Small Firm Clustering and Local Economic Development in Kerala : A Study of Two Clusters

Chapter 1

Introduction

It has been a matter of great concern that Kerala economy has not made any mark in its commodity producing sectors despite its significant achievements in the social sectors. Efforts to achieve industrialisation through large scale public investments have failed. Large private sector investments have kept shy of Kerala. At the same time Kerala has a fair record of the presence of small scale enterprises, though not performing well. Detailed analysis has shown that a major performance constraint is the lack of agglomeration economies in the industrial sector of Kerala (Subramanian and Pillai, 1986). Any search for alternative strategies for Kerala's industrialization, therefore, leads one to the theme of small firm clustering and local economic development.

On the basis of the European experience of successful industrial districts- clusters of thousands of small and medium enterprises- there is a growing widespread belief among the policy makers that clusters can form the basis of a viable industrial strategy of self-sustaining local economic development. The interest in clusters cropped up in the wake of the discovery in the early 80s of the extra ordinary performance of the agglomerations of thousands of small firms called industrial districts in the hitherto backward regions of Italy by Piore and Sabel(1984) and a number of other writers including Becattini (1989). While Piore and Sabel called it Flexible Specialisation, Best (1990) called it New Competition, Storper and Harrison (1991) Regional Production Systems, Colletis, Courlet and Pecquer(1990) Local Industrial Systems and Garofoli (1992) Endogenous local Industrialisation.

A cluster may be generally defined as a group of firms making the same or similar things in close vicinity to each other. But the term is used in two somewhat different ways in the industrial development literature (Mc Cormick, 1998). Porter (1990) uses the term to designate a group of firms engaged in similar or related activities within a national economy. Geographical proximity is not a defining characteristic in Porter's definition. Schmitz (1992a) defines a cluster as a geographic and sectoral agglomeration of enterprises. This is an elaboration of the Marshallion notion of the 'industrial district' (1890). Several authors have contributed to the development of the notion as we understand today (Piore and Sabel, 1984; Zeitlin, 1989; Storper and Walker, 1989; Becattini, 1989; Sengenberger and Pyke, 1992; Humphrey, 1995; Rabellotti, 1997).

Clustering of firms is claimed to have a number of advantages and implications for local economic development. Clustering facilitates collective efficiency, viz, gains in efficiency and flexibility which individual firms located in different places can rarely attain (Nadvi and Schmitz, 1994). Spatial proximity reduces transaction and transportation costs. The multiple interaction between different economic actors in a cluster such as traders, producers, suppliers, repair workshops, financial and technical institutions, brokers etc. facilitates rapid inter flow of information resulting in

technological development and innovation. As there are a large number of firms engaged in similar or related activities there will be greater division of labour and sectoral specialization. This gives rise to economies of scale and scope. Specialisation reduces the capital constraints faced by individual enterprises by distribution capital costs across small firms within the chain (Nadvi and Schmitz, 1994). Closely connected with are the advantages of external economies such as market access, a pool of specialized skills, generation of specialized input supplies etc. Clustering also facilitates trust formation and greater cooperation among the different actors.

Cluster studies have accumulated during the last couple of decades in the European and to some extent in the developing country context (Nadvi and Schmitz, 1994; World Development, various issues). Studies on Indian clusters also have attracted international attention. Footwear in Agra (Knorringa, 1992), diamond polishing in Surat (Kashyap, 1992), pumpsets in Coimbatore (Pillai, 2000), electronics in Bangalore (Holmstrom, 1993), knitwear in Tirupur (Cawthorne, 1995), hosiery in Ludhiana (Tweari,), rubber footwear in Kottayam(Pillai, 2001) are the most well known of these.

According to a UNIDO (1998) estimate there are 350 clusters in India each of which consisting of more than 100 registered small scale units coexisting with unregistered units. In addition, according to the same study there are more than 2000 rural artisan clusters in the country. This study further gives a state-wise distribution of 917 rural artisan clusters of which 34 are located in Kerala. The objective of the present study is to critically evaluate the prospects of achieving local economic development in Kerala through growth and competitiveness of small firm clusters. For the purpose we have selected two clusters, a saw mill cluster in Perumbavoor in Central Kerala and an agricultural implements cluster in Shornur in Northern Kerala. As the exact number of units in each cluster is not available, 60 units have been selected from each cluster for in-depth analysis. Data have been collected through structured schedules from the selected units as well as personal interviews with entrepreneurs, trade union leaders, business association representatives, government officials and knowledgeable persons in the locality. As some of the schedules did no give satisfactory and consistent information, it was decided to use data supplied by only 59 units in Shornur and 50 units in Perumbavoor.

Chapter 2 analyses the data relating to Perumbavoor and Chapter 3 that relating to Shornur. Chapter 4 gives the conclusion and policy implications.

Chapter 2

This chapter proposes to analyse the empirical materials collected from the saw-mill cluster in Perumbavoor. Perumbavoor is located in the north eastern part of Ernakulam District. It is a gateway to the forest area at the eastern borders of Kerala. The easy availability of timber from the forests made Perumbavoor the centre of saw-mill industry. The timber depots at Mudicakal, Theballur and Veettoor are not far from Perumbavoor.

The Perumbavoor cluster has nearly 600 saw-mill units. The Perumbavoor timber market is the biggest of its kind in Asia. It operates between 6.00 p.m. and 6.00 a.m every day. Between 300 to 400 trucks of timber come to this market every night. A good deal of the timber goes from Perumbavoor to Bombay, Tamil Nadu and Karnataka. The remaining part of the timber is available to the saw-mills in the area. The monthly turnover in Perumbavoor market is reportedly worth Rs. 3 crores of which timber worth Rs. 2.5 crores are traded without bills.

The first saw mill in the area was set up in the early 50s by one Mr. Patel from Gujarat He introduced the business in Perumbavoor by setting up the Ambika Saw Mill. Some of the timbers like Punnappa, white pine and Kolava were cheaper in Perumbavoor than in Kallai, the nerve center of timber industry in northern Kerala. The cheap availability of timbers attracted entrepreneurs like K.K. Kaderkutty and Kunjumayan Haji from Kallai to Perumbavoor to start mills. Following them V.K. Ummerkutty and Moidu started a joint enterprise called Vanchinadu industries. It originally belonged to a Chettiar from whom they bought it at a lower price. This was the first automatic saw mill in Perumbavoor. Ummer Sahib also had a private forest under his ownership.

In 1939, Vidya Sagar, a local merchant who started his career as a soldier in the Indian Army set up a packaging unit (SNV Industries) to supply packing materials to the Perumbavoor Ryons, a large scale enterprise in the area. When he lost his contract with Perumbavoor Ryons due to some misunderstanding, he shifted to Dealwood

(Peenjapalaka) industry. It is at that time that Vidyasagar saw a new kind of belt like saw blade (Belt Val) introduced by a Gujarati merchant for the use in Perumbavoor Ryons. Vidya Sagar saw the same kind of saw blade in Haridwar and with great efforts transported one to his unit. Later he modified the blade to suit to the local requirements. He started a new experiment of making packing materials with mango trees that happened to be in great demand in Tamil Nadu and Andhra Pradesh. He also started a saw mill at a later stage, but it closed down in 1976 owing to labour strikes.

Till the mid-80s, the timber industry flourished in Perumbavoor. Later easy availability of timber became a constraint. Prices of timber also began to shoot up along with the construction boom in Kerala in the 70s and 80s. In the wake of liberalization in the country the industry in Perumbavoor began to face severe threats from cheaper imports of timber from Malaysia, Indonesia, Burma (Myanmar) and Africa. A 12 % purchase tax and other duties which added up to 30 % of the final price made the industry less

competitive. Besides competition came up from the other states in India as well. The latter part of the 80s marked the beginning of the decline of the industry in Perumbavoor. Today only 10 % of the trade in the cluster is accounted for by traditional timber. Some mills have even been closed down and some of the existing ones restricted their activities to mere selling of sized timber. Since 1995 no new business enterprise got registered in the cluster.

Because of the crisis in the cluster, there has been a shift in the activity from saw milling to plywood manufacturing. The chief wood used for plywood in Perumbavoor is rubber. Because of that, rubber is the main wood traded in Perumbavoor today. The growth of rubber cultivation in Kerala and the eastern parts of Ernakulam made the availability of rubber wood easy in Perumbavoor. It was in 1980 that the Periyar Plywoods, the first Plywood unit in the cluster was set up. During the 80s nearly 20 such units got registered. One can generally identify two stages in the manufacture of plywood. The first stage is veneer making and the final stage the making of plywood itself. There are nearly 150 units making veneer and 20 making plywood. While the workers in the saw mills are mainly from Kerala, the workers for the plywood units were brought from Orissa and Mangalapuram. There are also a few units in the cluster which are specialized in treating rubber and other softwoods for better durability and to avoid fungus infection.

The plywood manufacturing units also are facing a crisis situation in the cluster. MDF Prelaminated particle boards and medium density fibre particle boards which are superior substitutes to plywood are being imported from Malayasia and Indonesia at prices which are cheaper by 25 % than the local product. Moreover, there is tough competition from new varieties of plywood such as new wood, marine plywood etc. that come form other states in India. After the mid90s no new unit has come to operate in the area. The timber and plywood units require at least 1.5 acres of land. Land shortage in Perumbavoor is another constraint on the industry in. The fall of rubber wood prices in recent years has led to a sizeable movement of rubber from Kerala to the mills on the border of Tamil Nadu and Karnataka where cheaper labour is available. Nearly 400 lorries of plywood ply from Perumbavoor to the neighbouring states every day resulting in loss of work and job in the cluster units.

Despite the crisis in the cluster, no serious efforts to innovate have taken place so far. It is not that the entrepreneurs are unaware of the sources of innovation. They often get information about new technologies from the Plywood Research Institute in Bangalore and from the Wood News that has been in Publication since 1991. Many entrepreneurs believe that the existing technology is cheap and relatively efficient. Moreover, new technologies are prohibitively costly and the entrepreneurs are not sure whether they would be able to recoup the expenditure in a reasonable time period. They do not think that it is the low technology that is threatening the industry as much as other factors such as shortage of raw materials and high wages.

The saw mill owners registered in 1993 an association called Saw Mill Owners' Sawing Enterprise Ltd (SOSEL). It owns 1.1 acres of land and the total asset at its disposal is

worth Rs. 1.5 crores. The Association has 300 members. In addition to this there is the Perummbavoor Small Scale Industries Association where the small saw mill owners are also members. One of the first activities of SOSEL was to set up a weigh bridge in Perumbavoor to avoid cheating by brokers. In 1998, the brokers also started their own association. Their association demanded Rs. 150 per truck load of timber whether it is weighed in the weigh bridge of the timber merchants or that of the brokers. SOSEL vehemently resisted this move and ultimately the brokers had to yield in. They had to dissolve the association. Similar solidarity had been displayed by SOSEL to resist the unreasonable demand by labourers. At the time of a fierce labour strike by the workers during the mid 90s, the owners themselves did the hazardous task of loading and unloading the timber that forced the workers to accept a negotiated settlement. In addition to this, the association also does lobbying work that perhaps is their major activity at any time.

Section 11

Empirical Analysis of Data

The Perumbavoor cluster can claim only the tradition of half a century. Only 20 % of the sample units were established before 1970 (Table 2.01). As much as 50 percent of the units came to exist during the 70s and 80s of the last century. The remaining 30 % of the units got set up in the 90s.

Table 2.01

Distribution of Units by Period of Establishment

Period of Establishment	**Percentage of units**
Before 1970	20
1970-1990	50
After 1990	30
All	**100**

Table 2.02

Professional Background of the Entrepreneurs

Professional Background	**Percentage reporting**
Same field	4
Business	4
Technical workers	10
Others	16
No previous experience	56

Total	**100**

We have already noted that it was the cheap availability of timber that led to the origin and growth of the saw mill cluster in Perumbavoor.

This would enable one to expect the entrepreneurs to hail from families who have been traditionally in the business or having some connection with the industry. But the survey data show that 56 % of the entrepreneurs in the sample had no previous business experience (Table 2.02). To be more precise, only 14 percent of them had any connection with the same business field. Many of the entrepreneurs did not have even any business background at all. It shows that the reason why the cluster happened to be in Perumbavoor is largely the resource base of the region. This is further supported by the fact that as much as 96 % of the entrepreneurs are of local origin. The very small firms and the largest firms are completely owned by local entrepreneurs (Table 2.03). Even in the relatively medium sized firms, one finds only a small percentage of entrepreneurs from outside the area.

Table 2.03

Percentage Distribution of Entrepreneurs by Area of Origin

Firm Size	Local Area	Outside
0-4	100	0
5-9	97	3
10-19	88	12
20 +	100	0
All	**96**	**4**

As mentioned in the previous section, there has been a clear shift of units from saw milling to plywood and packaging material production in recent times. Fifty Eight percent of the units surveyed produce packaging case materials (Table 2.04). Ten percent of them produce veneer and another 15 % wooden planks.

Table 2.04

Distribution of Enterprises According to Product

Main products	Percentage of units
Veneer	10
Packaging case and materials	58
Wooden planks	15

Others	17
Total	**100**

A majority of the units are small in size. Six percent of them are very small employing less than 5 workers. Seventy four percent employ less between 5and 10 workers (Table 2.05). The remaining units employ more than 10 workers, but only 4 % of the units employ more than 20 workers. In general, the cluster consists of generally small and medium firms.

Table 2.05

Size Distribution of Units by Number of Workers

Firm Size	Percentage of Enterprises
0-4	6
5-9	74
10-19	16
20 +	4
All	**100**

Backward Linkages

The degree of division of labour is extremely limited in the saw mill cluster of Perumbavoor. Only 12 % of the sample units seem to be engaged in any kind of work decentralization by subcontracting. Similarly only 22% of the sample units take up subcontracting work by themselves. The subcontracting practice is confined mostly to the plywood manufacturing segment of the cluster. The units engaged in the sawing process only do not subcontract their work to any firm. The plywood making units some times subcontract veneer making process to those firms specialized in it. But this is not indicative of any strong inter-firm relationship between the firms. A look at the nature and type of facilities provided to the supplier firms clearly show this. Only a small 2% of the units occasionally give advances to the supplier firms. Even an occasional help is extended in the organization of production only by 4 % of the units. Again only 6% of the units provide facilities even to transport the product from the supplier to the customer and that too only occasionally (Table 2.06).

Table 2.06

Facilities Provided to Subcontractors

Type of Facilities	Frequently	Occasionally

Advance Payment	0	2
Organisation of production	0	4
Transportation of parts or products	2	6
All	**2**	**12**

The table clearly shows that subcontracting relationship is not capable of generating any inter-firm collaboration or cooperation. The reasons why the units subcontract work also support this line of reasoning (Table 2.07). Saving on premises and machinery is the chief reason for the limited subcontracting that exists in the cluster. Six percent of the units engage in subcontracting to pass on the impact of fluctuations in demand to the supplier units. Some times lower wages of the subcontractor is also an incentive for subcontracting.

Table 2.07

Reasons for Subcontracting

Reasons for Subcontracting	**Percentage of units**
Irregular demand	6
Savings on premises and machinery	12
Greater efficiency of subcontractor	4
Lower wages of subcontractor	2
Others	0

The above argument does not, however, imply that there is a complete isolation of enterprises in the cluster. The supplier firms often try to maintain cordial relations with their customer firms. Twenty four percent of the supplier firms in the sample assist the customer firms to solve problems arising out of their products (Table 2.08). Eight percent of them also provide suggestions for product improvement. Fourteen percent of the suppliers even go to the extent of explaining the characteristics that are required for the final product.

Table 2.08

Type of Assistance Provided by Supplier Units

Type of assistance	**Percentage of units**
Solve problems arising out of the product	24
Provide suggestions to improve the product	8
Explain the required characteristics of the product	14
Others	4

Table 2.09

Percentage of Units Borrowing Capital

Firm Size	Percentage of Units
0-4	55
5-9	52
10-19	75
20 +	25
All	**54**

Many of the enterprises report linkages with the financial and technical institutions in the area. Fifty four percent of the units depend on borrowed capital (Table 2.09). Except the very large units, almost all size classes invariably borrow capital from financial institutions. But only 6 % of the units report access to subsidized credit. Similarly leasing machinery for production purposes is reported by 12 % of the firms; they, however, do so only occasionally for certain spcialised work or when their machinery goes out of order. But for other production related activities such as accounting assistance, costing of products, selection of personnel etc. the firms largely depend on their own internal resources (Table 2.10). Only for repair of machinery all of which cannot be carried out internally by own staff and to some extent accounting work, they depend on other units in the area. A majority of the firms have bought brand new machinery. But, 42 % of the units have bought second hand machinery obviously to save on initial investment.

On the whole it is seen that the backward linkages of the units are rather limited.

Table 2.10

Arrangement of Services

Type of services	Percentage of units reporting		
	By Own workers	By others in local area	By others outside the local area
Repair of machinery	26	88	0
Accounting	94	30	0
Costing of products	100	0	0
Personnel selection	94	2	2

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Forward Linkages

It is the size, location and character of the market that determine the volume and growth of production in any cluster. In the Perumbavoor cluster, as high as 59 % of the output is sold in the local market only. Twenty nine percent of it goes to the rest of Kerala . A very small percentage of the output only is sold in distant markets including overseas markets (Table 2.11).

Table 2.11

Percentages of Sales by Markets

Markets	**Percentage of Units**
Local Area	59
Rest of the State	29
Rest of the Country and abroad	12
All	**100**

The units in the cluster have clearly defined marketing channels. Forty three percent of the output is sold to the wholesalers. Another 40 % is sold directly to the consumers without the assistance of any intermediaries. Only 17 % of the output is sold through brokers or sales representatives (Table 2.12).

Table 2.12

Percentage of Output Sold Through Different Agencies

Marketing Channels	**Percentage of Units**
Direct to wholesalers	43
Direct to consumers	40
Through sales representatives	17
All	**100**

However, there is intense competition in the market. The competition is based on both price and quality. Timely delivery is also a major consideration (Table 2.13). As most of the sales is in the local area, the competition is also most intense in the local area (Table 2.14). The competitive pressure is felt more from the small and medium units than the larger ones (Table 2.15). This is largely because selling at any cost is a life and death issue for the smaller firms who have a precarious existence. The large firms do not face

such stiff competition. Probably the large firms have their own market niche where they may be facing only limited competition from units of their kind.

Table 2.13

Nature of Competition

Nature of Competition	Percentage of Units
Price	88
Quality	96
Speedy and Punctual Delivery	84

Table 2.14

Main Competitors

Main Competitors	Percentage of Units
Large Enterprises	16
Medium Enterprises	42
Small Enterprises	42

Table 2.15

Location of Competition

Location	Percentage of Units
Local area	86.0
Local area & rest of Kerala	8.0
Kerala & rest of India	6.0

Horizontal Linkages

There is a certain degree of horizontal inter-firm cooperation in the Perumbavoor cluster, but it is not dense enough to trigger off innovation and growth. This cooperation is more social than business related. As much as 92 % of the sample firms reported that they meet occasionally and when they meet most of the time they talk issues related to business (Table 2.16). They also discuss other issues, but more casually. The business issues they discuss are mainly related to markets and customer needs. Problems related to the availability of timber and rubber wood at reasonable prices also constitute the subject matter of their conversation (Table2.17). But the meetings are more occasional than frequent (Table 2.18).

Table 2.16

Topics of Conversation When Entrepreneurs Meet

Topics of Conversation	Percentage of Units
Social Activities, sports etc.	4
Civil and Political Affairs	10
Entrepreneurial Topics	96
Others	2

Table 2.17

Entrepreneurial Subjects Discussed

Entrepreneurial Subjects	Percentage of Units
Material Inputs	92
Equipments & Components	0
Markets and Customer Wants	90
Subcontracting	6
Others	2

Table 2.18

Frequency of Exchanging Ideas

Frequency	Percentage of Units
Never	8
Often	12
Occasionally	80

Table 2.19

Frequency of Visiting Other Units in the Area

Frequency of Visits	Percentage of units
Never	6
Occasionally	90
Often	4

Similarly, 90 percent of the sample units reported that they visited other production sites, but only occasionally (Table 2.19). Such visits are occasioned by the active presence of the association of saw mill owners. Eighty Six percent of the sample units are members of the association. The membership is often useful to them to obtain information on legal matters related to business and information on other enterprises. The members also collect information about seminars and courses from the association. A major use of the association is bargaining with trade unions and lobbying with the government (Table

2.20). However, it is worth noting that the members do not actively seek the support of the association in the above matters. They use the association only occasionally.

Table 2.20

Purpose of Association Membership

Purpose	Percentage of Units Reporting		
	Often	Occasionally	Never
Advice in legal matters	2	82	2
Information on other enterprises	2	76	6
Courses & Seminars	0	82	2
Bargaining with Trade Unions	2	82	0
Information Bulletins	2	82	0
Lobbying with the Government	2	82	0
Other	0	2	0

It is remarkable to observe that at least in the case of some units some enterprising workers have moved to set up their own enterprises. As high as 42 % of the sample units report that some of their past employees are now owners of saw-mills. Workers endowed with entrepreneurial talents learn the state of the art from the enterprise where they have been employed and eventually move out and set up their own business. This type of mobility can create if orchestrated with other factors an environment for inter-firm cooperation. Such instances are often quoted in the literature of Italian industrial districts. However, in the present context, only 10 percent of the parent units maintain any kind of business relation with such spin off enterprises.

The weak inter firm relation is further brought out by the fact that 81 % of the units produce a whole product. There is very little outsourcing in the cluster. Similarly almost all the units perform their functions within the premises of their units only. Six percent of the units perform part of their business activity at their residences. These business activities are mostly of a confidential nature such as tallying the final financial accounts, preparing income tax statements, contacting the suppliers and customers etc. Almost all value adding activities are performed at the factory sites. Most of the units are having only single establishments. Only 8 % of them reported to have more than one establishment and none had more than two. It is mostly the plywood manufacturing units that own a veneer making unit as another establishment. However, some times there is limited cooperation between the units. Ten percent of the units cooperate as far as

marketing of the product is concerned. They jointly send their product to some of the distant wholesalers in order to reduce transport cost.

Among the entrepreneurs no networking based either locality or community is found. They do not even think that it is essential to belong to such networks for business success. Only 2% of the entrepreneurs consider it worthwhile to have community based or locality based networks useful for success.

Technological Change and Innovation Possibilities.

Enterprises in the cluster do not show any innovative behaviour either in technological improvements or in matters related to organization or marketing. One does not find traces of even adaptive innovations. Most of the firms buy the available machinery in the market. This does not mean that for decades, they have been using the same type of technology. In the early 60s, the firms were using hand operated machinery mostly. But eventually more automated technology became available and the enterprises started using them. But they do not go in for even the risk free latest technology. The enterprises do not search for innovative technology. The main source of information about the technology is the market. Machinery suppliers also provide information about new machines (Table 2.21).

Table 2.21

Source of Technical Innovation

Source	Percentage of Units
Market	94
Repair shops	2
Machinery Suppliers	6

A very small minority of firms has developed old technology and modified them in a marginal way in collaboration with repair shops. None of the units in the cluster has shown any inclination towards innovating either in quality or design. They are not even trying to keep up with the trend in the national market. Most of them take a very considerable time even in adopting the latest technology in the market. They appear to be very conservative and do not think of changing the product style or quality. Unless they are sure of the market response, they would not even adopt designs that are in fashion in the rest of the country. Sometimes, however, units in the cluster bring about marginal changes in the design of the products. This is often done in response to demand from customers who had opportunity to observe new designs either abroad or in other parts of India. Here also the firms do bring about design changes which are easier and which do not involve significant additional costs

The organization of production in the cluster has not changed even marginally during the last 5 decades at all. There has not been any decentralization of production decisions. Most of the decisions are centrally taken by the entrepreneurs themselves and the employees are not involved. Some of the loyal workers do give suggestion on organisational matters to the entrepreneurs. But it is the pleasure of the entrepreneur to accept or reject the decision. Only 4 % of the sample units reported some minor changes in production organisation.

The cluster has mostly kept a blind eye towards process innovation. The process has remained more or less the same in the saw mills for decades. The plywood making units have tried to change the process marginally to cope with the market trend. But such innovations have not been significant enough to make them competitive in the market. It is not that the entrepreneurs are unaware of the different sources of innovation. They do not bring about any major innovation because they are not sure how the market will take it. Further, innovations are prohibitively costly and because of that the entrepreneurs are generally reluctant to introduce innovations. They are also not able to raise the huge finance required for innovation. Moreover, they are not sure whether they can recoup the investment through increased sales.

On the whole the entrepreneurs do not seem to be taking the initiative to introduce innovations for fear of increased cost and insufficient demand in the market. Only 34 % of the sample firms claimed that product quality improved at least marginally over the years. But 24 % percent of them are of the view that the quality has actually declined (Table 2.22). The units claim that they have some system of quality control. They generally instruct the workers to maintain quality at each stage of production (Table 2.23) . This is because quality standards are insisted on by the clients. Sometimes clients even assist the firms to maintain quality standards.

Table 2.22

Change in product Quality During the Preceding 5 Years

Change Characteristics	Percentage of Units
Declined	24
Remained the Same	36
Improved a Little	34
Improved a Lot	6

Table 2.23

Quality Control Procedures

Quality Control Measures	Percentage of Units
Final Inspection	98

Quality Awareness Training to Workers	100

Labour Market Linkages

We have already seen that nearly 80 % of the sample units are smaller in size. Most of the employment in the cluster is created within this sector. A little more than two thirds of the employees are males. Female employment is found mostly in the larger units (Table 2.24). It is mostly the clerical and accounting jobs that are engaged by women. Almost all the production related jobs are performed by men.

Table 2.24

Employment Pattern

Size Class	**Average Employment Per Unit**	
	Males	**Females**
0-4	4	0
5-9	5.7	1.1
10-19	9	2.6
20 +	14	6.5

The labour market for the cluster is largely confined to the local area. A majority of the enterprises employ workers from local area. But some of the saw mills employ skilled workers from Gujarat from where the industry came to strike roots in the cluster. In the plywood making units skilled workers are often brought from Orissa and Mangalapuram. But there is no community based segmentation in the labour market. Only 2% of the sample units are reported to be employing workers from the dominant community in the locality. This shows that community based networking is not found in the labour market.

The cluster has not been, however, expanding in terms of employment. Forty eight percent of the sample units account for a decline in employment during the last 5 years (Table 2.25). Only 22 % reported an increase in employment while 30 % reported *status quo*. Similarly, labour turnover in the cluster was also not significant. Only 10 % of the units reported any labour turnover during the past 5 years (Table 2.26). As much as 62 % of the units did not experience any labour turnover, while 28 % said that they had a decline in labour turnover. Much of the labour turnover was in the medium sized units employing between 10 and 19 workers (Table 2.27). There was no labour turnover at all in the lowest size class.

Table 2.25

Distribution of Units Reporting Change in Employment

Direction of Change	Percentage of Units
Increase	22
Decrease	48
Remained the Same	30
All	**100**

Table 2.26

Distribution of Units By Labour Turnover

Direction of Change	Percentage of Units
Increase	10
Decrease	28
Remained the Same	62
All	**100**

Table 2.27

Size Distribution of Units by Labour Turnover

Size Class	Percentage of Units Reporting			
	Increased	**Decreased**	**Remained the Same**	**Total**
0-4	0	0	100	100
5-9	8	27	65	100
10-19	25	37	38	100
2 +	0	50	50	100
All	**10**	**28**	**62**	**100**

In spite of the fact that the labour market is not at all tight in the cluster, as much as 38 % of the units experience difficulty in obtaining skilled workers (Table 2.28). This is true of almost all size classes. But the highest size class found it absolutely difficult to get skilled workers. Some of the units, particularly the largest ones even complained about the difficulty of getting unskilled workers. Such units constitute nearly 12 % of the total sample units.

Table 2.28

Distribution of Units Finding Difficulty in Getting Workers

Size Class	Percentage of Units Reporting Difficulty in Finding	
	Skilled Workers	**Unskilled Workers**
0-4	67	33
5-9	27	5
10-19	63	25
20 +	100	50
All	**38**	**12**

Performance

The performance of the cluster in terms of increase in output has been quite dismal during the last 5 years. Only 22 % of the firms accounted for an increase in output. Fifty eight percent of the firms experienced no change in output while the remaining 20% experienced a decline in output (Table 2.29). In the lowest size class even a single unit did not experience an increase in output; on the contrary, as high as 67% of the units experienced a decline in output. In terms of performance seen as output increase, the largest size class excelled all the others. But they account for only 4 % of the sample units. Even in the case of exports the performance has been far from satisfactory. Of the 3 units which report a small export every year, one accounted for a decline in output, one an increase and the remaining one maintained *status quo*. As the output level has been stagnant, so also was the level of capacity utilization in the cluster. Only 12 percent of the sample units went in for any increase in capacity utilization. In respect of 56 % of the units the level of capacity utilization declined (Table 2.30). The decline in the level of capacity utilization was directly proportional to the firm size.

Table 2.29

Distribution of Units by Change in Output

Size Class	**Percentage of Units Reporting**			
	Increased	**Constant**	**Decreased**	**All**
0-4	0	33	67	100
5-9	22	19	59	100
10-19	25	13	62	100
20 +	50	50	0	100
All	**22**	**20**	**58**	**100**

Table 2.30

Distribution of Units by Change in Capacity Utilisation

Size Class	**Percentage of Units Reporting**			
	Increased	**Constant**	**Decreased**	**All**
0-4	0	33	67	100
5-9	10	27	63	100
10-19	13	38	49	100
20 +	0	100	0	100
All	**12**	**32**	**56**	**100**

What is striking is that though the output did not increase over the years and the technology remained the same, most of the units made reasonable profits. While 32 % of the firms made good profits measured on a five point scale, the remaining 68 % made reasonable profits (Table 2.31). There is not much variation in the percentage of firms reporting profit levels across size classes. It is remarkable that none of the firms reported that they made any loss. Similarly none of the units made very good profits as well. But the profit levels did not show any increase over the years. During the preceding 5 years 80 % of the units accounted for a decline in profits. The decline in profit levels was inversely related to size classes. Thus the largest units had it better than the smaller units (Table 2.32).

Table 2.31

Distribution of Units by Profit Levels

Size Class	Percentage of Units Reporting					
	Very Good	Good	Reasonable	Nil	Loss	All
0-4	0	33	67	0	0	100
5-9	0	32	68	0	0	100
10-19	0	38	65	0	0	100
20 +	0	0	100	0	0	100
All	0	32	68	0	0	100

Table 2.32

Distribution of Units by Profit Trends

Size Class	Percentage of Units Reporting			
	Increased	Constant	Decreased	All
0-4	0	0	100	100
5-9	0	19	76	100
10-19	0	25	75	100
20 +	0	50	50	100
All	**0**	**20**	**80**	**100**

It is common knowledge that profitability and output are functionally related to Investment. But investment has increased only in the case of 29 % of the units in the cluster. But no unit has reported any decline in investment. However, a majority of the firms in the cluster does not consider it worthwhile to go in for additional investment. Even those units which made additional investment did not do it on a big scale. Much of the increase in investment has been in capacity expansion, product development and acquisition of land for the factories (Table 2.33).

Table 2.33

Trends in Investment in Functional Areas

Areas of Investment	Percentage of Units Reporting Trends in Investment			
	Increase	**Constant**	**Decrease**	**Total**
Capacity expansion in local area	35	58	7	100
Capacity expansion outside local area	14	86	0	100
Product development	27	73	0	100
Better machines and equipment	13	87	0	100
Marketing	7	93	0	100
Shops	0	100	0	100
Supplier firms	0	100	0	100
Real estate	51	49	0	100
Savings	100	0	0	100
All	**29**	**71**	**0**	**100**

The sample units in the cluster are operating under a number of constraints. Most of the complaints are related to infrastructure such as insufficiency of manufacturing sites, inadequate and low quality supply of electricity etc (Table 2.34). But the cluster units prefer to have some policy intervention by the government in certain areas to mitigate their hardship to some extent. The areas they strongly emphasise are: credit lines for small and medium enterprises, tax incentives and macroeconomic stability in the country (Table 2.35).

Table 2.34

Infrastructural Constraints

Type of Infrastructure	Percentage of Units
Manufacturing Site	100
Electricity	88
Telephone	24
Roads	26

Table 2.35

Expected Policy Intervention

Nature of Intervention	Percentage of Units
More technical training	2.0
Improvement in basic education	0
Support for hiring specialized consultants	2.0
Credit lines for small enterprises	86.0

Tax incentives for small enterprises	92.0
Greater macroeconomic stability	92.0
Others	24.0

Putting all threads together shows that the cluster has been stagnant by and large. The number of units has not been increasing since the mid-nineties; on the contrary the available evidence shows a decline in the number. Neither the output, nor the profit has been increasing. The cluster has not been able to attract new investment in vital areas. Inter-firm cooperation, the *differentia specifica* of small firm clustering is quite weak among the units. There has not been any drive towards innovation, even of the adaptive type. In spite of these bottlenecks, the units in the cluster have been making reasonable profits, though not at an increasing rate. This perhaps is the secret of the survival of the cluster against all odds.

Chapter 3

The area extending from shornur to Palghat in northern Kerala is the abode of the agricultural implements cluster. The two factors that led to the emergence of the cluster in this locality are cheap availability of good quality raw material and skilled labour. The railway loco shed at Shornur used to have plenty of rail scrap that are excellent for the making of agricultural implements. These railway scraps are made of good carbon steel that can stand heat treatment of very high temperature. During the early part of the last century, steel industry was not well developed in India and railway scrap used to be the chief source of raw materials. The *karuvan* community of Shornur and the surrounding areas used to supply the necessary skilled workers for the industry. Another factor responsible for the origin of the industry in this particular region was the presence of Mr. C.K. Menon who was trained in metallurgy in Sheffield. Mr. Menon who returned from Sheffield after graduation in metallurgy, though was offered a good job with the Tatas, declined the offer and decided to help the local community by setting up metal industrial units. In 1929, he set up the first metal working unit in Shornur. As he was not an entrepreneur himself, he did not stick to the unit. After the unit had survived the teething trouble, he left the unit and was instrumental in setting up another unit. He made use of the skills of the technical staff at the Railway yard in Shornur for the establishment of the industry.. Later Mr. Menon brought a rich man from Mysore to set up the South Indian Metal Company at Shornur. After a while he left himself for Mysore and assisted in setting up a metal unit in Mysore. After a brief stay at Mysore, he came back to Shornur again and was responsible for establishing the Sree Narayana Metal industry. He was also with the Kumar Industries, Edathara for a brief period. The role of C.K. Menon had a parallel in Beden Wurttemberg, the German industrial district where Ferdinand Von Steinbeck actively supported the development of specific crafts in the middle of the 19th century. Increasingly more and more units got set up in the region. The demand for the product of the cluster shot up with the growing agricultural activities in the state.

The W.W. 11 gave a boost to the industry in the region. During the war, to facilitate the movement of the army, it became necessary to clear the bushes and woods. This increased the demand for suitable implements. Another factor that acted as a demand booster was the import substitution industrialization strategy adopted by the government of India since the 50s. Import substitution encouraged ancillarisation and this indirectly helped the agricultural implements manufacturing on a big scale. The industry had its best growth in the 60s and the 70s. The units in the cluster made very high profits and this resulted in a mushrooming of new units after the 70s.

The cluster consists of all size classes of units although the majority belongs to the tiny sector. There are nearly 25 large units including a public sector company that employs more than 50 workers. There are about 200 small scale units which are registered at the Palghat District Industrial Centre. They on an average employ 10 workers. The tiny units are estimated to be 300 working mostly in homesteads. The large units were all set up during the hey day of the industry with huge investments and large areas of land. Most of these units got established before the 70s. Some of the large units grew from the small.

The small start up units need only a small amount of capital, a small shed and a few traditional tools like a lathe. The tiny units mostly work on the premises of the homes of the owners and employ two workers or less, mostly family labour.

The manufacturing process prevalent at the cluster is very traditional and involves several labour intensive stages. The railway scrap obtained from the Shornur Railway Yard is first cut into smaller pieces. They undergo rough forging in power hammer as the next step. Then they are subjected to hand forging for better finish. The next stages are grinding, tempering, cutting and polishing. After this the iron pieces are used to make various implements and surgical instruments.

The labour process in the industry is very laborious. Highly skilled workers work under hazardous conditions. They are exposed several hours to heat and fire. The skilled workers come from the local *Karuvan* community who are traditional black smiths. During the initial stages there was a plentiful supply of labour at cheap rate. Eventually wages went up. Some of the workers earn as much as Rs. 600 per day now. Such workers prefer to work at piece rates in order to earn a high compensation. They do not accept regular employment with any unit. The factory environment is highly polluted with the air full of char coal particles. The hazardous working conditions dissuade the younger generation from seeking jobs in this industry. Education has helped their mobility. The younger generation has largely gone out of the state to Mumbay and Chennai in search of better white collar and blue collar jobs. Some of them have obtained jobs in large metal working factories in these cities. Consequently the 90s witnessed a severe labour shortage in the cluster. This was the period, when the agricultural sector also experienced a labour shortage in Kerala (Sukumaran Nair, 1997). Therefore, in order to attract workers, the entrepreneurs had to give advances ranging from Rs. 5,000 to Rs. 25,000 that often could not be recovered from their wages. The workers used to play opportunism by deserting their present employers even before the advances were fully paid off. Some times while being on the regular pay roll of one factory, the workers clandestinely work for others for higher wages. As a result, none of the units, even the larger ones seem to be ready to invest in worker training. As the workers are not committed to the organization and often resort to opportunistic behaviour, investment in training is considered by entrepreneurs to be a waste. It is mostly on the job training that is prevalent in the cluster.

By the turn of the present century, the labour situation has changed considerably. The slow down in industrialization in the country in the second half of the nineties rendered many skilled workers in the metropolitan cities jobless. They came back to their villages and entered the local labour market which mitigated the shortage of labour to some extent.

A wide variety of implements are produced in the cluster. They are mainly of three types. The main type is estate tools which include axes, pick axes, sledge hammers, shovels, sickles, digging forks, mammatty forks, spades, crow bars, felling knives etc. The garden tools consist of garden shears, secature, kokra, weeders etc. The third type is mainly cutlery items consisting of scissors, knives, pans etc. A late entry into the cluster is surgical instruments produced in nearly 150 units spread over the cluster. The

implements produced in the cluster are of different size, shape and weight to suit to the regional requirements and tastes in the different districts of Kerala and the neighbouring states.

The technology used in most of the units in the cluster is largely traditional. Some of the large units have more sophisticated technology such as neumatic power hammers, pre forgery machines and gas cutting and power forging machines. There are a couple of units that export implements to Europe and African countries. They have designed their own machinery to produce according to the requirements of the overseas customers. The relatively small units have not gone in for technological improvement as it would require huge investments and necessitate the availability of consistently high quality steel. The smaller units are generally of the view that the traditional technology ensures better quality of the product than the modern.

The markets for the products are generally the different districts, particularly the northern districts of Kerala and the neighbouring states of Tamil Nadu, Karnataka and Andhra Pradesh. A very few units have access to international markets. The marketing within the country is mainly through agents and sales representatives. The commission paid to the agents varies from 3 to 5 %. Besides they offer a trade discount ranging form 15 to 40 %. However, the larger units who have to pay a purchase tax for raw materials and central excise duty for the final product offer relatively smaller discounts to the trading agents while the smaller units who avoid and evade taxes pay a higher trade margin. Such high margins are offered because of the high competition among the producers. The tiny units sell their products through informal channels. The conductors of the long distance private buses are often their agents who reach the product at distant markets. This helps them to keep the transportation cost very low and sell their products at a lower price. The units that export certain proportion of their products keep even the addresses of their clients, let alone the type and quantity of output exported as a closely guarded secret for fear of intimidation by their competitors.

The producers have their own Industrial Associations. The 12 big units are members of the Kerala Agricultural Implements Manufacturers Association. They do not have small producers in their association as the interests of the large and the small are very different. The main objective of the association is to set uniform price for the products and uniform discount rates to avoid unhealthy competition. They also use the association for lobbying with the government to reduce taxes and to obtain other concessions. The small units are members of the Small Industries Association where small units from other industries are also members. There is very little interaction between the large and the small units. There is also the Small Industries Cooperative Society that provides mutual help and assistance to the smaller units.

Though the producers are members of trade associations, inter-firm collaboration is generally lacking among the units. The large units have their association for certain limited purpose and they are always in competition and do not share any kind of information either related to technology or markets.

Each one has a niche market within the country or abroad and they nurture the market secretly. The bigger units have engineers among the employees, but very little R&D efforts are made. They often produce according to the design provided by the over-seas clients, but it does not have any spillover effect on the cluster due to the lack of inter firm cooperation. The larger firms some times subcontract certain work to smaller units. After rough forging the iron in the power hammer, it is given to smaller units for hand forging at pre determined rates. Hand forging is supposed to increase the quality of the product. Machine forging cannot get the same quality. But such subcontracting does not lead to quality inter firm relations or innovation.

The larger units cooperate mainly to obtain concessions from the government. Neither do they collect information on technology and markets nor do they share such information with each other. Some of the smaller units subcontract certain kinds of work as they do not have sufficient space to carry out all works in their factory premises. Steel is a bulky raw material and requires a lot of handling space that the smaller units do not have. The nature of competition among the smaller units is also quite unhealthy. The tiny units who do not have any secret to safe guard still do not interact with one another. They generally specialize in the making of a few implements with their traditional technology and do the entire process in their own units.

There is some degree of competition between the small and large units based on price. The smaller units because of their low establishment cost, informal nature of production and ability to avoid taxes, are in a better position to offer higher trade margin to the sales agents to get their products move faster in the market. As they do not have the capacity to hold stocks, they prefer to dispose of the products in the market as early as possible at a premium price.

Though no specific cluster policy has been followed either by the central, state or provincial governments, there has been some public provisioning of services in the cluster. In the early 60s a Small Industries Service Institute (SISI) was established at Shornur. It used to offer pre-forging facility to the small and tiny units at a nominal rent. Later in the mid 90s, consequent to the central government's policy of closing down loss making units, the Shornur SISI was closed down. This was a major blow to the small producers in the cluster. Another support to the small producers is the Shornur Metal Industries Ltd, a public sector company. It used to give technical advice and training to the needy in the cluster. This unit is now in the red and is facing the threat of closure.

There are some private sector units in the cluster that provide facilities analogous to the ones provided by the SISI. But the charges for using the facilities are three times that of the SISI. The association of the smaller units applied pressure on the government to re-open the SISI, but did not meet with any success. Several proposals have been made to the government for the revival of the SISI. One of those was to take over the SISI by the Small Industries Cooperative Society. The other proposal is that the Shornur Municipality should take over the Institute. A third one is that the Metal Industries Ltd should take it

over. Though negotiations have been going on for the last 10 years, nothing concrete has happened so far.

Though the industry had a good time till the late 80s, the 90s marked its decline. The reasons are wide ranging. The condition of cheap availability of railway scrap is no longer there, as Shornur Railway yard lost its importance. Moreover, now a days, the railway scraps are auctioned. The auctioneers get the scrap at a low bidding as they are said to be have certain underhand dealing with the railway authorities. These auctioneers resell the scrap to the local manufacturers at higher prices. Further, the railway scrap has found alternative use in the manufacture of rolling shutters and hence the cheap availability has declined. Raw steel available from the steel mills is expensive. Of late, there has been tough competition from the Tatas and the north Indian manufacturers. Implements from the Tatas are available in the market at lower prices. The general industrial stagnation of the 90s and declining agricultural prices affected the demand for the products. The 16 % excise duty and the 12 % purchase tax on fuel added fuel to fire. Eventually more efficient modern machines such as JCB that replaced the pick axe and stone crushers that replaced sledge-hammers etc. appeared in the market. Over and above, the stagnant technology and lack of innovation led to the further slow down of the cluster.

However, in response to the sagging demand and mounting costs of production some amount of diversification has taken place in the cluster. As many as 150 surgical instruments manufacturing units have sprung up in the latter half of the 90s. Most of such units were started by individuals who were formerly employees of surgical instruments manufacturing factories at Chennai, Bangalore, Mumbai etc. They could start the units with a small capital, often the retirement benefits they received from their former company. Most of the units are at the homestead of the owners. What all they need is a grinding motor, drill, air blower, a few dies and a few hand forging and finishing tools. Some of them have employed an extra hand in their units. The hospitals and shops mostly located in Coimbatore and other parts of S. India provide these small units with photocopies of catalogues of the instruments obtained from big factories in Europe. They manufacture according to these designs and supply to the clients. The big clients operate through representatives who are nearly 200 in number. The representatives bring orders to the small units and take the finished products to the clients in big cities and obtain commission as high as 35 % of the price. Some producers sell directly to shops in Coimbatore. Some of the units are specialist manufacturers of dental instruments. As the process involved is simple and less expensive, these units are able to carry on despite the competition from units in the Punjab and Pakistan. Some of the units give the final finishing work to subcontractors who have better tools. A major problem with the small units is that there is no standardization and consistency in their output. As the units function informally, no banks provide them with loans. Similarly, as the surgical instruments manufacturers are tiny and located in the homesteads, they do not have any trade association.

Section 11

Empirical Analysis

In the previous section, we argued that it was the cheap and plentiful availability of raw materials and skilled labour hailing from the local Karuvan community that led to the origin of the agricultural implements cluster in Shornur. Naturally one would expect the entrepreneurs to be from the local community with considerable experience in the field. Surprisingly none of the entrepreneurs surveyed has any previous experience in the field of agricultural implements manufacturing. All of them came to this industry because they thought that there was an opportunity here to make a living and earn a profit. Only 8.5 % of the entrepreneurs had even a business background (Table 3.01). Thirteen percent of them were previously technical workers in some establishments. The rest of them were unemployed and found a greener pasture in the agricultural implements manufacturing sector existing in the area.

Table 3.01

Professional Background of the Entrepreneurs

Professional Background	**Percentage of Units**
Same field	0
Business	8.5
Technical workers	13.5
No previous experience	78.7
Total	**100**

Though the cluster had its origin seven decades ago, a majority of the units got established only in the last decade of the last Century and this was also the period when the cluster faced its worst ever crises (Table 3.02). The majority of the firms are small in size (Table 3.03). Thirty two percent of them employ less than l4 workers. Only 15 % employ more than 20 workers. Given the relatively small size of firms in Kerala, it is remarkable that more than 8 % of the units in the cluster employ more than 100 workers.

Table 3.02

Distribution of Units by Period of Establishment

Period of Establishment	**Percentage of Units**
Before 1970	6.8
1970-1990	36.0
After 1990	57.2
All	**100**

Table 3.03

Size Distribution of Units by Number of Workers

Size Class	Percentage of Units
0-4	32.2
5-9	37.3
10-19	15.3
20-49	3.4
50-99	3.4
100 +	8.4
All	**100**

The implements that are manufactured in the cluster are mainly for family farms, though some units produce for industrial purpose. Mammatties used for land digging is the chief product (Table 3.04). The units in the cluster also produce other implements such as bill hooks, chistles, scissors, pick axes, sledge hammers etc. Other minor implements like sickles, etc. are also produced according to demand that has been on the decline in tune with the decline in paddy production in the state.

Table 3.04

Distribution of Units According to Product

Main Product	Percentage of Units
Mammatties	33.9
Bill Hooks	25.4
Chistles	6.8
Scissors	11.9
Pick Axes	6.8
Sledge hammer	6.8
Others	8.4
All	**100**

Backward Linkages

The degree of division of labour is not very high in the Shornur cluster. Though as much as 47.5 percent of the units are engaged in subcontracting work, it does not seem to be conducive to inter firm collaboration. A look at Table 3.05 bears adequate proof to this observation. Of the subcontracting firms, 45.5 % do engage in subcontracting because they have a major savings in premises and machinery. Again 23 % of them subcontract work to take advantage of the lower wages of the smaller firms. This is nothing but the “sweat shop” strategy. Some of the units, say, 13.7 % subcontract the work to pass on the impact of demand fluctuation to the subcontractors. Only less than 10% of the units do subcontract work to take advantage of the greater efficiency of the subcontractors.

Table 3.05

Reasons for Subcontracting

Reasons	Percentage of Units
Irregular demand	13.8
Savings on Premises and machinery	45.4
Greater efficiency of subcontractors	9.1
Lower wages of subcontractors	22.6
Others	**9.1**

As the subcontracting relationship does not amount to decentralization of production in the true sense, the various services that are given to subcontractors by the customer firms is worth examining. Only a negligible percentage of units provide facilities such as lending of machines or repair and maintenance services to subcontractors. Most of them do provide advance payments to the subcontractors and also transport the product to their premises (Table 3.06).

Table 3.06

Facilities Provided to Subcontractors

Type of Facility	Percentage of Units Reporting	
	Frequently	Occasionally
Advance payment	20.3	11.9
Organization of production	0	6.8
Lending of machines and equipments	1.7	5.1
Repair/ maintenance of machinery & equipment	1.7	3.4
Training of workers	0	1.7
Transportation of parts or products	23.8	3.4

Even the linkages of the units with the capital market do not seem to be very thick. Only 43.4 % of the firms reported to have accessed the capital market for borrowing (Table 3.07). No correlation is found between incidence of borrowing and size class. However, the smallest units have only limited access to borrowing facility as they do not have the required collateral to be pledged with the lending institutions. It is seen further that a majority of the units have to find out their own capital for running the business. This obviously is a constraint on expansion of business and innovative activities.

A further observation is that for technological and organizational matters also, cooperation between firms is not very common. Most of the work such as repair of machinery, accounting, costing of products, selection of personnel etc. is carried out by the units themselves internally (Table 3.08). Only for repair of machinery, they depend on others in the local area and that too when they do not have the required expertise within their firms. But here are no specialsed firms in the area providing such services.

Table 3.07

Percentage Distribution of Units Borrowing Capital

Size Class	Percentage of Units
0-4	31.0
5-9	54.0
10-19	45.0
20-49	40.0
50-99	62.5
100 +	34.0
All	**43.3**

Table 3.08

Arrangement of Services

Type of Services	Percentage of Units Reporting		
	Own Workers	Others in Local Area	Others Outside the Area
Repair of Machinery	66.1	32.8	1.7
Accounting	98.3	1.7	0
Costing of products	96.6	0	3.4
Selection of Personnel	96.6	3.4	0

The sample firms are lacking in certain other crucial areas of inter firm relations such as provision of assistance to parent firms in respect of tips to the solution of problems arising from the products, suggestions for quality and design improvement etc. Even suggestions for certain desired characteristics of the products are also not found to be provided. Only less than one quarter of the supplier units reported the provisioning of such services (Table 3.09).

Table 3.09

Type of Assistance Provided by Supplier Units

Type of Assistance Provided	Percentage of Units
Solve problems related to products	16.9
Provide suggestions for product improvement	23.7
Suggest required characteristics of products	5.1

Forward Linkages

A very large proportion of the output in the cluster is marketed through the channels of wholesalers and sales representatives. Nearly 47.5 percent of the output is sold directly to wholesalers and 32.8 % through sales representatives who are nearly 500 in number in the area (Table 3.10). Only 20 percent of the output goes directly to the consumers. It is the small and tiny units that have direct linkage with the consumers. While considering the markets where the output is sold, it is seen that 11% of the output is disposed in the local market. As much as 50 % of it goes to different part s of Kerla and 35 % target the national market. A very small proportion of the output is exported, but exports are done by only a couple of large firms in the area. The percentage of output exported is only 3.7 (Table 3.11)

Table 3.10

Percentage of Output Sold Through Different Agencies

Agencies	**Percentage of Output**
Direct to wholesalers	47.5
Direct to consumers	20.0
Through sales representatives	32.5
Total	**100**

Table 3.11

Sales by Markets

Different Markets	**Percentage of Output**
Local area	11.0
Rest of Kerala	50.0
Rest of India	35.3
Exports	3.7
All	**100**

The main competition for the units is in the local area (Table 3.12). As much as 91.5 % of the firms face severe competition in the local area only. They say they do not have to face so much competition in other markets. Those who reported to be facing competition in other parts of the state are only 11.9 % of the sample units. Twenty two percent of the units reported that they have to face competition in other parts of the country.

Table 3.12

Location of Competition

Location	**Percentage of Units**
Local area	91.5

Local area and rest of Kerala	11.9
Kerala and rest of India	22.1

Interestingly, the degree of competition faced in the markets is inversely related to the relative share of the total sales in the markets. Only 11 % of the output is sold in the local area, but as many as 92 % of the firms feel that they face the toughest competition in that market. Though as high as 50% of the output is sold in the rest of the state, only 12 % of the firms face competition in that market. Similarly the main competition is from small units, though there is considerable competition from larger units also (Table 3.13). As much as 32 % of the units face competition from large enterprises. Other factors like innovation, speed and punctuality of delivery etc. do not play any role in competition.

Table 3.13

Main Competitors

Main Competitors	Percentage of Units
Large Units	32.3
Medium Units	18.7
Small Units	64.6

Table 3.14

Nature of Competition

Nature of Competition	Percentage of Units
Price	22.1
Quality	68.0
New design	0
Speed & punctuality in delivery	0

Though the competition from small units is based on price, it is generally the opinion of the units that the main competition is based on quality (Table 3.14). Sixty eight percent of the units report that they have to maintain quality to be competitive in the market. Only 22 % of the units say that their competition is largely based on price.

Horizontal Linkages

There is a certain degree of horizontal cooperation between the sample units in the cluster. A little more than 20 % of the units share contract with others. Similarly nearly 55% of the entrepreneurs are members of business associations. But all of them are not active members. Membership in the association appears to be a matter of formality. A large majority of the members does not approach the association for any benefit

(Table3.15). A small percentage of the units approach the association for advice on legal matters. Some of the members find the association useful in lobbying with the government. Beyond that the associations do not seem to be playing any key role in fostering inter-firm cooperation in the cluster.

Table 3.15

Purpose of Membership in Business Associations

Purpose	Percentage of Units Reporting		
	Often	Occasionally	Never
Advice in legal matters	3.4	8.5	78.2
Information on other enterprises	5.1	1.7	81.6
Courses & seminars	0	3.4	85.0
Bargaining with trade unions	0	3.4	85.0
Information bulletins	0	0	88.4
Lobbying with the government	5.1	8.5	78.2
Others	3.4	13.6	71.4

However, 66 % of the entrepreneurs said that they often meet and discuss various issues related to business. Though various subjects crop up during their conversations, the chief topic remains to be entrepreneurial (Table 3.16). Among the entrepreneurial subjects discussed, the major ones are related to markets and customer wants and the problems in obtaining inputs for the industry (Table 3.17). Technology or innovation does not figure in their conversation at all.

Table 3.16

Topics of Conversation When Entrepreneurs Meet

Topic of Conversation	Percentage of Units
Social activities, sports etc.	1.7
Civil & political affairs	1.7
Entrepreneurial Topics	78.2
Others	10.2

Table 3.17

The Entrepreneurial Subjects Discussed

Entrepreneurial subjects	Percentage of Units
Material inputs	22.1
Equipments & components	5.1
Markets & customer wants	57.8
Subcontracting	5.1

Others	10.2

Even though the entrepreneurs do meet and discuss business related matters, only a very insignificant minority shows any interest in actual cooperation with other firms (Table 3.18). Only 17 % of the units exchange ideas related to markets and inputs with others (Table 3.19). Less than 3 % of the entrepreneurs ever visit the production sites of others in the area and that too only occasionally (Table 3.20). Most of the interaction between firms is mediated by familial and neighbourly relations. Business requirements do not seem to be playing any major role in this matter.

Table 3.18

Areas of Cooperation with Other Units

Areas of Cooperation	Percentage of Units
Marketing	1.7
Purchase of Inputs	1.7
Lending Machines	1.6
Others	1.2

Table 3.19

Frequency of Exchanging Ideas

Frequency	Percentage of Units
Never	81.3
Often	1.7
Occasionally	17.0

Table 3.20

Frequency of Visiting Other Production Sites

Frequency of Visits	Percentage of Units
Never	69.4
Occasionally	28.9
Often	1.7

It was noted during the survey that sometimes employees in units in this cluster leave their parent firms and set up their own business. Fourteen percent of the units report that their past employees are now owners of business enterprises of the same kind in the cluster. But only 10% of them maintain any kind of business relation with such spin off firms.

In point of fact, there is some degree of decentralization in production in the cluster. Slightly above 50 % of the units decentralsie their production activities. Less than 10 % of the units have more than one establishment. Others outsource some of the production processes to other units in the cluster. There are 11 % of the enterprises that perform part of the activities at home. Such activities are mostly of a secret nature such as winning new contracts, contacting prospective customers, preparing income tax statements etc.

A large majority of the enterprises have their origin in the local area (Table 3.21) Only a little less than 7 % of the units have been set up by entrepreneurs from outside the region. Such entrepreneurs mostly belong to the small and tiny groups. But a majority of the entrepreneurs do not consider it necessary to belong to the locality for success. They also do not find it necessary to belong to the leading local community to be successful.

Table 3.21

Percentage Distribution of Entrepreneurs by Area of Origin

Size Class	Percentage of Units		
	Local Area	**Outside**	**Total**
0-4	89.5	10.5	100
5-9	91.0	9.0	100
10-19	100	0	10
20-49	100	0	100
50-99	100	0	100
100 +	100	0	100
All	**93.2**	**6.8**	**100**

Technological Change and Innovation Possibilities

It looks like that no technological innovation has taken place in the Shornur cluster. There have been some minor modifications in the design of the products. As different regions generate demand for different types of implements, necessary modifications in the designs to suit to the local requirements are often brought about. However, no significant design changes have been implemented so far in the cluster. Even in the surgical instruments making units, there has not been any significant innovation. They produce according to the designs provided. But it is commendable that they successfully imitate the designs given in the foreign catalogues supplied by the local customers.

While 55 % of the units buy new machinery from the market, smaller units most often go for second hand machinery. However, some 7 % of the units have improved upon the second hand machinery for better efficiency. A little above 3 % of the units have successfully adopted the designs supplied by others. Almost every such design change takes place according to the specification of the clients. Seventy eight percent of the units reported that the clients played a major role in design changes.

Even the quality of the product has not changed significantly in the cluster over the preceding 5 years of the survey (Table 3.22). Fifty five percent of the units are of the opinion that the quality of the product remained the same over the period. Only 36 % of them said that quality improved even marginally over the years. In order to maintain quality, almost all the units generally make a final inspection (Table 3.23). Thirty seven percent of the units provide awareness training to their workers with respect to quality of the products. But this training is also carried out in house; the services of specialist institutions are never sought. A mere 5 % of the units resort to quality control on the request of the clients This clearly shows there is no abiding relationship between the units and their customers.

Table 3.22

Change in product Quality During the Preceding Five Years

Change Characteristics	Percentage of Units
Declined	3.4
Remained the same	54.2
Improved a little	35.6
Improved a lot	6.8

Table 3.23

Quality Control Measures

Quality Control Measures	Percentage of Units
Final inspection	98.3
Quality awareness training to workers	37.3
Total quality control	6.8

Most of the units do not have any reliable source of information on innovation (Table 3.24). Only 8.5 % of the firms ever had an opportunity to participate in a trade fair. Similarly the production organization did not change in any of the units in the cluster. Only 5 % of the firms made any attempt to change their internal organizational structure. None of the firms seem to be employing any modern management techniques or employing management specialists in the units.

Table 3.24

Sources of Information on Process Innovation

Source	Percentage of Units Reporting		
	Often	Occasionally	Never
Social occasions	0	3.4	96.6
Export agents	0	0	100
Machinery supplier	0	6.8	93.2

Exhibition	0	1.7	98.3
Repair workshops	0	1.7	98.3
Clients	0	6.8	93.2
Specialized publications	0	0	100
Enterprise visits	0	3.4	96.6
Experienced workers	0	5.1	94.9
Consultants	0	3.4	96.6
Libraries or information service	0	1.7	98.3

Labour Market Linkages

Though the Shornur cluster during its initial years drew heavily on the local workers, it is no more the case now. Only 55 % of the units reported that they employ a majority of their workers from the local area. Moreover, in the initial stages, most of the employees in the cluster were from the local Karuvan community. But now only 53 % of the units employ a majority of workers from the local community.

Table 3.25

Distribution of Units According to Change in Employment

Direction of Change	**Percentage of Units**
Increase	18.6
Decrease	25.5
Same	55.9
All	**100**

The cluster has not been in recent years a major provider of employment in the region. Fifty five percent of the units reported no change in employment in recent times (Table 3.25). Twenty six percent of the units reported even a decline in employment in recent years. Only 19 percent of the units reported an increase in employment.

Table 3.26

Distribution of Units by Labour Turnover and by Size

Size Class	**Percentage of Units**			
	Increased	**Decreased**	**Same**	**Total**
0-4	0	0	100	100
5-9	18.2	27.3	54.5	100
10-19	22.2	22.2	55.6	100
20-49	0	100	0	100
50-99	50.0	0	50.0	100
100 +	20.0	40.0	40.0	100

All	**15.3**	**23.7**	**61.0**	**100**

The labour turnover remained the same in a majority of the units. Labour turnover in fact declined in 24 % of the units. Only 15 % of the units reported any increase. It is mostly the relatively small units that maintained *status quo* in respect of labour turnover (Table 3.26).

Table 3.27

Pattern of Employment by Size and Gender

Size Class	Percentage of |Units	
	Males	**Females**
0-4	3.0	0.2
5-9	5.7	0
10-19	12.2	0
20-49	22.0	0.5
50-99	47.5	3.0
100 +	136.6	1.4

There is very little female employment in the cluster. Only in the larger units one finds some female employment (3.27). As the work is mostly physical and hazardous, it is difficult to expect women to enter the industry. Female workers are employed mostly in the accounting section and as secretaries.

However, a labour shortage is felt in the region. Almost all size classes of units report difficulty in getting skilled workers (Table 3.28). As much as 17 % of the units find it difficult even to get unskilled workers.

Table 3.28

Distribution of Units Finding Difficulty in Getting Workers

Size Class	Percentage of Units Having Difficulty in Finding	
	Skilled Workers	**Unskilled Workers**
0-4	84.5	10.5
5-9	86.3	18.2
10-19	100	11.1
20-49	100	100
50-99	50.0	0
100 +	100	20.0
All	**89.8**	**16.9**

Performance

Though the cluster has not been technologically vibrant, the output level has not been completely stagnant. As high as 32 % of the units reported an increase in output during the preceding 5 years of the survey (Table 3.29). The increase in output was quite remarkable in the case of larger units. Forty percent of the units reported that the output remained the same for the previous 5 years and it is the smaller units that have been largely responsible for this. The decrease in output has been also mostly in the case of smaller units. However, it is worth noting that only 27 % of the units reported a decrease in output on the whole.

Table 3.29

Distribution of Units Reporting Change in Output

Size Class	Percentage of Units Reporting Change in Output			
	Increase	**Same**	**Decrease**	**All**
0-4	26.3	36.7	37.0	100
5-9	27.3	40.9	31.8	100
10-19	33.3	33.3	33.3	100
20-49	0	0	100	100
50-99	50.0	50.0	0	100
100 +	80.0	0	20.0	100
All	**32.2**	**40.7**	**27.1**	**100**

A high 78 % of the firms reported that they make a reasonable level of profit. Another 10 % of the units make good profits while some of the larger units make very good profits even. It is, however, the smaller units that account for a larger proportion of profit making units. Lower tax liability, tax avoidance and low establishment costs are the chief reasons for their increased profitability. Similarly, nearly 20 % of the larger units made losses during the period of the survey. Though a good proportion of the units make reasonable levels of profits, only 9.6 % of the units experienced any increase in profit levels over the preceding 5 years of the survey (Table 3.30). Among the larger firms, 20 % accounted for an increase in profits. While 50 % of the units in general experienced a decline in profit levels, the decline has been more pronounced with respect to larger units (Table 3.31).

Table 3.30

Distribution of Units by profit Levels and Size

Size Class	Percentage of Units Reporting Profit Levels					
	Very Good	**Good**	**Reasonable**	**Nil**	**Loss**	**All**
0-4	0	10.5	89.5	0	0	100
5-9	0	13.6	77.3	4.5	4.5	100
10-19	11.1	0	88.9	0	0	100

20-49	50.0	50.0	0	0	0	100
50-99	0	0	50.0	50.0	0	100
100 +	20.0	0	60.0	0	20.0	100
All	**6.7**	**10.2**	**78.0**	**3.4**	**1.7**	**100**

Table 3.31

Distribution of Units by Profit Trend

Size Class	**Distribution of Units by Size and Profit Trends**			
	Increase	**Same**	**Decrease**	**All**
0-4	5.3	52.6	42.1	100
5-9	9.0	45.5	45.5	100
10-19	11.1	22.2	66.7	100
20-49	0	.0	100	100
50-99	0	50.0	50.0	100
100 +	20.0	20.0	60.0	100
All	**8.5**	**40.7**	**50.8**	**100**

A general stagnation is observed in respect of investment in the units. Only a small proportion of the units reported an increase in investment (Table 3.32). The increases in investments were mostly for expansion in machinery and equipment. Nearly 10 % of the units reported a decline in investment. A small proportion of the units, particularly the small and medium ones have reported an increase in capacity utilization over the last 5 years. A little above 40 % of the units experienced a fall in capacity utilization while as much units have accounted for *status quo* in the utilization of capacity (Table 3.33)

Table 3.32
Trends in Investment in Functional Areas

Areas of Investment	**Percentage of Units Reporting Trends in Investment**			
	Increase	**Same**	**Decreased**	**Total**
Capacity expansion in local area	30.5	66.1	3.4	100
Capacity expansion outside local area	13.6	76.3	10.1	100
Product development	6.8	84.7	8.5	100
Better machines & equipment	23.7	71.2	5.1	100
Marketing	8.5	91.5	0	100
Shops	1.7	89.8	8.5	100

Supplier firms	1.7	89.8	8.5	100
Real estate	0	89.8	90.2	100
Savings	3.4	83.1	13.5	100
Others	1.7	78.0	20.3	100

Table 3.33

Distribution of Units by Change in Capacity Utilisation

Size Class	Percentage of Units Reporting			
	Increase	Constant	Decrease	All
0-4	10.5	52.6	36.9	100
5-9	18.2	40.9	40.9	100
10-19	33.3	33.3	33.3	100
20-49	0	0	100	100
50-99	0	50.0	50.0	100
100 +	20.0	40.0	40.0	100
Total	16.9	40.7	40.7	100

Most of the units face various types of infrastructural constraints in their operation (Table 3.34). Thirty four percent of the units need additional land to expand their manufacturing activities, but land is not simply available at reasonable price. Adequate and ensured supply of electricity, a key infrastructurla input for the industry, is the most critical factor retarding capacity utilization in the cluster.

Table 3.34

Infrastructural Constriaints

Type of Infrastructure	Percentage of Units
Manufacturing site	34.0
Electricity	74.8
Telephone	5.1
Roads	5.1

The units in the cluster are generally of the opinion that there is no policy support from the government. On a number of issues , they prefer to have government support such as training facilities, credit lines to particularly small enterprises, tax incentives and over and above macroeconomic stability (Table 3.35)

Table 3.35

Expected Policy Intervention

Nature of Intervention	Percentage of Units
More technical training	66.3
Improvement in basic education	0
Support for hiring specialized consultants	3.4
Credit lines for small enterprises	86.7
Tax incentives for small enterprises	81.6
Greater macroeconomic stability	7.2
Others	28.9

Thus, the Shornur cluster, though by the very nature of it, holds out promises, its performance has been far from satisfactory. It has been just surviving. Beyond that the cluster did not show any dynamism. There has not been any effort to capture distant markets or compete with innovative products. The cluster came to exist to take advantage of the resource availability in the region. Once the resource base has depleted, the cluster is just puling on. It has not shown any tendency to adopt alternative growth strategies.

Chapter 4

The Shornur and Perumbavoor cluster under study present a picture of stagnation and pessimism. There is considerable similarity between these two clusters in terms of the key variables. Both the clusters lack innovative behaviour and inter-firm collaboration. Though the number of firms in both the clusters are above the critical minimum threshold, sectoral specialization and inter firm divisional of labour did not arise in the clusters. Clustering does not seem to be playing any role facilitating division of labour , diffusion of technical information and other kinds of cooperation between enterprises leading to higher over all efficiency. Both the clusters are resource based. The abundant availability of the key inputs, viz, the railway scrap for one cluster and the easy access to the forest timber for the other happened to be the chief contributing factor to the origin of these clusters. Absence of small scale service establishments, input suppliers, low purchasing power etc. seemed to have prevented innovation in the cluster thereby compelling them to adopt a sweatshop strategy .

Though by and large the clusters are similar in most respects, there are certain marginal differences between them. The Shornur cluster is more differentiated than the Perumbavoor cluster. In the former, more than 15 percent of the units are relatively large in the sense that they employ more than 20 workers. Clearly 8 percent of the units employ more than 100 workers. On the contrary, in Perumbavoor cluster, only 4 percent of the units employ more than 20 workers .Similarly more than 30 percent of the units in Shornur belong to the tiny group employing less than 4 workers . The number of such units are very small in Perumbavoor. Similarly, only 11 percent of the total output in Perumbavoor is sold in the local area whereas in the other cluster the percentage of such sales is as high as 59 percent.

In terms of performance, Shornur seems to be ahead of Perumbavoor. In Perumbavoor a majority of units reported a decline in output over the previous five years. In Shornur such units constitute only 27 percent. In terms of profitability also Shornur cluster performs much better than the other. As much as 17 percent of the units in Shornur make either “good” or “very good” profit. In Perumbavoor none of the units make any such profits. Similarly, in Shornur 8.5 percent of the units enjoyed an increase in profit level whereas in Perumbavoor none of the units had that privilege. Thus, one could say that Shornur is marginally more dynamic than Perumbavoor, though in terms of the defining characteristics of a cluster they are more or less the same.

In this context, a comparison of the clusters under investigation with the European clusters will be useful in understanding their stage of development and to think about the appropriateness of the policy instruments to be formulated. The chart that follows clearly shows that the Shornur and Perumbavoor clusters are in their rudimentary stage and much needs to be done to develop them to efficient and competitive agglomerations.

Comparison Between the European Clusters and the Clusters Under Investigation

Key Variables	Nature of Presence	
	In European Clusters	In Shornur and Perumbavor
Dominance of small and medium enterprises	Very strong	Very strong
Spatial concentration	Very strong	Strong
Sectoral specialization	Very strong	Very weak
Backward and forward linkages	Very strong	Weak
Horizontal linkages	Very strong	Very weak
Labour linkages	Very strong	Weak
Network of private and public institutions	Very Thick	Nil
Cultural and social linkage	Strong and homogenous	Weak
External economies	Very Strong	Weak
Cooperation between units	Very strong	Nil
Support services provided by business associations	Extensive	Weak

The success experience of European clusters prompt us to ask: why the clusters under review did not forge inter-firm relations , become innovative and develop efficiency and competitiveness ?.

As Cawthone (1995) wrote about the Tirupur cluster, the success of a cluster is contingent on the "propitious macroeconomic context "in which it is situated. The macroeconomic context in Kerala has been known for its inability to promote industrialization. As Enright (2000) argues in a different context, certain clusters which he describes as "latent" clusters, though may be endowed with a critical mass of firms in related industries sufficient to reap the benefits of clustering, may not have developed the level of interaction and information flows necessary to truly benefit from colocation. Lack of knowledge of other firms, lack of interaction among firms and individuals, lack of a common enough vision of their future, lack of the requisite level of trust for firms to find and exploit common interests could be some of the bottlenecks experienced by them. Such groups of firms do not think of themselves as a cluster and as a result, do not think of exploring the potential benefits of close relationship with other local organizations. In Shornur and Perumbavoor enterprise structures, private and public services, labour markets and social networks have not adapted to each other and their specific environment. This probably is the main reason for the absence in them of collective efficiency. Nadvi and Schmitz(1994) talk about "relatively disaggregated and less pronounced clusters of small firms" operating under relatively poor and unregulated working conditions with less extensive backward and forward linkages. Absence of opportunities in the formal sector often forces individuals to be self employed as small entrepreneurs. As they do not have any idea of areas of potential advantages of making

investment, they enter into areas where other firms are doing relatively well without making huge investments. The knowledge that units already exist and survive make them confident . They do not have to take risks by charting unexplored terrains. In both the clusters under study a majority of the entrepreneurs have no previous experience in business and particularly, almost nobody has experience in the same field. All of them came to this business seeing others doing relatively well. Many of the entrepreneurs interviewed expressed lack of interest in innovation fearing the market responses. They do not sufficiently realize that the market is in fact in the perception of the entrepreneur and that he can create market, if he wants. Though business associations do exist in these clusters, they do not seem to be successful in raising the clusters' competitive strategy through a range of support measures as has happened in Europe. These business associations have come up because there exists in Kerala the political culture of forming associations without much of a purpose. Ultimately these associations do not perform any useful purpose except doing weak lobbying with the governments. From these clusters no competitive advantage has emerged. All in all, entrepreneurs are not aware of the advantages of functioning in a cluster. They do not know that a cluster becomes successful only when they associate themselves with workers, traders, and other participants in the chain utilizing available and adaptable techniques and thus forming a collective production unit the scope of which goes beyond the individual enterprise. Mc Cormick (1998), Rasmussen (1991), Sverrisson (1992), Pedersen (1994) and others talk about such pessimistic clusters existing in Africa. Garofoli (1981,83)also has written about areas characterized by little interaction among firms specialized in the same products.

However, once there is a critical mass of small and medium firms in a cluster, policy intervention may be able to play a role in fostering networking and growth. Such policy initiatives have been proved successful in the Italian and other European cases (Brusco, 1990; Schmitz,1992b) . But a major problem with policies are generally path dependence. Cluster policy will have to depart from the beaten track and it is generally found to be difficult. Moreover, it may over lap other policy areas as there is bound to be a wide diversity in the context of cluster policies as engendered by the diverse requirements of the cluster. While general policies focus on the individual firms, cluster policy should address network issues. In other words, the thrust of the policy should be on the importance of networking, the targeting of selected networks and the focus of innovation (Raines, 2002). Resource sharing, joint purchase and use of machines, bulk buying of raw materials, sharing of skills etc. are possible if there is networking between the firms. In the Shornur case, if an adequate network is developed, the cluster as a collective unit can bid in the auction for railway scrap and get it at a much lower price than what they pay now. Also important is the creation of training centers and enhancement of existing facilities. After identifying common skill shortage, the centers can design courses appropriate for the workers. Another policy initiative that the government may provide in collaboration with or without the business associations is common facilities and services relevant for the cluster. In Shornur what is immediately possible is the reopening of the small industries service center which was very useful to the small and tiny enterprises. In all these things what is needed is a more comprehensive and integrated approach to local economic development keeping in view the growing

importance of localized policy design and delivery (Nauwelaers, 2001). In Italy, the birth place of industrial districts policy initiatives come from the local governments because only the local government can clearly understand the importance of the local cluster and hence its various needs. In Kerala , a massive movement was recently launched towards decentralized planning with great success. If more policy making powers are transferred to the panchayants, probably they could play an important role in fostering the rural clusters in Kerala that could substantially raise output and employment. The immense potential of a cluster based strategy of industrialization which is more appropriate for Kerala can then only be fully realized.

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