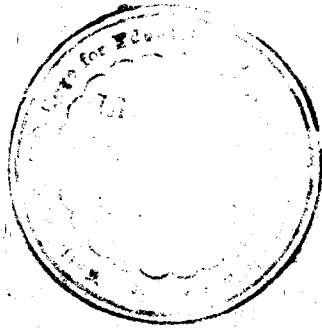


GOVERNMENT OF INDIA
NATIONAL EMPLOYMENT SERVICE

Sub. National Systems Unit,
National Institute of Educational
Planning and Administration
17-B, SriAurbindo Marg, New Delhi-110025
DCC. No.....
Date.....

AREA SKILL SURVEY

K A M R U P



DIRECTORATE GENERAL OF EMPLOYMENT & TRAINING
MINISTRY OF LABOUR, NEW DELHI.

AREA SKILL SURVEY - KAMRUP
DISTRICT ADVISORY GROUP MEMBERS
AND
STAFF

Advisory Group

1. Deputy Commissioner,
Kamrup - Chairman.
2. The Personnel Officer,
Indian Oil Corporation,
Refinery Division,
Gauhati Refinery, -
Member.
3. The Senior Personnel
Officer (Recruitment),
N.F. Railway, - Member.
4. The Inspector of Schools,
Kamrup District Circle,
Gauhati - Member.
5. The Director of
Agriculture,
Assam - Member.
6. The Commissioner,
Gauhati Municipal
Corporation - Member.
7. The Personnel Officer,
Everest Cycle Ltd.,
Gauhati - Member.
8. The Deputy General
Manager (Administration),
India Carbon Ltd.,
Gauhati - Member.
9. The Secretary,
Assam Hardboard Ltd.,
Gauhati - Member.
10. The Secretary,
INTUC (Assam Branch) -
Member.
11. The President,
Kamrup Chamber of
Commerce - Member.
12. Shri Biren Ram Phookan,
M.L.A. - Member.
13. The Registrar,
Gauhati University -
Member.
14. The Assistant Director
of Employment Exchanges,
Area Skill Survey -
Secretary.

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F O R E W O R D


The basic aim of Area Skill Surveys is to study the quantum and quality of current and prospective employment industry-wise and occupation-wise with a view to co-ordinating the 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 to tackle the problems of unemployment, formulating schemes for expansion of self-employment, career advice, training and 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 tenth report in the series - the reports already published being for Bangalore, Ludhiana, Gorakhpur, Bilaspur, Kaira, Aurangabad, Burdwan, Gurgaon and Udaipur.

I would like to express my thanks to employers and their associations, trade associations, heads of training institutions and 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 S.K. Das, 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 R.S. Srivastava, 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 and Joint Secretary
to the Government of India

Dated: 16th December, 1974
Shram Shakti Bhawan,
Rafi Marg, New Delhi
PIN: 110001.

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SCOPE AND 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 network 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 the 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;

.../

(iv)

vi) to study and collate information regarding manpower content of plan schemes and expansion programmes envisaged for the area; and

vii) to provide information needed for manpower planning at area for '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 Kamrup district.

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 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:

Schedule & agencies from whom information was collected

Type of information collected

i) AS.I - Employers' Schedule

All establishments in the public sector; all establishments in the private sector employing ten or more workers, 20 per cent of establishments employing 5-9 workers in the private sector.

Persons employed by occupation five years ago and currently; Working proprietors & partners; Seasonal employment; Expansion plans and factors hindering existing production or expansion or fuller utilisation of installed capacity; Future manpower needs by occupations two years hence and five years hence on the assumption that

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(v)

factors which were limiting expansion or production would be overcome; Separations and engagements; Manpower shortages; Economic activity; Year of establishment, etc.

ii) AS.II - Schedule for Emerging Establishments

All emerging establishments known to be in the blue-print stage or in different stage 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 occupations during next two years and five years.

iii) AS.III - Schedule for institutions imparting professional and technical education

All institutes, polytechnics, universities etc. imparting professional and technical education.

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

iv) AS.IV - Schedule for Agricultural Farms

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

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

v) AS.V - Village Schedule

Five per cent 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.

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 exchange, (ii) data collected under Employment Market Information Programme of Employment Service, (iii) decennial population census, (iv) district plans, (v) socio-economic surveys and (vi) records of local bodies, government departments, licensing authorities, employers' associations, etc.

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7. A District Advisory Group on Area Skill Survey was constituted under the Chairmanship of the Deputy Commissioner, Kamrup to review the progress in the collection of schedules and devise ways and means to ensure fullest cooperation from employers in the rendition of data. Other members nominated to serve on the District Advisory Group were drawn from the departments of Railway, Education, Agriculture, Local Administration, prominent employers, Trade Unions and Members of State Legislature.

8. The concepts, assumptions and analytical techniques adopted are given in the 'Technical Notes' that follow.

TECHNICAL NOTES

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

Reference Dates

2. Although the survey operations were spread over a period of about sixteen months beginning with the month of November 1972, the data on employment, i.e. number of regular employees on pay-roll including working proprietors and partners relate to the following reference dates:

Employment five years - as on 31st March, ago 1967

Current employment - as on 31st March, 1972

Anticipated employment five years hence - by 31st March 1977

Establishments & 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 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 Survey vis-a-vis Employment Market Information Programme.

	Number of establishments covered under	
	Area Skill Survey	Employment Market Information Programme
A. Public Sector	598	417
B. Private Sector		
i) Employing 25 or more workers	246	140
ii) Employing 10-24 workers	423	227
Total	669	367

(viii)

iii) Smaller establishments employing 5-9 workers	1040	217
Grand Total	2307	1001

4. While the smaller private establishments in the size class 5-9 workers were studied on 20 per cent 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 about 57.0 thousand in 1967 and 77.3 thousand in 1972. This gives an average growth rate of 7.1 per cent per year. As against this, employment figures thrown up by Area Skill Survey (excluding employment in smaller private establishments employing 5-9 workers) are 60.5 and 97.8 thousand in 1967 and 1972 respectively giving a growth rate of 12.3 per cent per year. The wide variation between the two is due to lack of comprehensiveness of Employers' Register coupled with possible errors in the estimation of employment in respect of defaulting establishments followed under Employment Market Information Programme. The 'personal interview method' of collection of data followed under the Area Skill Survey has also yielded better results. It may be recalled that the Dantwala Committee also recommended adoption of this approach for the collection of data under Employment Market Information Programme. For the same reason, the meeting of the Working Group on National Employment Service held in 1973 favoured the 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.

Response

7. The personal interview method coupled with an intensive programme of public relations undertaken from the very beginning resulted in achieving hundred per cent response.

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Employment
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 coming years.
- 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 for 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. Secondly, training of skilled personnel normally taken 2-5 years' time. Considering, however, the fact that about a year's time was necessary 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 needs and welfare programmes of compulsory education, 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 programmes as well as those arising due to expansion, contacts were established with the respective heads of departments with a view to eliciting information about plan schemes. This has resulted in arriving at fairly accurate manpower estimates in respect of such departments as irrigation, animal husbandry, agriculture, education, health and public works.

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(x)

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 96 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 the inadequacy of listing of emerging establishments can be had from an analysis of the past trends. During the preceding five yearly period of 1967-72, as many as 748 new establishments came up as against 96 identified for 1972-77.

C. Employment projected for segments marked by uniform growth pattern

- 1) 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 and servicing units spring up year after year on a fairly uniform pattern in the 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 the employment pattern by economic activity in the private sector establishments during the last five years was undertaken to identify such segments which revealed a fairly uniform upward trend year after year and thereby afforded full justification for projection on the basis of past trends. The segments thus identified are given below. Manpower projections on the basis of past trend have been worked out in respect of them only.

.../

New private establishments and employment in them
which came up during a year

...

Economic activities	1967		1968		1969		1970		1971		Total	
	A	B	A	B	A	B	A	B	A	B	A	B
1. Production including repairing & servicing units	42	325	43	421	38	372	48	500	55	556	226	2174
2. Wholesale trading	5	35	11	83	6	56	12	105	16	124	50	403
3. Retail trading	10	60	16	114	21	131	26	180	21	136	94	621
4. Public carriers	-	-	10	55	5	30	10	70	5	35	30	190
5. Educational services (non-technical)	9	105	5	95	4	75	5	93	6	117	29	485
6. Eating places	2	23	9	80	10	98	18	130	20	167	59	498
7. Others	5	30	3	62	7	75	3	57	10	141	28	365
Total:	73	578	97	910	91	837	122	1135	133	1276	516	4736

'A' stands for establishments.

'B' stands for employment.

Self-employment 9. The approach adopted in the study of self-employment is discussed below:

A. Rural Areas

- 1) Data on self-employment in the non-agricultural sector in the rural areas was collected from a sample of five per cent of villages in each development block. Of the total 3344 villages in the district, 167 villages representing 7.7 per cent of rural population were studied. The 'Village Schedule' that was canvassed in this regard was filled in after discussions with block and panchayat officials and other village elders who possessed intimate knowledge of their well-knit village community and households. Since about 87 per cent of the total

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villages had less than 500 households (or 2500 population) each and also because a small proportion of rural work-force is engaged in non-agricultural activities, a count of these persons with reasonable degree of precision, 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, licensing 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 trends of self-employment in the urban economy.

C. Working Proprietors & Partners

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 & 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,

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- 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 per cent per year;
- iii) Vacancies that remained unfilled in the establishments on the reference date (i.e. 31-3-1972).

Unemploy-
ment

11. The live register figures of District Employment Exchange and University Employment Information & Guidance Bureau, Gauhati, Employment Exchanges at Nalbari & Darpeta and Kamrup applicants registered with the State Professional & Executive Office at Shillong have been used to estimate current level 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 based on a Survey conducted by the D.G.E.&T. in 1968.

Balancing
of demand
& supply

12. Considering the fact that professional & higher technical personnel such as engineers, scientists, doctors and technologists have a high degree of mobility, the balancing of demand and supply in the present study 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 anticipated out-turn of training institutions and colleges during the next five years.

Agricultural
Farms

13. A study of 50 largest agricultural farms was undertaken to obtain 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.

Tabula-
tion

14. All data have been tabulated manually.

C H A P T E R - I

BACKGROUND OF THE AREA

1.1 The district of Kamrup comprising sub-divisions of Gauhati, Nalbari and Barpeta is situated in the lower region of Assam State. It is bounded on the north by Bhutan, on the east by Darrang and Nowgong districts, on the south by Meghalaya and on the west by Goalpara district. The number of towns in the district is seventeen and that of villages 3344 which are grouped into 25 talukas and community development blocks. The total area of the district is 9863 square kilometres, of which 1123 square kilometres is covered by forests. This reveals that the area is rich in forest resources.

1.2 According to 1971 Census, the population of the district is 28.5 lakhs (rural 25.2 lakhs and urban 3.3 lakhs) which is 35 per cent higher than 1961 population of 20.6 lakhs. The density of population of the district, as per 1971 census, is 289 per square kilometre as against the State average of 150 per square kilometre. The sex ratio (i.e. the number of females per 100 males), according to 1971 census, is 890 in Kamrup as against State average of 901. The proportion of scheduled castes and scheduled tribes is 5.8 and 10.4 per cent respectively to the total population.

1.3 The labour participation rate (i.e. the percentage of workers to total population in the district) is 26 per cent (48 per cent for males and two per cent for females). As against this, the State average is 29 per cent (49 per cent for males and 6 per cent for females). Seventy per cent of the total working population is engaged in agriculture (62 per cent cultivators and 8 per cent agricultural labourers).

1.4 The rate of literacy in the district as per census 1971 is 29 per cent (males 38 per cent and females 18 per cent). There has been fairly rapid stride in the field of educational activities. Currently there are 3305 primary schools, 478 middle schools, 226 high/higher secondary schools, a university, 25 affiliated degree/post-graduate colleges besides an engineering college, a school of agriculture, a medical college, a college of veterinary science, an ayurvedic college, two industrial training institutes, a textile training institute and a girls' polytechnic.

1.5 Kamrup has essentially an agriculture oriented economy. Main crops grown in the district are paddy, wheat, maize and bañra. Besides, fibres (jute), sugarcane, pulses, oil seeds and potatoes are other important crops grown in the area. There are also a few tea estates in the area.

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1.6 Due to rapid industrialisation and the shifting of the capital of Assam from Shillong to Gauhati the district has acquired a place of distinction. Some of the important industrial units in the district are Gauhati Oil Refinery, Associated Industries Ltd., India Carbon, Assam Hardboards Ltd. and Everest Cycle. Some of the important industries that are likely to come up in the area are manufacture of sugar and glass.

1.7 Kamrup ranks first in the sphere of small scale industries in the State. Establishment of two industrial estates in the district has given further fillip to its development. Principal industries in this sector are saw milling, furniture making, iron and steel, light engineering, chemicals and printing. In addition to small scale industries, a number of cottage industries are also flourishing in the area. Of these, the most important is the textile industry which consists of handloom weaving and production of silk. Handloom weaving is practiced in almost all village house-holds as a subsidiary occupation. Several weavers' cooperative societies have been set up. A town named as Soalkuchi in Kamrup district has a known status as a production centre of endi, muga and silk textiles. Manufacture of bamboo products, cane products, brass and bell-metal products is also carried on.

1.8 Gauhati, the headquarters of the district is said to be the gateway of Assam and is the nucleus of the transport system. It provides the link for passenger and goods transport system to Manipur, Mizoram and Nagaland, etc. Gauhati is the Headquarter for North Frontier Railway. In addition to road and rail links, the area is also connected by air and inland water channels.

C H A P T E R - II

EMPLOYMENT GROWTH

2.1 Wage and salaried employment (number of regular employees) recorded an increase from 0.64 lakhs in 1967 to 1.07 lakhs in 1972 thereby showing a rise of 13.4 per cent annually. The employment is likely to rise further at an annual rate of 14.3 per cent and is expected to reach 1.83 lakhs by 1977. The index of employment (1967 = 100) which rose to 167 in 1972 is expected to pick up further by 1977 and touch the level of 286.

Growth components

2.2 The components which are expected to contribute to the anticipated rise of 76.3 thousand persons during 1972-77 are:

<u>Components</u>	<u>Anticipated Growth (in thousands)</u>	<u>Major Industries</u>
a) Employment expected to be generated as a result of expansion of existing establishments.	65.5 /motor	Tea plantations, forestry, fishing, weaving of silk by handloom, wood & wooden products, iron & steel, bell metal, sundry hardwares, repairing & servicing of automobile, electrical & generator parts, construction, wholesale & retail trading, banking, railways, transportation by road, educational services, medical services and hotel & restaurant.
b) Employment expected to be generated in new establishments currently in blueprint stage.	6.1	Sugar, khadi textile, printing, fertiliser, soap, brick & tile, glass & glass product, iron & steel, sundry hardwares, electrical lamp & fan and research institutions, etc.
c) Employment projected for segments marked by uniform growth pattern.	4.7	Rice, atta & flour milling, bakery, wood & wooden products, sundry hardwares, repairing & servicing of automobile, printing, wholesale & retail trading, educational services and hotel & restaurant, etc.

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Sectoral Growth

2.3 Public sector employment which constitutes 58.8 per cent of the total employment of 1972 recorded an annual growth rate of 10.5 per cent between 1967-72. For the next five years, public sector employers anticipate an accelerated annual growth of 14.7 per cent. As against this, private sector employment which increased at an annual rate of 18.6 per cent during 1967 to 1972 is expected to grow at a somewhat slower pace (13.7 per cent) during the next five years.

Table-1

Employment Growth

Sector	Employment			Annual Growth Percentage		
	1967	1972	1977	1967-72	1972-77	1967-77
Public	41138	62760*	108996	10.5	14.7	16.5
Private	22777	43912	73982	18.6	13.7	22.5
Total	63915	106672	182978	13.4	14.3	18.6
Index of Employment (1967=100)	100	167	286			

*Includes 1662 employees of Assam Government Secretariat transferred to Gauhati from Shillong.

Employment by economic activity

2.4 The change in the level of employment recorded between 1967-72 and that anticipated during next five years according to broad industrial divisions is presented in the following table.

Table-2

Employment by Industrial Divisions

Industrial Division	Employment			Increase			
	1967	1972	1977	1967-72		1972-77	
				Number	Per cent	Number	Per cent
					per year		per year
	1	2	3	4	5	6	7
							8
Agriculture, live stock forestry & fishing	3053	7639	13771	4586	30.0	6132	16.0

.../

1	2	3	4	5	6	7	8
Manufacturing	11508	21015	42186	9507	16.5	21171	20.1
Construction	6171	10710	25857	4539	14.7	15147	28.3
Electricity, gas, water & sanitary services	1457	3168	4557	1711	23.5	1389	8.8
Trade & commerce	5584	10095	13832	4511	16.1	3737	9.4
Transport, storage & communication	11800	18663	25243	6863	11.6	6580	7.0
Services	24342	35382	57532	11040	9.1	22150	12.5
Total:	63915	106672	182978	42757	13.4	76306	14.3

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

2.5 Of the total employees in 1972, about one third (33.1 per cent) were engaged in services followed by manufacturing industries (19.7 per cent), transport, storage & communication (17.5 per cent), construction (10.0 per cent), trade & commerce (9.5 per cent) and agriculture, forestry & fishing (7.2 per cent). The small proportion in agriculture, forestry & fishing is due to the fact that employment in this sector is not covered under the survey and employment of 7639 persons in 1972 relates to only such government offices which were dealing with the development of agriculture, forestry & fishing in the area.

2.6 Substantial growth in employment during the last five years in terms of absolute numbers was recorded in services (11040) followed by manufacturing (9507), transport, storage & communication (6863), agriculture, live stock, forestry & fishing (4586), construction (4539) and trade & commerce (4511). Further significant increases by 1977 have been forecast in services (22150), manufacturing (21171) and construction (15147). Increases by 1977 are also anticipated in transport, storage & communication (6580), agriculture, live stock, forestry & fishing (6132), trade & commerce (3737) and electricity, gas, water & sanitary services (1389). Significant increase in construction (15147) is expected mainly due to execution of civil works of Fifth Plan projects.

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Services

2.7 About one third (33.1 per cent) of the total employed labour force in Kamrup district is engaged in services. Within the services, educational services (non-technical) occupied prominent position (15.2 thousand) in 1972. This was followed by administrative services in government, quasi-government and local bodies whose share in total employment in 1972 was 12.5 thousands. Significant employment growth has been forecast for administrative services in government, quasi-government and local bodies and educational services (non-technical). The transfer of capital of Assam and Secretariat from Shillong to Gauhati has also contributed to the rise by 1662 persons in the services sector of the area. Increases by 1977 are also anticipated in medical and health services and hotel and restaurants. More or less steady trends are noticed in educational services (technical), scientific services & research institutions and recreation services.

Table-3

Employment Growth in services

Industry	Employment			Increase	
	1967	1972	1977	1967-72	1972-77
Administrative services in government, quasi-government & local bodies	8194	12461	23257	4267	10796
Educational services (non-technical)	11201	15208	20995	4007	5787
Educational services (technical)	1368	1781	2109	413	328
Scientific services & research institutions	255	559	925	304	366
Medical & health services	1618	2429	5630	811	3201
Recreation services	130	288	577	158	289
Hotel & restaurants	446	1172	2260	726	1088
Others	1130	1484	1779	354	295
Total	24342	35382	57532	11040	22150

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

Manufacturing

2.8 Manufacturing industries which employ nearly one fifth of the total employed labour force in Kamrup district is the second largest sector in terms of total employment. Large labour force was employed in 1972 in weaving of silk by handloom, repairing & servicing of automobile, petroleum & petroleum products and printing & publishing. Besides these, dehusking of rice & flour milling, iron smelting & rerolling, bell metal products and sundry hardwares are other important industries of the area in which bulk of labour force was engaged.

Table-4

Employment Growth in Important Manufacturing Industries

Industry	Employment			Increase	
	1967	1972	1977	1967-72	1972-77
Dehusking of rice & flour milling	582	962	1649	380	687
Sugar	-	-	1448	-	1448
Bakery	143	364	1071	221	707
Khadi textiles	-	-	709	-	709
Weaving of silk by handloom	1784	2566	5318	782	2752
Wooden furniture & fixtures	89	277	888	188	611
Printing & publishing	822	1598	3066	776	1468
Petroleum & petroleum products	1220	1602	1722	382	120
Fertilisers	-	-	290	-	290
Bricks & tiles	326	408	1408	82	1000
Glass & glass products	-	-	274	-	274
Iron smelting & rerolling	402	850	1582	448	732
Bell metal products	527	771	2146	244	1375
Sundry hardwares	178	591	2111	413	1520
Electric motor & generator parts	96	237	739	141	502
Repairing & servicing of motor vehicles	700	1681	2980	981	1299

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

2.9 Significant increases are expected between 1972-77 in silk weaving by handloom, printing & publishing, sundry hardwares and repairing & servicing of motor vehicles. Other industries such as bakery, wooden furniture & fixtures, bricks & tiles, iron smelting & rerolling, bell metal products and electrical motor & generator parts which showed minor increases during the past five years are likely to pick up at a faster rate by 1977. The new industries which are likely to come up in the area are sugar, khadi textile, fertiliser and glass & glass products.

Occupational pattern

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 Division	Number of Employees			Increase	
	1967	1972	1977	1967-72	1972-77
1	2	3	4	5	6
I. Professional, technical & related workers	<u>14793</u>	<u>21645</u>	<u>29265</u>	<u>6852</u>	<u>7620</u>
i) Scientists, engineers & technologists	2212	3613	5396	1401	1783
ii) Doctors and medical & health technicians	1524	2266	3563	742	1297
iii) Teachers	9395	13208	16650	3813	3442
iv) Accountants, social scientists & other professionals	1662	2558	3656	896	1098
II. Administrative, executive & managerial workers	<u>2733</u>	<u>4311</u>	<u>5613</u>	<u>1578</u>	<u>1302</u>
III. Clerical & related workers (excluding unskilled office workers)	<u>13437</u>	<u>20143</u>	<u>27474</u>	<u>6706</u>	<u>7331</u>
IV. Sales workers	<u>1420</u>	<u>2723</u>	<u>4231</u>	<u>1803</u>	<u>1508</u>
V. Service workers (excluding watchmen, chowkidars, cleaners, watermen & sweepers)	<u>3577</u>	<u>4731</u>	<u>5783</u>	<u>1154</u>	<u>1052</u>
VI. Farmers, fishermen & related workers (excluding agriculture & plantation labour)	<u>721</u>	<u>1032</u>	<u>2757</u>	<u>311</u>	<u>1725</u>

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	1	2	3	4	5	6
VII. Production & related workers and transport equipment operators (excluding labourers)		<u>13294</u>	<u>25235</u>	<u>47421</u>	<u>11941</u>	<u>22186</u>
i) Production & related workers		11691	22324	43486	10633	21162
ii) Transport equipment operators		1603	2911	3935	1308	1024
VIII. Unskilled		<u>13940</u>	<u>26852</u>	<u>60434</u>	<u>12912</u>	<u>33582</u>
Total		63915	106672	182978	42757	76306

(Refer Appendix-II - Employment by Occupations).

2.11 Analysing skill-wise, bulk of the employed persons in 1972 belonged to two occupational categories namely (i) production process & related workers and transport equipment operators (25235) and (ii) professional, technical & related workers (21645). The number of clerical and related workers (20143) was also significant followed by service workers (4731) and administrative, executive & managerial workers (4311). Other important features that emerge from the foregoing table are:

I. Professional, technical & related workers

- i) Scientists, engineers & technologists - Their number which was 2212 and 3613 in 1967 and 1972 respectively is expected to increase to 5396 during the next five years. Marked upward trend is expected among civil engineers, overseers (civil), electrical and electronics engineers, mechanical engineers, draughtsmen, tracers and agronomists and agriculture scientists.
- ii) Doctors and medical & health technicians - Their number which was 2266 in 1972 is expected to reach 3563 by 1977. The rise is noticeable amongst physicians, surgeons & dentists, veterinarians, pharmacists, nurses, veterinary assistants, midwives & health visitors and nursing & sanitary attendants.
- iii) Teachers - As against a rise of 3.8 thousand in them between 1967-72, an increase of 3.4 thousand is expected during next five years. Increasing trend is noticeable for university & college teachers, secondary school teachers and middle & primary school teachers.

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iv) Accountants, social scientists & other professionals - As against an actual rise of 896 during 1967-72, their number is expected to rise by 1098 during 1972-77. The rise is expected mainly amongst accountants & auditors and village level workers.

II. Administrative, executive & managerial workers

As against a rise of 1.6 thousand actually recorded between 1967-72, their number is likely to increase by 1.3 thousand during 1972-77.

III. Clerical & related workers

The number of such workers is expected to increase by 7.3 thousand during the next five years as against an actual rise of 6.7 thousand recorded between 1967-72. Occupations which are showing upward trends are office assistants, clerks, typists and teleprinter operators, book-keepers and accounts clerks, cashiers and bus conductors.

IV. Sales workers

In this category an increase of 1508 is estimated between 1972-77 as against an increase of 1303 recorded during 1967-72.

V. Service workers -

The number of such workers is expected to increase by 1052 during the next five years as against an actual rise of 1154 recorded between 1967-72. The rise is mainly expected amongst cooks, butlers & bearers and protective service workers.

VI. Farmers, fishermen & related workers

The number of such workers which was 721 in 1967 rose to 1032 in 1972 and is expected to increase conspicuously to 2757 by 1977.

VII. Production & related workers and transport equipment operators

i) Production & related workers - The number of these workers which was 22324 in 1972 is expected to rise to 43486 by 1977, thereby showing a substantial increase of 21.2 thousand during the next five years as against an actual rise of 10.6 thousand between 1967-72. Marked increases are anticipated in respect of spinners & winders, weavers hadloom, carpenters, blacksmiths, mechanic automobiles, mechanic general, electricians, radio mechanics, welders, engravers,

workers:

bell metal, printers, moulders, chemical workers, parchers foodgrain, turners, fitters, electrician, sheet metal workers, tinsmiths, tyre-makers & vulcanisers.

- ii) Transport equipment operators - As against an increase of 1308 actually recorded between 1967-72, their number is expected to rise by 1024 between 1972-77. Rise has been forecast for truck, bus and car drivers.

Employment in establishments located in rural areas

2.12 Out of the total of 2307 establishments that were identified under the survey in the district of Kamrup in 1972, only 281 or 12.2 per cent were located in areas classified as rural according to 1971 census. These establishments accounted for an employment of 17.0 thousand in 1972 as against 7.1 thousand in 1967. Of the total employment of 17.0 thousand, tea plantations, fishing & forestry engaged 7.0 thousand followed by silk spinning & weaving (2.9 thousand), educational services (2.5 thousand) and spinning & weaving of cotton in mills (0.6 thousand). Further rise of the order of 5.1 thousand is anticipated during the next five years in establishments located in the rural areas.

Factors hindering existing production and/or expansion

2.13 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 present below:

i) Shortages of raw material

Textile - cotton & silk	Staple silk & cotton yarn
Bakeries	Atta & maida
Printing	Paper
Sundry hardwares, metal products & rerolling mills	Copper, zinc, black sheet, iron & steel and brass

ii) Financial assistance

Wood & wooden products, Smelting of iron & steel, bell metal products, sundry hardwares, repairing & servicing of motor vehicles and bricks & tiles.	Working capital
Silk textile, dehusking of rice & flour milling.	For expansion of existing capacity.
Printing & allied activities	For purchase and installation of machinery.

C H A P T E R - III

SELF-EMPLOYMENT

A. Rural Areas

3.1 Information about self-employment in the non-agricultural sector in the rural areas was collected from a sample of five per cent of the villages in the district. This involved a study of 167 villages representing 7.7 per cent of the total rural population of the area*. The village schedules that were canvassed in this regard were completed after discussion with the village elders and officials who possessed intimate knowledge of their respective community and house-holds.

3.2 The survey has revealed that 1.57 lakh persons were self-employed in 1972 in various non-agricultural activities, while additional opportunities for self-employment could be created to the extent of 74 thousand persons in the light of modernisation of agriculture, local produce, other resources, expanding needs for maintenance and other services. 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-6

Existing & future avenues of self-employment in rural areas

Field	Existing no. of persons who are self-employed	Scope for future self employment
	2	3
Silk spinning & weaving	46,300	18,200
Fishing	12,800	7,800
Cane & bamboo work	7,100	4,800
Carpentry & wood work	7,200	4,200
Poultry farming	4,600	4,400
Bee-keeping	3,300	4,100
Dairy farming	4,900	2,300
Hope making	1,500	1,500
Gur making	2,100	1,700
Fish-net making	1,000	1,500
Leather goods making	4,700	1,500
Cycle repairing	3,800	1,400
Bidi making	2,300	1,300

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

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1	2	3
Tailoring	5,200	1,300
Pottery	4,900	1,200
Piggery	200	800
Flour milling	5,000	500
Oil expelling	1,700	1,000
Construction workers	4,800	1,100
General mechanics	2,700	500
Sheep-rearing	1,900	500
Blacksmithy	3,200	600
Welding	1,200	300
Electrical wiring & repairing	1,100	200
Diesel engine repairing	700	700
Others	22,300	10,400
Total:	156,500	73,800

3.3 Besides allied agricultural fields such as fishing, poultry & dairy farming, piggery and sheep rearing, considerable scope for self-employment exists in cane & bamboo work, bee-keeping, rope-making, gur making, fish-net making and leather goods making. Cycle repairing, bidi making, tailoring, pottery, diesel engine repairing and blacksmithy are also expected to generate additional opportunities for self-employment in rural areas. Silk spinning & weaving which is the most popular traditional cottage industry of the area provided substantial self-employment opportunities in which scope still exists provided financial assistance is extended to this industry.

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.

Silk, spinning & weaving	Financial assistance, development of marketing facilities, raw material, supply of power/ electricity.
Fishing	Development of ponds, marketing facilities.
Dairy & poultry farming	Financial assistance for purchase of live-stock and development of marketing facilities.
Cane & bamboo work	Marketing facilities.

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Welding, general mechanics, electrical & diesel engine repairing	Initial capital for setting up workshops, purchase of tools and implements.
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Bidi making	Marketing facilities.
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3.5 Short-term training programmes have also been indicated to improve avenues of self-employment in rural areas in respect of following:

Dairy & poultry farming

Leather goods making

Pottery

Cane & bamboo work

Fish-net making

Cycle repairing

3.6 Fully trained and experienced craftsmen would, however, be needed to take up work as carpenters, general mechanics, diesel engine mechanics, electricians, blacksmiths and tailors. Efforts will, however, have to be made to enable willing persons to establish themselves in the rural areas by providing such inducements as financial assistance, provision of electric connections, accommodation, etc.

B. Urban Sector

3.7 A comprehensive analysis of self-employment in the urban areas was beyond the scope of the present survey. However, a limited assessment in respect of those segments of economy for which information was readily available from the existing records of government departments, local bodies, employers' & trade associations, licensing authorities, etc. was attempted. The statistics presented below are in respect of only those sectors for which information was available. The data gives an indication of the changes in the incidence of self-employment which may also in certain cases have an element of direct employment. While translating the number of licences, 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 whereas in the case of autos etc., 2-3 persons might be engaged plying it on shift basis.

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Table-7

Self-employment in urban areas

Field	1967	1972	Increase (+) Decrease (-)
<u>Number of licences issued</u>			
For preparation/sale of:			
a) Sweetmeat	89	479	+ 390
b) Meat/Fish	183	315	+ 132
c) Biscuits/Confectioneries	39	78	+ 39
d) Vegetables	50	400	+ 350
<u>Number of licences issued</u>			
a) Railway porters	193	243	+ 50
b) Hawkers registered with railways	28	49	+ 21
c) Stamp vendors (court)	NA	21	-
d) Public Carrier Trucks	216	546	+ 330
e) Tractors	33	145	+ 112
f) Contract Carriage buses	103	145	+ 42
g) Cycle rickshaws	4127	4434	+ 307
h) Animal driven carts	743	709	- 34
i) Man-driven carts	965	1396	+ 431
<u>Number of vehicles registered</u>			
a) Auto rickshaws	-	300	+ 300
b) Taxis	845	360	+ 115
<u>Number of advocates registered with Bar Council</u>			
	NA	336	-
<u>Number of registered medical practitioners</u>			
	NA	84	-
<u>Number of registered petition writers</u>			
	NA	105	-
<u>Number of registered shops & commercial establishments</u>			
	3927	4757	+ 830

3.8 A unique feature of self-employment in the urban sector of this area is that a large number of graduates have formed cooperatives through institutional finance to ply auto-rickshaws which is a new venture in the transport sector. Expansion in the self-employment opportunities during 1967-72 in such fields as retail trading (shops & commercial establishments, selling of sweetmeat,

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vegetables, meat & fish etc.) and public carriers, auto and cycle rickshaws, taxis etc. is an indication of increasing business tempo and industrialisation of the area.

C. Working Proprietors & Partners

3.9 As many as 1186 private establishments (out of 1709) reported existence of one or more working proprietors & partners who were actively engaged in day-to-day operations of their establishments. 86 per cent of smaller private establishments (5-9 workers) reported presence of working proprietors & partners in them. Of the total employment of 6.2 thousand in these establishments, 1.7 thousand or 27.9 per cent were working proprietors & partners. Similar analysis in respect of bigger establishments revealed that the proportion of working proprietors & partners to the total employment was 1:23.

3.10 Principal industries which were built up by individual entrepreneurship are listed in the Table that follows. The data indicates the industries and fields which, in the light of economic characteristic of the area, provide scope for self-employment besides generating substantial paid-employment.

Table-8

Industries	No. of establishments	Employment	No. of working proprietors & partners
Construction	16	5246	16
Wholesale trading	236	2154	436
Retail trading	241	1803	336
Food stuff	91	1228	124
Production of tea in Plantation	2	923	16
Servicing & repairing of motor vehicle	75	787	103
Wood & wooden products	69	701	74
Printing & publishing	54	531	72
Chemical & chemical products	28	384	40
Sundry hardwares	24	256	41
Welding & electroplating	25	204	27
Iron & steel furniture making	16	196	18
Brass & bell metal	21	164	21

3.11 A study of occupational profile of working proprietors & partners revealed that majority of them had taken up managerial, clerical and sales functions. Only a small proportion was engaged in professional, technical and production process work.

<u>Occupation</u>	<u>No. of working proprietors & partners</u>
Professional & technical	94
Administrative & managerial	1386
Clerical & sales	175
Production process (craftsmen)	67
Total:	1722

3.12 An analysis of the educational attainments 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:

<u>Level of education</u>	<u>Number</u>	<u>Percentage</u>
Below matriculation (including illiterates)	415	24.1
Matriculates & above but below graduates	758	44.0
Graduates & above but below post-graduate	430	25.0
Post-graduates	49	2.8
Professional & technical	70	4.1
Total	1722	100.0

C H A P T E R - IV

MANPOWER REQUIREMENTS

4.1 Manpower needs of the area for the next five years (i.e. by 1977) presented in this chapter are made up of the following components:

- i) Employment growth - ibid chapter II;
- ii) Replacement needs due to attrition in the employed work-force - ibid Technical Notes, para 10;
- iii) Vacancies that remained unfilled in establishments on 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 51.2 thousands. This does not include requirement of unskilled workers which is likely to be 36.6 thousands. Following table gives requirements by broad occupational categories:.

Table-9

<u>Occupation</u>	<u>Number</u>
I. Professional, technical & related workers	<u>9843</u>
i) Scientists, engineers & technologists	2173
ii) Doctors ^{and} medical & health technicians	1527
iii) Teachers	4775
iv) Accountants, social scientists & other professionals	1368
II. Administrative, executive & managerial workers	<u>1732</u>
III. Clerical & related workers	<u>9534</u>
IV. Sales workers	<u>1799</u>
V. Service workers	<u>1559</u>
VI. Farmers, fishermen & related workers	<u>1834</u>
VII. Production & related workers and transport equipment operators	<u>24920</u>
i) Production & related workers	23536
ii) Transport equipment operators	1384
Total:	51221

(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 (24.9 thousand) followed by professional, technical & related workers (9.8 thousand), clerical & related workers (9.5 thousand), sales workers (1.8 thousand), farmers, fishermen & related workers (1.8 thousand), administrative, executive & managerial workers (1.7 thousand) and service workers (1.6 thousand).

Professional, technical & related workers

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

1) Scientists, engineers & technologists

Civil engineers	300
Electrical & electronic engineers	200
Mechanical engineers	210
Chemical engineers	40
Overseers, civil engineering	450
Agronomists & agricultural scientists	140

ii) Doctors and medical & health technicians

Physicians, surgeons & dentists, allopathic	250
Veterinarians	150
Pharmacists	180
Nurses	340
Midwives & health visitors	70
Veterinary assistants	130
X-ray technicians	40
Nursing & midwifery attendants	190

iii) Teachers

Teachers, middle & primary schools	2960
Teachers, secondary school	1100
Teachers, university & colleges	510
Teachers, craft	210

iv) Accountants, social scientists & other professionals

Statistical & economic investigators	150
Accountants & auditors	510
Librarians	50
Village level workers	190

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4.5 Out of a total of 2173 jobs likely to come up for scientists, engineers & technologists, 450 will pertain to overseers civil engineering, 300 to civil engineers, 210 to mechanical engineers and 200 to electrical engineers. The demand for doctors and medical & health technicians during the next five years is likely to be of the order of 1527 (Nurses 340, physicians, surgeons & dentists, allopathic 250, pharmacists 180, veterinarians 150). Among teachers, the total requirement for middle & primary teachers and secondary teachers will be of the order of 2960 and 1100 respectively. Requirements for accountants & auditors will be 510, village level workers 190 and that for statistical & economic investigators 150.

Production & related workers and transport equipment operators

4.6 The estimated requirements for some of the important categories of personnel among production & related workers and transport equipment operators, will be as follows:

1) Production & related workers

Metal, platers & coaters	210
Paper makers	130
Chemical processors & related workers	400
Spinners & winders	1140
Weavers, handloom	2430
Drawing & weaving operatives	640
Parchers, food grain	280
Crushers & pressers, oil seed	190
Khandsari & sugar makers	540
Bakers	110
Confectioners & other food processors	200
Carpenters	120
Furniture makers, wood	230
Wood working machine operators	270
Blacksmiths	190
Turners	120
Machinists	80
Fitters	310
Mechanics, automobile	500
Fitters, automobile	110

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Mechanics, general	330
Electricians, general	310
Radio mechanic	180
Electrical & electronic equipment assemblers	110
Cinematograph operators	100
Plumbers & pipe fitters	280
Welders, electric & gas	410
Sheet metal workers	160
Tinsmiths	200
Engravers, bell metal	920
Plastic product makers	260
Job printers	530
Machinemen, hand printing	200
Book-binders	250
Stone masons	310
Brick layers, construction	1110
Cleaners, oilers & greasers, motor vehicle	1130
Earth moving & related machinery operators	240
Checkers, testers, packers, weighers sorters & counters	440
ii) <u>Transport equipment operators</u>	
Drivers, truck	770
Drivers, bus	200
Drivers, car	150
Ferry crew & boatmen	100

4.7 Substantial demands for weavers handloom (2430), spinners & winders (1140), motor vehicle cleaners (1130), bell metal engravers (920), mechanics automobile (500) and carpentry & joinery workers (230) are expected to be generated in the next five years. The other categories which will be needed in sizeable number are machine tool operators (250), fitters (310), general mechanics (380), electricians (310), welders (410), khandsari & sugar makers (540), job printers (530), brick layer construction (1110) and earth moving machine operators (240). Of a total of 1384 jobs likely to come up by 1977 for transport and equipment operators, the demand for bus drivers will be of the order of 200 and that for truck drivers 770.

Manpower requirements by educational level

4.8 Employers were also requested to furnish information about educational & technical qualifications of workers likely to be in demand during the next five years. Table below shows manpower needs in terms of level of education and technical qualifications for which data is available.

Table-10

Manpower needs by level of education

<u>Level of education/experience</u>	<u>Percentage</u>
Below matric (including illeterates')	36.7
Matric & above but below graduates	12.3
Graduates & post-graduates (science)	1.8
Graduates & post-graduates (arts including law)	4.5
<u>Professional & technical qualifications</u>	
Engineering	2.5
Education	2.0
Others	0.3
Recognised certificate (such as those issued by ITIs & teacher training institutes etc.)	9.6
Production & related workers with experience irrespective of qualifications or ITI training	30.3
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. The manpower needs in these categories are normally being met through informal inplant apprenticeship or institutional training organised by establishments. In so far as craftsmen in the engineering categories are concerned, a further probe might be necessary to assess employers' needs by degree of skills so that current training programme could be re-oriented to match employers' specific requirements.

C H A P T E R - V

UNEMPLOYMENT TRENDS

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

- i) District Employment Exchange, Gauhati;
- ii) Employment Exchange, Barpeta;
- iii) Employment Exchange, Nalbari;
- iv) University Employment Information & Guidance Bureau, Gauhati; and
- v) Kamrup applicants registered with the Professional & Executive Employment Office, Shillong.

5.2 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 the Employment Exchange. On the other hand, employed persons may also seek registration with Employment Exchanges in the hope of getting better jobs.

Persons registered for employment

5.3 The total number of employment seekers who were residents of Kamrup and were pending on the live register of the five Employment Exchanges mentioned above was around 10.5 thousand in June 1968. The number nearly doubled itself by the end of June 1973. The proportion of women employment seekers to total which was about two per cent in June 1968 increased to about five per cent in June 1973. The number of women employment seekers which was only 216 in 1968, rose more than four times to 951 in 1973. The following table illustrates:

Table-11

Number of employment seekers on the Live Register

<u>Year ending (June)</u>	<u>Men</u>	<u>Women</u>	<u>Total</u>
1968	10257	216	10473
1969	10962	263	11225
1970	12268	432	12700
1971	13208	636	13844
1972	18753	659	19417
1973	18682	951	19633

Educational attainments of job seekers

5.4 Analysing the employment seekers according to their educational attainments, about 55.5 per cent of those pending on the live register at the end of June, 1973 were non-matriculantes and illiterates. As against this, the proportion of such persons in the past was higher at 66.5 per cent at the end of June 1968. This would be clear from the table that follows:-

Table-12

Number of job seekers by educational attainments

Level of Education	June 1968			June 1973		
	Men	Women	Total	Men	Women	Total
<u>Educated persons</u>	<u>3378</u>	<u>126</u>	<u>3504</u>	<u>8283</u>	<u>452</u>	<u>8735</u>
a) <u>Matriculates</u>	1970	75	2045	3733	233	3966
b) <u>Higher secondary (including intermediates)</u>	837	37	874	2558	97	2655
c) <u>Graduates</u>	<u>467</u>	<u>8</u>	<u>475</u>	<u>1689</u>	<u>83</u>	<u>1772</u>
Arts	281	7	288	835	54	889
Science	135	1	136	624	22	646
Commerce	25	-	25	62	-	62
Engineering	19	-	19	142	4	146
Agriculture	2	-	2	11	-	11
Education	-	-	-	4	2	6
Medical	3	-	3	10	1	11
Others	2	-	2	1	-	1
d) <u>Post-graduates</u>	<u>104</u>	<u>6</u>	<u>110</u>	<u>303</u>	<u>39</u>	<u>342</u>
Arts	57	6	63	124	24	148
Science	39	-	39	155	13	168
Commerce	1	-	1	14	-	14
Others	7	-	7	10	2	12
<u>Non-matriculate (including illiterates)</u>	<u>6879</u>	<u>90</u>	<u>6969</u>	<u>10399</u>	<u>499</u>	<u>10898</u>
GRAND TOTAL	10257	216	10473	18682	951	19633

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5.5 The number of educated persons (i.e. matriculates & above) which was 3504 at the end of June 1968 increased to two and half times to 8735 during next five years. Only twenty-five per cent among the educated persons during 1968 were those who passed higher secondary or intermediate examinations. The proportion improved to 30% in 1973. Graduate applicants registered with the Employment Exchanges in Kamrup have shown marked rise from a meagre 475 in 1968 to 1772 in June 1973. Similarly the number of post-graduate applicants also trebled itself between 1968 and 1973.

5.6 Educated women whose number was as low as 126 in 1968 rose to 452 in 1973. The number of graduates and post-graduates among women applicants has also risen spectacularly in arts & science faculties during the last five years. It would appear that of late more women are taking to higher education.

Type of work sought by employment seekers

5.7 Of the 19.6 thousand on the Live Register of Employment Exchanges at the end of June 1973 as many as 13.1 thousand (67 per cent) were fresh entrants to the employment market. Their proportion was only 49 per cent in June 1968.

Table-13

Type of work sought by employment seekers

Type of work sought	June 1968			June 1973		
	Men	Women	Total	Men	Women	Total
Professional & technical	176	12	188 (1.3)	527	64	591 (3.0)
(i) Teachers	48	7	55 (0.5)	274	49	323 (1.6)
(ii) Others	128	5	133 (1.3)	253	15	268 (1.4)
Clerical & related	206	3	209 (2.0)	228	9	237 (1.2)
Service	125	4	129 (1.2)	140	3	143 (0.7)
Farming, fishing & related work	7	-	7 (0.1)	23	-	23 (0.1)
Production & related and transport equipment operation	783	5	788 (7.5)	728	10	738 (3.8)

New entrants seeking employment-freshers	5019	131	5150 (49.2)	12590	486	13076 (66.6)
Unskilled	3941	61	4002 (38.2)	4446	379	4825 (24.6)
Total	10257	216	10473 (100.0)	18682	951	19633 (100.0)

(Figures in brackets indicate percentage to total).

5.8 Of the total live registrants, 738 or about four per cent of the total were seeking work as production process & related workers or as transport equipment operators and 591 or three per cent were seeking professional & technical jobs. It will also be observed that only a small number of job seekers had the necessary background for taking up clerical & service work.

Unemployed persons

5.9 As all 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 estimate the extent of unemployment in the district. The following table shows the number of job seekers who could be considered as unemployed after applying adjustment factors. The correction factors applied were taken from a D.G.E.&T. Survey conducted in 1968.

Table-14

Estimated number of unemployed persons 1972

Category	Persons unemployed
Professional & technical workers	560
(i) Teachers	269
(ii) Others	291
Clerical & related workers	145
Production & related workers and transport equipment operators	240
Service workers	14
Graduates & above without professional training or experience (freshers)	705
Matriculates & above but below graduates without professional training or experience (freshers)	4394
Below matriculates without professional training or experience (freshers)	4757
Total	10815

C H A P T E R - VI

TRAINING AND EDUCATIONAL FACILITIES

6.1 Information about the current and future trends of out-turn in respect of professional & 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 these 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-15

Out-turn from Institutions

<u>Field of study</u>	<u>Total out-turn 1972-77</u>
a) <u>Ph.D level</u>	33
Arts & Humanities	33
b) <u>Post-graduate level</u>	<u>448</u>
<u>Veterinary science</u>	<u>19</u>
<u>Education</u>	<u>161</u>
<u>Medicine</u>	<u>38</u>
Master of surgery	18
Master of medicine	20
<u>Science</u>	<u>875</u>
Physics	119
Chemistry	128
Botany	142
Zoology	83
Geology	70
Agricultural botany	106
Statistics	77
Mathematics	150
<u>Arts & humanities</u>	<u>3355</u>
Economics	452
History	300

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Philosophy	157
Political science	876
Geography	108
Anthropology	67
Commerce	210
English	379
Assamese	321
Languages, other	485
c) <u>Graduate level</u>	<u>13085</u>
<u>Engineering</u>	<u>677</u>
Civil	225
Mechanical	184
Electrical	163
Chemical	105
<u>Medicine</u>	<u>977</u>
Bachelor of medicine & bachelor of surgery	720
Bachelor of veterinary science & animal husbandry	257
<u>Education</u>	<u>2443</u>
Law	623
<u>Science</u>	<u>4941</u>
Bachelor of science (Hons)	2104
Bachelor of science (Pass)	2837
<u>Arts & humanities</u>	<u>3424</u>
Bachelor of arts (Hons)	1516
Bachelor of commerce	1908
d) <u>Diploma level</u>	<u>1693</u>
<u>Engineering</u>	<u>619</u>
Civil	278
Mechanical	93
Electrical	92
Chemical	128
Draughtsmen civil	28
<u>Medicine</u>	<u>793</u>
Ayurvedic medicine & surgery	68

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Homeopathic medicine	625
Dental surgery	100
<u>Others</u>	<u>281</u>
Library science	103
Journalism	22
Statistics	34
Fine Arts	23
Stenography	28
English language	71
<u>e) Certificate level</u>	<u>2711</u>
<u>Engineering trades</u>	<u>803</u>
Draughtsmen	38
Radio mechanic	44
Motor mechanic	85
Machinist	30
Turner	23
Electrician	127
Fitter	54
Wiremen	50
Blacksmith	31
Carpentry	153
Welder	113
Machine shop	50
Heat treatment	5
<u>Vocational trades</u>	<u>1585</u>
Pottery	34
Cutting & tailoring	57
Weaving & spinning	248
Leather work	17
Doll & toy making	65
Bamboo & cane work	22
Stenography	271
Typing	876
<u>Education</u>	<u>262</u>
<u>Foreign languages</u>	<u>61</u>
Grand Total	22010

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6.2 In addition to the out-turn from training institutions/colleges shown above, persons are also being trained through Apprenticeship Training Programme under the Apprentices Act, 1961 and under employers' own inplant training programmes. The following Table shows the number trained during the last three years (1969-72):

Table-16

Number trained during three years (1969-72)

Occupation	Trained under Apprenticeship Act	Trained through employers own training programme	Total
Machine operators	-	21	21
Turner	9	-	9
Fitter	33	-	33
Motor Mechanic	117	-	117
Diesel mechanic	36	-	36
Tractor mechanic	24	-	24
General mechanic	18	-	18
Grinder	12	-	12
Miller	9	-	9
Moulder	6	-	6
Carpenter	3	-	3
Blacksmith	3	-	3
Welder	15	-	15
Electrician	6	29	35
Instrument mechanic	-	6	6
Wireman	-	1	1
Painter (spary)	-	2	2
Total	291	59	350

6.3 It would be observed from the above Table that a number of persons have been trained under the Apprentices Act in such trades as motor mechanic, diesel engine mechanic, tractor mechanic, fitters and welders. Employers' own training programmes were responsible for training of electricians and machine operators. The employers training programmes were organised mainly for meeting their own requirements.

6.4 It would, however, not be realistic to augment the estimates of availability of trained manpower (discussed in para 6.3) on the basis of above figures as majority of those who completed their apprenticeship were Industrial Training Institute certificate holders who have already been taken into account.

C H A P T E R - VII

DEMAND AND 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 & professional categories such as engineers, technologists, doctors, scientists, etc., who have a country-wide mobility and may sometimes even move out of the country. Accordingly, while the exercise of balancing of demand for and supply of production & related workers may be an indicator of imbalances of manpower in respect of these categories and may be a useful guide in the strengthening or diversification of current training programmes for such skills, a similar exercise in respect of higher professional may not be valid and worthwhile. Attempt has, therefore, been made in this chapter to balance supply of manpower with the anticipated demands by (1972-77) for craftsmen and production process workers only.

7.2 Data on demand side i.e. manpower requirements of the area has been outlined in chapter IV. The components that have been taken into account to build up the supply side are:

- i) Unemployed persons currently available for work - ibid Chapter V.
- ii) Out-turn from training institutions, colleges etc. - ibid Chapter VI.

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 or in-service training; and
- C - Demand will out-strip supply indicating strengthening of existing training and educational facilities.
- D - Fields in which short-term training courses are indicated.

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

Field	Number
Teachers, secondary school	1340

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B. Demand is expected to be met by informal or in-service training

<u>Field</u>	<u>Number</u>
Spinners & winders	1140
Weavers, handloom	2430
Khandsari & sugar makers	540
Book-binders	250
Drivers - car	150
Cleaners, greasers & oilers, motor vehicle	1130

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

<u>Field</u>	<u>Number</u>
Machinists	60
Turners	90
Fitters	330
Mechanics, automobile	400
Blacksmiths	160
Welders	280
Mechanics, general	330
Grinders	30
Electricians	170
Wiremen, light & power	30
Radio mechanics	120
Compositors	40
Tinsmiths	200
Job printers	530

D. Short-term training courses are indicated in the following fields

<u>Field</u>	<u>Number</u>
Engravers bell metal	920
Type makers & vulcanisers	120
Drivers - bus	200
Drivers - truck	770

C H A P T E R - VIII

AGRICULTURAL FARMS

8.1 A survey of fifty 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 on the aspects taken up for study. Further, because of land reform measures and the consequent lack of interest and hesitation 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 15 to 165 acres. The total area of the farms was 3676 acres giving an average of 73.52 acres per farm. Of the total area, 2.9 thousand acres was irrigated and the remaining was partially irrigated. Sixty per cent of the agricultural farms were using pumps or tubewells of their own for irrigation. The remaining 40 per cent were using canal water as well in addition to tube well or pump water. Major crops grown were paddy, wheat and seeds. Some of the farms were also growing sugarcane, pulses, oilseeds, potato and vegetables. Only six per cent agricultural farms have taken up subsidiary activities like poultry, piggery and dairy farming.

Mechanisation and farm equipment

8.3 The study has revealed that forty per cent of the farms were using mechanised implements for agricultural operations. As many as 68 per cent of these had their own tractors. Maintenance facilities for repairs and servicing of equipment were available at reasonable distance from the area of operation. The type of implements used by the agricultural farms is indicated below:-

Table 17

Type of equipments used on the farms

<u>Type of equipment</u>	<u>Number in use</u>	<u>No. of agricultural farms using equipments</u>
Tractor	35	34
Pump set	37	30
Plough	46	17
Thresher	15	15
Harrow	32	13

Tillers	11	11
Wheelhoes	27	1
Sicles	61	9
Spade	37	7
Sprayer	13	7
Seed driller	7	5
Weeder	7	6
Yoke	16	4
Others	28	10

Employment

8.4 Regular employment of the fifty farms (excluding farm owners and partners) was only 685 in 1972 as against 410 five years ago (1967).

	<u>1967</u>	<u>1972</u>
Managers & overseers	35	42
Tractor operators	11	22
Pump attendants	14	20
Agricultural equipment operators	17	49
Agricultural research workers	6	15
Technicians/mechanics	8	22
Clerical workers	22	30
Agricultural labourers	257	444
Service workers	40	41
Total	410	685

In addition to the above, 12 owners and partners were also working on their own farms. Besides exercising overall supervision, the owners were also operating the mechanical equipments.

8.5 Seasonal labour to the extent of 119.6 thousand man-days was engaged during the year for following agricultural operations:

	Man-days (in thousands)
Sowing	12.1
Ploughing	10.4
Transplanting	11.5
Harvesting	21.8
Paddy cleaning	10.8

Threshing	6.3
Seed uprooting (mustard)	5.4
Jute extraction	5.4
Inter culture	1.1
Weeding	1.3
Spadding	1.5
Drying	2.5
Spraying	0.3
Wheel holding	3.7
Fertilising	1.0
Other agricultural operations	24.4
Total	119.6

Financial assistance

8.6 Financial assistance has been obtained by 24 per cent of the agricultural farms for purchase of tractors, agricultural equipments, installation of pump sets and tube wells. Majority of agricultural farms have, however, been able to meet their requirements from their own resources as most of them were managed by cooperatives. Some of the farms have obtained financial assistance for more than one purpose.

Table-18

Purpose of financial assistance

	<u>No. of farms</u>
Installation of tube well/ pump sets	10
Tractor	5
Harrow	2
Weeder	3
Thresher	4
Seed driller	3
Tiller	2
Sprayer	1
Cultivator	1

8.7 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 agricultural farms are concerned.

RESULTS AT A GLANCE

Wage and salaried employment (number of regular employees) went up from 0.64 lakhs in 1967 to 1.07 lakhs in 1972 or by 0.43 lakhs thereby showing an annual growth rate of 13.4 per cent. The employment is likely to rise at an annual rate of 14.3 per cent during the next five years and will reach 1.83 lakhs by 1977. The index of employment (1967=100) which rose to 167 in 1972 is expected to pick up further by 1977 and touch the level of 286. (Chapter II)

2. Slightly less than one-third of the total employed labour force in 1972 was engaged in services in Kamrup. Only 19.7 per cent was employed in manufacturing industries. Substantial growth during the last five years was recorded in services followed by manufacturing, transport, storage & communication and construction. During the next five years services and manufacturing sectors are expected to show a spectacular rise followed by construction. (Chapter II)

3. Significant employment growth has been forecast by administrative services in government, quasi-government and local bodies, educational services (non-technical) and medical & health services. In the case of latter the employment is expected to be more than double of the present level in the next five years. Steady growth in employment is noticed in educational services (technical), scientific services & research institutions and recreation services. (Chapter II)

4. Analysing occupationally, bulk of the employment in 1972 was accounted for by three occupational categories, namely (i) professional, technical & related workers, (ii) clerical & related workers, and (iii) production & related workers and transport equipment operators. Professional, technical & related workers which rose by 6.9 thousand in 1967-72 are expected to increase by 7.6 thousand in the next five years. Clerical & related workers which rose by 6.7 thousand during 1967-72 is expected to show a rise by 7.3 thousand during next five years while a steep rise of 22.2 thousand is anticipated during the next five years in the production & related workers and transport equipment operators as against an increase of 11.9 thousand during the past five years. (Chapter II)

5. Shortage of raw material and lack of financial assistance were the main factors which were hindering existing production and/or expansion in the private sector. (Chapter II)

6. Additional opportunities for self-employment to the extent of 74 thousand 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 agricultural activities such as weaving, fishing, dairy & poultry farming, cane & bamboo work/mat making & bee keeping, considerable scope for self-employment also exists in carpentry & saw milling, cycle repairing, rope making and oil expelling. (Chapter III)

7. Working proprietors & partners of private firms have played an important role in building up of the industrial complex in the area. The principal industries which are the result of individual entrepreneurship are food stuff, servicing & repairing of automobiles, wood & wooden products, printing & publishing, sundry hardwares and trading. (Chapter III)

8. Additional manpower needs of the area by 1977 will be of the order of 51.2 thousand (excluding unskilled workers) which are likely to be of the order of 36.6 thousand. Some of the more important crucial manpower needs will be as follows:

<u>Professional, technical & related workers</u>	<u>9843</u>
i) Scientists, engineers & technologists	2173
ii) Doctors and medical & health technicians	1527
iii) Teachers	4775
iv) Accountants, social scientists and other professionals	1368
<u>Production & related workers and transport equipment operators</u>	<u>24920</u>
i) Production & related workers	23536
ii) Transport equipment operators	1384
<u>Administrative, executive & managerial workers</u>	<u>1732</u>
<u>Clerical & related workers</u>	<u>9534</u>
<u>Sales workers</u>	<u>1799</u>
<u>Service workers</u>	<u>1559</u>
<u>Farmers, fishermen & related workers</u>	<u>1834</u>

(Chapter IV)

9. No formal institutional training or possession of a recognised certificate has been considered as an essential criterion for recruitment of sizeable number of production & related workers which include occupations such as bidi makers, textile workers etc. in whose case employers go more by experience and work performance.
(Chapter IV)

10. Balancing of demand for and supply of manpower among craftsmen & production process workers and other lower categories has revealed the following imbalances:

- a) Supply is likely to be in excess of future needs in respect of teachers, secondary schools.
- b) Demand will out-strip supply indicating strengthening of existing training and educational facilities in respect of mechanics automobile, general mechanics, fitters, welders, blacksmiths, electricians, radio mechanics, machinists, turners, grinders, wiremen, compositors, tinsmiths and job printers.

(Chapter VII)

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EMPLOYMENT GROWTH BY ECONOMIC ACTIVITY

Economic Activity	Number of Employees		
	1967 2	1972 3	1977 4
<u>AGRICULTURE, LIVESTOCK, FORESTRY AND FISHING</u>	<u>3053</u>	<u>7632</u>	<u>13771</u>
Production of tea in planta- tion	2336	6405	7759
Planting, replanting & conservation of forests	550	804	3577
Fishing	85	105	1834
Rearing of silk-worms & other small birds	82	325	601
<u>MANUFACTURING</u>	<u>11508</u>	<u>21015</u>	<u>42186</u>
Dehusking of rice & flour milling	582	962	1649
Sugar	-	-	1348
Indigenous sugar	-	-	100
Canning & preservation of fruits-		60	84
Baker products	143	364	1071
Butter, ghee & cheese	42	55	132
Edible fats & oils	113	224	469
Sweetmeat, condiments & chocolate	-	-	58
Aerated & mineral water	-	140	140
Ice cream	-	15	25
Bidi	95	213	237
Cotton spinning & weaving in mills	480	813	898
Cotton dyeing & bleaching	5	15	50
Cotton weaving in powerlooms	13	37	277
Cotton weaving in handlooms	74	106	188
Khadi textile	-	-	707
Cotton nets	-	-	27
Jute rope	272	312	347
Embroidery & art work in textiles	-	12	105
Spinning of silk (other than in mills)	45	512	925

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(xv)

	1	2	3	4
Weaving of silk textile by handloom		1784	2566	5318
Hosiery	-	-	41	45
Crepe lace & fringes	-	-	-	45
Waterproof textile		58	65	98
Umbrellas		9	24	46
Sawing & planing of wood		261	512	957
Wooden furniture & fixtures		89	277	888
Plywood		18	406	406
Paper & paper products		-	45	264
Printing & publishing other than books		566	1086	2342
Printing & publishing of books		256	512	724
Leather footwear		10	10	80
Tyres & tubes		-	127	312
Rubber footwears & rubber products		54	103	134
Petroleum & petroleum products		1220	1602	1722
Sulphuric acid & other industrial chemicals		315	352	667
Dyes, paints, colours & varnishes		-	24	36
Fertilizers		-	-	290
Matches		-	-	29
Medicines & pharmaceuticals		222	346	476
Soap		55	80	462
Polythenes		10	24	115
Candles, silicate, coal-tar & by-products		49	104	244
Bricks & tiles		326	408	1408
Cement products		47	145	517
Lime		-	-	39
Glass & glass products		-	-	274
Iron smelting & re-rolling		402	850	1582
Casting of ferrous & non-ferrous alloys		-	38	51
Iron & steel furniture		56	244	499

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1	2	3	4
Bell metal products	527	771	2146
Aluminium products	65	86	131
Metal products such as tin can	45	89	128
Electroplating, polishing & welding	122	204	455
Sundry hardwares	178	591	2111
Assembly & repairing of agricultural machinery	127	228	417
Assembly of diesel engines & tractors	-	34	175
Machine tools	32	125	248
Electrical motors & generator parts	96	237	739
Electrical lamps & fans	42	58	215
Insulated wires & cables	35	50	50
Battery	-	21	21
Repairing & servicing of motor vehicles	700	1681	2980
Bicycles & accessories	286	426	475
Building & repairing of ferry & boats	24	170	170
Scientific, medical & surgical instruments	-	-	64
Repair work of other goods	1558	2413	2699
<u>CONSTRUCTION</u>	<u>6171</u>	<u>10710</u>	<u>25852</u>
Construction & maintenance of buildings	4337	8102	12472
Construction & maintenance of roads, railways & bridges	796	925	4829
Construction & maintenance of telegraph & telephone lines	25	30	99
Construction & maintenance of waterways	1013	1653	8457
<u>ELECTRICITY, GAS, WATER & SANITARY SERVICES</u>	<u>1457</u>	<u>3168</u>	<u>4552</u>
Generation & transmission of electric energy	430	1032	1416
Distribution of electric energy	828	1854	2277
Gas	66	109	195

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1	2	3	4
Collection, purification & distribution of water	133	173	669
<u>TRADE & COMMERCE</u>	<u>5584</u>	<u>10095</u>	<u>13832</u>
Wholesale trading	2030	3922	5154
Retail trading	1312	2403	3852
Banking & insurance	2242	3770	4826
<u>TRANSPORT, STORAGE & COMMUNICATION</u>	<u>11800</u>	<u>18663</u>	<u>25243</u>
Transporting by railways	5495	7755	11185
Transporting by bus service	1724	2132	3112
Transporting by vehicles	1129	2823	4044
Transporting by boat & ferry	126	470	695
Transporting by air	227	256	298
Services incidental to transport such as packing, carting & travel agency	31	37	37
Warehouses	481	846	1163
Operation of storage excepting warehouses & cold storage	947	1862	1903
Postal, telegraphic, wireless & signal communication	907	1298	1563
Telephone communication	323	642	642
Information & broadcasting	410	542	601
<u>Services</u>	<u>24342</u>	<u>35382</u>	<u>57532</u>
Public service in administrative departments & offices of central government	486	797	946
Public service in administrative departments & offices of quasi-government organisations, municipalities, local bodies	2030	2648	3724
Public services in administrative departments and offices of state government	5678	9016	18587
Educational services, technical	1368	1781	2109
Educational services, non-technical	11201	15208	20995
Scientific services & research institutions	255	599	925
Public health & medical services	1260	1829	4166

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1	2	3	4
Veterinary services	358	600	1464
Community services	976	1258	1467
Recreation services	130	288	577
Hotel & catering services	536	1302	2438
Other services	64	96	134
GRAND TOTAL	63915	106672	182978

EMPLOYMENT GROWTH BY OCCUPATIONS

Occupation	Number of Employees		
	1967	1972	1977
1	2	3	4
I. <u>PROFESSIONAL, TECHNICAL & RELATED WORKERS</u>	<u>14793</u>	<u>21645</u>	<u>29265</u>
i) Scientists, engineers & technologists	<u>2212</u>	<u>3613</u>	<u>5396</u>
Chemists	64	97	143
Geologists, geophysicists & meteorologists	2	10	12
Laboratory assistants, physical, soil & chemical	62	68	179
Architects & town planners	12	23	47
Civil engineers, general	163	255	342
Civil engineers, building	122	222	222
Civil engineers, structural	-	3	3
Civil engineers, irrigation	85	169	237
Civil engineers, highways & roads	48	84	117
Civil engineers, railways	14	17	17
Civil engineers, public health	12	12	48
Electrical & electronics engineers	122	258	429
Mechanical engineers	138	248	426
Chemical engineers	22	38	75
Metallurgists	3	5	6
Mining engineers, petroleum & gas	3	3	3
Industrial engineers	10	13	17
Surveyors	2	4	19
Work inspectors, engineering	2	2	2
Instrument engineers	11	16	16
Agricultural engineers	9	9	9
Food technologists	3	6	33
Printing technologists	11	32	38
Technologists, others	15	23	63
Draughtsmen, civil	85	133	181

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	1	2	3	4
Draughtsmen, electrical	14		34	34
Draughtsmen, mechanical	35		37	40
Draughtsmen, other	12		16	17
Overseers, civil engineering	533		700	1071
Permanent way inspectors	73		154	159
Electrical & electronics engineering overseers & technicians	30		51	65
Mechanical engineering overseers & technicians	11		16	66
Chemical engineering technicians	50		91	141
Laboratory assistants, metallurgical	-		10	16
Petroleum & natural gas extraction technicians	-		2	12
Survey technicians	4		6	76
Laboratory assistants, engineering	27		35	37
Tracers	104		220	263
Blue printers	24		27	29
Aircraft pilots	15		15	15
Inland river masters	23		84	84
Biologists, zoologists & botanists	11		12	58
Bacteriologists & pharmacologists	11		14	24
Silviculturists	39		50	54
Agronomists & agricultural scientists	127		205	326
Life science technicians	40		84	125
ii) Doctors and medical & health technicians	<u>1524</u>		<u>2266</u>	<u>3563</u>
Physicians, surgeons & dentists	131		170	407
Physicians, ayurvedic	15		16	31
Physicians, homoeopathic	14		17	17
Physicians, unani	8		14	14
Veterinarians	65		77	216
Pharmacists	270		377	517
Dieticians & health officers	21		58	72
Vaccinators, inoculators, medical & dental assistants	108		181	247

	1	2	3	4
Veterinary assistants	120	223	334	
Laboratory assistants, pharmaceutical	1	5	5	
Nurses, general	389	544	831	
Nurses, specialised	11	11	11	
Midwives & health visitors	64	111	171	
X-Ray technicians	9	11	47	
Physiotherapists & occupational therapists	4	4	11	
Nursing attendants	100	149	227	
Midwifery attendants	100	122	202	
Sanitary inspectors	94	176	196	
iii) Teachers	<u>9395</u>	<u>13208</u>	<u>16650</u>	
Teachers - university & colleges	1356	1933	2247	
Teachers - secondary schools	2613	3257	4026	
Teachers - middle & primary schools	5270	7787	9962	
Teachers - manual training	156	231	415	
iv) Accountants, social scientists & other professionals	<u>1662</u>	<u>2558</u>	<u>3656</u>	
Statisticians	11	30	34	
Statistical assistants	56	138	215	
Economists & economic investi- gators	7	39	91	
Accountants & auditors	818	1289	1668	
Sociologists & anthropologists	6	6	6	
Historians	2	2	2	
Librarians	43	61	104	
Translators	43	46	56	
Personnel & occupational specialists	21	23	24	
Labour welfare & probation officers	6	20	52	
Medical social workers	9	14	19	
Women-welfare organisers	-	3	45	

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1	2	3	4
Family planning organisers	5	11	44
Village level workers	188	256	424
Public/police prosecutors	12	22	29
Judges, magistrates & legal practitioners	54	69	70
Editors & journalists	52	78	91
Advertisement writers & radio commentators	6	7	7
Publicity officers & public relation officers	41	49	68
Information officers	14	16	24
Commercial artists, decorators, movie cameramen & photographers	40	48	56
Composers & performing artists	54	67	139
Physical training instructors	18	19	43
Hand writing & finger print experts	1	9	9
Laboratory attendants	166	244	336
II. <u>ADMINISTRATIVE, EXECUTIVE & MANAGERIAL WORKERS</u>	2733	4311	5613
Administrative & executive officials, union government	123	187	198
Administrative & executive officials, state government	547	851	1116
Administrative & executive officials, quasi-government	51	86	94
Administrative & executive officials, local bodies	137	187	197
Working proprietors, directors & managers, wholesale trade	380	549	651
Working proprietors, directors & managers, retail trade	310	441	600
Directors & managers, bank	176	272	310
Directors & managers, insurance	178	219	243
Directors & managers, well-drilling	9	11	16
Working proprietors, directors & managers, construction	29	56	68

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	1	2	3	4
Working proprietors, directors & managers, electricity, water & gas	72	88	108	
Working proprietors, directors & managers, manufacturing	498	941	1427	
Working proprietors, directors & managers & related executive, transport	80	142	182	
Working proprietors, directors, managers & related executives, storage & warehouse	15	34	40	
Working proprietors, directors & managers, lodging & catering services	77	155	226	
Working proprietors, directors & managers, recreation & entertainment	51	92	137	
III. CLERICAL & RELATED WORKERS	13437	20143	27474	
Section officers & clerical supervisors	1144	1527	1828	
Office assistants	2106	3243	3967	
Panchayat secretaries	95	87	177	
Patwaries	772	926	926	
Stenographers & stenotypists	301	488	586	
Typists & teleprinter operators	720	1226	1733	
Key punch & verifying machine operators	22	35	46	
Book keepers & accounts clerks	833	1424	1941	
Cashiers	356	542	772	
Computers & book keeping machine operators	7	87	85	
Calculating machine operators	43	55	55	
Automatic data processing machine operators	5	7	7	
Clerks	4723	6272	10975	
Store keepers & related workers	350	665	822	
Receptionists	19	30	52	
Library clerks	9	18	18	
Time keepers	13	21	33	

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	1	2	3	4
Reservation clerks, transport	46		73	73
Booking clerks, transport	151		213	238
Booking clerks, recreation	17		41	120
Ticket collectors, checkers & examiners	48		77	77
Duplicating machine operators	37		47	47
Addressing machine operators	9		13	13
Bill collectors	32		83	83
Proof readers & copy holders	35		94	189
Station masters & station superintendents	16		23	25
Post masters, telegraph masters & other supervisors	43		81	126
Section controllers & yard foremen, railway	8		8	18
Traffic & platform inspectors, railway	38		49	59
Rates inspectors, railway	22		24	24
Claims inspectors, railway	65		77	77
Traffic inspectors, motor transport	11		15	30
Traffic officers, air service	32		42	49
Goods supervisors, railway & road transport	29		39	59
Contract officers, telephone	17		37	37
Line inspectors, telegraph & telephone	3		5	5
Telephone & wireless inspectors	12		23	23
Transport & communication supervisors	14		17	17
Conductor guards, railway	30		32	32
Bus conductors	389		497	707
Mail guards	9		9	9
Postmen	148		214	214
Messengers & telegraph messengers	135		208	218
Mail carriers & runners, mail	26		41	41
Sorter, mail	9		15	15

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	1	2	3	4
Telephone operators, trunk		98	171	171
Telephone operators, local		37	52	54
Telephone operators, P.B.X.		16	28	28
Telegraphists		98	144	162
Technical assistants, communication		2	9	9
Wireless operators		230	340	390
Radio & control tower operators, aerodrome		7	9	14
IV. SALES WORKERS		1420	2723	4231
Sales supervisors		316	439	524
Purchasing & manufacturing agents		5	12	16
Technical salesmen & service advisers		30	83	279
Salesmen, wholesale trade		472	943	1581
Salesmen, retail trade		370	786	1321
Shop assistants		10	10	18
Petrol pump, salesmen		34	106	130
Technical demonstrators, sales		20	25	25
Street vendors, canvassors & news vendors		36	62	62
Shop attendants		94	183	183
Agents, insurance		11	36	53
Auctioneers		11	25	25
Valuers		11	13	14
V. SERVICE WORKERS		3577	4711	5783
House keepers, matrons & stewards		5	12	18
Cooks & cock bearers		256	515	769
Butlers, bearers, waiters & barmen		144	460	868
Ayahs, institutional		33	50	80
Domestic servants		24	48	48
Room bearers		16	67	80
Building caretakers		18	34	44

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	1	2	3	4
Drycleaners, launderers & pressers	71		104	149
Barbers		15	18	28
Guides	-		-	3
Protective service workers	2995		3423	3696
<u>VI. FARMERS, FISHERMEN, HUNTERS, LOGGERS & RELATED WORKERS</u>	<u>721</u>		<u>1032</u>	<u>2757</u>
Farm, Plantation, dairy, managers & supervisors	25		44	175
Planters	-		-	50
Farmers, dairy, poultry & fur bearing animals	-		3	121
Insect rearers	52		66	143
Farm machinery operators	34		56	166
Farm workers, animal, birds & insect rearing	16		62	433
Gardners, general	117		177	216
Grass cutters	-		15	40
Forestry workers	429		552	1115
Fishermen	9		15	206
Fish overseers	9		11	21
Fisheries inspectors	9		9	9
Fieldmen, fish	17		17	17
Fish hatchers	1		1	36
Fish meal & net makers	3		4	9
<u>VII. PRODUCTION & RELATED WORKERS, TRANSPORT EQUIPMENT OPERATORS</u>	<u>13294</u>		<u>25235</u>	<u>47421</u>
i) Production & related workers	<u>41691</u>		<u>22324</u>	<u>43486</u>
Supervisors & foremen, well drilling	5		6	6
Well drillers, petroleum & gas	5		5	12
Supervisors & foremen, metal smelting & refining	7		13	34
Furnace operators, open hearth	8		16	20
Furnace operators	35		53	57

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1	2	3	4
Rollers, hot rolling mill & rolling mill operatives	42	132	273
Metal melters & reheaters	66	109	109
Metal casters	9	28	28
Moulders, general	29	66	188
metal moulders & core makers	28	58	143
Metal annealers, temperers & case hardeners	11	24	30
Wire drawers	8	32	221
Metal drawers & extruders	13	53	162
Electroplaters	26	36	53
Metal platers & coaters	51	72	272
Metal processors	40	57	57
Supervisors & foremen, wood preparation & paper making	5	23	24
Wood treaters	8	8	8
Sawyers, plywood makers & wood processing workers	45	284	338
Paper pulp preparers	-	8	23
Paper makers	2	10	138
Supervisors & foremen, chemical processing	31	40	76
Crushers, grinders & mixers chemical	63	73	119
Processmen, chemical	24	51	113
Cookers, roasters & heat treaters	56	70	197
Filter & separator operators	17	22	25
Petroleum refining workers	266	406	406
Chemical processors & related workers, other	285	393	755
Supervisors & foremen, spinning weaving, knitting, dyeing & related processing	24	32	35
Fibre preparers	172	264	328
Spinners & winders	831	1190	2168
Warpers & sizers	36	92	126

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	1	2	3	4
Weaving & knitting machine setters & pattern card preparers	10		12	26
Weavers - powerloom	140		424	506
Weavers - handloom	1093		1618	3888
Drawing & weaving operatives	62		272	881
Carpet makers & finishers	19		24	24
Bleachers, dyers & textile product finishers	15		27	87
Tanners & pelt dressers	6		7	7
Supervisors & foremen, food & beverages processing	6		20	34
Washing machine attendants	6		18	38
Millers, food grain	25		46	105
Rollermen & flour mill operators	-		6	23
Grinders, hand (food grain)	-		-	45
Parchers, food grain	50		88	360
Crushers & pressers, oil seeds	61		108	283
Khandsari & sugar makers	-		-	542
Food preservers & canners	-		30	51
Dairy product processors	8		8	78
Bakers (baking product)	18		59	162
Mixing machine attendants	13		55	112
Sweet meat makers	72		114	197
Confectioners, candy & other food processors	9		21	217
Tea preparers	7		56	166
Brewers & aerated water makers	-		29	29
Bidi makers	47		139	163
Supervisors & foremen, tailoring, dress making, sewing & upholstery work	2		3	33
Tailors & dress makers	27		66	151
Pattern makers & cutters	15		15	37
Sewers & embroiders	24		46	115
Sewers, tent	21		54	54

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1	2	3	4
Umbrella makers & examiners	3	11	15
Upholsterers	2	6	12
Shoe makers & repairers	24	26	53
Shoe cutters, sewers & related workers	2	2	32
Supervisors & foremen, carpentry cabinet making & wood working operatives	3	35	63
Carpenters, general	135	231	330
Carpenters, construction	96	204	323
Carpentry & joinery operatives	14	22	247
Furniture makers, wood	40	127	341
Wood machinists, general	16	30	90
Drillers, wood	15	31	31
Wood working machine operatives	36	108	369
Body builders, automobile	-	-	89
Ferry & boat builders	11	67	67
Carpenters, cabinet makers & related workers	2	37	172
Stone cutters & carvers	16	29	29
Supervisors & foremen, blacksmithy	31	49	71
Blacksmiths	187	368	524
Hammermen	42	71	74
Smithy operatives	52	98	203
Markers, metal	3	4	4
Tool makers & metal pattern makers	20	46	95
Machine tool setters	18	27	35
Machinists, general	33	65	141
Turners	69	115	218
Shapers	4	8	15
Planers	6	11	15
Blotters	5	8	16
Millers	8	16	22
Drillers, metal, general	12	19	41

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1	2	3	4
Machine tool operatives	119	187	421
Grinders, general	17	38	62
Polishers	29	37	38
Metal grinders, polishers & tool sharpners	30	49	55
Metal spinners	19	23	36
Power press operators, metal	17	24	45
Metal stampers & machine tool making operatives	19	25	37
Supervisors & foremen, machinery fitting, assembling, repairing & precision instrument making	15	39	83
Mechanics, automisers & fuel pump	-	9	23
Mechanic, dental	2	4	21
Fitters	135	226	515
Fitting, assembling & machine erecting operatives	78	185	268
Mechanics, automobile	286	570	1003
Fitters, automobile	47	84	184
Mechanics, motor cycle	25	92	138
Motor vehicle repairing operatives	132	260	441
Aircraft engine mechanics	23	23	23
Mechanics, diesel engine	30	44	50
Mechanics, pumps	11	22	35
Mechanics, refrigeration & air conditioning	19	27	34
Fitters, bicycle	20	33	38
Mechanics, general	188	313	666
Mechanics, sewing machine	22	26	36
Overhauling & repairing operatives	121	267	509
Supervisors & foremen, electrical & electronics equipment	5	8	16
Engineering supervisors, telephone & telegraph	16	25	25
Sub-inspectors, telephone & telegraph	16	27	27

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1	2	3	4
Electrical supervisors, wiring	11	33	33
Line supervisors, electrical	14	32	34
Electricians, general	235	463	718
Mechanics precision instruments, electrical	24	44	52
Electrical fitters	86	150	159
Electrical repairmen & electrical operatives	161	430	459
Electronics fitters	5	5	57
Electrical & electronics equipment assemblers	51	94	194
Radio mechanics	1	11	194
Wiremen, light & power	49	121	182
Electricians, automobile	13	25	53
Electrical wiring operatives	23	93	97
Maintenance mechanics, telephone & telegraph	29	61	66
Installers & repairmen, telephone & telegraph	71	90	90
Linemen, light & power	100	264	336
Linemen, telephone & telegraph	38	62	81
Cable jointers	16	39	39
Linemen & cable jointing operatives	29	90	90
Armature winders	4	5	10
Coil winders, machine	4	7	7
Battery servicing & repairingmen	2	28	37
Meter sealers, electrical	51	142	172
Supervisors, broadcasting, audio-visual projection & sound equipment	1	2	3
Radio operators, broadcasting station	3	3	3
Cinematograph operators	49	96	188
Sound equipment operators & audio visual projectionists	4	8	11
Supervisors & foremen, sheet & structural metal working	11	21	35

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	1	2	3	4
Plumbers		29	57	180
Pipe fitters		9	36	173
Plumber & pipe fitting operatives		4	19	52
Welders, gas.		112	311	675
Welders, electric		16	28	36
Flame cutters & welding operatives		117	183	234
Sheet metal workers, general		31	127	271
Dent removers		35	69	90
Tin smiths		65	153	338
Sheet metal working operatives		39	114	298
Metal plate & structural metal workers		15	30	68
Engravers - bell metal		201	353	1233
Supervisors & foremen, glass forming & pottery		5	8	15
Glass formers, cutters, grinders & finishers		-	-	63
Potters & clay formers		21	33	52
Glass & ceramics, kilnmen		85	116	248
Glass & ceramics, painters & decorators		9	10	30
Glass formers & pottery workers		-	-	124
Plastic product makers		21	33	292
Rubber product makers		15	43	69
Type repairers		31	119	189
Tyre makers & vulcanisers		12	79	192
Paper & paper board product makers		-	22	80
Supervisors & foremen, printing		10	17	24
Job printers		147	339	830
Compositors		37	68	109
Lino operators		27	36	53
Type setters & photo type setters		34	45	68

(xxxiii)

	1	2	3	4
Machinemen, hand printing	20	94	288	
Machinemen, automatic printing	83	113	121	
Printing press operatives	53	79	229	
Stereo-type setters & electro-typers	-	-	3	
Artists & retouchers, lithographic	3	6	11	
Photo engravers	4	4	4	
Book binders	72	150	387	
Book binding operatives	20	43	66	
Photographic dark room workers	16	25	25	
Barmen lino machine & type setters	18	33	78	
Painters, construction	12	72	88	
Painters, general	70	117	143	
Painters, spray	30	81	156	
Painters, wood work & furniture	8	16	56	
Painters, mate	32	62	103	
Musical instrument repairers	-	7	9	
Candle makers	17	29	71	
Candle moulders	21	32	67	
Work supervisors, construction	42	66	243	
Stone Masons	118	346	620	
Brick layers, construction	408	550	1601	
Brick layers, refractory	30	37	69	
Tile setters	10	18	33	
Concrete moulders	20	30	268	
Concrete mixers	22	28	36	
Reinforced concreaters, cement finishers	35	48	95	
Plasterers	12	24	24	
Insulators, building	6	6	8	
Glaziers, construction	2	3	3	
White washers	59	110	110	
Pipe layers	32	40	85	

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(xxiv)

1	2	3	4
Boiler supervisors	-	2	2
Electrical switch board operators	46	153	183
Pumpmen	126	181	233
Stationary engine & related equipment operators	15	17	112
Boilermen & firemen	17	38	131
Cleaners, oilers & greasers, motor vehicle	1040	2126	3041
Supervisors & foremen, material & freight handling	3	3	3
Crane & hoist operators	1	1	4
Concrete mixer operators (construction)	43	56	108
Earth moving & related machinery operators	165	261	471
Checkers, testers, packers, weighers, sorters & counterers	387	710	1079
Tractor drivers, construction	4	11	11
11) Transport equipment operators	<u>1603</u>	<u>2911</u>	<u>3935</u>
Ferry crews & boatmen	23	133	188
Drivers, railway	16	18	38
Firemen, locomotive	10	40	70
Pointsmen, signalmen & shunters, railways	21	35	63
Trolley drivers	45	50	50
Drivers, car	404	570	646
Drivers, bus	371	469	599
Drivers, truck	662	1519	2135
Drivers, other vehicles	51	77	146
Unskilled	<u>13940</u>	<u>26852</u>	<u>60434</u>
GRAND TOTAL	63915	106672	182978

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MANPOWER NEEDS BY 1977

Occupation	Number
1	2
<u>I. PROFESSIONAL, TECHNICAL & RELATED WORKERS</u>	<u>9843</u>
1) Scientists, engineers & technologists	<u>2173</u>
Cemists	57
Geologists, geophysicists & matereologists	3
Laboratory assistants, physical, soil & chemical	120
Architects & town planners	26
Civil engineers, general	113
Civil engineers, building	22
Civil engineers, irrigation	85
Civil engineers, highways & roads	41
Civil engineers, railways	2
Civil engineers, public health	37
Electrical & electronics engineers	197
Mechanical engineers	207
Chemical engineers	41
Metallurgists	2
Industrial engineers	5
Surveyors	15
Instrument engineers	2
Agricultural engineers	21
Food technologists	28
Printing technologists	9
Technologists, other	42
Draughtsmen, civil	69
Draughtsmen, electrical	3
Draughtsmen, mechanical	3
Draughtsmen, other	3
Overseers, civil engineering	445
Permanent way inspectors	20
Electrical & electronics engineering overseers & technicians	19
Mechanical engineering overseers & technicians	52
Chemical engineering technicians	61
Laboratory assistants, metallurgical	7

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1	2
Petroleum & natural gas extraction technicians	10
Survey technicians	78
Laboratory assistants, engineering	6
Tracers	70
Blue printers	5
Aircraft pilots	2
Inland river masters	8
Biologists, zoologists & botanists	47
Bacteriologists & pharmacologists	11
Silviculturists	9
Agronomists & agricultural scientists	142
Life science technicians	49
ii) Doctors ^{and} medical & health technicians	<u>1527</u>
Physicians, surgeons & dentists	254
Physicians, ayurvedic	17
Physicians, homeopathic	2
Physicians, unani	1
Veterinarians	147
Pharmacists	181
Dieticians & health officers	27
Vaccinators, inoculators, medical & dental assistants	84
Veterinary assistants	133
Laboratory assistants, pharmaceutical	1
Nurses, general	341
Nurses, specialised	1
Midwives & health visitors	71
X-Ray technicians	37
Physiotherapists & occupational therapists	7
Nursing attendants	93
Midwifery attendants	92
Sanitary inspectors	39
iii) Teachers	<u>4775</u>
Teachers - university & colleges	507

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1	2
Teachers - secondary schools	1099
Teachers - middle & primary schools	2962
Teachers - manual training	207
iv) Accountants, social scientists & other professionals	<u>1368</u>
Statisticians	7
Statistical assistants	91
Economists & economic investigators	56
Accountants & auditors	509
Sociologists & anthropologists	1
Historians	2
Librarians	49
Translators	15
Personnel & occupational specialists	3
Labour welfare & probation officers	41
Medical social workers	6
Women welfare organisers	42
Family planning organisers	34
Village level workers	194
Public/police prosecutors	9
Judges, magistrates & legal practitioners	8
Editors & journalists	22
Advertisement writers & radio commentators	1
Publicity officers & public relation officers	24
Information officers	10
Commercial artists, decorators, movie cameramen & photographers	19
Composers & performing artists	79
Physical training instructors	26
Hand writing & finger print experts	1
Laboratory attendants	119
II. ADMINISTRATIVE, EXECUTIVE & MANAGERIAL WORKERS	<u>1732</u>
Administrative & executive officials, union government	30
Administrative & executive officials, State government	346

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1	2
Administrative & executive officials, quasi-government	17
Administrative & executive officials, local bodies	31
Working proprietors, directors & managers, wholesale trade	157
Working proprietors, directors & managers, retail trade	203
Directors & managers, bank	65
Directors & managers, insurance	46
Directors & managers, well-drilling	6
Working proprietors, directors & managers, construction	18
Working proprietors, directors & managers electricity, water & gas	29
Working proprietors, directors & managers, manufacturing	580
Working proprietors, directors, managers & related executives, transport	54
Working proprietors, directors, managers & related executives, storage & warehouse	9
Working proprietors, directors, & managers, lodging & catering services	87
Working proprietors, directors & managers, recreation & entertainment	54
III. <u>CLERICAL & RELATED WORKERS</u>	953+
Section Officers & clerical supervisors	408
Office assistants	1040
Panchayat secretaries	99
Patwaries	93
Stenographers & stenotypists	172
Typists & teleprinter operators	643
Key-punch & verifying machine operators	35
Book keepers & accounts clerks	660
Cashiers	290
Computers & book keeping machine operators	52
Calculating machine operators	6
Automatic data processing machine operators	1
Clerks	4776

1	2
Storekeepers & related workers	252
Receptionists	25
Library clerks	2
Time keepers	14
Reservation clerks, transport	7
Booking clerks, transport	46
Booking clerks, recreation	83
Ticket collectors, checkers & examiners	8
Duplicating machine operators	5
Addressing machine operators	1
Bill collectors	8
Proof readers & copy holders	104
Station masters & station superintendents	4
Post masters, telegraph masters & other supervisors	53
Section controllers & yard foremen, railway	11
Traffic & platform inspectors, railway	15
Rates inspectors, railway	2
Claims inspectors, railway	8
Traffic inspectors, motor transport	17
Traffic officers, air services	11
Goods supervisors, railway & road transport	24
Contract officers, telephone	4
Line inspectors, telegraph & telephone	1
Telephone & wireless inspectors	2
Transport & communication supervisors	2
Conductor guards, railway	3
Bus conductors	260
Mail guards	1
Postmen	21
Messengers & telegraph messengers	29
Mail carriers & runners, mail	4
Sorter, mail	2
Telephone operators, trunk	21
Telephone operators, local	7

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1	2
Telephone operators, P.B.X.	3
Telegraphists	32
Technical assistants, communication	1
Wireless operators	108
Radio & control tower operators, aerodrome	6
<u>IV. SALES WORKERS</u>	<u>1799</u>
Sales supervisors	129
Purchasing & manufacturing agents	5
Technical salesmen & service advisers	204
Sales, wholesale trade	748
Salesmen, retail trade	615
Shop assistants	9
Petrol pump, salesmen	35
Technical demonstrators, sales	4
Street vendors, canvassers & news vendors	6
Shop attendants	18
Agents, insurance	21
Auctioneers	3
Valuers	2
<u>V. SERVICE WORKERS</u>	<u>1559</u>
House keepers, matrons & stewards	7
Cooks & cook bearers	322
Butlers, bearers, waiters & barmen	454
Ayans, institutional	35
Domestic servants	5
Room bearers	20
Building caretakers	142
Dry cleaners, launderers & pressers	64
Barbers	20
Guides	3
Protective service workers	616
<u>VI. FARMERS, FISHERMEN, HUNTERS, LOGGERS & RELATED WORKERS</u>	<u>1834</u>
Farm, plantation, dairy, managers & supervisors	135
Planters	50
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1	2
Farmers, dairy, poultry & fur bearing animals	118
Insect rearers	84
Farm machinery operators	116
Farm workers, animal, birds & insect rearing	377
Gardners, general	62
Grass cutters	27
Forestry workers	618
Fishermen	193
Fish overseers	11
Fisheries inspectors	1
Fieldmen, fish	2
Fish hatchers	35
Fish meal & net makers	5
VII. PRODUCTION & RELATED WORKERS, TRANSPORT	24920
<u>EQUIPMENT OPERATORS</u>	
i) Production & related workers	<u>23536</u>
Supervisors & foremen, well drilling	1
Well drillers, petroleum & gas	9
Supervisors & foremen, metal smelting & refining	22
Furnace operators, open hearth	6
Furnace operators	9
Rollers, hot rolling mills & rolling mill operators	154
Metal melters & reheaters	11
Metal casters	3
Moulders, general	129
Metal moulders & core makers	91
Metal annealers, temperers & case hardeners	8
Wire drawers	192
Metal drawers & extruders	114
Electroplaters	21
Metal platers & coaters	207
Metal processors	6
Supervisors & foremen, wood preparation & paper making	3
Wood treaters	1

1	2
Sawyers, plywood makers & wood processing workers	82
Paper pulp preparers	16
Paper makers	129
Supervisors & foremen, chemical processing	40
Crushers, grinders & mixers, chemical	53
Processmen, chemical	67
Cookers, roasters & heat treaters	134
Filter & separator operators	5
Petroleum refining workers	41
Chemical processors & related workers, other	401
Supervisors & foremen, spinning, weaving, knitting, dyeing & related processing	6
Fibre preparers	91
Spinners & winders	1144
Warpers & sizers	43
Weaving & knitting machine setters & pattern card preparers	15
Weavers - powerloom	124
Weavers - handloom	2428
Drawing & weaving operatives	636
Carpet makers & finishers	2
Bleachers, dyers & textile product finishers	63
Tanners & pelt dressers	1
Supervisors & foremen, food & beverages processing	16
Washing machine attendants	22
Millers, food grain	64
Rollermen & flour mill operators	18
Grinders, hand (food grain)	45
Parchers, food grain	281
Crushers & pressers, oil seeds	186
Khandsari & sugar makers	542
Food preservers & canners	24
Dairy product processors	71
Bakers (baking product)	109
Mixing machine attendants	62

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1	2
Sweat meat makers	94
Confectioners, candy & other food processors	198
Tea preparers	116
Brewers & aerated water makers	3
Bidi makers	38
Supervisors & foremen, tailoring, dress making, sewing & upholstery work	30
Tailors & dress makers	92
Pattern makers & cutters	24
Sewers & embroiders	74
Sewers, tent	5
Umbrella makers & examiners	5
Upholsterers	7
Shoe makers & repairers	30
Shoe cutters, sewers & related workers	30
Supervisors & foremen, carpentry, cabinet making & wood working operatives	31
Carpenters, general	123
Carpenters, construction	139
Carpentry & joinery operatives	227
Furniture makers, wood	217
Wood machinists, general	63
Drillers, wood	3
Wood working machine operatives	272
Body builders, automobile	89
Ferry & boat builders	7
Carpenters, cabinet makers & related workers	139
Stone cutters & carvers	3
Supervisors & foremen, blacksmithy	27
Blacksmiths	193
Hammermen	10
Smithy operatives	115
Tool makers & metal pattern makers	55
Machine tool setters	11
Machinists, general	82

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1	2
Turners	115
Shapers	8
Planers	5
Slotters	9
Millers	8
Drillers metal, general	24
Machine tool operatives	253
Grinders, general	28
Polishers	5
Metal grinders, polishers & tool sharpners	11
Metal spinners	15
Power press operators, metal	23
Metal stampers & machine tool making operatives	15
Supervisors & foremen, machinery fitting, assembling, repairing & precision instrument making	48
Mechanics, automisers & fuel pump	15
Mechanic, dental	17
Fitters	312
Fitting, assembling & machine erecting operatives	110
Mechanics, automobile	495
Fitters, automobile	108
Mechanics, motor cycle	55
Motor vehicle repairing operatives	207
Aircraft engine mechanics	2
Mechanics, diesel engine	14
Mechanics, pumps	15
Mechanics, refrigeration & air conditioning	15
Fitters, bicycle	8
Mechanics, general	384
Mechanics, sewing machine	13
Overhauling & repairing operatives	267
Supervisors & foremen, electrical & electronics equipment	9
Engineering supervisors, telephone & telegraph	3

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1	2
Sub-inspectors, telephone & telegraph	3
Electrical supervisors, wiring	3
Line supervisors - electrical	5
Electricians, general	310
Mechanics precision instrument, electrical	12
Electrical fitters	24
Electrical repairmen & electrical operatives	72
Electronics fitters	53
Electrician & electronics equipment assemblers	109
Radio mechanics	184
Wiremen, light & power	81
Electrician, automobile	31
Electrical, wiring operatives	13
Maintenance mechanics, telephone & telegraph	11
Installers & repairmen, telephone & telegraph	9
Linemen, telephone & telegraph	25
Linemen, light & power	98
Cable jointers	4
Linemen & cable jointing operatives	9
Armature winders	6
Coil winders, machine	1
Battery servicing repairingmen	12
Meter sealers, electrical	44
Supervisors, broadcasting, audio-visual, projection & sound equipment operations	1
Sound equipment operators & audio-visual projectionists	5
Cinematograph operators	102
Supervisors & foremen, sheet & structural metal working	16
Plumbers	131
Pipe fitters	145
Plumber & pipe fitting operatives	37
Welders, gas	600
Welders, electric	11

1	2
Flame cutters & welding operatives	70
Sheet metal workers, general	157
Dent removers	28
Tin smiths	200
Sheet metal working operatives	195
Metal plate & structural metal workers	41
Engravers - bell metal	915
Supervisors & foremen, glass forming & pottery	8
Glass formers, cutters, grinders & finishers	63
Potters & clay formers	21
Glass & ceramics, kilnmen	144
Glass & ceramics, painters & decorators	21
Glass formers & pottery workers	12
Plastic product makers	262
Rubber product makers	30
Tyre repairers	82
Tyre makers & vulcanisers	121
Paper & paper board product makers	60
Supervisors & foremen, printing	9
Job printers	525
Compositors	48
Lino operators	21
Type setters & phototype setters	28
Machinemen, hand printing	203
Machinemen, automatic printing	19
Printing press operatives	158
Stereo-type setters & electro typers	3
Artists & retouchers - lithographic	6
Book binders	252
Book binding operatives	27
Photographic darkroom workers	3
Barmen lino machine & type setters	48
Painters, construction	23
Painters, general	39

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1	2
Painters, spray	83
Painters, wood work & furniture	42
Painters, mate	47
Musical instrument repairers	3
Candle makers	45
Candle moulders	38
Work supervisors, construction	184
Stone masons	310
Brick layers, construction	1106
Brick layers, refractory	36
Tile setters	17
Concrete moulders	241
Concrete mixers	11
Reinforced concreters, cement finishers	52
Plasterers	2
Insulators, building	3
White washers	11
Pipe layers	49
Electrical switch board operators	57
Pumpmen	70
Stationary engine related equipment operators	109
Boilermen & firemen	97
Cleaners, oilers & greasers, motor vehicle	1134
Crane & hoist operators	3
Concrete mixer operators (construction)	58
Earth moving & related machinery operators	236
Checkers, testers, packers, weighers, sorters & counterers	441
Tractor drivers, construction	3
ii) Transport equipment operators	<u>1384</u>
Ferry crews & boatmen	97
Drivers, railways	22
Firemen, locomotive	34

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1	2
Pointsmen, signalmen & shunters, railways	31
Trolley drivers	5
Drivers, car	151
Drivers, bus	198
Drivers, truck	768
Drivers, other vehicles	78
VIII. <u>UNSKILLED</u>	<u>36526</u>
<u>GRAND TOTAL</u>	<u>87817</u>