' of the tribal entrepreneurs indicated that controllable factors such as education, previous experience, motivation, etc. are more important than the uncontrollable factors such as possession of ancestral land, tribal affiliation, language, religion or social status. Poor financial basis, low level of savings, inadequate institutional credit, lack of technical and business skills, etc. are some of the week variables of the study in a sample of 181 observations in the primary, secondary and tertiary sectors.

[25] M. Van den Bigaert, 'Entrepreneurial Patterns in the Urban Informal Sector: The Case of Tribal Entrepreneurs in Ranchi.

S. Nanjundan, in 'The Informal Sector and Poverty Alleviation' (1995)[26], reviewed the increasing role of the informal sector in the alleviation of urban poverty in developing countries. The sector is characterized by family or clan ownership, employment as a means of livelihood, and no profit maximization motive. As the informal sector meets the social objectives of employment creation and poverty reduction, more emphasis should be given to strengthen this sector through own groups, clusters or associations, with infrastructure, credits, training, technology and market information. While analyzing the effects of globalization on the industry, he says that, there has been a tendency towards the gigantism until the 1970's, towards widely dispersed location of separable operations, and the increased role of servicing in the nature of assembling or finishing and marketing, computerized accounting and financing. The informal sector whose operations are characterized by flexibility and innovation does not seem to affect adversely by globalization. However, skill up- gradation, computer literacy, and organizational arrangements to derive benefits of clustering are essential for the informal sector to meet market competition locally and globally.

"Urban Unorganised Sector in India", a study by Satya Raju R[27], reveals that, the unorganised sector accommodates a large share of the labour force in the metropolitan cities in India. It was about 62.12% of the total employment in Delhi in 1979. In Bombay, it was above 45% in 1961, in Calcutta it recorded over 40% of the labour force in 1987. In Ahmedabad, the study carried out by T.S. Papola provide database for the unorganised sector in the urban economy. It concludes by saying that there is a rise in the relative share of the unorganised sector.

In an article by Sridhar Krishna, "Phasing Out of Import Licensing; Impact on Small Scale Industries"[28], bring to light the consequences of the removal of Quantitative Restrictions (QRs) in India.

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[26] S.Nanjundan, 'The Informal Sector and Poverty Alleviation', Productivity, Vol.36, No.1, April-June 1995.

[27] R. Satya Raju, "Urban Unorganised Sector in India", Mittal publications, Delhi.

[28] Sridhar Krishna, "Phasing Out of Import Licensing: Impact on Small-Scale Industries", Economic and Political Weekly, July 7, 2001.

715 items were removed from the list in the first stage on April 2000, followed by 714 items in April 2001; aggregating 1429 items were placed on the Open General License List (OGL). Items on the open general list imply free import. Sridhar Krishna identified certain industries where there were indications that they had affected adversely by imports. The indications were confirmed in the case of industries dealing with watches and clocks, toys and plastics. They proved wrong in the case of those industries dealing in ceiling fans, ice- cream and bicycles. The study however, does not made any distinction based on products in the formal/ informal, organized/unorganized or rural/ urban sector.

In the watches and clocks industry, he observed that, they have affected adversely because of free imports, but they hurt relatively larger units than the small-scale units. This is because the small-scale units have adapted themselves to the new situation and transformed their manner of operation.

All tiny units manufacturing timepieces, wall clocks, alarm clocks and watches have given up all manufacturing activities and they have switched over to assembling imported (smuggled) components and selling them in the grey market. Larger units on the other hand closed, or facing heavy competition from MNCs because of the flooding of imported watch components. The capacity utilization in the industry as a whole is only 25%. C.S. Prasad[29] while analysing the export potential of small-scale industries in India held the same view. According to him, "the natural advantage of quick response, flexibility and innovativeness possessed by this sector, will help to convert the challenges into opportunities".

In Kerala, K.K. Subrahmanian[30](1994) observed that the predominance of small units in the SSI sector may be due to the constraints faced by the entrepreneurs to get finance, especially long-term and risk capital.. According to him, "there is a bias towards small size in SSI in Kerala, which is a disquieting feature". The distribution of SSI units shows that there is heavy concentration in the smallest size group.

[29] C.S. Prasad, "Export Potential of Small-Scale Industries", Productivity, Vol.36 (1),April-June,1995.
[30] K.K. Subrahmanian, "Small Scale Industries & Employment: Some Disquieting Dimensions", Productivity, Vol. 35 (3), Oct-Dec, 1994.

In 1987-88, about 90% of SSI units were in the 1-9 employment size class. In terms of capital size 80% units account for the smallest size-group (value of plant and machinery less than Re 1 lakh). Almost 97% SSI units in Kerala are seen to have the basic feature of tiny enterprise - a bias towards small size in SSI in Kerala. They have poor factor-use efficiency, output-capital ratio, output-labour ratio and obviously contribute less to the total production of the SSI sector. This may be due to the constraints faced by the entrepreneurs to get finance, especially long-term and risk capital. This in turn tells upon the weakness in the policy resolutions for the promotion of efficient small-scale industries in the state.

The study points towards the need for efficiency-based growth of the SSI sector and its integration with employment generation while translating the strategy into specific policies and programmes for the promotion of SSIs. Moreover a study on the performance of SSI units in Kerala by Subramanian and Pillai[31] shows that the problems of the SSI units in Kerala include low capacity utilization, low factor productivity, unfavourable wage-productivity relationship, low proportion of self-employment, and shortage of credit capital, leading to the increasing incidents of "sickness" and the closure of SSI units.

On "Kerala's Informal Labour Market Interventions From Work to Well-Being?" Louise Waite[32] argues that, the path to 'development' is often associated with the expansion of employment opportunities as a means to encourage economic growth and also enhance well-being at the individual and household level. However, the notion that the well-being of individuals and households can be enhanced through the gaining of employment is too often assumed rather than established. Through a case study of the energy intensive head loaders sector of the informal labour market in Kerala, the paper attempt to explore facts whether effort intensity limits well-being benefits of employment and can state

[31] Subramanian K.K., Pillai Mohanan (1993), "Modern Small Industry in Kerala - A Review of Structural Change and Growth Performance", Working Paper No.254, Centre for Development Studies, Thiruvananthapuram.

[32] Louise Waite, 'Kerala's Informal Labour Market Interventions From Work to Well-Being?', EPW, June 30, 2001, pp-2395-97.

interventions ameliorate the negative effects of such energy intensive employment.

The informal labour markets in Kerala are not homogeneous and are stratified along gender, age, caste and body capital lines. It has numerically significant state-specific informal sectors such as toddy tapping and the coir industry. Moreover, the contemporary high degree of unionization and mobilization amongst Kerala informal sectors is quite exceptional in the Indian context.

While analyzing the effects of the effort intensity on well being he observed that, 'although the micro dynamics of the workers' livelihoods are extremely complex, this may lead to a situation where those with healthy bodies get rewarded and those with poorer body capital endowments are unable to earn adequate economic returns to replenish their expended energy'. The state interventions for enhancing well being through work are the welfare boards, which are unique to Kerala. It was estimated that the welfare board uses 85% of its funds for disbursement for bonus and holiday wages, which are linked to annual days of employment, and annual wages. Thus, 'the workers that are most able to mobilize their body capital get the greatest rewards, in both absolute wage and bonus terms'. The system of labour pooling- grouping of workers into different categories in accordance with the nature of their work, among the workers mean certain groups secure the more profitable pools of the head load work and greater economic return. He concludes that, however, the state intervention in the head loaders sector seems to ameliorate some of the more negative consequences of effort-intensive work.

P. Monahan Pillai[33] studied the performance of industrial clusters of footwear in Kottayam, (Kerala). The dimensions relating to the origin, evolution, growth pattern and institutional interlinkages and impacts have considered. The study observed that, subcontracting remains inadequate and inter-firm co-operation is limited. It point towards the need to increase the volume of production by product diversification depending

[33] P.Mohanan Pillai, "Performance of Industrial Clusters: The Case of Footwear Cluster in Kottayam", Kerala.

on factors like friction, tastes, gender, fashions and geographical and climatic conditions. To get the performance and inter segment linkages of the footwear cluster it has considered a sample of 50 units consists of producers, machinery manufacturers, mould makers and subcontractors.

It observed that women are employed in subcontracting units, their average earning per day came to Rs. 40 (1996). The wage rates in the subcontracting units are so low and the work is monotonous. Subcontracting firms receive financial support from firms placing orders with them. Regarding marketing, it observed that the share of output marketed outside the state is more in the case of small than big units because of bulk order procurement by traders from small firms. The study further highlights the insignificant role of the state government in the development of the cluster. It concludes by emphasising the role of the state to "initiate the steps to facilitate the establishment of related industries in the region and transform the existing industrial base into an interdependent production network in the region through a process of inter temporal diversification".

Mridul Epen, in 'Women in Informal Sector in Kerala: Need for Re-examination'[34], says that, women's work is varied: a large part of it escapes from enumeration as it does not receive any remuneration or perceived as 'housework', fall under the domain of informal sector, though it adds to the family's real income substantially. The ranges of activities of women who are primarily engaged in domestic duties vary from kitchen gardening to fetching water from outside the household premises. The study point towards the need to estimate the informal sector activities of women, not as a residual from total workers and organized workers, as usually practiced (by the Employment Market Information).

It observed that the most demeaning aspect of working in the informal sector is the open and at times subtle sex discrimination in wages. For example in construction even for the same unskilled work, women are paid less, the argument being that women are only supplementary earners, despite the fact that in poorer households the contribution of women to their family income is higher or even the only source of earning.

[34] Mridul Epen, 'Women in Informal Sector in Kerala: Need for Re-examination', EPW, June 30, 2001.

Moreover, it highlights the fact that young women constitute an important segment of the informal sector workforce. It further bring to light the widening role of informal sector activities like floriculture, poultry, livestock rearing, garment-making, food processing and fish processing apart from the traditional casual labourers in agriculture, construction, brick-making, coir, own account workers in handloom weaving, basket weaving and vending fish/vegetables.

The paper concludes that, "while providing those who are excluded from the formal sector, with some type of asset and guiding them into newer areas of employment could be one avenue; another for wage earners could be in terms of diversifying their working conditions with acquisition of new skills".

The study of NPC Research Division on "Sub-contracting: Emerging Issues in the Indian Context"[35], points out that, as against the traditional view the recent view gaining popularity is that, "the sub-contracting system has potential efficiency advantages over vertical integration or purely market based transaction schemes". It says that the benefits from subcontracting can be classified at three levels. They are; benefits at (a) large firm (parent) level, (b) small firm (subcontractor) level, and (c) Economy level.

The benefits at the large unit level include specialisation and cost advantage, easy implementation of Flexible Manufacturing System (FMS) and Just-in Time (JIT), insulation from market fluctuations, take advantage of benefits of government policy. The benefits at the small unit (sub-contractor) level include, technological and managerial benefits, reduction in transaction cost, and develop specialisation.

Another study on subcontracting practices in Indian industries by NPC Research Division[36] says that, inspired by the Japanese and Korean successes, subcontracting has recommended for developing countries like India, as a mechanism for widespread industrialization and employment generation. Considering the extent of subcontracting, stability of buyer-

[35] NPC Research Division, "Sub-contracting: Emerging Issues in the Indian Context", Productivity, Vol.35, January-March, 1995.
[36] NPC Research Division, "Subcontracting Practices by Indian Industries - A Survey", Productivity, Vol.37, No.3, Oct-Nov 1996, pp-361-373.

supplier relation and the nature of assistance rendered to the subcontractors, subcontracting seems to be beneficial to both the parent as well as subcontractor units in India. It further says that, modern management practices are increasingly resorted to in order to conform international business standards and practices to survive and grow in the globally integrated market. Large producers are now concentrating on their 'core' activities like design, marketing and assembly, while subcontracting or outsourcing an increasing range of inputs, components and services.

Why there are so many small firms in Japan? According to Tetsuo Minato[37], the key to this question lies in the sub-contracting system, which is basic to the character of Japanese Industries. Major Japanese industries do not produce all goods on their own. Instead, they rely on subcontractors for a great deal of production and most of these purchases are from very, small subcontractors.

His study further reveals that, 'the current superiority of Japanese quality control is the cumulative fruits of over twenty years of those collaborations between large and small firms'. The works of Ohnishi Yoshikuni[38] and Kam Wong Poh[39] (1991) revealed that, subcontracting which is widely practiced in Japan is considered as a major source of the competitiveness of Japanese industries when compared to their American and European counterparts. Widespread development of subcontractors has also identified as a major factor behind the successful growth of small-scale industries in Japan.

The evolution of clustering as a distinct pattern of industrial organization is at least as old as the industrial revolution itself. The unprecedented dynamism in the industrial clusters of Italy turned out to be the subject matter of a series of studies on the phenomenon of clustering. The striking achievement of the small firms in clusters in the Emilia Romagna region, Italy, on accelerating exports and maintaining high standards of product quality projected as a role model of a

[37] Tetsuo Minato, "Strategic Outsourcing for Global Competition", Productivity, Vol.31(6), Apr-Jun 1995.

[38] Ohnishi, Yoshikuni, "Industrial Restructuring: Subcontracting in Japan", Productivity, Vol.33(2), 1992.

[39] Kam, Wong Poh, "Technological Development Through Subcontracting Linkages: A Case Study", Asian Productivity Organisation, Tokyo (1991).

'successful' industrial district[40]. Besides, the industrial clusters enjoy 'collective efficiency' as Schmitz[41] (1990) calls it, which remains the key of dynamism in clusters of small firms. The collective efficiency or economies of agglomeration or strength through a state of togetherness includes a network of suppliers provides materials, equipment, new and second hand machinery spare parts and other attendant services and repairs.

A comprehensive support system locally and spontaneously, has been greatly instrumental in providing competitiveness to the small and medium enterprises in clusters. Sengerberger, W. and Pyke, F.[42], suggests that, clusters may encourage improvements in the quality of products and production process by creating externalities from R&D activities and by the pooling of expertise that follows from clustering.

A study on sub-contracting practices in the Indian industries by NPC Research Division[43], based on information collected through structured questionnaire method from large and medium scale industries reveals the extend and reasons of subcontracting. In order to identify the major reasons for subcontracting the respondent units were asked to rank six questions in order of preference. The responses showed that lack of in-house facilities and lowering the cost of production are the two major reasons for subcontracting.

Colin C. Williams and Jan Windebank (1998)[44], distinguished the formalisation and informalisation thesis in their work on "Informal Employment in the Advanced Economies". According to them, "there is

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[40] Keshabananda Das, "Industrial Clustering in Developing Countries", Productivity, Vol.36, No.1, April-June, 1995.
[41] Schmitz, Hubert (1990), "Small Firms and Flexible Specialisation in Developing Countries", Labour and Society, 15(3), (given in Keshabananda Das, ibid.
[42] Sengerberger, W. and Pyke, F., "Small Firm Industrial Districts and Local Economic Regeneration: Research and Policy Issues", Labour and Society, 16, 1991, pp 1-24.
[43] NPC Research Division, "Subcontracting Practices by Indian Industries-A Survey", Productivity, Vol.37 (3), Oct-Dec. 1996.
[44] Colin C Williams and Jan Windebank, "Informal Employment in the Advanced Economies", Routledge, London, (1998).

a natural and inevitable shift of economic activity from the informal to the formal sphere", called 'the formalisation thesis'. 'The informalisation thesis' describes a process by which the advanced economies are witnessing a growth of informal economic activity. Based on the assumption that informal employment is either a new form of advanced capitalist exploitation or a response to overregulation by the market, the advanced economies fall into economic crisis and the neo-liberal project of deregulation takes hold, they called it as 'advanced capitalism' rather than a mere "lag" from traditional relationships of production.

In this work, they critically evaluated both approaches that the later half of the twentieth century has been characterised by an all-pervasive formalisation of economic life in the advanced economies, as well as the theory that in the last twenty years, the advanced economies, under pressure from globalised markets, are undergoing a process of informalisation.

Why subcontracting has not become a widespread and popular practice in India though it is beneficial to both parent as well as subcontractor units? A recent survey undertaken by the National Productivity Council[45] showed that, subcontracting is not widely practiced in India. They analysed subcontracting in India in the light of the experiences of it in Korea and Japan. It says that, subcontracting in Japan and Korea evolved through 4 phases. Under the first, small firms had poor resources and large firms had no desire to incorporate them into the production process. Outsourcing was resorted mainly to adjust to fluctuations in demand. Trust was negligible. During the second phase, small firms were incorporated in to the large firm's system to meet huge demand expansions. Parent firms provided the resources to their subcontractors who, in turn, were heavily dependent on the resources of the parent firms, and subjected to their severe control. In the third phase, subcontractors accumulated their resources and improved their skill. However, parent firm's skill retained power, resources and took the initiative in the inter-firm system. It is only in the fourth phase that balanced bargaining power and mutual reliance emerged within the system. Different types of resources are now exchanged to achieve advanced joint tasks and also to realise higher rate of inter-firm

[45] NPC Research Division, "Growth Profiles of SSI Units in MP", submitted to the DCSSI, Government of India (Unpublished), 1996.

productivity. Subcontracting in India may be placed either in the first or second phase[46].

Research study series on structure and performance of informal enterprises of four cities by the Ministry of Urban Development, India[47],(1987) brings into light the dynamics of informal industries in four cities; Wardha (Maharastra), Ghaziabad and Allahabad (UP), and Jaipur (Rajastan). The study observed that the bulk of the informal enterprises, in the case study cities- Wardha, Allahabad, and Jaipur, were in the trade and commerce sector.

Informal household and other industries were prominent in all the case study cities. In terms of workforce participation, it has seen that, the trade/commerce appears to be the most important subsector. Regarding employment structure of informal enterprises, the most significant employment-generating sector in the sample was construction, followed by services and repair sector. The linkages of informal sector enterprises in the cities depend on one another on the formal sector units in regard to raw material procurement, disposal of their products and services. The estimation of the magnitude of such linkage shows that 87% of the informal enterprises bought their raw materials locally and 12% from formal sector manufacturers.

The National Commission on Labour of the Government of India[48] conducted a series of studies to improve the lots of workers in the unorganised sector of industries. It covered the Building Construction Industry in Delhi (1977-78), Jari Industry at Surat (Gujarat) in 1978, Fire-works Industry in and around Sivakasi (Tamilnadu) in 1979, Match Factories in and around Sivakasi (1980), Metal ware industry in Jagadhari (Haryana) in 1980 and Agarbathi Industry in Karnataka (1981). The Commission recommended a better understanding of the problems of different categories of unorganised labour, helped the Government in the formulation of suitable ameliorative measures for workers in that sector.

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[46] Minato, Tetuso (1994), "Strategic Alliance between Small and Long Business", (given in NPC Research Division, Productivity vol.37 (3), Oct-Dec. 1996).

[47] "Structure and Performance of Informal Enterprises: A Study of Four Cities", prepared for the Ministry of Urban Development, National Institute of Urban Affairs, New Delhi, Sept. 1987.

[48] Report on the working and living conditions of workers in Agarbathi Industry in the State of Karnataka (1981), Ministry of Labour and Rehabilitation, Labour Bureau, Chandigarh.

The study report of Small Industries Service Institute[49] (SISI), of the Government of India in 1994-95 on the cluster group of industries, analysed the technological, financial, modernization and marketing problems of latex thread manufacturing units in India.

[49] Study Report of Cluster Group of Industries on Latex Thread under Modernisation, Small Industries Service Institute, Nucleus Cell, Cochin, 1994 -95.

1.8. Genesis

Kunnamkulam, as the word connotes is the land of hills and ponds. The hills, 'Adupputty', 'Kizhoor' and 'Kakkad' lies in the boarders and the ponds 'Enjhankulam', 'Ayyamkulam', and 'Madhurakulam' are in the middle. Manakulam, Cheralayam and Kakkad, the suburbs of Kunnamkulam were the seats of the Nambidis of Manakulam, Ayinikur and Kakkad Karanavappad respectively. They were collectively known as Thalappilli Rajas and belonged to three branches of the same dynasty[50].

The history of Kunnamkulam turns back to the Paleolithic age. Kakkad cave and Chowannur cave support this fact. It is said that this place was part of 'MahodayaPattanam' and was known as 'Kunnamkulangare'.

C. Achyuta Menon in the Cochin State Manual says that, "it is in fact the chief center of the Jacobites in the State, and there are several of their old churches in the town and its neighborhood". Moreover, "some of the oldest and wealthiest Christian families are to be found in Kunnamkulam". Panakkal and Paramel were prominent among them[51]. The ascendancy competition between these wealthy families, its contexture to literary activities opened new dimensions in the development of printing. Panakkal Chakku, Cheru and Koothur Paramel Iyyu Uttoop were arbitrators of these families.

It is said that the Christian families were settled earlier at Chattukulangare shifted to Kunnamkulam after the invasion of Tippu in 1789. They were invited by the Thalappilli Rajas, provided residences and places of worship. They resided on both sides of the street. This may have helped to avoid threat from Tippu against Thalappilli Rajas[52], gave annual tribute to the Rajas for their

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[50] C.Achyuta Menon, 'The Cochin State Manual', 1911.
[51] The Development Report, Kunnamkulam, 1996.
[52] Oral information from Prof. Ittoop C.C, Chungath, Kunnamkulam.

ascendancy. Those settled on both sides of the street started trade and business, began a new era of transaction.

Paramel Uttoop, Kaikulangara Rama Varrier and VRP press.

The role of Kaikulangara RamaVarrier, the blazing scholar in Malayalam literature and his relationship with Koothur Paramel Iyyu Uttoop is worth mentioning in this context. There is a one to one relationship between Vidya Ratna Prabha press (VRP) and the Kaikulangara in Kunnamkulam. Attracted by the talents of Kaikulangara Rama Varrier, revealed in the successive scientific litigation with Payyanazhi Nair, another scholar in Sanskrit, Paramel Uttoop decided to make use of his talents in Malayalam literature.

The beginning of Printing in Kunnamkulam.

It has been seen that Iyyu Uttoop, an appreciator of Malayalam literature, a businessman having trade relationship with Cochin, decided to reveal the literary talents of Kaikulangara RamaVarrier. He published the works of Kaikulangara from the St. Thomas Press at British Cochin. The books he published from there include; 'Raghuvamsom', 'Magham', 'Nyshadham', 'Kumarasambhavom' etc. Within a short period he started a press on his own at Kunnamkulam in the name of Vidya Ratna Prabha (VRP) in the II floor of his house. He published a number of religious and other books from there. It includes, 'Astangahrudayam', 'Amarakosam', 'Samudrika Sastram', 'Noothana Sidharoopam', etc. These books and Christian religious books published from here at a cheap rate have got wide currency in the State. According to Ulloor.S. Parameswara Iyyar, it is the wealth of Uttoop, the intellect of Kaikulangara and the caliber of Malliammavil Kunjhuvareedu, an expert in printing, brought together the human and material resources for publishing books in Malayalam[53].

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[53] Ulloor S Parameswara Iyyar, "Kerala Sahitya Charithram", Vol.4

St. Thomas Press and VRP Press.

There are differences of opinion regarding the ownership of St. Thomas press at British Cochin, VRP press, and the commencement of VRP press at Kunnamkulam. According to Ulloor, Paramel Iyyu Uttoop started St. Thomas press at British Cochin, later on shifted to Kunnamkulam as VRP press. But there are evidences in the 'Malayalam Grandha Soochi' showing books published from St. Thomas press and VRP in the same year[54]. K.M. Govi[55] quotes from Christian Encyclopedia, 1976 that, it was established by Pulikkottil Mar Dionysius V in 1869. But P.J. Thomas says that, it was started by Paramel Uttoop[56]. Prof. A. Balakrishna Varrier indirectly says that St. Thomas press was not owned by Paramel Uttoop.

Regarding the beginning of VRP, the Development Report of Kunnamkulam for the year 1996 says that, it was established in 1860's. As per the Malayala Grandha Soochi Vol.I list, it was established towards the close of the 19th century. To K.M. Govi it was started about 1881. He cites the evidences of the publication on behalf of VRP in the 1880's. Moreover, there are evidences to show the publication of 'Nyshadham Kavyam', (Appendix) from St. Thomas press at Cochin in 1879 by Koothur Paramel Iyyu Uttoop. If the VRP had established before this we can presume that it would not have been published from St. Thomas Press at Cochin.

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[54] K.M.Govi, 'Adi Mudranam Bharathathilum Keralathilum', Kerala Sahitya Academy, Thrissur, 1998.

[55] P.J.Thomas, 'Malayala Sahityavum Christianikalum', Kottayam, 1989.

[56] Prof. A. Balakrishna Varrier, 'Kaikulangara RamaVarrier', Department of Cultural Publication, Kerala State, 1997.

Printing Vs Binding at Kunnamkulam.

The question as to whether printing or binding initiate first in Kunnamkulam is relevant. The oral statement of the local people goes in favour of binding. There are evidences of ancient bounded manuscripts of religious books available at the Church library at Thozhiyoor in Kunnamkulam.

Moreover, the western part of Thalappilli Taluk was chiefly a center of trade for agricultural products and areca-nut in the earlier period. Trade and exporting of agricultural products requires books for the accounting purposes. In the beginning therefore, informal production of account books might have started for the wealthy traders in Kunnamkulam. The bound manuscripts of religious books available at Thozhiyur support the arguments of local people. Stitched manuscripts of Christian religious books using wooden plates on top and bottom instead of wrapper can be seen in the library.

Briefly, a number of historical reasons point towards the growth and development of this industry at Kunnamkulam.

They are;

1. The Missionary activities in Kunnamkulam.

   To K.M. Govi, it was another contribution of Basel Mission in Malabar area. They trained Christians in bookbinding at their institute in Mangalore. This gradually spread in the Malabar area.

2. Trade relationship with neighboring states and Sivakasi.

   As mentioned in the Cochin State Manual, hundreds of men and women belonging to Taluks of Thalappilli, Thrissur and Mukundapuram were engaged in the areca-nut industry from

September to January. The major portions of the prepared arecanuts were exported to the Tamil and Telugu districts, where there was considerable demand for it.

Besides, there existed trade relationship with Sivakasi. The oral statements of Kunnamkulam people[57] are that they used crackers extensively during the 'Epic Phony' ceremony, imported from Sivakasi. The trade relationship with Sivakasi is one of the important factors behind the growth and development of paper based industry in Kunnamkulam.

3. The beginning of educational institutions in between 1837 and 1898.

When we analyse the beginning of English schools from 1837 to 1898, we can see that the number of schools started in Trichur, Kunnamkulam, and Irinjalakuda was about 7 out of 15 in the Cochin State. The establishment of schools in and around Kunnamkulam during this period may have encouraged the development of this industry.

4. Cultural background.

Kadavallur, Chowannur and Arthat, the nearby places of Kunnamkulam had a rich cultural background. Kadavallur is well known throughout this coast as being the place where Nambudiris of the Thrissur and Tirunavaya Yogams compete for superiority in Vedic proficiency. In Chowannur, there was a Sabha Madom, an endowed college where Sanskrit education was given. Arthat was the chief center of Orthodox Christians. It contains one of the oldest Jacobite Syrian churches in the State. All these contributed a cultural rising up in the area which later on helped the development of the publishing industry. These published books were sold during Guruvayur Ekadasi,

[57] Oral statement from C.J. Peter, Retd. Head Master, Guruvayur Road, Kunnamkulam.

when the temple was open to all Hindus and a good amount of trade taken place at that time[58].

To sum up, the publishing and binding industry would have grown up as formal activity in the 1880's.

Section-11

PAPER-BASED INDUSTRY; AN OVERVIEW

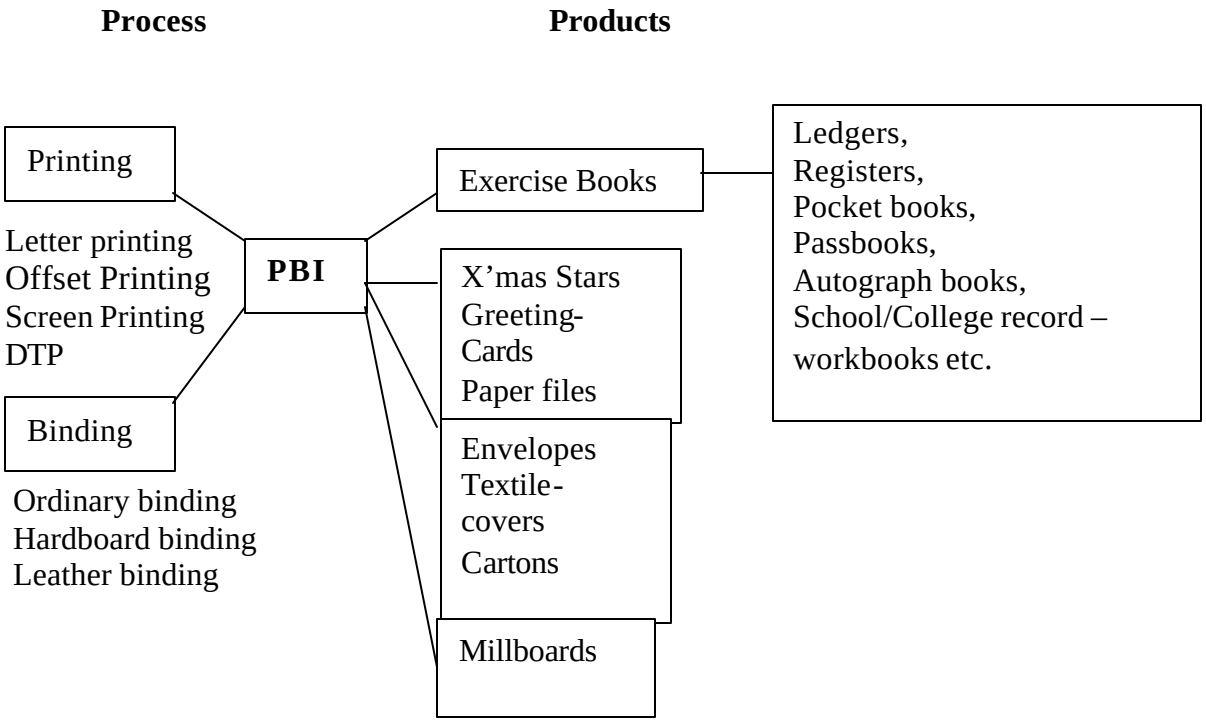
- **The Segments of PBI**
- **A Profile of Exercise book segment**
- **Patterns of Production**
- **Machinery and Manpower Requirement**
- **Sub-contracting**
- **Mode of Transportation**
- **Residential Pattern**
- **The Workers**
- **The Trade Association**

[58] Oral statement from C.J. Peter,

11.1 Segments of PBI

The study in the initial phase conducted a primary investigation, in 15,546 households (92%) out of a total of 16,880 households (HHs) in the 31 municipal wards of Kunnamkulam. It has seen that a total of 1745 households comprise to this industry, in which 1539 are normal households doing piece-rate work. Production units, Household Enterprises (HHEs) together constitute 182, and the rest are marketing outlets for paper-based products (Appendix- 2).

The different segments of the PBI can be shown as follows.



Out of 182 Production Units and HHEs, there are 131 exercise-book manufacturing units, 32 printing presses, 10 DTP centres, 3 screen-printing units, 3 textile cover units, 2 leather-binding units and, 1 millboard production unit (Appendix-3). Near about 72% of the paper-based production units belongs to the exercise book segment. Some units do both printing and the production of exercise books.

Printing press includes both letterpress and offset type. It has seen that letterpresses are gradually switching over to offset printing. Some letterpresses are working only for printing brand names overleaf of exercise books. Some others do it over textile covers. The screen printing units undertake mainly printing of visiting card, brand names on folders, files etc.

The textile cover units carry out the work of all types of brown covers for textiles, bakeries, stationary shops, and others.

The leather-binding units focus on hardboard binding. Ledgers, registers, record work books for schools and colleges are their products. 'Folios' after printing goes directly to them for such binding.

Only one millboard production unit was found within the municipality. In the well-developed printing segment, DTP have become part of offset printing.

Though each and every segment of this industry is equally important, we consider exercise book segment for further detailed analysis.

11.2 A profile of exercise book segment.

The process of production of exercise books and its varied forms like registers, ledgers, pocket books, passbooks etc. differ only slightly. There are differences in the cutting of papers, folding, ruling and binding. However, the process of production of exercise book segment can be classified into;

1) Cutting raw paper
2) Ruling
3) Counting
4) Folding
5) Punching
6) Stitching
7) Covering with wrapper/binding, and
8) Sizing

Cutting raw paper into different sizes, depending upon the size of the exercise book, is the initial step in the manufacturing of exercise book. The raw papers are received in reams and reels. Almost all production units except a few big units take delivery of papers in reams. The reams of papers, with the help of cutting machines get sliced. These papers are then ruled using the ruling machines. There are different versions of ruling machines.

The next step is counting of ruled papers. No machines are used for counting. It is a manual work. After counting, these bunches of papers are folded. The folded lots of papers are known as 'forums'. Small wooden tools are used for folding. The forums are kept one by one so that punching can be done on the folded sides of the bundle of papers at a time.

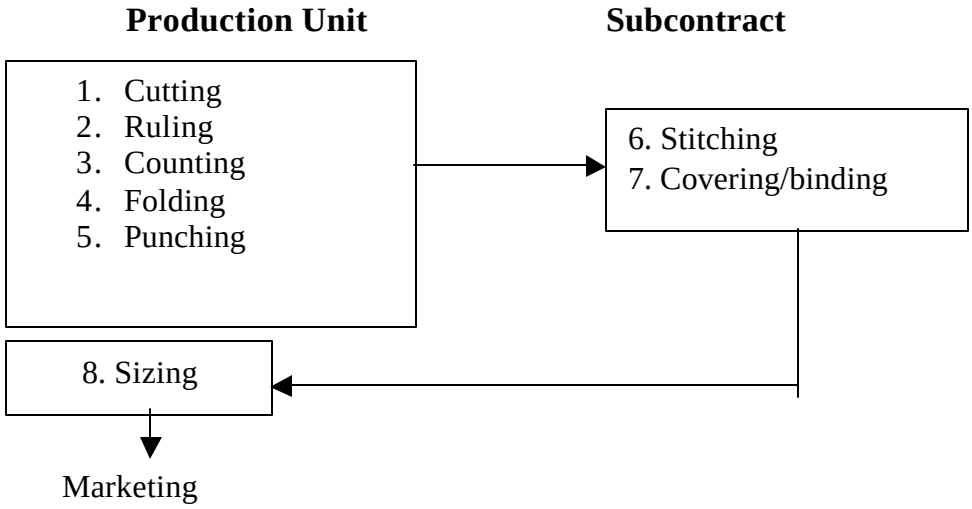
The punching facilitates stitching easier and smooth. Punching requires more attention, otherwise the size of books may change and result in wastage of paper. The number and size of forum varies as the size of books varies.

Covering with wrapper is another step. Laminated or plane wrappers are used for covering. Finally, sizing three sides of exercise books are done with the help of cutting machines.

These processes are carried out in different stages. The first two processes are done under the roof of the production unit itself. The other five processes need not be done within the unit. The normal households doing piece-rate work usually subcontract it. The last step, sizing is again done within the production unit. The processes are shown below.

11.3 Patterns of Production.

Type-1



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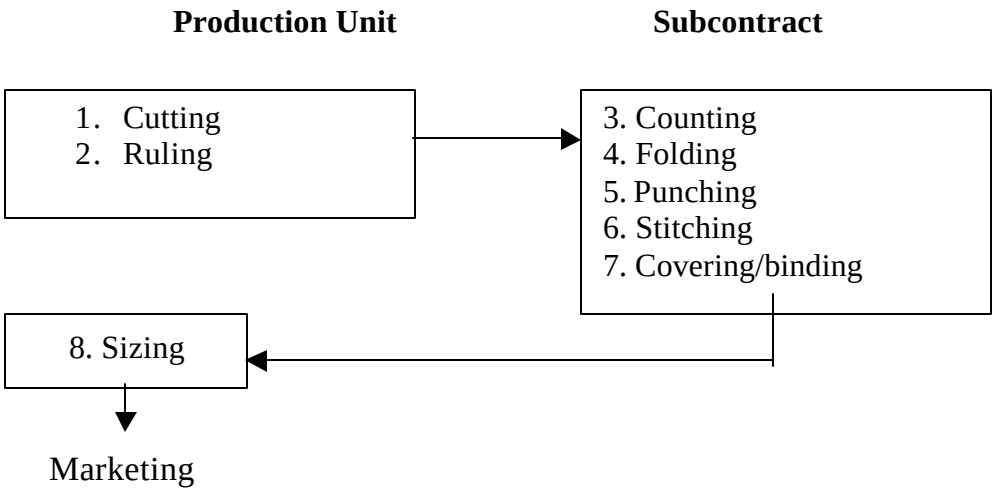

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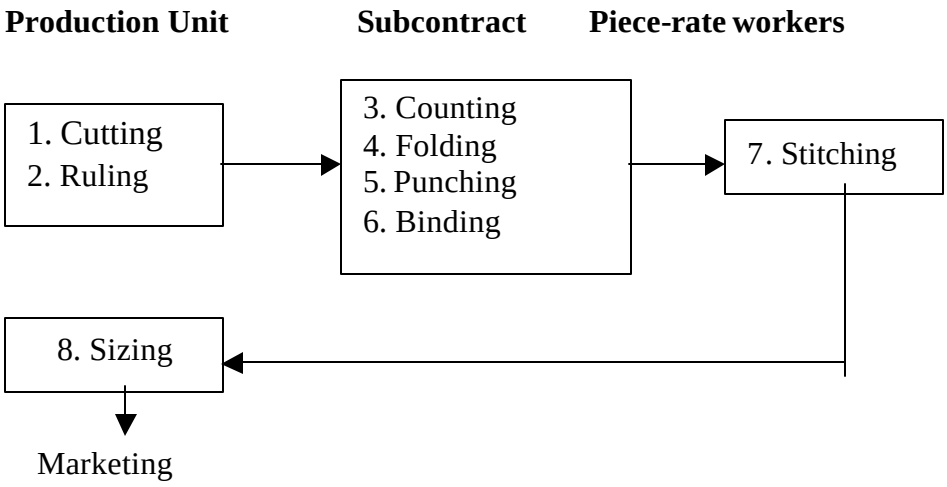


11. 4 Machinery and manpower requirement.

We have already mentioned the different process of production of exercise books. The process, the minimum required capital, work force, the gender- wise participation generally found, are as follows.

Sl No	Process	Machinery & man power requirements	Gender Participation observed
1	Cutting	1 cutting machine + 2 labour	M/F
2	Ruling	1 ruling machine + 2 labour	1M, 1F
3	Counting	Labour	M/F
4	Folding	Labour	M/F
5	Punching	Labour	M
6	Stitching	Labour	F
7	Binding	Labour	M/F
8	Sizing	Cutting machine + 2 labour	F

In these processes, female workforce plays a crucial role. They engage in almost all the mechanism of the paper-based production process. Here the process of counting, folding, punching, stitching and binding can be done by the members within the family. This makes possible the sub-contracting in this industry.

11.5 Subcontracting.

From the above observations, one can see that subcontracting of production activities at different stages is an inevitable character of this industry. Thus, in the production of exercise books there are two sectors; production units, (including small-scale, tiny and household units) on the one side and, normal households doing piece-rate work, on the other. The production units have registration with the local authorities, district SSI department, and in their trade association. The piece-rate workers are subcontractors, possesses all the features of an informal sector.

In these, piece-rate workers belongs to the normal households, the contribution of female workforce is substantial. These female workers

undertake activities together with their household responsibilities. They generally do stitching work. Raw papers at this stage are distributed in their houses for stitching work. The Unit usually supplies thread and adhesives- the raw materials used for stitching work. The Units receive the bundles of papers given to them after stitching it in the stipulated time. The HHs takes up the work according to their time and prospective. They keep good faith and confidence with the production units. The households undertake the work from 3-4 production units at a time. The volume of work undertaken per day and the rate per bundle they receive are not uniform. It varies from unit to unit, household to household and, from one municipal ward to another. Largely it depends on the Household-Unit rapport.

11.6 Mode of Transportation.

We have already stated that 'a unique method of hauling' exist in this industry. It is a 'conventional' and 'convenient' way of transportation. The 'conventional' mode of conveyance is by bullock carts. Shipping of reams of papers by bullock carts from wholesalers/agency outlets to individual units is very common. Tricycle barrows, a refined version of the traditional cycle rickshaw is the 'convenient' method of transportation used to distribute reams of papers in one direction (from wholesalers to units) and finished products in return (from units to shops). Apart from these, motor three wheelers and other vehicles are also used. Women and children usually carry papers on their own from the nearby production units to their houses.

11.7 Residential Pattern.

A unique residential prototype found in Kunnamkulam is the 'line houses' ('angadi veeducal'). Houses with a contracted front elevation are built-up on both sides of the street. These narrow dwellings are constructed within 3 to 5 'cents' of ground. In certain localities, 10 to 20

such residences are put together within 100 feet on both sides of the street. Such houses hardly possess courtyard in front of them.

This suburban housing prototype helped to increase the momentum in the growth of this industry. The people, especially women from these houses began to enter the industry by doing piece-rate work. This residential pattern helped to acquire skill outside the formal system. Moreover, it helped the entrepreneurs to distribute raw materials for piecework easier. It helped to accelerate the frequency of subcontracting during peak season. Since the work exhale less waste or any kind of contamination, it does not make any environmental problems in the locality.

11.8 The Workers.

Workers of the PBI can be classified into main, part-time and piece-rate. Those who can work for more than 6 months in a year in a production unit and receive reward on a monthly/ weekly basis is considered as main worker. Part-time workers can find job less than 6 months in year but work in any unit at regular intervals. Piece-rate workers undertake work on a piece rate basis. They usually carryout the work at home, predominately women. Main and part-time workers are direct labourers. Among these three categories, main workers are few in number, since there is active involvement of household members. The seasonal nature of demand for paper-based products hardly permits the employment of more main labourers in the industry. Still certain medium size production units employ main workers on a full time basis.

Among the workers in the PBI, piece-rate workers take the lion share. They subcontract piecework. Generally, they do counting, folding, stitching and covering/binding. Part-time workers include both male and female workers. However, majority of the piece-rate workers are women. Old, young, literate, illiterate, very poor and middleclass women participate in the work. Household women do piece rate work after fulfilling their family responsibilities, fetching drinking water and rearing livestock. Those who live in the residential colonies provided by the government and surplus-land of the government also undertake piece-rate work.

Almost all piece-rate workers receive raw materials (ruled/plain papers, thread and adhesives) at their household premises. Entrepreneurs supply it in three-wheelers and other light vehicles. Households residing nearby the production unit carry bundles of papers on their own.

1V.8 The All Kerala Exercise Book Manufacturers' Association (AKExMA)

The All Kerala Exercise Book Manufacturer's Association, the trade association, started in 1969 with a membership of less than 15 units. It became a registered trade association in 1989, when Shri. K.M.George, Kannanaikal became the secretary of the association. It has a director board consisting of nine members. The tenure of three members each complete on a rotation basis in every three years. The new members have to be elected by the general body.

The association acts as an advisor - in technical, organizational, and financial matters, as a coordinator, and as a mediator. They provide information about production, marketability, debt management, accessibility of resources etc. to the new entrepreneurs. As a coordinator it evaluates the policy resolutions of the government regarding the industry and suggest amendments if necessary.

The underlying function of the association is its role as a mediator. It signs contractual agreements with the government agency Kerala State Co-Operative Consumers' Federation Ltd., for the production of exercise books through negotiations. The agreement helps the small and medium units from the exploitation of bigger units. The agreement ensures the existence of registered units thereby avoid bogus units. It guarantees quality specifications of the Federation. Severe actions were taken against defaulters. Thus, it helps the government and at the same time protects the industry. Now more than 200 exercise book

production units have registered in it from in and around Kunnamkulam municipality.

Section -111

THE INDUSTRIAL CLUSTER

- **The Industrial Cluster**

- **Cluster Map**
- **Intensity of HHs depending upon the PBI**
- **The Industrial Cluster and HH dependence zone**
- **Municipal Wards having unique features**
- **The Organisation of PBI**

111.1 The Industrial Cluster

It has been observed that the number of production units per ward ranges from 1-26 and are scattered in the 20 municipal wards. However, 87% of production units (158) are concentrated in 11 wards. Therefore, we have considered those 11 wards for the identification of the industrial cluster. This cluster include printing, binding and millboard production units of the paper-based industry. (Appendix- 5)

The cluster of paper-based production units in the Municipality

Sl.No.	Ward No.	Ward name	No. of Prdn. Units & HHEs
1	4	Vyssery	9
2	5	Naduppanthi	9
3	6	Kakkad	11
4	8	Munimada	21
5	10	Ayyappath	14
6	13	Town	26
7	18	Santhinagar	19
8	19	Thekkepuram	9
9	20	Kurukkenpara	9
10	21	Cheeramkulam	19
11	27	Kavilakkad	12
		Total	158 (87%)

The industrial cluster, intensity of

HHs depending upon the paper-based industry, cluster and HH dependence zone, municipal wards having special features are shown below.

111.2 The cluster map

The production units spread over the 11 municipal wards were considered for the mapping of the industrial cluster of the paper-based industry.

Industrial Cluster in the Kunnamkulam Municipality

111.3 Intensity of HHs depending upon the paper-based industry.

There are 1745 HHs which depend upon this industry. It ranges from 2 to 168 in the 31 municipal wards. However, 82% of households (1431) are centred in the 16 municipal wards. Therefore, we have taken into account those 16 wards to locate the intensity of households which depend up on the PBI activities.

Intensity of households depending upon the PBI

111.4 Industrial cluster and HH dependence

By clubbing together the above two observations we get the zone, where 87% of the production units and 82% of the households which depends upon the paper-based industry are located.

Industrial cluster and HH dependence zone

HH intensity zone

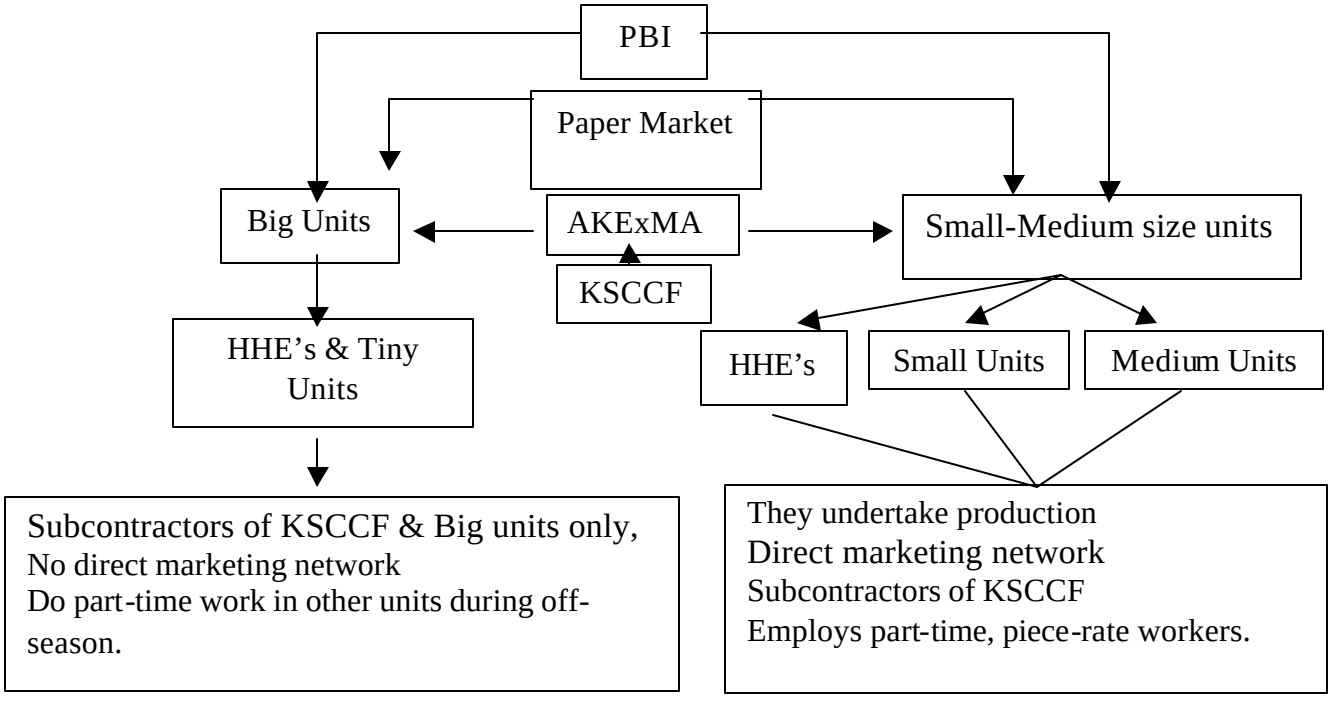
Industrial Cluster and household dependence zone

More over, certain municipal wards which possess exceptional features, have also been identified.

Ward 8 Highest number of printing presses

Ward 13	Highest no. of Units in the PBI Highest no. of male main workers Highest no. of shops for paper-based products
Ward 20	Highest no. of female piece-rate workers Highest no. of HHs depending on PBI Highest no. of normal HHs doing piece-rate work
Ward 21	Highest no. of book binding Units
Ward 27	hest child participation

111.6 The Organization of Paper-based Industry.



Section-1V

FINDINGS

- **The Nature of the Industry**
- **Workers and their Composition**
- **The Market Structure**
- **Economics of Production**
- **Raw material Listing**
- **The Dynamics of Subcontracting**
- **Socio-Economic background of workers**
- **Summary of Central Findings**

1V.1 The nature of the industry.

We have tried to explore facts regarding the nature of the industry to compare it with the composite set of informality characteristics given by ILO[59]. It includes;

1) Ease of entry
2) Unregulated
3) Labour-intensive
4) Crude/adapted technology
5) Self/family labour
6) Skills acquired outside formal school- system
7) Tiny/small scale operations
8) Reliance on indigenous resources
9) Individual/ family ownership
10) Non-unionised
11) Some activities/items are usually reserved exclusively for being undertaken in this sector
12) Absence of standards for quality of equipment, environment and output
13) Illegal (due to official limitation of access to formal sector)
14) Highly competitive market licences

Out of 14 characteristics mentioned by ILO to distinguish the informal sector from formal sector, eight of them are the regular features of the paper-based industry. That is, labour intensive technique, family labour, skills acquired outside the formal system, small scale of operations, family/individual ownership, non-unionised, absence of standards regarding equipment, environment and output, and, competitive market.

[59] Given in Damodar Panda, ibid.

In the exercise book manufacturing segment, only three processes out of the following eight are done mechanically, using two types of machines. The other six processes are done manually in almost all the production units, which gives us a clear indication of labour intensive mode of production.

The minimum required capital and labour

Sl No	Process	Machinery & man power requirements
1	Cutting	1 cutting machine + 2 labour
2	Ruling	1 ruling machine + 2 labour
3	Counting	Labour
4	Folding	Labour
5	Punching	Labour
6	Stitching	Labour
7	Binding	Labour
8	Sizing	Cutting machine + 2 labour

Secondly, household members contribute a major share of the labour force required. That is, in the 131 exercise book production units, 36 are exclusively household units, the share of family members as main workers in this segment is nearly 45%. Moreover, the average number of family workers in the industry is approximately two.

Thirdly, the sample survey conducted in the second phase of the study revealed that, a large number of women piece-rate workers acquired the skill for doing piece-rate work from outside the formal system (Appendix 12). 98% of households acquired the skill domestically, against one professionally qualified household in the manufacturing of exercise books. Seasonal production in small volumes and individual ownership was observed here. Since the household members act as main workers, the wage rate is fixed by the bargaining between the entrepreneur and the labourer, means they are not unionised. No legal standards exist on the equipments, environment and output. Finally, there is very high competition in the marketing of paper-based products as it is limited to the state boundaries.

Regarding the remaining six characteristics, i.e., ease of entry, government regulations, adapted technology, indigenous resources,

reserved products, and illegal operations, the industry do not satisfy a traditional character as mentioned by the ILO mission. "There is a controversy over the issue of entry"[60]. There exists certain degree of regulations in the entry and operations, skewed more towards 'modern'[61] or ' quasi-formal'[62]characteristics.

From the above features, it can be inferred that the industry is slanted towards the characteristics of a modern informal sector.

Moreover, another set of characteristics, at the same time, point towards the features of a 'Household Industry', as per the definition of the Census 2001 of the Government of India.

1. The household members actively participate in their own production units.

2. The activities of this industry relate to production, processing, servicing and making.

   Grouping of paper-based industrial activities support this fact.

Production/ manufacturing Group-1	Processes Group-2	Servicing/making Group-3
Exercise books X'mas stars Cartons Mill boards	Printing Binding	Registers Ledgers Envelopes Textile covers Paper files Greeting cards

3. It was seen that the goods produced are not used for self-consumption of the HHs, but for sale. and,

4. The industry carryout its activities mainly in the HH premises or within the precincts of the houses where the household lives.

[60] Kishor C.Samal, "Urban Informal Sector", ibid.
[61] Bose A.N. (1978)
[62] Barbara Hariss (1978).

Out of 131 exercise book production units, 36 units are exclusively household enterprises. Other units are located within the vicinity of the households.

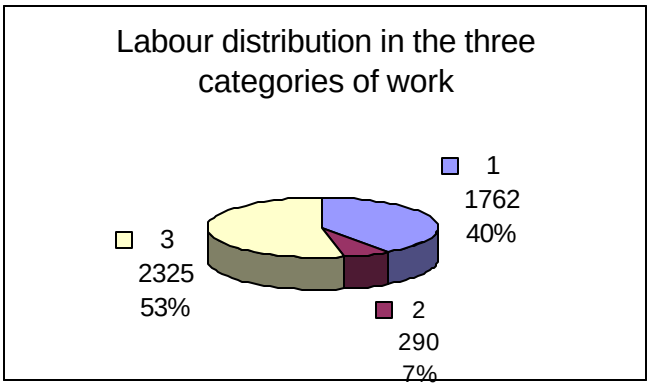
These features exhibit the nature of a Household Industry[63] as well.

1V.2. Workers and their composition

It was observed from the primary investigation that direct and indirect labour forces are equally important in the paper-based industry. Direct labour, i.e., main and part-time workers constitutes 47% of the total work force, the rest 53% are piece rate workers.

Labour Distribution in Different Types of Work

Main Workers	Part-time Workers	Piece-rate Workers	Total Workers
1762 (40%)	290 (7%)	2345 (53%)	4397



1. Main work
2. Part-time work
3. Piece-rate work

The Workforce

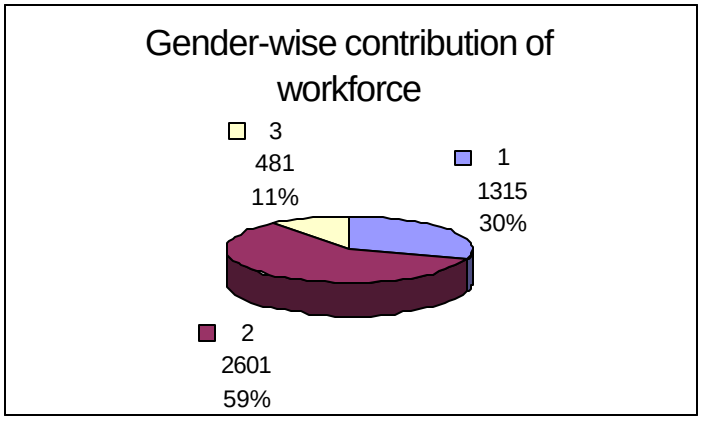
In the gender-wise split-up of total work force (main, part-time and piece-rate), we have observed that about 59% is contributed by female workers, 30% by male workers and 11% were children.

Gender wise Distribution of Total Workforce

	Main	Part-time	Piece-rate	Total

[63] As per the definition given for HHIs by the Government of India for Census purposes.

	workers	workers	workers	
Male	1001	167	147	1315
Female	746	111	1744	2601
children	15	12	454	481
Total	1762	290	2345	**4397**



1. Male
2. Female
3. Children

The gender distributions within these three categories of workforce shows that the direct labour force contribute predominantly men. Out of the total main workers, the share of male workers is 57%. It is 56% among part-time workers. The same in the female counterpart is 42% and 38% respectively.

The Gender wise Distribution of Workers within each category

Main		Part-time		Piece-rate workers		
Male	Female	Male	Female	Male	Female	Children
1001 (57%)	746 (42%)	167 (56%)	111 (38%)	147 (6%)	1744 (74%)	454 (19%)

Work Opportunities

It has seen that female labour force play a decisive role in the piece-rate work. They comprise nearly three forth of the piece-rate workforce (Appendix- 6). The involvement of child labour is 19%.

Moreover, the sample survey conducted in the 308 normal households doing piece-rate work revealed that nearly 16% households doing the work throughout the year whereas 84% doing only seasonal work. Interestingly we could see the participation of; female government employees, gulf returnees, returnees from northern states, housewives of employees working abroad, retired persons from the educational sector, do the piece-rate work during the season. Educated women also depend largely upon the work after their marriage.

Wage Rate

We have seen that the wage rate is not uniform throughout the industry. It varies from one production unit to another, during peak season and slack season, and from one Municipal ward to another ward (Appendix-8). For piece-rate work, it ranges from Rs. 3.50 per bundle to Rs.6.50 per bundle. However, the average rate for piecework is Rs. 4.50 per bundle. The average wage rate of main workers is about Rs. 1800/ month, while the same for part-time workers is Rs. 2500/ month during the zenith period. The average wage of these categories during dull-season remains the same in the case of main workers and differs in part-time workers.

Output

The average product of households doing piecework has found to be varying from 2.93 bundles to 6.25 bundles per day and an average earnings is Rs. 21/- per day. The process wise participation of the work shows that 89% engaged in stitching, 2% in covering/binding with wrappers, 4% folding, and 5% do all the processes (Appendix-13).

Employer- Employee Relationship

Very few workers have grievances against the proprietors for wages and its disbursement. They keep good faith and liaison with them.

There is no contractual agreement between direct labourers (main and part-time workers) and entrepreneurs in the PBI. However, main workers are paid bonus and limited number of leave. The workers are not organised also. Labour conflict rarely exists between them.

Gender Discrimination

We have further observed that there exists very high degree of discrimination in the daily wages of part-time and piece-rate workers. There is discrimination based on, gender, season and locality. Employers offer very high wages to the skilled part-time workers during the zenith period. However, part-time female workers are paid less compared to their male counterpart. Similarly, part-time wage rate is high in those municipal wards where the industry is clustered. The velocity of part-time labour market transactions is also very high during the peak season. Wage discrimination of piece-rate workers are given in the next part – 'the dynamics of sub-contracting'.

Educational Levels

The educational level of piece-rate workers, their willingness to continue in the paper-based industrial activities and willingness to devote more time in to the work were also studied (Appendix-12). The sample survey conducted in the 308 households (20%) of piece-rate workers, consists of 508 (22%) piece-rate workers shows that nearly 92% of the piece-rate workers have an educational background below 10^{th} standard. 44% of workers have work experience less than 5 years, 16% have experience in between 5 to 10 years and 40% are doing this work for more than 10 years. This gives us a clear picture of the industry as a source of income its and employment potential. Moreover, it was further revealed that 96% of workers are willing to continue in the work and 85% can devote more time in to the work.

1V.3 Market Structure.

The small-scale and tiny units have an assured short-term market. The market for exercise books is restricted to the domestic territory of the state. The production targets of the units are more or less fixed. They are permanent suppliers to individual merchants/ institutions for a long time. The seasonal production capacity, working capital requirements, seasonal and off-seasonal demands from the part of merchants, output quality, profitability and the relationship between producers and merchants are the factors which determines the market size. The working capital

requirements, the realisation of cash in the trade cycle, advantages in the lump sum purchase of raw materials and its quality, wrapper style etc. have an effect on product prices. The seasonal nature of working capital requirements increases the rate of interest in the indigenous market. The economies of production and external economies are often neutralized by the rate of interest existing in the indigenous financial market. Therefore, the economies of subcontracting, internal and external economies are not fully realized in the product prices.

Institutions and organisations that make cash purchases are able to enjoy such economies to a large extent. Producers can also realise cash in a trade cycle of short duration rather than a yearlong trade cycle as usually experienced in the market. This is one of the reasons why the producers are less motivated to expand their market, they constantly meet the requirements of individual institutions and organizations.

1V.4 Economic Aspects of Production

The statement of the projected profitability by using one ruling machine and one cutting machine (both standard size), after the commencement of production is considered.(estimates at the 2001 price level)

The estimates are based on the following premises.

1. the average selling price is considered
2. the price of one ruling machine and one cutting machine are estimated to be Rs. One lakh.
3. capacity utilisation assumed same in the year considered.
4. the raw materials are estimated 78% of the value of sales.
5. the unit is expected to work 26 days/ month.
6. the labour cost include the wages and salaries of direct & indirect labour.
7. 85% of capacity utilisation is envisaged.
8. the annual increase of wages & salaries, fringe benefits and incentives are not considered.
9. interest on term loan has been worked out as 17.5% on the loan amount outstanding.
10. interest on working capital loan is worked out at 17.5% per annum.
11. profit before tax is estimated
12. Withdrawal has not considered.
13. the unit will break-even at 32% at the installed capacity.

It is anticipated to produce 42000 exercise books of 200 pages per month. (the cost of production of different sizes and quality differ). The average cost of wrapper is considered.

Raw Material Requirement

Anticipated Production (Standard 200 pages size)		=42000	books/month
1 Ream contains		=500	sheets
500 sheets		=8000	pages
8000 pages		=42	books
One ream cost	= Rs	200/-	.
Ream required / month		=42000/42 = 1000	

Cost of 1000 Ream of papers =1000 x 200 = Rs.2.0 lakh

Other materials:

Wrapper	}	
Adhesives	}	=Rs. 1.50 per book
Thread etc.	}	
		=Rs. 0.63 lakh / month

Total Raw Material Cost
(at 100% capacity utilization) =Rs. 2.63 lakh / month

Table – 1V.1
Cost of Raw Materials
(Capacity Utilization on Half-Yearly Basis: Jan-June & July-Dec)

(in lakhs)

Cost at 100% Capacity Utilization in	Varying Capacity Utilization	Cost at Varying Capacity	Total Yearly Cost*	Average Total Cost /

Jan.- June period (in 6 months) (1)	In July-Dec. Period (2)	Utilization In July-Dec. (3)	(1)+(3)	Month (1)+(3)/12
2.63 x 6 = 15.78	100%	15.78	31.56	2.63
2.63 x 6 = 15.78	50%	7.89	23.67	1.97
2.63 x 6 = 15.78	25%	3.95	19.73	1.64
2.63 x 6 = 15.78	10%	1.58	17.36	1.45

*Total Yearly Cost of Raw materials only.

Production and Sales Turnover

Products : Note books of 200 pages

No. of Working Days : 26 / month

No. of Shifts : One

No. of Workers : 14 (including direct & indirect)

Selling Price per Unit : Rs. 8.00 / book

Sales Turnover : Rs. 336000

Table – 1V.2
Sales Turnover in Jan-June and July-Dec. Period

(in lakhs)

Jan-June Output at 100%Capa. Utilization (no. of books) (1)	Turnover in the Jan-June months. (2)	July-Dec Output at varying Capa. utilization (no. of books) (3)	Turnover in the July-Dec. months (4)	Total Sales Turnover Per year (2)+(4)	Average Sales Turnover Per month (2)+(4)/12
2.52	20.16	100% = 2.52	20.16	40.32	3.36
2.52	20.16	50% = 1.26	10.08	30.24	2.52
2.52	20.16	25% = 0.63	5.04	25.2	2.1
2.52	20.16	10% = 0.252	2.02	22.18	1.84

Cost of Production & Profitability
(at 100% capacity utilization / month)

Raw materials	-	Rs. 2.630	lakh
Power & Consumables	-	Rs. 0.017	lakh
Salary & Wages	-	Rs. 0.144	”
Maintenance Cost	-	Rs. 0.039	”
Interest on Term Loan (@17.5%per lakh)	-	Rs. 0.015	”
Interest on Working Capital Loan (@ 17.5% per lakh)	-	Rs. 0.037	”
Depreciation	-	Rs. 0.042	”
Administrative Expenses	-	Rs. 0.034	”
Sales Commission	-	Rs. 0.034	”
Total	-	Rs. 2.992	lakhs
Net Sales Turnover	=	Rs. 3.36	lakhs
Net profit before tax at 100% capacity utilization	=	Rs. 0.37	lakhs

Computation of Break-Even level of Operation
(as per monthly calculations)

Gross Sales Turnover		3.360	lakhs
A. Variable Cost			
Raw-material	2.630		
Power	0.017		
Sales Commission	0.034		
Interest on W/C loan	0.037		
Wages	0.048		
		2.766	lakhs
B. Contribution		0.594	lakhs
C. Fixed Cost			
Salary	0.096		
Maintenance Cost	0.039		
Admn. Expenses	0.034		
Interest on Term Loan	0.015		
		0.184	
D. Depreciation		0.042	
Total Non-Cash fixed cost		**0.226**	

Break even point at 85% capacity Utilization

$$= \frac{0.226 \times 85\%}{0.594}$$

$$= \underline{32\%}$$

As per table -1V.1 given above, we have considered 100% capacity utilisation in the first half of the year i.e., in the busy season of January-June. However, we have considered a varying level of 50%, 25% and 10% capacity utilisation in the following six months, the redundant season of July- December. A split up of net profitability in this season can be estimated.

Table – 1V.3
The Economics of Production during the Slack Season-
July – December.

(in lakhs / month)

Level of operations	Total Cost*	Total Revenue**	Net profit Before tax
@50%	1.609	1.680	0.071
@25%	0.917	0.840	-0.077
@10%	0.502	0.336	-0.166

** Total Cost includes Fixed Cost & Variable Cost.*
i.e., Fixed Cost + Variable Cost per book X number of books.
*** Total Revenue = number of books X price per book.*

The above approximation highlights the basic problems of the production units. We have mentioned that certain units turns into self-employed units during the redundant period, and a large number of units are out of work. An average 50% level of operations during this period will yield a marginal profit. However, any level of operations less than 39% will not be profitable for the firm. A diversified product-mix can certainly fill up this production gap in the industry during this period.

Moreover, we have estimated the monthly cost of raw materials Rs. 2.63 lakhs at full capacity utilisation. The average cash purchase is assumed 45% of the gross sales turnover; the remaining credit purchase will be Rs. 1.85 lakhs. When we estimate the delay in trade cycle to be about one month, nearly 3.75 lakhs of rupees should be raised to meet the raw material cost alone for the uninterrupted production in the next month. Tiny production units unable to raise such an enormous amount through organised financial institutions resort to indigenous moneylenders at a high rate of interest, ebbs away a major portion of its net profit.

1V.5 Raw material listing.

Raw materials	Quality & Brand name	Other specifications	Size & weight	sources
Paper	1.Cream wove (a) super printing (b) map	Note-book range (Double cap size): 44-54 GSM*	(1) 39x64 cms ▸ 5.5 Kg/ ream	1. Hindustan Paper Corpn. 2.Simplex Mills

	printing/deluxe printing 2.White wove 3.White printing 4. Unbleached	 Note- book range (Crown size): 54 GSM Note-book high quality range: 60 GSM and above (Map litho, colour wove etc.) Not used for Ex.Books „ „	(2) 42x67 cms ▸ 6.2 Kg/ ream (3) 50x75 cms ▸ 8.3 Kg/ ream	Co.(Maharastra) 3.Coastal Papers (AP) 4.Sam Turbo (TN) 5.Shreyans Paper (Punjab) 6.Sesha Sai Papers (TN) 7.Mysore Paper Mills etc.
Wrapper	1.Map litho (a) Laminated (b) Plain 2.Duplex Board	Double Cap Crown	110-140 GSM 200-350 GSM	Sivakasi
Thread	1.Cotton 2.Nylon		200-400 Mtrs./piece	
Adhesives	1.Domestically - made (a) using Tapioca powder (b) using wheat 2.Fevicol			

*GSM- GramPerSquareMeter

1V.6 The dynamics of subcontracting.

In this industry through subcontracting, small firms are incorporated into the large firm's system to meet demand expansions. Parent firms provide the resources to their subcontractors who in turn were heavily dependent on the resources of the parent firms, and subject to their severe control. Here the parent firm enjoys the economies of inventory management, infrastructure facilities, permanent employment and other maintenance expenditure, whereas the subcontractors will get income and employment.

The sample survey conducted in the 22 municipal wards of Kunnamkulam Municipality revealed that the residential pattern of nearly 78% of subcontractors doing piece rate work is line houses or residential colonies provided by the government (Appendix-4). There exists wide discrepancy in the rate for piecework in the 22 municipal wards, where the average rate varies from Rs. 3.50 to Rs. 6.50 per bundle. The normal rate is Rs. 4.50 per bundle. In the 'Ayyappath' municipal ward, where the highest rate exists (Rs.6.50/bundle), the dwelling prototype of subcontractors is found to be independent houses. However, the average rate is less than the normal rate (Rs.4 /bundle), in those municipal wards where the residential model is line houses or residential colonies provided by the government. Thus, the parent firm enjoys the economies due to the residential pattern of subcontractors. They can also reduce conveyance cost in these zones when the frequency of distribution of raw materials and the collection of finished products is high during the crowning season (appendix- 8).

The result of primary investigation regarding the 'Households Related to the Industry' is found relevant in this context. ['Households Related to the Industry' = production units + household enterprises + normal households doing piece-rate work + shops for paper-based products]. Out of 15546 HHs, 11% HHs are related to this industry in the municipal area. We have seen that 82% households are centred in 16 municipal wards, means that out 8608 households, 1431 HHs i.e., 17% HHs are related to this industry. Thus, the dependence of HHs upon this industry varies from 11% to 17%. Moreover, the production units and normal HHs (doing piece-rate work) are in the ratio 1:8 (appendix- 9). This high ratio of production units to subcontractors helps the parent firms to adopt modern methods of Flexible Manufacturing Systems (FMS), Just – In – Time (JIT) management practices.

1V.7 The Socio-Economic background of Piece-rate workers.

Age and Sex

We have considered the family size, age and gender-wise distribution of piece-rate workers in the sample survey. The average family size was five persons consisting of one man, two women and two children. 26% of the family members were males and the remaining 32% females. Children upto 14 years of age constituted 42% of the total while those in the 18 to 60 years comprise 58%.

Literacy

The literacy rate of these workers shows that 52% had schooling below 7^{th} standard, 40% below 10^{th} and 8% above 10^{th}. (Appendix - 10)

Economic activity

The majority of the piece-rate workers are women, their male counterparts are workers in different areas. They are engaged in formal and informal activities. They work in rock-cut industries, printing work, auto rickshaw drivers, coolie, etc. Some of them do both piece-rate work together with other informal sector works and agriculture jobs.

The average daily earnings of piece-rate workers

The individual earnings of piece-rate workers during the season range from Rs. 10/- to Rs. 70/- per day. The average earnings is Rs. 21/- per day. Almost all the piece-rate workers receive their income on a monthly basis. In respect to the nature of work, 84% do only seasonal work, 16% are full-time. The work participation shows that 89% was doing stitching work, 2% covering, 4% folding and 5% doing all these. (Appendix –8)

Dwelling Conditions

The survey revealed that approximately 78% of households reside in line house or residential colony type houses and the remaining 22% in independent houses. 59% of these dwelling have tiled roofs, 23% thatched and 17% terraced. About 95% of these have permanent structures while the remaining 5% have only temporary.

Separate kitchen was found in line houses and independent houses. In almost all other houses, except in certain cases, they use part of the living room as kitchen.

Ownership and type of landlord

Regarding the location of the piece-rate workers' residences, nearly 78% of them belong to line houses and colonies. 71% have a landed property less than 5 cents, 23% have above 5 cents and 5% possess above 10 cents of land. One percent resides in rented houses. (Appendix -11)

Electrification

89% of the houses are electrified, 11% are not. (Appendix - 4)

Drinking water

Drinking water points are provided in case of most of the dwellings. In residential colony area, these are provided outside the household premises. 53% have drinking water facility outside the household premises and the rest have within the household premises. (Appendix -11) The surroundings of almost all the dwellings have good sanitation. Environment is also found to be good.

Experience and skill

44% of piece-rate workers have work experience below 5 years, 40% have above 10 years, and 16% in between 5-10 years. All the workers have the skill from informal training. Only one household has got professional training in bookbinding. (Appendix -12)

96% workers are willing to continue in the work. 85% workers can devote more time for doing this work.

1V.8 Summary of Central Findings of the Study

Weak Points

Concerning the nature of the industry, we have seen that there exists labour intensive technique of production. The industry put on little progress in the adapted technology since the beginning of its activities. Very low degree of modernisation has taken place in the industry ever since the commencement of its operations.

The workers acquired the skill from outside the formal system. 98% households have got its proficiency through on-the-job training or from their bordering households. No formal training was given to the workers in the manufacturing of any kind of paper-based products.

The seasonal nature of production is another peculiarity of this industry. The production season begins January every year and it comes to a halt at the close of June. Approximately 84% of households engaged in the piece-rate work also have only seasonal work.

An important raw material of this industry- laminated wrapper sheets are not manufactured domestically. It comes from Sivakasi, in the neighbouring state of Tamilnadu. Due to lack of modernisation and technological up-gradation, the 150-year-old paper-based industry is still unacquainted to produce it domestically.

About the wage rate, there exists vivid discrimination of wages based on, gender, season and region on all categories of work. Moreover, it has noticed that, during busy season the average wage rate of part-time workers are higher in those municipal wards where the industry is clustered.

The variation in the average wage rate of male part-time workers in different municipal wards during the busy season is 39% (i.e., Rs. 1800 to Rs. 2500) against a meagre change in the wage rate of female part-time workers. Moreover, a comparison of the wage rate changes in part-time and piece-rate workforce during the busy season shows that the wage rate of the latter is almost steady. This shows that the demand for part-time skilled labour is higher than the piece-rate workers during the busy season.

The educational background of piece-rate workers is low. 92% of households have schooling below 10^{th} standard.

An assured short-term market for the paper-based products has also been estimated. Due to a very long duration of the trade cycle jointly with their low capacity to obtain adequate working capital, bring together a gloomy picture of the paper-based product market. Small-scale producers are less motivated to expand the market; they constantly meet the requirements of their limited existing clients.

Very low degree of internal dynamism has perceived within this industry. Even if the economies of sub-contracting subsist due the residential prototype, other kind of dynamism is rarely found in this domain. Independent nature of small and tiny units carryout isolated practices in raw material purchasing, mutual sharing of production, transportation, labour transaction, processes of production, and marketing. Inter-firm linkages are rarely found.

The industry deeply depends upon the indigenous money market for the seasonal requirement of working capital. The seasonal nature of working capital raise the rate of interest in the indigenous money market, ebbs away the profitability and economies of production.

Long-term trade cycle is another impediment of the industry as in any other case. The time taken to convert raw materials into output, sales and realise the revenue is very long; say one year or more. It has observed that on the average, the cash purchase of products is approximately 45 % of the total sales. The rest goes on credit. Small-scale and tiny producers, unable to offer sufficient collateral security fail to make use of commercial banks' credit facilities.

Nationalised banks and financial institutions consider small scale and tiny units at par, neglect low conditionality credit facilities to the mainstream tiny units in this industry.

Low levels of average earnings of piece-rate workers has also found in this sector. The average earnings of piece-rate workers are as low as Rs. 21/- per day. Very low daily earnings together with its seasonal nature create scepticism in workers.

Domination of private ownership/agencies in the supply of raw materials like laminated wrapper, adhesives etc. are perceived. Intermediaries and commission agents play crucial role in the supply of raw materials.

The socio-economic background of piece-rate workers is poor. 71% of workers possess less than 5 cents of land and 5% have above 10 cents. 23% houses are thatched. 11% houses are not electrified. Only 53% households have drinking water facility within their household premises. Social security measures of all categories of workers are inadequate.

Strong Points

As mentioned earlier regarding the nature of the industry, there is active participation of household members in the industry. We have observed that their share come around 45% of total main workers in the exercise book segment.

There exists very high competition among producers in the industry. This ensures product quality and competitive price.

Pertaining to the labour force, we can see that direct and indirect workforce have an equal significance in the industry. It has estimated that 47% of direct workers and 53% of indirect workers share the total workforce. The contribution of male workers are high in direct labour force, about 57% of main and 56% of part-time work, where as it is about one forth in the indirect labour force.

The labour distribution in the three categories of work - main, part-time and piece-rate - shows that piece-rate workers play a dominant role in the industry (53%) where the contribution of female workers is 74%.

The gender-wise distribution of total labour force also shows that female workforce take a predominant share. It is about 59% in the industry as a whole.

There exists good relationship between piece-rate workers and producers. The same is casual in between direct workers and proprietors.

It has observed that the industry provide good openings to the new entrants. The data relating to the work experience shows that nearly 60% of piece rate workers have started their work within ten years, more specifically, 44% commenced the activities within 5 years.

The industry provide livelihood to a large fraction of participants. It has estimated that the 96% of piece-rate workers are willing to keep on in the work. Their option to do the work reveals that 85% can devote more time. It has observed that almost all the family members participate in the piece-rate work of this industry. For instance, we could distinguish three members in a family, in the age group of 65 to 70 years, were engaged in the piece-rate work. They exclusively depend upon this industry as a source of lively hood for more than 50 years!

In the production scenario, we have observed that there are economies of sub-contracting due to the unique residential pattern of households participating in the industry. Approximately, 78% of sub-contractors doing piece-rate work live in line houses or residential colony type houses. There exists wide discrepancy in the rate for piecework in the 22 municipal wards, where the average rate varies from Rs. 3.50 to Rs. 6.50 per bundle. The normal rate is Rs. 4.50 per bundle. In the 'Ayyappath' municipal ward, where the highest rate exists (Rs.6.50/bundle), the dwelling prototype of subcontractors is found to be independent houses. However, the average rate is less than the normal rate (Rs.4 /bundle), in those municipal wards where the residential model is line houses or residential colony type houses.

The dependence of households upon this industry varies from 11% to 17% and the ratio of production units to sub-contractors has estimated to be 1:8. This high ratio of production units to subcontractors helps the parent firms to adopt modern methods of Flexible Manufacturing Systems (FMS) and Just – In – Time (JIT) management practices.

The average family size of piece-rate workers is worked out to be five. The male-female composition in these families is conducive to the growth of this industry. The age distribution estimated in the 18-60 categories is 58%.

The residential type, household composition, the nature of the industry, labour relationship, categories of workers, subcontracting practices, cluster etc. are an added advantage to this industry. It facilitates flexibility in production, inventory management, infrastructure facilities, and administrative cost.

Since the industry exhales less wastage, it does not make any kind of environmental threat to the locality. A comparatively well-off living conditions are available to the workers like; ownership and type of landlord, dwelling conditions, average number of children, power facilities and drinking water.

Section- V

The Problems and Prospects of PBI in Kunnamkulam

The Problems of Paper-based Industry in Kunnamkulam.

The paper-based industry has over the past few decades acquired a prominent place in the socio-economic development at the local level. The sector has exhibited strengths when the other sectors failed to accommodate a large number of people as a source of livelihood. Though the sector has demonstrated its strengths, the focus towards this segment by the local government has been defensive, resulting to insulate the sector from the dynamics of competitive growth.

Though there are variations in the size, structure and composition of products among production units, and the problems faced by them are distinctive, we have attempted to highlight certain aspects, which are commonly observed in the industry.

1. Seasonal nature of production.

The sample survey conducted in the 22 municipal wards covering 40% of aggregate production units exhibit the fact that the seasonal nature of production is one of the fundamental problem faced by the paper-based industry. Nearly 84% of the production units operate on a seasonal basis. The average working period has estimated to be 6 months per year. In the remaining period, the entrepreneurs are working only to cater the needs of individual organisations or doing piecework of domestic institutions or unemployed otherwise.

In the sample survey, it has further revealed that more than 77% of the units operate with one cutting machine and one ruling machine. The 85% capacity utilization of these machines requires ½ - 1 tonne papers per day and 5 to 7 workers. In the absence of its full capacity utilization during the off-season the workers required

in these units can be reduced to 2, which means that it turns into a self employed unit because we have seen that the average number of households participating in this exercise book segment is two. Therefore, it requires very few hired workers during off-season. The ratio of production units to households doing piece-rate work, (i.e., 1: 8) also becomes infertile.

Since the main activity of the industry, approximately 72% of units, is converged into the production of exercise books, the seasonal nature of production causes severe threat to this industry. The basic reason behind unemployment, wage discrimination and rate difference in piece-rate work is due to the seasonal nature of production.

2. Competition

The industry faces internal and external competition. Internal competition between big, small and tiny units is severe. Big units are able to get hold of economies like- bulk purchasing of raw materials, purchase on cash payment, market accessibility by sales on credit, own transportation and high frequency in the supply of output, accessibility of working capital at low rate of interest etc. apart from the other economies of this industry.

The small and tiny units on the other hand, suffer from credit purchase of raw materials in the peak season, shortage of funds due to the long delayed trade cycle, high rate of interest in the indigenous money market, incapability to provide sufficient collateral security, wage-rate differentials of part-time workers during the season, deficiency of alternate power supply etc.

Among these, the sales on long-term credit and higher rate of interest in the indigenous money market are remarkable.

Moreover, the industry faces external competition. Sales of high quality exercise books using attractive laminated wrappers and high quality papers through super-markets, super-bazars and direct selling of such products to the educational institutions and organisations, affect adversely the industry.

3. Marketing

The industry is competent to produce output at a low cost even if the demand for the product is seasonal in nature. This is possible because of the existence of small and tiny units with comparatively low investment in fixed capital and the economies of subcontracting. However, the products have an assured short-term market, restricted to the boundaries of the state. As the demand mainly arises from the educational sector, the intake of students and their demand for exercise books have an assured market. Widening of the market therefore, is a pre-condition for the development of the industry. Moreover, the provision of raw materials and spare parts, imported or otherwise through appropriate channels is essential to avoid intermediary and commission agents.

Thus, absence of a central marketing agency is another problem faced by the industry.

4. Credit Support

The formal credit facilities from financial institutions are virtually not accessible to the small and tiny units. Nearly 77% of units in the exercise book segment operate with only two machines and limited infrastructure facilities, falls in the tiny sector. The working capital requirements of these units are very high because of the long-term trade cycle, fluctuations in the raw material cost, seasonal nature of production, wage differentials and maintenance cost. However, nationalised banks and financial institutions in the organised sector consider small scale and tiny units at par, neglect low conditionality credit facilities to the

mainstream tiny units in this industry. Though the output is utilized mainly in the priority sector, little attention has been given by the organized financial institutions to meet their seasonal financial requirements. Absence of clear-cut demarcation between small and tiny units, in terms of credit keeps away the industry from low conditionality seasonal loans.

5. Absence of internal cluster dynamism.

Very low degree of internal dynamism has perceived in this industry. Independent nature of small and tiny units carryout isolated practices in the purchase of raw materials, production, transportation, labour transaction, production processes, and marketing. Inter-firm linkages are very limited in these clusters. If it exists, it is casual. Worldwide experience suggests that internal dynamism is inevitable for the existence and competence of small units against gigantic capital-intensive industries.

6. Absence of University – Industry Linkages.

As has been seen in U.K, Korea and other countries, the linkage between IITs, Engineering colleges, and local manufacturers is inevitable. This will improve the attitude and mindset of entrepreneurs towards manufacturing by the introduction of advanced modern technology. The organisation of events like 'venture fest' needs to be organised for the small businesses. In UK, the Oxford Brookes University has established a new business liaison Unit to facilitate contacts with the industry and to introduce companies to the selection of the University dealing with; research, recruitment of graduates, training, consultancy, services to industry, licensing, and spin off companies. The

participants in this event include knowledge and technology-based business entrepreneurs, scientist, engineers, financiers, managers, technical experts, professional service companies and support organisations.

7. Skill

Most of the participants acquired the skill through on-the-job training from within the informal sector itself. It has revealed that 98% of workers have the skill from out side the formal system. The need for skill development becomes more obvious when we consider the fact that lack of skills is a major constraint, limiting the scope for diversification of goods produced in the informal sector. Further, it has observed that skill development within the informal sector is likely to promote greater self-employment rather than wage employment.

Because of the lack of training programmes in the industry, it is unable to produce its ingredients domestically. On-the-job training limits the ability of many workers and entrepreneurs to exploit new skills, new products and new resources. The technology of printing laminated wrappers coming from outside, is still unknown to the 150 year old paper-based industry.

8. Innovation

The paper-based industry is less innovative in the sense that little improvements have taken place in the product mix. The new paper products like 'plantain leaf' used for banquet of Keralites, paper plates and tea cups, fancy bags, readily usable disposable kits, cartons for consumer products, computer paper reels etc. are supplied from outside the State. These products have a very good demand in the domestic market.

9. The absence of a single window agency.

The absence of a developed single window agency to save the trouble of the entrepreneurs is another problem faced by the industry. It has seen that the Business Link in U.K. is the single agency at the local level, which deals with all the problems of the entrepreneurs[64].

Moreover, information regarding developments of the paper-based product market, the range of paper-based products in the international market, its prices, information about the procurement of raw materials, financial resources, technological developments, benefits and economies of clusters, market information and quality improvement training programmes are to be given to the entrepreneurs through the single window agency for the sustained development of the industry.

Prospects of the Industry.

In a labour-abundant and capital-scarce country like India, informal industries have come to occupy a significant position in the economy. Most informal sector enterprises are low capital intensive and high potential for employment generation. Moreover, it possesses locational flexibility, which serves as an effective instrument for achieving a wide dispersal of industries. Further, they have indigenous and adapted technology, lying in the semi-urban or rural areas.

The paper-based industry in Kunnamkulam has an incredible future because of its peculiarities like biodegradable products, its household welcoming production pattern, residential prototype, mode of transportation, economies of subcontracting, market potential and its cluster advantages.

Diversified product mix, technological up gradation and professional training will enable the industry to eliminate the problem of seasonal nature of production. The installation of hand-made paper unit, a central paper-recycling unit, homegrown wrapper printing mechanism

[64] Bimal Julka Op. Cit.

and advanced lamination technology etc. can help to reduce the cost of raw materials still further.

A clear-cut demarcation between small-scale units and tiny units are essential to facilitate more timely and low conditionality credit, power supply, and liberal licenses to the industry. The formation of a common marketing agency in the form of a co-operative society can help the industry to boost its marketing activities outside the state and the procurement of raw materials at reasonable prices.

The operation of an industrial centre as a single window agency is essential to solve the problems of entrepreneurs and quality control. Information regarding the paper-based products in the international market, market access, comparative cost and product prices etc. should be given through this central window.

Proper security measures and insurance coverage are to be provided to the workers and their families through the single window agency.

World wide experience suggests that there is a need to formulate policies for regional development with the government intervention on the line of (Bologna) Italy. Attention needs to be focused on the existing natural clusters by extending required institutional support and modernization facilities providing adequate infrastructure, promotion of joint ventures. These ventures should inter-alia, have facilities like training, pollution control and other common facilities carrying external economies.

Conclusion

In this study project, an attempt has made to examine the problems and prospects of PBI in Kunnamkulam. It was conducted in three stages. In the first stage, a primary investigation was carried

out in the entire municipality to identify the paper-based production activities and for getting information vis-à-vis workers. It began in the month of February 2001, in the beginning of the production season. It helped the identification of workers, their age distribution, time devoted by them, different process of work etc. Moreover, it helped to get more accuracy in data collection.

It is to be recognized that the data regarding piece-rate workers is subject to variation as many of the female workers prefer other informal activities during the off-season, likely to stick on there even if the wages are less. Besides, marriage, child care, illness of their dependents etc. affect participation of female workforce in the industry every year.

In the second stage, we have completed a sample survey in the paper-based production units during September- December 2001. In this season, we have noticed the off-seasonal work, making of X'mas stars and Greeting cards. The nature of work during off-season and the problems of tiny units have observed. In the third stage, sample survey of piece-rate workers have conducted. Sample survey in the locality of residential colonies, line-houses and independent houses bring into light their socio-economic background and problems.

Finally, we have invited the proprietors of big, small and tiny production units into a common platform to make obvious the problems faced by them. A separate discussion was arranged for the proprietors of tiny units in the PBI. These focus groups imparted their grievances and intricacy, helped to dig up to a large extent the general problems facing the industry. Throughout this study, we have tried to provide an empirical and analytical methodology to

reveal the nature of the industry, its cluster, information about workers, their socio-economic background, local level advantages due to the residential pattern, economies of subcontracting, mode of transportation and finally the problems facing the industry.

The study brings out the heterogeneity existing in the paper-based industry against other informal sectors in terms of its discrete structure, nature of production, potential for diversified eco-friendly product mix, advantages of suburban prototype, assured market, advantages of subcontracting and composition of workers**.**

One cannot simply view this sector, as a refuge for marginalized populations, there appears to be a heterogeneous momentum with a hierarchy of its own. The major problems faced by this industry include; seasonal nature of production, discrimination of wage rate, short-term market, high interest regime indigenous money market, deficiency of working capital etc. Attention needs to be focused on to synchronize this cluster to generate inter-firm linkages, modernisation and the diversification of product mix. The potential for diversified biodegradable paper-based products together with the existing informal and cluster distinctiveness opens a favourable climate for the development of the industry. This should be exploited adequately on the lines of Sivakasi experience.

The urban informal and household sector has emerged as a significant and dynamic source of employment, income, production and distribution of essential goods and services in Indian cities. Proper and systematic planning of this sector would not only hasten and accelerate the developmental process but also initiate balanced local level development. In the emerging scenario of a liberalized regime, unrestricted competition from multinationals, their technological superiority and marketing techniques may offer formidable challenge to the modern informal sector. Yet, the winds of change have also opened up new vistas for the small and progressive tiny units. They have the flexibility and adaptability to switchover to low-volume markets and diversify into differentiated products with appropriate manufacturing processes.

Gaps to be filled in:-

1) The study has not analysed the different elements of dynamism usually found in other industrial clusters. A comparative study with other clusters like Sivakasi, Tiruppur will be beneficial in this context.
2) This study has not constructed a demand model for diversified paper based products in the market.
3) The study has not analysed deeply the scope of a common marketing agency and its organizational structure.
4) The study has not listed the paper based product mix available in the international market and the methods of widening the market for paper based products through exports.

** ** **

Appendix- 1
Kunnamkulam Municipal Wards and Households

Ward No.	Ward Name	Total HHs	HHs Surveyed
1	**Muthummel**	**533**	**490**
2	Cheruvathani	**436**	**368**
3	Kizhoor south	**423**	**420**
4	Vyssery	**426**	**410**
5	Naduppanthi	**593**	**592**
6	Kakkad	**673**	**651**
7	Kizhoor north	**388**	**386**
8	Munimada	**992**	**929**
9	Ayyamparambu	**501**	**478**
10	Ayappath	**491**	**408**
11	Chowannur	**517**	**511**
12	Malankara	**448**	**419**
13	Town	**1932**	**1840**
14	Kanipayur	**432**	**396**
15	Anaikal	**482**	**370**
16	Kaniyambal	**420**	**413**
17	Nehrunagar	**982**	**820**
18	Santhinagar	**1052**	**813**
19	Thekkepuram	**348**	**346**
20	Kurukenpara	**373**	**361**
21	Cheeramkulam	**486**	**478**
22	Porkalengad	**448**	**397**
23	Chemanoor north	**461**	**387**
24	Chemanoor south	**427**	**370**
25	Arthat	**353**	**339**
26	Thekken Chitanjur	**391**	**379**
27	Kavilakkad	**372**	**361**
28	Anjoorkunnu	371	310
29	Chittanjur	402	386

30	Alathur	302	296
31	Vaduthala	425	422
	Total	**16880**	**15546**

Appendix-2
Composition of the Paper-based Industry

Ward No.	Ward name	HHs Surveyed	HHs related to the PBI*	Normal HHs	Prdn.Units + HHEs	PB shops
1	Muthummel	490	6	6	-	-
2	Cheruvathani	368	9	9	-	-
3	Kizhoor south	420	51	51	-	-
4	Vyssery	410	58	49	9	-
5	Naduppanthi	592	38	29	9	-
6	Kakkad	651	55	41	11	3
7	Kizhoor north	386	43	43	-	-
8	Munimada	929	99	76	21	2
9	Ayyamparambu	478	45	42	3	-
10	Ayappath	408	79	65	14	-
11	Chowannur	511	137	131	6	-
12	Malankara	419	77	75	2	-
13	Town	1840	112	76	26	10
14	Kanipayur	396	26	24	2	-
15	Anaikal	370	25	22	3	-
16	Kaniyambal	413	94	93	1	-
17	Nehrunagar	820	14	12	-	2
18	Santhinagar	813	42	17	19	6
19	Thekkepuram	346	91	82	9	-
20	Kurukenpara	361	168	159	9	-
21	Cheeramkulam	478	82	62	19	1
22	Porkalengad	397	9	9	-	-
23	Chemanoor north	387	9	9	-	-
24	Chemanoor south	370	2	2	-	-
25	Arthat	339	18	18	-	-
26	Thekken Chitanjur	379	54	52	2	-
27	Kavilakkad	361	109	97	12	-
28	Anjoorkunnu	310	14	14	-	-
29	Chittanjur	386	107	104	3	-
30	Alathur	296	58	56	2	-
31	Vaduthala	422	14	14	-	-
	Total	**15546**	**1745**	**1539**	**182**	**24**

*HHs related to the PBI= Production Units & HHEs + Normal HHs doing piece-rate work + Shops for paper-based products.

Appendix-3 Break-up of Paper-based Units in Kunnamkulam

Ward No.	Ward Name	Total prdn. Units	Ex. Book Prdn.units	Printing Units	Others
1	Muthummel	-	-	-	-
2	Cheruvathani	-	-	-	-
3	Kizhoor south	-	-	-	-
4	Vyssery	9	7	1	Millboard-1
5	Naduppanthi	9	7	1	LeatherBinding-1
6	Kakkad	11	8	3	-
7	Kizhoor north	-	-	-	-
8	Munimada	21	9	10	Screen printing-1 DTP-1
9	Ayyamparambu	3	3	-	-
10	Ayappath	14	9	3	Screen printing-1 DTP-1
11	Chowannur	6	6	-	-
12	Malankara	2	2	-	-
13	Town	26	12	6	DTP-7 Tex.cover & other-1
14	Kanipayur	2	2	-	-
15	Anaikal	3	3	-	-
16	Kaniyambal	1	1	-	-
17	Nehrunagar	-	-	-	-
18	Santhinagar	19	9	7	Leather binding-1 Screen printing-1 DTP-1
19	Thekkepuram	9	9	-	-
20	Kurukenpara	9	9	-	-
21	Cheeramkulam	19	17	1	Textile cover-1
22	Porkalengad	-	-	-	-
23	Chemanoor north	-	-	-	-
24	Chemanoor south	-	-	-	-
25	Arthat	-	-	-	-
26	Thekken Chitanjur	2	2	-	-
27	Kavilakkad	12	11	-	Textile cover-1
28	Anjoorkunnu	-	-	-	-
29	Chittanjur	3	3	-	-
30	Alathur	2	2	-	-
31	Vaduthala	-	-	-	-
	Total	**182**	**131**	**32**	**19**

Appendix-4

Dwelling Conditions (i)

Ward name	Sample Size	Structure		Construction type			Roof		
		Permt	Temp	LH	Col	Ind	Tile	tha	terr
Kizhoor South	5	5	-	-	-	5	4	-	1
Vysserry	8	8		6	-	2	8	-	-
Naduppanthy	6	6	-	6	-	-	5	1	-
Kakkad	11	11	-	8	-	3	7	-	4
Kizhoor North	6	6	-	-	-	6	5	-	1
Munimada	15	15	-	15	-	-	11	3	1
Ayyamparambu	5	5	-	1	-	4	5	-	-
Ayyappath	5	5	-	-	-	5	5	-	-
Chowannur	33	32	1	28	1	4	17	9	7
Malankara	13	13	-	11	-	2	7	6	-
Town	23	22	1	23	-	-	16	5	2
Anaikal	3	1	-	2	-	1	1	-	-
Kaniyambal	28	28	-	21	-	7	17	2	9
Santhi nagar	5	5	-	5	-	-	2	3	-
Thekkeppuram	13	13	-	10	-	3	9	4	-
Kurukkenpara	42	39	3	5	37	-	21	13	8
Cheeramkulam	10	10	-	8	-	2	10	-	-
Arthat	5	5	-	4	-	1	4	-	1
Thekken chittanjur	12	11	1	4	-	8	6	1	5
Kavilakkad	19	17	2	13	-	6	12	4	3
Chittanjur	34	26	6	-	28	6	9	18	5
Alathur	7	7	-	4	-	3	1	2	4
Total	**308**	**294**	**14**	**174**	**66**	**68**	**182**	**71**	**51**
%		95%		78%			59%	23%	17%

* LH- Line House * Col- residential colony * Ind- Independent
* tha- Thatched * terr- Terraced

**Sample Data.

Appendix-5

The Industrial Cluster

Ward No.	Ward Name	HHs related to the PBI	Normal HHs*	Production Units+HHIs
1	Muthummel	6	6	-
2	Cheruvathani	9	9	-
3	Kizhoor south	51	51	-
4	Vyssery	58	49	9
5	Naduppanthi	38	29	9
6	Kakkad	55	41	11
7	Kizhoor north	43	43	-
8	Munimada	99	76	21
9	Ayyamparambu	45	42	3
10	Ayappath	79	65	14
11	Chowannur	137	131	6
12	Malankara	77	75	2
13	Town	112	76	26
14	Kanipayur	26	24	2
15	Anaikal	25	22	3
16	Kaniyambal	94	93	1
17	Nehrunagar	14	12	-
18	Santhinagar	42	17	19
19	Thekkepuram	91	82	9
20	Kurukenpara	168	159	9
21	Cheeramkulam	82	62	19
22	Porkalengad	9	9	-
23	Chemanoor north	9	9	-
24	Chemanoor south	2	2	-
25	Arthat	18	18	-
26	Thekken Chitanjur	54	52	2
27	Kavilakkad	109	97	12
28	Anjoorkunnu	14	14	-
29	Chittanjur	107	104	3
30	Alathur	58	56	2
31	Vaduthala	14	14	-
	Total	**1745**	**1539**	**182**

*Normal HHs – Normal households doing piece-rate work.

Primary Data

Appendix-6

Main, Part-time, Piece-rate Workers (Gender wise)

Ward name	Total Wor-kers	Main workers			Part-time workers			Piece-rate workers		
		M	F	C	M	F	C	M	F	C
Muthummel	7	-	7	-	-	-	-	-	-	-
Cheruvathani	13	2	11	-	-	-	-	-	-	-
Kizhoor south	96	14	3	-	5	-	-	2	55	17
Vyssery	173	53	30	-	2	3	-	4	76	5
Naduppanthi	120	56	25	-	3	-	-	6	26	4
Kakkad	149	58	38	-	1	8	-	3	41	-
Kizhoor north	81	4	4	-	-	-	-	5	63	5
Munimada	364	57	62	-	85	9	-	12	108	31
Ayyamparambu	99	23	14	2	3	5	-	3	35	14
Ayappath	235	49	56	-	3	28	2	3	77	17
Chowannur	284	37	55	-	1	2	1	11	145	32
Malankara	174	11	9	-	1	4	4	17	107	21
Town	306	110	78	-	-	6	-	5	96	11
Kanipayur	71	2	13	2	-	-	-	3	28	23
Anaikal	53	7	5	-	-	6	-	1	25	9
Kaniyambal	195	19	11	-	-	-	1	12	120	32
Nehrunagar	16	8	1	-	-	-	-	1	6	-
Santhinagar	132	68	30	-	4	2	-	2	25	1
Thekkepuram	243	75	47	-	10	6	-	2	82	21
Kurukenpara	410	84	51	-	5	8	-	9	202	51
Cheeramkulam	299	78	66	5	31	13	1	11	80	14
Porkalengad	11	2	1	-	-	-	-	2	4	2
Chemanoor north	9	3	5	-	-	-	-	-	-	1
Chemanoor south	3	-	1	-	-	-	-	-	2	-
Arthat	27	7	4	-	-	-	-	1	14	1
Thekken Chitanjur	106	19	14	-	3	-	-	4	56	10
Kavilakkad	315	79	57	6	6	-	3	15	90	59
Anjoorkunnu	20	3	4	-	-	-	-	1	8	4
Chittanjur	250	40	25	-	3	11	-	10	117	44
Alathur	114	27	10	-	-	-	-	2	52	23
Vaduthala	22	6	9	-	1	-	-	-	4	2
Column total	4397	1001	746	15	167	111	12	147	1744	454
Total		**1762**			**290**			**2345**		

*Primary Data

Appendix-7
Gender wise Distribution of Total Workers

Ward No.	Ward name	Total workers	Total male Workers	Total female Workers	Total Children

1	Muthummel	7	-	7	-
2	Cheruvathani	13	2	11	-
3	Kizhoor south	96	21	58	17
4	Vyssery	173	59	109	5
5	Naduppanthi	120	65	51	4
6	Kakkad	149	62	87	-
7	Kizhoor north	81	9	67	5
8	Munimada	364	154	179	31
9	Ayyamparambu	99	29	54	16
10	Ayappath	235	55	161	19
11	Chowannur	284	49	202	33
12	Malankara	174	29	120	25
13	Town	306	115	180	11
14	Kanipayur	71	5	41	25
15	Anaikal	53	8	36	9
16	Kaniyambal	195	31	131	33
17	Nehrunagar	16	9	7	-
18	Santhinagar	132	74	57	1
19	Thekkepuram	243	87	135	21
20	Kurukenpara	410	98	261	51
21	Cheeramkulam	299	120	159	20
22	Porkalengad	11	4	5	2
23	Chemanoor north	9	3	5	1
24	Chemanoor south	3	-	3	-
25	Arthat	27	8	18	1
26	Thekken Chitanjur	106	26	70	10
27	Kavilakkad	315	100	147	68
28	Anjoorkunnu	20	4	12	4
29	Chittanjur	250	53	153	44
30	Alathur	114	29	62	23
31	Vaduthala	22	7	13	2
	Total	**4397**	**1315**	**2601**	**481**

*Primary Data

Appendix-8
Production and Rate Particulars of Piece-rate Workers

Ward name	Sample Size (HHs)	Nature of Work		Average Product Per day	Average rate Per bundle
		S	F		
Kizhoor South	5	1	4	4.75	4.75

Vysserry	8	5	3	2.93	4.50
Naduppanthy	6	5	1	3.41	4.00
Kakkad	11	10	1	4.11	4.00
Kizhoor North	6	5	1	3.40	4.50
Munimada	15	11	4	3.81	4.00
Ayyamparambu	5	5	-	3.92	3.50
Ayyappath	5	3	2	4.50	6.50
Chowannur	33	30	3	4.80	4.50
Malankara	13	11	2	3.52	5.50
Town	23	17	6	3.81	4.50
Anaikal	3	3	-	6.25	4.50
Kaniyambal	28	23	5	3.97	4.50
Santhi nagar	5	5	-	4.20	4.00
Thekkeppuram	13	13	-	4.29	5.00
Kurukkenpara	42	36	6	3.97	4.00
Cheeramkulam	10	10	-	4.54	4.50
Arthat	5	4	1	5.00	4.50
Thekken chittanjur	12	9	3	3.83	4.00
Kavilakkad	19	18	1	3.63	4.00
Chittanjur	34	30	4	5.31	4.00
Alathur	7	6	1	5.11	4.50
Total		**260**	**48**		
		84%	16%		

*Sample Data

Appendix-9
Paper- based Industry Related HHs

Ward name	Composition HHs in PBI				Total
	Normal HHs	HHEs	Pro. Units	Shops	
Muthummel	6	-	-	-	6
Cheruvathani	9	-	-	-	9
Kizhoor south	51	-	-	-	51
Vyssery	49	3	6	-	58
Naduppanthi	29	2	7	-	38
Kakkad	41	2	9	3	55
Kizhoor north	43	-	-	-	43
Munimada	76	1	20	2	99
Ayyamparambu	42	1	2	-	45
Ayappath	65	-	14	-	79
Chowannur	131	-	6	-	137
Malankara	75	1	1	-	77
Town	76	2	24	10	112
Kanipayur	24	1	1	-	26
Anaikal	22	1	2	-	25
Kaniyambal	93	-	1	-	94
Nehrunagar	12	-	-	2	14
Santhinagar	17	2	17	6	42
Thekkepuram	82	5	4	-	91
Kurukenpara	159	3	6	-	168
Cheeramkulam	62	3	16	1	82
Porkalengad	9	-	-	-	9
Chemanoor north	9	-	-	-	9
Chemanoor south	2	-	-	-	2
Arthat	18	-	-	-	18
Thekken Chitanjur	52	1	1	-	54
Kavilakkad	97	7	5	-	109
Anjoorkunnu	14	-	-	-	14
Chittanjur	104	1	2	-	107
Alathur	56	-	2	-	58
vaduthala	14	-	-	-	14
Total	**1539**	**36**	**146**	**24**	**1745**
(%)	88	3	8	1	100

*Total- total industry related HHs
*Primary Data

Appendix-10

Literacy Status of Piece-rate Workers

Ward name	Sample Size	Total Workers	Total Bel.7th	Total Bel.10th	Total Above.10th
Kizhoor South	5	5	2	2	1
Vysserry	8	16	12	3	1
Naduppanthy	6	12	6	5	1
Kakkad	11	17	11	6	-
Kizhoor North	6	10	7	2	1
Munimada	15	37	16	16	5
Ayyamparambu	5	14	8	6	-
Ayyappath	5	10	5	4	1
Chowannur	33	68	25	33	10
Malankara	13	25	12	12	1
Town	23	32	19	13	-
Anaikal	3	4	2	2	-
Kaniyambal	28	43	14	23	6
Santhi nagar	5	10	2	7	1
Thekkeppuram	13	24	8	10	6
Kurukkenpara	42	88	56	25	7
Cheeramkulam	10	24	12	11	1
Arthat	5	6	1	4	1
Thekken chittanjur	12	18	5	10	3
Kavilakkad	19	41	28	12	1
Chittanjur	34	67	48	19	-
Alathur	7	9	3	5	1
Total	**308**	**580**	**302**	**230**	**48**
(%)			52%	40%	8%

* Sample Data

Appendix-11
Dwelling Conditions (ii)

Ward name	Sample size	Electrified		Drinking water		Landed property		
		Yes	No	In	Out	Bel.5	Ab.5	Ab.10
Kizhoor South	5	5	-	5	-	1	3	1
Vysserry	8	8	-	3	5	5	2	1
Naduppanthy	6	6	-	4	2	5	1	-
Kakkad	11	10	1	9	2	9	2	-
Kizhoor North	6	6	-	4	2	4	1	1
Munimada	15	14	1	6	9	10	4	1
Ayyamparambu	5	5	-	5	-	3	2	-
Ayyappath	5	5	-	5	-	-	5	-
Chowannur	33	31	2	20	13	24	7	2
Malankara	13	13	-	10	3	7	6	-
Town	23	21	2	10	13	20	3	-
Anaikal	3	2	1	-	3	1	-	-
Kaniyambal	28	25	3	13	15	11	14	3
Santhi nagar	5	5	-	5	-	5	-	-
Thekkeppuram	13	13	-	8	5	9	4	-
Kurukkenpara	42	32	10	-	42	42	-	-
Cheeramkulam	10	10	-	6	4	10	-	-
Arthat	5	5	-	2	3	1	3	1
Thekken chittanjur	12	7	5	4	8	5	3	4
Kavilakkad	19	18	1	12	7	18	1	-
Chittanjur	34	27	7	6	28	26	4	2
Alathur	7	7	-	7	-	2	5	-
Total	**308**	**275**	**33**	**144**	**164**	**218**	**70**	**16**
(%)		89	11	47	53	71	23	5*

* 1% rented houses *Landed property in ‘cents’of land

* Sample Data

Appendix- 12
Experience & Skill of Piece-rate Workers

Ward Name	Experience of HHs/year			HHs willing to Continue in work		HHs willing to Devote more time		Skill/ HHs	
	Bel5	Bel10	Ab10	Yes	No	Yes	No	PT	IT
Kizhoor South	1	2	2	5	-	5	-		5
Vysserry	-	2	6	8	-	6	2		8
Naduppanthy	1	-	5	6	-	3	3		6
Kakkad	4	1	6	11	-	8	3		11
Kizhoor North	1	2	3	6	-	6	-		6
Munimada	3	5	7	15	-	12	3		15
Ayyamparambu	2	2	1	2	3	2	3		5
Ayyappath	3	1	1	5	-	5	-		5
Chowannur	15	2	16	33	-	33	-	1	32
Malankara	5	3	5	13	-	13	-		13
Town	6	1	16	22	1	18	5		23
Anaikal	-	-	3	3	-	3	-		3
Kaniyambal	15	6	7	25	3	22	6		28
Santhi nagar	-	2	3	4	1	1	4		5
Thekkeppuram	7	4	2	13	-	8	5		13
Kurukkenpara	15	8	19	42	-	39	3		42
Cheeramkulam	1	-	9	9	1	7	3		10
Arthat	4	1	-	5	-	5	-		5
Thekken chittanjur	7	1	-	7	1	7	1		8
Kavilakkad	17	1	1	19	-	15	4		19
Chittanjur	20	7	7	33	1	33	1		34
Alathur	4	2	1	7	-	6	1		7
Total	135	51	122	297	11	261	47		303
(%)	44	16	40	96	4	85	15		98

PT- Professional Training

IT- Informal Training

*Sample Data

Appendix-13
Work Participation –Process wise

Ward name	Sample Size	Process of work Sti	Cov	Fol	All process
Kizhoor South	5	4	-	-	1
Vysserry	8	7	-	-	1
Naduppanthy	6	6	-	-	
Kakkad	11	9	-	-	2
Kizhoor North	6	6	-	-	
Munimada	15	15	-	-	
Ayyamparambu	5	4	-	-	1
Ayyappath	5	5	-	-	
Chowannur	33	30	-	-	3
Malankara	13	12	-	1	
Town	23	16	3	4	
Anaikal	3	2	-	-	1
Kaniyambal	28	27	-	-	1
Santhi nagar	5	5	-	-	
Thekkeppuram	13	13	-	-	
Kurukkenpara	42	42	-	-	
Cheeramkulam	10	8	-	-	2
Arthat	5	10	1	1	
Thekken chittanjur	12	4	-	-	1
Kavilakkad	19	16	-	-	3
Chittanjur	34	26	1	7	
Alathur	7	7	-	-	
Total	**308**	**274**	**5**	**13**	**16**
%		89%	2%	4%	5%

***Sti- Stitching *Cov- Covering *Fol- Folding**
***Sample Data.**

Appendix-14

PBI- Sample Survey- Sample Size

Ward No.	Ward name	Normal HHs*	Sample Size	Total prodn. Units & HHEs	Sample size
1	Muthummel	6	-	-	-
2	Cheruvathani	9	-	-	-
3	Kizhoor south	51	5	-	-
4	Vyssery	49	8	-	-
5	Naduppanthi	29	6	9	6
6	Kakkad	41	11	11	4
7	Kizhoor north	43	6	-	-
8	Munimada	76	15	21	3
9	Ayyamparambu	42	5	3	-
10	Ayyapath	65	5	14	-
11	Chowannur	131	33	6	-
12	Malankara	75	13	2	-
13	Town	76	23	26	1
14	Kanippayur	24	-	2	-
15	Anaikal	22	3	3	-
16	Kaniyambal	93	28	1	-
17	Nehru nagar	12	-	-	-
18	Santhi nagar	17	5	19	13
19	Thekkeppuram	82	13	9	6
20	Kurukkenpara	159	42	9	9
21	Cheeramkulam	62	10	19	13
22	Porkalengad	9	-	-	-
23	Chemmannur N	9	-	-	-
24	Chemmannur S	2	-	-	-
25	Arthat	18	5	-	-
26	Thekken chittanjur	52	12	2	-
27	Kavilakkad	97	19	12	12
28	Anjoorkunnu	14	-	-	-
29	Chittanjoor	104	34	3	2
30	Alathur	56	7	2	1
31	Vaduthala	14	-	-	-
	Total	**1539**	**308**	**182**	**75**
			20%		41%

*Normal HHs – Normal HHs doing piece-rate work.

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