2017

RSDC
RUBBER SKILL DEVELOPMENT COUNCIL

SKILL GAP ANALYSIS

KARNATAKA

Chapter Scheme

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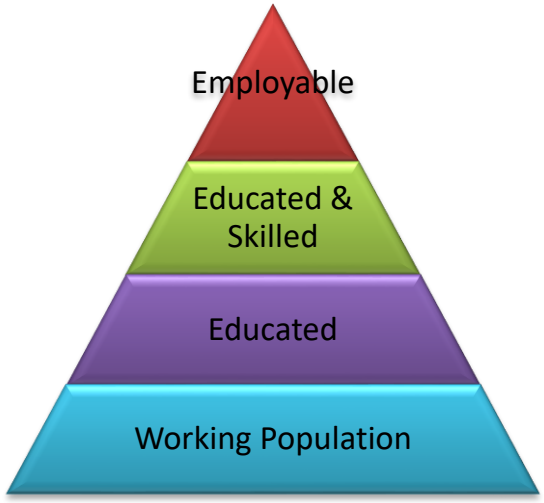
INTRODUCTION

Let's begin the challenging issue of skill gap prevalent in the industry by first understanding the concept of skill, its importance for an individual and the society, the relevance of skill development and the meaning of skill gap in the current scenario. An ability and capacity acquired through deliberate, systematic and sustained effort to smoothly and adaptively carry out activities or job functions involving ideas, things and people is how we may define *Skill* in the industrial set up. Skill has the power to break the vicious circle of poverty as it empowers an individual to become economically independent. *Skill converts a human into a human resource*. Presently, our country faces a dual challenge of paucity of highly trained workforce, as well as non-employability of large sections of the conventionally educated youth, who possess little or no job skills. Therefore, if we have to promote the development of our country then we should focus on skill development.

A1. Indian Economy: Status and Requirement

Why acquiring skill or skill development is so important for our economy? Today, India is one of the youngest nations in the world with more than 62% of its population in the working age group (15-59 years), and more than 54% of its total population below 25 years of age. Its population pyramid is expected to "bulge" across the 15-59 age group over the next decade. It is further estimated that the average age of the population in India by 2020 will be 29 years as against 40 years in USA, 46 years in Europe and 47 years in Japan. In fact, during the next 20 years the labour force in the industrialized world is expected to decline by 4%, while in India it will increase by 32%. This poses a formidable challenge and a huge opportunity. India needs to equip its workforce with employable skills and knowledge so that they can contribute substantively to the economic growth of the country. It is extremely important to work towards creating a skilled workforce to reap the demographic dividend. However, skills need to be an integral part of employment and economic growth strategies to spur employability and productivity.

Fig 1.1: Workforce Pyramid



The country, however, has a big challenge ahead as it is estimated that only 4.69% of the total workforce in India has undergone formal skill training as compared to 68% in

UK, 75% in Germany, 52% in USA, 80% in Japan and 96% in South Korea. While the debate on the exact quantum of the challenge continues, there is no disputing the fact that it is indeed a challenge of formidable proportion.

In addition, the number of people who enter the work force age group every year is estimated to be 26.14 million. Assuming an average labour participation rate of 90% (male) and 30% (female), at least 16.16 million persons will enter workforce and they all, except those opting for higher education, need to acquire skills. This will add another 104.62 million persons to be skilled in the next 7 years. Thus, it can be seen that 104.62 million fresh entrants to the workforce over next seven years (by 2022) will need to be skilled. In addition, 298.25 million of existing farm and non-farm sector workforce will need to be skilled, reskilled and upskilled. Thus, appropriate measures required to be taken keeping in view sheer numbers, sectoral division and spatial disbursal not only across the country but possible requirement in other parts of the world.

Moreover, with the increasing participation of women in the workforce in India, Skill development programmes should focus on both male and female before any imbalance emerges on gender count. In recent times, government's emphasis on skill development has received a big push in the country. A broad outline of the recent government initiatives is presented in the next section.

B1. Skill India

The main goal is to create opportunities, space and scope for the development of the talents of the Indian youth and to develop more of those sectors which have already been put under skill development for the last so many years and also to identify new sectors for skill development. The new programme aims at providing training and skill development to 500 million youth of our country by 2020, covering each and every village. Various schemes are also

Fig 1.2: Skill India

proposed to achieve this objective. The emphasis is to skill the youths in such a way so that they get employment and also improve entrepreneurship. The mission covers training, support and guidance for all occupations that were of traditional type like carpenters, cobblers, welders, blacksmiths, masons, nurses, tailors, weavers etc.

More emphasis will be given on new areas like real estate, construction, transportation, textile, gem industry,

jewellery designing, banking, tourism and various other sectors, where skill development is inadequate or nil.

The training programmes would be on the lines of international level so that the youths of our country can not only meet the domestic demands but also of other countries like the US, Japan, China, Germany, Russia and those in the West Asia. Another remarkable feature of the 'Skill India' programme would be to create a hallmark called 'Rural India Skill', so as to standardize and certify the training process.

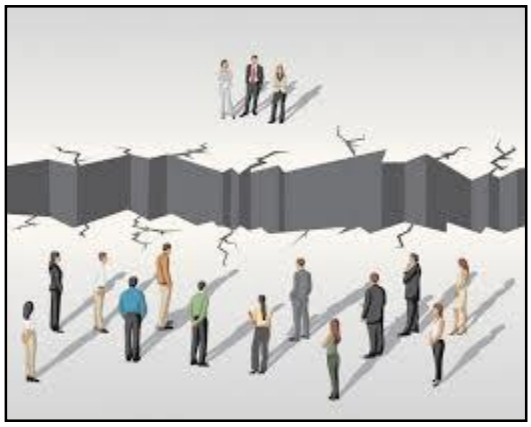
Tailor-made, need-based programmes would be initiated for specific age groups which can be like language and communication skills, life and positive thinking skills, personality development skills, management skills, behavioural skills, including job and employability skills. The course methodology of 'Skill India' would be innovative, which would include games, group discussions, brainstorming sessions, practical experiences, case studies etc.

Pradhan Mantri Kaushal Vikas Yojana (PMKVY) is the flagship scheme of the Ministry of Skill Development & Entrepreneurship (MSDE). The objective of this Skill Certification Scheme is to enable a large number of Indian youth to take up industry-relevant skill training that will help them in securing a better livelihood. Individuals with prior learning experience or skills will also be assessed and certified under Recognition of Prior Learning (RPL). Under this Scheme, Training and Assessment fees are completely paid by the Government.

C1.Skill Gap and its Analysis

Different types of skills are required in the manufacturing units for various job roles. However, before we move on to skill development, it is extremely important to understand the existing skill gap in each of the sectors. Let's take a note of what do we mean by skill gap. Here it is noteworthy that we first need to define the skills required to perform a specific job role and then highlight the gap. The difference in the skills required on the job and the actual skills possessed by the employees is referred to as S*kill Gap*.

Fig 1.3: Skill Gap



Skill Gap is prevalent across various job roles in different segments of the industry. Efforts in the skill landscape have been largely devoid of industry/employer linkages until the last few years. This has created gaps in terms of sectoral need and availability, competency required by employer and those possessed by a trainee etc. Placement of trainees has consequently

suffered. At first, there is a need to define their skills requirements, and training methodology, commitments in terms of increased remuneration to skilled workers also need to be made by them. This is necessary to create economic incentive for skilling, and for industry to realize the productivity gains linked with skilled manpower.

To address the skill gap, the availability of good quality trainers is a major area of concern. There is a lack of focus on development of trainer training programmes and career progression pathways for trainers have also not been defined. To outline the skill requirement, the skill gap analysis is undertaken. In other words, Skill Gap Analysis for the various job roles in the industry helps achieve the following objectives:

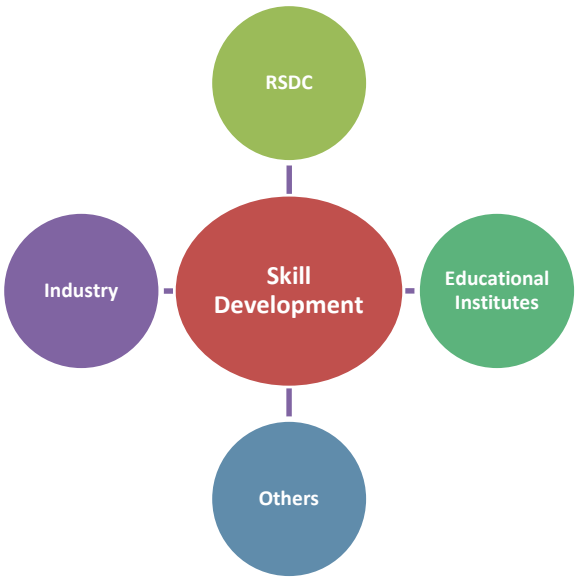
- Helps to define the skills required in the industry at present and in future
- Make employees aware about the critical skill they will need to develop/learn
- Helps in recruitment effort when current employee do not possess the required skills for the specific job role

Skill Gap Analysis has covered the organized segment of the industry, whereas a large number of manufacturing units are operating in the unorganized segment. One of the biggest challenges of skill development in our country is that 93% of the workforce is in informal/unorganised sector. Consequently, it is difficult to map existing skills in the unorganized sector and gauge the skilling requirement in the sector. On the other hand, the rate of job growth in informal sector is estimated to be twice that in formal sector.

D1. Skill Development

Different states in India face varied challenges in relation to demographics and skill development. There needs to be a shared sense of urgency to address the challenges of the changing demography. Skills development is the shared responsibility of the key stakeholders viz. Government, the entire spectrum of corporate sector, community based organizations, those outstanding, highly qualified and dedicated individuals who have been working in the skilling and entrepreneurship space for many years, industry and trade organizations and other

Fig 1.4: Stakeholders



stakeholders. The challenge of human resource requirements of the country will be addressed by aligning the supply and composition of skilled workers with demand. This will ensure that the supply of skilled workforce is relevant to projected needs and can be easily absorbed into the job market.

In this report, the focus is on the skill requirement of the rubber industry in Indian context. We concentrate on the quality of the available manpower, skill deficiencies leading to the skill gap, emerging trend for industry expansion and skill requirement in the rubber sector. Before we take up the skill gap analysis in the rubber industry in the southern state of India, let's have a look at the trends in rubber industry in the state in focus, i.e. Karnataka covering main indicators of state economy, rubber manufacturing units, rubber consumption etc.

STATE IN FOCUS

The chapter focuses on the general economic conditions of the state, an overview of rubber industry in India, status of rubber industry in the state in focus and its growth in the recent past. Normally, the overall development of the various sectors in the state reflects on to the growth of the specific segment of economic activity. Here, we will take a note of economic development of the state and various aspects of rubber industry therein. Karnataka is a traditional rubber growing region of the country; therefore it we present an analysis on the production side of the commodity in the state which serves as the basic raw material for the rubber product manufacturing. However, it is interesting to look at the consumption pattern over the period to highlight the developments in the rubber industry in the state in focus.

A1.State Economy

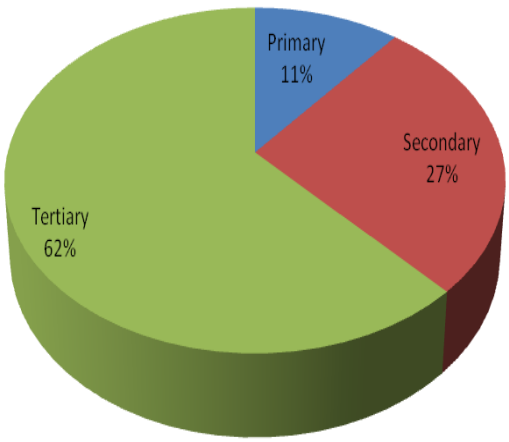
Formerly known as the State of Mysore, the state of Karnataka is located in the southern part of India and has the states of Tamil Nadu, Maharashtra, Andhra Pradesh and Kerala as neighbors. The capital of the state is the city of Bangalore which has evolved as one of the most vibrant cities in the country.

The Population of Karnataka according to the 2011 census stands at about 61 million, making it the 9th most populated state in India. The state is spread over an area of about 190000 sq. km. making it the 8th largest state in the country in terms of area. The density of population per sq. Km. is about 300 and a lot below the national average. The population of the state is rising considerably due to rapid efforts towards development and progress. The state witnessed 15.7 percent decadal growth in population from 2001 to 2011. The literacy rate of the state is 75.4 percent, which is better than the overall literacy rate of India at 74.04 percent. The sex ratio in Karnataka at 973 stands about 20 points higher than the national average. The state is moving towards development at a rapid rate and has emerged as one of the prime economical contributors to the revenue of India as a whole.

Fig 2.1: Coastline State: Karnataka

Advance estimates show that Karnataka's Gross State Domestic Product (GSDP) at constant (2011-12) prices is expected to grow at 6.9% and reach Rs.871995 crore in 2016-17.

Fig 2.2: Share of Major Sectors of the Economy



A marginal decrease is evident in the composition of GSDP of agriculture & allied activities and industry sector from 11.77% and 24.70% in 2015-16 to 11.68% and 23.68% in 2016-17 respectively. At the same time, a marginal increase in the composition of the service sector from 63.53% to 64.64% is apparent. During the last few years, the services sector has been the largest component of GSDP. The contribution of 'Real estate, Professional Services & Ownership of Dwellings' is highest with 32.55% in 2016-17 followed by 'Manufacturing (14.76%)', 'Trade and Repair Services (9.04%)' and 'Crops (8.19%)'.

Per capita income is estimated by dividing NSDP at current prices with mid-financial year projected population (as on 1st October). Per Capita State Income (i.e. per capita NSDP) of Karnataka at current prices is estimated to increase by 9.2% to touch Rs.159893 during 2016-17, as against Rs.146416 in 2015-16. All India Per capita income for 2016-17 is Rs.103818, Karnataka's per capita income is higher by 54 percent.

The concerted efforts by the State have resulted in a large-scale inflow of investments during the past few years. The State Level Single Window Clearance Committee (SLSWCC) to clear projects with an investment between Rs.15 crore and Rs.500 crore, has approved 252 projects with the proposed investment of Rs.13601 crore which intends to create employment for 79960 in 2015-16. Further in 2016-17 (up to December 2016), the committee has approved 134 projects with the proposed investment of Rs.9727 crore which intends to create employment for 25773 persons.

Table 2.1: State of Growth

Year	GSDP* (at constant prices)	Growth Rate (%)
2011-12	603778	..
2012-13	641212	6.20
2013-14	708623	10.51
2014-15	760282	7.29
2015-16	815545	7.27

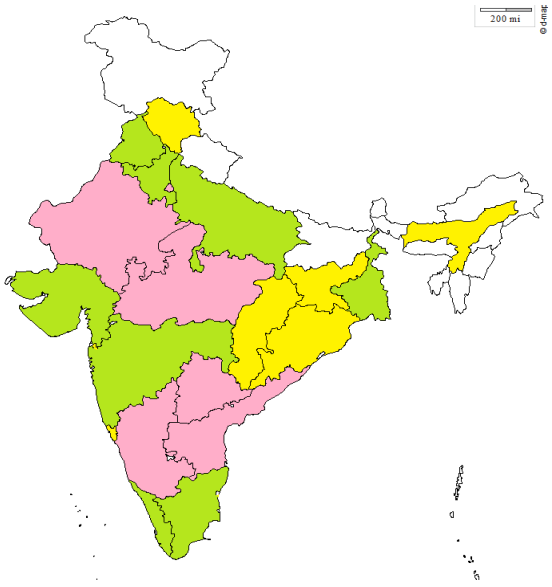
Source: CSO

*GSDP in Rs. crore at 2011-12 prices

A2.Rubber Industry in India

In India, there are approximately 6000 manufacturing units producing a wide range of rubber products operating across 24 states and 4 union territories (according to the registered units with Rubber Board). However, there are thousands of unregistered firms engaged in production of different rubber products throughout the country. The rubber goods manufacturing industry includes large capital owned automotive tyre sector and small capital based non-tyre sector consisting of majorly in Micro, Small and Medium Enterprises (MSME). Unlike tyre industry which represents an organized segment of rubber manufacturing in our country, the production of non-tyre rubber products takes place in the organized as well as unorganized sector. The highest number of rubber product manufacturing units exists in Kerala, followed by Uttar Pradesh and Tamil Nadu.

Fig 2.3: Rubber Industry Concentration in India



The map represents the presence of large (green colour), medium (pink colour), low (yellow colour) and negligible (white colour) number of rubber product manufacturing units in India. Karnataka falls under the medium category in this industrial segment.

The total turnover of the Indian rubber industry is estimated around thousand crores. Among the various rubber product segments in the country, there are large number of firms involved in manufacturing of moulded and extruded goods, tread rubber products, footwear, dipped goods and adhesives. In the production of a wide range of rubber products, natural, synthetic and reclaim rubber is used in the industry. Natural rubber consumption is at the top position followed by synthetic and reclaim rubber. Two third of the rubber consumption is attributed to the tyre segment whereas the remaining one third is consumed by the non-tyre segment. The large tyre plants in India are spread across various states. Given the growth in the automobile segment in the country, the expectation regarding the establishment of new units are on the positive side.

India is currently the sixth largest producer of NR in 2015 with a share of 4.7% of world production. During 2015, the output in main producing countries viz; Thailand, Indonesia, Malaysia and Vietnam increased, whereas production in China and India decreased during 2015.

Production of Natural Rubber (NR) in India during the year 2015-16 fell 12.9 per cent to 562,000 tonnes from 645,000 tonnes produced a year ago. Adverse weather, high wages, lack of skilled labourers, grower's reluctance in harvesting or maintaining trees in response to the low NR prices have affected the production of natural rubber (NR) in India during the year ended March 2016. Even though the tappable area under natural rubber was 559,000 ha during 2015-16, only 391,000 ha has contributed to the NR production during the year.

Table 2.2: Consumption of All Kinds of Rubber According to the End Products 2014-15 (in Tonnes)

Products	Natural Rubber	Synthetic Rubber	Reclaim Rubber
Auto Tyres and Tubes	682350	382690	49640
Cycle Tyre and Tubes	75465	29585	26750
Camel Back	44675	31785	4730
Footwear	62635	35190	9650
Belts and Hoses	42170	17730	10750
Latex Foam	28385	--	--
Dipped Goods	41215	--	--
Others	44015	39150	27545
Total	**1020910**	**536130**	**129065**

Source: Monthly Rubber Statistical News, April 2016

India ranks second with regard to NR consumption in 2015 with a share of 8.2% of world consumption. India produced 199,845 tonnes of Synthetic Rubber (SR) during 2015-16, up 31.6 per cent on year. SR consumption increased to 553,370 tonnes during 2015-16 registering a growth of 3.2% as against 536,130 tonnes consumed during 2014-15. The relative share of consumption of NR and SR in India was 64:36 during 2015-16.

A3.Rubber Industry: Karnataka

In the coastal state of the country, as per the data validated by the RSDC, the total number of rubber manufacturing companies is around 350; it includes the small, medium and large scale firms operating in the state. The leading segment of the rubber industry is tread rubber products followed by Moulded products in the state in focus. More than 90 percent of the firms are small and medium scale enterprises, a common trend observed throughout the country for the rubber industry.

Table 2.3: Manufacturers Status

Year	No. of licensed manufacturers		
	Karnataka	Kerala	India
2011-12	205	760	4386
2012-13	205	724	4334
2013-14	195	724	4350
2014-15	191	734	4307
2015-16	192	744	4363

Source: Rubber Board

The number of registered manufacturers has not shown any striking trend in the last five years. It is important to note that our survey focuses on the firms operating in the organized segment of the industry only whereas there are a large number of units manufacturing rubber products in the unorganized sector across the country.

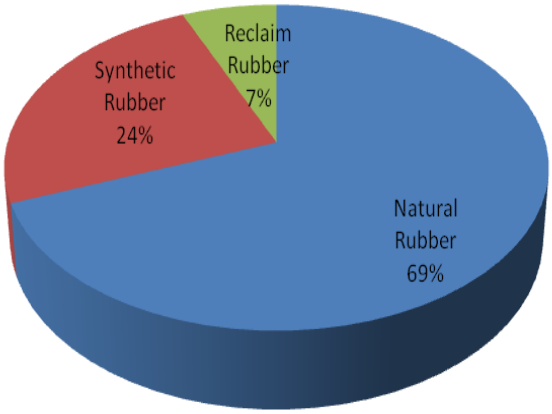
Bangaluru, the capital city is the major centre of rubber product manufacturing in the state of Karnataka. There are many other districts as well where different types of rubber products are manufactured, however the number of units is not very large. With respect to the large tyre companies' presence in the state, Mysore is the main centre for the production of tyres for J K Tyres operating two units in the city. Rubber products are manufactured mainly in the following centres in the state:

a) Bangaluru
b) Mangalore
c) Mysore
d) Belgaum
e) Hubli
f) Tumkur
g) Kumta

A4.Rubber Consumption: Karnataka

During 2011-2016, the state has witnessed rubber consumption decline of almost 21 percent. The fall has been witnessed in all the three categories, NR, SR and RR. Each of the rubber segments has depicted double digit decline during the select period. From the annual total rubber consumption of above 1 lakh tonne in the state in the year 2011-12, the rubber consumption has declined to 82 thousand tonnes in 2015-16. There has been a clear downtrend with respect to the rubber consumption in the state over the last five years.

Fig 2.4: Composition of Rubber Consumption

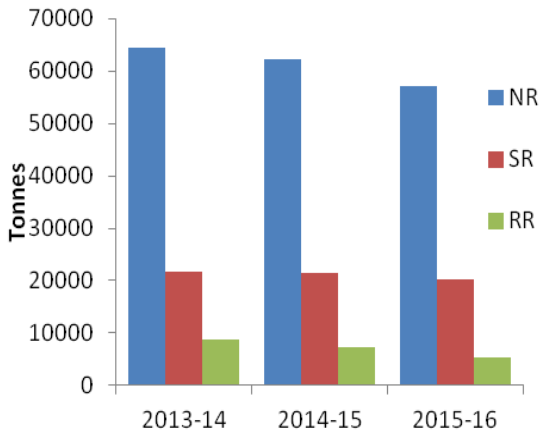


The total consumption of 82,710 tonnes of rubber in the year 2015-16 comprised of 57,150 tonnes of natural rubber; 20,160 tonnes of synthetic rubber and 5,400 tonnes of reclaimed rubber. Tamil Nadu, Kerala, Maharashtra, Gujarat and Andhra Pradesh are the top five rubber consuming states in the country. In the year 2015-16, Karnataka stood at the eighth position in the list of rubber consuming state in India. The total consumption of rubber in the year 2015-16 for the southern state stood at 5 percent of the total rubber consumption in India.

For the state of Karnataka, natural and synthetic rubber constituted 5.7 percent and 3.6 percent of the total national consumption in the respective segment while share of reclaimed rubber

consumption for the state constituted 4.6 percent of the total reclaimed rubber consumption for India.

Fig 2.5: Consumption Trend



After presenting an overview of the rubber industry in the state, now we move on to the detailed analysis of employment in the industry. In order to understand the various factors affecting the employment in the rubber industry and skill requirement in the state, a survey of 71 units has been conducted. The next chapter presents the details, analysis and findings of the skill gap study in the state.

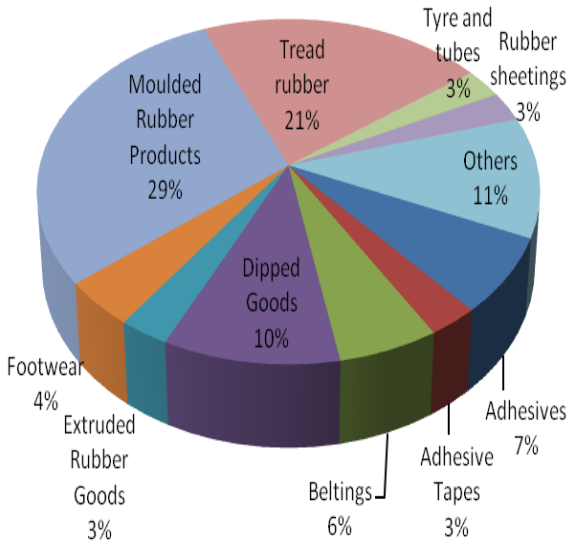
SURVEY INSIGHTS

This chapter provides an insight into the status of human resource employed in the rubber industry in the state of Karnataka. Analyzing the pattern of manpower recruitment, their skills, skill gap, training status and its requirement based on the feedback received from the surveyed firms, it presents the current scenario, industry concerns and future requirement. The survey covered a sample of 71 rubber product manufacturing firms involved in the production of adhesives, adhesive tapes, belts, footwear, tread rubber, foam products, rubber sheets, mats, rubber rollers , tyre and tubes, moulded and extruded rubber products. The firms belonging to the following cities provided their inputs for undertaking the skill gap analysis in the state:

- Bengaluru
- Mangalore
- Mysore
- Tumkur
- Mandya

Given the different scale of production (tiny, small, medium and large) and existing organizational structure, the skill gap prevalent in the industry is analyzed across various job roles attached to different operational departments. The analysis of the data collected from the select rubber products manufacturing firms across the different segments would not only help in understanding the existing skill gaps but also the emerging skill gaps with respect to the rubber industry in Karnataka.

Fig 3.1: Survey Coverage



Through analyzing the responses of the surveyed firms in the state, the focus of the chapter is on understanding the present structure of employment, future expansion plans, educational and training status and the industry players' expectations from the various stakeholders viz, RSDC, Industry Association, Educational Institutes and other stakeholders.

Highlighting the present capabilities of the employees involved in different operations, the analysis presents a matrix of skill gaps for various job roles across the different segments of rubber product manufacturing in the state. Here, we examine the overall employment in rubber industry in the state w.r.t.:

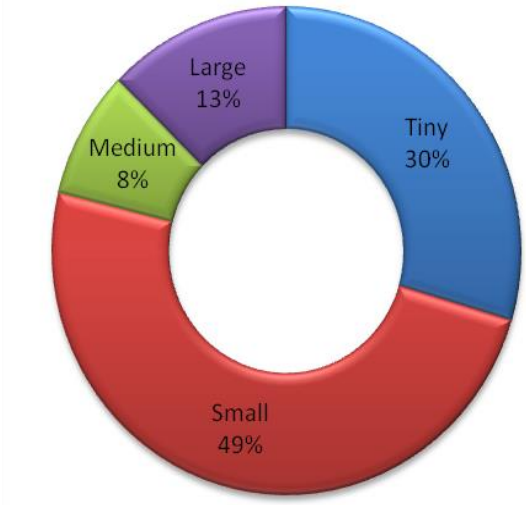
a) Current Status
b) Issues/Concerns
c) Possible Actions

A) CURRENT STATUS

A1. Scale of Operations

The sample comprises of tiny, small, medium and large scale units producing a wide range of rubber products. In the selected sample for the survey, almost half of the firms belong to the small scale enterprises based on the investment information revealed by them. Among the respondents, there is 30 percent tiny, 49 percent small scale, 8 percent medium scale and 13 percent large scale firms according to their total investment in the business. However, the total turnover varies as compared to the total investment of the firms.

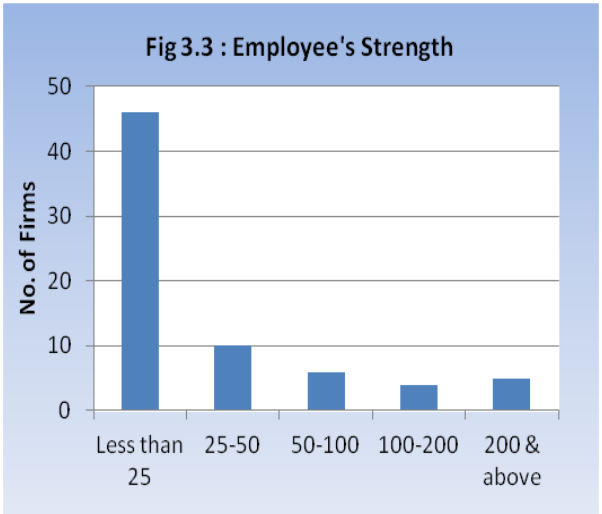
Fig 3.2: Investment



The turnover of the surveyed firms ranges between less than a crore to 650 crores. However, most of the entrepreneurs surveyed in the state are handling manufacturing of rubber products only for one production unit.

Half of the firms do not envision any major change in the production in their respective segments of rubber product manufacturing. The change in the various segments is related to setting up of new plant, expansion of same line of business, moving towards updated technology.

Another important variable reflecting the size of the firm relates to the total number of employees in the organization.



The human resource requirement varies depending on the nature of the product produced, scale of automation and production. The employment pattern reveals that except for one firm, all the firms investing upto 5 crores (tiny and small scale) employ less than 50 persons. It has been noticed that eighty percent of the small scale firms have less than 50 employees. Medium and large scale firms employ relatively larger number of employees ranging from 50 to 600. A large scale firm belonging to the tyre tube segment hires the highest number of employees according to the details shared

by the respondent firms. According to the survey response, most of the firms have maintained that they face problem in getting skilled manpower mainly at operator's level.

Considering the time zone related to the establishment of the surveyed firms, no striking fact has been noticed with respect to the size of operations in the last fifty years. There has been a clear tilt towards the small scale firms in the industry in the state over the years. The survey provides a coverage of a combination of old established firms as well as newly established firms in the beginning of 21st century. This particular phenomenon helps in identifying the problems with respect to skilled manpower in the industry for older and newer firms as well as highlights the similarity for both.

Table 3.1: Periodic Table

No. of Firms	Year of Establishment		
Respondent Firms	**1960-75**	**1975-00**	**2000-15**
Tiny	1	8	12
Small	2	25	8
Medium	-	3	3
Large	2	6	1

Two third of the respondent rubber products manufacturing firms were established before the beginning of 21st century in the state of Karnataka and majority of them during 1975-2000. All the medium scale firms are established in the last two decades only. It is important to note that whether the firms are in operation for many years or established in recent past, they all face the problem of getting skilled manpower.

A2. Recruitment Strategy

Majorly, the firms engaged in rubber industry are interested in hiring the employees on their roll irrespective of their production capacity, investment, product segment and number of total personnel employed. An analysis of the recruitment strategy of the firms belonging to the rubber industry in the state of Karnataka depicts that 77 percent of the surveyed firms have hired all the employees on their roll and only two firms have three fourth off roll employees.

Table 3.2: Basis of Employment

Percentage of on roll employees	Surveyed Firms (%)
0-25	-
25-50	6
50-75	13
75-100	4
100	77

No single firm has all employees hired on off roll basis. The firm which has off roll employees is engaged in manufacturing of footwear, dipped goods, tread rubber products, beltings, moulded products, tyre and tubes but they do not indicate any correlation with the size of the production and investment made by them.

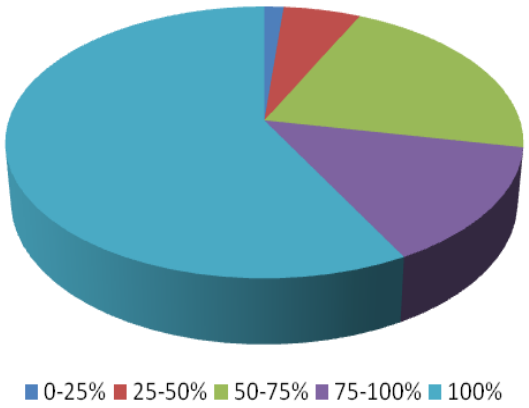
The most effective method of employing workers in the industry is through internal references and direct interview. However, majority of the firms are using multiple channels for recruitment. There are small,

medium as well as large scale firms which reported that they are using the consultancy and newspaper ads in addition to references to get the relevant people for the vacant positions in their production unit.

A2.1 Employees Recruitment

Among the total firms surveyed in the state, it has been noticed that 58 percent of them have recruited all the employees from Karnataka only. Such firms belong to small as well as large scale category covering a range of rubber manufacturing products.

Fig 3.4:Employment Pattern: Employees from Karnataka



There are employees coming from other states to work in rubber product manufacturing firms for two-fifth of the surveyed firms, however the percentage of employees coming from outside varies for different segments of the industry. Majority of the respondents have mentioned that there is no specific location from where the employees coming from outside Karnataka are hired. Few firms have indicated that they have recruited workers coming from Bihar, Assam and Kerala. Importantly, there is no organization which has recruited all the workers from outside the state.

The main reason for outside hiring is availability of more skillful workers as listed by the firms hiring the people mainly from the other states. However, most of them have not mentioned any specific reason for hiring from outside Karnataka. The main job positions for outside people are not underlined by the respondent firms.

A2.2 Attrition Trend

A noticeable trend related to the employment in the rubber products manufacturing unit is that the employees do not remain associated for more than half of the surveyed organizations for longer periods irrespective of the total scale of operations. Low level of attrition has been reported only by 37 percent of the firms. Such trends are similar for small, medium and large scale firms. Also, the firms established in the 21st century and that operating for more than 20-25 years, employee's attrition has been reported higher as compared to the feedback received from firms operating in other states.

Table 3.3: Attrition Rate

0- 5 %	•37%
5-10 %	• 8%
More than 10%	•55%

A2.3 Retention Strategy

Skilled manpower is more valuable as compared to their unskilled counterparts and therefore it becomes important for firms to retain the skilled workers with them. However, the survey results show that the employed personnel do not possess any technical skill before joining and gain experience through shop floor work only. Here, it is interesting to understand that if the firms spend time and resources in training people on the job then they should have effective retention strategy. However, it is found that forty percent of the surveyed firms do not have any retention strategy. For rest of the firms, it is mainly the monetary aspect related to pay, bonus and increment as well as good working conditions which play an important role in encouraging people to remain associated with them for a longer period.

Table 3.4:Retaining Employees

Retention Strategy	Firms Response (%)
No retention Strategy	41
Good pay, increment, bonus and facilities	49
Basic Employees facilities	10

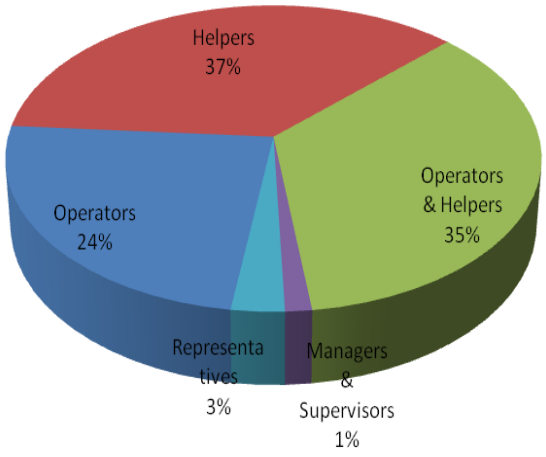
No firm has given importance to long term career growth plan as their retention strategy.

A2.4: Workforce Status

A2.4.1 Requirement & Availability of Manpower

The survey analysis for the key job roles for recruitment clearly shows that the main roles for employment in rubber industry are related to helpers and operators. No other category stands anyhow closer to these two job roles in the rubber product manufacturing in Karnataka. It is interesting to note that only three percent of the respondent firms belonging to the footwear segment mentioned the there is a requirement for people for undertaking marketing role. However, it is important to note that no firm has highlighted any major requirement for supervisory role and non-core activities specific to quality assurance.

Fig 3.5: Key Job Role Requirement



In Karnataka, finding requisite number of people for carrying out the rubber products manufacturing by the firms is a major concern for half of the respondent firms. They do not face shortage of manpower. On the other hand, the half pie does not find the manpower as easily and the shortage of skilled manpower has been identified as a common problem by those firms. Most of the firms facing manpower shortage have reported that they face difficulty in hiring helpers and skilled operators.

It is interesting to note that neither a single firm has mentioned about the supervisor's role for recruitment nor they face any problem in hiring people for supervisory role. Based on the responses of the firms, it has been noted that there is no issues faced by the firms on account of hiring people for non-core activities.

A2.4.2 Workforce Distribution: Core and Non- Core

The proportion of employees engaged in administrative and managerial work is not very significant in rubber products manufacturing firms across all segments. More than 90 percent of the firms surveyed are hiring 70 percent or more of their total employees in the production section. Moreover, the trend is in line with the findings related to the key job roles for employment in this sector.

Table3.5: Core and Non-Core Distribution

Recruitment in Core Functions of Production	Surveyed Firms (%)
90% and above	42
80 to 90 %	30
70 to 80 %	15
60 to 70 %	8

A2.4.3 Actual Employment

The main categories for which firms have listed out their total employment pattern are as follows:

- Supervisor
- Operator
- Helper
- Senior Management
- Quality Assurance
- Sales
- Office/Management Executives
- Accounts

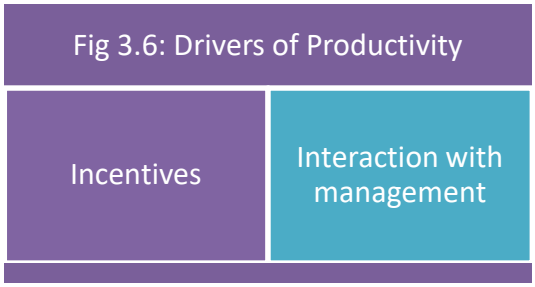
An analysis of the employment pattern reflects that for most of the surveyed firms, operators and helpers constitute the highest share of their total employees. However, for supervisory role the firms have recruited less than 15 percent of their total work force. Interestingly close to fifty percent of the total respondents have no one recruited for quality assurance. Senior management mainly exists in medium and large scale firms in addition to some of the small scale firms. It should be noted that some of the organizations involved in retread work, footwear and beltings manufacturing have personnel separately recruited for Utility and Maintenance and Research and Development. One third of the surveyed firms have people recruited for accounts work whereas for others there is no one working separately at the accountant's designation.

A2.4.4 Drivers of Productivity

The firms need to pay attention towards the productivity of people employed by them for undertaking various job roles. Skill development of employees is one aspect for which employer should be careful about. However, from the point of view of employees what drives their productivity remains a big question to be answered. Eliciting the response for this

question, it has been pointed by firms that incentives are the top most driver of productivity. Monetary phenomenon guides the performance of the workers to a great extent. However, majority of the firms have not been able to identify any reason that drives the productivity of the employees.

Fig 3.6: Drivers of Productivity



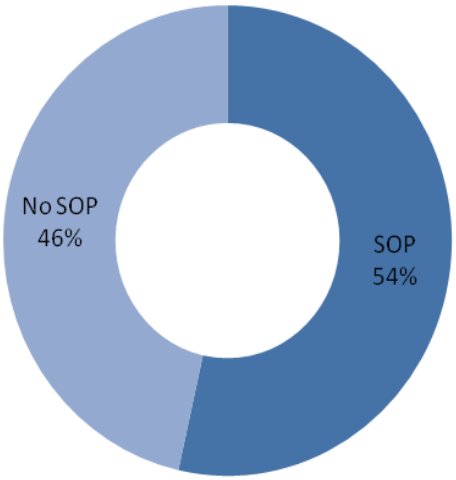
Two of the surveyed firms reported interaction with management as the factor affecting the productivity. Considering these responses, it should be noted that incentives can be provided easily by the employer when the worker performs a task more efficiently over a period of time. This could be attributed to developing skills of the workforce for which both employee as well as employer should pay attention for improving productivity in the long run.

A3. Standard Operating Procedures (SOP)

Standard Operating Procedures are laid down by the firms to clearly list out the process to be followed at different levels in product manufacturing. It has been observed that half of the respondent firms have the SOPs at their workplace which is a very positive side of the manufacturing practices in the industry in the state. Such trend does not have any correlation with specific segment of rubber manufacturing units. But at the same time, rest of the respondent firms which do not have SOPs are also quite considerable in number. Nevertheless, these firms have 70-80% of employees who do not have any vocational training or higher education (graduation).

It follows from such observations that it is required for the employees to be educated to a particular level to follow the standard procedures.

Fig 3.7: Standard Operating Procedures



Half of the organizations surveyed do have Standard Operating Procedures at their units. Processes are carried out based on standard instructions and they revise it at different time intervals. For firms following SOP, 15 percent of them revise it as per the requirement (product or process modification/technology upgradation), 25 percent on annual basis and few of them on half yearly basis. However, no revision has taken place for some firms, reason being the same product and process followed.

B. ISSUES AND CONCERNS

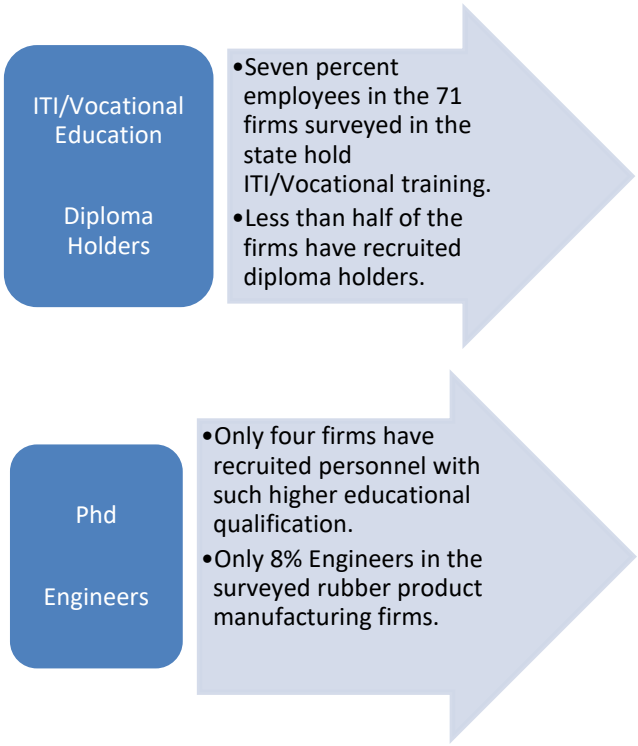
B1. Educational Front

It is assumed that the skills do have a strong correlation with the educational background of the workers. Considering this fact, the section highlights in detail the present scenario of the educational status of the workers employed in the rubber industry in the state of Karnataka. Only 11 percent of the total surveyed firms have all the employees who are metric pass and hold higher educational qualification. There are twenty percent firms which have recruited all the employees who are not even metric pass. This situation for the state is similar to the condition in some other states where majority of the workforce employed in the industry are not even metric pass. In Karnataka, almost two third of the total respondent firms have 50 percent or less employees who are not even metric pass.

Table3.6: Minimum Education

Percentage of employees below 10th standard	Surveyed Firms (%)
Less than 40 percent	20
40-70 percent	35
70-100 percent	34
None	11

The area of concern is the vocational training and field specific educational qualification for the employees working in the rubber industry in different segments. It is important to note that the industry employment should focus on vocational and specialized education however the ground reality shows that majority of the firms have not recruited employees who are ITI/vocational. There are only 7 percent of total employees in the surveyed firms who are vocationally qualified. The presence of Diploma holders in the rubber manufacturing units is also not very high in the state but better as compared to a number of states, accounting for 7 percent of the total number of employees. Merely 8 percent of the total number of employees working in the rubber products manufacturing units surveyed is Engineers. Also, the firms which hire qualified personnel in the research department is only restricted to four firms, scale and one medium scale.



Graduates working in the rubber manufacturing units are mainly associated with the accounts, marketing, quality assurance and management department.

On an average, there are 12 percent graduates working in the firms employing such educated personnel.

B2. Training

Out of the 71 firms, no firm has a separate training department for their employees. Neither had they appointed a trainer nor do they arrange any expert visit to their workplace. Generally, all the firms have adopted the culture of on the job training, mostly prevalent all over the country in the manufacturing segment. These firms have not indicated separate resources especially for training their employees. All these firms are not tiny organizations but small, medium and large scale firms. This clearly indicates less interest shown by the organization in allocating separate resource for training the employees. However, the following chart depicts the persons who are mainly engaged in providing in house training to the work force working in the rubber products manufacturing units:

Fig.3.8: IN-HOUSE TRAINERS

Although majority of the firms do not have any separate training department, they provide training to the employees by utilizing their in-house resources. It has been noted that in the smaller organizations having less than 20 employees, the proprietor/director or the supervisor trains the operator and helpers in performing the assigned task. Experienced operators mainly take up the responsibility of training the helpers and operators in medium or large organizations. Here, the attitude on the part of the organizations too does not reflect an encouraging trend towards resolving the issue of technical skills.

B2.1 Requirement for Training

The firms do not allocate specific resources for training department and 4 percent of them responding to the requirement for training reported that there is no need for training whereas rest of the firms agreed that there is a sheer need for training the employees. Responding to the training requirement, organizations have clearly outlined the roles for which there is specific requirement for training. Among the various job roles, the requirement for operators' training emerged as the top priority which was followed by helpers, management, supervisors, packaging and inspection teams training requirement.

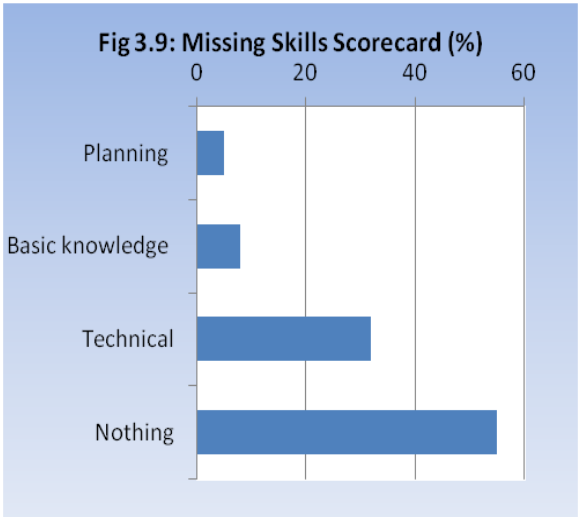
B2.3 Training Institutes

Regarding the association of rubber products manufacturing firms of different segments with the training institute, the

survey results present a significant observation that 100 percent of the firms have no direct relation with the training institutes. No firm have any association with ITI Colleges and engineering colleges even for recruiting people for electrical, mechanical & maintenance department. The findings presents a great concern over the association of the firms for training institutes as whether it is small, medium or large scale firm, no firm share any relation with training institutes. No major issue has been highlighted by the firms with respect to the dealing with training institutes in the state.

B3.Missing Skills

More than half of the firms mentioned that there are no skills missing with their employees. On the other hand, the firms who responded to the query related to the skills that the industry find missing in their employees believed that the workers lack technical skills in this industry badly whether it is a small, medium or a large organization.



As the employees mainly gain knowledge on the job which has been highlighted throughout in the survey responses, the weakness on the part of knowledge regarding the properties of the material/product and their usage seems to be another area of concern. An important area of concern that they reported relates to the planning skills for operations.

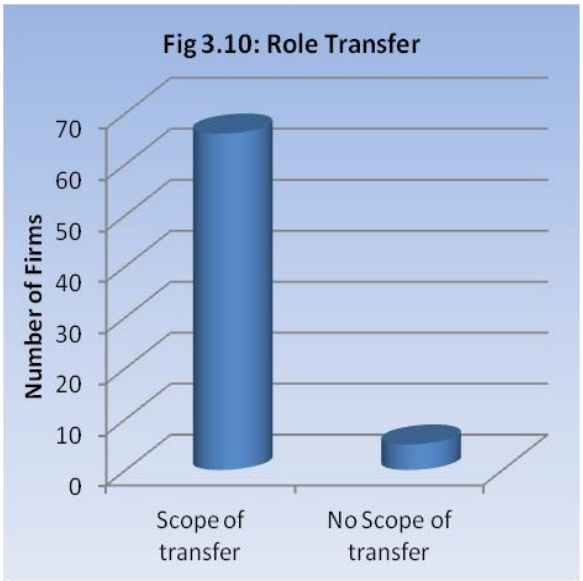
B3.1: Regional/State level Variation in Skill Gap

More than 90 percent of the surveyed firms have not responded to provide any indication regarding the regional/state level variations in the skill gap that they witness. However, rest of the firms sharing their views on this aspect hold that the workers from other states are more willing to work hard.

B4.Role Transfer

Transfer of roles in the factory premises basically mean that a person recruited for performing a particular job role is also performing the other roles. The survey results indicate that more than ninety percent of the respondents admit that there exists a scope of transferring role among employees. Some of the firms maintain that job rotation is good for the performance of the workers. Few firms hold that they train the workers for performing multiple tasks/roles. However, those who have denied the existence of such phenomenon in their factory premises belongs to mainly small scale units producing moulded rubber products in the

state. In other words, the person specific role is not related to the size of the organization as reflected by the feedback of most of the respondents.



It is now interesting to ascertain whether there is a particular category where role transfer is common or it exists at all levels. The survey findings do not clearly outline whether such multiple role performance happens among helpers, operators or supervisors. It has been clearly accepted by majority of the firms irrespective of their size and total number of persons employed that the workers are performing more than one task.

Such arrangements in the firms points towards an important finding while we discuss the skill gap issue in our present analysis, that is , employees have the capability of performing more than one role than can't we call is as multi skill employees. Then where is exactly the skill gap, here we have a reservoir of skills but the fact is that the employees are not trained to perfection in one role and upgraded on regular basis but use their services in multiple roles in adhoc manner.

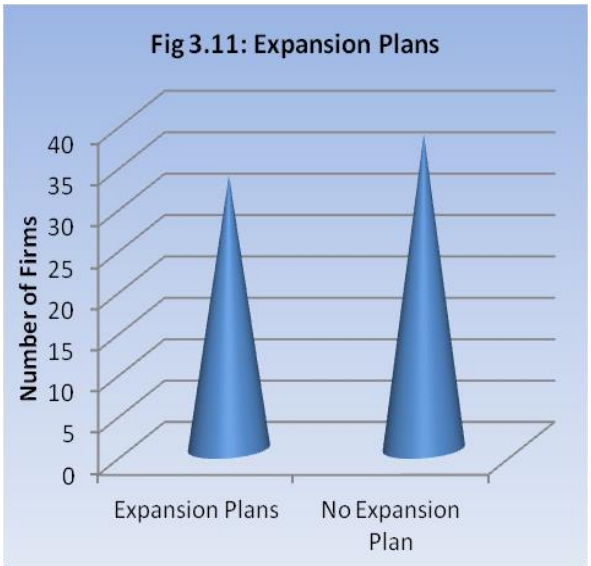
B4.1 Skill Gap or Saving on Resources

It has been reiterated by majority of the firms that transfer of roles among employee is taking place. However, one should think over it as it is really a skill gap or firms are saving on their resources. Even at the senior management level, the multiple roles are performed by the employees. The following intercepts which has been shared by the some of the firms can be taken for the consideration:

"The Owner himself plays the role of Managing Director and also together plays multiple roles that of marketing manager, HRM, procurement and production manager. The helpers do the finishing and packing. The supervisor along with the quality check worker does the quality check.

B5. Expansion Plan

There are more than half of the surveyed firms in the state which do not have any future expansion plans. A considerable number of entrepreneurs are not concerned about their growth and future directions in the market, which is not an encouraging trend for the industry. Only 47 percent respondent firms engaged in rubber product manufacturing in the state reported that they have the future expansion plans regarding their manufacturing activities.



Those firms are either looking forward to set up a new plant expanding the same line of business, enter a new extending product line, moving towards specialized products, diversifying in different segment or upgrade the technology with automated machines. The firms are expecting increase in the customer base and expansions coming in if the GST gets implemented.

Fig 3.12: Expansion on the Way

- Moving towards automation
- Setting up new plants
- Moving towards specialized products
- Production in different regions
- Expanding same line of business
- Diversifying products
- Entering new product segment

Firms expanding their business may require the additional workforce; however the respondent firms have not highlighted specifically the job roles. Moreover, the total number of additional workforce will depend on the expansion. Some of the firms have clearly outlined their total human resource requirement (10-30 % percent increase from current levels) and others are planning for expansion but they do not have any estimate about the required human requirement. Regarding the investment plans for the firms looking forward for expansion, it has been noted that the range of investment related to their current scale of the operations is expected to increase from 5 lakhs to 5 crores.

B6. Future Trends: Emerging Skill Gap

Technical skill is one area where most of the respondents feel that the gap would emerge in the near future. Such outlook for the industry is held by the entrepreneurs running small, medium as well as large scale units. It has been outlined very clearly by some of the surveyed firms that the employees working with not only lack technical skills but also the skills listed below.

a) Rubber and product knowledge
b) Operational
c) Communication
d) Planning

Not even a single firm has underlined the gaps emerging on account of educational aspect.

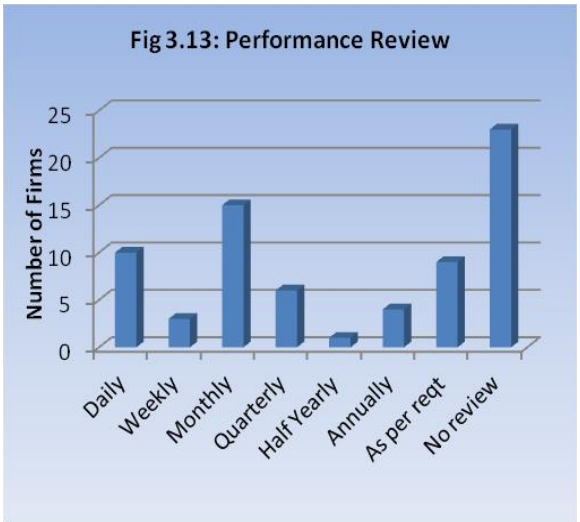
B7.Skills vs Performance Review

Performance of any employee depends on the ability to perform the work assigned efficiently, effectively and in timely manner. However, the output is important but the review of the performance is no less significant to develop and maintain new and existing skills. Performance review depends greatly on how one measures the output of the worker.

Table 3.7: Workers Output Measurement	
Parameter	**Firms (%)**
Quantity produced	75
• *Daily*	*30*
• *Order wise*	*3*
• *Set target*	*42*
Hours Spent	5
None	20

Some of the firms have not responded to the way they measure the output of their workers whereas those who have shared their method regarding the output measurement disclosed that it is mainly by the way of quantity produced whether it is on daily basis, order wise or as per the set targets. Importantly, the firms have shared that generally the target set for production are met in time which indicated towards the efficiency of the workers employed in rubber industry in the state. Only 5 percent of the firms surveyed mentioned that the hours spent forms the main basis for output measurement by them.

It is important to carry out the performance review by the firms which are all engaged in the manufacturing activities. Not only the personal development is reflected through such activities but also the skill gaps get highlighted for each of the employees.



One third of the surveyed firms have not shared their process or method of reviewing their workers performance. These firms are employing lesser number of employees (less than 20) as compared to the firms undertaking performance review for their employees. Also, the firms which are not reviewing the performance of their workers have hired all their workers on roll.

On the other hand, those who have discussed the method/frequency of their performance review mainly mentioned that they review the workers performance on monthly and daily basis. Some of them are doing it on annul, half yearly, quarterly and weekly basis as per their convenience. Moreover, there are few firms which conduct the review as per the requirement such as when increments are given, production decreases, targets are not met etc.

C. Possible Actions

To address the skill gap issue in the rubber industry in the southern state of Karnataka, the respondents from the different product segments have suggested the Rubber Skill Development Council (RSDC) to play a significant role in providing the skilled and trained labour force for this industry. Firms have expressed their interest to attend the training programme organized in their area. However, majority of the firms did not share any role for educational institutes/government/ any other stakeholder and have not shown any interest in their participation in skill development for rubber sector. Few firms have indicated that the council should facilitate setting up of training institute in the area nearby the industrial units.

SKILL GAP ANALYSIS

Before we move on to the skill gap analysis for the rubber industry in the state of Karnataka based on the survey conducted for the select manufacturing units, it is important to understand what we mean by Skill and Skill Gap. An ability and capacity acquired through deliberate, systematic and sustained effort to smoothly and adaptively carry out activities or job functions involving ideas, things and people is how we may define *Skill* in the industrial set up. Different types of skills are required in the manufacturing units for various job roles. Here it is noteworthy that we first need to define the skills required to perform a specific job role and then highlight the gap. The difference in the skills required on the job and the actual skills possessed by the employees is referred to as *skill gap*. Skill gap analysis for the various job roles in the rubber industry helps achieve the following objectives:

- Helps to define the skills required in the industry at present and in future
- Make employees aware about the critical skill they will need to develop/learn
- Helps in recruitment effort when current employee do not possess the required skills for the specific job role

This chapter presents the skill gap noted by the firms producing rubber products in the state, job role wise skill gap for different segments, skill gap intensity for each of the job role and emerging skill requirements in the future in the industry.

A) Missing Skills: An Analysis

An attempt is made to provide an industry's perspective regarding the employees' skill gap that the entrepreneurs have identified and experienced in their organizations. Interestingly, more than half of the firms mentioned that there are no skills missing with their employees. On the other hand, the firms who responded to the query related to the skills that the industry find missing in their employees believed that the workers lack technical skills in this industry badly whether it is a small, medium or a large organization.

Table 4.1: Technical Skill Gap: Product Category Wise

Category	Firm's response (%)
Camel back	22
Footwear	-
Belts and hoses	16
Tyre, Tube and Flaps	-
Dipped goods	-
Others	62

As the employees mainly gain knowledge on the job which has been highlighted throughout in the survey responses, the weakness on the part of knowledge regarding the properties of the material/product and their usage seems to be another area of concern. An important area of concern that they reported relates to the planning skills for operations.

B) Skill Gap: Based on Major Classification

As reported by the firms, there are distinct skill gaps prevalent at different levels. However, for some levels, there is no skill gap. Broadly, here we will list down the main skill gap observed at helper, operator, supervisor, quality control and management level. Following the organizational hierarchy, let's begin from the bottom of the pyramid.

1. Helper

Entrepreneurs have shown their concerns over the education levels of the helpers working in the industry. Due to the lower level of education, it becomes difficult for them to understand the technical related to the product and process. The individuals working as helpers in the factory premises are primarily not trained at all and do not possess any knowledge about machinery. Generally, they need to be guided all the time for their work. On their behavioural side, some of the firms have mentioned that they are not dedicated towards their work and easily lose focus while performing manual tasks. In general, it is important to focus on their personality development, disciplinary and communication skills. An attitude towards self learning need to be developed which is extremely important for progress on professional front.

2. Operators

The operators handling a range of activities in the manufacturing unit are not trained and skilled for performing their roles. On the job training is provided to most of the operators employed in the rubber products manufacturing units in Karnataka. Lack of product, raw material and process knowledge is the main gap witnessed for the individuals handling machine operations. Issues arising in functioning of machine and its repair are not easily resolved by the operators. They are generally not able to resolve even small issues arising at their end.

3. Supervisor

Here emerges an important issue with respect to the skill gap prevalent in the rubber industry at supervisory level in the state of Karnataka. Either the firms have not identified any skill gap or majority of those who have found any skill gap in the performance of supervisory role has rated it of high intensity. Supervisors are the main pillar of the manufacturing activities under whose guidance the work is carried out in the unit. One of their main roles is to train the workforce and get the product ready. Therefore, wherever the skill gap at this level is of high intensity, the firms need to take an immediate corrective action for the smooth functioning of the manufacturing activities.

4. Quality Control

Experts and experienced personnel have been hired by the rubber industry for quality checking of the manufactured products. There is no skill gap reported by the majority of the respondent firms for the people engaged in performing this job role.

5. Management

For the people involved in managerial tasks associated with production, storage, maintenance and factory operations, skill gap related to technical knowledge, planning skills and computer application has been identified based on the survey responses.

There exist large number of employees who are involved in the production or manufacturing process who receives training in the factory premises only after getting employed, therefore the skill gap at the entry level is at the highest level.

Table 4.2: Job Roles and Skill Gap: Karnataka

Segment	Job Role	Skill Gap	Intensity
Tread Rubber	Manager	• Lack knowledge about rubber • Not well versed with computer applications • Lacks planning skills	High
	Supervisor	• Lack technical skills	High
	Operator	• Lack technical skills	High
	Mixing Operator	• No technical knowledge of chemicals and machine problems • Lack basic knowledge about product and process	Medium
	Extruder Operator	• Lack knowledge about machine and its function • Not trained	Medium
	Helper	• Lack technical skills • New people come and leave, those who stay take long time to learn and always need to be guided	Medium
	Technical & Quality Assistant	• None	Low
	Operations Head	• None	Low
Adhesives	Manager	No skill gap	Low

	Cutting and Packaging Worker	• None	Low
	Mixing Operator	• No technical knowledge about chemicals and machine problems	Medium
	Helpers	•None	Low
Moulded Products	Manager	• Lack of knowledge about rubber • Lack managerial skills • Less knowledge about rubber industry	High
	Mixing Mill Operator	• Lack technical skills • Less knowledge about rubber and chemical • Need to be guided every time	High
	Moulding Operator	• Lack technical knowledge • Lack knowledge regarding time duration for respective process	Medium
	Press Operator	• Lack technical knowledge • Lack dedication • Lack theoretical knowledge • Lack knowledge about tools • Cannot resolve small issues on their own	Medium
	Helper	• Lack dedication to work • Less educated • No training • No basic knowledge about machines	Medium
	Quality Check	• Lack judgmental skills	Medium
	Supervisor	• Base is not strong in rubber industry • Lack of knowledge about machinery	High

		• Poor management	
	Trimming & Packaging	• Lack basic knowledge of rubber • Lack of product knowledge and understanding about quality	Medium
	Maintenance	None	Low
	Accountant	None	Low
Beltings	Supervisor	• Less knowledge about machines • Not efficient in controlling workers • Base is not strong in context of rubber industry	High
	Kneader Operator	• Lack of technical knowledge about various chemicals and rubbers	Medium
	Mixing Mill Operator	• Lack of basic knowledge about raw material	Medium
	Calendering Operator	• Technical knowledge about machine operations • Cannot resolve small issues on their own	Medium
	Curing Operator	• Lack of technical knowledge	Medium
	Helper	• Lack of training and dedication	High
Dipped Goods	Supervisor	• Lack of technical knowledge	Medium
	Helper	• Uneducated • Loose focus while performing manual work	Medium
	Manager	No skill gap	Low
Note: No skill gap reported by the firms producing FOOTWEAR, TYRE & TUBE in the state for any of the job roles.			

Skill gaps have been highlighted in the above section for the different categories of the employees segment wise in the state but it is significant to understand its intensity to take necessary action for improving the efficiency of performing assigned tasks. For example: the employees working at the manager and supervisors level across the rubber product manufacturing segments have shown intense skill gaps wherever it is prevalent, therefore the job roles falling under this category require immediate action while those working at operator level in different job roles, the intensity of the gap seems to be majorly medium which can be resolved over a period of time.

C) Skill Gap Intensity

The intensity of skill gap is listed under three categories by the firms covered in the sample of the study i.e. Low, Medium and High. However, the analysis of the responses is listed under following categories based on the given criteria:

Table 4.3: Skill Gap Intensity Criteria

Category	Criteria (Response of firms)
Low	Low: 80 percent or more
Low to Medium	Low: 60 to 80% and Medium:20-40 %
Medium	Medium: 80 percent or more
Medium to High	Medium: 60 to 80% and High:20-40 %
High	High: 80 percent or more

Analyzing the responses of the firm for the intensity of the skill gap noted for non-core job roles by them, it is interesting to note that the intensity of skill gap is not high for any of the roles across the different segments. Moreover, two segments viz footwear and tyre & tubes have not identified any skill gap for the specific roles.

The skill gap intensity for operator's role for various activities has been rated mainly medium by the respondent firms. However, there is only one supervisory role mentioned by the organization at the senior level but not specific to different job roles. Nevertheless, the supervisor's role assumes high intensity for skill gap wherever noted.

An analysis of skill gap intensity indicates that the firms have not rated low skill gap intensity for any operators' role. Most of the operators are facing medium level of skill gap which can be corrected by technical training. Interestingly, firms reported that helpers which form an important part of the industry mainly lack skills in performing their tasks carefully, not on their routine jobs of housekeeping, loading/unloading, movement of material etc.

D) Emerging Skill Gap

It is difficult to find skilled manpower in the current scenario as there are mainly unskilled and semi-skilled workers are available as per the feedback of the firms engaged in rubber product manufacturing. The firms have not indicated any major educational skill gap that would emerge in

near future in the industry. Also, some of the firms have clearly outlined that there will be availability issues w.r.t the skilled operators in near future. It is noteworthy that some of the firms do not envision any major change in their line of production. However, majority of them would like to expand the same line of their business.

Following these two sets of responses, it is estimated that the requirement for the job roles would be more or less same for the industry as a whole however technological advancement (if any for small and medium scale firms) may demand employees trained with operations of automated machines.

Fig 4.1: SKILL GAP INTENSITY

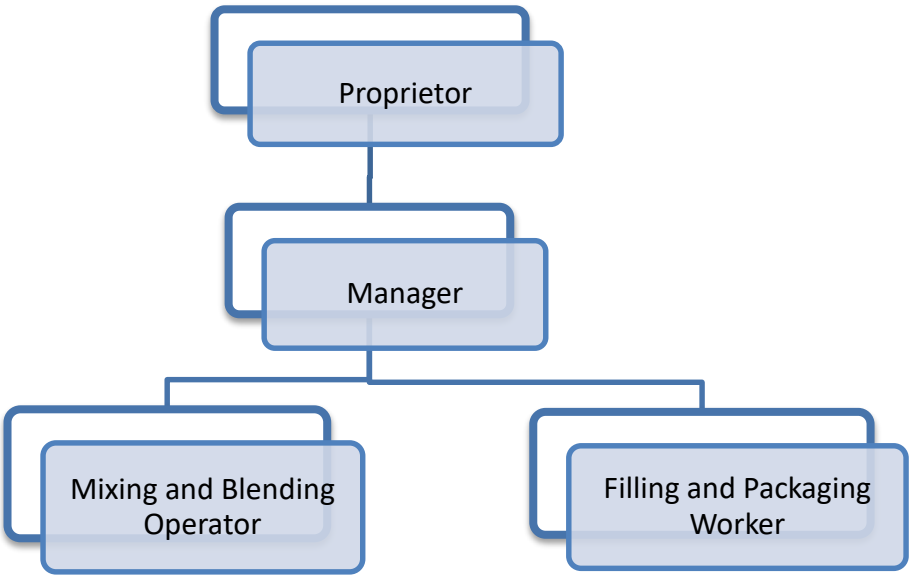
Job Role	Low	Low to Medium	Medium	Medium to High	High
Supervisor					
Manager					
Mixing Operator					
Kneader Operator					
Curing Operator					
Moulding Operator					
Extruder Operator					
Press Operator					
Packing Operator					
Calendaring Operator					
Helper					
Quality Control					

SEGMENTS AT A GLANCE

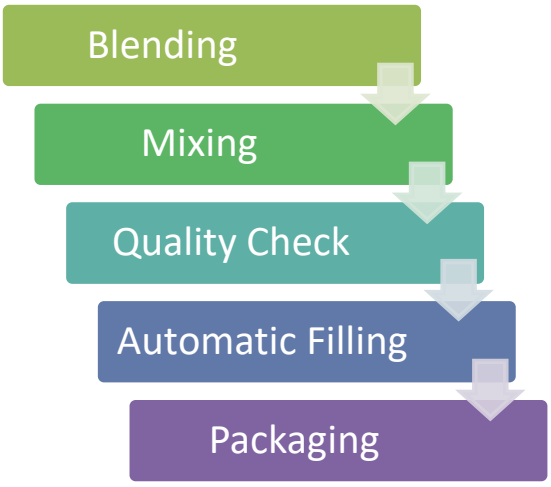
Adhesives

The survey findings reveal that all the respondent firms involved in the manufacturing of adhesives are tiny units employing less than five employees. As per their feedback, they do not face any major challenge with respect to human resource availability. The main job requirement is for operator/s and helpers. The surveyed firms in this business line have majorly recruited all their employees from the city in which they operate.

Fig 5.1: Organization Structure



Process Outline:

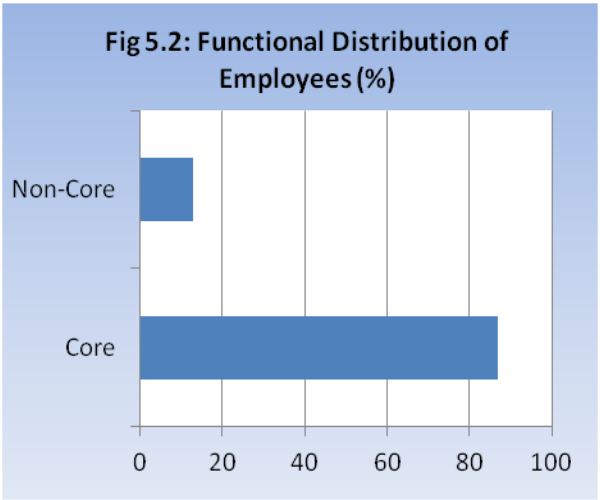


The operations at the adhesive manufacturing firms employing very few workers depict its simple manufacturing process. Natural rubber and rubber chemicals are blended using blending machine. The other chemicals are mixed thereon using mixing mill. The prepared product is checked for its quality. The product is then transferred to automatic filling machine to get it packed in various boxes. The operator and helper function over this machine to make the product ready to deliver.

Table 5.1: Scale of Operation					
Sample Units	Tiny	Small	Medium	Large	Total
Adhesive	5	-	-	-	5

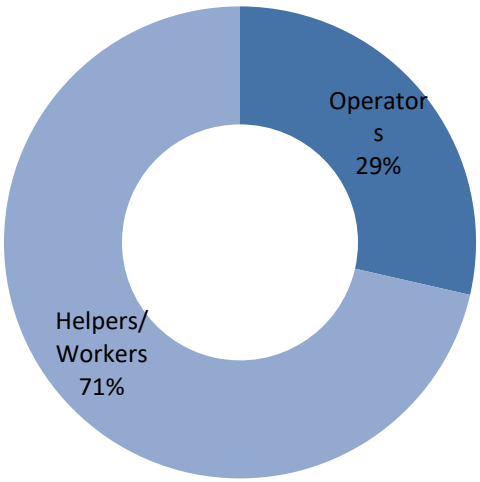
Manpower at a glance

All the employees in the adhesive producing firms are on roll employees, no firm is hiring off roll employees. The main sources of recruitment are through employee's reference, and direct interview. All the firms have recruited mainly local people in their production units, the participation of people coming from outside for work in adhesive segment in UP is very minimal. The proportion of employees engaged in core activities employee constitute 87 percent of the total employees.



Moreover, all the respondent firms feel that there is a scope for transfer of roles in the activities carried out by the workers in their units. The workers need to perform multiple tasks in these units. Main job role requirement is listed for helpers/workers by most of the firms and in adhesive segment. According to the firms, the employees lack technical and communication skills. The workers in the adhesive units are less educated; they have not completed the school education even at the metric level. Only the proprietors hold technical qualifications.

Fig 5.3: Job Role Distribution



Training

Training is mainly provided on the job for different functions. No specific training departments are in existence as well as there is no association with training institutes which implies that this segment of rubber industry in Karnataka is delivering training in an unstructured manner.

Educational Qualifications (% of total employees)

Educational Qualification	Tiny
Ph.D/Research	-
Engineers	13
Graduate	-
Diploma Engineers	-
ITI/Vocational Education	-
XII/X/School Education	-
Below Xth standard	87
Others (CA, CS, ICWA, MBA etc.)	-

Main Roles and Skill Gap

1. **Mixing Operator**

Mixing Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Mixing the correct (indicated) proportion of raw material. • Operate the mixing machine • Proper cleaning of the machine • Regular maintenance of the machine • Guide the helper	• Lack of technical knowledge about chemicals and machine problems			

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

- Identifying the different inputs
- Understand the importance of each raw material
- Knowledge of operating the machine

- Technical Knowledge of each input.
- Ability to communicate with the plant in-charge in case of any faults or technical issues

Managerial skills:

- Guiding the helpers for routine work
- Time management for completion of work
- Ability to take decisions
- Team spirit

Soft Skills:

- Good communication skills
- Good listening skills.
- Understanding skills for performing work quickly

2. Helper/Worker (Filling/Packaging/Dispatch)

Helper	Skill Gap			
	Tiny	Small	Medium	Large
• Works as directed by proprietor • Pack the products in properly, clean and tight packaging so that product does not come in contact with air because then it will solidify. • Clean the packaging machine. • Fill the containers of different sizes as asked by the manager. • Put it at proper storage area	None			

Intensity of Skill Gap: Low

Skills Required

Technical Skills:

- Perform all the work as directed
- Ability to communicate with proprietor

- Knowledge to pack the products properly and how the machine can be used to best seal the packs.
- Fast to act so that more units can be packed without wastage of product.

Soft Skills:

- Basic communication skills
- Basic behavioral skill

3. Supervisor/Manager

Supervisor/Manager	Skill Gap			
	Tiny	Small	Medium	Large
• Manage the chemical settings by adding a certain amount of chemical used for product development and also manage the production • Manage the accounts of the company. • Follow up the quality check before the product is made. • Manage companies day to day activities and report the same to the proprietor • Manage procurement and sales activities and manage the customers • Understand the end user requirement and design processes to incorporate the customer needs in the final product. • Manage the workers	•None			

Intensity of Skill Gap: Low

Skills Required

Technical Skills:

- **Knowledge of the rubber industry**
- **Knowledge of basic properties chemicals, additives used, etc used in production process**
- **Knowledge about the machines and their operation**
- **Ability to measure dimensions using industrial measuring instruments**
- **Power to recognize error**

Managerial Skills:

- **Should be able to supervise the team and guide them so that quality is maintained**
- **Ability to schedule work and manage time**
- **Ability to motivate workers.**

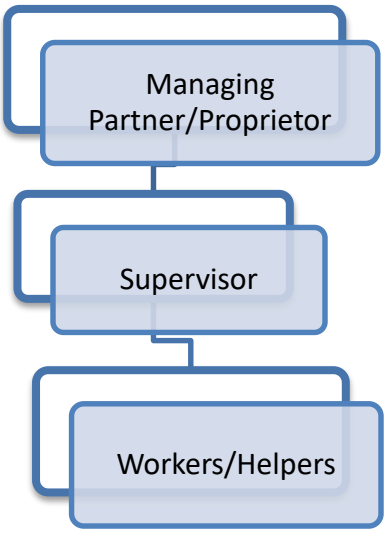
Soft Skills

- **Effective communication skill**
- **Interact with workers, superiors and external parties**

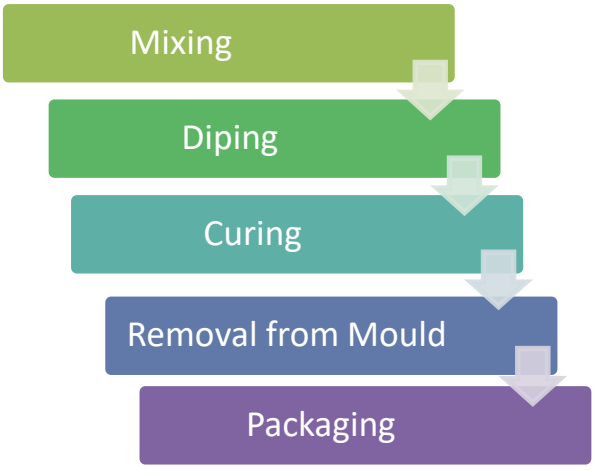
Dipped Goods

Dipped goods producing firms in the famous city of Bangalore do not have any retention strategy for their employees. In seventy percent surveyed firms involved in the rubber gloves production, the attrition rate is reported to be higher than five percent. Moreover, the firms do not find any skill missing in their workers. This particular fact points towards the easy availability of the workers for performing simple tasks as required by the respondent firms. It has been highlighted by the firms that they are mainly hiring workers from the state only, either there are no outstation employees or if they exist then in very small proportion.

Fig 5.1 B: Organization Structure



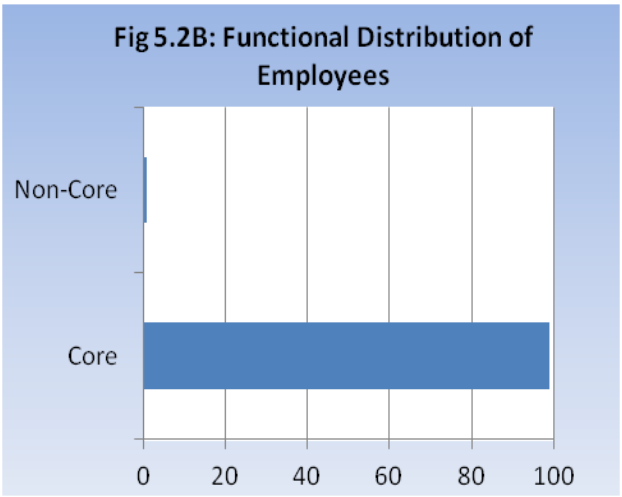
Process Outline:



At first, the mixing process is carried out involving chemicals, latex and other materials to form the required compound. Hand dummies are dipped in chemicals slowly so that a layer of latex is formed over it. After the dipping is done the dummies are to be kept in vulcaniser machine which heats up the dummies with latex on them making dry faster and also making it strong at specified temperature. The produced goods are thoroughly checked, then packed and made ready to deliver.

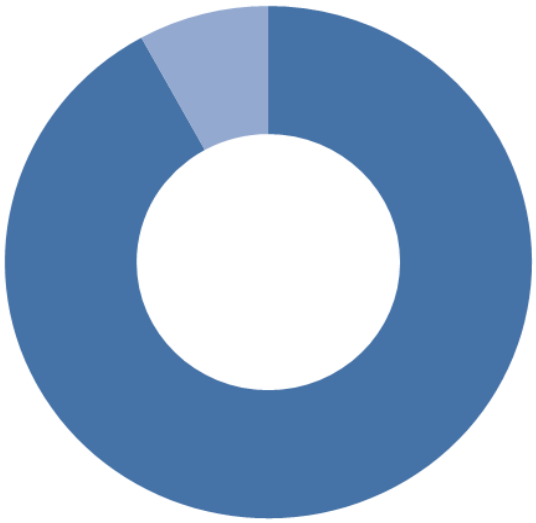
Table 5.1 B: Scale of Operations					
Sample Units	**Tiny**	**Small**	**Medium**	**Large**	**Total**
Gloves	3	4	-	-	7

Manpower at a glance



A very simple organizational structure has been noticed in the firms producing dipped goods in the state. The respondent firms are recruiting less than 40 employees as the scale of production is either tiny or small. Majority of the employees recruited in the gloves manufacturing firms are on roll and others employed on off roll basis. It is important to note that 99 percent of the employees are engaged in the core production activity, which implies that the administrative and managerial tasks are taken up by the owner themselves. In the units covered in the sample, the helpers'/workers role constitutes 92 percent of the total employees in the firms. Such a high proportion of helpers in such units clearly indicates main requirement for helpers in the gloves producing units. The transfer of roles is frequently noticed in these firms as the workers handle multiple tasks. No standard operating procedures are followed by the firms surveyed in this segment of the industry.

Fig 5.3 B: Job Role Distribution



The employees in the dipped goods segment are recruited mainly on the basis of references. Looking at the educational background of the workers, we have found that 95 percent of them are not even metric pass. However, given such a state of basic education among workers, the firms did not see any educational gap emerging in the coming years for the workforce employed in this segment of rubber product manufacturing. On the performance front, workers generally meet their targets whereas the performance review is undertaken by only two-third of the surveyed firms.

Table 5.2 B: Educational Qualifications (% of total employees)

Educational Qualification	Tiny	Small
Ph.D/Research	-	-
Engineers	-	-
Graduate	-	-
Diploma Engineers	-	-
ITI/Vocational Education	-	2
XII/X/School Education	-	7
Below Xth standard	100	91
Others (CA, CS, ICWA, MBA etc.)	-	-

Training

Training department is not in existence for any of the firms surveyed in the gloves producing units. The responding firms highlighted that experienced workers are employed otherwise in-house training is provided to them. Moreover, there is no relation with any training institute of these firms.

Main Roles and Skill Gap

1. Worker/Helper

Worker/ Helper	Skill Gap			
	Tiny	Small	Medium	Large
• See that the floor is maintained and nothing is getting wasted. • See that no accidents take place. • Follow the production activities as asked. • Use dummies properly and dip it as required or asked by the manager/supervisor. • Keep the product safely to vulcanize and dry it up • Do packaging properly in proper	• Lack of basic education	• Lose focus while performing manual jobs		

sets. • Keep the dummies properly so that they can be used again • Exchange their duties time to time as asked. • Complete the set target in timely manner • Check the quality of the products and also see the packaging is proper or not.				

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

- Knowledge about latex and chemicals
- Packaging methods and quality control procedures
- Dipping operation for the manufactured product
- Perform all the work as directed

Soft Skills:

- Basic communication skills
- Co-ordination skills
- Behavioral skills

2. Supervisor

Supervisor	Skill Gap			
	Tiny	Small	Medium	Large
• Manage the shop floor activities. • Set the machine for the mixing operation/operate the mixing machine and supervise the dipping operations. • Maintain the safety aspects as per the company standards		• Lack of technical knowledge		

• Manage the chemical settings that how much the chemical has to be used for product development and also manage the production • Follow up the quality check before the product is made. • To manage company's day to day activities and report the same to the proprietor.				

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

- Knowledge of the raw material and machines at hand
- Understand the processes conducted for dipped goods.

Managerial Skills:

- Should be able to supervise the team and guide them so that quality is maintained

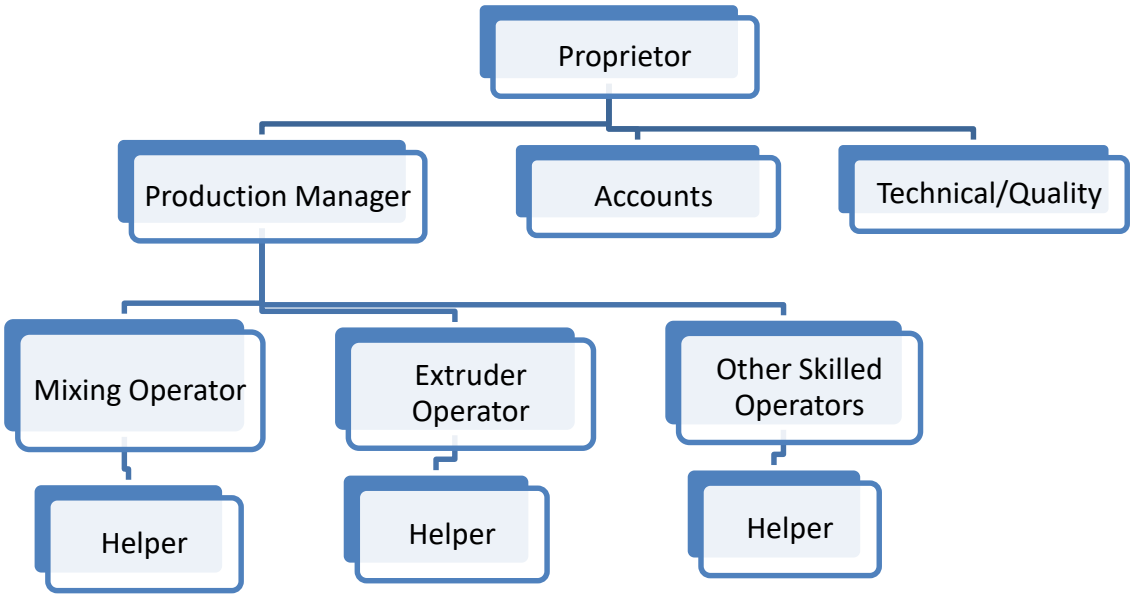
Soft Skills

- Effective communication skill

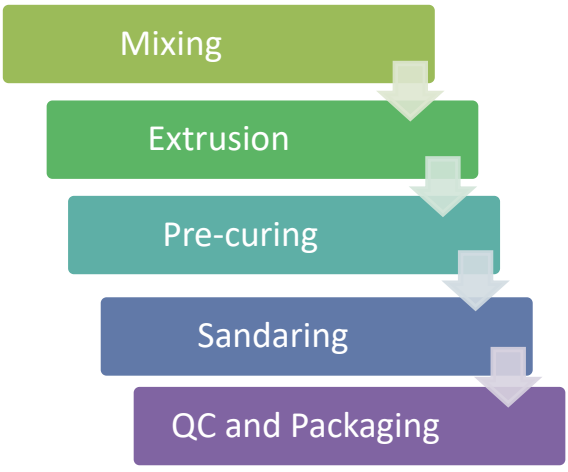
Tread Rubber

Whether a firm is in tread rubber business for last forty years or a new unit with less than five years of experience, a clear trend of employees performing multiple roles in this segment has been observed by all the responding firms. The entrepreneurs accept that there is ample scope of transfer of roles for employees in their units. The turnover of the firms in the tread rubber business varies between 5 lakhs to 54 crores implying the existence of small as well as large scale operations. Firms involved in tread rubber production in the state hire a large proportion of their workforce from within the state.

Fig 5.1 C: Organization Structure



Process Outline:



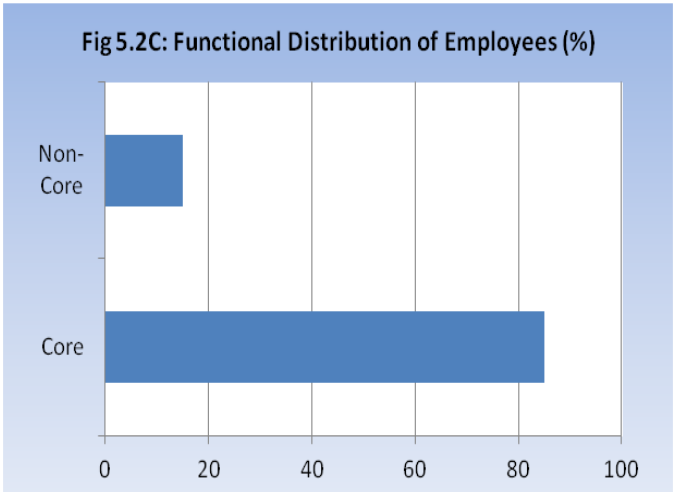
The manufacturing of tread rubber products involves the use of kneader as well as mixing machine. At first, raw material is put into the kneader machine where it is masticated in the large quantity. Mixing machine is used to further form rubber sheets. The sheets are taken to soap solution tank to make the sheets get cooled and cleaned. The sheets are kept for maturation for 1 day. After sheets get maturated they are taken to extruder where the sheets for tread rubber are

taken out. After extrusion, the tread rubber is taken for procuring and the precured rubber is taken to sandaring machine where the rubber is roughed from the backside. The produced goods are thoroughly checked and then packed as per the customer requirement.

Table 5.1C: Scale of Operations

Sample Units	Tiny	Small	Medium	Large	Total
Tread Rubber	6	7	-	2	15

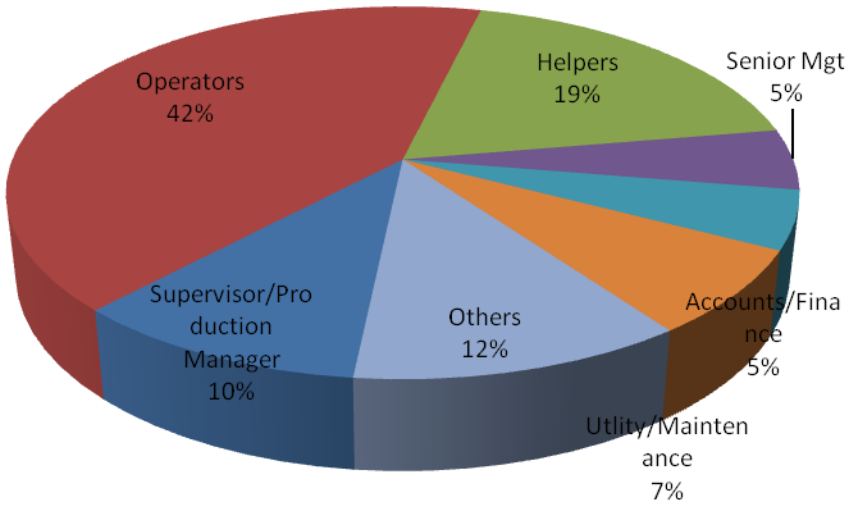
Manpower at a glance



The number of employees among the select units is reported to be as low as five in tiny units whereas large units have recruited more than hundred employees. Majority of the employees are recruited on roll in the select firms involved in manufacturing of tread products in the state. Around 85 percent of the employees of the responding firms are engaged in the core production activity, whereas a very small proportion of the total employees are taking up the administrative, accounting and managerial tasks. The employees are recruited mainly through reference and direct interview. The attrition rate seems to be relatively higher in these units as compared to the similar units in the other states. Eighty percent of the surveyed firms primarily follow the retention strategy of paying bonus and annual salary increment while others do not follow any such strategy to retain employees with their organizations. Three fourth of the surveyed firms easily find the employees required by them and do not face any shortage.

In the units covered in the sample, the information shared about their employees classification has helped in identifying the proportion of different level of employees in this segment. The main job role is for operators in the tread manufacturing units followed by the requirement for helpers. Standard operating procedures are followed by all the small and large scale firms in this segment of the industry while tiny units do not follow the same. SOPs are revised as per requirement however majority of the firms have not undertaken any revisions so far. Firms do not have any expansion plans at present and also they have not indicated any direction related to the future workforce size.

Fig 5.3 C: Job Role Distribution in Sample Units



Regarding the educational qualification of the employees in different categories, office staff holds degree of graduation whereas the helpers have mainly completed secondary/senior secondary. Surprisingly, a good number of operators have completed vocational education/diploma.

Table 5.2 C: Educational Qualifications (% of total employees)

Educational Qualification	Tiny	Small	Large
Ph.D/Research	-	-	-
Engineers	-	7	10
Graduate	4.5	10	13
Diploma Engineers	-	11	13
ITI/Vocational Education	-	5	10
XII/X/School Education	20	30	25
Below Xth standard	75.5	37	29
Others (CA, CS, ICWA, MBA etc.)	-	-	-

Training

Training department is not in existence for any of the firms surveyed in the referred segment. The responding firms highlighted that there is a need to train employees, but they do provide on the job training after hiring them. Moreover, there is no relation with any training institute of these firms operating in the southern state of the country.

Main Roles and Skill Gap

1. Mixing Operator

Mixing Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Maintenance of the machine. • Work over all the machines as required by the cycle of production. • Follow the job card for the production • Mix the raw materials , see that chemicals mixed are exactly same as asked by Manager/Supervisor • See that there is less product and time wasted ; should focus on production • Take the help of workers as required • Work on all the machines properly. • Keep machine clean and proper. • Teach the helper about product, process and machinery • Follow the instructions given by the supervisor	• Lack technical knowledge about chemicals and machine problems • Lack technical skills • Lack of basic knowledge about product	• Lack technical skills	-	• Lack technical skills

Intensity of skill gap: Medium

Skills Required

Technical Skills:

- Knowledge about the chemicals and rubber.
- Operate the machine skillfully.
- Know the composition and required specification.

Managerial skills:

- Guiding the helpers for routine work
- Ability to communicate with the Manager/Supervisor in case of any faults or technical issues
- Able to tackle small issues in production

Soft Skills:

- Good communication skills
- Good listening skills.
- A quick learner and clearly understand and implement what the Supervisor /Proprietor say
- Ask for any help and report to higher authority

2. Extruder Operator

Extruder Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Precautions to be taken to avoid accidents • Keep the machine in good condition • Follow the production as told by the supervisor • Clean the area after the work is done • Teach the helper how it is to be done • See that no wastage takes place. • Follow the orders given by supervisor	•Lack of knowledge about machine and its functions •Untrained	•Lack technical skills	-	• Lack technical skills

Intensity of Skill Gap: Medium

Skills Required

Technical Skills:

- Operating the machine skillfully and taking due care while working.
- Should be able to follow the standard operating procedures

- Handling of equipments properly
- General maintenance skills

Managerial skill:

- Good communication skills for guiding helpers.
- Guide the helpers in proper loading and unloading of material

Soft Skills:

- Effective communication skill
- Quick learner
- Basic arithmatic

3. Helper

Helper	Skill Gap			
	Tiny	Small	Medium	Large
• Maintain the floor properly and keep the tools safely so that it is not damaged. • Assist the operators and supervisors as asked or required. • Loading and unloading the material, moving the products to right place and bringing raw material to the machines • Finishing and packing the product in respective packing material. • Do all work as directed by the supervisor/operator • Be helping hands in all production and packaging activities • Learn how to operate the machines	• Lack technical skills	• New people come and leave, worker take long to learn and need to be guided always. • Lack technical skills	-	• Lack technical skills

• Clean the machines on regular basis				

Skill Gap Intensity: Medium

Skills Required

Technical Skills:

- Proper finishing and packaging
- Do all the work as directed
- Pay attention towards direction
- Consistency in work

Soft Skills:

- Basic mathematical skills for product counting, identification of numbers etc.
- Good reading skills
- Discipline
- Quick learner

4. Manager

Manager	Skill Gap			
	Tiny	Small	Medium	Large
• Manage the production in the factory properly. • See that production is being done properly, effectively and efficiently. • Set targets for per day production as required. • See that discipline is maintained in the company. • Manage the productivity	• Lacks knowledge about rubber • Not updated with computer	• Lacks knowledge about rubber • Not updated with computer	-	• No skill gap

accordingly. • See that the quality of production is managed properly. • See that the machines are maintained properly. • Handle the accounts of the company and maintain all the records of transactions done by the company • Take the reporting from the supervisor of work done on daily basis • Set targets for work according to the requirement. • In absence of owner manage the company. • Manage the delivery of goods also. • Mark the attendance • See that no quality issues arise.	work	work		

Intensity of Skill Gap: High

Skills Required

Technical Skills:

- Knowledge of production and machine operations
- Knowledge of the rubber industry
- Knowledge of the current trends in rubber technology

Managerial Skills:

- Effective work, time and human resource management
- Should be able to supervise the team and guide them so that quality is maintained
- Ability to schedule work and manage time
- Ability to motivate workers.

Soft Skills
• Effective communication and co-ordination skill

5. Supervisor

Supervisor	Skill Gap			
	Tiny	Small	Medium	Large
• Prepares the recipe for making rubber sheets. • Manages the production from mixing to packaging. • Prepare daily report • See that smooth functioning is there at the floor. • Maintain the record of people and set their work over different machine. • Resolve issues of the floor if not then report to the manager. • Assist the operators whenever needed. • See that proper production takes places and no wastage is there. • Guide the operators and helpers if any help is required. • Take the work of operator if anyone is absent. • See that no accidents take place in factory. • Take care of issues at the production line	• Lack technical skills and basic knowledge about product	• Lack technical skills • Lack basic knowledge		• Lack technical skills
Skill Gap Intensity: High				

Skills Required

Technical Skills:

- **Knowledge of machines, rubber, chemicals and production process**
- **Expert in the field of rubber**
- **Knowledge of quality testing procedures**

Managerial Skills:

- **Manage issues emanating in production at different stages**
- **Proper documentation**
- **Maintaining confidentiality as per the requirement**

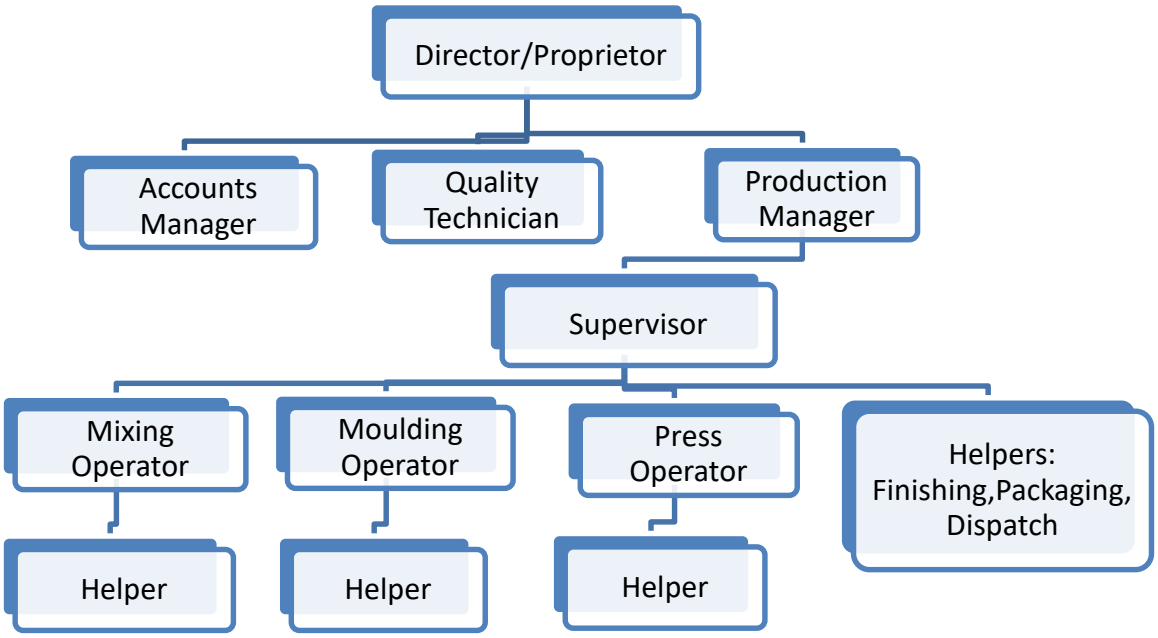
Soft Skills:

- **Good communication skills**
- **Good analytical skills**

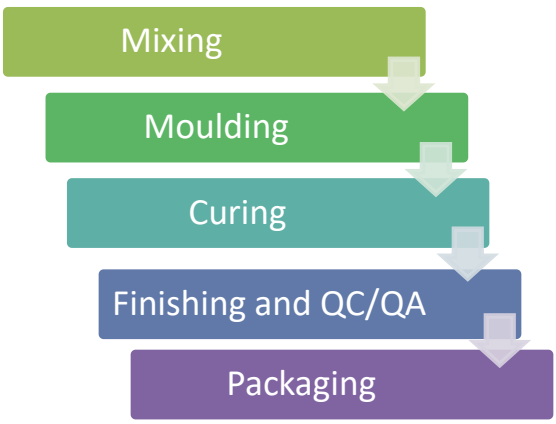
Moulded Products

The moulded rubber products manufacturing is mainly undertaken by the tiny and small scale units in the state as per the information shared by the surveyed firms. Most of them are operating their business in the capital city, Bangalore. The firms covered include old established firms dealing in moulded products since 45 years as well as younger firms established in the last decade. The survey findings reveal that there is a major issue related to the availability of helpers. Half of the firms do not have any expansion plan related to their production.

Fig 5.1 D: Organization Structure



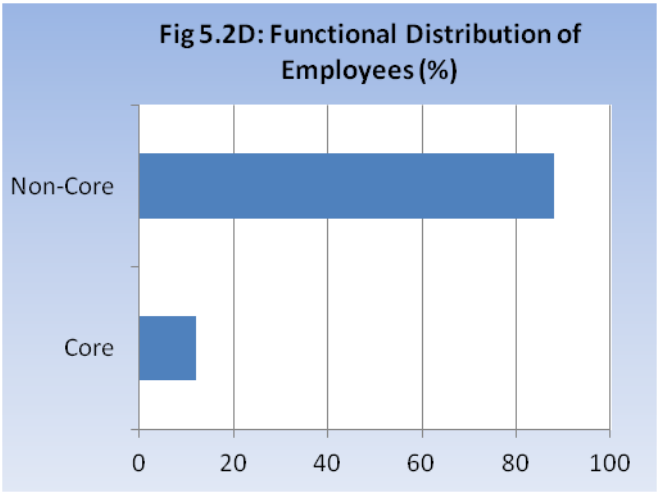
Process Outline:



Compound is obtained by mixing the raw materials in a mixing machine. The mixing takes place as per the required specification and then the sheet/strip is prepared. Then the desired shape product is put in the moulding machine and then curing takes place. Finishing of the product is carried out. The produced goods are thoroughly checked for compliance to customer specification. The finished products are then packed and made ready to deliver.

Table 5.1D : Scale of Operations					
Sample Units	**Tiny**	**Small**	**Medium**	**Large**	**Total**
Moulded Products	6	15	-	-	21

Manpower at a glance

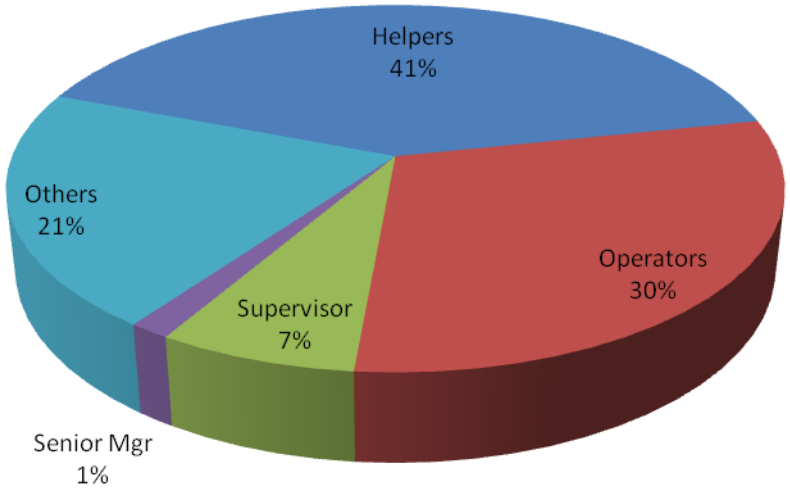


Majority of the firms, 18 out of 21 surveyed firms have recruited 100 percent on roll employees. The firms recruiting off roll employees have relatively higher number of employees working in their firms in the select segment. The major strategy for recruitment is referential hiring and direct interview. Majority of the employees are engaged in the core production activity, only 12 percent of the total employees are taking up the administrative, managerial and accounting tasks. However, majority of the units feel that there is a scope for transfer of roles in the activities carried out by the workers in their units as they perform multiple tasks.

A large proportion of the surveyed firms have clearly mentioned that they do not find easily the requisite number of employees required to carry out the production whereas others have highlighted that there is a no major issue related to manpower as they have experienced people working in their unit. There is a major concern reported for helpers' availability by the firms facing problems in of manpower shortage. Also, the employees lack skills with respect to technical knowledge and raw material and product knowledge according to the respondent firms in moulded goods producing units. Based on the feedback received from the firms, it has been observed that attrition rate is relatively higher in this segment of manufacturing in the state.

As per the classification of employees, the segment indicates mainly the requirement of helpers followed by operators. Interestingly, more than two third of the firms do not have any one recruited for quality control/assurance. Also, the role of sales and marketing seems not to be existence separately implying that such roles are handled by proprietors themselves given the small scale of operations.

Fig 5.3D: Job Role Distribution in Sample Units



An analysis of operator level employment reflects that there is mainly the requirement for hydraulic press operation followed by mixing, moulding and trimming operation. The operator level trend is quite different for this segment as compared to the other neighbouring states where the main requirement emerges for mixing and moulding. The requirement for extrusion emerges as some of the firms involved in the production of moulded products also produces extruded product.

Fig 5.4 D: Operator Level Employment Pattern

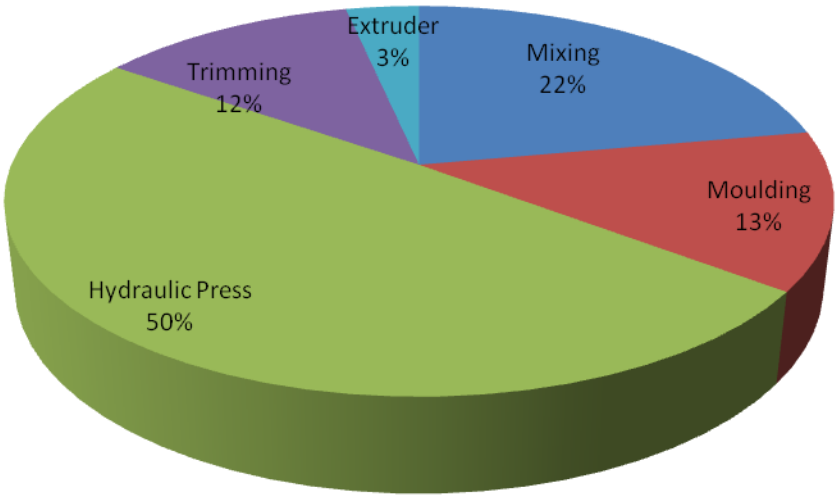


Table 5.2D: Educational Qualifications (% of total employees)

Educational Qualification	Tiny	Small
Ph.D/Research	-	-
Engineers	-	1
Graduate	3.5	7
Diploma Engineers	2.1	5
ITI/Vocational Education	10	4
XII/X/School Education	22	29
Below Xth standard	62.4	53
Others (CA, CS, ICWA, MBA etc.)	-	1

Training

All the firms surveyed in the moulded goods segment in the state do not have any separate training department, on the job training is the main methodology adopted in the industry. Most of the firms feel that there is a need for training however their requirement varies. Some of them believe that operators need to be trained for machine operations, trimming, packaging and production techniques whereas few of them highlighted the requirement for training helpers and inspection team. However, it is interesting to note that no firm has any relation with the training institutes.

Main Roles and Skill Gap

1. **Mixing Operator**

Mixing Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Mixing the raw material and the Chemical in proper proportion as instructed • Maintain the pressure and the temperature of the machine so that mixing occurs properly • Maintain the machine as per the guidelines. • Check that the preparations are	• Lack technical skill • Less knowledge about rubber and	• Lack technical knowledge • Less knowledge about rubber and	-	-

without any deformities and blending has occurred properly; as is suitable for the next process. • Maintain the machine by cleaning it and checking the conditions on daily basis .	chemicals • Need to be guided all the time • Lack of knowledge about processing time	chemicals • Need to be guided all the time		

Skill Gap Intensity : High

Skills Required

Technical Skills:

- Good understanding of the machine at work.
- Knowledge of identifying the chemicals to be added to raw material.
- Putting the chemicals in sequence.
- Attentive towards the work process.
- Know the composition and required specification.
- Visual inspection of the compound to understand the condition.
- Avoid contamination of the compound.

Managerial skills:

- Guiding the helpers for routine work

Soft Skills:

- Good communication skills
- Good listening skills.
- Understanding skills for performing work quickly

2. Kneader Operator

Kneader Operator	Skill Gap

• Properly operate the Kneader machine to mix the raw materials • Mixing the chemicals, synthetic and natural rubber in proper proportion • Chemicals are mixed in proper proportions as instructed • Keep machine clean • Guide the helper • Maintain the machine as per the guidelines.	Tiny	Small	Medium	Large
	-	• Lack technical knowledge about various chemicals and rubber	-	-

<u>Skill Gap Intensity: Medium</u>

Skills Required

Technical Skills:

- Good understanding of the machine at work.
- Knowledge of identifying the chemicals to be added to raw material.
- Putting the chemicals in sequence.
- Know the composition and required specification.
- Visual inspection of the compound to understand the condition.

Managerial skills:

- Guiding the helpers for routine work

Soft Skills:

- Good communication skills
- Good listening skills.
- Understanding skills for performing work quickly

3. <u>Moulding Operator</u>

Moulding Operator	Skill Gap			
• Operate the machine properly. • Checking that the moulds are properly fixed • Maintaining the temperature of the machine which has been set by the supervisor. • Maintain the machine. • Take care of safety while working on the process as per org. guidelines.(as the temperature is very high) • Maintain the machine. • Report to the in-charge/supervisor in case of trouble	Tiny	Small	Medium	Large
	•Lack of knowledge about processing time	•Lack technical knowledge	-	-

Skill Gap Intensity: Medium to High

Skills Required

Technical Skills:

- Operating the machine skillfully and taking due care while working.
- Handling the moulds as prescribed
- Finely work on the preparation based on the dimensions set by the management.
- Maintain the machine so that it is suitable to work on for the next shift

Managerial skill:

- Good communication skills for guiding helpers.
- Guide the helpers in proper application of the produced product

Soft Skills:

- Effective communication skill

4. Press Operator

Press Operator	Skill Gap			
	Tiny	Small	Medium	Large
• Maintenance of the machine. • Control of temperature when the product is inside it. • Keeping track of curing time for each product. • Keep the products carefully when the cool down • Follow the guidelines provided by the company • Follow the safety instructions such as wearing gloves etc	• Lack of proper technical knowledge • Lack of dedication towards work	• Lack of proper technical knowledge • Lack of dedication towards work • Lack theoretical knowledge tools • Lack knowledge about tools • Lack technical knowledge about machine • Cannot resolve small issues on their own • Experienced but not educated		

Skill Gap Intensity: High

Skills Required

Technical Skills:

- Thorough knowledge of curing process and press and it's working.
- Maintain the appropriate temperature and pressure at all times.

- Basic knowledge about safety measures

Managerial skill:

- Good communication skills.

Soft Skills:

- Good knowledge of metric system (time, temperature, pressure)
- Good reading skills

5. Quality Technician

Quality Technician	Skill Gap			
	Tiny	Small	Medium	Large
• From beginning to the packaging check the quality that the production is in right direction or not • Carry out quality tests and procedures as per the standards • Identify the process where defects are originating. • If any unit goes wrong, inform about it to manager	-	•Lack judgmental skills •Experienced but not trained •Lack of knowledge	-	-

Skill Gap Intensity: Low

Skills Required

Technical Skills:

- Knowledge of testing procedures
- Knowledge of lab equipment and its handing
- Knowledge lab chemicals and preparations

Soft Skills:

- Good communication skills

6. Supervisor

Supervisor	Skill Gap			
	Tiny	Small	Medium	Large
• Be active on floor with operators and follow all the instructions • Follow all the orders given by proprietor in respect of production in company • Check that the quality of per day production • Inventory should be maintained as per the schedule • Create a report of each day's activity and provide same to the owner and discuss the problems being faced. • Help the operators in production activities • Mixing of chemicals with rubber in proper ratio. • Knowledge of all the machines so that small problems can be resolved • Check that the workers are coming on time or not and mark their attendance • Provide daily report to the production manager. • If any worker or helper absent then assign other to do the	• No skill gap	• Base is not strong in context of rubber industry • Lack knowledge about machine operations	-	-

job. • Managing the requirements of the floor				

Intensity of Skill Gap: Medium

Skills Required

Technical Skills:

- Knowledge of the rubber industry
- Knowledge of the current trends in rubber technology

Managerial Skills:

- Should be able to supervise the team and guide them so that quality is maintained
- Ability to schedule work and manage time
- Ability to motivate workers.

Soft Skills

- Effective communication skill

7. Accountant

Accountant	Skill Gap			
	Tiny	Small	Medium	Large
• Record day to day transactions • Record the expenses and purchases made by the company • Maintain ledger • Keep all the bills properly and maintain all accounts and files properly as asked. • Release the payments with the permission of owner to various vendors who supply raw	• No skill gap	• No skill gap	-	-

material. • Maintain the accounts for the company • Release the salary of staff.				

Skill Gap Intensity: Low

Skills Required

Technical Skills:

- Knowledge of various documents and their importance.
- Mathematical and accounting Skills.
- Ability to communicate in English language
- Good IQ level.
- Ability to communicate and negotiate with the external parties.

Soft Skills

- Effective communication skill

8. Production Manager

Production Manager	Skill Gap			
	Tiny	Small	Medium	Large
• Manage the office of the company. • Follow sales and procurement function of the company with the directors of the company. • See that the targets are met properly every day or not • Check the quality of the sample of the product which is produced. • Give updates about the market	• Less knowledge about rubber and rubber industry	• Less knowledge about rubber and rubber industry	-	-

situation • Keep a check on the shop floor activities. • To manage the factory on daily basis. • Take the reporting related to production on daily basis. • Manage the production as per the requirement and order. • Marketing is also to be seen by the manager • Discuss any issue regarding floor • Keep record of raw material used and product produced				

Intensity of Skill Gap: High

Skills Required

Technical Skills:

- Knowledge of the rubber industry
- Knowledge of the current trends in rubber technology

Managerial Skills:

- Should be able to supervise the team and guide them so that quality is maintained
- Ability to schedule work and manage time
- Ability to motivate workers.

Soft Skills

- Effective communication skill

9. Helper

Helper	Skill Gap			
• Supporting the operators on	Tiny	Small	Medium	Large

machines and being a helping hand over production needs • Cleaning the work area after job is done • Keeping and maintaining tools at their respective places • Follow the orders given by managers and operators. • Help in packaging of the products • Be active on floor with operators and follow all the instructions • Ensure minimum wastage	• No skill gap	• Lacks technical knowledge • Not well educated therefore lack basic knowledge • Lack training and dedication	-	-

<u>Skill Gap Intensity: Low</u>

Skills Required

Technical Skills:

- Proper finishing and packaging
- Do all the work as directed
- Remove the moulds from the rubber in line with the guidance of the supervisor

Soft Skills:

- Basic mathematical skills for product counting, identification of numbers etc.
- Good reading skills

HUMAN RESOURCE REQUIREMENT

In the rubber industry, there are people employed primarily in the two main segments i.e. tyre and non-tyre manufacturing. In addition to this, there are a large number of human resources engaged in the repair and maintenance of the tyre and tube which forms an important segment of employment for the rubber industry in the country. Here, we first attempt to estimate the current employment in the rubber industry in the state of Karnataka which forms the basis of our estimation for the human resource requirement in the coming years.

A1. Employment in Rubber Industry

Around 1.3 lakh people are estimated to be engaged in the rubber industry in the state of Karnataka. The employment for the following segments have been considered to arrive at the workforce associated with the rubber industry.

a) Tyre and Tube Companies
b) Non-tyre companies
c) Repair and Maintenance
d) Recycle, Reuse and Waste

As the tyre and tube manufacturing firms are mainly operating in the organized segment, the employment in these firms has been estimated based on the industry feedback. The employment for the firms engaged in the non-tyre segment has been arrived on the basis of data collected in the survey conducted for the rubber industry by the RSDC. However, the repair and maintenance segment employment is estimated considering the various parameters such as road network in the country, number of villages and number of petrol pumps. An emerging segment of recycle, reuse and waste accounts for an estimated 3 percent of the total employment in the industry in the three segments discussed above.

A2. Future Requirements

Human resource requirement in any industry in coming years depends on the expansion of existing units, setting up of new units and development in technology in use. In addition, to this the overall growth of the state economy, manufacturing sector and social development are important factors facilitating growth in any industry and thus the employment. An estimation based on responses collected in the sample survey regarding their expansion plans, automation; recently set up major tyre plants and expansion in coming year, and other factors such as GSDP, Manufacturing sector growth, capital investment and HDI, has been attempted to highlight the human resource requirement in the rubber industry in the state.

A forecast for the human resource requirement in next five years is presented below to indicate the future trend in the rubber industry in one of the coastline states of the country, i.e. Karnataka.

Table6.1: Five Year Forecast	
Category	**Incremental Human Resource Requirement**
1. Auto tyres & tubes*	27086
2. Camel back	1764
3. Footwear	2335
4. Belts and hoses	1535
5. Latex foam	617
6. Dipped goods	896
7. Others@	2406
Total	**36638**

Human Resource Requirement in the tyre segment is estimated based on the recently started large tyre plants in the state and on-going projects in this segment. Moreover, the growth in the state domestic product and manufacturing segment in the state, rubber consumption, positioning of human development index and capital investment in the last five years is considered to arrive at the estimated requirement for the human resources in the various segments. The estimation for the category of Auto tyre and tubes includes requirement in the Repair and Maintenance segment as well as Recycle, Re-use and Waste segment.

The incremental human resource requirement for 36,638 workers in the rubber industry in the state is based on the trends witnessed in the past, the current industry scenario and survey responses received from the respondent firms. The estimations provide a direction of change, however, in an ever changing environment in which the production takes place the exact requirement may vary as the time unfolds.

It is estimated that in the coming five years, we may witness an overall 28 percent increase in the employment in the rubber industry in the state.

Taking a note of the job role requirement in the manufacturing units, the survey feedback underlines the main requirement of skilled operators in coming years. Moreover, the fact that the firms are looking towards the modernization and automation, there will be greater demand for operators handling automatic machines. Table 6.2 provides a direction for the industry requirement under the major job category in the state. At the operator level, the highest demand would be emerging for mixing operators. Skilled operators would find greater opportunities knocking at their door in the manufacturing segment.

Table 6.2: Job Role wise Requirement	
Job Role	**% of human resource requirement**
Supervisor	4
Manager	3
Operator	*44*
• *Mixing*	*15*
• *Curing*	*14*
• *Moulding*	*7*
• *Cutting*	*1*
• *Extruder*	*7*
Helper	33
Packaging/Dispatch	6
QC	4
Office/Marketing	6

The industry feedback on expected profile of major human resource for major job roles and analysis of their availability is presented below:

Employee profile	Industry feedback on expected qualification and profile	Analysis
Helper	Needs to complete basic education and get formal training in product and machine handling.	There is adequate availability of helpers in all the select states however they need to complete at least basis education to develop skills to move on career path.
Operator	Needs to know the semi automatic /automatic machine operation and maintenance. Training on machine exposure for about 6-12 months will be ideal.	There is a shortfall of skilled operators across all segments in rubber industry reported by the firms in all select states. Sufficient re-skilling and upskilling needs to be done to improve the performance and quality.
Supervisor	Needs to hold technical certification and remain updated about latest technology. Able to manage the shop floor.	The personnel performing supervisory role do not remain updated about the latest technology in the industry.
Senior Management	Needs to have technical knowledge about the product and processes involved	The senior management exists in majority of the firms; however the proportion seems to be directly related to the scale of operations.