

GOVERNMENT OF INDIA
NATIONAL EMPLOYMENT SERVICE

AREA SKILL SURVEY

K A I R A .
(GUJARAT)

Sub. National Systems Unit,
National Institute of Educational
Planning and Administration
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DIRECTORATE GENERAL OF EMPLOYMENT & TRAINING
MINISTRY OF LABOUR : NEW DELHI

Area Skill Survey - Kaira
DISTRICT ADVISORY GROUP MEMBERS
AND
STAFF

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4. The Director of Technical
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5. The Collector of Kaira -
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6. The District Development
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7. The District Education Officer,
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11. Shri Arvindbhai Sheth, President,
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12. Shri Rao, Manager, New Shorrock
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13. The District Industries Officer,
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FOREWORD


The basic aim of Area Skill Surveys is to study quantum and quality of current and prospective employment industry-wise and occupation-wise with a view to co-ordinating manpower needs and employment opportunities with the output of educational system and available technical training facilities. Area Skill Surveys thus fulfil the long felt need for such data as is essential for tackling problems of unemployment at the area or grass-root level. An Expert Sub-Group of the National Employment Service which concurrently evaluated these surveys besides suggesting improvements in the existing methodology and further refinement of techniques found that the results of the studies were of significant value in initiating measures for tackling problems of unemployment and formulating schemes for expansion of self-employment, career advice, training & apprenticeship, job development, employment market information programme, etc.

Starting with the three districts of Bangalore, Ludhiana and Gorakhpur, the scheme was extended to cover twelve more districts in the country. This is the fifth report in the series - the reports already published being for Bangalore, Ludhiana, Gorakhpur and Bilsapur.

I would like to express my thanks to employers and their associations, trade associations, heads of training institutions & colleges, State Directorate of Employment and district officials who extended their co-operation in the fullest measure to make the survey a success. Thanks are also due to Shri D.P. Vora, Assistant Director of Employment Exchanges and other members of the Survey Team for their hard labour in carrying out the survey operations and for their resourcefulness in achieving full response in the collection of field data.

The Survey was organised under the over-all direction and charge of Shri J.C. Gupta, Deputy Director of Employment Exchanges, D.G.E & T, assisted by Shri Hari Krishan, Assistant Director and other staff.

Action is being initiated separately to improve these surveys in the light of experience gained and the recommendations made by the Expert Sub-Group and various Area Advisory Groups. However, comments and suggestions for further improvement from the readers would also be most welcome.


(Ishwar Chandra)

Director General & Joint Secretary
to the Government of India

Dated: 1st July, 1974

Shram Shakti Bhavan,
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SCOPE & METHODOLOGY

An Area Skill Survey is basically a method to determine in respect of a given geographic area, current and prospective availability of skills and requirements in the foreseeable future. Of the several methods designed to estimate future manpower needs, area skill surveys have some distinct advantages. Firstly, skill surveys aim at eliciting information by a direct approach to employers and training institutions instead of attempting manpower projections on the basis of assumed growth rates and targets. Secondly, in view of the well known fact that skilled manpower, excluding perhaps high level manpower, has limited mobility, area skill surveys furnish data which is more meaningful for manpower planning, at the area level. Thirdly, in the National Employment Service, with its net work of Employment Exchanges with whom a fund of information about local labour market is available a base already exists which can be easily developed to undertake the work of collecting additional data required for skill surveys with very little additional cost. Finally, because of the simplified process of data collection inherent in Area Skill Survey Programme, an analysis of labour market can be obtained at desired intervals enabling initiation of remedial measures to remove current and anticipated skill imbalances.

2. Broad objectives of area skill surveys are:-

- i) to provide information for use in vocational guidance and in initiating an effective career advisory service which depends for its success on a sound knowledge of changing job opportunities in different occupations in the area;
- ii) to furnish details for use in job development and placement activities of the Employment Service;
- iii) to provide specific information on changes that will be necessary in training and apprenticeship programme to meet future requirements;
- iv) to provide information about fields in which financial and other assistance is indicated for promotion of opportunities for employment and self-employment;
- v) to provide area-wise information concerning manpower resources needed in connection with location and expansion of industries.

- vi) to study and collate information regarding manpower content of Plan schemes and expansion programmes envisaged for area; and
 - vii) to provide information needed for manpower planning at area or 'grass-root' level.
3. To start with, fifteen districts in the country were taken up for conduct of Area Skill Surveys on pilot basis. The areas taken up for study were drawn from each of the following three types:

Type A - Highly industrialised urban areas with large skilled labour force and having complex employment market;

Type B - Districts having a fairly developed urban industrial base as well as rural base characterised by advanced and mechanised agricultural operations;

Type C - Predominantly rural areas marked by traditional agricultural activity where there is need for expansion of non agricultural sector and avenues of self-employment.

4. This report embodies the findings of the survey conducted in Kaira District (Gujarat).

5. The approach adopted for collection of information for Area Skill Surveys is based on what is known as 'Establishment Reporting' system. In order to achieve a satisfactory response and accurate data, the Enquiry Schedules (Questionnaires) designed for the survey were collected through personal interviews by trained staff. Following chart outlines the Enquiry Schedules that were canvassed for the collection of information.

Schedules & agencies from whom information was collected

Type of information collected

i) A.S.I - Employers' Schedule

All establishments in the public sector; All establishments in the private sector employing ten or more workers; 20 percent of establishments employing 5-9 workers in the private sector.

Persons employed by occupations five years ago and currently; Working proprietors and partners; Seasonal employment; Expansion plans and factors hindering existing production or expansion or fuller utilisation of installed capacity; Future

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manpower needs by occupation two years hence and five years hence on the assumption that factors which were limiting expansion or production would be overcome; Separations and engagements; Manpower shortages; Economic activity; Year of establishment etc.

ii) A.S.II - Schedule for Emerging Establishments

All emerging establishments known to be in the blue-print stage or in different stages of completion on the date of enquiry.

Likely date of commencement of production or activity; Nature of economic activity; Likely number of persons to be employed by occupation during next two years and five years.

iii) A.S. III - Schedule for institutions imparting professional & technical education

All institutes, polytechniques, universities, etc. imparting professional & technical education.

Likely out-turn by courses and professions during next five years at the certificate, diploma, graduate and post-graduate level.

iv) A.S.IV - Schedule for agricultural farms

Fifty largest agricultural farms in the area selected on the basis of size from each taluka.

Employment; Manpower shortages; Farm equipment used; Financial assistance obtained etc.

v) A.S. V - Village Schedule

Ten percent of villages taken from each development block.

Existing avenues of self-employment other than agriculture; Additional opportunities for self-employment that could be created in the light of modernisation of agriculture; local resources and expanding need for maintenance and other services.

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6. A mass of statistical data and information which was available from other sources was also studied in the presentation of area reports. Some of the important sources were - (i) data available from day-to-day operations of employment exchanges, (ii) data collected under Employment Market Information Programme of Employment Service, (iii) decennial population census, (iv) district plans, (v) small scale and rural industries, (vi) agricultural condition, (vii) socio-economic surveys, (viii) reports of employers' associations, (ix) records of local bodies, government authorities etc.

7. A District Advisory Group on Area Skill Survey was constituted under the Chairmanship of the Director of Manpower, Employment & Training, Ahmedabad to review progress in the collection of schedules and devise ways and means to ensure fullest co-operation from employers in the rendition of data. Other members nominated to serve on the District Advisory Group were drawn from departments connected with Labour, Planning, Education, Technical Training, Agriculture, Community Development, Employers' Association and Trade Unions.

8. Some of the more important recommendations made by the Advisory Group and action taken on them are discussed below:-

Recommendations	Action taken
i) The problem of estimating avenues of self-employment is a complex one and accuracy will vary according to the assessment of individuals. The accuracy of such data should, therefore, be properly analysed before arriving at reliable estimates.	Considering the need for reliable estimates of self-employment in rural areas, it is proposed that in future data on existing avenues of self-employment in the non-agricultural sector should be collected by constructing a comprehensive frame of establishments having one or more workers (including self-employed). Successful trials in this regard were made at Udaipur. Information on self-employment potential would have to be collected on the basis of discussions with knowledgeable persons.

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- ii) A large number of milk cooperative societies are functioning in Kaira District. In order to collect complete information, the Chairman of the National Dairy Board should be contacted to obtain requisite information about self-employment and expansion programmes.
- iii) For ensuring better response and collection of reliable data, the field staff should have knowledge of local area and language.
- iv) For a survey of such magnitude every survey team should be provided with a vehicle. Bottleneck if any, in providing such transport be sorted out at the higher level directly.
- v) The field staff should be given training in detail before sending them to field as ultimately it is the quality of the data that matters most in a survey of this type.
- This was noted by the Survey Team for action. Study of all cooperative societies from manpower angle was undertaken.
- In so far as high and middle personnel of the survey team are concerned, they are drawn from States on zonal basis. The trained nucleus, however, moves from one place to other within the zone. However, a large number of questionnaires are canvassed by part-time workers who are appointed locally and are familiar with the local area and language.
- Under existing arrangements, vehicles wherever these are available with local employment exchange are being utilised for the Area Skill Survey work. However, in the Fifth Plan it is proposed to provide vehicle for covering major employment market areas. Vehicles available with the employment exchanges/industrial training institutes etc. would, however, continue to be used in other cases.
- Top personnel of the survey teams are being trained at the D.G.E & T. who in turn give training to the field staff. It is also proposed to arrange training of middle level personnel in scrutiny and compilation of data by the D.G.E & T.

9. The concept, assumptions and analytical techniques adopted are given in the "Technical Notes" that follow.

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TECHNICAL NOTES

The following paragraphs outline the concepts, assumptions and analytical techniques on the basis of which findings and conclusions have been drawn for presentation in the report. It is hoped that as more experience is gained, the methodology and techniques will be further refined to satisfy the users.

Reference dates

2. Although the survey operations were spread over a period of about a year commencing from the month of October 1972, the date on employment i.e. the number of regular employees on pay-roll including working proprietors and partners relates to the following reference dates:

Employment 5 years ago - as on 31st March, 1967
 Current employment - as on 31st March, 1972
 Anticipated employment - by 31st March, 1977.
 5 years hence

Establishments and employment

3. A comprehensive and up-to-date frame of establishments, being an essential pre-requisite, was constructed on the basis of the Employers' Register maintained at the employment exchanges under the Employment Market Information Programme and other available sources. This was further supplemented with reference to special street surveys carried out by the field staff in the district. A high degree of comprehensiveness in the construction of the frame was achieved. This would be apparent by a comparison of the establishments covered under Area Skill Surveys vis-a-vis employment Market Information Programme.

	No. of Establishments covered under	
	Area Skill Survey	Employment Market Information Programme.
A. Public Sector	252	250
B. Private Sector		
i) Employing 25 or more workers	422	208
ii) Employing 10-24 workers	953	215
Total:	1375	423
iii) Smaller establishments with 5-9 workers	1844	111
Grand Total	3471	784

4. While the smaller private establishments in the size class 5-9 workers were studied on 20 percent sample basis, all other establishments were studied on cent percent basis.

5. The employment revealed under the Employment Market Information Programme (which does not cover private establishments employing less than 10 workers) was 55.2 thousand in 1967 and about 62.3 thousand in 1972. This gives average growth rate of 2.6 percent per year. As against this, comparable employment figures thrown up by area survey (excluding employment in smaller private establishments employing 5-9 workers) are 60.2 thousand and 83.1 thousand in 1967 and 1972 respectively giving a growth rate of 7.6 percent per year. The wide variation between the two is due to lack of comprehensiveness of Employers' Register and possible errors in the estimation of employment in respect of defaulting establishments under Employment Market Information Programme. The 'personal interview method' of collection of data followed under the Area Skill Survey has also yielded reliable data. It may be recalled that the Dantwala Committee also recommended adoption of this approach for the collection of data under the Employment Market Information Programme. For the same reason the meeting of the Working Group of National Employment Service held in 1973 favoured raising of survey teams for conduct of street surveys on a continuing basis to ensure comprehensive coverage of employers.

6. Employment in the agricultural sector and in establishments having 1-4 workers being outside the purview of this survey, has not been covered.

Re.spo-
nse

7. The personal interview method coupled with an intensive programme of public relations undertaken from the very beginning as well as the efforts of District Advisory Group resulted in achieving hundred percent response.

Employ-
ment
growth

8. Future employment growth has been worked out by taking into account undermentioned components:-

A. Forecast furnished by existing employers

- i) The employers were requested to estimate future employment in their respective establishments on the basis of their expansion plans and on the assumption that existing shortages and difficulties relating to raw-materials, power, finance, foreign exchange etc. which may be hindering production or expansion or fuller utilisation of installed capacity, would be overcome in the coming years.

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- ii) Forecasts were obtained at two points of time, namely, two years hence (i.e. by 1974) and five years hence (i.e. by 1977). There are several reasons to warrant forecast at two and five years' period from the date of enquiry. Firstly, projections of demand for shorter periods are likely to be more realistic than long term estimates based on many un-known variables. Secondly, training of skilled personnel normally takes 2-5 years' time. Considering, however, the fact that about a year's time was taken up for completion of the survey, the two years' projection has not been analysed and presented in this report.
- iii) Significant employment is expected to be generated as a result of implementation of minimum social and welfare programme of compulsory education, adult literacy, family planning, health, sanitation, communication etc. Since public sector establishments at the district level were generally not in a position to forecast their manpower needs arising both as a result of implementation of welfare programme as well as those arising due to expansion, contacts were established with the respective heads of departments with a view to elicit information about plan schemes. This has resulted in arriving at fairly accurate manpower estimates in respect of such departments as Health & Medical Services, Education, Industries, Agriculture, Public Works, Banking, Insurance, etc.

B. Employment likely to be generated by emerging establishments

As far as possible, attempts have been made to identify and list out new establishments which are currently known to be in blue-print stage or are in different stages of completion but are likely to emerge in the next five years. This led to the identification of 87 new establishments. It may, however, be mentioned that a comprehensive listing of new establishments is not possible because establishments and projects which may be planned subsequent to the date of enquiry cannot be brought within the ambit of the survey. Some idea of inadequacy of listing emerging establishments can be had by an analysis of the past trends. During the proceeding five year period 1967-72, as many as 1069 new establishments came up as against 87 identified for 1972-77.

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C. Employment projected for segments marked by uniform growth pattern

It has been noticed that a sizeable number of private establishments particularly in the smaller size class, such as trading shops, eating places, minor repairing & servicing units spring up year after year on a fairly uniform pattern in normal course to meet the needs of population growth, urbanisation and expanding economy. As no formal planning or advance action (e.g. land acquisition, licence, power connection, finance etc.) is required in raising such establishments, it is hardly possible to construct a comprehensive frame of such emerging establishments for the purpose of estimating future employment. In order to bridge the gap and build up a more realistic forecast, detailed analysis of employment pattern by economic activity in private sector establishments during the last five years was undertaken to identify such segments which revealed a fairly uniform employment growth year after year and thereby afforded full justification for projection on the basis of past trends. The segments thus identified are given below. Manpower projection on the basis of past trend have been worked out only in respect of them.

Number of new establishments in selected economic activities in private sector which come up during a year with employment

Economic Activity	1967		1968		1969		1970		1971 and onwards		Total	
	A	B	A	B	A	B	A	B	A	B	A	B
	Carrying of stone	2	47	3	109	3	143	5	129	12	305	25
Manufacturing (including repairing & servicing) units												
Wool & cotton	22	160	9	107	14	111	12	134	23	200	80	712
Di & snuff	18	243	22	267	17	185	42	329	53	542	152	1566
Chemical & chemical products	15	120	-	-	5	25	5	40	10	85	35	270
Clay & cement products	19	246	31	244	17	145	29	409	32	448	128	1492
Earthen ware & pottery	5	25	-	-	-	-	-	-	5	45	10	70
Non-ferrous metals & their products	3	70	5	76	8	96	17	171	20	210	53	623
Other manufacturing units	11	91	11	67	74	590	46	417	53	463	195	1628
Trading establishments	36	793	31	367	40	600	35	497	60	768	202	3025
Eating places	22	163	16	123	13	99	6	55	10	94	67	534
Other services	-	-	-	-	5	60	-	-	10	90	15	150
Total:-	153	1958	128	1360	196	2054	197	2181	288	3250	962	10803

A = Establishment B = Employment

Self-
Employment

9. Data indicative of self-employment is discussed below :

A. Rural Areas -

- i) Data on self-employment in the non-agricultural sector in rural areas was collected from a sample of 10 percent of villages in each development block. Of the total 962 villages in the District, 100 villages representing 10.43 percent of rural population were studied. The village schedule that was canvassed in this regard was filled in after discussion with block and panchayat officials, sarpanchs and other village elders who possessed intimate knowledge of their well knit village community and house-holds. Since about 70 percent of the total villages had less than 500 house-holds or 2500 population each and also because a small proportion of rural work-force is engaged in non-agricultural activities, a reasonably good count of these persons did not present any difficulty.
- ii) Village officials and elders were also requested to estimate additional opportunities for self-employment that could be created in the light of modernisation of agriculture, availability of raw materials and expanding needs for maintenance and other services. It is felt that these estimates would be fairly indicative of the self-employment potential in rural areas.

B. Urban Areas -

A comprehensive coverage of self-employment in urban areas was outside the scope of the survey. However, a limited assessment in respect of those segments of economy for which information was readily available from existing records of government departments, local bodies, employers' and trade associations, licencing authorities, etc. was made. Although no forecasts have been attempted on the basis of this data, its utility lies in the fact that it sheds interesting light on the trend of self-employment in the urban economy.

C. Working proprietors & partners

The information in respect of these persons has been obtained separately on Employers' Schedule. It is believed that to a considerable extent, the small establishments are the handiwork of a single individual or a group of individuals who besides supervising the establishment or enterprise also engage paid workers. Accordingly an analysis of working proprietors and partners by economic activity has, in the context of the economy and needs of the area, been undertaken to provide an indication of avenues for self-employment.

- Future manpower needs 10 Following elements were taken into account to calculate future manpower needs:
- i) Employment growth;
 - ii) Replacement needs due to attrition in the existing work-force -- In conformity with the accepted norm, these have been calculated at the rate of two percent per year;
 - iii) Vacancies remaining unfilled in the establishments on the reference date (i.e. 31.3.1972).
- Unemployment. 11 The Live Register figures of District Employment Exchange, Nadiad and University Employment Information Bureau, Vallabh Vidyanagar (District Kaira) have been used to estimate the extent of unemployment in the urban areas of the district. As all applicants on the Live Register are not necessarily unemployed, the Live Register figures were adjusted by applying correction factor to eliminate those who were employed or were students. The correction factors applied were taken from a D.G.E & T. Survey conducted in 1968.
- Balancing of demand & Supply 12 Considering the fact that professional and higher technical personnel, such as engineers, scientists, doctors and technologists have a high degree of mobility, the balancing of demand and supply has been restricted to the category of craftsmen and other lower category of skilled workers only. For this purpose, the future manpower needs have been balanced against the supply of manpower revealed by current unemployed and out-turn of training institutions & colleges during the next five years.
- Agricultural Farms 13 A study of 50 largest agricultural farms was undertaken to reveal information about employment manpower shortages, farm equipment used, financial assistance obtained etc. It is apparent that such a survey can only be classified as a type study instead of being considered as a comprehensive analysis of the manpower situation in the rural area.
- Tabulation 14 All data has been tabulated manually.

CHAPTER I

BACKGROUND OF THE AREA

1.1 The Kaira District of Gujarat State is oblong in shape, major portion of which lies between the rivers Mahi and Sabarmati to the north-west, and extends upto the gulf of Cambay in the south-east. The district is situated almost in the heart of the Gujarat State with a network of communication and has fairly rich soil and sizeable irrigation facilities. As a result of these favourable factors, Kaira District happens to be the most thickly-populated region in the State. The total area of the district is about 7194 square km. containing 17 towns and 962 (5 uninhabited) vilages, which are grouped into ten development/taluka blocks.

1.2 Of the total agricultural land (5.4 lakh hectares) 98 percent is under cultivation and the remaining is either hilly or forest area. The annual average rain fall is 880 mm. The main sources of irrigation are canals, wells, tube wells and ponds. The district has got the benefit of two major irrigation projects namely Meshvo and Mahi right bank canals. Besides these two major irrigation projects, river water is lifted by means of oil engines, electric motors etc. by cultivators to irrigate their fields. Of the total land under cultivation only 23.1 percent is under irrigation through canals, wells, tubewells and ponds. There are 5537 oil engines, 3467 electric motors and 72 tube wells for irrigation purposes. The main crops of the district are tur dal, rice, tobacco and groundnut. Rice mills and groundnut oil mills have also therefore developed in the district. Nearly two third of the total villages in the district are members of Milk Cooperative Societies and are selling their surplus milk to Amul Dairy located at Anand which produces butter, ghee and milk powder. The growth in the production of Amul has been spectacular. Its annual sales exceed 40 crores and farmers have been the major co-sharers in the rising prosperity.

1.3 This district has also made a great headway in the field of cooperative movement. Out of 957 villages, 97 percent of villages are covered under the cooperative movement. A total of 60 percent of the cultivators are taking advantage of the cooperative institutions. There are in all 74 co-operative banks and 1751 cooperative societies in the district. There are 535 post offices and 64 railway stations located in the district.

1.4 According to 1971 census, the population of district is 24.51 lakhs (rural 19.62 lakhs and urban 4.89 lakhs) which is 29 percent higher than 1961 population of 19.74 lakhs. The growth in rural and urban population during the decade is 23 percent and 27 percent respectively. 1971 census

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enumerated 29 percent of the total population as workers. In absolute terms, the number of workers was 7.15 lakhs of which as many as 5.16 lakhs were agricultural workers (cultivators 3.46 lakhs and agriculture labourers 1.70 lakhs).

1.5 The percentage of literacy was 43 as against 36 for the State as a whole. Of the five universities in Gujarat, Sardar Patel University, Vallabh Vidyanagar is located in the district. The other noteworthy institutions are the Ayurvedic Medical College, the Agriculture College, the Dairy Science College, the Animal Husbandary and Veterniary Science College and the Chemical Technology Institute.

1.6 The district has not lagged behind in the development of industries. A large number of small scale industrial units spread all over the district are producing a large variety of items. Nadiad and Anand have large number of light engineering industries. The other items manufactured are plastic products, electrical goods, cement products, tobacco products, brass utensils, steel furniture and textiles. There is a transistor factory as well as food storage factory near Nadiad. Thus the industrial development of the district which has taken place during the last two decades has complemented its rural economy. The district can be said to be very well balanced in agricultural development and industrial expansion.

1.7 - With rich background of agricultural prosperity, communication facilities, educational development and industrial progress, this district has got potential for further industrial expansion.

CHAPTER II

EMPLOYMENT GROWTH

2.1 Wage and salaried employment (number of regular employees) went up from 68.8 thousand in 1967 to 96.7 thousand in 1972 or by 27.8 thousand thereby showing an annual growth rate of 8.1 percent. The employment is likely to rise at an annual rate of 10.0 percent and will reach 1.45 lakhs by 1977. The index of employment (1967 = 100) which rose to 140 in 1972 is expected to pick up further by 1977 and touch the level of 211. Thus employment will more than double itself between the period 1967-77.

2.2 Growth Components - The component elements which contribute to the anticipated rise of 48.5 thousand persons during 1972-77 are:

Components	Anticipated growth (in thousands)	Major industries
a) Employment generated as a result of expansion of existing establishments.	35.7	Quarrying of stone; rice, atta, flour milling; bidi making; cotton textile; matches; bricks & tiles; cement products; trading in tobacco products; transportation by bus; hotels & restaurants.
b) Employment expected to be generated in new establishments currently in blue-print stage	2.0	Rice, atta, flour milling; plastic products; cement products; sundry hardwares; repairing & assembling of machinery.
c) Employment projected for segments marked by uniform growth pattern	10.8	Quarrying of stone; rice, atta, flour milling, bidi making; cement products; basic metals & their products.

2.3 Sectoral Growth - Employment in public sector which accounted for nearly two-fifth of the total employment in 1967 increased at an average annual growth rate of 4.9 percent during 1967-72 as against a yearly growth of 3.8 percent

forecast for the next five years. In the private sector annual growth rate during 1967-72 was 10.1 percent and the anticipated growth for the next five years (1972-77) is of the order of 13.3 percent.

Table 1

Employment Growth

Sector	Employment			Annual Growth percentage		
	1967	1972	1977	1967-72	1972-77	1967-77
Public	26526	33081	39365	4.9	3.8	4.8
Private	42316	63599	105786	10.1	13.3	15.0
Total	68842	96680	145151	8.1	10.0	11.1
Index of employment (1967=100)	100	140	211			

2.4 Employment growth by Economic Activity: - The growth in employment recorded between 1967-72 and the anticipated rise during the next five years by industrial divisions is given in the table below:

Table 2
Employment by Industrial Divisions

Industrial Division	Employment			Increase			
	1967	1972	1977	1967-72		1972-77	
				Number	percent per year	Number	Percent per year
Agriculture	186	910	5072	724	77.8	4162	91.5
Mining & Quarrying	789	1770	3476	981	24.9	1706	19.3
Manufacturing	26342	41255	68031	14913	11.3	26776	13.0
Construction	722	1179	1208	457	12.7	29	0.5
Electricity, gas, water, and sanitary services	1329	1679	1804	350	5.3	125	1.5
Trade & Commerce	10250	14176	24322	3926	7.7	10146	14.3
Transport, storage & communication	3776	5506	6774	1730	9.2	1268	4.6
Services	25448	30205	34464	4757	3.7	4259	2.8
Total	68842	96680	145151	27838	8.1	48471	10.0

(Refer Appendix I - Employment Growth by Economic Activity).

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2.5 Of the total employment in 1972, 42.7 percent was engaged in manufacturing industries followed by services (31.3 percent), trade & commerce (14.7 percent) and transport, storage & communication (5.7 percent). The balance of employment was in mining & quarrying (1.8 percent), gas, water & sanitary services (1.7 percent), construction (1.2 percent) and agriculture (0.9 percent). The small proportion in agriculture is due to the fact that the employment in this sector is not covered under the survey. The employment of 910 in 1972 relates only to such government establishments which are dealing with the development of agriculture in the area.

2.6 Substantial growth in employment during the last five years was reported in manufacturing industries (14.9 thousand) followed by services (4.8 thousand), trade & commerce (3.9 thousand) and transport, storage & communication (1.7 thousand). Further significant increases by 1977 have been forecast in manufacturing (26.8 thousand), trade & commerce (10.1 thousand) services sector (4.3 thousand), agriculture (4.2 thousand), mining & quarrying (1.7 thousand) and transport, storage & communication (1.3 thousand). In case of electricity, gas, water & sanitary services, employment by 1977 is expected to rise by 125 persons as against an actual rise of 350 persons recorded in the preceding five yearly period. The downward trend projected for construction sector, inspite of a rise of 457 in the past, is due to apparent difficulties of coverage of private construction work.

2.7 Industries of the area - More than two-fifth (42.7 percent) of the total employed segment of the labour force in 1972 was engaged in manufacturing industries in Kaira. Large labour force was employed in such industries as cotton textile, bidi, dairy products, electrical goods, cement pipes, rice, atta & flour milling, wood & wooden products, bricks & tiles and weaving (power loom).

Table 3
Employment growth in important industries

Industry	Employment			Increase	
	1967	1972	1977	1967-72	1972-77
Rice atta & flour milling	714	1374	3667	660	2293
Butter, ghee & cheese	3069	3805	4662	736	857
Edible fats & oils	572	670	1291	98	621
Bidi	3039	4464	10405	1425	5941
Cotton textile	7899	10949	11508	3050	559
Waving (power loom)	713	1099	2141	386	1042
Wood & wooden products	849	1327	2502	478	1175
Printing	425	531	898	106	367
Sodium silicate	292	485	953	193	468
Fertilizer	298	357	407	59	50
Plastic product	128	472	1014	344	542
Bricks & tiles	672	1169	3042	497	1873
Cement pipes	1241	1861	3953	620	2092
Agate stone	552	725	1325	173	600
Glass products	574	956	1116	282	160
Sundry hardwares	325	859	1522	534	763
Electrical goods	1454	2775	3382	1321	607
Assembling & repairing of motor vehicles	496	685	1260	189	575
Scientific, medical and surgical instrument & equipment	64	316	934	252	618

(Refer Appendix I-Employment Growth by Economic Activity).

2.8 Industries such as rice,atta, flour milling, bidi making weaving (power loom), wood & wooden products, plastic products, bricks & tiles, cement pipes, sundry hardwares and scientific, medical & surgical instruments which showed sizeable increases in the past five years (i.e. 1967-72) are expected to increase significantly between 1972-77. Sizeable increases are expected between 1972-77 in edible fats & oils, printing, sodium silicate, agate stone and assembling & repairing of motor

vehicles which increased marginally in the past. Industries such as cotton textile and electrical goods which showed significant increases in employment during the preceding five years have forecast only marginal increases in the coming five years. Butter, ghee & cheese, fertilizer and glass products have shown almost same increases in employment for both the five yearly periods.

2.9 Within the services sector, administrative services in the government, quasi-government offices and local bodies which accounted for sizeable employment (18 thousand in 1972) showed improvement during 1967-72 and is expected to remain almost stationary by 1977. The educational services provided employment to 6.6 thousand employees during 1972 and are likely to increase by 0.8 thousand as against an increase of 1.5 thousand recorded during past five years. Public health and medical services and hotel & restaurants also recorded improvement in employment during preceding five years. For the next five years, only nominal gain has, however, been anticipated in respect of health services, while significant gain has been anticipated by hotels and restaurants.

Table 4
Employment growth in services

	Number of employees			Increase	
	1967	1972	1977	1967-72	1972-77
Public services in administrative departments & local bodies	16159	18077	18576	1918	499
Educational services- technical	583	898	1016	315	118
Educational services - Non- technical	4572	5733	6407	1161	674
Scientific services	111	128	128	17	-
Public health & medical services	2023	2756	2941	733	185
Recreation	484	619	1036	135	417
Hotels & restaurants	1370	1816	4133	446	2317
Religious & welfare	146	178	227	32	49
Total	25448	30205	34464	4757	4259

2.10 The following table shows by broad occupational divisions changes in employment between 1967-72 and 1972-77.

...

Table 5
Employment by occupational divisions

Occupational Divisions	Number of Employees				
	1967	1972	1977	Increase	
				1967-72	1972-77
I. Professional, technical & related workers	<u>14960</u>	<u>17962</u>	<u>21907</u>	<u>3002</u>	<u>3945</u>
i) Scientists, engineers & technologists	1306	1949	4432	643	2483
ii) Doctors, medical & Paramedical workers	1512	1887	2024	275	137
iii) Teachers	10844	12475	13147	1631	672
iv) Accountants, social scientists & other professionals	1198	1651	2304	453	653
II. Administrative, executive & managerial workers	<u>3924</u>	<u>5956</u>	<u>8248</u>	<u>2022</u>	<u>2292</u>
III. Clerical & related workers	<u>8258</u>	<u>10957</u>	<u>13490</u>	<u>2699</u>	<u>2533</u>
IV Sales workers	<u>1403</u>	<u>1712</u>	<u>2322</u>	<u>309</u>	<u>610</u>
V Service workers	<u>4174</u>	<u>4744</u>	<u>5302</u>	<u>570</u>	<u>1058</u>
VI Farmers, fishermen, hunters, loggers & related workers	<u>460</u>	<u>939</u>	<u>2357</u>	<u>529</u>	<u>1368</u>
VII Production & related workers and transport equipment operators	<u>25120</u>	<u>39093</u>	<u>65918</u>	<u>13973</u>	<u>26825</u>
i) Production & related workers	24078	37405	63457	13327	26052
ii) Transport equipment operators	1042	1688	2461	646	773
VIII Unskilled workers	<u>10533</u>	<u>15267</u>	<u>25107</u>	<u>4734</u>	<u>9840</u>
Total	68842	96680	145151	27838	48471

(Refer Appendix II - Employment by Occupations).

2.11 Due to pre-ponderance of manufacturing industry in the area, more than half of the total number of employed persons in 1972 were found under the two occupational categories viz (i) production & related workers and transport equipment operators and (ii) professional & technical workers. Clerical & related workers (10957) were also significant followed by administrative, executive & managerial workers (5956), service workers (4744) and sales workers (1712). The other important features that emerge from the foregoing table are:-

- 1) Production & related workers & transport equipment operators
 - a) Production & related workers - The number of such workers which rose significantly by 13.3 thousand between 1967-72 is expected to rise sharply by 26.1 thousand in the next five years. The occupations with upward trend in this category are moulders (144), metal processors (103), wood sawyers (143), paper & pulp preparers (287), cookers, roasters & heat treaters (172), weaver powerloom (1019), grain millers (1389), tobacco culling, grading & blending operatives (6056), bidi makers (5687), tobacco preparers & tobacco product makers (1113), Carpenters (170), wood working machine operatives (531), machinists (137), turners & lathe operatives (595), fitters (447), electricians & electrical fitters (106), welders electrical (191), jewellery & goldsmithy operatives (315), moulders pottery (196), brick & tile moulders (626), glass formers (655) and plastic product makers (369).
 - b) Transport equipment operators - As against an actual rise of 646 recorded between 1967-72, their number is expected to rise by 773 during next five years. Upward trend is expected in motor vehicle drivers.
- ii) Professional, technical & related workers
 - a) Scientists, engineers & technologists - These workers increased by 643 during last five years and are likely to rise significantly by 2483 between 1972-77. Marked upward trend is noticeable amongst engineering technicians-others and agronomists & horticulturists.

- b) Doctors and medical & health technicians- The number of such workers is expected to rise by 137 between 1972-77 as against an actual rise of 275 recorded between 1967-77.
- c) Teachers - Their number which rose by 1631 during the last five years is likely to rise by 672 between 1972-77.
- d) Accountants, social scientists & other professionals - The number of such workers is likely to rise by 653 in the next five years as against a rise of 453 recorded between 1967-72. Occupations with upward trend are accountants & auditors and composers & performing artists.
- iii) Clerical & related workers - As against an actual rise of 2.7 thousand recorded during 1967-72, the anticipated rise between 1972-77 will be 2.5 thousand.
- iv) Administrative, executive & managerial workers - The number of such workers is expected to rise by 2.3 thousand during 1972-77 as against an actual rise of 2.0 thousand between 1967-72.
- v) Farmers, fishermen, hunters, loggers & related workers - As against a nominal rise of 0.5 thousand during 1967-72 the number of such workers is expected to rise significantly by 1.4 thousand in the next five years.
- vi) Service workers - A rise of 1.1 thousand is expected during 1972-77 as against an actual rise of 0.6 thousand between 1967-72 for workers in this category.
- vii) Sales workers - The number of such workers which rose by 0.3 thousand during 1967-72 is expected to rise by 0.6 thousand during next five years i.e. 1972-77.

2.12 Shift in the occupational structure - The rise in employment recorded between 1967-72 and the anticipated rise during the next five years by 1977 has brought noticeable shift in the occupational structure of employees. The proportion of production and related workers, transport and equipment operators to the overall employment which was 36.5 percent during 1967 increased to 40.4 percent in 1972 and is expected to rise to 45.4 percent by 1977. Proportion of farmers, loggers and related workers has shown nominal increase from 0.7 percent in 1967 to 1.0 percent in 1972 and

and to 1.6 percent by 1977. As against these increases, marked downward shift in the proportion of professional, technical & related workers has been noticed. These workers who constituted 21.8 percent of employment in 1967 declined to 18.6 percent and 15.1 percent in 1972 and 1977 respectively. In spite of rise from 5.7 percent in 1967- to 6.2 percent in 1972, the proportion of administrative, executive & managerial workers have forecast a decline to 5.7 percent by 1977. Clerical & related workers are also expected to show downward shift in the occupational mix.

Table 6

Occupational composition of employees

Occupational Divisions	Percentage		
	1967	1972	1977
Professional, technical & related workers	21.8	18.6	15.1
Administrative, executive & managerial workers	5.7	6.2	5.7
Clerical & related workers	12.0	11.3	9.3
Sales workers	2.0	1.8	1.6
Service workers	6.0	4.9	4.0
Farmers, loggers & related workers	0.7	1.0	1.6
Production & related workers, transport equipment operators	36.5	40.4	45.4
Unskilled workers	15.3	15.8	17.3
Total	100.0	100.0	100.0

2.13 Employment in establishments located in rural areas

Out of a total of 3471, 1378 establishments (39.7 percent) were found to be located in areas which were classified as rural during 1971 census. They accounted for an employment of 23.1 thousand persons in 1972 as against 13.8 thousand in 1967. Of the total 23.1 thousand in 1972 manufacturing of bidis engaged 3.3 thousand during 1972 as against 1.8 thousand in 1967. Substantial rise was in trade & commerce where the number of persons engaged in 1972 was 9.1 thousand as against 5.6 thousand persons in 1967. The establishments located in rural areas hold out promise of further growth in employment by 13.7 thousand persons in the next five year 1972-77.

...

2.14 Factors hindering existing production and/or expansion -

Manufacturing industries in the private sector reported a number of difficulties which were hindering current production or fuller utilisation of installed capacity and/or expansion. The problems of employers were, however, discussed in a general way without quantifying them. A brief resume of this aspect is presented below:

i) Shortage of raw material

Textile - cotton	cotton, nylon yarn, yarn machinery, bobbins
Wood & wooden products	Saw blades.
Paper products	Waste paper and hand made paper.
Printing & publishing	Printing ink, colour and paper.
Brass and metal products iron & steel, furniture, bell metal products	Brass, mild steel, pig iron steel plates, coal of high quality and copper.

ii) Import

Printing & publishing	Paper, printing machinery.
Manufacturing of soap	Sodium silicate.

iii) Licences

Textile - cotton	Licence to install additional looms
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iv) Power shortages

Textile - cotton	Power staggering and irregular supply of electricity hinders the production and expansion.
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v) Financial assistance

Textile - cotton	Purchase of looms and machinery.
Printing & publishing	Purchase of machinery.
Wood & wooden products	Working capital.
Chemical & chemical products	Purchase of raw material.
Rolling of iron & steel and machine tools	Purchase of raw material.

...

CHAPTER III

SELF-EMPLOYMENTA. Rural Areas

3.1 Information about self-employment in the non-agricultural sector in rural areas was collected from a sample of ten percent of villages in the district. This involved a study of 100 villages representing 10.43 percent of the total rural population*. The village schedules that were canvassed in this regard were completed after discussion with village elders and officials who possessed intimate knowledge of their respective village community and households.

3.2 The survey has revealed that 42.3 thousand persons were self-employed in 1972 in various non-agricultural activities while additional opportunities for self-employment to the extent of 27.3 thousand persons could be created in the light of modernisation of agriculture, local produce, other resources, expanding needs for maintenance and other services. The type of assistance needed for promoting self-employment among rural folks was mainly finance. The fields in which persons are currently self-employed and fresh employment opportunities that could be developed in the near future are indicated in the following table.

Table 8
Existing & future avenues of self-employment
in rural areas

Field	Existing number of persons who are self-employed	Scope for future self- employment
1	2	3
Dairy farming	6611	11585
Retail trading	6909	2343
Eating places	2925	1917
Bidi making	4096	1567
Atta chakki (flour grinding)	2469	1007
Hair cutting (barber)	1941	1000
Carpentry & wood work	2452	977
Blacksmithy	2111	836
Quarrying of stone	277	819

Contd..

* Floating of the data was done on the basis of population covered in the sample.

1	2	3
Sand carrying from river	-	761
Pottery	1871	746
Shoe making & repairing	1410	642
Laundrying (Dhobā)	1753	634
Transport by tonga & animal driven carts	1000	590
Tailoring	1433	474
Cycle repairing	783	366
Sweetmeat making	873	224
Cement pipe manufacturing	-	150
Sawing mill	224	134
Repairing diesel engine, tractor, oil pumps & electrical motors	104	217
Oil expelling	15	75
Handloom weaving	112	75
Poultry farming	-	89
Snuff making	970	-
Other services	1916	107
Total	42255	27305

3.3 As about 80 percent of the population of the district lives in rural areas, considerable scope for self-employment exists in fields allied to agriculture such as dairy farming (11585). Sizeable self-employment opportunities also exist in non-agriculture fields such as eating places (1917), retail trading (2343), bidi making (1567), flour grinding (1007), hair cutting (1000), carpentry & wood work (977), blacksmithy (836), quarrying (819), pottery (746) shoe making & repairing (642), laundry/washing (634) and transport services (590).

3.4 A number of measures have been suggested for promoting self-employment in rural areas. The following chart summarises the type of assistance that would be needed in various fields:

...

Dairy farming, retail trading,
bidi making, flour milling,
carpentry & wood work, black-
smithy, shoe making, tailoring,
cement pipe manufacturing,
repairing shops, oil expelling,
handloom weaving poultry farming.

Financial
assistance.

Laundrying

Financial
assistance,
caustic soda &
washing material.

Eating places

Licence.

3.5 Short-term training programmes are indicated to improve avenues of self-employment in rural areas in respect of following:

Dairy farming, pottery, shoe-making, bidi making
tailoring, handloom weaving, poultry farming.

3.6 Fully trained and experienced craftsmen would, however, be needed to take up such work as carpentry, blacksmithy, repairing of diesel engines, tractors, oil pumps & electrical motors. Efforts will have to be made to attract willing persons to the rural areas by providing such inducements as financial assistance, provision of electric connections, accommodation etc.

B. Urban Sector

3.7 A comprehensive account of self-employment in the urban areas was outside the scope of the present survey. However, a limited assessment in respect of those segments of economy for which information was readily available from existing records of government departments, local bodies, employers' and trade associations, licensing authorities etc. was attempted. The statistics presented below is in respect of sectors for which information was available. The data gives an indication of the likely changes in the size of self-employment which may also, in certain cases, have an element of direct employment. While translating the number of licenses, registrations, etc. into manpower terms, consideration will have to be given to the fact that these numbers do not necessarily represent an equal number of self-employed. For instance, each public carrier may provide employment to 4-8 persons.

Table 9
Self-employment in urban areas

Field	1967	1972	Increase (+) Decrease (-)
<u>Number of licences issued</u>			
<u>Municipality</u>			
a) Sweet makers	196	245	+ 49
b) Meat sellers	79	114	+ 35
c) Eating places	231	279	+ 48
d) Hawkers	900	1027	+ 127
e) Fish sellers	17	36	+ 19
f) Milk sellers	175	226	+ 51
g) Butter & ghee sellers	60	85	+ 25
h) Bakery	41	68	+ 27
<u>Railway authority</u>			
i) Porters	138	127	- 11
j) Book stalls	6	7	+ 1
k) Tea stalls	56	55	- 1
l) Fursan	27	29	+ 2
<u>Number of vehicles registered</u>			
<u>Municipality</u>			
a) Tongas	178	159	- 19
b) Animal driven carts	150	115	- 35
c) Hand driven carts	1643	1871	+ 228
<u>Regional transport authority</u>			
d) Auto rikshaw	15	68	+ 53
e) Taxi	63	124	+ 61
f) Goods carriers	1317	2872	+ 1555
<u>Motor driving licences issued to individuals</u>	1382	2263	+ 880
<u>No. of licences issued under the money lender Act, Pawn broker act 1961</u>			
a) Financial corporation	39	55	+ 16
b) Individual money lenders	178	216	+ 38
<u>No. of advocates enrolled</u>	222	247	+ 25
<u>No. of medical practioners</u>	182	263	+ 81
<u>LIC Agents</u>	378	488	+ 110

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3.8 It will be observed that expansion in employment opportunities has occurred in such fields as retail selling, sweet making, plying of auto rikshaws, taxies, goods carriers, medical practitioners and in number of LIC agents. The increasing number of hand driven carts in Kaira district is indicative of movement of goods in city/town areas.

C. Working proprietors & partners

3.9 As many as 2533 private establishments (out of 3471 in the district) reported that one or more proprietors & partners were actively engaged in day-to-day operation of their concerns. 80.8 percent of smaller private establishments (5-9 workers) reported existence of working proprietors & partners. Of the total employment of 11.4 thousand in these establishments about 2.6 thousand were working proprietors & partners. Similar analysis of bigger establishments indicated that proprietors & partners were actively engaged in 1043 establishments out of the total establishment of 1375 and the proportion of proprietors & partners to total employment was a little more than 1:8.

3.10 The principal industries which were built up by individual entrepreneurship are given below. The data indicates the industries and fields which, in the light of economic characteristics of area, provided scope for self-employment besides generating substantial paid employment.

...

Industries	No. of establishments	Employment	No. of working proprietors & partners
Rice, atta & flour milling	142	1366	420
Production of butter, ghee, cheese, and other dairy products	27	907	41
Production of edible fats & oils	29	624	160
Manufacture of bidi	375	4405	503
Cotton textiles	134	1181	244
Sawing & planing of wood	117	902	295
Printing including lithography	57	465	89
Manufacture of bricks & tiles	47	1163	120
Manufacture of cement & cement products	102	1038	227
Manufacture of structural stone goods, stone dressing & stone crushing	67	520	108
Manufacture of sundry hardwares	45	627	91

3.11 A study of occupational profile of working proprietors & partners revealed that majority of them had taken up managerial, clerical and sales functions.

Occupation	Number of working proprietors & partners
Administrative & managerial	3794
Catering & entertainment services	379
Clerical & sales service	1030
Other services	172
Total	5375

3.12 An analysis of the educational attainment of the working proprietors & partners revealed that no relationship existed between the level of education and type of work performed by them. Data below shows the educational profile of working proprietors & partners.

Level of education	Number	Percentage
Below matriculation (including illiterates)	3317	61.7
Matriculates & above but below graduates	1446	26.9
Graduates & above but below post-graduates	480	8.9
Professional & technical	132	2.5
Total	5375	100.0

....

C H A P T E R I V
MANPOWER REQUIREMENTS

4.1 Manpower needs of the area for the next five years (i.e. by 1977) presented in the chapter have been built up on the following component elements:

- i) Employment growth - ibid Chapter II.
- ii) Replacement needs due to attrition in the employed work force - ibid Technical Notes para 10.
- iii) Vacancies remaining unfilled in establishments on the reference date (i.e. 31.3.1972) - ibid Technical Notes, para 10.

Manpower needs by occupational categories

4.2 The skill requirements by 1977 will be of the order of 47 thousand. This does not include requirements of unskilled workers which is likely to be 11.4 thousand. Following table gives requirements by broad occupational categories.

Table 10

Occupation	Number
I. Professional & technical workers	<u>5691</u>
i) Scientists, engineers & technologists	2689
ii) Doctors and medical & health technicians	326
iii) Teachers	1680
iv) Accountants, social scientists & other professionals	996
II. Administrative, executive & managerial workers	<u>2872</u>
III. Clerical & related workers	<u>3692</u>
IV. Sales workers	<u>838</u>
V. Service workers	<u>1531</u>
VI. Farmers, fishermen, hunters, loggers & related workers	<u>1461</u>
VII Production & related workers and transport equipment operators	30929
i) Production & related workers	29987
ii) Transport workers	942
Total	47014

(Refer Appendix III - Manpower needs by 1977).

4.3 The requirements for production & related workers and transport equipment operators will be of the highest order (30.9 thousand) followed by professional & technical workers (5.7 thousand), clerical & related workers (3.7 thousand), administrative, executive & managerial workers (2.9 thousand), service workers (1.5 thousand) and farmers, fishermen & related workers (1.5 thousand). The manpower needs of the area will be comparatively small for sales workers.

Professional & Technical Workers

4.4 The more important and crucial manpower needs among this category are:

i) <u>Scientists, engineers & technologists</u>	
Chemists	80
Architects & civil engineers	50
Mechanical engineers	80
Electrical engineers	80
Civil engineering overseers & technicians	100
Electrical engineering technicians	30
Survey technicians	50
Engineering technicians - other	680
Agronomists & horticulturalists	1350
Social scientists	80
ii) <u>Doctors and medical & health technicians</u>	
Physicians, surgeons & dentists	50
Pharmacists	20
Nurses	90
Midwives & health visitors	40
Medical & health attendants	40
Sanitary inspectors	40
iii) <u>Teachers</u>	
University	170
Secondary School	350
Middle & primary school	980

iv) Accountants, social scientists
& other professionals

Mathematicians, staticians & economists	30
Accountants & auditors	580
Labour & social welfare Officer	30
Creative artists	60
Composers & performing artists	230

4.5 Out of the total jobs likely to come up, 210 will pertain to three principal branches of engineering viz. civil, mechanical and electrical. The demand for doctors and medical & health technicians during the next five years is likely to be of the order of 326 (nurses 90, physicians, surgeons & dentists 50, sanitary inspectors 40, medical & health attendants 40 and midwives & health visitors 40). The demand for teachers (1680) is also expected to be sizeable. The other demands which deserve special attention are of agronomists & horticulturists (1350) and of accountants & auditors (580).

Production process & related workers and transport equipment operators

4.6 The estimated requirements for production & related workers may be seen at Appendix III. Demand for some important categories are as follows:-

Production & related workers

Quarrymen	240
Moulders	170
Metal processors	110
Wood sawyers	150
Paper & pulp preparers	320
Cookers, roasters & heat treaters	200
Chemical & related workers - others	210
Doffer spinning	130
Weaver power loom	1270
Grain millers	1460
Dairy workers	240
Tobacco curing, grading & blending operatives	6760

Bidi makers	6050
Tobacco preparer & tobacco product makers - other	1250
Carpenter	200
Wood working machine operatives	570
Machinists	150
Turners & lathe operators	650
Fitters	530
Mechanic general	160
Electricians & electrical fitters	130
Welders, electrical	210
Moulders (pottery)	220
Brick & tile moulders (hand)	670
Glass formers	660
Plastic product makers	390
Others	6880

Transport equipment operators

Drivers, car and ambulance	150
Drivers, bus	510
Drivers, truck	180
Others	110

4.7 Amongst production & related workers, substantial demands are expected for quarrymen (240), paper & pulp preparers (310), weavers powerloom (1270), grain millers (1460), dairy workers (240), tobacco curing, blending & grading operatives (6760), bidi makers (6050), tobacco preparers & tobacco product makers (1250), wood working machine operatives (570), turners & lathe operatives (650), fitters (530), brick & tile moulders (670), plastic product makers (390), during next five years. Under transport equipment operators, sizeable demand for motor vehicle drivers is expected to be generated.

Manpower requirements by educational level

4.8 Employers were asked to furnish information about educational & technical qualification of workers likely to be in demand during the next five years. Of the total number of 47.0 thousand persons excluding unskilled labourers likely to be required during the next five years by 1977, the educational profile could be obtained in respect of 30.75 thousand persons.

Table 11

Level of education	Percentage
Below matric	9.0
Matriculation	14.5
Graduates & post graduates science	0.7
Graduates Arts (including law)	3.0
Professional & technical	
Engineering	3.0
Others	1.3
Recognised certificate (such as those issued by ITI and teachers training institute etc.)	6.5
Production & related workers with experience irrespective of qualification or ITI training	62.0
Total	100.0

4.9 No formal institutional training or possession of recognised certificate or diploma has been considered as an essential criterion for recruitment of a sizeable number of production & related workers. This may partly be due to the fact that demand for these workers include occupations such as tobacco curing & grading operatives and bidi makers, textile workers & glass formers for whom no formal institutional training is normally required and in whose case the employer go more by experience and work performance. Nearly 6.5 percent jobs will be for recognised certificate holders which include primary & middle school teachers, craftsmen & production workers and para-medical persons. In case of 14.5 percent of vacancies the education level prescribed will be matriculate while for 3.7 percent of vacancies it will be graduate and above. All those who are illiterate or literate but have not passed matriculate will be eligible for about 9 percent of jobs during the next five years.

CHAPTER V

TRAINING AND EDUCATIONAL FACILITIES

5.1 Information about the current and future trends of out-turn in respect of professional and technical education separately at the certificate, diploma, graduate and post-graduate level (including doctorates) was collected from all the recognised colleges and institutions in the area. In working out the estimates, the present intake capacity, admission targets set for the future as well as the information about educational wastage, and stagnation, if any, at different levels of education were taken into consideration. The table below indicates the likely out-turn during the next five years (1972-77) at various levels of education.

Table 12
Out-turn from Institutions

<u>Field of study</u>	<u>Total out-turn next 5 years</u>
a) <u>Post-graduate level (including Doctorate)</u>	
<u>Engineering</u>	<u>99</u>
Civil	37
Mechanical	34
Electrical	28
<u>Veterinary Science</u>	<u>20</u>
<u>Agriculture</u>	<u>152</u>
<u>Science, Arts & Humanities</u>	<u>3267</u>
Physics	466
Chemistry	988
Botany	113
Mathematics	259
Statistics	112
Organic Chemistry	16
Commerce	320
English	135
Gujarati	316
Hindi	251
Economics	169
History	41
Politics	25
Sociology	36
Philosophy	20
Education	<u>1121</u>

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b) Graduate level

<u>Engineering</u>	<u>1550</u>
Civil	400
Mechanical	430
Electrical	420
Chemical	300
<u>Medicine</u>	<u>452</u>
Bachelor of veterinary science	130
Bachelor of science & ayurvedic medicine	123
Bachelor of pharmacy	199
<u>Education</u>	<u>4053</u>
<u>Law</u>	<u>790</u>
<u>Science</u>	<u>1940</u>
B.Sc. (Agriculture)	570
B.Sc. (Dairying)	275
B.Sc. (Pass)	1095
<u>Arts & Humanities</u>	<u>6200</u>
B.A. (Pass)	4810
B. Com	1590

c) Diploma level

<u>Engineering</u>	<u>771</u>
Civil	77
Electrical	129
Mechanical	267
Chemical	169
Agro Industries	129
<u>Medicine</u>	
Pharmacy	231
<u>Science</u>	
Dairying	80
<u>Others</u>	
Diploma in co.op.	293

d) Certificate level

<u>Engineering trades</u>	<u>155</u>
Turner	51
Fitter	53
Electrician	51
<u>Vocational trades</u>	<u>1789</u>
Cutting & Tailoring	302
Typing (English)	180
Typing (Gujarati)	180
Stenography	180
Education (Primary)	947
<u>Medicine</u>	
General Nursing	68

5.2 In Kaira District of Gujarat there is no Industrial Training Institute. Training in engineering trades at certificate level is, therefore, limited. In addition to the out-turn from training institutions/colleges shown above, persons are also being trained under Apprenticeship Act 1961 and under employers' own inplant training programmes. The following table shows the number trained during the last three years (1969-72):

Table 13
Number trained during three years 1969-72

Occupation	Trained under Apprentices Act	Trained through employers' own training pro- grammes	Total
Machinists	71	26	97
Carpenters	12	-	12
Lineman	13	-	13
Fitters	67	67	134
Turners	10	-	10
Welders	18	17	35
Buffer (Glazer)	5	-	5
Painters	5	-	5
Sheet metal workers	3	181	184

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Mechanics	15	31	46
Blacksmiths	1	-	1
Wiremen	3	45	48
Electricians	4	32	36
Boiler attendants	3	-	3
Weavers	116	-	116
Doffer-cum-piecers	21	-	21
Compositors	-	2	2
Letter press	-	1	1
Rigman	-	6	6
Book binders	-	1	1
Total	367	409	776

5.3 It would be observed from the above table that quite a good number of persons have been trained under the Apprentices Act 1961 in such trades as fitters, machinists, weavers and doffer-cum-piecers. Employers' own training programmes were responsible for training of fitters (67), sheet metal workers (181), wiremen (45), electricians (32) and mechanics (31). The employers' training programmes were organised mainly in meeting their own requirements. It is also interesting to note that as many as 239 out of 367 were absorbed in their own establishments.

5.4 It would, however, not be realistic to augment estimate of availability of trained manpower (discussed in para 5.1) on the basis of above figures as majority of those who completed their apprenticeship were ITI certificate holders who have already been taken into account.

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C H A P T E R VI

UNEMPLOYMENT TRENDS

6.1 The unemployment trends in the area have been analysed on the basis of employment seekers registered with the Employment Exchanges located in Kaira district. The Live Register figures that have been taken into account in this regard relate to:

- i) District Employment Exchange, Nadiad
- ii) University Employment Information & Guidance Bureau, Vallabh Vidyanagar.

6.2 While studying unemployment trends through Live Register figures, it has to be borne in mind that as employment exchanges are located in urban areas, all rural employment seekers may not be registered. Similarly, even among urban persons all who may be unemployed may not seek registration with employment exchange. On the other hand, employed persons may also seek registration with the employment exchange in the hope of getting better jobs.

Persons registered for employment

6.3 The total number of employment seekers who were residents of Kaira and were pending on the Live Register of the employment exchanges mentioned above were around 7.4 thousand in June 1968. The number increased each year and swelled to about two and a half times by the end of June 1973. The proportion of women employment seekers to total which was about six percent in June 1968 increased to about thirteen percent in June 1969 and started decreasing each year and reached to about five percent in June 1973. The following table illustrates:-

Table 14
Number of employment seekers on the
Live Register

Year ending (June)	Men	Women	Total
1968	7016	430	7446
1969	7720	1103	8823
1970	9487	937	10424
1971	12787	1182	13969
1972	15804	1136	16940
1973	17605	980	18585

Educational attainments of job seekers

6.4 Analysing the employment seekers according to their educational attainment, about fifty three percent of those on the Live Register at the end of June 1973 were non-matriculいたes and illiterates. As against this, the proportion of such persons was forty-nine percent at the end of June 1968 as would be clear from the table that follows:

Table 15
Number of job seekers by educational attainment

Level of Education	June 1968			June 1973		
	Men	Women	Total	Men	Women	Total
<u>Educated Persons</u>	<u>3616</u>	<u>271</u>	<u>3887</u>	<u>8010</u>	<u>698</u>	<u>8708</u>
a) <u>Matriculates</u>	<u>2962</u>	<u>213</u>	<u>3175</u>	<u>5681</u>	<u>482</u>	<u>6163</u>
b) <u>Higher Secondary</u>	178	13	191	437	77	514
c) <u>Graduates</u>	<u>416</u>	<u>43</u>	<u>459</u>	<u>1761</u>	<u>119</u>	<u>1880</u>
Arts	85	30	115	512	31	543
Science	50	5	55	501	23	524
Commerce	75	2	77	415	12	427
Engineering	71	-	71	83	1	84
Medical	-	-	-	12	1	13
Agriculture	111	-	111	41	-	41
Law	2	-	2	6	-	6
Education	18	6	24	192	51	243
Others	4	-	4	-	-	-
d) <u>Post Graduates</u>	<u>60</u>	<u>2</u>	<u>62</u>	<u>131</u>	<u>20</u>	<u>151</u>
Arts	17	2	19	46	11	57
Science	32	-	32	19	1	20
Commerce	9	-	9	64	8	72
Agriculture	1	-	1	2	-	2
Education	1	-	1	-	-	-
<u>Non-matriculいたes incl. illiterates</u>	<u>3400</u>	<u>159</u>	<u>3559</u>	<u>9595</u>	<u>282</u>	<u>9877</u>
Grand Total	7016	430	7446	17605	980	18585

6.5 The above table shows that the number of educated persons (i.e., matriculates & above) which was 3887 at the end of June 1968 more than doubled during following five years and was 8708 at the end of June 1973. Eighty-two percent among the educated persons during 1968 and seventy-five percent during 1973 were those who had passed matriculation examination. Graduate applicants registered with the employment exchanges in Kaira have shown a marked rise from 459 in 1968 to 1880 in 1973. Only a small number of post-graduate applicants are, however, registered with the employment exchanges.

6.6 The number of educated women pending on the Live Register was 271 in 1968. This number became more than 2½ times in 1973. The number of graduate women applicants has risen spectacularly in science, commerce and education during the last five years. The number of women post-graduates in commerce have now become available and are seeking employment through employment exchanges.

Type of work sought by employment seekers

6.7 Of the 18.6 thousand on the Live Register of employment exchanges at the end of June 1973 as many as 14.7 thousand (79 percent) were fresh entrants to the employment market. Their proportion was 75 percent in June 1968 as will be seen from the data given below:

Table 16

Type of work sought by employment seekers

Type of work sought	June 1968			June 1973		
	Men	Women	Total	Men	Women	Total
Professional & Technical	677	114	791 (10.6)	1056	334	1390 (7.5)
Administrative, executive & managerial	32	3	35 (0.5)	21	-	21 (0.1)
Clerical & account work	327	28	355 (4.8)	1142	42	1184 (6.4)
Sales	1	-	1	-	-	-
Service	122	9	131 (1.8)	266	-	266 (1.4)
Farming, fishing, hunting & related work	220	-	220 (3.0)	174	-	174 (0.9)

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Production & related work and transport equipment operation	299	-	299 (4.0)	879	-	879 (4.7)
New entrants seeking employment (freshers)	5338	276	5614 (75.4)	14067	604	14671 (79.0)
Total	7016	430	7446 (100.0)	17605	980	18585 (100.0)

(Figures in brackets indicate percentage to total)

6.8 Of the total live registrants as on June 1973, 1390 or about eight percent of the total were seeking work as professional & technical. The number of job seekers who were seeking work as production & related and transport equipment operators was 879 (4.7 percent) and those available for clerical work was 1184 (6.4 percent). It will also be observed that only a small number of job seekers had the necessary background for taking up administrative, executive & managerial, service work and farming, fishing & hunting. No person was available to fill sales position. Nearly sixty-two percent of women registrants were freshers. Thirty-four percent were seeking work as professional & technical and four percent as clerical.

Unemployed persons

6.9 As all the applicants on the Live Register are not necessarily unemployed, the Live Register figures have to be adjusted by applying correction factors to eliminate those who were employed or were students in order to formulate an estimate of unemployment in the district. The following table shows number of job seekers who could be considered as unemployed after applying adjustment factors. The correction factors applied are based on the results of the D.G.E & T. survey conducted to ascertain the proportion of employed persons on the Live Register of Employment Exchanges in 1968.

Table 17
Estimated number of unemployed persons during 1972

Category	Number of unemployed
Professional & technical workers	293
Clerical & related workers	157
Production & related workers and transport equipment operators	304
Service workers	118
Graduates & above without professional training or experience	605
Matriculates & above but below graduates without professional training or experience	2911
Below matriculates without professional training or experience	1584
Other occupations	93
Total	6065

C H A P T E R VII

DEMAND & SUPPLY

7.1 By and large, mobility among craftsmen, production process workers and other lower categories is limited to the boundaries of an employment market area. The same will not, however, be true in respect of higher technical and professional categories such as engineers, technologists, doctors, scientists etc. who have a country-wide mobility. Accordingly, while the exercise of balancing supply and demand for craftsmen and production process workers may lead to meaningful finding and help in the strengthening and diversification of current training programme, a similar exercise in respect of engineers etc. will not be valid and worthwhile. Attempt, therefore, has been made in this chapter to balance supply of manpower with the future demand by 1977; for craftsmen & production process and other lower categories of workers only.

7.2 Data on the demand side, i.e. manpower requirements of the area, has been outlined in Chapter-V. The component elements which have been taken into account to build up supply side are:

- i) Out-turn from training institutions, colleges and polytechnics and persons likely to be trained under employers' own training programme - ibid Chapter VI.
- ii) Unemployed persons currently available for work - ibid Chapter VII.

Balancing of Demand & Supply

7.3 The balancing of supply of manpower with the future demand by 1977 has been worked out to identify skills in which-

- A - Supply is likely to be in excess of future needs;
- B - Demand is expected to be met by informal inservice training; and
- C - Demand will out-strip supply indicating strengthening of existing training and educational facilities.

A. Supply is likely to be in excess of future needs

<u>Field</u>	<u>Number</u>
Teachers - Secondary Schools	3700
* Stenographers	160
@ Pharmacists	200
@ Tailors & dress makers	230

* The level of proficiency of passed out trainees is not acceptable to the employers

@ Scope of employment for them exists outside the area.

B. Demand is expected to be met by informal or inservice training

<u>Field</u>	<u>Number</u>
Drivers motor vehicle	700
Fire fighters, policemen & guards	350
Accountants & auditors	500
Conductors - road transport	500
Cooks, waiters & related workers	1000
Glass formers	650
Plastic product workers (Semi-skilled operatives)	400
Grain millers & processors	1300
Wood working machine operatives	550

C. Demand will out-strip supply indicating strengthening of existing training and educational facilities

<u>Field</u>	<u>Number</u>
Fitters	350
Weavers Power Loom	1150
Doffer & piecers	300
Blacksmiths	100
Tool makers	100
Machinists	50
Turners	550
Grinders	50
Shapers	150
Fitters/Mechanic automobile	200
Mechanic general	150
Wiremen	50
Electricians	50
Welders	200
Moulders	200
Compositor hand	150
Printers & book-binders	250

C H A P T E R VIII

AGRICULTURAL FARMS

8.1 A survey of 50 largest agricultural farms was carried out simultaneously with the skill survey of the area to study trends on such aspects as employment, manpower shortages, farm equipment, financial assistance, etc. Since, the selection of farms was done on the basis of size from each development block, the results presented in this chapter depict only general trends in the aspects taken up for study. Further, because of lack of reform measures and the consequent lack of interest and motivation on the part of farm owners in furnishing information, the results may have to be viewed with caution.

8.2 The size of the holdings studied ranged between 18 to 1825 acres. Of the total area of 5059 acres of the 50 agricultural farms covered under the survey 83 acres i.e. 1.64 percent was irrigated, 1604 acres i.e. 31.70 percent was partially irrigated, and the remaining 3372 acres i.e. 66.66 percent was un-irrigated. Thus, only a few farmers were using canal water in addition to tube well water. Major crops grown were ~~wheat~~, bajara, cotton, tobacco, tuber and paddy. Some of the farmers were also growing castor and jowar. Only one farmer has taken up dairy and cattle breeding.

Mechanisation & farm equipment

8.3 The study has revealed that most of the farms were using mechanised and intensive methods of cultivation. As many as 42 percent of them had their own tractors, 12 percent had oil engine facilities and 10 percent possessed their own electric motors. The agricultural implements owned by the farm owners were as below:

	No. of equipment	No. of farms using equipment
Tractors	22	21
Electric motors	5	5
Oil engines	6	6
Threshers	1	1
Winnover	1	1
Tube wells	2	2
Ploughs	70	14

Maintenance facilities for repairing and servicing of equipment were available only at Taluka Headquarters and at certain towns.

Employment

8.4 Regular employment of 50 farms (excluding farm owners) was 316 persons in 1967 which rose to 332 in 1972. The type of workers employed are given below:

	1967	1972
Farm manager	3	3
Farm overseer	7	9
Tractor driver	9	10
Clerk	2	2
Milker	11	11
Watchman	11	11
Electric motor driver	1	1
Sweeper	4	4
Domestic servant	2	2
Oil engine driver	2	2
Tonga driver	1	1
Accountant	-	1
Jeep Driver	1	1
Cart Driver	5	5
Unskilled worker	244	256
Shepherd	13	13
Total	<u>316</u>	<u>332</u>

8.5 In addition to those employed on regular basis as many as 85 farm owners/partners were also working on their farms. Besides, exercising overall supervision they were also operating agricultural implements.

8.6 Seasonal labour to the extent of 361 thousand man-days was engaged during the last year for following operations:-

	Man-days in thousand
<u>Tractor operation</u>	0.46
Agriculture operations	360.61
(Pump operations, plough- ing, sowing, transplanting, harvesting, cleaning etc.)	
Total	361.07

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8.7 Financial assistance has been obtained by 17 farms out of 50 farms. Majority of farms have been able to meet their requirements from their own resources. The financial assistance has been used for purchase of tractors, oil engines, pipes, construction of tube wells and for cotton & tobacco growing.

8.8 As has been stated earlier in this report, the study is based on information collected from fifty largest agricultural farms in the area selected on the basis of size from each development block. Accordingly the results presented in this chapter are relevant to the conditions in so far as larger farms are concerned.

RESULTS AT A GLANCE

Wage and salaried employment (i.e. number of regular employees) went up from 68.8 thousand in 1967 to 96.7 thousand in 1972 or by 27.8 thousand thereby showing yearly growth rate of 8.1 percent. The employment is likely to rise at an annual rate of 10.0 percent and will reach 1.45 lakhs by 1977.

(Chapter- II)

2. Slightly more than two-fifth of the total employed labour force is engaged in manufacturing industries in Kaira district. Large labour force was employed in such industries as manufacture of cotton textiles, bidi, dairy products, electrical goods, cement pipes, rice ~~atta~~ and flour milling and wood & wooden products. Other industries in order of importance are bricks & tiles, weaving power loom and glass products.

(Chapter - II)

3. Industries such as rice, atta, flour milling, bidi making, weaving (power loom), wood & wooden products, plastic product, bricks & tiles, cement pipes, sundry hardwares and scientific, medical & surgical instruments which showed sizeable increases in the past five years (i.e. 1967-72) are expected to increase significantly between 1972-77. Cotton textile and electrical goods which showed significant increases in the employment during preceding five years have forecast only marginal increases in the coming five years.

(Chapter- II)

4. Analysing occupationally production & related workers and transport equipment operators who rose by 14.0 thousand between 1967-72 are expected to increase by 26.8 thousand in the next five years.

Shortage of raw material was the main factor which was hindering existing production and/or expansion in the private industrial sector of the area. In a few cases, difficulties relating to import and financial assistance were also expressed.

(Chapter- II)

5. Additional opportunities for self-employment to the extent of 27.3 thousand persons could be created in the rural areas in the light of modernisation of agriculture, local produce, other resources, expanding needs for maintenance and other services. Besides allied agricultural fields like dairy farming, considerable scope for self-employment exists in eating places, retail trading, bidi making, flour grinding and hair cutting, carpentry & wood work and

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blacksmithy. In urban areas self-employment opportunities are expected to expand in goods carriers, hand-driven carts, retail selling, LIC agency and in medical practice.

(Chapter- III)

6. Working proprietors & partners of private firms have played an important role in building up a sizeable industrial complex in the area. The principal industries which were built by individual entrepreneurship are manufacture of bidi, flour milling, sawing & planing of wood, cotton textile, cement & cement products, edible fats & oils and structural stone goods.

(Chapter- III)

7. Manpower needs of the area by 1977 will be of the order of 47 thousand (excluding unskilled workers which is likely to be of the order of 11.4 thousand). Some of the important and crucial manpower needs are estimated to be as follows:

I	Professional & technical workers	<u>5691</u>
	i) Scientists, engineers & technologists	2689
	ii) Doctors and medical & health technicians	326
	iii) Teachers	1680
	iv) Accountants, social scientists & other professionals	996
II.	Administrative, executive & managerial workers	<u>2872</u>
III.	Clerical & related workers	<u>3692</u>
IV.	Sales workers	<u>838</u>
V.	Service workers	<u>1531</u>
VI.	Farmers, fishermen, hunters, loggers & related workers	<u>1461</u>
VII	Production & related workers and transport equipment operators	<u>30929</u>
	i) Production & related workers	29987
	ii) Transport workers	942
	Total	47014

(Chapter- IV)

8. Balancing of demand and supply of manpower among production & related workers and other lower categories has revealed following imbalances:

- a) Supply is likely to be in excess of future needs in respect of secondary school teachers, pharmacists, tailors & dress makers and stenographers.
- b) Demand will out-strip supply indicating strengthening of existing training and educational facilities in respect of weavers power loom, turners, fitters, doffer & piecers, automobile mechanics, welders, moulders, printers and book binders.

(Chapter VII)

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APPENDIX - I

EMPLOYMENT GROWTH BY ECONOMIC ACTIVITY

Economic Activity	Number of Employees		
	1967	1972	1977
1	2	3	4
FIELD PRODUCE	186	910	5072
QUARRYING & MINING	789	1770	3476
Mining of crude petroleum & natural gas	518	740	740
Quarrying of stones	271	1030	2736
MANUFACTURING	26342	41255	68031
Rice, atta & flour milling	714	1374	3667
Sugarcane syrup in mills	-	677	677
Sugar product	9	12	47
Jam, jelly, sauce & canning and preservation of fruits	-	140	261
Bread, biscuits & cake	-	100	230
Butter, ghee and cheese	3069	3805	4662
Sweet meet	32	32	81
Edible fats & oils	572	670	1291
Aerated & mineral water	30	35	110
Ice	32	102	178
Ice cream	15	30	38
Bidi	3039	4462	10405
Snuff	71	135	280
Cotton ginning & pressing	977	1689	2051
Cotton spinning (other than in mills)	48	327	500
Cotton spinning and weaving in mills	6874	8923	8947
Cotton dyeing & bleaching	-	10	10
Cotton weaving in power looms	713	1099	2141
Cotton weaving in hand looms	60	75	115
Cotton cordage, rope, twine	64	69	119
Garments	40	40	42

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	1	2	3	4
Making of textile garments including rain-coats	67	72	102	
House-hold goods such as curtains, pillow cases, bedding material	-	313	313	
Umbrella	8	11	16	
Sawing & planing of wood	608	941	1887	
Wooden furniture	117	147	260	
Boxes & packing cases	91	154	219	
Manufacture of materials from cork, bamboo, cane leaves & other allied products	11	18	24	
Wooden transport equipment	22	67	112	
Manufacture of paper from waste paper & other fibres	54	75	393	
Paper board	36	281	413	
Paper bags	73	102	121	
printing other than books	425	531	898	
Leather products such as leather upholstery suite case etc.	19	67	236	
Rubber hose pipes	40	105	124	
Sodium silicate	292	485	953	
Dyes, paints, colours & varnishes	186	378	470	
Matches	11	33	540	
Nicotine sulphate	9	254	317	
Fertilizers	298	357	407	
Soap	347	404	674	
Preparation of Perfumes	45	59	101	
Plastic products	128	472	1014	
Bricks & tiles	672	1169	3042	
Cement pipes	1241	1861	3053	
Lime	35	105	262	
Agate stones	552	725	1325	
Earthen ware & earthen pottery	193	372	538	
Glass bangles & beads	17	17	35	
Glass products	657	939	1081	

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1	X 2	X 3	X 4
Smelting & re-rolling of Iron	186	342	530
Iron goods & foundry works	253	448	752
Iron & steel furniture	130	237	614
Brass & bell metal products	148	170	300
Metal products as tincan	226	325	634
Enamelling, galvanising & plating	181	189	296
Sundry hardwares	325	859	1522
Repairing & assembling of all types of machinery	24	95	378
Machine tool	69	212	606
Textile machinery accessories	37	36	42
Electric motors & transformers	-	122	250
Insulated wires & cables	315	276	302
Radio microphone	-	122	250
Electric switch button & applicances	1139	2131	2584
Spare parts for railway	17	26	30
Assembling of motor vehicles	7	47	125
Automobile spare parts	194	185	292
Repairing & servicing of motor vehicles	295	453	843
Optical instruments and lenses	59	146	321
Scientific medical & surgical instruments & equipments	64	316	934
Repair work of dairy & agricultural machinery	60	74	589
CONSTRUCTION	<u>722</u>	<u>1179</u>	<u>1208</u>
Maintenance of roads & building	281	518	547
Maintenance waterways wells	441	661	661
GENERATION TRANSMISSION & DISTRIBUTION OF ELECTRICITY	<u>1329</u>	<u>1679</u>	<u>1804</u>

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	1	2	3	4
TRADE & COMMERCE	<u>10250</u>	<u>14176</u>	<u>24322</u>	
Trade & Commerce	9171	12399	22338	
Banking insurance, P.F., money lending	1079	1777	1964	
TRANSPORT	<u>3776</u>	<u>5506</u>	<u>6774</u>	
Transport by bus	2232	3657	4670	
Ware housing	8	13	13	
Postal, telegraph & communication	1536	1836	2094	
SERVICES	<u>25448</u>	<u>30205</u>	<u>34464</u>	
Public services in Central Govt.	351	549	578	
Public services in quasi-Govt. & local bodies	11042	12423	12517	
Public service in State Govt.	4766	5105	5481	
Educational service, technical & vocational	583	898	1016	
Educational services non-technical	4572	5733	6407	
Scientific service & research institute	111	128	128	
Public health medical & veterinary services	2023	2756	2941	
Religious & welfare services	146	173	227	
Recreation services	484	619	1026	
Hotels & restaurants	1370	1816	4133	
GRAND TOTAL	<u>68842</u>	<u>96600</u>	<u>145151</u>	

EMPLOYMENT GROWTH BY OCCUPATION

Occupation	Number of Employees		
	1967	1972	1977
1	2	3	4
I PROFESSIONAL & TECHNICAL	<u>14960</u>	<u>17962</u>	<u>21907</u>
i) Scientists, engineers & Technologists	<u>1306</u>	<u>1949</u>	<u>4432</u>
Geologists & meteorologist	5	5	5
Chemists	37	63	135
Laboratory assistants physical	34	37	41
Laboratory assistants soil	16	16	17
Laboratory assistants geological	30	58	66
Laboratory assistants chemical	8	11	16
Civil engineers & architects	215	306	328
Electrical engineers	38	56	97
Electrical engineers generation & supply	15	28	43
Electrical & electronics engineers	80	85	92
Mechanical engineers	81	143	178
Mechanical engineers design	77	84	89
Mechanical engineers production	9	30	35
Mechanical engineers automobile	16	18	21
Technological & other engineers	38	96	98
Surveyors	40	44	51
Draughtsmen	31	48	52
Civil engineers overseers & technicians	35	94	179
Electrical engineering technicians	138	138	155
Engineering technicians, others	49	119	789
Mining technicians	26	69	69
Survey technicians	149	153	189
Biologist & animal scientists	2	7	14
Bacteriologist & related scientists	38	44	52
Agronomists & horticulturists	25	76	1420
Soil scientists	13	22	96
Agricultural scientists others	-	28	28
Life science technicians	61	71	77

(contd)

(XIX)

	1	2	3	4
ii) Doctors and medical & health technicians	<u>1612</u>	<u>1887</u>	<u>2024</u>	
Physicians general	189	226	248	
Surgeons general	6	5	5	
Dentists	1	1	1	
Physicians & surgeons others	10	15	15	
Physicians ayurvedic	8	6	6	
Veterinarians	38	54	64	
Pharmacists	123	151	159	
Vaccinators & medical assistants	120	184	184	
Veterinary assistants	167	161	161	
Nurses	168	224	296	
Midwives and Health visitors	258	245	256	
X-ray technicians	10	11	11	
Sanitary inspectors	351	376	376	
Medical & health attendants	163	228	242	
iii) Teachers	<u>10844</u>	<u>12475</u>	<u>13147</u>	
Teachers university & colleges	945	1119	1188	
Teachers secondary schools	1978	2184	2320	
Teachers primary	7621	8810	9144	
Teachers others	300	362	495	
iv) Accountants, social scientists & other professions	<u>1198</u>	<u>1651</u>	<u>2304</u>	
Mathematicians, statisticians & economists	19	62	81	
Accountants & auditors	675	980	1437	
Librarians & curators	34	35	42	
Personnel occupational specialists	6	7	13	
Judges, magistrates, legal practitioners	70	73	73	
Editors, journalists & other related workers	13	13	36	
Creative artists	2	3	18	
Composers & performing artists	111	169	271	
Religious workers	12	11	11	
Athlets & sportsmen	69	94	96	
Laboratory attendants	72	84	92	
Labour & Social Welfare Officer	115	120	134	...

	1	2	3	4
II ADMINISTRATIVE, EXECUTIVE & MANAGERIAL WORKERS	<u>3934</u>	<u>5956</u>	<u>8248</u>	
Administrative & executive officials government & local bodies	324	391	458	
Working proprietors, directors & managers trading	244	297	367	
Working proprietors, directors, managers, financial institutions	185	325	359	
Working proprietors, directors & managers - mining construction manufacturing etc.	2474	4086	6021	
Working proprietors, directors & managers, transport, storage & communication	124	142	151	
Working proprietors, directors & managers - other services	583	715	892	
III CLERICAL & RELATED WORKERS	<u>8258</u>	<u>10957</u>	<u>13490</u>	
Clerical & other supervisors	829	1152	1554	
Village officials	950	966	966	
Stenographers	82	136	141	
Typists	359	488	503	
Book keepers & accounts clerks	383	587	628	
Cashiers	217	315	398	
Computing machine operators	28	30	34	
Clerical workers	3646	5167	6641	
Communication supervisors	620	698	698	
Transport conductors	654	976	1399	
Mail distributors & related workers	422	353	439	
Telephone & wireless operators	68	89	89	
IV SALES WORKERS	<u>1403</u>	<u>1712</u>	<u>2322</u>	
Merchants & shop keepers trading	847	1029	1219	
Manufacturers, agents	32	57	88	
Salesmen, shop assistants & related workers	524	626	1015	

1	2	3	4
V. SERVICE WORKERS,	<u>4174</u>	<u>4744</u>	<u>5802</u>
Cooks, waiters & related workers	687	930	1948
Ayahs	49	62	68
Launderers, dry cleaners & pressers	16	33	38
Barbers	9	11	11
Fire fighters	16	55	57
Policemen & detectives	3103	3229	3255
Customs examiners & petrolers	294	424	425
VI FARMERS, FISHERMEN, HUNTERS, LOGGERS & RELATED WORKERS	<u>460</u>	<u>989</u>	<u>2357</u>
Farm managers & supervisors	98	460	1738
Other farm workers	223	367	432
Forest workers	139	162	187
VII PRODUCTION & RELATED WORKERS AND TRANSPORT EQUIPMENT OPERATORS	<u>25120</u>	<u>39093</u>	<u>65919</u>
i) Production & related workers	<u>24078</u>	<u>37405</u>	<u>63457</u>
Supervisors & foremen mining & quarrying	15	45	115
Quarrymen	748	888	1041
Drillers, machine	-	7	14
Scrapper drivers mine	1	1	2
Stowing mistry	-	1	6
Supervisors & foremen petroleum well drilling	11	36	41
Well drillers petroleum & gas	28	10	10
Derrickmen & gaugers	-	21	21
Well drillers other than petroleum & gas	-	12	12
Supervisors & foremen metal making	17	47	86
Furnacemen	11	23	41
Rolling mill operators	19	22	42
Melter reverberatory furnace	14	27	57
Die casting machine operators	-	4	14
Moulders	167	231	375

Core makers machine	32	59	50
Moulding & core making operatives	77	157	314
Metal drawer & heat treatment operatives	29	38	47
Electroplaters & coaters	100	175	201
Metal processors	58	104	207
Supervisors & foremen wood preparators	2	2	2
Wood sawers	47	89	232
Cylindrical saw operators	40	53	53
Paper & pulp preparer	112	283	570
Supervisors & foremen chemical processing & related workers	31	51	58
Supervisors & foremen petroleum well drilling	11	36	41
Crushers grinders & mixers (Chemicals)	68	112	166
Processmen chemical	-	6	11
Panmen soad	4	7	31
Cookers roasters & heat treaters	223	311	483
Box filtration operators	2	2	2
Acid workers	-	8	8
Cell foam attendents	128	139	139
Soap Machine attendents	73	58	84
Chemical & related process workers, others	73	149	348
Jobbers textile	158	217	220
Supervisors, foremen, spinning, weaving, knitting & dyeing and related workers	70	118	123
Bale breakers & tenters cotton	-	9	9
Waste machinemen cotton textile	46	33	53
Carder cotton, hand	4	8	40
Finishers scutcher tenter	9	7	7
Card tenters (cotton)	22	39	49
Sleever lap men	6	2	12

Combing tenters	24	25	35
Comb minders	11	11	11
Fibre preparation operatives	36	119	134
Dranding tenters	49	72	72
Sabbing tenters	18	32	46
Inter tenters	44	141	151
Doffers fly frame	219	392	422
Piecers	431	777	777
Twisters	55	66	66
Doffers spinning	657	725	785
Winders textile	339	468	468
Reelers textile	30	327	327
Knotters silk	19	21	21
Spinning & weaving operatives	21	21	21
Warpers	12	16	16
Creelers	23	36	36
Front sizers	12	17	17
Back sizers	28	33	33
Beam garters	17	17	27
Weaving knitting machine setters & pattern card preparers	-	155	185
Drowers	77	86	86
Reachers hand textile	68	27	27
Comber board men textile	13	20	20
Weavers power loom	2381	2587	3606
Ribbon weavers	6	10	10
Drawing & waving operatives	145	325	350
Wavers hand loom	16	16	36
Textile workers other	67	96	96
Socks knitters	2	2	6
Scutcher men (bleaching)	23	23	23
Hand printers	1	17	17
Hand dyers	35	40	40

(XXIV)

1	2	3	4
Jigger men cotton textile	23	23	38
Cheese dyeing machine men	114	114	114
Dyers garment	20	22	22
Calender men cotton textile	38	38	38
Raising machine men	20	20	20
Slentering machine men	26	36	38
Padding machine men	21	147	147
Sanforizing machine men	21	21	21
Bleaching dyeing printing & furnishing operatives	322	336	336
Cloth examiners	18	15	15
Folder machine	199	250	250
Supervisors & foremen food processing & dairy product	16	18	39
Grain millers	413	712	2101
Oil expeller men	20	39	125
Oil crusher operators	45	42	72
Cutter drivers	-	25	27
Centrifugal men	-	37	37
Khandsari, sugar & gur making operatives	-	219	219
Processing men food canning & preserving	4	6	60
Dairy workers general	100	88	88
Pasteurising plant operators, dairy	40	47	47
Ice cream makers	5	10	10
Bakers (baking product)	-	30	60
Sweetmeat makers	57	93	113
Baking confectionery & sweetmeat making operatives	2	22	52
Fillers aerated water	2	5	37
Supervisors & foremen tobacco preparer	5	10	23
Supervisors & foremen tobacco product making	31	42	130
Cutting machine operators tobacco	83	97	131

1	2	3	4
Tobacco curing, grading & blending operators	4220	6723	12779
Bidi makers	2307	3677	9364
Bidi checkers	-	5	27
Snuff makers	40	40	64
Tobacco preparers & tobacco product makers	687	1411	2524
Supervisors & foremen dress making	8	17	51
Tailors, dress makers & garment makers	408	360	383
Designers garment	-	4	9
Sewing machine operators	12	22	72
Upholstery & umbrella makers	2	5	5
Cobblers	19	24	28
Leather cutters & related workers	-	10	10
Supervisors & foremen carpenters & cabinet making operatives	12	21	21
Carpenters	210	264	434
Wood working machine operatives	163	348	879
Bullock-cart builders	20	25	25
Cabinet makers	24	43	71
Stone polishers (hand)	12	27	57
Thread cutting machine operators	38	25	35
Supervisors machine tool operatives	10	10	44
Blacksmiths	56	117	174
Smithy operatives	15	34	51
Tool makers & other operatives	38	57	231
Setters drop forging machine	2	2	2
Machinists	57	103	240
Turners & lathe operatives	267	490	1085
Shapers drillers and gear cutters	4	11	15
Drillers, metal	40	67	85
Machine tool operatives	136	292	496
Grinders	47	85	151
Glazers & polishers	18	25	52
Metal polishers & grinder others	436	436	497

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Machine tool operatives	24	18	32
Supervisors & foremen machinery fitting and repairing	59	62	65
Supervisors & foremen machinery motor vehicle repairing	5	10	26
Supervisors foremen precision instrument making	7	6	6
Watch repairers	5	-	2
Mechanics authomiser & fuel pump (diesel)	-	2	2
Mechanics typewriter & calculating machine	1	2	2
Precision instrument & watch making operatives	6	6	21
Fitters	486	827	1274
Mechanics automobile	21	34	79
Fitters automobile	76	167	177
Motor vehicle repairing operatives	28	65	190
Mechanics diesel engine	3	10	12
Tractor mechanics	7	24	44
Fitters stationery steam engine	1	1	1
Mechanics general & repairmen domestic applicances	31	348	472
Overhauling & repairing operatives	283	442	554
Supervisors & foremen electrical & electronics equipment	58	112	130
Metal checkers & examiners	1	3	3
Electrical & electrical fitters	200	234	340
Mechanics precision instrument electrical & electronics	5	13	23
Electrician helpers	480	714	742
Electrical equipment fitting & repairing operatives	18	100	113
Radio technicians	-	12	12
Radio mechanics & craftsmen installation	-	42	51
Radio mechanics & repairing others	-	134	134
Wiremen light & power	223	281	297

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1	2	3	4
Electrician (auto)	-	45	45
Electrical wiring operatives	3	145	149
Mechanics, teleprinter	4	4	4
Linemen light & power	100	155	188
Linemen & cable joining operatives	260	291	393
Armature & coil winders	15	40	49
Battery servicing men	4	30	74
Operators electrical equipment plant	16	8	8
Electric fitters & electronic workers - other	131	118	122
Cinematographers & sound equipment operators	42	44	73
Supervisors & foremen plumbing & pipe fitting	4	4	5
Plumbing & pipe fitting operatives	47	50	65
Welders gas	19	26	42
Welders, electrical	128	210	401
Gas cutters	10	11	11
Brazers	25	35	25
Lead burners & welding operatives	37	44	60
Sheet metal workers	111	131	172
Sheet metal & machine operators	4	14	20
Tin smiths	13	15	16
Sheet metal working operatives	65	111	128
Metal plate workers	13	20	20
Wire makers & gem grinders gold & silver	3	14	21
Gem polishers, machine	25	55	55
Jewellery & goldsmithy operatives	145	210	525
Jewellery engraving operatives	5	10	10
Engravers & embossing operatives	5	13	15
Supervisors & foremen glass forming	45	41	52
Supervisors ceramics	10	17	25
Blowers glass	10	10	30
Mouldmen glass	-	3	3
Machinemen sheet glass	11	11	12

1	2	3	4
Lense makers	10	10	10
Glass cutters	25	25	45
Grinders & finishers	10	81	182
Moulders & moulding workers (pottery)	158	224	420
Pressmen ceramics	26	67	125
Brick & tiles moulders (hand)	209	471	1097
Furnacemen & engravers glass	4	12	21
Kiln-loaders brick & tiles	161	254	373
Glass & ceramics kilnmen	-	63	83
Glazers pottery & porcelain	-	8	14
Mixing machine operators	-	10	22
Grinder attendents (stone)	-	97	303
Granulater attendents cement	2	12	56
Glass formers	60	87	742
Supervisors & foremen rubber goods making	6	14	14
Supervisors & foremen plastic goods making	-	6	22
plastic product operatives	65	233	602
Tablet machine operators	31	42	47
Tyre repairer	30	23	29
Supervisors & foremen paper & paper board product making	3	5	6
Paper product makers	6	6	6
Supervisors & foremen dark room operatives	1	1	3
Job printers	5	35	50
Compositors hand	113	130	252
Mono operators	3	3	3
Printing press operatives	110	163	273
Book binders	88	107	236
Photographic operatives	50	51	52
Printers & printing helpers	6	22	23
Painters construction	16	8	8
Painters spray	14	25	25

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(XXIX)

	1	2	3	4
Supervisors & foremen production (nec.)	4	9	34	
Agarbathi makers	1	5	23	
Tabla makers	1	2	2	
Production process workers nec.	-	23	152	
Supervisors construction	1	5	9	
Masons	44	60	64	
Concrete moulders	11	61	394	
Polishing finishing operatives	15	49	86	
Tile pressers	43	27	53	
Glazers construction	15	16	20	
White washers	13	13	13	
Stationery engine drivers (IC)	25	31	56	
Air compressor operators	6	11	23	
Turbine operators	-	4	4	
Electric switch board operators	31	50	50	
Air conditioning & defulgeration plant operators	-	31	81	
Pumpmen	27	71	72	
Stationery engine operatives	25	35	35	
Boiler attendants	37	51	n72	
Boiler firemen	30	48	57	
Boiler house operatives	93	96	102	
Oilers & greizers	82	160	195	
Cleaners motor vehicles	100	163	195	
Loco cleaners	34	43	43	
Water treatment plant operators	106	121	171	
Supervisors & foremen checking	13	14	14	
Loaders & unloaders	30	55	67	
Earth moving machine operators	7	18	32	
Checkers & testers	173	189	203	
Weighers & counters	76	80	133	
Packers hand	129	250	389	
Labellers & stampers (hand)	30	29	79	

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	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Tractor drivers		7	14	14
Liftmen		8	6	6
ii) Transport equipment operators		<u>1042</u>	<u>1688</u>	<u>2461</u>
Boatmen		3	9	9
Drivers railway engine		4	4	4
Pointsmen railway		3	2	2
Drivers car & ambulance		139	189	318
Drivers bus		616	939	1356
Drivers truck		254	459	309
Drivers fire brigade		12	19	19
Transport equipment operators, others		11	67	164
VIII UNSKILLED WORKERS		<u>10533</u>	<u>15267</u>	<u>25107</u>
GRAND TOTAL		68842	96630	145151

MANPOWER NEEDS BY 1977

Occupation		Number
1		2
PROFESSIONAL & TECHNICAL WORKERS		5691
i)	<u>Scientists, engineers & technologists</u>	<u>2689</u>
	Chemist	78
	Laboratory assistants	30
	Architects & civil engineers	54
	Electrical engineers	80
	Mechanical engineers	75
	Industrial engineers	1
	Surveyors	11
	Technologists & other engineers	11
	Draughtsmen, civil	3
	Draughtsmen, Electrical	2
	Draughtsmen, mechanical	2
	Draughtsmen, others	2
	Civil engineering overseers & technicians	95
	Electrical engineering technicians	32
	Mechanical engineering technicians	5
	Chemical engineering technicians	11
	Mining technicians	7
	Survey technicians	51
	Engineering Technicians, others	676
	Biologists animal scientists	7
	Bacteriologists & related xxxxx scientists	12
	Agronomists & horticulturist	1352
	soil scientists	76
	Agricultural scientists, others	3
	Life Science technicians	13
ii)	<u>Doctors and medical & health technicians</u>	<u>326</u>
	Physicians, surgeons & dentist	47
	Veterinarians	15
	Pharmacists	23
	Vaccinators & medical assistants	16

Veterinary assistants	16
Nurses	94
Midwives & health visitors	36
X-Ray technicians	1
Sanitary inspectors	38
Medical & health attendents	38
iii) <u>Teachers</u>	<u>1682</u>
Teachers, university & colleges	172
Teachers, secondary schools	354
Teachers, primary/middle	982
Teachers, others	172
iv) <u>Accountants, social scientists & other professions</u>	<u>996</u>
Mathematicians, statisticians & other related workers	25
Accountants & auditors	581
Librarians & curators	11
Personnel & occupational specialists	8
Labour & social welfare officers	26
Judges, magistrates & legal practitioners	7
Editors, journalists & other related workers	24
Creative artists	55
Composers & performing artists	231
Religious workers	1
Athletes & sportsmen	11
Laboratory attendents	16
II <u>ADMINISTRATIVE, EXECUTIVE & MANAGERIAL WORKERS</u>	<u>2872</u>
Administrative & executive officers, Govt. & local bodies	109
Working proprietors, directors & managers, trading	100
Working proprietors, directors & managers, financial institutions	66
Working proprietors, directors & managers, mining construction, manufacturing etc	2320
Working proprietors, directors & managers, transport, storage & communication	23
Working proprietors, directors & managers, other services	254

	1	2
III CLERICAL & RELATED WORKERS		<u>3692</u>
Clerical & other supervisors		523
Village officials		97
Stenographers		21
Typists		65
Book keepers & accounts clerk		99
Cashiers		114
Computing machine operators		7
Clerical & related workers		2045
Communication supervisors		70
Transport conductors & guards		521
Mail distributors & related workers		121
Telephone & wireless operators		9
IV SALES WORKERS		<u>838</u>
Merchants & shop keepers, trading		343
Manufacturers' agents		42
Salesman, shop assistants & related workers		453
V SERVICE WORKERS		<u>1531</u>
Cooks, waiters & related workers		1066
Ayas		12
Launderers, dry cleaners & pressers		20
Barbers		21
Fire fighters		8
Policemen and detectives		349
Customs examiners & petrolers		55
VI FARMERS, FISHERMEN, HUNTERS, LOGGERS & RELATED WORKERS		<u>1461</u>
Farm managers & supervisors		1327
Other farm workers		103
Forest workers		31
VII PRODUCTION & RELATED WORKERS AND TRANSPORT EQUIPMENT OPERATORS		<u>30929</u>
i) <u>Production & related workers</u>		<u>29987</u>
Supervisors & foremen mining & quarrying		75
Quarrymen		242

(XXXIV)

Driller machine	8
Scraper driver, mine	5
Well driller, petroleum and gas	1
Derrick man & gauger	2
Well driller other than petroleum and gas	1
Supervisors & foremen, metal making	44
Furnace men	25
Rolling mill operators	22
Melter reverberatory furnace	33
Die casting machine operator	10
Moulder	163
Core maker machine	6
Moulding and core making operatives	173
Metal drawers & heat treatment operatives	13
Electroplater and coaters	44
Metal Processors	113
Supervisor & foreman wood preparation & paper making	1
Wood sawyers	152
Cylindrical saw operator	5
Paper and pulp preparers	315
Supervisor & foreman chemical processing and related workers	12
Supervisor & foreman petroleum refining & related activities	9
Crusher, grinder & mixer, chemical	65
Processman chemical	6
Panman soap	25
Cookers, roasters & heat treaters	203
Acid workers	1
Cell room attendant	14
Soap machine attendant	32
Chemical and related process workers, other	214
Jobber textiles	25
Supervisor & foremen, spinning, weaving, knitting & dyeing and related workers	17

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	1	2
Bale breaker & tenter cotton		1
Waste machine man cotton textile		23
Carder cotton, hand		33
Finisher scatcher tenter		1
Card tenter, cotton		14
Sliver lap man		10
Combing tenter		12
Comb winder		1
Fibre preparation operatives		27
Drawing tenter		7
Slubbing tenter		17
Inter tenter		24
Doffer fly frame		24
Piecer		69
Twister		72
Doffer spinning		132
Winder textile		47
Reeler textile		33
Knotter silk and spinning and weaving operatives		4
Warper		2
Creeler		4
Front sizer		2
Back sizer		3
Beam garter		12
Weaving, knitting, machine setter and pattern card preparers		45
Drawer		9
Reacher hand textile		3
Comber board man textile		2
Weaver power loom		1271
Ribbon weaver		1
Drawing and weaving operatives		57
Weaver hand loom		22
Sock knitter		4
Textile workers other		10

1	2
Scutcher man (bleaching)	2
Hand printer textiles	2
Hand dyer	4
Gigger man cotton textile	17
Cheese dyeing machine man	11
Dyer, garment	2
Calender man cotton textile	4
Raising machine man	2
Stentering machine man	5
Padding machine man	15
Sanforizing machine man	2
Bleaching dyeing and printing and finishing operatives	34
Cloth examiner	1
Tanners and fellmongers	21
Folder machine	22
Supervisor and foreman food processing and dairy product	10
Grain millers	1460
Oil expellerman	93
Oil crusher operator	34
Cutter driver	4
Centrifugal man	4
Khandsari, sugar and gur making operatives	22
Processing men food canning and preserving	55
Dairy worker (general)	241
Pasteurising plant operator, dairy	5
Ice cream maker	1
Baker-baking product	18
Sweetmeat maker	14
Baking confectionery & sweetmeat making operatives	32
Filler aerated water	77
Supervisor & foreman tobacco preparer	14
Supervisor & foreman tobacco-product making	92

	1	2
Cutting machine operators tobacco		44
Tobacco curing, grading and blending operator		6741
Beedi maker		6013
Beedi checker		32
Snuff makers		28
Tobacco preparers & tobacco product makers		1254
Supervisor & foreman dress making		36
Tailors dress makers & garment makers		59
Designers garment		5
Sewing machine operators		52
Upholster and umbrella makers		1
Cobblers		6
Leather cutters & related workers		1
Supervisors & foreman, carpenter & cabinet making operatives		2
Carpenters		196
Wood working machine operators		556
Bullock-cart builders		
Cabinet makers		32
Stone polishers, hand		43
Thread cutting machine operators		2
Supervisor, machine tool operators		35
Blacksmiths		69
Smithy operatives		20
Tool makers and other operatives		150
Machinists		147
Turners and lathe operators		645
Shapers, millers and gear cutters		4
Drillers, metal		15
Machine tool operatives		233
Grinders		74
Glazers and polishers		28
Metal polishers and grinders others		105
Machine tool operatives		16
Supervisors & foremen, machinery fitting & repairing		9

1	2
Supervisors & foremen, motor vehicle repairing	17
Supervisors & foremen, precision instrument making	1
Watch repairers	2
Precision instrument & watch making operatives	16
Fitters	530
Mechanics, automobile	48
Fitters, automobile	27
Motor vehicle repairing operatives	131
Mechanics, diesel engine	3
Tractor mechanics	22
Fitters, stationery steam engine	-
Mechanics, general	159
Overhauling and repairing operatives	156
Supervisor & foreman electrical & electronic equipment	29
Electrician & electrical fitters	129
Mechanics, precision instrument (electrical & electronics)	11
Electrician - helpers	99
Electrical equipment fitting & repairing operatives	23
Radio technician	1
Radio mechanics & craftsmen installation	13
Radio mechanics and repairers - others	13
Wiremen light and power	45
Electricians (auto)	4
Electrical wiring operatives	18
Linemen light and power	49
Linemen and cable joining operatives	111
Armature and coil winders	13
Battery servicing men	47
Operator, electrical equipment plant	1
Electric fitter and electronic workers other	15
Cinematographer and sound equipment operator	33
Supervisor & foreman plumbing and pipe fitting	1
Plumbing and xxxx pipe fitting operatives	20
Welder gas	19

(XXXIX)

1	2
Welder electrical	212
Gas cutter	1
Brazer	2
Lead burner & welding operatives	20
Sheet metal workers	54
Sheet metal machine operators	7
Tin smith	2
Sheet metal working operatives	28
Metal plate workers	2
Wire maker and gem grinder (gold & silver)	8
Gem polisher machine	5
Jewellery goldsmithy operatives	336
Jewellery engraving operatives	1
Metal engraving and embossing operative	3
Supervisor & foreman glass forming	15
Supervisor ceramics	10
Blower glass	21
Machine man, sheet glass	2
Lense maker	1
Glass cutter	22
Grinder and finisher	109
Moulder & moulding workers (pottery)	218
Pressman ceramics	65
Bricks & tile moulders (hand)	673
Furnaceman and engravers glass	10
Kiln loader, bricks and tiles	144
Glass and ceramics kilnman	26
Glazer pottery and porcelain	7
Mixing machine operator (abrasive)	13
Grinder attendant (stone)	216
Granulator attendant (cement)	45
Glass formers	664
Supervisor & foreman, rubber goods making	12
Supervisor & foreman, plastic goods making	17
Plastic product makers	392

1	2
Tablet machine operator	4
Tyre repairer	8
Supervisor & foreman, paper and paper board product making	1
Paper product makers	1
Supervisor & foreman dark room operatives	3
Job printer	18
Compositor hand	135
Mono operator	-
Printing press operatives	126
Book binders	140
Photographic operatives	6
Printer & printing helpers	3
Painter construction	1
Painters spray	2
Supervisor & foreman production (nec)	26
Agarbati maker	10
Production process workers (n.e.c.)	131
Supervisor construction	4
Mason	10
Concrete moulder	334
Polisher & finishing operatives	20
Tile pressers	34
Glaser construction	6
White washer	1
Stationery engine driver (IC)	28
Air compressor operator	13
Electric switch board operator	9
Air conditioning & refrigeration plant operator	53
Pump man	8
Stationery engine operatives	3
Boiler attendant	26
Boiler fireman	9
Boiler house operatives	6
Oiler and greasers	51

(xxxxii)

Cleaner motor vehicles	13
Loco cleaners	1
Water treatment plant operator	60
Supervisor & foramsa checking (drugs & other materials)	1
Earth moving machine operators	16
Checkers and testers	34
Weighers & counters	61
Packers hand	164
Labellers & stampers hand	53
Tractor driver	1
Liftman	1
ii) <u>Transport equipment operators</u>	<u>3942</u>
Boatmen	1
Driver car and ambulance	149
Driver bus	511
Driver truck	176
Driver fire brigade	2
Transport equipment operators, other	104
Total	<u>47014</u>

VIII UNSKILLED WORKERS

11426

NIEPA DC

GRAND TOTAL



D00735

53440

Sub. Unit
NIEPA
DC
31/7/03