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MANPOWER PLANNING AND DEVELOPMENT IN OMAN

VOLUME II

(APPENDICES)

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LIST OF APPENDICES

APPENDIX 'A'

THE OMAN NATIONAL WORKFORCE

APPENDIX 'A'

THE OMAN NATIONAL WORKFORCE

(A.1) There are three different points of reference to be established in respect of the number of economically active Omani nationals. The first is their total number, this being crucially related to the total population of the number of Omanis in the modern privae sector, and perhaps also those in the informal sector (though the practical definition of the informal sector is no clearer in Oman than elsewhere). Thirdly, in order to round out the manpower assessment completely, the number of economically active Omanis (with their dependents) employed temporarily or permanently outside the Sultanate should be established.

The Total Number of Economically Active Omanis in the Sultanate :

(A.2) In the absence of a total labour market survey or a population census it is difficult to establish with accuracy the total number of economically active Omanis. However, the results of the series of establishment surveys and a range of other estimates makes it possible to build up a picture of the number and skill level of the national workforce.

(A.3) The modern sector portion of the workforce is that which is most crucial to the manpower assessment. However, the number of Omanis in the rural sector is also important, because the agricultural sector is rightly to be given considerable

importance in the SFYDP. Potentially, then, the question of the rural workforce is a key issue, since productivity in agriculture will become a prominent element of national economic development. The rural national workforce has served as a reservoir of labour for the burgeoning demands of the modern sector, so examination should seek to ascertain the extent to which the past phase of rural urban migration within the Sultanate has diminished and debilitated the rural workforce. This will have a considered impact upon how the agriculture sector will perform under the SFYDP, and demonstrates the extent to which the rural workforce and population might continue to provide a source of labour for the modern sector.

(A.4) Analysis turns first, therefore, to consideration of the total national workforce of the Sultanate. To establish this figure, it is necessary to derive a total national population of the Sultanate. In view of the absence of a full population census in the Sultanate, it is only natural that considerable conjecture surrounds any estimation of the size of its population. There are some early twentieth century estimates which although detailed, fall outside consideration here. Recent reasoned estimates of the number of Omanis have varied from a little over 300,000 (1971) to 1,500,000 (1975). Less well grounded figures range even more widely. Whilst accurate resolution of the numbers and characteristics of the population must await a full scale national census, the numerous estimates

made in the meantime must serve as a basis for evaluation, and, in fact, do so to within useful limits.

(A.5) So little is known about the Sultanate's population that there has been a tendency for it to be ignored in regional labour market calculations. This recent editions of the Labour Force Estimates and Projections published by the Internaional Labour Office (ILO, 1977 for example) do not list Oman separately, but aggregate it with other (much smaller) territories in the Gulf area.

(A.6) The lowest estimte of total population to the commonly quoted is 330,000 in 1971. This figure stems from a programme of cholera inoculation carried out then by the Sultanate"s Ministry of Health. The Ministry could only find that number of Omanis to innoculate throughout the country (Mertz, 1972, and Socknat, 1975). However, field enquiries in the Dhahira, Northern Oman, in 1972, showed that substantial numbers of the population, combined with limited time and resources of the inoculation programme, meant that the teams were not successful in finding all households. It is therefore, reasonable to suppose that the population was significantly in excess of 330,000 in the early 1970s. Indeed, a larger figure of 450,000 was quoted as the 1971/72 World Bank estimate in the National Census Bureau Handbook for 1972. The basis of this figure is not clear. However, there is no reason to believe this is any more accurate than any other estimates.

(A.7) The first modern detailed enquiry was carried out by the Whitehead Consulting Group, in a study commissioned by the Ministry of Social Affairs (Whitehead Consulting Group, 1972). No subsequent estimates of total population have been based upon such a lengthy field investigation as was carried out by the Whitehead team. By house-counting on the ground and using aerial photographs, with the application of a multiplier to represent the number of persons per household, the Whitehead team arrived at a figure of 435,000 which relates to 1971. Most of the more recent estimates of the population of the Sultanate as a whole have not been so substantially grounded. An exception is the estimate prepared by Italconsult (Ministry of Communications and Public Services, Sultanate of Oman, Italconsult, 1974) which assessed the various population estimates as they stood in 1974. The Italian team considered a 1972 figure of 600,000 which derived from the World Bank, to be too high, and made an independent assessment by region. Their estimate ws based upon cultivated area, derived from aerial photograph, and upon a presumed ratio of inhabitants per unit cultivated (derived from comparison with similar oasis type economies). The adapted ratios per cultivated hectare were as follows : on the Batina coast, 10.4; and in the interior 9.2 (excepting Nizwa, Sumail and Izki; 9.7). This gives a total population for Oman of 480,000.

(A.8) Other estimates amounted to second-hand refinements of

existing figures. Thus Fischer and Muzzafar (1975) quote a figure of 750,000, based upon the Oman Statistical Year Book (First Issue), 1973, which in turn derives from an altered version of the Whitehead figure and the estimate produced by the World Bank in 1972. The reasons for the manipulation of these estimates have not been made clear.

(A.9) Subsequent population estimates become difficult to assess. The only direct reference to total population in the Statistical Year Book of 1973 is a note " No population census has so far been carried out in Oman, and precise figures are not available. For planning purposes, the population is assumed to be 1,500,000". No attempt was made in the Year Book to break this figure down regionally, nor to show how it related to the previous much smaller totals. This larger figure reflects the intention to show the considerable scale, in the early 1970s, of return migration of Omanis, previously living outside the Sultanate. However, as the analysis shows subsequently, the population of the Sultanate is now approaching the figure of 1,500,000 quite rapidly. The figure of 1,500,000 is thus retained by the Sultanate for planning purposes, and is quoted in the National Plan 1976-80, as well as the SFYDP. Recently in 1984, the Development Council estimated the total population of 2,000,000. Although several other reports have dealt with numbers of population over various small regions of the Sultanate, most go but a little way towards establishing a

national estimates which have been broken down into smaller regional assessments. It is therefore worth examining the Human Resources section of the Report on the Water Resources Survey of Northern Oman (Ministry of Communications, Alexander Gibb and Partners, 1975), which gives person /cultivated area ratios calculated on the basis of field surveys in northern Oman. The population figures so derived show that, for the regions covered both by the Gibb Survey and the Whitehead estimates, the estimates are of the same order, though the detiled distribution is different. This also means, of course, that the Italconsult figures are of the correct order too. Table A.1 brings some of the best estimates together.

(A.10) Even the numbers living in the capital area of the Sultanate are not known to within generally accepted statistical limits. A recent attempt at assessment gave results which cannot be definitely placed within closer bounds than 35,000 and 50,000 (Eochard, 1973). Since that time, there has obviously been considerable population growth in the capital area, but an estimation of this can only be on a very general basis. Some of the results published by ECWA are useful (see Table A.2).

(A.11) The World Bank economic mission to Oman in 1979 estimated that the population totalled 860,000, on the basis of an assumed enrollment ratio of six year old boys of 40 per cent, together with the presumption that the six year old population cohort comprised 3.8 per cent of the total population. These assump-

tions lead to view that, of a total population of 860,000, Omanis comprised 720,000 and non-nationals 140,000. The value of this estimate lies not in its methology (both the assumption that 40 per cent of six years old boys are a school and the assertions that 6 years olds comprise 3.8 per cent of the total national population are dubious) but in the fact that it forms, when compared with other estimates for earlier years, part of a very plausible time series.

(A.12) In the study of World Bank, the Omani national population is estimated to have been 760,000 at the end of 1980 (the base of point of their projections). This falls roughly in the time series suggested by Table A.1, implying a rate of increase after the past few years of just less than 3 per cent. It assumes a negligible net gain in population from migration over the past two or three year in line with the Government's that net immigration of returning Omani nationls (with the exception of students) is now insignificant, the flow of former residents of East Africa and the Gulf States having virtually ceased. This estimate of 760,000 is also in line with the demographic data provided by the United Nations Economic Commission for Western Asia (Population Division) (1981). They have estimated that the population of Omani Nationals was 666,000 in 1975 (see Table A.2). Their estimate of growth rate is "approximately 3 per cent per annum". If the 1975 ECWA figure is projected forward at that growth rate, then the 1980 popultion figure becomes

772,000 close to their study's estimate of 760,000.

(A.13) From the above total national population figure, it is possible to derive a workforce estimate by application of a crude activity rate.* In the absence of the results of a national census, comparison with neighbouring states suggests narrow bounds for the figure. Table A.3 shows crude activity rates for several oil exporting states with economies and societies evolving along lines similar to those in Oman. The crude activity rates range from 18 per cent in the case of Qatar to 26 per cent in Iraq. One of the most important factors determining the crude activity rate in these countries is the size if the agricultural sector. Thus Iraq, Algeria, and Saudi Arabia (and, to a less extend, Libya) tend to have the higher rates. Kuwait and Qatar, with small populations and virtually no agricultural sector employment,** have lower rates. The proportion of the workforce engaged in the agricultural sector in Iraq is 33 per cent, in Algeria 53 per cent and in Saudi Arabia 42 per cent (1975). In contrast, in the same year, only about 3 per cent of Kuwaiti and Qatari employment was in this sector.

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* The crude activity rate is the proportion of a population which is economically active, expressed as percentage.

** These also tend to be the states with the largest proportion of their population below 15 years of age because of the easy access these urban populations have to medical facilities, which has reduced infant mortality rates.

(A.14) The crude activity rate for the Sultanate most probably

falls between 22 and 26 per cent. The World Bank for their study selected the median of 24 per cent for the Sultanate. This would yield a workforce of 182,000 nationals. (The postulated range of crude activity rates, 22 per cent to 26 per cent, gives an Omani national workforce which ranges from 167,000 to 198,000). The figure used here for the national workforce of 160,000 is rather lower than this crude activity rate derived of 182,000 figure. But 160,000 is close to the total national workforce given in the Second Five Year Plan, which is 153,000, reproduced here as Table A.4.

(A.15) There are still a number of Omanis in employment outside the Sultanate and especially in the Gulf States. These are nationally included in the workforce estimate which is derived by crude activity rate from the total population figure. In the figures for domestic employment they are excluded. If 20,000 workers are withdrawn from the 180,000 figures, to account for workers abroad, the apparent inconsistency is explained. Thus the base year domestically employed, national workforce, used in the World Bank assessment, amount to 160,000 so differing from the Plan's estimates by only 70,000. In view of the contrasting means by which these two workforce figures were derived, (the study estimate deriving from a total population figure and the figure in the Plan from an assessment of sectoral employment and a people to land ratio for the cultivated area of Oman) the similarity of the estimates of striking. (The basis of calcula-

tion of the Plan's estimate is made clearn in the footnotes in Table A-4*).

The Larger Population Figures :

(a.16) In order to derive the large workforce size that results from consideration of the 1,500,000 population figure used for planning purposes up to 1982, the non-national population totals of workers plus dependents must first be deduced. Estimates shows that the non-National population total is estimated to amount to 170,000, comprising 145,000 migrant workers plus 25,000 dependents. This 170,000, figures suggests that the Omani national proportion of the total population of 1,500,000 is 1,330,000. If the same crude activity rate of Omani nationals as is used above (24 per cent) is applied to this larger Omani national population, then the national workforce rises to 319,000.

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* The picture is, in fact, complicated by the exclusion of the armed forces, police and civilian guards from the labour figure in the Plan and this assessment. These forces now amount to a significant proportion of the workforce of the Sultanate. The crude activity rates, as applied here, take account of this.

(A.17) The recent estimates of the Labour Department for 1985

show as follows :-

	Government	Private	Rural	TOTAL
Omani	40,000	30,000	175,000	245,000
Expatriates	25,000	275,000	17,000	317,000
TOTAL:-	65,000	305,000	192,000	562,000

Thus the estimates represents 44 % expatriates and 56 % for nationals. The representation of nationals in the modern sector is just around 23.8 %. The total national workforce is 245,000, and assuming the crude activity rate of 25 %, the total national population is 980,000. If 20,000 Omani workers working abroad are added to the previous estimates, thus the national population is around One million. The estimated expatriate workers is estimated as 317,000. If the same percentage was taken for their dependents as in the World Bank report i.e. 25,000 for 145,000 migrant workers, then the estimated numbers for dependents in 1985 is around 55,000, thus the total estimated expatriate workforce is 372,000 expatriates. The total population is around 1.37 million. The official estimates in the Statistical Year Book is around 2 millions. This means that more work should be carried out to have a clear picture about population and workforce data.

ESTIMATED OMANI POPULATION BY AGE AND SEX 1975

TABLE A.2 :

Age Group	Males	Females
0 - 4	19,0	18.8
5 - 9	15.1	14.9
10 - 14	12.7	12.6
15 - 19	10.3	10.2
20 - 24	7.8	7.7
25 - 29	7.1	7.0
30 - 34	6.3	6.2
35 - 39	5.6	5.6
40 - 44	4.2	4.3
45 - 49	3.3	3.4
50 - 54	2.7	2.8
55 - 59	2.0	2.1
60 - 64	1.6	1.8
65 - 69	1.1	1.2
70 - 74	0.7	0.8
75 and over	0.5	0.6
TOTAL :-	100.0	100.0
Number	336,300	329,700

NOTE : ALL ECWA DATA IS UNOFFICIAL.

SOURCE: Estimated by ECWA, and cited in ECWA, 1981 Table 9.1.

SULTANATE OF OMAN

SOME MAJOR ARAB LABOUR IMPORTING COUNTRIES NATIONAL WORKFORCES AND CRUDE ACTIVIT RATES 1975

TABLEA A.3 :

	National Workforce	Crude Activity Rate
Bahrain	50,000	21.4
Kuwait	87,000	19.4
Libya	454,000	20.2
Qatar	12,000	18.4
Saudia Arabia	1,300,000	23.0
U.A.E.	45,000	22.5
Algeria	3,037,000	26.1
Iraq	3,008,000	26.0

SOURCE:- Statistical Year Book and Censuses.

SULTANATE OF OMAN

ESTIMATES OF OMANI CIVIL LABOUR FORCE (THOUSAND) 1980 AS IN SECOND FIVE YEAR DEVELOPMENT PLAN

TABLE A.4 :

	OMANI
Private Sector (b)	130
Agriculture and Fisheries	(100)
Other Occupations	(30)
Government, Public Sector	23
TOTAL:-	153

a) Civil Labour force is defined as being from 16 to years. It excludes the police, military,students invalids and women not seeking employment.

b) The number of workers (Omanis) in agriculture was was estimated at 2 workers per hectare with 4,000 hecatares being cultivated.

10,000 were estimated as working in animal husbandry; 8,000 is estimated number of fishermen.

The number of Omanis in other occupations derives from the employment survey in which 1965 establishments revealed that they employed 10,808 Omanis; apart from these, there are 10,000 other registered companies which are assumed to employ 2 Omanis each.

SOURCE: Second Five Year Development Plan.

APPENDIX 'B'

MINISTERIAL CIRCULAR NUMBER 10/1978

APPENDIX--B

MINISTERIAL CIRCULAR
NUMBER 10/1978

SULTANATE OF OMAN
MINISTRY OF SOCIAL AFFAIRS AND LABOUR
DIRECTORATE GENERAL OF VOCATIONAL TRAINING

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REF: to article No. 22 and 24 from the Omani Labour Law concern the Vocational Training in the Private Sector, and in view of the importance of Vocational Training in up-grading the skills of Omani Labour, the Ministry of Social Affairs and Labour has decided to apply a scheme of Participation in the training projects as follows :-

1- Participation in the cost of training incurred by Levy Paying Firms in the Vocational Training as follows :

   a- To participate in the training programme held for Omani employees which are approved by the Ministry, that are run by Levy Paying Firms;

   b- To participate in covering training cost of Omani employees in-service, and in training held in the training centres during the official working hours which have been approved by the Ministry. This will apply to training Overseas, as well as in Oman.

2- The Directorate of Vocational Training and the Directorate of Labour are asked to apply the Circular, each in his own field;

3- Prior to that, cases approved formerly by the Ministry are accepted.

4- This circular is in operation from the date of announcement in the Official Gazette.

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APPENDIX--B

APPENDIX TO THE MINISTERIAL
CIRCULAR NUMBER 10/1978

SULTANATE OF OMAN
MINISTRY OF SOCIAL AFFAIRS AND LABOUR
DIRECTORATE GENERAL OF VOCATIONAL TRAINING

****

SCHEME OF PARTICIPATION OF TRAINING IN VOCATIONAL TRAINING COSTS INCURRED BY LEVY PAYING FIRMS :

Article 1 ; GENERAL GUIDELINES

1) This scheme is considered as the scheme of Participation in Training costs incurred by Levy Paying Firms;

2) The Participation granted to a Company will be limited to a total rebate not larger than its total levy of the year;

3) The Participation is granted yearly, in relation to the training cost on condition that the request is submitted to the Directorate of Training in advance before commencing any training programme, even in the case of similarity or repitition of the programmes;

4) Training refers to specific Vocational Programmes and excludes general or academic education, Confereneces and Seminars;

5) Participation is rebated on training permanent employees only; the scheme excludes classifications other than permanent employees, and excludes non-Omani labour;

6) Participation of training will not be granted to employees who have been seconded from another employer on a loan basis, but will be granted to the original employer, if he is eligible.

Article 2 : IN-COMPANY TRAINING OPERATING IN OMAN

1) Training Wages and Allowances :

The Ministry will participate in the cost of

direct instruction carried out in-Company to the extent of allowing for Levy Rebate :

a) Trainee wages and allowances of
R.O. 0 - 60 per month.

Rebate : 100 % of wages and allowances.

b) Trainee wages and allowances of
R.O. 62 - 351 per month.

Rebate : R.O. 30 + 50 % of wages and allowances.

c- Trainee wages and allowances of
R.O. 351/- and above.

The rebate to be calculated on a pro-rata basis for hours, days, months spent on training.

Rebate will be on condition that normal wages and allowances have been paid to each employee in full.

2) The wages and allowances of each training during working hours in the Vocational Training Centres followed to the Ministry of Social Affairs and Labour or any other Centres in the Country approved by the Ministry will be rebated at the rates set out under paragraph (1) of this scheme;

3) Rebate will be allowed for the full salary and for allowances (water,electricity and accommodation) of full-time instructors, calculated on a pro-rata basis from the normal salary and allowances after studying the case individually;

4) The Instructors wages of Supervised Practice following Director Instruction will be allowed as under (3) of this scheme;

5) Part of the cost of equipment and materials may be allowed at the Ministry's discretion depending on circumstances.

Article 3 : OVERSEAS TRAINING

1) Will qualify if the course is not available within the country and cannot be arranged by the Directorate of Training locally;

2) Will qualify it it is not more economical to arrange the course locally than to undertake the training overseas;

3) The Levy Rebate claimed for overseas training must not exceed 25 % of a Company's total training Levy for the year;

4) Course Fees for approved training will be allowed in full;

5) Wages or salary (excluding allowances) will be allowed for Levy Rebate at the same rate as indicated in Article 2.

6) Training allowances for the trainees will be rebated according to appendix attached;

7) No Levy Rebate will be made in respect of a course of longer than 12 months.

APPENDIX--B

SULTANATE OF OMAN
MINISTRY OF SOCIAL AFFAIRS AND LABOUR
DIRECTORATE GENERAL OF VOCATIONAL TRAINING

****

SUGGESTED ALLOWANCES FOR OVERSEAS TRAINING
FOR THE PRIVATE SECTOR EMPLOYEES

SALARY	DAILY ALLOWANCE IN OMANI RIALS		
	1st District	2nd District	3rd District
351 - Upward	10	8	7
60 - 350	8	8	5

1st District	2nd District	3rd District
Algeria	Tunisia	Bahrain
Morocco	Mauritania	Bangladesh
Liberia	Saudi Arabia	Afghanistan
Nigeria	Libya	Burma
Senegal	Indonesia	Nepal
Goban	Mongolia	Sri Lanka
Cameroon	Korea	Malawi
Ivory Coast	Kenya	Maldives
Ruanda	Mozambique	Mauritius
Togo	Tanzania	Botswana
Belgium	Sierra Leone	U.A.E.
Denmark	Malaysia	Syria
Nolrway	Thailand	Egypt
Venezuala	Loas	South Yemen
Argentina	Philippines	Pakistan
Brazil	Djibouti	India

1st District	2nd District	3rd District
Nicaragua	Madagascar	
Dominica	Jordan	
Porto Rico	Iraq	
Rumania	Lebanon	
Hungary	Sudan	
Czechoslovakia	Somalia	
Chile	Kuwait	
Peru	Qatar	
Panama	Iran	
San Salvador	Turkey	
Uraguay	Ethiopia	
Equador	Zambia	
Costa Rice	Zambia	
Guatemala	Swaziland	
New Zealand	Uganda	
Burundi	Cyprus	
Niger	Kampuchia	
Yemen	Vietnam	
Mali	Angola	
New Guinea		
Chad		
Dohomey		
Central Africa		
Zaire		
Congo		
Japan		
Hong Kong		
China		
Gambia		
France		
West Germany		
Switzerland		
United Kingdom		
Holland		
Sweden		
Italy		
Luxemburg		
Finland		
Ireland		
Iceland		
Australia		

1st District	2nd District	3rd District
Austria		
U.S.A.		
Canada		
U.S.S.R.		
Spain		
Portugal		
Jamaica		
Barbados		
Greece		
Malta		
Bulgaria		
Poland		
East Germany		
Cuba		
Mexico		
Honduras		
Albania		
Bolivia		
Colombia		
Yogoslavia		

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APPENDIX 'C'

PRESENT AND FUTURE POPULATION AND EDUCATION IN ARAB COUNTRIES

APPENDIX--C

PRESENT AND FUTURE POPULATION AND EDUCATION IN ARAB COUNTRIES

The Appendix consists of various tables on population and education in the Arab countries at present and its expectations in the future The tables have been translated from the papers discussed in the seminar held in Baghdad (4-6 December 1982) on the strategy on Arabic Manpower Development organized by Arab Labour Organizations. The tables in the appendix are :-

TABLE AC-1 - Present and future illitera3tes above 15 years of age in some Arab countries 1970-1990

TABLE AC-2 - Estimation of the rate of iliteracy per sex in some Arab countries 1980 (%).

TABLE AC-3 - Progress of number of students in various educational stages in Arab countries (1960-1980 (in 1000).

TABLE AC-4 - The rate at which educational stages have been developed in Arab countries in relation to total students 1960-190 (%).

TABLE AC-5 - The rates at which educational stages have been developed in Arab countries in relation to sex 1970-1980 (%).

TABLE AC-6 - Rate of enrolment of students at the primary level in Arab countries 1975-1980 (%).

TABLE AC-7 - Rate of enrolment of student at the secondary levels in Arab countries 1975-198 (%).

TABLE AC-8 - Distrribution of the number of students in various types of education in Arab coungtries

TABLE AC-9 - Distribution of the number of students in various types of education in Arab countries.

TABLE AC-10 – Rates of enrolment at higher education (University education) in Arab countries 1975-1980.

TABLE AC-11 – Rate of Government expenditure on education (1970-1978).

TABLE AC-12 – Distribution of students at different levels levels of education in Arab countries (1980-2000).

TABLE AC-13 – Projections of number of students in Arab countries at year 2000.

TABLE AC-14 – Population growth in Arab countries 1960-2000.

TABLE AC-15 – Average population growth 1960-2000.

TABLE AC-16 – Progress of population rates in urban areas in Arab coungtries (1960-2000) (%).

TABLE AC-17 – Progress of population of educational age in Arab countries (in millions) (1960-2000).

APPENDIX - C

TABLE AC1 : PRESENT AND FUTURE ILLITERATES ABOVE 15 YEARS OF AGE IN SOME ARAB COUNTRIES 1970 - 1990

S T A T E	Number of Illiterates (15 Years & above) in 1000s					
	1970		1980		1990	
	Total	Females	Total	Females	Total	Females
Algeria	5678	3499	6041	3827	6331	4071
Saudi Arabia	3983	2133	4785	2769	4949	3063
Egypt	10963	6793	11744	7531	12771	8301
Iraq	3451	2146	3973	2656	4225	2871
Jordan	640	405	715	444	783	473
Kuwait	193	98	275	148	381	203
Lebanon	441	293	450	310	433	309
Libya	724	472	613	426	528	389
Morocco	6287	3665	8236	4788	9681	5537
Somalia	432	755	1945	1040	1894	1053
Sudan	7341	4185	9112	5404	10756	6766
Syria	2041	1331	2086	1399	2187	1438
Tunis	1886	1176	1922	1245	1928	1258
Yemen (AR)	3028	1588	3897	2098	4517	2841
Yemen (PDR)	592	370	646	468	585	449

APPENDIX - C

TABLE AC2 : ESTIMATION OF THE RATE OF ILLITERACY PER SEX IN SOME ARAB COUNTRIES 1980 (%)

STATE	RATE OF ILLITERACY		Difference Between Females % and Males %
	Females %	Males %	
Somalia	99.5	90.0	9.5
Yeman (AR)	99.5	84.1	15.4
Saudi Arabia	97.7	70.1	27.6
Sudan	93.5	63.5	30.0
Yemen (PDR)	89.1	33.4	55.7
Morocco	85.1	63.3	21.8
Iraq	76.6	37.1	39.5
Algeria	70.9	44.4	26.5
Tunisia	63.9	37.3	26.6
Syria	61.5	29.1	32.4
Libya	60.8	24.5	36.3
Egypt	58.8	32.7	26.1
Jordan	53.4	31.1	22.3
Kuwait	45.8	30.6	15.2
Lebanon	32.3	14.6	17.7
Malta	17.7	12.6	5.1
TOTAL	73.5	46.2	27.3

APPENDIX - C

TABLE AC3 : PROGRESS OF NUMBER OF STUDENTS IN VARIOUS EDUCATIONAL STAGES IN ARAB COUNTRIES

Educational Stage	1960	1965	1970	1975	1980
Primary Stage	7,194.5	10,241.0	12,629.7	16,673.0	20,518.8
Secondary Stage	1,297.2	2,312.2	3,561.5	5,715.6	8,694.3
Secondary	163.9	297.6	445.4	870.1	1,383.6
T O T A L	8,655.6	12,850.7	16,636.6	23,258.7	30,596.7

APPENDIX - C

TABLE AC4 : THE RATES AT WHICH EDUCATIONAL STAGES IN ARAB COUNTRIES HAVE BEEN DEVELOPED IN RELATION TO TOTAL STUDENTS 1960 - 1980 (%)

Educational Stage	1960	1965	1970	1975	1980
Primary	83.1	79.7	75.9	71.7	67.1
Secondary	15.0	18.0	21.4	24.6	28.4
Post-Secondary	1.9	2.3	2.7	3.7	4.5
T O T A L	100	100	100	100	100

APPENDIX - C

TABLE AC5 : THE RATES AT WHICH VARIOUS EDUCATIONAL STAGES HAVE BEEN DEVELOPED IN ARAB COUNTRIES IN RELATION TO SEX 1970 - 1980 (%)

Educational Stage	MALE		Difference(%)	FEMALE		Difference(%)
	1975	1980		1975	1980	
Primary	70.1	65.3	-4.8	74.4	69.7	-4.7
Secondary	25.6	29.5	+3.9	22.8	26.8	+4.0
Post Secondary	4.3	5.2	+0.9	2.8	3.5	+0.7
TOTAL	100	100	-	100	100	-

APPENDIX - C

TABLE AC6 : RATE OF ENROLMENT OF STUDENTS AT THE RPIMARY LEVEL IN ARAB COUNTRIES 1975 - 1980 (%)

COUNTRY	Age Group	Males and Females		Males		Females	
		1975	1980	1975	1980	1975	1980
Algeria	6 - 11	96.0	99.3	114.4	113.2	77.3	84.8
Saudi Arabia	6 - 11	58.2	66.7	73.0	79.9	43.0	53.1
Bahrain	6 - 11	140.0	130.0	154.0	140.0	125.0	119.0
Djibuti	7 - 12	56.0	77.0	72.0	96.0	39.0	58.0
Egypt	6 - 11	73.3	73.8	88.9	86.5	57.1	60.4
U.A.E	6 - 11	75.0	87.0	80.0	90.0	70.0	85.0
Iraq	6 - 11	93.6	116.2	122.2	127.1	63.7	104.9
Jordan	6 - 11	82.8	83.0	87.0	85.6	78.4	80.3
Kuwait	6 - 9	93.0	106.8	99.7	109.9	86.2	103.6
Lebanon	5 - 9	105.6	96.8	109.3	100.4	101.8	93.0
Lybia	6 - 11	138.2	130.6	145.4	135.1	130.6	126.0
Malta	5 - 10	101.6	103.7	101.6	104.0	101.6	103.5
Morocco	7 - 11	62.0	77.1	78.3	95.6	45.2	58.0
Moritania	6 - 12	18.7	29.7	24.2	38.0	13.3	21.5
Oman	6 - 11	44.0	64.0	62.9	81.2	24.4	46.3
Qatar	5 - 10	111.0	108.0	113.0	110.0	108.0	105.0
Somalia	6 - 11	41.3	50.4	54.1	63.9	28.6	37.0
Sudan	7 - 12	47.0	53.1	59.1	61.0	34.3	44.7
Syria	6 - 11	90.9	94.0	105.2	105.0	75.4	82.3
Tunisia	6 - 11	97.5	102.9	116.0	117.8	78.1	87.3
Yemen (AR)	7 - 12	28.8	37.0	50.1	61.5	6.5	11.7
Yemen (PDR)	7 - 12	72.2	80.8	94.7	101.0	49.0	60.1
TOTAL	-	73.7	80.4	90.0	93.2	56.9	67.1

PENDIX C

.BLE AC 7 : RATE OF ENROLMENT OF STUDENTS AT THE SECONDARY LEVELS IN ARAB COUNTRIES 1975-1980(%)

STATE	Male-Female		Male		Female	
	1975	1980	1975	1980	1975	1980
Algeria	19.9	32.9	25.8	40.0	13.8	25.6
Saudi Arabia	21.5	34	28.5	42.6	14.2	25.1
Bahrain	55.2	66.5	58.3	67.9	52.2	65.1
Jeboth	17.6	36.1	25.9	50.4	9.4	22
Egypt	42.8	50.1	55.9	61.7	29.8	38
Emirates	17.3	30.4	21.1	33.1	13.4	27.5
Iraq	34.6	58.2	48	76.7	20.6	38.7
Jordan	45.4	62.1	52.4	68	38	56
Kuwait	66.7	75.4	71.2	80.5	62	70.1
Lebanon	48.3	50.6	52.3	52.2	44.2	48.8
Libya	54.9	78	71	87.2	38	68.3
Malta	44.7	78.1	80	81.9	69.3	74
Moroco	16.5	23.4	20.9	28.6	11.8	18.1
Moritania	3.6	6.3	6.5	10.4	00.7	2.2
Oman	1.4	15	2.3	20.9	00.5	9
Qatar	45.1	54.9	47.4	53.7	42.8	56
Somalia	5.1	10.7	8	15.7	2.3	6.2
Sudan	13.6	16.5	18.4	21.1	8.6	11.8
Syria	48.3	47.2	63.6	57.7	31.3	35.7
Tunis	21.3	27	27.5	33.5	14.7	20.1
Yeman Arab Republic	4.1	10.1	7.8	17.2	00.9	2.8
Yeman PDR	22.5	29	35.4	39.8	9.9	17.8
Total	28.5	37.3	37	45.9	19.7	28.2

(TABLE AC 7)

APPENDIX C

COUNTRY	Acadamic Education %		Teacher Training %		Vocational & Technical Trg: %	
	1970	1978 or 1979	1970	1978 or 1979	1970	1978 or 1979
Algeria	76.9	97.2	3.4	1.3	19.7	1.5
Saudi Arabia	83.7	93.3	14.4	5.3	1.9	1.4
Bahrain	93	91.5	-	-	7	8.5
Jeboty	54.7	81.7	1.2	2.0	44	16.3
Egypt	79.2	80.4	1.8	1.5	19	18.1
Emirates	86.7	98.6	3.4	-	9.9	1.4
Iraq	96.9	92.5	-	2.0	3.1	5.6
Jordan	97	96	-	-	3.0	4.0
Kuwait	94.9	99.7	2.3	-	2.9	0.3
Lebanon	96.4	88.9	2.1	0.6	1.6	10.5
Libya	84.3	86.8	10	10.8	5.7	2.5
Malta	90	83.9	-	-	10	16.1
Moroco	96.8	95.5	0.9	1.7	2.3	2.8
Moritania	-	-	-	-	-	-
Oman	93.9	93.3	-	1.3	6.1	5.3
Qatar	89.1	96.9	5.8	0.5	5.1	2.6
Saomalia	95.9	69.8	1.0	8.8	3.1	21.3
Sudan	96.8	94.9	1.8	1.2	1.4	3.9
Syria	96.4	95.8	0.2	0.1	3.4	4.2
Tunisia	82.8	68.6	6.1	1.4	11.1	30.0
Yeman Arab Republic	90.6	90.1	7.2	5.3	2.2	4.6

TABLE (AC 8) : DISTRIBUTION OF THE NUMBER OF STUDENTS IN VARIOUS TYPES OF EDUCATION IN ARAB COUNTRIES

APPENDIX C

COUNTRY	Year	Sex	Total	Specialization			
				Commerce & Admin.%	Industry %	Age %	Others
Algeria	1975	M,F	012,801	35	60	2	3
		F	2,687	65	26	1	8
Saudi Arabia	1979	M,F	4,557	66	27	7	-
		F	-	-	-	-	-
Bahrain	1979	M,F	2,048	60	40	-	-
		F	613	100	-	-	-
Egypt	1979	M,F	522,151	63	27	10	-
		F	211,318	89	8	3	-
Emirates	1979	M,F	392	5	92	3	-
		F	-	-	-	-	-
Iraq	1979	M,F	54,026	27	57	16	-
		F	15,111	74	19	7	-
Kuwait	1977	M,F	871	23	-	-	77
		F	74	-	-	-	100
Lebanon	1979	M,F	28,798	53	39	-	8
		F	-	-	-	-	-
Libya	1975	M,F	4,888	31	22	13	34
		F	-	-	-	-	-
Oman	1976	M,F	456	-	78	-	21
		F	-	-	-	-	-
Qatar	1979	M,F	382	11	14	-	75
		F	-	-	-	-	-
Somalia	1979	M,F	5,197	8	48	19	25
		F	1,473	14	35	4	47
Sudan	1979	M,F	13,818	46	42	11	2
		F	2,629	90	-	-	10
Syria	1979	M,F	24,440	30	55	5	11
		F	6,574	61	10	-	29
Tunis	1979	M,F	79,401	-	99	-	1
		F	26,976	-	99	-	1
Yeman (PDR)	1979	M,F	1,223	72	-	14	14
		F	305	76	-	-	24
TOTAL		M,F	784,949	51	38	9	1
		F	267,751	78	18	3	1

TABLE (AC 9) : DISTRIBUTION OF THE NUMBER OF STUDENTS IN VOCATIONAL AND TECHNICAL EDUCATION IN ARAB COUNTRIES

APPENDIX C

COUNTRY	Male-Female		Male		Female	
	1975	1980	1975	1980	1975	1980
Algeria	2.9	4	4.4	5.9	1.4	2.5
Saudi Arabia	4	7.5	6.3	10.8	1.6	4.1
Bahrain	3	4.3	2.6	5.3	3.4	3.1
Jebooty	-	-	-	-	-	-
Egypt	12.9	14.7	17.7	19.3	7.9	9.9
Emirates	-	2.2	-	2.5	-	1.8
Iraq	8.3	9.8	11	13.1	5.6	6.2
Jordan	5	11.7	6.3	12.8	3.5	10.6
Kuwait	9.3	12.3	7.5	10.1	11.4	14.6
Lebanon	21.2	25.1	31.3	37.1	10.8	12.7
Libya	6	7.4	9.5	10.6	2.2	4
Malta	4.6	5	6.6	7.4	2.5	2.6
Morocco	3	5.1	4.8	7.3	1.1	2.6
Moritania	-	0.6	-	1.0	-	0.2
Oman	-	-	-	-	-	-
Qatar	5	8.3	3.9	7.1	6.2	9.4
Somalia	0.6	0.8	1.1	1.5	0.1	1.0
Sudan	1.5	1.8	2.4	2.6	0.5	1.0
Syria	12.1	17.1	17.7	23.5	6.3	10.0
Tunis	4	5.2	5.9	6.8	2.0	3.5
Yemen Arab Republic	0.7	2.5	1.5	4.6	0.1	0.7
Yeman (PDR)	1	3.4	1.5	4.8	0.5	1.9
T O T A L	6.9	8.7	9.8	11.9	9.3	5.4

TABLE (AC 10) : RATES OF ENROLMENT AT HIGHER EDUCATION (UNIVERSITY EDUCATION) IN ARAB COUNTRIES 1975-1980

APPENCIX C

COUNTRY	Average Rate of Annual Growth %				Ratio A to B	
	Educational Expenditure (A)		GNP (B)			
	1970 - 1975	1975 - 1978	1970 - 1975	1975 - 1978	1970 - 1975	1975 - 1978
Algeria	17.1	25.3	17.3	21.3	0.99	1.19
Saudi Arabia	81.1	5.4	39.6	36	2.05	0.15
Bahrain	22.9	33.2	35.9	25.1	0.64	1.32
Egypt	12.6	18.4	12.2	25.3	1.03	0.73
Jeboty	11.2	16	14.5	16	0.77	1
Emirates	59.6	36.6	63	17.5	0.95	2.09
Iraq	18.8	20.6	28.5	19.5	0.66	1.06
Jordan	14.3	35.2	8.9	27.8	1.61	1.27
Kuwait	25.6	10.3	31	16	0.83	0.64
Lebanon	15.2	12.1	0.03	10.9	-	1.11
Libya	32	12.9	22.6	17.3	1.42	0.75
Malta	2	11.3	12.5	17	0.16	0.66
Morocco	21	22.7	14.5	11.9	1.45	1.91
Moritania	14.8	12.5	11.3	8.1	1.31	0.54
Oman	63.7	4 .7	47.9	8.3	1.33	0.57
Qatar	31.6	38	54.5	9.6	0.58	3.96
Somalia	31.3	21.6	10.2	12	3.07	1.8
Syria	25.4	30	24.8	16.2	1.02	1.85
Tunis	11.2	21.7	18.4	12.8	0.61	1.69
Yeman (Rep)	44.6	38.2	27.2	43.2	1.64	0.88
Yeamn (PDR)	11.6	33.9	8.1	32.2	1.43	1.05
TOTAL	37.4	14.3	27.5	12.5	1.36	1.14

TABLE (AC 11) : RATE OF GOVERNMENT EXPENDITURE ON EDUCATION (1970-1978)

APPENDIX - C

TABLE AC12 : DISTRIBUTION OF STUDENTS AT DIFFERENT LEVELS OF EDUCATION IN ARAB COUNTRIES 1980 - 2000

STAGE	1980		2000	
	in 1000s	(%)	in 1000s	(%)
Primary	20,690	67.3	39,749	57.8
Secondary	8,741	28.4	24,947	36.3
Higher Education	1,329	4.3	4,037	5.9
TOTAL	30,760	100	68,733	100

APPENDIX C

COUNTRY	Primary Stage			Secondary Stage			Higher Stage			TOTAL		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Tota
Algeria	3,379.5	3,059.6	6,439.1	2,010.9	1,677.5	3,688.4	188.6	93.1	281.7	5,579.0	4.830.2	10,4
Saudi Arabia	1,296.1	1,168.9	2,465.0	933.3	707.7	1,641.0	193.0	97.8	290.8	2,422.4	1,974.4	4,9
Bahrain	50.9	42.6	93.5	35.8	30.8	66.6	4.2	2.4	6.6	90.9	75.8	16
Jeboty	15.2	14.2	29.4	8.6	4.4	13	–	–	–	23.8	18.6	..
Egypt	4,101.0	3,075.6	7,176.6	3,270.0	2,376.2	5,646.2	781.5	500.6	1,282.1	8,272.1	5,952.4	14,1
Emirates	122.2	117.2	239.4	94.5	89.4	183.9	8.4	6.2	14.6	225.1	212.8	4
Iraq	2,210.6	1,962.5	4,172.6	1,774.9	1,521.0	3,295.9	270.5	243.9	514.4	4,256.0	3,726.9	7,9
Jordan	445.7	406.4	852.1	327.6	275.6	603.2	47.8	62.6	90.4	821.4	724.6	1,5
Kuwait	213.2	206.0	419.2	363.9	339.4	703.3	50.5	54.1	104.6	627.0	599.5	1,2
Lebanon	258.0	247.9	505.9	237.8	246.3	484.1	99.9	42.0	141.9	595.7	536.7	1,1
Libya	548.7	502.8	1,051.5	403.6	356.6	760.2	37.3	18.7	56.0	989.6	787.1	1,8
Malta	15.9	14.9	30.8	19.0	16.1	35.1	1.4	0.5	1.9	36.3	31.5	
Morocco	2,823.5	2,157.3	4,980.8	1,669.2	1,302.2	2,971.4	311.1	153.2	464.3	4,803.8	3,612.7	8,4
Moritania	198,0	152.9	350.9	71.1	59.8	130.9	4.2	2.9	7.1	273.3	215.6	4
Oman	157.0	121.6	278.6	53.1	52.2	105.3	–	–	–	210.1	173.8	3
Qatar	34.6	33.4	68.0	29.4	32.5	61.9	3.9	4.8	8.7	67.9	70.7	1
Somalia	493.2	368.8	86.2	114.0	73.5	187.5	30.5	8.9	39.4	637.7	451.2	1,0
Sudan	2,129.8	1,851.2	3,981.0	820.0	549.2	1,369.2	70.5	34.4	104.9	3,020.3	243.8	5,4
Syria	1,419.7	1,318.2	2,738.0	926.4	686.9	1,613.3	246.6	151.7	398.3	2,592.8	2,156.8	4,7
Tunisia	684.7	627.6	1,312.3	454.1	351.4	805.5	78.0	50.8	128.8	1,216.8	1,020.8	2,2
Yeman Arab Republic	742.5	329.4	1,171.9	231.5	158.1	389.6	50.3	23.9	84.2	1,024.3	621.2	1,6
Yeman PDR	299,6	230.0	529.6	108.6	82.4	191.0	9.8	6.6	16.4	418.0	319.0	7
T O T A L	21,639.7	18,108.5	39,748.2	13,957,3	10,989.2	24,946.5	2,488.0	1,549.1	4,037.1	38,085.0	30,646.8	68.7

TABLE (AC 13): PROJECTIONS OF NUMBER OF STUDENTS IN ARAB COUNTRIES AT VARIOUS STATES AT YEAR 2000

APPENDIX C

COUNTRY	1960	1965	1970	1975	1980	1985	1990	1995	2000
Algeria	10,800	11,923	13,307	15,680	18,594	22,215	26,525	31,233	36,016
Saudi Arabia	4,787	5,405	6,198	7,180	8,367	9,784	11,458	13,233	15,565
Bahrain	162	185	215	256	302	356	416	478	538
Jeboty	81	85	95	106	119	135	152	169	187
Egypt	25,925	29,389	33,329	36,995	41,995	47,303	52,806	58,540	64,672
Emirates	119	150	227	796	796	1,008	1,215	1,425	1,635
Iraq	6,847	7,975	9,355	11,020	13,084	15,501	18,176	21,110	24,270
Jordan	1,695	1,962	1,299	2,702	3,190	3,764	4,407	5,122	5,894
Kuwait	278	471	744	1,002	1,372	1,770	2,194	2,672	3,166
Lebanon	1,857	2,151	2,469	2,799	3,161	3,559	3,991	4,442	4,891
Libya	1,349	1,624	1,982	2,430	2,977	3,559	4,289	5,025	5,768
Malta	329	319	326	328	340	353	366	377	387
Morocco	11,640	13,139	15,126	17,305	20,296	23,869	27,840	31,993	36,149
Moritania	970	1,196	1,245	1,421	1,634	1,890	2,192	2,538	2,919
Oman	505	571	654	766	891	1,041	1,218	1,423	1,651
Qatar	59	70	111	170	220	272	326	381	434
Somalia	2,226	2,500	2,789	3,170	3,645	4,214	4,843	5,525	6,261
Sudan	11,256	12,533	14,090	16,015	18,371	21,153	24,299	27,722	31,270
Syria	4,561	5,325	6,258	7,354	8,644	10,175	11,992	14,072	16,291
Tunisia	4,221	4,630	5,127	5,608	6,363	7,188	8,045	8,841	9,563
Yeman Arab Republic	4,039	4,492	4,836	5,282	5,926	6,706	7,648	8,757	9,962
Yeman (PDR)	1,208	1,351	1,497	1,654	1,890	2,175	2,521	2,932	3,380
T O T A L	94,918	107,346	122,279	139,722	162,177	188,028	216,919	248,174	780,868

TABLE 14 : POPULATION GROWTH IN ARAB COUNTRIES 1960-2000

APPENDIX C

	1960 1965	1965 1970	1970 1975	1975 1980	1980 1985	1985 1990	1990 1995	1995 2000
Algeria	2.6	2.2	3.3	3.5	3.6	3.6	3.3	2.9
Saudi Arabia	2.5	2.8	3.0	3.1	3.2	3.2	3.2	3
Bahrain	2.7	3.1	3.6	3.4	3.3	3.2	2.8	2.4
Jeboty	1.0	2.3	2.2	2.3	2.6	2.4	2.1	2.0
Egypt	2.5	2.6	2.1	2.6	2.4	2.7	2.1	2.0
Emirates	4.7	8.6	19.7	7.4	4.8	3.8	3.2	2.8
Iraq	3.1	3.2	3.3	3.5	3.4	3.2	3.0	2.8
Jordan	3.0	3.2	3.3	3.4	3.4	3.2	3.1	2.9
Kuwait	11.1	9.6	6.1	6.5	5.2	4.4	4.0	3.5
Lebanon	3.0	2.8	2.5	2.5	2.4	2.3	2.2	1.9
Libya	3.8	4.1	4.2	4.1	3.9	3.6	3.2	2.8
Malta	-0.6	0.4	0.1	0.7	0.8	0.7	0.6	0.5
Morocco	2.5	2.9	2.7	3.2	3.3	3.1	2.8	2.5
Moritania	2.5	2.6	2.7	2.8	2.9	3.0	3.0	2.8
Oman	2.5	2.8	3.4	3.2	3.2	3.2	3.2	3.0
Qatar	3.5	9.7	8.9	8.9	4.3	3.7	3.2	2.6
Somalia	2.4	2.2	2.6	2.6	2.9	2.8	2.7	2.5
Sudan	2.2	2.4	2.6	2.6	2.9	2.8	2.7	2.4
Syria	3.5	3.3	3.3	3.3	3.3	3.3	3.3	3.0
Tunisia	1.9	2.1	1.8	1.8	2.5	2.3	1.9	1.6
Yeman Arab Republic	2.2	1.5	1.8	1.8	2.5	2.7	2.7	2.6
Reman DPR	2.3	2.1	2.0	2.0	2.8	3.0	3.1	2.9
T O T A L	2.5	2.7	2.7	2.7	3.0	3.9	2.7	2.5

Table 15 : AVERAGE POPULATION GROWTH 1960-2000

APPENDIX C

C O U N T R Y	1960	1970	1975	1980	1990	2000
Algeria	30.44	45.56	53.74	60.85	71.06	76.43
Saudi Arabia	29.72	48.67	58.68	66.84	77.32	81.81
Bahrain	78.40	78.14	78.09	77.89	79.65	82.46
Jeboty	49.38	62.11	68.87	73.95	80.92	84.49
Egypt	37.86	42.25	43.54	45.37	50.54	57.36
Emirates	40.34	57.37	65.32	71.92	80.34	83.97
Iraq	42.89	58.37	65.71	71.62	79.47	83.31
Jordan	42.71	49.61	52.94	56.28	62.82	68.67
Kuwait	73.30	76.45	30.78	88.33	92.96	94.44
Lebanon	44.37	61.85	69.78	75.86	83.33	86.56
Libya	22.76	34.26	43.68	52.39	65.32	71.88
Malta	59.36	64.45	80.85	83.28	87.10	89.29
Morocco	29.31	34.62	37.43	40.55	47.50	54.88
Moritania	03.37	12.82	23.07	35.6	57.05	66.16
Oman	03.44	05.02	06.14	07.35	10.56	15.13
Qatar	72.88	79.75	83.70	86.11	89.19	91.37
Somalia	17.30	23.13	26.47	30.15	38.13	46.18
Sudan	10.30	16.38	20.37	24.77	34.03	42.46
Syriya	36.77	43.35	46.74	50.26	57.31	63.86
Tunisia	36.03	06.02	47.62	51.73	59.40	65.83
Yeman Arab Republic	03.41	32.10	07.93	10.24	15.87	22.18
Yeman (PDR)	27.95	39.89	34.34	96.93	43.25	50.77
T O T A L	30.64	39.89	44.84	49.24	57.53	64.42

TABLE 16 : PROGRESS OF POPULATION RATES IN URBAN AREA IN ARAB COUNTRIES (1960-2000) (%)

APPENDIX - C

TABLE AC17 : PROGRESS OF POPULATION AT EDUCATIONAL AGE IN ARAB COUNTRIES (IN MILLIONS) 1960 - 2000

Educational Stage	1960	1965	1970	1975	1980	1985	1990	1995	2000
Primary	14.7	17.1	19.8	22.6	25.5	29.8	34.3	38.6	42.2
Secondary	12.9	14.5	16.9	20.0	23.4	26.4	30.7	35.7	40.4
Higher	8.6	9.5	10.6	12.7	15.3	18.1	20.3	23.6	27.6
T O T A L	36.2	41.1	47.3	55.3	64.2	74.3	85.3	97.9	110.2

APPENDIX 'D'

UPDATED LABOUR MARKET PROJECTIONS FOR THE SULTANATE OF OMAN USING THE "COMPOUND MODEL"

APPEN- D

UPDATED LABOUR MARKET PROJECTIONS FOR THE SULTANATE OF OMAN USING THE " COMPOUND MODEL "

J. S. Birks

INTRODUCTION

Labour market projections are becoming an essential aspect of overall development planning in Oman. No longer can economic development and growth be allowed to forge ahead without regard for the labour market.

In its simplest expression, rapid economic growth results in rapid increases in imports of non-Omani workers to the Sultanate. Labour Market Projections can demonstrate the nature of this relationship, i.e. what numbers of extra non-Omani workers will be imported as a result of stipulated rates of economic growth over the next few years (given a series of assumptions about the numbers of Omanis leaving the education and training system and entering the workforce). Labour demand, resulting from projected economic expansion, is compared on a year by year basis up to say, 1995; imbalances are examined, and estimates are made of the workers (by type and number) who have to be imported to make up labour deficits and allow the economic growth targets to be attained.

Equally importantly, shares of the workforce accounted

for by Omanis and non_Omanis need evaluation according to economic sector and occupational level.

Alternatively, it is possible to calculate which economic growth rates could be achieved by the economic without the share or number of non_omanis reaching an unacceptable level. These shares or numbers could be calculated for the economy as a whole, for individual economic sectors, for occupational levels, or for combinations of sectors and occupations (called sector occupation "cells").

Thus, labour market projections can either be a passive demonstration of the result of economic growth, or used as a basis for policy to actively influence the course of the economy.

But, to be useful, projections must be based on up to date information. Therefore some revised projections for the Sultanate will be made. These will be calculated using the " Compound Model ".

The Compound Model :

The Compound Model is a computer programme designed to calculate the labour market consequences in a country that result from the interaction of economic,educational, and policy factors.

To achieve this, the programme has been designed in four interactive sub-programmes (or sub-models). These are

called :

The Labour Force Model

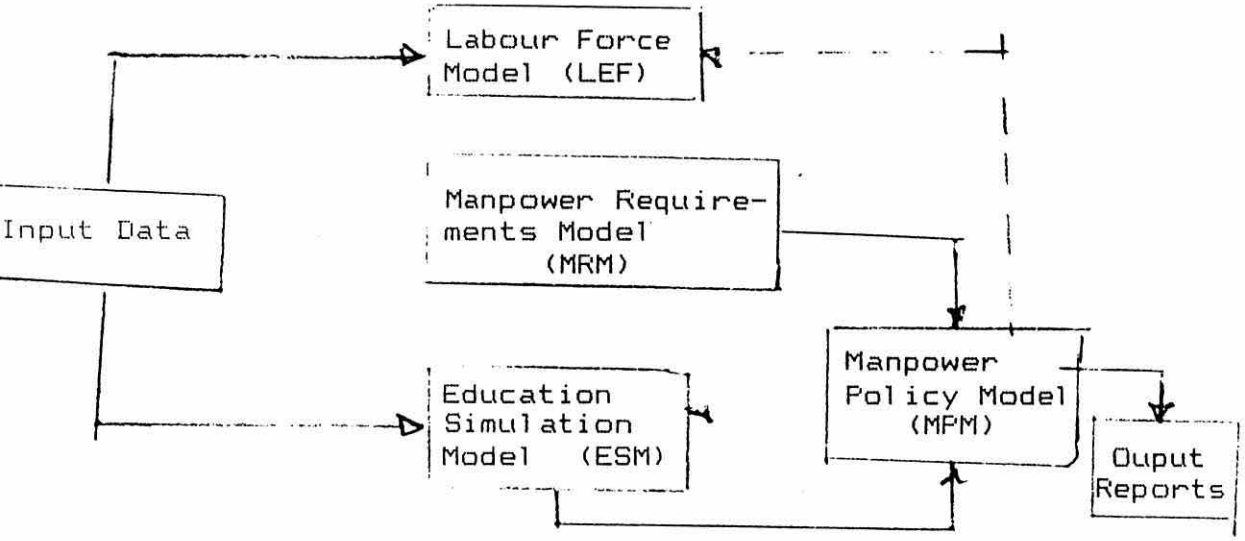
The Manpower Requirements Model

The Education Simulation Model

The Manpower Policy Model

The manner of interaction (linkages) of these three sub-models is shown in Figure - 1.

Figure - 1



In this simplified figurative representation of the Compound Model, the supply of labour, as calculated by the Labour Force Model (which gives the national workforce at the beginning of any year) and the Education Simulation Model (which, through the Manpower Policy Model, generates estimates of the numbers of national workers who are likely to enter the workforce each pro-

jection year) is compared with the demand for labour which is estimated by the Manpower Requirements Model.

The manner in which these sub-models inter-relate within the overall framework of the Compound Model is, in reality, much more complex than this text suggests. An indication of the degree of interaction of the various models, and their component parts, is given in the diagram in Figure - 2.

However, two points must be stressed: (a) that the purpose of the model is essentially to compare projected demand for, and supply of, labour under various assumptions of educational and economic expansion. (The degree of sophistication with which this comparison can be made is facilitated by the speed with which the programme can process the many constituent components. Each extra consideration of detail makes the estimated figures for the future more accurate, and enables estimates to be made for small sectors or finely defined occupations within the economy and labour market); and (b) this having been noted it must be stressed that the output of the model - the printed reports giving estimates of the labour market situation of the future - is only as reliable as the data entered in the first place. Inaccurate information about the present, if fed into the model will lead to wildly inaccurate estimates of the future. Such inaccurate results, if used for policy decisions, might be badly misleading. The fact that a computer model has been used to calculate estimates should not be supposed to evalidate them. Only the reliability of the data, also the accuracy of any estimates which have to be made where information about the present is not available, can ensure the quality of the reports which the model is designed to produce.

e Components of the Model :

Each of the three sub-programmes are now considered in brief, to illustrate their functions, the principal data requirements, and some of their printed output reports.

The Labour Force Model (LFM) :

i) Function The LFM identifies the available national labour force at the starting point of the projections - the base year - and, subsequently, for each year of the projection period. The calculations apply an attrition rate to the stock of workers each year, to account for deaths, retirements, etc. to give a net stock.

The second part of the task of the LFM is to allocate new national workers entering the workforce, as calculated by the Educational Sub-Model (see below, C).

ii) Data Requirement Information is needed about the workforce at the starting point of the projections. The workers should be defined by nationality, economic sector of employment and occupational level Attrition rates - the rate of departure from the workforce - must be determined for each of these disaggregated groups.

iii) Principal Reports : Each sub-model generates its own series of reports when the Compound Model is run.

The principal reports of the LFM include the numbers of the national labour force employed within each sector disaggregated by occupation. These reports indicate :

- labour force at beginning of the simulation year
- numbers affected by attrition;
- labour force subsequent to attrition;
- current labour force allocations from the Educational Simulation Model;
- total labour force availableability at the end of the simulation year.
- national labour force disaggregated by occupations (summed across economic sectors);
- national labour force by economic sectors (occupations summed).

If economic growth and labour market conditions are such that non-Omani workers have been "imported" during the calculations, then reports on expatriate workers will show analyses of non-national workers by nationality and by sector occupation for the simulation year, indicating: expatriate labour force; attrition (numbers affected); expatriate labourforce after attrition; expatriate requirements needed to fill deficits (after allocation of nationals to the workforce); and the net import-

ationl of non-Omani workers for each year of the projections.

The Manpower-Requirements Model (MRM) :

i) Function The principal function of the MRM is to calculate future labour requirements by occupational level. These are based upon sectoral production targets, as projected for the economy.

The occupational requirements are then translated into terms of educational qualifications, to enable comparison with outputs from the Educational Simulation Model, from which estimates of new entrants into the workforce are derived. An example of a suitable conversion of occupational groups into educational requirements is given in attachment - 1.

ii) Principal Data Requirements : The MRM could well be referred to as the "economic block" of the Compound Model, since it uses a simulation of an economy's growth in order to generate the estimates of occupational requirements of labour.

The MRM requres specification of sector production targets (usually on the basis of a development plan). Basic data requirements are :

gross domestic product by sector (for the base year); annual sector targets for the projection period; productivity of labour in the sector

(most simply calculated on a worker/ output ratio basis);estimates of growth of productivity.

Some alternative means of calculating occupational requirements in the MRM mean that labour output elasticities (the relative change in labour requirements resulting from a change in economic output from a sector) can be used.

iii) Output Reports of MRM : The MRM produces reports detailing expected production by sector, and related manpower requrements by occupation within sectors, by year, indicating annual net additional labour market requirements. These outputs are aggregated in various forms.

C. The Educational Simulation Model (ESM) :

i) Funtion The ESM simulates flows of students and trainees through the education and training system. On the basis of the initial enrolments in the base year of the projections and assumptions of the internal efficiency of the system - the repetition and drop-out rates of students and trainees - the yearly changes in the system can be calculated.

The structure of the education and training system is defined, and directed changes within it, caused, for example, by the opening of new facilities during the projection period, can be accounted for in the

model.

In the simulations, the potential flow of new entrants to the workforce can leave the education system from any grade or course. Education system leavers are classified by sex and whether they "graduated" or "dropped out" from their last course. As the model simulates students and trainees leaving the education and training system, they are grouped into clusters by educational level. These clusters (which might comprise numbers from several exit points from the education and training system aggregated into one figure) are then related to the occupational levels defined in the Manpower Requirements Model. By this means, the output from the education and training system is linked to the demand for labour in the economy.

The ESM can take into account numbers who never enter school, those who enter school at less or more than the ideal age for the grade, and, with the Labour Force Model, those who drop out at an age too youn to enter the workforce.

As potential workers leave the education and training system, the calculations pass them into the clusters related to the occupational groups by which all workers have been classified in the LFM and MRM.

From these clusters, each year's new entrants to the workforce are added to the stock of workers.

But not everyone who leaves the education and training system enters employment. For example, some girls marry, some boys wait before obtaining work. Therefore " participation rates" have to be applied to leavers of the education and training system each year, to determine what share of the leavers from each course enter the workforce, and the share remaining economically inactive.

ii) Data Requirements To run effectively the ESM needs information or assumptions about every course and every grade in the education and training system. Thus base year enrolments of students (distinguished, if necessary, by nationality) are required for every year or grade of every programme in each branch of the education and training system. Also needed are details of the transition from grade to grade (promotion, repetition and drop out rates) and flows of students into different branches of the education and training system. Also essential are the participation rates of school leavers by grade, or at least groups of grades, to determine proportion s of leavers that enter the workforce. Estimated numbers of children not entering school

are also entered into the ESM.

Optional calculations - related to projections of teacher numbers - require information on teacher stocks by type and student / teacher ratios.

iii) Principal-Report give information on current leavers for each year of the projection period, by grade and programme, and the potential number of labour market entrants.

D. The Manpower Policy Model MPM) :

i) Functions For each projection year the MPM allocates supplies of workers from the existing (year beginning) workforce, and from the ESM to the work force by sector and occupation, according to priorities which can be entered into the model. This enables demonstration of the impact upon the work force of a range different policy decisions.

For example,in allocating manpower with professional qualifications and senior technical qualifications - engineers, say, a priority might be assigned to these occupational categories within the oil industry and within other sectors considered as strategically important - public utilities, communications or manufacturing, for example.

Where supply of labour is less than the demand, the highest, most critical priority occupations will

first be supplied with labour by the calculations. If several sector and occupation combinations - by cells - have equal priority of demand, and the supply of new workers at these occupational levels is insufficient, then allocation between these cells is made on the basis of each cell's net requirements for extra workers. But the rate at which these requirements are fulfilled by the calculation can be adjusted to take into account the share that national workers already employed in the cell comprise of the total employment in that cell.

Priorities for combinations of economic sectors and occupational groups - cells - might also reflect the individual desires of entrants to the labour market, rather than government priorities. This illustrates the natural evolution of the distribution of national workers within the workforce. Thus the impact of Omanis' preferences for government employment, for example, can be demonstrated by the projections.

Once the available Omani national workforce has been workforce has been distributed by the calculations in this part of the model, then the extra numbers of non-Omani workers are estimated. When the model runs in its simplest form, then non-Omanis of a

range of nationalities are presumed to be available on an unrestrained basis.

However, the availability of non-nationals can be constrained in various ways - numbers may be generally limited;specific skills which are required by the growing economy might be considered to be limited, so simulating the real international labour market, which is scarc in certain skills. Government tolerence levels for certain nationalities can be set in the form of ceiling numbers of these nationalities, which limit labour imports.

Thus a blend of constraints upon importation of non-nationals can be entered to govern the model's calculations in respect of labour imports.

ii) Data-Requirements For this part of the Compuound Model, the data requirements are essentially policy statements - the according of priorities to encourage employment of Omani nationals in certain occupations or economic sectors, for example. Alternatively the ceiling number of a particular imported worker group may be the most important constraint.

A contrasting example is to use information on the preferences of labour market entrants. This latter can be derived from labour market surveys, labour

office information, and the expectational surveys.

iii) Principal Reports generated by this sub-model include : allocation of new workers by occupation, within sectors; reports can therefore focus on the progress towards Omanisation by sector and occupation indicating numbers of extra nationals needed.

The Application of the Compound Model :

Projections should be regularly updated. To continue using projected figures when they are overtaken by the real events is misleading and dangerous.

Since the previous set of projections (embodied in the World Bank Report "Assessment of the Second Five Year Development Plan of the Sultanate of Oman") which were completed in 1981, using December, 1980 as a base, a considerable amount of new data has been amassed. Recorded numbers of non-Omani workers have grown rapidly (more quickly than was projected in the original calculations); the Education and Training System has expanded, and its structure evolved; the economy's performance under the Second Five Year Development Plan has been evaluated; and more indications have been gained about labour market trends amongst Omani nationals.

Updating is well due.

The primary usefulness of some runs of the Compound Model at this stage lies in the focussing of attention on the

feasibility of and the labour market consequences resulting from reaching given development targets whilst shortages of human resources, rather than capital and financial resources, continue to be the major constraint upon economic growth.

The model will show (by simulating with real data, the output of Omani Nationals from the Educational and Training System).

- what additional imports of non-Omani labour will result from continued rates of growth similar to those presently prevailing.
- what output targets and rates of growth can be achieved with existing labour, plus increments of new national workers from the Education and Training System.
- if an "acceptable" rate of increase of numbers of non-Omani workers is stated as a policy aim, achievable rates of economic expansion can be demonstrated.
- the feasibility of specific manpower and Omanisation targets can also be examined. Omanisation in one sector can only be at the cost of a smaller share of Omanis employed in another sector. These consequences can be demonstrated.
- the period taken to achieve nationalisation goals

at various rates of economic growth can be compared; more rapid growth of the economy delays progress towards Omanization.

More specifically, a re-run of the model now will produce an updated backdrop of human resource information against which planning for the Third Development Plan can begin. A fuller and more accurate evaluation of the Manpower implications of the Second Plan is an essentkal prerequisite for the shaping of the Third Plan, now that the issue of the numbers and shares of non-Omani workers and population in the Sultanate has become important.

Data Input to the Compound Model :

Both a strength and weakness of the Compound Model is the amount of data inputs needed. The level of resolution of the model means that a large body of economic, demographic and educational data is needed. The collection and assembly of this range of data is, in itself, a valueable exercise, for it represents a data set which can be used for many other purposes than Compound Model Manpower Projections.

However, the collection of the data is a major task, taking significant time and effort on the part of professionals and research assistants. Moreoever, data collection entails a considerable number of visits, to Ministries and government agencies, for the information

needed is not collected in one place - the team making the projections have to assemble the data in a form suitable for their needs.

General Description of Input :

Since manuals are available to guide the user in the operation of the model, there is no need to discuss the format of input, or detailed requirements of coding.

But some general observations about the nature of the input are useful to give an impression of the way the model is run, and the amount of work involved.

Data inputs are best indicated by card types.*

There are seven major card types :

Type C : Run control cards, informing the system about the type of run being requested.

Type D : Manpower demand or requirements cards, informing the system about labour demand and methods of estimating requirements.

Type E : Education simulation cards, specifying educational structure, enrolment, intakes, promotion, repetition, dropout rates, etc.

Type G : General data cards, defining sector, occupation, nationalities, reports selection, etc.

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* Although the input is referred to in terms of "cards", the physical card never, of course, exist. Data can be inputted directly onto disc or tape through terminals - it is not essential to use "batch" operation, in which cards are punched and then read by the machine.

Type L : Labour force data cards, containing information about existing labour force, attrition rates, etc.

Type P : Manpower policy data cards, informing the system about manpower allocation priorities, extent of nationalization, and expatriate manpower constraints.

Type S : Manpower supply cards, informing the system about labour force participation patterns, school leavers pooling, teacher stock, etc.

Input cards have been designed to allow the user to enter the required data into the system, and to select processing options and methods. The individual cards needed are as follows.

Where the title of the card does not make its function self-evident, a note of explanation is given,. The format of the card is shown in the attachment.

Card Type and Identifier	Card Name
C01	Run Control Runs can be used to update data, make simulations, etc.
C02	Run Title
C03	Years of Projection (the Base Year and last year are stipulated).

D01 Methods of Manpower Requirements Estimation

The Projections can be calculated according to : elasticities, productivities, or figures of workers can be directly entered. Different methods can be used for different sectors.

D02 Base Year Sectoral Output

D03 Sectoral Output Streaming

Allows direct entry of output by sector for each projection year.

D04 Does not exist, a result of the manner of evolution of the model.

D05 Sectoral output Growth Rate

D06 Sectoral Output Linear Interpolation, allows entry of a target output for the last year of projections.

D08 Base Year Sectoral Produtivity

D09 Sectoral Productivity Streaming

D10 Annual Gross National Product Growth Rate

D11 Sectoral Productivity Growth Rates

D12 Sectoral Productivity Linear Interpolation

D13 Sectoral Elasticity, allows entry for each sector and projection year to govern the relationship between output growth and increased labour demand.

D14 Base Year Sectoral Employment

Card Type and Identifier	Card Name
D19	Sectoral Employment Streaming, allows entry of planned labour force growth on a Sectoral basis by year.
D20	Sector Occupation Distribution Matrix, allows entry of the per cent distribution of employment in each occupation within a given sector. For an example of a sector-occupation matrix, see attachments.
E01	ESM Control, specifies base year, number of courses and age groups.
E02	Educational level, allows specification of the courses in the system.
E03	Base Year Enrolment, student entries by course and age group.
E04	Educational Structure. This card allows definition of the flows of students and trainees up the educational ladder.
E05	Does not exist.
E06	Promotion, Repetition and Drop out Rates, to be specified for each course in the educational ladder.
E07	Entrance Rates/Levels, specifies intake of students into certain courses.

Card Type and Identifier	Card Name
E08	Population Date, an option that tracks population growth and feeds the ESM. It will not be used in the Omani projections.
E09	Student Teacher Ratio
G01	Year"s Name
G02	Definition of Sectors
G03	Definition of Occupational Groups
G04	Definition of Nationalities
G05	Selection of Reports Footnotes
G07	Footnotes, to be used in explaining detail in the reports, and labelling assumptions.
L01	Base Year National Labour Force
L02	National Labour Force Attrition, rate of loss of workers from workforce.
L03	Base Year Expatriate Labour Force
L04	Expatriate Labour Force Attrition
P01	Priority Matrix and Nationalisation Targets, gives preference to cells of recent Omani workers.
P03	Sector/Occupation/Nationality Constraints, to restrict numbers or types of non-national workers to demonstrate policy option.
P07	Expatriate Manpower Desirability/Availability, to constrain the supply of workers from outside

the Sultanate.

'08 Constraints on Expatriate Growth, enables entry of an annual limiting value.

601 Teacher-Groupings, with card S02, an optional element of the model related to teaching staff needs, which we will not use for the Omani projections.

603 Minimum Legal Age of Work

604 Base Year Under Age School Leavers, accounts for those who have left school too young to enter the workforce.

605 Participation Matrix, determines the share of school leavers from each course who become economically active.

606 School Leavers Pooling. This card determines the relationship between the educational level at which leavers depart from the education and training system, and the occupational level (and perhaps, the economic sector) in which they enter the workforce.

607 Base Year Teacher Stock

608 Teacher Attrition Rates

609 Under-age Participation Rates, defines shares of young age groups not in fulltime education who enter the workforce.

S10 Additional National Manpower, facilitates entry to the labour force of, for example, the migrants returning from abroad who have not been through the Omani education and training system.

This completes the cards needed to run the Compound Model.

Reports Produced by the Model :

A "highlight" report, summarising, by year: total national labour force; non-national labour force by nationality; numbers of non-nationals imported; and net increase in the numbers of non-nationals is always given. The highlights report also shows, by year: the percentage of nationals in the whole labour force, as well as in individual economic sectors and occupational groups; any unemployed nationals are shown by educational level; and finally the annual net additions to the workforce from the education and training system are tabulated.

The reports of the educational simulation model are also always produced. These reports show, for each projection year: enrolment by course and grade; promotion, repetition and drop-out rates; and the numbers of graduates and drop-outs from each course in the structure.

The manpower projection reports are now listed together

with their identification code in the model.

Report Identification	Report Name
L01	National Labour Force Stock by Sector, by Occupation, by Year.
L02	National Labour Force Stock by Occupation and Year.
L03	National Labour Force Stock by Sector and Year.
N01	Expatriate Labour Force Analyses by Nationality, Sector, Occupation, and Year.
N02	Expatriate Labour Force Analyses by Sector, Occupation, and Year.
N03	Expatriate Labour Force Analyses by Occupation and Year.
N04	Expatriate Labour Force Analyses by Sector and Year.
M01	Target Sector Products and Manpower Requirements by Sector, Occupation, and Year.
M02	Target Sector Products and Expected Sector Requirements by Year.
S01	Status of Under-age School Leavers by Age and Level.
S02	Status of Under-age Population Not Attending Any School by Year.

S03 Current Year School Leavers and the Potential Labour Force Participants.

P01 Allocation Report of Manpower Supplies from the Educational System by Year.

P02 Allocation of Pooled School Leavers by Sector, Occupation and Year.

P03 Nationalizagtion Programme Analysis Report by Sector, Occupation, and Year.

P04 Nationality Analyses of Labour Force by Sector and occupation.

P05 Nationality Analyses of Labour Force by Sector and Year.

P06 Nationality Analyses of Labour Force by Occupation and Year.

P07 Comparative Analyses of Target Output and Achievable Output by Sector and Year.

P08 Analysis of National Manpower Pools.

ATTACHMENT--1

THE RELATIONSHIP BETWEEN EDUCATIONAL LEVEL AND OCCUPATIONAL GROUPS

For the calculations, the demand for labour is defined, within each economkic sector, by Occupational Groups. These occupational groups are then related to educational level - the point from which labour market entrants have left the Education and Training System.

The following list gives 10 occupational groups (for example "scientific and technical professional workers", "semi-skilled manual workers") and gives the necessary educational qualifications for entry into each group by a new labour market entrant.

Occupational Group A-1 :

scientific and technical professional workers; entry to this occupational level requires technical, science or maths university degree or higher qualification.

Occupational-Group A-2 :

other professionals; requires non-science non-maths university degree or higher qualification.

Occupational Group B-1 :

higher level technicians; requires 3 to 4 years post-secondary science and maths education.

ccupational Group B-2 :

other technicians and sub-professionals; requires 1 to 3 years (not complete) post-secondary science and maths education.

Occupational Group B-3 :

other sub-professionals; requires 0 to 4 (not complete) years (dropout) of post-secondary non-science and non-maths education.

Occupational Group C-1 :

skilled office occupations; requires 2 to 3 years of secondary education, or a commercial vocational equivalent.

Occupational Group C-2 :

skilled manual occupations requires 1 to 3 years of technically oriented secondary education, or technical and vocational equivalent.

Occupational Group D-1 :

semi-skilled office related occupations; requires one or more years of general preparatofry level education or 1 year of secondary and commercial, or vocational equivalent.

Occupational Group D-2 :

semi-skilled manual occupations; requires incomplete technical secondary and vocational training.

Occupational Group E :

Other semi-skilled occupations; requires primary education plus some on-the-job training.

Occupation Group F :

unskilled occupations, not requiring any special education and training, but includes the first 3 years of primary education.

ATTACHMENT--2

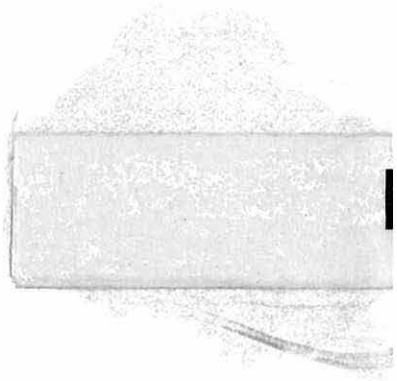
THE SECTOR OCCUPATION MATRIX

The sector occupation matrix is a table of the workforce in which economic sector of exmployment is tabulated with occupational level. Igt thus enables the occupational distribution of the workforce of each economic sector to be shwon.

Each combination of economic sector and occupational group is called a cell.

The first table in the attachment, which covers two pages, shows an example of a sector occupational matrix calculated for Oman. The chart shows how the sectors and occupations are related in the model (through the "pools" or "clusters" of educational outputs) to the education suystem.

APPENDIX 'E'



MANPOWER AND EDUCATION MODEL (MEM)

A NEW TOOL FOR MANPOWER ANALYSIS

APPENDIX--E

MANPOWER AND EDUCATION MODEL (MEM)

A NEW TOOL FOR MANPOWER ANALYSIS

The World Bank is pleased to announce the development of a new versatile tool for manpower analysis in both labour surplus, as well as, labour deficit economies: the Manpower and Education Model (MEM). Designed to be used on an IBM compatible personal computer (PC), MEM consists of three sub-models, each of which can be operated independently or in conjunction with each other in an integrated manner :

- Manpower Requirements Model (MRM)
- Education Simulation Model (ESM), and
- Manpower Allocation Model (MAM).

Important Features of the MEM :

General

The MEM is designed to accomplish in the context of a national economy :

i) projections of manpower demand to meet specific sectoral output targets;

ii) forecasts of flows through an education and training system, to enable simulation of potential manpower supplies;

iii) comparison of projected manpower demand and supplies

to facilitate examination of potential surplusses or shortages of manpower; and

iv) illustration of the impact, in labour exporting or labour importing states, of different patterns of labour migration.

Each of the three sub-models can begin calculations in different years due to the modular nature of the design. This feature combined with the data over ride facility allows compilation of base year data using partial information for several different years.

Manpower Requirement Model (MRM) :

Manpower requirements are computed using the simple "output per worker" approach for each sector of economic activity. The modular design, however, will allow addition of other methods of computations: elasticity or sector-share, etc. if the user interest warrant it.

Education Simulation Model (ESM) :

Simulation of student flows through an education and training system is made more realistic by allowing students to make lateral transfers in addition to the forward movement along the education and training ladder. Other features include :

- no limit on number of courses in the ladder;
- introduction of enrolment capacity for each course;
- grouping of courses by levels;

- computations of gross teacher requirements by level;
- cost computations for each course's enrolments;
- identification of terminal points in each stream;
- quantification of graduates from each stream; and
- flexibility to distribute promotees among the follow-on courses at the next rung of the ladder and/or among the courses at the same lateral level - a phenomenon frequently observed in higher education

Manpower Allocation Model (MAM) :

Dynamics of labour market can now be simulated as realistically as the available data will allow. Major features include :

- ability to allocate new national labour market entrants on the basis of labour demand in individual sector-occupation matrix (SOM) cells, or proportionate to the number of nationals already employed in various SOM cells, or a weighted combination of the two;
- tracking of students' age as they progress through the education and training system.
- specification of underage labour force participation rates by age and sex, and for working age participants by sex and level of education or training achieved;
- assignment of leavers from a single course to

multiple labour pools which are used to feed various SOM cells;

- holding new labour force entrants for varying periods before allocating them to SOM cells to simulate periods of unemployment prior to obtaining first job;
- definition of sector-occupation mobility paths and proportions of workers in each SOM cell affected by mobility;
- provision for workers to depart employment and later to reenter after varying periods of time;
- provision for workers to migrate out of the country for varying periods of time and later to return and reenter the labour force.
- specification of limits on total number of expatriate workers, as well as on new importations desired by nationality;
- limits on total number of expatriate workers, as well as on new importations desired, by nationality, for each labour force pool; and
- specification of nationalization target for fractions of each SOM cell employment.

Machine Requirement :

i) at least 512K memory;

ii) a floating point processor chip (8087 or 90287);

iii) a floppy disk drive;

iv) a hard disk drive with at least 10MB capacity;

v) a PC-DOS or MS-DOS operating system, version 2.0 or higher, installed on the hard disk; and

vi) a printer capable of printing 132 characters on each line.

The Technical Assistance Division of the Europe, Middle East and North Africa Region's Projects Department would be pleased to provide additional information, including the software, upon request.

APPENDIX 'F'

POSSIBLE STUDIES FOR PROPOSED MANPOWER PLANNING UNIT

F

APPENDIX--F

POSSIBLE STUDIES FOR PROPOSED MANPOWER PLANNING UNIT

Q-1 The MPU should ensure that it is always in a position to respond to requests from any branch of the Government for analysis of the mankpower implications of policies or development strategies. Indeed, as part of its routine business, the Unit should produce publications (of either limited or wide circulation according to content or degree of confidentiality) pertaining to the most important manpower issues facing the Sultanate. Thus, a concerted effort will be made to enlarge the body of people in the Sultanate who are aware of the long term manpower and population implications which result from the present options open to Omani economic planners today.

Q-2 The following comprises a skeletal list of some of the major topics and studies towards which the staff of the MPU could profitably direct their efforts. Prioritization of this list of topics, their detailed devetailing with the staff and structure of the MPU, and the schedule of implementation await further attention. Major such topics include :

a) monitoring of the manpower situation resulting from the progress of the SFYDP;

b) refining of macro economic based manpower and population projections for the medium term, including separate estimates of (1) manpower needed for facilities and infrastructure development, and (2) that needed for ongoing operations;

c) preparation of manpower recomnendations and inputs for the Third Development Plan, due to begin in 1986;

d) special sector-related studies -- manpower in agriculture, for example;

e) review and inventory of the in-service training opportunities in the Sultanate; evaluating the Levy Rebate Scheme, and, in connection with this, establishment of standards of trade and qualification of Omanis in the workforce, and relation of these standards to the VTCs, and other training courses;

f) advice to concerned ministries upon the collection and refinement of the ETS statistics;

g) evaluation of public and private sector incentive wages and compensation levels, in relation to the distribution of skills, and to their impact upon the labour market;

h) continuing monitoring of disposition of Oman nationals within the sector-occupation matrix and the extent of reliance upon non-nationals in criticial cells within the matrix;

i) public sector labour requirements, economic demand for labour and marginal productivity within the sector;

j) public sector labour requirements, economic demand for labour and marginal productivity within the sector;

k) refinement of statistical base of the establishment surveys, and extrapolation and projection from it;

l) possible labour market surveys of parts of the private sector to enhance information about nationals gained from the establishment and labour card data sets;

m) advice to MOSAL and refinement of studies of information available upon labour cards for non-national workers;

n) studies of turnover, quality and type of non-national workers in the Sultanate;

o) studies of non-national dependents, including the economic and social costs related to their presence in the Sultanate;

p) studies of Omanis resident and in employment abroad, making an inventory of their skills, and discussing their possible return and contribution to the Oman workforce and economy;

q) tracer studies of Omanis leaving the ETS, and monitoring of their subsequent movements in the workforce;

r) in connection with (q) above, evaluation of the need for English language teaching, an assessment of the aspirations and motivations of Omanis within the modern and traditional economies, and recommendations regarding orientation and career guidance of school leavers from the ETS;

s) evaluation of sector preferences of workers, and sector priorities (from a government perspective) for distribution of Omani workers, as part of (q) above;

t) productivity studies of both national and non-national labour;

u) evaluation of private sector employers' perceptions and preferences of employees, with respect to nationality and skill level, for example;

v) evaluation of alternative means of control of non-national workers in the Sultanate;

w) the role of women in the workforce;

x) rural urban migration and, in conjunction with this, urban and rural conflicts in development, as viewed from a manpower perspective;

y) rural education and training issues; and

z) manpower deployment and the issue of income distribution amongst nationals.

APPENDIX 'G'

QUESTIONNAIRES ABOUT

TECHNICAL AND VOCATIONAL EDUCATION

LIST OF QUESTIONNAIRES

Questionnaire 1 : Questionnaire about Technical and Vocational Education Directed to the Students of Preparatory Education in the Sultanate of Oman

Questionnaire 2 : Questionnaire about Technical Education and Vocational Training Directed to the Guardians of Preparatory Stage Students in the Sultanate of Oman

Questionnaire 3 : Questionnaire about Technical and Vocational Education Directed to the Administrators of Technical and Vocational Centres and Institutes in the Sultanate of Oman

Questionnaire 4 : Questionnaire about Technical and Vocational Education Directed to the Teachers and Instructors at the Technical and Vocational Centres and Institutes in the Sultanate of Oman

Questionnaire 5 : Questionnaire about Technical and Vocational Education Directed to Inspectors and Supervisors in Technical and Vocational Education in the Sultanate of Oman

Questionnaire 6 : Questionnaire about Technical and Vocational Education Directed to Graduates of Vocational Training Centres and Technical Schools and Institutes in the Sultanate of Oman

Questionnaire 7 : Questionnaire about Technical and Vocational Education Directed to the Employers of Private Sector Factories and Establishments in the Sultanate of Oman

Questionnaire 8 : Questionnaire Directed to Directors and Personnel Directors of the Governmental Factories and Establishments in the Sultanate of Oman

Questionnaire 9 : Questionnaire about Technical and Vocational Education Directed to the Students of Technical Education Institutes in the Sultanate of Oman

Questionnaire 10 : Questionnaire About Technical and Vocational Education Directed to the Administrators of Intermediate (Preparatory) Schools in the Sultanate of Oman

BOOK (1)

QUESTIONNAIRE ABOUT TECHNICAL AND VOCATIONAL EDUCATION DIRECTED TO THE STUDENTS OF PREPARATORY EDUCATION IN THE SULTANATE OF OMAN

INSTRUCTIONS ON HOW TO FILL OUT THE QUESTIONNAIRE

Dear Student,

This questionnaire contains a number of statements about technical and vocational education after each one there are three phrases as comments on these statements. You are requested to carefully read every statement, then select the phrase that represents your opinion the best. When you select the comment " phrase ", check the square that precedes it. Here is an example:

Technical Education is useful

☐ Agree

☐ Don't know

☐ Don't Agree

Check the first response if you agree with the statement, the second if you have no opinion about the matter, and the third if you don't agree with the statement.

Students who have not heard about technical or vocational education should not answer this questionnaire.

Basic Data about the Respondent

1. City or Town:

2. Age :

3. Sex

- ☐ Male
- ☐ Female

4. Age of the father " or guardian" :

5. Occupation of the father " or guardian" :

6. Nationality:

7. Family income: please check one of the following response

- ☐ Very High income
- ☐ High Income
- ☐ Average income
- ☐ Below average
- ☐ Low income

8. Educational level of the Father or "guardian"

- ☐ Illiterate
- ☐ Literate
- ☐ Elementary
- ☐ Secondary
- ☐ University
- ☐ Master
- ☐ PhD
- ☐ Other

9. Number of Brothers and Sisters

- ☐ Male
- ☐ Female

THE QUESTIONNAIRE

Q.1 General education is more useful to the students than technical or vocational education.

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.2 A cquisition of certificate or diplòma in technical or vocational training is a guarantee for the student future

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.3 Schools, institutions and centres of technical and vocational education rid the country of recruiting foreign technical labour

- ☐ Agree
- ☐ Don't know
- ☐ Dont agree

Q.4 Technical education gives the chance for those students who could not continue in the schools of general education

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.5 Technical or Vocational education is more useful to the students than general education

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.6 Technical or vocational education helps the country develop and grow

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.7 Technical or vocational education reduces much of the fathers' expenses

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.8 Technical or vocational education suits rich students

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.9 If a friend of mine wants my advice on joining a technical or vocational school, I will encourage him

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.10 Technical/Vocational education suits students who have technical or vocational tendencies whether they are rich or poor

- ☐ Agree
- ☐ Dont know
- ☐ Don't agree

Q.11 The future of those who join technical/vocational education is more secured than those who join general education

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.12 Families of higher social status do not marry their daughter to graduates of technical/vocational institutes

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.13 Suppose that two chaps have proposed to your grown up sister .They are both eligible, but one is a general secondary graduate while the other is a technical/vocational institure graduate. Which one of them would you advice her to marry ?

- ☐ General Secondary school graduate
- ☐ Technical/Vocational institute graduate

Q.14 If, I join technical or vocational education it will mean higher income upon graduation

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.15 Who are more respected by society, people of Technical/ Vocational professions or those of clerical ones?

- ☐ Society respects people of Tech/Voc professions
- ☐ Society respects people of clerical professions more

Q.16 If , I joined Technical/Vocational education, I would hide this fact from others

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.17 When I become a grown up with a family, I would not allow any of my children to enrol in Tech/Voc. education

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.18 If one of my children wants to join and asks my advice on joining, a Tech/Voc. centre, I would try to prevent him from doing so

- ☐ Agree
- ☐ Don't know
- ☐ Dont agree

Q.19 Tech/Voc. education suits poor students

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.20 Voc/Tech. study has more future gurantee than general study

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.21 I would feel proud if I joined Tech/Voc education

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.22 The problèm with the Tech/Voc education is that it is blocked road, and that its graduates have no chance in university education.

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.23 When I become a grown-up with a family, I would not interfere in my children's choce of education.

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.24 Tech/Voc. enrollment guarantees a job for its student on graduation.

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.25 Tech/Voc. Institute graduates are more useful to society than graduates of general education schools

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.26 Tech/Voc. education provides students with the chance of dealing with modern equipment and systems

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.27 Tech/Voc work is more difficult than clerical work

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.28 Most of the students who join Tech/Voc.education are failures of general education schools

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.29 Most of the students who join Tech/Voc. education have Tech/Voc. talents or tendencies

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.30 When I become a grown-up with a family, I will encourage my children to join Tech/Voc. education

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.31 Do you think of joining Tech/Voc. Eduction ?

- ☐ Yes
- ☐ Don't know
- ☐ No

Q.32 If you think of joining Tech/Voc. Education, please give your reasons in the following space

Q.33 If you don't think of joining Tech/Voc. education please give your reasons in the following space

Thank you for your cooperation.

BOOK (2)

QUESTIONNAIRE ABOUT TECHNICAL EDUCATION AND VOCATIONAL TRAINING DIRECTED TO THE GUARDIANS OF PREPARATORY STAGE STUDENTS IN THE SULTANATE OF OMAN

INSTRUCTIONS ON HOW TO FILL OUT THE QUESTIONNAIRE

Dear Guardian,

This questionnaire contains a number of statements about technical and vocational education after each one there are three phrases as comments on these statements. You are requested to carefully read every statement, then select the phrase that represents your opinion the best. When you select the comments " phrase ", check the square that precedes it. Here is an example:

Technical Education is useful

☐ Agree

☐ Don't know,

☐ Don't Agree

Check the first response if you agree with the statement, the second if you have no opinion about the matter, and the third if you don't agree with the statement.

Guardian who have not heard about technical or vocational education should not answer this questionnaire.

BASIC DATA ABOUT THE RESPONDENT

1. City or Town:

2. Occupation :

3. Period of service in the above mentioned occupation :

4. Family income "please check one of the following response,

- ☐ Very high
- ☐ High
- ☐ Average
- ☐ Below average
- ☐ Low

5. Age :

6. Sex

- ☐ Male
- ☐ Female

7. Nationality :

8. Education

- ☐ Illiterate
- ☐ Literate
- ☐ Elementary
- ☐ Intermediate "Preparatory"
- ☐ Secondary
- ☐ University
- ☐ Master
- ☐ Ph.D
- ☐ Other

9. Children

- ☐ Sons
- ☐ Daughters

10. Do you have children in the Tech/Voc. education schools ?

- ☐ Yes
- ☐ No

THE QUESTIONNAIRE

Q.1 General education is more useful to the students than technical or vocational education.

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.2 A Equisition of certificate or diplòma in technical or vocational training is a guarantee for the student future

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.3 Schools, institution and centres of technical and vocational education rid the country of recruiting foreign technical labour

- ☐ Agree
- ☐ Don't know
- ☐ Dont agree

Q.4 Technical education gives the chance for those students who could not continue in the schools of general education

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.5 Technical or Vocational education is more useful to the students than general education

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.6 Technical or vocational education helps the country develop and grow

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.7 Technical or vocational education reduces much of the fathers' expenses

- [ ] Agree
- [ ] Don't know
- [ ] Don't agree

Q.8 Technical or vocational education suits rich students

- [ ] Agree
- [ ] Don't know
- [ ] Don't agree

Q.9 If one of my children wants to enrol in a Tech/Voc. School I will encourage him/her

- [ ] Agree
- [ ] Don't Know
- [ ] Don't agree

Q.10 Technical/Vocational education suits students who have technical or vocational tendencies whether they are rich or poor

- [ ] Agree
- [ ] Dont know
- [ ] Don't agree

Q.11 Fathers who enrol their children in Tech/Voc. education feel more secured of their future than those who enrol them in gengral education

- [ ] Agree
- [ ] Don't know
- [ ] Don't agree

Q.12 Families of higher social status do not marry their daughters to graduates of Tech/Vocational Institutes

- [ ] Agree
- [ ] Don't know
- [ ] Don't agree

Q.13 Suppose that two chaps have proposed to your grown up Daughter.They are both eligible, but one is a general secondary graduate while the other is a technical/vocational institure graduate. Which one of them would you advice her to marry ?

- ☐ General Secondary school graduate
- ☐ Technical/Vocational institute graduate

Q.14 If, my children join technical or vocational education it will mean higher income upon graduation

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.15 Who are more respected by society, people of Technical/ Vocational professions or those of clerical ones?

- ☐ Society respects people of Tech/Voc professions
- ☐ Society respects people of clerical professions more

Q.16 If one of my children joined Technical/Vocational education, I would hide this fact from others

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.17 I would not allow any of my children to enrol in Tech/Voc. education

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.18 If one of my children wants to join and asks my advice on joining, a Tech/Voc. centre, I would try to prevent him from doing so

- ☐ Agree
- ☐ Don't know
- ☐ Dont agree

Q.19 Tech/Voc. education suits poor students

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.20 Voc/Tech. study has more future gurantee than general study

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.21 I would feel proud if one of my children joins Tech/Voc education

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.22 The problem with the Tech/Voc education is that it is blocked road, and that its graduates have no chance in university education.

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.23 I would not interfere in my children's choice of education.

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.24 Tech/Voc. enrollment guarantees a job for its student on graduation.

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.25 Tech/Voc. Institute graduates are more useful to society than graduates of general education schools

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.26 Tech/Voc. education provides students with the chance of dealing with modern equipment and systems

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.27 Tech/Voc work is more difficult than clerical work

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.28 Most of the students who join Tech/Voc.education are failures of general education schools

- ☐ Agree
- ☐ Don't know
- ☐ Don't agree

Q.29 Most of the students who join Tech/Voc. education have Tech/Voc. talents or tendencies

- ☐ Agree
- ☐ Dont' know
- ☐ Don't agree

Q.30 If one of my children wants to join Tech/Voc.education I will encourage him/her

- ☐ Agree
- ☐ Dont know
- ☐ Don't agree

Q.31 Do you think of encouraging one of your children to join Tech/Voc. education

- [ ] Yes
- [ ] Don't know
- [ ] No

Q.32 If you think of encouraging one of your children to join Tech/Voc. education, please give your reasons in the following space.

Q.33 If you don't think of encouraging one of your children to join Tech/Voc. education, please give the reasons in the following space:

Thank you for your cooperation.

BOOK (3)

QUESTIONNAIRE ABOUT TECHNICAL AND VOCATIONAL EDUCATION DIRECTED TO THE ADMINISTRATORS OF TECHNICAL & VOCATIONAL CENTRES & INSTITUTES IN THE SULTANATE OF OMAN

Instructions on How to Fill out the Questionnaire

1. The terms «technical establishment» and «training establishment» as used in this questionnaire, refer to all schools, institutes, centers, and colleges of technical and vocational education and training;

2. Some questions and statements are followed by two, three, or more, possible responses. Each response is preceded by a square. Please check the square that precedes the response that represents your own opinion the most.

   Example: The correct use of tools increases productivity.

   ☐ Agree.
   ☐ Don't know.
   ☐ Don't Agree.

   Check the first response (Agree) if you agree with the statement; the second response (Don't know) If you have no opinion regarding the statement; and the third response (Don't Agree) if you do not agree with the statement.

Basic Data About the Respondent

1. Level of your educational establishment:

2. The Administrative organization your educational establishment belongs to:

3. City/town your educational establishment is located in:

4. Province:

5. Your position (job):
   - ☐ Principal / manager.
   - ☐ Assistant - principal.
   - ☐ Other (Specify).

6. Years of experience at your present job:

7. Your age:

8. Nationality:

The Questionnaire

1. What is the level of the institute/center that you work at?

   - ☐ Elementary.
   - ☐ Intermediate.
   - ☐ Secondary (senior-high).
   - ☐ Diploma (two years after secondary school).
   - ☐ University (3-4 years).
   - ☐ Other (please mention).

2. How long is the full program of (theoretical and practical) study at your center/inst.?
   (i.e., how many years or months does it last?
   (If your center/inst. provides more than one program or stage, please specify each programd and its length).

3. What specialization fields does your center/institute provide? And how much interest do applicants (students) show in each?

In the following table please specify each specialization field your center provides and then rate your students' interest in it (i.e., how strongly they want/do not want to join it).

Specialization Field	Interest Shown By students		
	Strong	Moderate	Weak
1.	☐	☐	☐
2.	☐	☐	☐
3.	☐	☐	☐
4.	☐	☐	☐
5.	☐	☐	☐
6.	☐	☐	☐
7.	☐	☐	☐
8.	☐	☐	☐
9.	☐	☐	☐
10.	☐	☐	☐

4. In general, what do you think are the causes of students' preference for some specialization fields?

☐
☐
☐
☐
☐

5. And, what do you think are the causes of students' lack of interest in some specialization fields?

☐
☐
☐
☐
☐

6. What is your opinion regarding the sufficieny or insufficiency of the period alloted in your center/institute for both theoretical instruction and practical training?

Specialization	Period Alloted To Theoretical Instr.			Period Alloted To Practical Train.		
	Too Long	Appropriate	Too Short	Too Long	Appropriate	Too Short
1.	☐	☐	☐	☐	☐	☐
2.	☐	☐	☐	☐	☐	☐
3.	☐	☐	☐	☐	☐	☐
4.	☐	☐	☐	☐	☐	☐
5.	☐	☐	☐	☐	☐	☐
6.	☐	☐	☐	☐	☐	☐
7.	☐	☐	☐	☐	☐	☐

7. How do you rate the standards of theoretical instruction and practical training in each of the specialization fields (areas) in your inst./center?

Specialization	Standard of Theoretical Instr.					Standard of Practical Train.				
	Very high	High	Average	Low	Very low	Very high	High	Average	Low	Very low
1.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

8. Do you believe the center/institute you teach at should add specializations which it does not have at the present time?

☐ Yes.
☐ No.

9. If you answered yes to Q. 8, please mention below what those specializations are.

10. In general, how do you rate students' (and / or trainees') interest in your center / institute?

- ☐ Very strong interest.
- ☐ Strong interest.
- ☐ Moderate interest.
- ☐ Weak interest.

11. Judging by your experience, what do you think are the main factors that make some students enrol in technical and vocational centers / institutes?

- ☐ Their interest in tech. / voc. education.
- ☐ The generous rewards they get at these institutions.
- ☐ Their failure in public schools.
- ☐ The certainty of employment after graduation.
- ☐
- ☐
- ☐

12. Do some of the students you accept in your programs leave your center/inst. before they finish their studies?

- ☐ Yes.
- ☐ No.

13. If yes to Q. 11, what percentage of your students leave the center/inst. before finishing their studies?

- ☐ Less than 5%.
- ☐ 6 - 10%.
- ☐ 11 - 15%.
- ☐ 16 - 20%.
- ☐ 21 - 30%.
- ☐ 31 - 40%.
- ☐ 41 - 50%.
- ☐ 51 - 60%.
- ☐ 61 - 70%.
- ☐ 71 - 80%.
- ☐ 81 - 90%.
- ☐ 91 - 100%.

14. Generally speaking, what are the most usual reasons for students' attrition (i.e., leaving without finishing their studies)?
Please check the answers you agree with and/or add others.

- ☐ Difficulty of program studies.
- ☐ Student's laziness or lack of interest in studying.
- ☐ Student's (or his family's) moving to another locale where there is no tech./voc. inst. / center.
- ☐ Family break-up or family problems.
- ☐ Personal problems or delinquency.
- ☐ Student is forced to enrol in a department or specialization he does not like.
- ☐
- ☐
- ☐

15. What incentives do you recommend in order to encourage students to enrol in tech. / voc. institutes/centers?

- ☐ Raising benefits and rewards.
- ☐ Treating tech. / voc. diplomas/certificates as being equal to those of public schools which correspond to them in grades and levels.
- ☐ Allowing tech. / voc. graduates to continue their studies at higher-level institutes.
- ☐ Using the mass media to acquaint the public with tech. / voc. education.
- ☐ Sending outstanding tech. / voc. graduates for study abroad.
- ☐ Allowing tech. / voc. graduates to work in their own fields of specialization.

☐
☐
☐

16. Does your center/inst. coordinate its curricula and programs with government and private-sector establishments, i.e., does your center/inst. try to know from these establishments what their training and educational needs are?

- ☐ Yes.
- ☐ No.

17. If yes to Q. 16 Please specify how such coordination takes place? (e.g., is it regular? Is it direct?, etc.)

18. Do you think that the programs and curricula of your voc. / tech. center/inst. adequately prepare students for the needs and conditions of the job market?

- ☐ Very adequately.
- ☐ Adequately.
- ☐ Don't know.
- ☐ Inadequately.
- ☐ Very inadquately.

19. How do you rate the tools and other instructional means used at the center / institute you work at?

- ☐ Very high.
- ☐ High.
- ☐ Average.
- ☐ Low.
- ☐ Very low.

20. Do you believe that the means used at your center/institute to evaluate students (e.g. exams, etc) are a good indicator of their level of perfomance in the future (i.e., after their graduation?

- ☐ Yes.
- ☐ Don't know.
- ☐ No.

21. What, in your opinion, are the main strengths of the programs and curricula of your center/institute of technical/vocational education?

- ☐
- ☐
- ☐
- ☐
- ☐

22. What, in your opinion, are the main weaknesses of the programs and curricula of your center/institute of technical/vocational education?

- ☐
- ☐
- ☐
- ☐
- ☐

23. What language is officially and practically used for instruction at your center/inst.?

- ☐ Only Arabic.
- ☐ Another language which is .....
- ☐ Two languages: Arabic and .....

24. What language do you believe should be used for instruction at your center/inst. ?

- ☐ Only Arabic.
- ☐ Another language which is .....
- ☐ Two languages: Arabic and .....

25. How do you rate the buildings and facilities of your center/inst. in terms of the following:

(A) Their suitability for class-room (theoretical) instruction?

- ☐ Good.
- ☐ Moderate.
- ☐ Poor.

(B) Their suitability for work-shop (practical) training?

- ☐ Good.
- ☐ Moderate.
- ☐ Poor.

(C) Safety?

- ☐ Good.
- ☐ Moderate.
- ☐ Poor.

26. What recommendations do you offer in order to improve the curricula and programs of study of your inst./center?

☐
☐
☐
☐
☐

27. Are any of your teaching/training staffs nationals (i.e., citizens of the state)?

☐ Yes.
☐ No.

28. If yes to Q. 27, please check the percentage of nationals in your over-all teaching/training staff?

☐ 1 - 10%.
☐ 11 - 20%.
☐ 21 - 30%.
☐ 31 - 40%.
☐ 41 - 50%.
☐ 51 - 60%.
☐ 61 - 70%.
☐ 71 - 80%.
☐ 81 - 90%.
☐ 91 - 100%.

29. If you answered no to Q. 27, please mention why there are no nationals in your teaching/training staff.

- ☐ The financial incentives which we offer are too unattractive for them.
- ☐ Non-existence or scarcity of nationals who are qualified to teach the fields we offer.
- ☐ A foreign company/firm contractor does all the training/teaching.
- ☐
- ☐
- ☐

30. In your center/inst. are there any specialization fields that do not have their full need of teachers and trainers (whether national or expatriate)?

- ☐ Yes.
- ☐ No.

(A) If yes, please mention each field that does not have its need of teachers/trainers and, in front of it, what the percentage of shortage is.

Specialization	% Shortage of Teachers/Trainers
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

31. If you answered yes to Q. 30, what are the causes of this shortage?

☐
☐
☐
☐
☐

32. Does your center/institute provide counseling (professional and educational) to its students?

☐ Yes.
☐ No.

(A) If yes, do you think that the students benefit from this counseling service?

☐ Yes.
☐ Don't know.
☐ No.

33. Does your center/institute provide professional supervision to its teachers/trainers?

☐ Yes.
☐ No.

(A) If yes, do you think that the teachers benefit from the supervisory service?

☐ Yes.
☐ Don't know.
☐ No.

(B) If no, what recommendations do you offer to improve the level of educational supervision provided to your teachers?

- ☐ Training sessions for the supervisors.
- ☐ Allowing each supervisor to supervise only one subject-area.
- ☐
- ☐

34. Are any training/educational sessions held to upgrade your training/teaching staff's knowldege of their fields?

- ☐ Yes.
- ☐ No.

35. If yes to Q. 34, where are such sessions held?

- ☐ Locally (in the country).
- ☐ Abroad.
- ☐ Sometimes locally and sometimes abroad.

36. Also, if yes to Q. 34, who benefit from these sessions?

- ☐ Only national (citizen) teachers.
- ☐ Expatriate (foreign) teachers.
- ☐ Both.

37. Also, if yes to Q. 34, how do you rate the usefulness of these sessions?

- ☐ Very useful.
- ☐ Moderately useful.
- ☐ Little useful.
- ☐ Not useful.

38. If you think the sessions are not useful (Q. 37), what are the reasons (for their not being useful)?

☐
☐
☐
☐
☐

39. What, in your opinion, are the main problems which the teachers/trainers of your center/inst. face (and adversely affect their perfomance)?

☐ Poor economic rewards/benefits.
☐ Lack or inadequacy of the instruments/tools/ facilities available.
☐ Administrative problems (e.g. poor schedules; poor admin./faculty relations, etc.)
☐ Student-related problems (e.g. poor discipline, laziness, lack of punctualness, poor motivation, etc.).

☐
☐
☐
☐
☐

41. Do you think that most teachers at your center/inst. keep up with the new developments in their areas of specialization?

☐ Yes.
☐ No.

(A) If yes, how do they keep up?

☐ Through center's library.
☐ Through their supervisors.
☐ Through correspondence.

(B) If no, what do you think are the reasons why they do not keep up?

☐
☐
☐
☐
☐

42. Are there (physically or mentally) handicapped students in your inst./center?

☐ Yes.
☐ No.

43. If yes to Q. 42, what types of handicaps are there (among your students)?

☐ Visual.
☐ Audio.
☐ Physical.
☐ Mental.

44. If no to Q. 42, do you think handicapped students can be accepted at your center/inst.?

☐ Yes.
☐ No.

45. If yes to Q. 44, please indicate what types of handicapped students can be enrolled at your inst/center.

46. Do you have an image (preconception) of your institute in the year 2000 (A.H. 1420)?

☐ Yes.
☐ No.

47. If yes to Q. 46, what do you expect the number of students at your inst./center to be then?

Thank you.

BOOK (4)

QUESTIONNAIRE ABOUT TECHNICAL AND VOCATIONAL EDUCATION DIRECTED TO THE TEACHERS AND INSTRUCTORS AT THE TECHNICAL AND VOCATIONAL CENTRES AND INSTITUTES IN THE SULTANATE OF OMAN

Instructions on How To Fill out the Questionnaire

1. The terms «technical establishment» and «training establishment» as used in this questionnaire, refer to all schools, institutes, centers and colleges of technical and vocational education and training.
2. Some questions and statements are followed by two, three, or more, possible responses. Each response is preceded by a square. Please check the square that precedes the response that represents your own opinion the most.

Example:

The Correct use of tools increases productivity.

- ☐ Agree.
- ☐ Don't know.
- ☐ Don't Agree.

Check the first response (Agree) if you agree with the statement, the second response (don't know) if you have no opinion regarding the statement, and the third response (don't agree) if you do not agree with the statement.

Basic Data About the Respondent

1. Level of your educational establishment:

2. The Administrative organization your educational establishment belongs to:

3. City / Town your educational establishment is located in:

4. Province:

5. Your position (job):

   ☐ Teacher (theoretical subjects).
   ☐ Trainer (practical - workshop subjects).
   ☐ Both.

6. Years of experience at your present job:

7. Your age:

8. Nationality:

The Questionaire

1. What is the level of the institute / center that you work at?

- ☐ Elementary.
- ☐ Intermediate.
- ☐ Secondary (senior-high)
- ☐ Diploma (two years after secondary school)
- ☐ University (3-4 years)
- ☐ Other (Please mention).

2. What is the major field (or fields) that you teach?

- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐

3. How do you rate the standards of theoretical instruction and practical training in each of the specialization fields (areas) in your inst./center?

Specialization	Standard of Theoretical Instruction					Standard of Practical Training				
	Very High	High	Average	Low	Very low	Very High	High	Average	Low	Very low
1.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

4. What is your opinion regarding the sufficieny or insufficiency of the period alloted in your center for theoretical instruction and practical training?

Specialization	Period Alloted To Theoretical Instr.			Period Alloted To Practical Train.		
	Too Long	Appropriate	Too Short	Too Long	Appropriate	Too Short
1.	☐	☐	☐	☐	☐	☐
2.	☐	☐	☐	☐	☐	☐
3.	☐	☐	☐	☐	☐	☐
4.	☐	☐	☐	☐	☐	☐
5.	☐	☐	☐	☐	☐	☐
6.	☐	☐	☐	☐	☐	☐
7.	☐	☐	☐	☐	☐	☐

5. Do you believe the center / institute you teach at should add specializations which it does not have at the present time?

☐ Yes.
☐ No.

a) If yes, please mention below what these specializations are.

☐
☐
☐
☐
☐
☐
☐

6. How do you rate the tools and other instructional means used at the center / institute you teach at?

- ☐ Very high.
- ☐ High.
- ☐ Average
- ☐ Very low.

7. Judging by your experience, what do you think are the main factors that make some students enrol in technical and vocational centers 'nstitutes?

- ☐ Thier interest in tech./voc. education.
- ☐ The generous rewards they get at these institutions.
- ☐ Their failure in public schools.
- ☐ The certainty of employment after graduation.
- ☐
- ☐
- ☐

8. Also, judging by your experience, how do you rate the enthusiasm and motivation of students at your center / institute, i.e., in general?

- ☐ Highly motivated.
- ☐ Moderately motivated.
- ☐ Poorly motivated.

9. What incentives do you recommend in order to encourage students to enrol in tech./voc. institutes/centers?

- ☐ Raising benefits and rewards.
- ☐ Treating tech/voc. diplomas / certificates as being equal to those of public schools which correspond to them in grades and levels.
- ☐ Allowing tech. / voc. graduates to continue their studies at higher-level institutes.
- ☐ Using the mass media to acquaint the public with tech./ voc. educ.
- ☐ Sending outstanding tech / voc. graduates for study abroad.
- ☐ Allowing tech./ voc. graduates to work in their own fields of specialization.
- ☐
- ☐
- ☐

10. What, in your opinion, are the most important problems that students at your center/inst. face.

- ☐
- ☐
- ☐
- ☐

11. Do you think that the programs and curricula of your voc./ tech.center/inst. adequately prepare students for the needs and conditions of the job market?

- ☐ Very adequately.
- ☐ Adequately.
- ☐ Don't know.
- ☐ Inadequately
- ☐ Very inadequately.

12. Do you believe that the means used at your center / institute to evaluate students (e.g. exams, etc) are a good indicator of their level of performance in the future (i.e., after their graduation)?

- ☐ Yes.
- ☐ Don't know
- ☐ No.

13. What, in your opinion, are the main strengths of the programs and curricula of your center / institute of technical / vocational education?

☐
☐
☐
☐
☐

14. What, in your opinion, are the main weaknesses of the programs and curricula of your center / institute of technical / vocational education?

☐
☐
☐
☐
☐

15. Does your center / institute provide counseling (professional and educational) to its students?

- ☐ Yes.
- ☐ No.

a) If yes, do you think that the students benefit from this counseling service?

- ☐ Yes.
- ☐ Don't know.
- ☐ No.

16. Does your center / institute provide professional supervision to its teachers?

- ☐ Yes.
- ☐ No.

a) If yes, do you think that the teachers benefit from the supervisory service?

- ☐ Yes.
- ☐ Don't know.
- ☐ No.

17. If you answered Q. 16 in the affirmative (yes), what supervisory methods are used at your center/institute?

- ☐ Sudden visits.
- ☐ Scheduled (pre-set) visits.
- ☐ One-on-one sessions between a teacher and the supervisor.
- ☐ Group sessions between the teachers and the supervisor.
- ☐
- ☐

18. Do you think that most teachers at your center / inst. keep up with the new developments in their areas of specialization?

- ☐ Yes.
- ☐ No.

a) If yes, how do they keep up?

- ☐ Through centers' libraries.
- ☐ Through their supervisors.
- ☐ Through correspondence.
- ☐
- ☐
- ☐

b) If no, what do you think are the reasons why they do not keep up?

- ☐
- ☐
- ☐
- ☐
- ☐

19. What language is officially and practically used for instruction at your center / inst. ?

- ☐ Only Arabic.
- ☐ Another language which is.....
- ☐ Two languages: Arabic and .....

20. What language do you believe should be used for instruction at your center / inst?

- ☐ Only Arabic.
- ☐ Another language which is .....
- ☐ Two languages: Arabic and .....

21. What, in your opinion, are the main problems which the teachers / trainers of your center / inst. face (and adversely affect their performance)?

- ☐ Poor economic rewards / benefits.
- ☐ Lack or inadequacy of the instruments / tools / facilities available.
- ☐ Administrative problems (e.g., poor schedules, poor admin./faculty relations, etc.).
- ☐ Student-related problems (e.g. poor discipline, laziness, lack of punctualness, poor motivation, etc)
- ☐
- ☐
- ☐

22. What solutions to the forementioned problems (Q.21) do you suggest?

- ☐
- ☐
- ☐
- ☐
- ☐

THANK YOU

BOOK (5)

QUESTIONNAIRE ABOUT TECHNICAL & VOCATIONAL EDUCATION DIRECTED TO INSPECTORS AND SUPERVISORS IN TECHNICAL AND VOCATIONAL EDUCATION IN THE SULTANATE OF OMAN

Questionnaire

1. How many technical centers and institutes do you supervise?

2. What level (levels) are the center (or institute) you supervise?

   - ☐ Elementary.
   - ☐ Intermediate.
   - ☐ Secondary (senior-high).
   - ☐ Diploma (2-year beyond secondary).
   - ☐ College (4 years).
   - ☐ Other (please mention):

3. How many visits do you make to each center/institute each year?

4. Do you think that the number of visits mentioned above (Q. 3) is sufficient?

   - ☐ Yes.
   - ☐ No.

5. What faculty do you supervise?

   - ☐ Work-Shop trainers.
   - ☐ Teachers of theoretical subjects.
   - ☐ Both.

6. How do you rate the standards of theoretical instruction (middle column) and practical training (third column) in each of the specialization areas (departments) in the institutes/centers you supervise?

Specialization	Standard of Theoretical Instruction					Standard of Practical Training				
	Very High	High	Average	Low	Very low	Very High	High	Average	Low	Very low
1.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

7. What is your opinion regarding the sufficieny or insufficiency of the period alloted in these centers / institutes for both theoretical instruction and practical training?

Specialization	Period Alloted To Theoretical Instr.			Period Alloted To Practical Train.		
	Too Long	Appropriate	Too Short	Too Long	Appropriate	Too Short
1.	☐	☐	☐	☐	☐	☐
2.	☐	☐	☐	☐	☐	☐
3.	☐	☐	☐	☐	☐	☐
4.	☐	☐	☐	☐	☐	☐
5.	☐	☐	☐	☐	☐	☐
6.	☐	☐	☐	☐	☐	☐
7.	☐	☐	☐	☐	☐	☐

8. Do you believe the centers/institutes you supervise should add specializations which they do not have at the present time?

☐ Yes.
☐ No.

(a) If yes, please mention below what these specializations are.

9. How do you rate the tools and other instructional means used at the centers/institutes you supervise?

- ☐ Very good.
- ☐ Good.
- ☐ Average.
- ☐ Poor.
- ☐ Very poor.

10. Do you believe that the means used at these centers/institutes to evaluate students (e.g. exams, etc) are a good indicator of their level of performance in the future (i.e., after their graduation)?

- ☐ Yes.
- ☐ Don't know.
- ☐ No.

11. How do you rate the ability of these institutes/centers' faculty to present their courses as units in a whole (or parts in a unified curriculum)?

- ☐ Very high.
- ☐ High.
- ☐ Average.
- ☐ Low.
- ☐ Very low.

12. What, in your opinion, are the main weaknesses of the programs and curricula of the (local) centers and institutes of technical/vocational education?

- ☐
- ☐
- ☐
- ☐
- ☐

13. What, in your opinion, are the main strengths of the programs and curricula of the (local) centers and institutes of technical / vocational education?

☐
☐
☐
☐
☐

14. Do the centers/institutes you supervise provide educational and vocational guidance (counseling) to their students?

☐ Yes.
☐ No.

(A) If yes, how adequate is this guidance (counseling) in meeting the students' training needs?

☐ Very adequate.
☐ Adequate.
☐ Average
☐ Not adequate.
☐ Not adequate at all.

15. Do you think that the supervision which teachers and trainers receive actually helps them and improves the effectiveness of their centers/institutes?

☐ Yes.
☐ No..

(A) If no, what recommendations do you suggest in order to raise the supervisory programs' ability to improve the performance of the institutes/centers? (Check the responses you agree with and/or add others).

- ☐ Enrolling the supervisors in training sessions to update their knowledge of their respective fields.
- ☐ Delimiting a supervisor's responsibility to only one topic.
- ☐
- ☐
- ☐

16. Judging by your experience, what do you think are the main factors that make some students enrol in technical and vocational centers/institutes?

- ☐ Their interest in tech./voc. education.
- ☐ The generous rewards they get at these institutions.
- ☐ Their failure in public schools.
- ☐ The certainty of employment after graduation.
- ☐
- ☐
- ☐

17. What incentives do you recommend in order to encourage students to enrol in tech./voc. institutes / centers?

- ☐ Raising benefits and rewards.
- ☐ Treating tech./voc. diplomas/certificates as equal to those of public schools which correspond to them in grades and levels.
- ☐ Allowing tech./voc. graduates to continue their studies at higher-level institutes.
- ☐ Using the mass media to acquaint the public with tech./voc. education.
- ☐ Sending outstanding tech./voc. graduates for study abroad.
- ☐ Allowing tech./voc. graduates to work in their own fields of specialization.

☐
☐
☐
☐
☐

18. Do you think that the programs and curricula of (these) voc./tech. cent./inst. adequately prepare students for the needs and conditions of the job market?

☐ Very adequately.
☐ Adequately.
☐ Don't know.
☐ Inadequately.
☐ Very inadequately.

19. What, in your opinion, are the main problems which the teachers/trainers of these center/inst. face (and adversely affect their performance)?

☐ Poor economic rewards/benefits.
☐ Lack or inadequacy of the instruments / tools / facilities available.
☐ Administrative problems (E.g. poor schedules poor admin./ faculty relations, etc.)
☐ Student-related problems (E.g. poor discipline, laziness, lack of punctualness, poor motivation, etc).
☐
☐
☐

20. What solutions to the formentioned problems (Q.21) do you suggest?

☐
☐
☐
☐
☐

21. Do you think that most teachers at these centers/inst. keep up with the new developments in their areas of specialization?

- ☐ Yes.
- ☐ No.

(A) If Yes, how do they keep up?

- ☐ Through centers' libraries.
- ☐ Through their supervisors.
- ☐ Through correspondence.
- ☐
- ☐
- ☐

(B) If no, what do you think are the reasons for their not keeping up with the new developments in their fields?

- ☐
- ☐
- ☐
- ☐
- ☐

22. What language is of officially and practically used for instruction at these centers/inst.?

- ☐ Only Arabic.
- ☐ Another language which is .....
- ☐ Two languages: Arabic and .....

23. What language do you believe should be used for instruction at these centers/inst.?

- ☐ Only Arabic.
- ☐ Another language which is .....
- ☐ Two languages: Arabic and .....

THANK YOU.

BOOK (6)

QUESTIONNAIRE ABOUT TECHNICAL AND VOCATIONAL EDUCATION DIRECTED TO GRADUATES OF VOCATIONAL TRAINING CENTRES, AND TECHNICAL SCHOOLS AND INSTITUTES IN THE SULTANATE OF OMAN

BASIC DATA ABOUT THE RESPONDENT

1. City or Town :

2. Present Occupation :

3. Period of service in this occupation :

4. The Institute which graduated you :

5. Age :

6. Sex :

☐ Male ☐ Female

7. Nationality :

THE QUESTIONNAIRE

1. Institue/Centre which graduated you :

2. Level of certificate you have got from this Institute/Centre :

- ☐ Elementary
- ☐ Intermediate (Preparatory)
- ☐ Secondary
- ☐ 2 - year - post secondary
- ☐ University (4years post secondary)
- ☐ Other ------ that are ----------

3. What was your specialization at the inst./centre ?

4. Where do you work now ?

- ☐ Public sector
- ☐ Private sector
- ☐ Business of your own.

Q. 5

Do you now work in the same specialization your studied at inst/cen. of graduation ?

☐ Yes

☐ No

☐ To some extent.

Q. 6

If your answer to Q.(5) is No, please give the reasons in the following:

☐

☐

☐

☐

Q. 7

Are you satisfied with your present job ?

☐ Yes

☐ No

A - If your answer is Yes, please give the reason/reasons:

☐

☐

☐

B - If your answer is No, please give the reason/reasons:

☐

☐

☐

Q. 8

According to the following scale how do you rate your gain from the theoritical knowledge (lectures and readings) you have received at the tech/voc. inst/centre. please check the appropriate square.

- ☐ Great
- ☐ Moderate
- ☐ Little
- ☐ None

Q. 9

According to the following scale how do you rate your gain from the practical training (workshop practices) you have received at the tech/voc. inst/cen. of your graduation ?

- ☐ Great
- ☐ Moderate
- ☐ Little
- ☐ None

Q. 10

According to the following scale how do you rate the relationship between what you have studied and trained on at the inst/cen. , and your present job ?

- ☐ Great
- ☐ Moderate
- ☐ Little
- ☐ None

Q. 11

What are your suggestions for the impronement of the programmes and curricula of tech/voc. education in the country ?

☐

☐

☐

☐

Q. 12

Are you attending, or have you attended any training courses or programmes in your present job ?

☐ Yes

☐ No

A - If your answer is Yes, are these courses local or abroad ?

☐ Local

☐ Abroad

Q. 13

If your answer to Q (12) is Yes, how do you rate their usefulness according to the following scale ?

☐ Great

☐ Moderate

☐ Little

☐ None

Q. 14 Do you read magazines and periodicals in your specialization ?

☐ Yes

☐ No

A - If your answer is Yes, what are these magazines and periodicals ?

☐

☐

☐

☐

B - If your answer is No, please give the reasons for not reading them ?

☐

☐

☐

☐

Q. 15 Have you ever been sent for abroad study ?

☐ Yes

☐ No

Q. 16 If your answer to Q 15 is Yes, which do you prefer, local studies or abroad studies

☐ Local

☐ Abroad

A - If you think local study is better why ?

☐

☐

☐

☐

B - If you think abroad study is better, why ?

☐

☐

☐

☐

Q. 17

If you have a young relative who has tech/voc. tendencies, do you encourage him/her to join a tech/voc institute ?

☐ Yes

☐ No

A - If youranswer is Yes, what are your suggestions to encourage citizens to join tech/voc. institutes ?

☐

☐

☐

☐

☐

☐

B - If your answer is No, why ?

☐

☐

☐

☐

☐

☐

Q. 18

Everybody has aims to fulfil in his lifetime. We shall mention here below nine of them. Please try to arrange them according to their importance to you, so that aim no (1) means the most important to you and aim No (9) means the least important.

- ☐ Physical comfort (Lack of weariness and hardships)
- ☐ Financial gain (money making)
- ☐ Peychological comfort (lack of worries & problems)
- ☐ Luxurious life (The mansion, the fabulous car, etc)
- ☐ Faithful friends.
- ☐ United and lovable family.
- ☐ Self assertion
- ☐ Having society respect
- ☐ Success at Work

Q. 19

From among the above mentioned aims in Q (18) show in the following space the most important to you presonally ?

Thanking you for your cooperation.

BOOK (7)

QUESTIONNAIRE ABOUT TECHNICAL & VOCATIONAL EDUCATION DIRECTED TO THE EMPLOYERS OF PRIVATE SECTOR FACTORIES AND ESTABLISHMENTS IN THE SULTANATE OF OMAN

Instructions on How to Fill out the Questionnaire

1. The terms «technical establishment» and «training establishment» as used in this questionnaire, refer to all schools, institutes, centers and colleges of technical and vocational education and training.
2. Some questions and statements are followed by two, three, or more, possible responses. Each response is preceded by a square. Please check the square that precedes the response that represents your own opinion the most.

Example: The correct use of tools increases productivity.

- ☐ Agree.
- ☐ Don't know.
- ☐ Don't Agree.

Check the first response (Agree) if you agree with the statement, the second response (Don't Know) If you have no opinion regarding the statement, and the third response (Don't Agree) if you do not agree with the statement.

Data About The Respondent

1. State:

2. Type of industrial establishment you work at:

3. Good (or goods) your establishment produces:

4. Province your establishment is located in:.

5. City / Town your establishment is located in:

6. Position you occupy within your establishment:

7. Years of experience at your present job:

8. Nationality:

Questionnaire

1. What is the total number of employees (administrative , technical, and non-technical) at your factory (establishment)?

2. A. How many of your total number of employees are nationals (citizens of the state)?

   B. And how many are expatriates?

3. What do you think are the advantages of employing foreign (expatriate) labor? (Please check the answers you agree with and / or add your own answers.

- ☐ Foreign employees are less expensive.
- ☐ Foreign employees have lower rates of absenteeism.
- ☐ Foreign employees are more obedient to the management.
- ☐ Foreign employees are more skilled.
- ☐ Foreign employees are more faithful (or loyal) to the firm.
- ☐ Foreign employees are more flexible.
- ☐ National employees are difficult to find.
- ☐
- ☐
- ☐

Instructions on How to Fill out the Questionnaire

1. The terms «technical establishment» and «training establishment» as used in this questionnaire, refer to all schools, institutes, centers, and colleges of technical and vocational education and training;
2. Some questions and statements are followed by two, three, or more, possible responses. Each response is preceded by a square. Please check the square that precedes the response that represents your own opinion the most.

Example: The correct use of tools increases productivity.

☐ Agree.
☐ Don't know.
☐ Don't Agree.

Check the first response (Agree) if you agree with the statement; the second response (Don't know) if you have no opinion regarding the statement, and the third response (Don't Agree) if you do not agree with the statement.

Basic Data About the Respondent

1. Organization you work at/with:

2. The sector to which the above organization belongs to:

   - ☐ The national organization in change of technical/vocational education
   - ☐ Oil industry
   - ☐ Industry
   - ☐ Electricity
   - ☐ Water desalination
   - ☐ Other (Please mention):

3. Province:

4. City/Town:

5. Work Position:

6. Years of experience at the present position (job):

7. Nationality:

4. What do you think are the problems (and disadvantages) of employing foreign labor?
(Please check the answers you agree with and / or add your own answers).

- ☐ Problems of accommodation and transportation.
- ☐ Problems of travel.
- ☐ Problems of communication.
- ☐
- ☐
- ☐

5. In all confidential frankness, which do you prefer: foreign labor or local labor?

- ☐ Foreign labor.
- ☐ Local labor.

6. Do you think that it is preferable that national (local) labor substitute (take the place of) foreign labor?

- ☐ Yes.
- ☐ No.

a) If yes, please say why.

- ☐
- ☐
- ☐
- ☐

b) If no, please say why.

- ☐
- ☐
- ☐
- ☐

7. Whether you answered question 6 in the affirmative or negative, do you think that it is practically possible to replace foreign labor by local labor?

☐ Yes.
☐ No.

a) If yes, please mention the steps that you believe can bring this about.

☐
☐
☐
☐

b) If no, please say why.

☐
☐
☐
☐

8. Does your factory (establishment) employ national employees who have graduated from national centers or institutes of technical or vocational education?

☐ Yes.
☐ No.

9. If (you answered) yes to question 8, do these employees work in their fields of specialization?

☐ Yes.
☐ No.

10. If (you answered) yes to question 9, how do you rate the professional / technical capability of these employees (i.e in their jobs)?

- ☐ Very high capability.
- ☐ High capability.
- ☐ Average.
- ☐ Less than average.
- ☐ Poor.

11. If (you answered) no to question 9, what do you think are the reasons why they do not work in their fields of specialization?

- ☐ We do not have their fields of specialization in the factory.
- ☐ They do not have the required field experience or technical / vocational skills.
- ☐
- ☐
- ☐

12. If you answered no to question 9, please say on what basis/bases do you place these graduates in the jobs they occupy at your establishment.

- ☐ Wherever there is need for them.
- ☐ The management's estimation of where they would be most useful.
- ☐ Their personal preference.
- ☐
- ☐
- ☐

13. If you answered yes to question 8, (i.e, if you employ graduates of local tech./voc. centers), do you believe that those of them who graduated with high grades (or marks) perform their jobs more ably than those who graduated with low grades (or marks)?

- ☐ Yes.
- ☐ No.

14. If you answered yes to question 13, how do you compare high-grades graduates with low-grades graduates in the following areas.

Area	Superior To Classmates	Equal To Classmates	Inferior To Classmates
Supervisory Jobs	.....	.....	.....
Theoretical Areas	.....	.....	.....
Maintenance Jobs	.....	.....	.....
Operational Jobs	.....	.....	.....
Machine Handling	.....	.....	.....
Manual Skills	.....	.....	.....
Other	.....	.....	.....

15. What specialization fields do exist in your establishment which graduates of local voc./ tech.center are not trained in?

A. Field:

B. Field:

C. Field:

D. Field:

E. Field:

16. What are the major weaknesses that you notice in the graduates of local voc./ tech.. centers in the different fields of specialization?

a) In terms of their standard of training (i.e., knowledge and skills):

☐
☐
☐
☐

b) In terms of their professional behavior (i.e., discipline, orderliness, reliability, punctuality, responsibility, dealings with superiors):

- ☐
- ☐
- ☐
- ☐

17. Does your factory (or establishment) have a center or committee for providing your national employees with voc. / tech. training?

- ☐ Yes.
- ☐ No.

18. If no (to Q. 17), does your factory (or establishment) employ a particular person for training national employees? Or, does it have a program (or plan) of training them outside the factory?

- ☐ We have a person who trains them on the premises.
- ☐ We have a plan of training them outside the factory.

19. If yes (to Q. 17), what sort of relationship does your factory (establishment) have with the government agency in charge of voc./ tech. education / training?

- ☐ We are fully supervised by the said government agency.
- ☐ We receive inspection or guidance from the said agency.
- ☐ They send us periodical brochures or guidelines.
- ☐ There is no supervision whatever from the said agency.
- ☐ Other (please specify):

20. Does your factory (establishment) send its employees for training abroad?

- ☐ Yes.
- ☐ No.

21. If yes (to Q. 20), how do you rate the criteria used for selecting these employees for training abroad?

- ☐ Very good.
- ☐ Good.
- ☐ Average (moderate).
- ☐ Less than average.
- ☐ Poor.

22. What modifications do you believe are required to imporve such criteria?

- ☐
- ☐
- ☐
- ☐
- ☐

23. If you believe that these criteria (used for selecting employees for study / training abroad) are not good enough, what criticisms do you have of them?

- ☐
- ☐
- ☐
- ☐
- ☐

24. Does your factory provide incentives to attract national labor to work in it?

- ☐ Yes
- ☐ No.

25. If yes (to Q. 24), please name these incentives below.

- ☐
- ☐
- ☐
- ☐
- ☐

26. If no (to Q. 24), please mention below the reasons why you do not provide such incentives.

- ☐
- ☐
- ☐
- ☐
- ☐

27. Do you believe that the incentives your factory provide are sufficient to attract national employees?

- ☐ Yes.
- ☐ No.

28. If no (to Q. 27), what improvements should be introduced to those incentives?

☐
☐
☐

29. Below is a list of incentives which some employers provide. Add to them what you like and then rate your own establishment's position (performance) with respect to these incentives.

Incentives	With Respect to National Employees					With Respect to Foreign Employees				
	Excellent	Very Good	Average	Good	Nonexistent	Excellent	Very Good	Average	Good	Nonexistent
Salaries	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Promotions	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Raises	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Rewards for productivity	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Housing	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Transportation	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Training sessions (in the country)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Training sessions (Abroad)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Encouragement rewards	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Retirement Benifits	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Education for Children	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Tenure	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

30. Does your establishment have a unified system of incentives and rewards for both its national employees and its foreign (expatriate) employees?

☐ Yes.
☐ No.

31. If **Yes** (to Q. 30), please say why below.

☐
☐
☐

32. If **No** (to Q. 30), please say why below.

☐
☐
☐

33. Do you have a conception (or preconception) of what your establishment would be in the year 2000 (A.H. 1420)?

☐ Yes.
☐ No.
☐ Don't know.

(a) If yes, please check the perecntage of increase you expect in the number of your total labor force.

- ☐ No increase.
- ☐ Less than 10%.
- ☐ 11 __ 20%
- ☐ 21 __ 30%
- ☐ 31 __ 40%
- ☐ 41 __ 50%
- ☐ 51 __ 60%
- ☐ 61 __ 70%
- ☐ 71 __ 80%
- ☐ 81 __ 90%
- ☐ 91 __ 100%
- ☐ 101 __ 200%
- ☐ More than 200%.

34. Are there handicapped employees working at your establishment?

- ☐ Yes.
- ☐ No.

a) If yes, what sort of handicaps do they have?

- ☐ Audio.
- ☐ Visual.
- ☐ Mental.
- ☐ Missing limb.
- ☐ Other (specify):

b) If no, please mention below what handicapped groups are employable and in what jobs they can work.

☐
☐
☐

35. Do you have female employees?

☐ Yes.
☐ No.

a) If yes, what jobs do they occupy?

☐ Administrative and financial.
☐ Clerical and secretarial.
☐ Technical.
☐ Vocational.
☐ Other (specify):

36. If yes (to Q. 35), what percentage of your female employees are nationals?

☐ Less than 10%
☐ 11 __ 20%
☐ 21 __ 30%
☐ 31 __ 40%
☐ 41 __ 50%
☐ 51 __ 60%
☐ 61 __ 70%
☐ 71 __ 80%
☐ 81 __ 90%
☐ 91 __ 100%

37. Is it **Practically possible** to open new areas (fields) for women to work in?

☐ Yes.
☐ No.

38. If yes to Q 37, please mention below those areas and fields (where women could be employed) and order them in terms of their importance.

☐
☐
☐
☐
☐

39. If no to Q. 37, please mention below the reasons for your answer.

☐
☐
☐
☐
☐

THANK YOU.

BOOK (8)

QUESTIONNAIRE DIRECTED TO DIRECTORS AND PERSONNEL DIRECTORS OF THE GOVERNMENTAL FACTORIES AND ESTABLISHMENTS IN THE SULTANATE OF OMAN

INSTRUCTIONS ON HOW TO FILL OUT THE QUESTIONNAIRE

1. The terms "technical establishment" and training establishment" as used in this questionnaire refer to all schools, institutes, centres, and colleges of technical education and vocational training.

2. Some questions and statements are followed by two,three, or more possible responses. Each response is preceded by a square. Please check the square that precedes the response that presents your own opinion the most.

Example:
Using of machines in workshops increases production

☐ Agree
☐ Don't know
☐ Don't agree

Check the first response (agree) if you agree with the statement, the second (Don't know) if you have no opinion regarding the statement, and the third response (Don't agree) if you do not agree with the statement.

Example 2
Is your factory Governmental ? ☐ Yes ☐ No

Check square yes, if its governmental, and square No if it is not.

3. Please when answering free question try to make your response in the form of short points.

BASIC DATA ABOUT THE RESPONDENT

1. Country :

2. The type of your industrial establishment:

3. Economic sector you belong to:

- ☐ Petroleum
- ☐ Electricity
- ☐ Industry
- ☐ Distilling
- ☐ Other ....

4. Merchandise your factory or 'Industrial establishment produces:

5. Location of your factory:

6. City:

7. Your Position:

8. Period of service in this position:

9. Nationality:

THE QUESTIONNAIRE

1. Total number of personnel at your factory "Administrators, workers, technical and non-technical and others"

2. (a) Total number of nationals at your factory:

   (b) Total number of expatriates:

3. What, in your opinion are the advantages of the expatriate force, check the responses you agree with and add what you think fit.

- ☐ They are cheaper
- ☐ Of lesser rate of abcence
- ☐ More obedient to administraton
- ☐ More skilful
- ☐ More loyal at work
- ☐ More flexable
- ☐ Nationals are not available
- ☐
- ☐

4. What, in your opinion are the problems of recruiting expatriates ? check the responses you agree with and add what you think fit.

- ☐ Housing and transporting problems
- ☐ Traveling problems
- ☐ Communication problems
- ☐
- ☐
- ☐

5. Information of this questionnaire is highly confidential as you know. So please answer the following question very candidly: which do you generally prefer, expatriates or national workers ?

- ☐ Expatriates
- ☐ Nationals

6. Is it, in your opinion, preferable to replace expatriate force by the national manpower?

☐ Yes ☐ No

If your answer is Yes please give the reason/reasons

If your answer is No please give the reason/reasons

7. Whether your answer to Q.6 is 'Yes' or 'No' do you think it is practically possible to replace the expatriate force by the local manpower ?

☐ Yes ☐ No

If your answer is Yes, please state the steps which could make it possible:

If your answer is 'no' please show the reasons:

8. Does your factory have national workers graduated from national educational and vocational establishments ?

☐ Yes ☐ No

9. If your answer to Q.8 is 'Yes' do those graduates work in their specialization fields ?

☐ Yes ☐ No

10. If your answer to Q.9 is 'Yes' how do you evaluate their proficiency ?

☐ Very high

☐ High

☐ Average

☐ Below average

☐ Low

11. If your answer to Q9 is 'No' what in your opinion are the reasons of their not working in their specialized fields :

- ☐ Their specializations are not available at the factory
- ☐ Their lack of field experience or vocational skill
- ☐ Other reasons as:

12. If your answer to Q.9 is 'No' upon what grounds do they take their specific jobs at your factory ?

- ☐ The need for them in certain jobs
- ☐ The administration determines the areas where they can be useful
- ☐ The workers personal choice
- ☐

13. If your answer to Q.8. is 'Yes' (that you have local graduates) do you think those who graduated with higher grades from Tech/Voc. centres and institutes are more efficient at work then those whose graduation grades are average or low ?

☐ Yes ☐ No

14. If your answer to Q.13 is Yes what are the fields of work in which they are better ahan their lower grade colleagues ? where are they equal ? and where are they inferior to them?

FIELDS OF WORK	Better	Equal	Inferior
Supervisory works			
Theoritical fields			
Maintenance works			
Operating Work			
Machines installation			
Hand Skills			
Others like			

15. What are the specializations your sector needs and are not available from the vocational centres graduates ?

A ☐ Specializations .....

B ☐ "

C ☐ "

D ☐ "

E ☐

16. What are the weak points you notice of the national graduates working for you in different specialization fields?

A. Training standard "know-hows and skills"

B. Professional attitude "discipline , regularity, obligation, punctuality, responsibility and his way with his superiors"

17. Do you have at your factory (or establishment) a centre for the vocational training for the national workers ?

☐ Yes ☐ No

18. If your answer to Q.17 is 'No' do you have any person responsible for national workers' training, or have you a plan to train them outside your factory ?

☐ We have someone for teir training at the factory

☐ We have aplan to train them outside the factory

19. If your answer to Q.17 is 'Yes' what is the relation between this centre and the government organization responsible for the Technical education or the Vocational training ?

- ☐ Full supervision
- ☐ Inspection or guidance only
- ☐ Sending directive circulars only
- ☐ No supervision whatsoever
- ☐ Other kinds of relations such as:
- ☐
- ☐

20. Does your factory send personnel for abroad study ?

☐ Yes ☐ No

21. If your answer to Q.20 is 'Yes' how do you evaluate the basis of personnel nomination for abroad courses ?

- ☐ Very adequate
- ☐ Adequate
- ☐ Average
- ☐ Below average
- ☐ Inadequate

22. What are the most important amendments required to make these basis adequate ?

- ☐
- ☐
- ☐
- ☐
- ☐

23 If you think those basis are inadequate, what makes them so?

- ☐
- ☐
- ☐
- ☐
- ☐

24. Does your factory offer special incentives to attract national manpower ?

☐ Yes ☐ No

25. If your answer to Q.24 is Yes, Please mention here below these incentives

☐
☐
☐

26. If your answer to Q.24 is 'no' please mention here below the reasons for not offering these incentives.

☐
☐
☐

27. Do you think the incentives you offer are good enough to attract nationals to your factory ?

☐ Yes ☐ No

28. If your answer to Q.27 is 'No' please give the reasons here below.

☐
☐
☐

29. Here below is a table with a number of incentives some factories and employers offer. Add to them and show how you evaluate what your factory offers of these incentives to expatriates and to nationals

INCENTIVES	For Local Workers						For Expatriates					
	Exc:	V.Good	Good	Moderate	Poor	None	Exc:	V.Good	Good	Moderate	Poor	None
SALARIES												
PROMOTIONS												
INCREMENTS												
INCENTIVES												
INCENTIVES FOR INCREASE OF PRODUCTIVITY												
PROVIDING HOUSING												
LOCAL COURSES AND SCHOLARSHIPS												
ABROAD COURSES AND SCHOLARSHIPS												
ENCOURAGING INCENTIVES												
PENSION												
GUARANTEE FOR THE CONTINUITY OF THE POST												
OTHER INCENTIVES SUCH AS:												

30. Is your incentive system the same for both local and expatriate workers ?

☐ Yes ☐ No

31. If your answer to Q. 30 is 'Yes' please give the reasons here below

32. If your answer to Q.30 is 'No' please give the reasons here below:

33. Do you have any idea of the factory's future in 2000 AC, 1420 H ?

☐ Yes ☐ No ☐ Don't No

for those whose answer is 'Yes' what are the aspects of your idea as regard to:

(a) Percentage of the increase of the workers total number to their present total number :

☐ None
☐ Less than 10%
☐ 11 - 20%
☐ 21 - 30%
☐ 31 - 40%
☐ 41 - 50%
☐ 51 - 60%
☐ 61 - 70%
☐ 71 - 80%
☐ 81 - 90%
☐ 91 - 100%
☐ 101- 200%
☐ More than 200%

(b) Percentage of the expatriates to the national work force

☐ No expatriates to be mentioned
☐ Less than 10%
☐ 11 - 20%
☐ 21 - 30%
☐ 31 - 40%
☐ 41 - 50%
☐ 51 - 60%
☐ 61 - 70%
☐ 71 - 80%
☐ 81 - 90%
☐ 91 - 100%

34. Do you have handicaped workers (Audio -Visual, or loss of a limb or mental disorder)

☐ Yes ☐ No

(a) If the answer is 'Yes' what are the handicaps your workers have?

☐ Audio -Handicap

☐ Visual handicap

☐ Mental Handicap

☐ Amputation of one of the limbs

☐ Other handicaps

(b) If your answer is 'No' please mention herebelow what kind of handicaped people you can make use of, and at which type of work ?

35. Do you have female personnel ?

☐ Yes ☐ No

(a) If your answer is 'Yes at which type of work ?

☐ Administrative and financial

☐ Clerical and secretarial

☐ Technical

☐ Handicraft

☐ Other mention .....

☐

☐

36. If your answer to Q.35 is 'Yes' what is the percentage of the national female personnel to the foreigh female personnel at your factory ?

☐ Less than 10%	☐ 51 - 60 %
☐ 11 - 20 %	☐ 61 - 70 %
☐ 21 - 30 %	☐ 71 - 80 %
☐ 31 - 40 %	☐ 81 - 90 %
☐ 41 - 50 %	☐ 91 - 100%

37. Is it possible from the practical point of view to open new fields of work for women ?

☐ Yes ☐ No

38. If your answer to Q 37 is 'Yes' what in your opinion are the most important of those fields at your factory (arrange according to importance)

☐
☐
☐
☐
☐

39. If your answer to Q.37 is 'No' please give your reasons

☐
☐
☐
☐

Thank you for your cooperation.

BOOK (9)

QUESTIONNAIRE ABOUT TECHNICAL AND VOCATIONAL EDUCATION

DIRECTED TO THE STUDENTS OF TECHNICAL EDUCATION INSTITUTES

IN THE SULTANATE OF OMAN

Instructions on how to fill out the Questionnaire

1. The terms " technical establishment " and " training establishments " as used in this questionnaire, refer to all schools, institutes, centres, and colleges of technical and vocational education and training.

2. Some questions and statements are followed by two, three, or more, possible responses, Each response is preceded by a square. Please check the square that precedes the response that presents your own opinion the most.

   Example: The correct use of tools increses productivity

   ☐ Agree
   ☐ Don't know
   ☐ Don't agree

   Check the first response (agree) if you agree with the statement, the second response (Don't know) if you have no opinion regarding the statement, and the third response (Don't agree) if you do not agree with the statement.

3. Please when answering free questions try to make your response in the form of short points.

Basic Data about the Respondent

1. City or Town:

2. Age :

3. Sex

- ☐ Male
- ☐ Female

4. Age of the father " or guardian" :

5. Occupation of the father " or guardian" :

6. Nationality:

7. Family income: please check one of the following responses

- ☐ Very High income
- ☐ High Income
- ☐ Average income
- ☐ Below average
- ☐ Low income

8. Educational level of the Father or "guardian"

- ☐ Illiterate
- ☐ Literate
- ☐ Elementary
- ☐ Secondary
- ☐ University
- ☐ Master
- ☐ PhD
- ☐ Other

9. Number of Brothers and Sisters

- ☐ Male
- ☐ Female

THE QUESTIONNAIRE

Q.1 What are the reasons that made you join this educational technical or vocational establishment you are now at ? Here are some of the reasons check that suits you the best or mention others.

- ☐ Parent's chioce "or one of them"
- ☐ My own personal interest in technical and vocational studies
- ☐ Advice of friends and relatives
- ☐ Direction of teachers or their advice
- ☐ Attractiveness of the announcements of the technical and vocational education establishment
- ☐ My desire to obtain a qualification, certificate or diploma
- ☐ Difficulty of general education
- ☐ Simplicity of technical or vocational education
- ☐ Technical or vocational education gurantees the acquisition of a job on graduation
- ☐ Other reasons, which are :
- ☐
- ☐
- ☐

Q.2 Please look at your previous response, to Q.1, then show in the following space the most important reason for joining the institute or centre at which you now study:

Q.3 Have you studied any technical or vocational subjects (syllabus) at school before joining the instute or centre you are now at ?

- ☐ Yes
- ☐ No

Q.4 If your response to Q.3 is no, procede to Q.5, if it is Yes, please show to what extent have these subjects influenced your decision to join a technical institute or a vocational centre ?

- ☐ They have encouraged me a lot
- ☐ Attracted my attention to technical education
- ☐ They had no influence on me

Q.5 What in your opinion are the most important advantages and incentives which your institute or centre provide ? please arrange according to importance.

- ☐
- ☐
- ☐

Q.6 What do you think of the advantages and incentives which you mentioned in Q.5

- ☐ Very adequate
- ☐ Adequate
- ☐ Inadequate

Q.7 If you think they are not enough what makes them so ?

- ☐
- ☐
- ☐

Q.8 Do you know of cases of students who have quitted after joining your institute or centre ?

- ☐ Yes
- ☐ No

Q.9 If your response to Q.8 is yes, what are the reasons of their leaving the institute or centre ? "check the reasons to which you agree from the following and/or add more.

- ☐ Difficulty of the theoritical syllabus
- ☐ Bad treatment of teachers and instructors
- ☐ Recklessness of those students
- ☐ Their private or familistic circumstances
- ☐ Their academic failure
- ☐ Other reasons, which are
- ☐
- ☐
- ☐

Q.10 What in your opinion, are the most important problems and difficulties that face your institute or centre ?

Q.11 Do you study a certain specialization ?

- ☐ Yes
- ☐ No

Q.12 If your response to Q.11 is Yes, how has the specialiazation been determined ?

- ☐ According to your previous scores and achievements
- ☐ According to your interest and aptitudes
- ☐ Was determined by the administration
- ☐ Was determined by other ways, which are:
- ☐
- ☐
- ☐

Q.13 What do you think of the standard of your institute/centre theoritical syllabus ?

- ☐ Excellent
- ☐ Moderate
- ☐ Weak

Q.15 Do you think that the syllabus of your institute/centre "with its theoritical studies and practical training" adequately prepare the students for the requirements and conditions of the job market on graduation?

- ☐ Yes
- ☐ No
- ☐ I Don't know

Q.16 If your response to Q.15 is no, please mention in the following space the reasons of its being inadequate

Q.17 Does your practical training include visits to factories and firms at which your specialization is performed ?

- ☐ Yes
- ☐ No

Q.18 Does your practical training include work "as training " for certain periods at factories and firms at which year specialization is performed ?

- ☐ Yes
- ☐ No

Q.19 What do you think of the equipment and systems used at your institute/centre

- ☐ Adequate
- ☐ Inadequate

Q.20 What do you think of your institute/ centre premises and utilities ?

- ☐ Adequate
- ☐ Inadequate

Q.21 Waht is the medium of instruction at your institute/centre

- ☐ Only Arabic
- ☐ Arabic and English together
- ☐ Only English

Q.22 What, in your opinion, is the language, or are the languages which must be used as medium of instruction at your institute/centre ?

Q.23 Have you any idea of what would be of you after graduation, what career should you take on graduation ?

- [ ] Yes
- [ ] No

Q.24 If you response to Q.23 is yes, how your future career should be like ?

- [ ] Shall work with the Government
- [ ] Shall work for a company or a private firm
- [ ] Shall start a business on my own
- [ ]
- [ ]

Q.25 Everybody has aims wishes to fulfil in his lifetime. In the following are 8 aims. We kindly request you to arrange them according to their personal importance to you. That means aim or objective No(1) is the most important to you and aim No (8) is the least important to you

- [ ] Physical comfort " No illness and no hardships "
- [ ] Psychological comfort "no worries and no problems"
- [ ] Luxurious life "big and comfortable house,luxurious car etc."
- [ ] Faithful friends
- [ ] United and loveble family
- [ ] Self assertion
- [ ] Having respect of other
- [ ] Success at work

Q.26 From the above mentioned aims of Q.25 write in the following space the most important one of them to you personally.

Thank you for your cooperation.

BOOK (10)

QUESTIONNAIRE ABOUT TECHNICAL AND VOCATIONAL EDUCATION

DIRECTED TO THE ADMINISTRATORS OF INTERMEDIATE (PREPARATORY) SCHOOLS

IN THE SULTANATE OF OMAN

BASIC DATA ABOUT THE RESPONDENT

1. Level of School:

2. Administrative organization your school belongs to:

3. Town/City in which your school is located:

4. Province:

5. Your position (Job)

☐ Principal

☐ Assistant Principal

6. Years of service in this position:

7. Age:

8. Nationality:

INSTRUCTIONS ON HOW TO FILL OUT THE QUESTIONNAIRE

1. The terms "technical establishment" and "training establishment" as used in this questionnaire, refer to all schools, institutes, centres, and colleges of technical and vocational education and training.

2. Some questions and statements are followed by two, three or more possible responses. Each response is preceded by a square. Please check the square that precedes the response that presents your own opinion the most.

Example:
Using of practical examples helps students understand theoritical subjects

☐ Agree
☐ Don't know
☐ Don't agree

Check the first response (agree) if you agree with the statement, the second response (Don't know), if you have no opinion regarding the statement, and the third response (Don't agree) if you don't agree with the statement.

Example (2)
Is your school governmental

☐ Yes
☐ No

Check 'Yes' square if its governmental 'No' squre if its is not.

3. Please when answering free question try to make your responses in the form of short points.

THE 'QUESTIONNAIRE

1. Do you have a social worker at the school ?

- ☐ Yes
- ☐ No

2. If you have a social worker, how is social work being undertaken

- ☐ Students group sessions
- ☐ Individual case study
- ☐ Others like....
- ☐
- ☐

3. If the school has no special social worker who takes his responsibilities.

- ☐ Principal
- ☐ Assistant
- ☐ One of the teachers
- ☐ Persons sent by the authorities some times
- ☐ Others like ...
- ☐
- ☐

4. Do educational authorities provide you with specific programmes or instructions on how to conduct social work

- ☐ Yes
- ☐ No

5. If your answer to question (4) is Yes, what are the three most important aspects those programmes or instructions emphasize ?"check from the following or add from your own"

- ☐ Solving of students problems with administration and teachers
- ☐ Dealing with students' social and behavioural problems
- ☐ Briefing students on their future careers
- ☐ Studying problems of slow leaners
- ☐ Others (mention....)
- ☐

6. Does the social worker or any other person undertake any organized effort to help students select careers that suit their tendencies and aptitudes?

- ☐ Yes
- ☐ No

7. If your answer to question (6) is yes, is this effort:

- ☐ Official "under directions of the educational authorities "?
- ☐ Self initiated by the school and its teachers ?

8. Does your school officially or non-officially tries to directs its students to Tech/Voc. Education ?

- ☐ Yes
- ☐ No

9. If your answer to question (8) is Yes, please check from the following the type of students you try to direct to Tech/Voc. education

- ☐ Those who are weak at theoritical studies
- ☐ Students who have problems (often absent, trouble makers etc.,)
- ☐ Students of Tech/Voc Tendencies
- ☐ Those who are academically good
- ☐ Others.....

10. If your answer to question (8) is yes(that is you do try to direct them to tech/voc. schools) how do you evaluate your efforts in this regards ?

- ☐ Very successful
- ☐ Successful to some extent
- ☐ Occasionally successful
- ☐ Complete failure

11. Do you think there should be organized efforts within general education schools to make students aware of Tech/Voc. education ?

- ☐ Yes
- ☐ No

12. If your answer to question (11) is Yes, please give your reasons in the following space.

13. If your answer to question (11) is no, please give your reasons in the following space.

14. If your answer to question (11) is yes, " that you think students should be made aware of Tech/Voc. education" what are your suggestions to make (or/improve) programmes to fulfil this ?

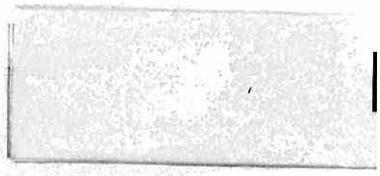
Thank you for your cooperation.

APPENDIX 'H'

MANPOWER PROJECTIONS 5 YEARS

OUTPUT, EMPLOYMENT AND

PRODUCTIVITY 1985



Simulation: FINS
Date produced: 2/12/86

MANPOWER PROJECTION 5 YEARS

Output, Employment, and Productivity

1985

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Output Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	61400.	3.5			115.0000	23.5		534.00	
FISHING	28200.	1.6			12.0000	2.5		2350.00	
MINING & QUARRYING	8000.	0.5			1.1200	0.2		7143.00	
MANUFACTURING	105400.	6.0			7.9000	1.6		13342.00	
CONSTRUCTION	242200.	13.7			159.9000	32.7		1515.00	
TRADE(WHOLE&RETAIL)	412200.	23.3			70.3800	14.4		5856.00	
HOTELS & RESTAURANTS	14400.	0.8			9.7100	2.0		1483.00	
TRANSPORT & COMMUN.	90600.	5.1			10.0600	2.1		9006.00	
FINANCE,R.E. & B.S.	263600.	14.9			6.5900	1.3		40000.00	
PERSON. & COMM. SER.	32800.	1.9			27.9500	5.7		1174.00	
GOVERNMENT SERVICES	511400.	28.9			68.5000	14.0		7466.00	
Total	1770200.	100.0			489.1100	100.0		3619.23	

MANPOWER PROJECTION 5 YEARS

Employment by Occupation

1985

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0460	0.0575	0.0115	0.0460	0.0690	0.1035	0.1035	0.1035	0.7475	36.7080	77.0040	115.0000
FISHING	0.0048	0.0060	0.0012	0.0048	0.0072	0.0096	0.0108	0.0108	0.0780	3.8304	8.0364	12.0000
MINING & QUARRYING	0.0633	0.0506	0.0134	0.0708	0.0122	0.1007	0.1691	0.0839	0.1943	0.1891	0.1726	1.1200
MANUFACTURING	0.0703	0.3997	0.0024	0.0498	0.0197	0.3800	0.6597	0.4187	1.7688	3.6301	0.5009	7.9000
CONSTRUCTION	4.1734	2.3985	0.1919	1.8868	0.1279	2.4625	15.5743	0.2239	48.5936	81.5970	2.6703	159.9000
TRADE(WHOLE&RETAIL)	1.1472	3.6386	0.1126	1.2387	0.4786	9.6209	6.8691	23.1198	6.3201	13.9282	3.9061	70.3800
HOTELS & RESTAURANTS	0.0146	0.1398	0.0019	0.0204	0.0854	0.4302	0.0894	0.6603	5.5192	1.2992	1.4497	9.7101
TRANSPORT & COMMUN.	0.0543	0.2837	0.1217	0.0734	0.1851	0.7766	0.4316	0.0976	0.4346	6.5903	1.0110	10.0600
FINANCE,R.E. & B.S.	1.2172	1.3299	0.1140	0.4481	0.0158	1.7127	0.3737	0.1450	0.2326	0.7229	0.2781	6.5900
PERSON. & COMM. SER.	0.2935	0.2292	0.0894	0.1901	0.2711	0.1314	0.6289	1.1012	13.8632	8.6393	2.5127	27.9500
GOVERNMENT SERVICES	2.0550	4.5895	1.3700	7.8775	10.9600	3.6990	4.3155	0.4110	5.1375	11.3710	16.7140	68.5000
Total	9.1395	13.1231	2.0301	11.9064	12.2321	19.4271	29.2255	26.3756	82.8894	168.5054	114.2558	489.1101

Simulation: FINS
Date Produced:

Employment Distribution for 1985

Sector	Occupation											
	A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	.04%	.05%	.01%	.04%	.06%	.09%	.09%	.09%	.65%	31.92%	66.96%	100.00%
FISHING	.04%	.05%	.01%	.04%	.06%	.08%	.09%	.09%	.65%	31.92%	66.97%	100.00%
MINING & QUARRYING	5.65%	4.52%	1.20%	6.32%	1.09%	8.99%	15.10%	7.49%	17.35%	16.88%	15.41%	100.00%
MANUFACTURING	.89%	5.06%	.03%	.63%	.25%	4.81%	8.35%	5.30%	22.38%	45.95%	6.34%	100.00%
CONSTRUCTION	2.61%	1.50%	.12%	1.18%	.08%	1.54%	9.74%	.14%	30.39%	51.02%	1.67%	100.00%
TRADE(WHOLE&RETAIL)	1.63%	5.17%	.16%	1.76%	.68%	13.67%	9.76%	32.84%	8.98%	19.79%	5.55%	100.00%
HOTELS & RESTAURANTS	.15%	1.44%	.02%	.21%	.88%	4.43%	.92%	6.80%	56.84%	13.38%	14.93%	100.00%
TRANSPORT & COMMUN.	.54%	2.82%	1.21%	.73%	1.84%	7.72%	4.29%	.97%	4.32%	65.51%	10.05%	100.00%
FINANCE,R.E. & B.S.	18.47%	20.18%	1.73%	6.80%	.24%	25.99%	5.67%	2.20%	3.53%	10.97%	4.22%	100.00%
PERSON. & COMM. SER.	1.05%	.82%	.32%	.68%	.97%	.47%	2.25%	3.94%	49.59%	30.91%	8.99%	100.00%
GOVERNMENT SERVICES	3.00%	6.70%	2.00%	11.50%	16.00%	5.40%	6.30%	.60%	7.50%	16.60%	24.40%	100.00%

Simulation: FINS
Date produced:

MANPOWER PROJECTION 5 YEARS

Output, Employment, and Productivity

1986

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	64163.	3.6	0.045	0.541	117.7994	24.4	0.024	544.68	0.020
FISHING	32627.	1.8	0.157	0.649	13.2229	2.7	0.102	2467.50	0.050
MINING & QUARRYING	9320.	0.5	0.165	0.861	1.2792	0.3	0.142	7285.86	0.020
MANUFACTURING	126585.	7.1	0.201	0.457	8.6252	1.8	0.092	14676.20	0.100
CONSTRUCTION	225800.	12.6	0.068	1.071	148.3014	30.8	-0.073	1522.57	0.005
TRADE(WHOLE&RETAIL)	381400.	21.3	-0.075	1.060	64.8058	13.4	-0.079	5885.28	0.005
HOTELS & RESTAURANTS	15206.	0.9	0.056	0.906	10.2028	2.1	0.051	1490.42	0.005
TRANSPORT & COMMUN.	102650.	5.7	0.133	0.916	11.2851	2.3	0.122	9096.06	0.010
FINANCE,R.E. & B.S.	273353.	15.3	0.037	0.450	6.6998	1.4	0.017	40800.00	0.020
PERSON. & COMM. SER.	36178.	2.0	0.103	0.942	30.6630	6.4	0.097	1179.87	0.005
GOVERNMENT SERVICES	519200.	29.1	0.015	0.666	69.1959	14.4	0.010	7503.33	0.005
Total	1786484.	100.0	0.009	1.562	482.0806	100.0	-0.014	3705.78	0.024

Simulation: FINS
Date produced:

MANPOWER PROJECTION 5 YEARS

Employment by Occupation

1986

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0471	0.0589	0.0118	0.0471	0.0707	0.1060	0.1060	0.1060	0.7657	37.6016	78.8785	117.7994
FISHING	0.0053	0.0066	0.0013	0.0053	0.0079	0.0106	0.0119	0.0119	0.0859	4.2207	8.8553	13.2229
MINING & QUARRYING	0.0723	0.0578	0.0154	0.0808	0.0139	0.1150	0.1932	0.0958	0.2219	0.2159	0.1971	1.2792
MANUFACTURING	0.0768	0.4364	0.0026	0.0543	0.0216	0.4149	0.7202	0.4571	1.9312	3.9633	0.5468	8.6252
CONSTRUCTION	3.8707	2.2245	0.1780	1.7500	0.1186	2.2838	14.4446	0.2076	45.0688	75.6782	2.4766	148.3014
TRADE(WHOLE&RETAIL)	1.0563	3.3505	0.1037	1.1406	0.4407	8.8589	6.3250	21.2887	5.8196	12.8251	3.5967	64.8058
HOTELS & RESTAURANTS	0.0153	0.1469	0.0020	0.0214	0.0898	0.4520	0.0940	0.6938	5.7993	1.3651	1.5233	10.2029
TRANSPORT & COMMUN.	0.0609	0.3182	0.1365	0.0824	0.2076	0.8712	0.4841	0.1095	0.4875	7.3929	1.1342	11.2851
FINANCE,R.E. & B.S.	1.2375	1.3520	0.1159	0.4556	0.0161	1.7413	0.3799	0.1474	0.2365	0.7350	0.2827	6.6998
PERSON. & COMM. SER.	0.3220	0.2514	0.0981	0.2085	0.2974	0.1441	0.6899	1.2081	15.2089	9.4779	2.7566	30.6630
GOVERNMENT SERVICES	2.0759	4.6361	1.3839	7.9575	11.0714	3.7366	4.3593	0.4152	5.1897	11.4865	16.8838	69.1959
Total	8.8400	12.8395	2.0492	11.8036	12.3557	18.7344	27.8081	24.7411	80.8150	164.9622	117.1317	482.0807

Simulation: FINS
Date produced:

MANPOWER PROJECTION 5 YEARS

Output, Employment, and Productivity

1987

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	66280.	4.1	0.033	0.386	119.3008	28.1	0.013	555.57	0.020
FISHING	36412.	2.2	0.116	0.542	14.0540	3.3	0.063	2590.88	0.050
MINING & QUARRYING	10438.	0.6	0.120	0.817	1.4046	0.3	0.098	7431.58	0.020
MANUFACTURING	145573.	8.9	0.150	0.303	9.0173	2.1	0.045	16143.82	0.100
CONSTRUCTION	161800.	9.9	-0.283	1.013	105.7386	24.9	-0.287	1530.19	0.005
TRADE(WHOLE&RETAIL)	313500.	19.2	-0.178	1.023	53.0035	12.5	-0.182	5914.71	0.005
HOTELS & RESTAURANTS	15815.	1.0	0.040	0.871	10.5581	2.5	0.035	1497.87	0.005
TRANSPORT & COMMUN.	112709.	6.9	0.098	0.889	12.2683	2.9	0.087	9187.02	0.010
FINANCE,R.E. & B.S.	281007.	17.2	0.028	0.280	6.7524	1.6	0.008	41616.00	0.020
PERSON. & COMM. SER.	38711.	2.4	0.070	0.924	32.6462	7.7	0.065	1185.77	0.005
GOVERNMENT SERVICES	451500.	27.6	-0.130	1.033	59.8739	14.1	-0.135	7540.85	0.005
Total	1633246.	100.0	-0.085	1.394	424.6177	100.0	-0.119	3847.57	0.038

Simulation: FINS
Date produced:

MANPOWER PROJECTION 5 YEARS

Employment by Occupation

1987

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0477	0.0597	0.0119	0.0477	0.0716	0.1074	0.1074	0.1074	0.7755	38.0808	79.8838	119.3008
FISHING	0.0056	0.0070	0.0014	0.0056	0.0084	0.0112	0.0126	0.0126	0.0914	4.4860	9.4120	14.0540
MINING & QUARRYING	0.0794	0.0635	0.0169	0.0888	0.0153	0.1263	0.2121	0.1052	0.2437	0.2371	0.2164	1.4046
MANUFACTURING	0.0803	0.4563	0.0027	0.0568	0.0225	0.4337	0.7529	0.4779	2.0190	4.1434	0.5717	9.0173
CONSTRUCTION	2.7598	1.5861	0.1269	1.2477	0.0846	1.6284	10.2989	0.1480	32.1340	53.9584	1.7658	105.7386
TRADE(WHOLE&RETAIL)	0.8640	2.7403	0.0848	0.9329	0.3604	7.2456	5.1731	17.4116	4.7597	10.4894	2.9417	53.0035
HOTELS & RESTAURANTS	0.0158	0.1520	0.0021	0.0222	0.0929	0.4677	0.0972	0.7180	6.0012	1.4127	1.5763	10.5582
TRANSPORT & COMMUN.	0.0662	0.3460	0.1484	0.0896	0.2257	0.9471	0.5263	0.1190	0.5300	8.0370	1.2330	12.2683
FINANCE,R.E. & B.S.	1.2472	1.3626	0.1168	0.4592	0.0162	1.7549	0.3829	0.1486	0.2384	0.7407	0.2850	6.7524
PERSON. & COMM. SER.	0.3428	0.2677	0.1045	0.2220	0.3167	0.1534	0.7345	1.2863	16.1925	10.0909	2.9349	32.6462
GOVERNMENT SERVICES	1.7962	4.0116	1.1975	6.8855	9.5798	3.2332	3.7721	0.3592	4.4905	9.9391	14.6092	59.8739
Total	7.3049	11.0527	1.8139	10.0579	10.7942	16.1090	22.0702	20.8938	67.4758	141.6156	115.4298	424.6179

Simulation: FINS
Date produced:

MANPOWER PROJECTION 5 YEARS

Output, Employment, and Productivity

1988

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	68269.	4.2	0.030	0.327	120.4704	29.5	0.010	566.69	0.020
FISHING	39944.	2.4	0.097	0.461	14.6831	3.6	0.045	2720.42	0.050
MINING & QUARRYING	11493.	0.7	0.101	0.786	1.5161	0.4	0.079	7580.21	0.020
MANUFACTURING	163479.	10.0	0.123	0.170	9.2058	2.3	0.021	17758.20	0.100
CONSTRUCTION	132500.	8.1	-0.181	1.022	86.1599	21.1	-0.185	1537.84	0.005
TRADE(WHOLE&RETAIL)	301300.	18.4	-0.039	1.123	50.6874	12.4	-0.044	5944.28	0.005
HOTELS & RESTAURANTS	16368.	1.0	0.035	0.853	10.8733	2.7	0.030	1505.36	0.005
TRANSPORT & COMMUN.	121839.	7.4	0.081	0.868	13.1308	3.2	0.070	9278.89	0.010
FINANCE,R.E. & B.S.	287470.	17.5	0.023	0.128	6.7722	1.7	0.003	42448.32	0.020
PERSON. & COMM. SER.	41034.	2.5	0.060	0.912	34.4328	8.4	0.055	1191.70	0.005
GOVERNMENT SERVICES	455100.	27.8	0.008	0.371	60.0511	14.7	0.003	7578.55	0.005
Total	1638795.	100.0	0.003	-12.676	407.9829	100.0	-0.039	4016.82	0.044

Simulation: FINS
Date produced:

MANPOWER PROJECTION 5 YEARS

Employment by Occupation

1988

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0482	0.0602	0.0120	0.0482	0.0723	0.1084	0.1084	0.1084	0.7831	38.4542	80.6670	120.4704
FISHING	0.0059	0.0073	0.0015	0.0059	0.0088	0.0117	0.0132	0.0132	0.0954	4.6868	9.8333	14.6831
MINING & QUARRYING	0.0857	0.0685	0.0182	0.0958	0.0165	0.1363	0.2289	0.1136	0.2631	0.2559	0.2336	1.5161
MANUFACTURING	0.0819	0.4658	0.0028	0.0580	0.0230	0.4428	0.7687	0.4879	2.0612	4.2301	0.5836	9.2058
CONSTRUCTION	2.2488	1.2924	0.1034	1.0167	0.0689	1.3269	8.3920	0.1206	26.1840	43.9674	1.4389	86.1599
TRADE(WHOLE&RETAIL)	0.8262	2.6205	0.0811	0.8921	0.3447	6.9290	4.9471	16.6508	4.5517	10.0310	2.8131	50.6874
HOTELS & RESTAURANTS	0.0163	0.1566	0.0022	0.0228	0.0957	0.4817	0.1001	0.7394	6.1804	1.4548	1.6234	10.8734
TRANSPORT & COMMUN.	0.0709	0.3703	0.1589	0.0959	0.2416	1.0137	0.5633	0.1274	0.5672	8.6020	1.3196	13.1308
FINANCE,R.E. & B.S.	1.2508	1.3666	0.1172	0.4605	0.0163	1.7601	0.3840	0.1490	0.2391	0.7429	0.2858	6.7722
PERSON. & COMM. SER.	0.3615	0.2823	0.1102	0.2341	0.3340	0.1618	0.7747	1.3567	17.0787	10.6432	3.0955	34.4328
GOVERNMENT SERVICES	1.8015	4.0234	1.2010	6.9059	9.6082	3.2428	3.7832	0.3603	4.5038	9.9685	14.6525	60.0511
Total	6.7978	10.7141	1.8084	9.8359	10.8299	15.6152	20.0637	20.2272	62.5076	133.0368	116.5463	407.9830

Simulation: FINS
Date produced:

MANPOWER PROJECTION 5 YEARS

Output, Employment, and Productivity

1989

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	69976.	4.2	0.025	0.196	121.0610	29.7	0.005	578.02	0.020
FISHING	43060.	2.6	0.078	0.342	15.0746	3.7	0.027	2856.44	0.050
MINING & QUARRYING	12412.	0.7	0.080	0.735	1.6053	0.4	0.059	7731.81	0.020
MANUFACTURING	179827.	10.7	0.100	0.000	9.2058	2.3	0.000	19534.02	0.100
CONSTRUCTION	126900.	7.6	-0.042	1.113	82.1079	20.2	-0.047	1545.53	0.005
TRADE(WHOLE&RETAIL)	298200.	17.8	-0.010	1.479	49.9163	12.3	-0.015	5974.00	0.005
HOTELS & RESTAURANTS	16826.	1.0	0.028	0.817	11.1221	2.7	0.023	1512.88	0.005
TRANSPORT & COMMUN.	129637.	7.7	0.064	0.835	13.8328	3.4	0.053	9371.68	0.010
FINANCE,R.E. & B.S.	293220.	17.5	0.020	0.000	6.7722	1.7	0.000	43297.29	0.020
PERSON. & COMM. SER.	43085.	2.6	0.050	0.898	35.9746	8.8	0.045	1197.66	0.005
GOVERNMENT SERVICES	460200.	27.5	0.011	0.551	60.4219	14.8	0.006	7616.44	0.005
Total	1673342.	100.0	0.021	-0.103	407.0946	100.0	-0.002	4110.45	0.023

Simulation: FINS
Date produced:

MANPOWER PROJECTION 5 YEARS

Employment by Occupation

1989

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0484	0.0605	0.0121	0.0484	0.0726	0.1090	0.1090	0.1090	0.7869	38.6427	81.0624	121.0610
FISHING	0.0060	0.0075	0.0015	0.0060	0.0090	0.0121	0.0136	0.0136	0.0980	4.8118	10.0955	15.0746
MINING & QUARRYING	0.0907	0.0726	0.0193	0.1015	0.0175	0.1443	0.2424	0.1202	0.2785	0.2710	0.2474	1.6053
MANUFACTURING	0.0819	0.4658	0.0028	0.0580	0.0230	0.4428	0.7687	0.4879	2.0612	4.2301	0.5836	9.2058
CONSTRUCTION	2.1430	1.2316	0.0985	0.9689	0.0657	1.2645	7.9973	0.1150	24.9526	41.8996	1.3712	82.1079
TRADE(WHOLE&RETAIL)	0.8136	2.5807	0.0799	0.8785	0.3394	6.8236	4.8718	16.3975	4.4825	9.8784	2.7704	49.9163
HOTELS & RESTAURANTS	0.0167	0.1602	0.0022	0.0234	0.0979	0.4927	0.1024	0.7563	6.3218	1.4881	1.6605	11.1222
TRANSPORT & COMMUN.	0.0747	0.3901	0.1674	0.1010	0.2545	1.0679	0.5934	0.1342	0.5976	9.0619	1.3902	13.8328
FINANCE,R.E. & B.S.	1.2508	1.3666	0.1172	0.4605	0.0163	1.7601	0.3840	0.1490	0.2391	0.7429	0.2858	6.7722
PERSON. & COMM. SER.	0.3777	0.2950	0.1151	0.2446	0.3490	0.1691	0.8094	1.4174	17.8434	11.1197	3.2341	35.9746
GOVERNMENT SERVICES	1.8127	4.0483	1.2084	6.9485	9.6675	3.2628	3.8066	0.3625	4.5316	10.0300	14.7429	60.4219
Total	6.7163	10.6789	1.8244	9.8393	10.9124	15.5487	19.6986	20.0625	62.1931	132.1763	117.4441	407.0947

Simulation: FINS
Date produced:

MANPOWER PROJECTION 5 YEARS

Output, Employment, and Productivity

1990

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	71725.	4.1	0.025	0.196	121.6544	28.6	0.005	589.58	0.020
FISHING	46246.	2.7	0.074	0.309	15.4192	3.6	0.023	2999.26	0.050
MINING & QUARRYING	13405.	0.8	0.080	0.735	1.6998	0.4	0.059	7886.45	0.020
MANUFACTURING	196011.	11.2	0.090	-0.101	9.1221	2.1	-0.009	21487.43	0.100
CONSTRUCTION	149500.	8.6	0.178	0.967	96.2495	22.6	0.172	1553.26	0.005
TRADE(WHOLE&RETAIL)	307500.	17.6	0.031	0.836	51.2170	12.0	0.026	6003.87	0.005
HOTELS & RESTAURANTS	17281.	1.0	0.027	0.811	11.3656	2.7	0.022	1520.45	0.005
TRANSPORT & COMMUN.	137933.	7.9	0.064	0.835	14.5724	3.4	0.053	9465.40	0.010
FINANCE,R.E. & B.S.	299084.	17.1	0.020	-0.000	6.7722	1.6	-0.000	44163.23	0.020
PERSON. & COMM. SER.	45239.	2.6	0.050	0.896	37.5854	8.8	0.045	1203.64	0.005
GOVERNMENT SERVICES	461000.	26.4	0.002	-1.867	60.2258	14.1	0.003	7654.53	0.005
Total	1744925.	100.0	0.043	1.079	425.8833	100.0	0.046	4097.19	0.003

Simulation: FINS
Date produced:

MANPOWER PROJECTION 5 YEARS

Employment by Occupation

1990

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0487	0.0608	0.0122	0.0487	0.0730	0.1095	0.1095	0.1095	0.7908	38.8321	81.4598	121.6544
FISHING	0.0062	0.0077	0.0015	0.0062	0.0093	0.0123	0.0139	0.0139	0.1002	4.9218	10.3262	15.4192
MINING & QUARRYING	0.0960	0.0768	0.0204	0.1074	0.0185	0.1528	0.2567	0.1273	0.2949	0.2869	0.2619	1.6998
MANUFACTURING	0.0812	0.4616	0.0027	0.0575	0.0228	0.4388	0.7617	0.4835	2.0424	4.1916	0.5783	9.1221
CONSTRUCTION	2.5121	1.4437	0.1155	1.1357	0.0770	1.4822	9.3747	0.1347	29.2502	49.1161	1.6074	96.2495
TRADE(WHOLE&RETAIL)	0.8348	2.6479	0.0819	0.9014	0.3483	7.0014	4.9988	16.8248	4.5993	10.1358	2.8425	51.2170
HOTELS & RESTAURANTS	0.0170	0.1637	0.0023	0.0239	0.1000	0.5035	0.1047	0.7729	6.4602	1.5207	1.6969	11.3657
TRANSPORT & COMMUN.	0.0787	0.4109	0.1763	0.1064	0.2681	1.1250	0.6252	0.1414	0.6295	9.5464	1.4645	14.5724
FINANCE,R.E. & B.S.	1.2508	1.3666	0.1172	0.4605	0.0163	1.7601	0.3840	0.1490	0.2391	0.7429	0.2858	6.7722
PERSON. & COMM. SER.	0.3946	0.3082	0.1203	0.2556	0.3646	0.1767	0.8457	1.4809	18.6424	11.6176	3.3789	37.5854
GOVERNMENT SERVICES	1.8068	4.0351	1.2045	6.9260	9.6361	3.2522	3.7942	0.3614	4.5169	9.9975	14.6951	60.2258
Total	7.1270	10.9832	1.8548	10.0292	10.9340	16.0144	21.2689	20.5991	67.5659	140.9095	118.5974	425.8835

Simulation: FINS
Date produced: 1987/1/16

MANPOWER PROJECTIONS 20 YEARS

Output, Employment, and Productivity

1991

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	73159.	4.1	0.020	0.495	122.8589	28.1	0.010	595.47	0.010
FISHING	48096.	2.7	0.040	0.490	15.7215	3.6	0.020	3059.25	0.020
MINING & QUARRYING	13807.	0.8	0.030	0.660	1.7334	0.4	0.020	7965.31	0.010
MANUFACTURING	209732.	11.6	0.070	0.555	9.4764	2.2	0.039	22132.05	0.030
CONSTRUCTION	156975.	8.7	0.050	0.896	100.5591	23.0	0.045	1561.02	0.005
TRADE(WHOLE&RETAIL)	316725.	17.6	0.030	0.829	52.4910	12.0	0.025	6033.89	0.005
HOTELS & RESTAURANTS	17626.	1.0	0.020	0.746	11.5352	2.6	0.015	1528.05	0.005
TRANSPORT & COMMUN.	142071.	7.9	0.030	0.660	14.8609	3.4	0.020	9560.05	0.010
FINANCE,R.E. & B.S.	308057.	17.1	0.030	0.327	6.8386	1.6	0.010	45046.50	0.020
PERSON. & COMM. SER.	47501.	2.6	0.050	0.896	39.2683	9.0	0.045	1209.66	0.005
GOVERNMENT SERVICES	470220.	26.1	0.020	0.746	61.1247	14.0	0.015	7692.80	0.005
Total	1803970.	100.0	0.034	0.734	436.4682	100.0	0.025	4133.11	0.009

218

Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Employment by Occupation

1991

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0491	0.0614	0.0123	0.0491	0.0737	0.1106	0.1106	0.1106	0.7986	39.2166	82.2663	122.8589
FISHING	0.0063	0.0079	0.0016	0.0063	0.0094	0.0126	0.0141	0.0141	0.1022	5.0183	10.5287	15.7215
MINING & QUARRYING	0.0979	0.0784	0.0208	0.1096	0.0189	0.1558	0.2617	0.1298	0.3007	0.2926	0.2671	1.7334
MANUFACTURING	0.0843	0.4795	0.0028	0.0597	0.0237	0.4558	0.7913	0.5022	2.1218	4.3544	0.6008	9.4764
CONSTRUCTION	2.6246	1.5084	0.1207	1.1866	0.0804	1.5486	9.7945	0.1408	30.5599	51.3153	1.6793	100.5591
TRADE(WHOLE&RETAIL)	0.8556	2.7138	0.0840	0.9238	0.3569	7.1755	5.1231	17.2433	4.7137	10.3880	2.9133	52.4910
HOTELS & RESTAURANTS	0.0173	0.1661	0.0023	0.0242	0.1015	0.5110	0.1062	0.7844	6.5566	1.5434	1.7222	11.5353
TRANSPORT & COMMUN.	0.0802	0.4191	0.1798	0.1085	0.2734	1.1473	0.6375	0.1442	0.6420	9.7354	1.4935	14.8609
FINANCE,R.E. & B.S.	1.2631	1.3800	0.1183	0.4650	0.0164	1.7774	0.3878	0.1504	0.2414	0.7502	0.2886	6.8386
PERSON. & COMM. SER.	0.4123	0.3220	0.1257	0.2670	0.3809	0.1846	0.8835	1.5472	19.4771	12.1378	3.5302	39.2683
GOVERNMENT SERVICES	1.8337	4.0954	1.2225	7.0293	9.7800	3.3007	3.8509	0.3667	4.5844	10.1467	14.9144	61.1247
Total	7.3246	11.2319	1.8907	10.2292	11.1153	16.3799	21.9612	21.1338	70.0984	144.8987	120.2045	436.4683

Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Output, Employment, and Productivity

1992

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	74623.	4.0	0.020	0.495	124.0753	27.7	0.010	601.43	0.010
FISHING	50020.	2.7	0.040	0.490	16.0298	3.6	0.020	3120.43	0.020
MINING & QUARRYING	14221.	0.8	0.030	0.660	1.7677	0.4	0.020	8044.97	0.010
MANUFACTURING	224413.	12.0	0.070	0.555	9.8444	2.2	0.039	22796.01	0.030
CONSTRUCTION	164824.	8.8	0.050	0.896	105.0618	23.5	0.045	1568.83	0.005
TRADE(WHOLE&RETAIL)	326227.	17.5	0.030	0.829	53.7968	12.0	0.025	6064.06	0.005
HOTELS & RESTAURANTS	17979.	1.0	0.020	0.746	11.7074	2.6	0.015	1535.69	0.005
TRANSPORT & COMMUN.	146334.	7.8	0.030	0.660	15.1552	3.4	0.020	9655.65	0.010
FINANCE,R.E. & B.S.	317298.	17.0	0.030	0.327	6.9057	1.5	0.010	45947.43	0.020
PERSON. & COMM. SER.	49877.	2.7	0.050	0.896	41.0266	9.2	0.045	1215.71	0.005
GOVERNMENT SERVICES	479624.	25.7	0.020	0.746	62.0370	13.9	0.015	7731.26	0.005
Total	1865439.	100.0	0.034	0.736	447.4077	100.0	0.025	4169.44	0.009

220

Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Employment by Occupation

1992

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0496	0.0620	0.0124	0.0496	0.0744	0.1117	0.1117	0.1117	0.8065	39.6048	83.0808	124.0753
FISHING	0.0064	0.0080	0.0016	0.0064	0.0096	0.0128	0.0144	0.0144	0.1042	5.1167	10.7352	16.0298
MINING & QUARRYING	0.0999	0.0799	0.0212	0.1117	0.0193	0.1589	0.2669	0.1324	0.3067	0.2984	0.2724	1.7677
MANUFACTURING	0.0876	0.4981	0.0030	0.0620	0.0246	0.4735	0.8220	0.5218	2.2042	4.5235	0.6241	9.8444
CONSTRUCTION	2.7421	1.5759	0.1261	1.2397	0.0840	1.6180	10.2330	0.1471	31.9283	53.6130	1.7545	105.0618
TRADE(WHOLE&RETAIL)	0.8769	2.7813	0.0861	0.9468	0.3658	7.3540	5.2506	17.6722	4.8309	10.6464	2.9857	53.7968
HOTELS & RESTAURANTS	0.0176	0.1686	0.0023	0.0246	0.1030	0.5186	0.1078	0.7961	6.6545	1.5664	1.7479	11.7075
TRANSPORT & COMMUN.	0.0818	0.4274	0.1834	0.1106	0.2789	1.1700	0.6502	0.1470	0.6547	9.9282	1.5231	15.1552
FINANCE,R.E. & B.S.	1.2755	1.3936	0.1195	0.4696	0.0166	1.7948	0.3916	0.1519	0.2438	0.7576	0.2914	6.9057
PERSON. & COMM. SER.	0.4308	0.3364	0.1313	0.2790	0.3980	0.1928	0.9231	1.6164	20.3492	12.6813	3.6883	41.0266
GOVERNMENT SERVICES	1.8611	4.1565	1.2407	7.1343	9.9259	3.3500	3.9083	0.3722	4.6528	10.2981	15.1370	62.0370
Total	7.5293	11.4877	1.9275	10.4344	11.3001	16.7551	22.6796	21.6833	72.7357	149.0345	121.8405	447.4078

Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Output, Employment, and Productivity

1993

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	76115.	3.9	0.020	0.495	125.3038	27.3	0.010	607.44	0.010
FISHING	52021.	2.7	0.040	0.490	16.3441	3.6	0.020	3182.84	0.020
MINING & QUARRYING	14648.	0.8	0.030	0.660	1.8027	0.4	0.020	8125.42	0.010
MANUFACTURING	240122.	12.4	0.070	0.555	10.2267	2.2	0.039	23479.89	0.030
CONSTRUCTION	173065.	9.0	0.050	0.896	109.7660	23.9	0.045	1576.67	0.005
TRADE(WHOLE&RETAIL)	336014.	17.4	0.030	0.829	55.1350	12.0	0.025	6094.38	0.005
HOTELS & RESTAURANTS	18339.	1.0	0.020	0.746	11.8821	2.6	0.015	1543.37	0.005
TRANSPORT & COMMUN.	150724.	7.8	0.030	0.660	15.4553	3.4	0.020	9752.21	0.010
FINANCE,R.E. & B.S.	326817.	16.9	0.030	0.327	6.9734	1.5	0.010	46866.38	0.020
PERSON. & COMM. SER.	52370.	2.7	0.050	0.896	42.8636	9.3	0.045	1221.79	0.005
GOVERNMENT SERVICES	489217.	25.4	0.020	0.746	62.9629	13.7	0.015	7769.92	0.005
Total	1929451.	100.0	0.034	0.737	458.7158	100.0	0.025	4206.20	0.009

222

Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Employment by Occupation

1993

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0501	0.0627	0.0125	0.0501	0.0752	0.1128	0.1128	0.1128	0.8145	39.9970	83.9034	125.3038
FISHING	0.0065	0.0082	0.0016	0.0065	0.0098	0.0131	0.0147	0.0147	0.1062	5.2170	10.9457	16.3441
MINING & QUARRYING	0.1019	0.0815	0.0216	0.1139	0.0196	0.1621	0.2722	0.1350	0.3128	0.3043	0.2778	1.8027
MANUFACTURING	0.0910	0.5175	0.0031	0.0644	0.0256	0.4919	0.8539	0.5420	2.2898	4.6992	0.6484	10.2267
CONSTRUCTION	2.8649	1.6465	0.1317	1.2952	0.0878	1.6904	10.6912	0.1537	33.3579	56.0136	1.9331	109.7660
TRADE(WHOLE&RETAIL)	0.8987	2.8505	0.0882	0.9704	0.3749	7.5370	5.3812	18.1118	4.9511	10.9112	3.0600	55.1350
HOTELS & RESTAURANTS	0.0178	0.1711	0.0024	0.0250	0.1046	0.5264	0.1094	0.8080	6.7538	1.5898	1.7740	11.8823
TRANSPORT & COMMUN.	0.0835	0.4358	0.1870	0.1128	0.2844	1.1932	0.6630	0.1499	0.6677	10.1248	1.5533	15.4553
FINANCE,R.E. & B.S.	1.2880	1.4072	0.1206	0.4742	0.0167	1.8124	0.3954	0.1534	0.2462	0.7650	0.2943	6.9734
PERSON. & COMM. SER.	0.4501	0.3515	0.1372	0.2915	0.4158	0.2015	0.9644	1.6888	21.2604	13.2491	3.8534	42.8636
GOVERNMENT SERVICES	1.8889	4.2185	1.2593	7.2407	10.0741	3.4000	3.9667	0.3778	4.7222	10.4518	15.3630	62.9629
Total	7.7413	11.7509	1.9652	10.6448	11.4885	17.1405	23.4250	22.2480	75.4825	153.3229	123.5063	458.7159

Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Output, Employment, and Productivity

1994

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	77637.	3.9	0.020	0.495	126.5444	26.9	0.010	613.52	0.010
FISHING	54102.	2.7	0.040	0.490	16.6646	3.5	0.020	3246.50	0.020
MINING & QUARRYING	15088.	0.8	0.030	0.660	1.8384	0.4	0.020	8206.67	0.010
MANUFACTURING	256930.	12.9	0.070	0.555	10.6239	2.3	0.039	24184.29	0.030
CONSTRUCTION	181718.	9.1	0.050	0.896	114.6809	24.4	0.045	1584.55	0.005
TRADE(WHOLE&RETAIL)	346094.	17.3	0.030	0.829	56.5065	12.0	0.025	6124.85	0.005
HOTELS & RESTAURANTS	18705.	0.9	0.020	0.746	12.0595	2.6	0.015	1551.09	0.005
TRANSPORT & COMMUN.	155245.	7.8	0.030	0.660	15.7614	3.4	0.020	9849.73	0.010
FINANCE,R.E. & B.S.	336622.	16.9	0.030	0.327	7.0417	1.5	0.010	47803.70	0.020
PERSON. & COMM. SER.	54989.	2.8	0.050	0.896	44.7829	9.5	0.045	1227.90	0.005
GOVERNMENT SERVICES	499001.	25.0	0.020	0.746	63.9027	13.6	0.015	7808.77	0.005
Total	1996131.	100.0	0.035	0.737	470.4069	100.0	0.025	4243.41	0.009

224

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Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Employment by Occupation

1994

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0506	0.0633	0.0127	0.0506	0.0759	0.1139	0.1139	0.1139	0.8225	40.3930	84.7341	126.5444
FISHING	0.0067	0.0083	0.0017	0.0067	0.0100	0.0133	0.0150	0.0150	0.1083	5.3193	11.1603	16.6646
MINING & QUARRYING	0.1039	0.0831	0.0221	0.1162	0.0200	0.1653	0.2776	0.1377	0.3190	0.3103	0.2833	1.8384
MANUFACTURING	0.0946	0.5376	0.0032	0.0669	0.0266	0.5110	0.8871	0.5631	2.3787	4.8817	0.6736	10.6239
CONSTRUCTION	2.9932	1.7202	0.1376	1.3532	0.0917	1.7661	11.1699	0.1606	34.8515	58.5217	1.9152	114.6809
TRADE(WHOLE&RETAIL)	0.9211	2.9214	0.0904	0.9945	0.3842	7.7244	5.5150	18.5624	5.0743	11.1826	3.1361	56.5065
HOTELS & RESTAURANTS	0.0181	0.1737	0.0024	0.0253	0.1061	0.5342	0.1111	0.8200	6.8546	1.6136	1.8005	12.0596
TRANSPORT & COMMUN.	0.0851	0.4445	0.1907	0.1151	0.2900	1.2168	0.6762	0.1529	0.6809	10.3253	1.5840	15.7614
FINANCE,R.E. & B.S.	1.3006	1.4210	0.1218	0.4788	0.0169	1.8302	0.3993	0.1549	0.2486	0.7725	0.2972	7.0417
PERSON. & COMM. SER.	0.4702	0.3672	0.1433	0.3045	0.4344	0.2105	1.0076	1.7644	22.2123	13.8424	4.0260	44.7829
GOVERNMENT SERVICES	1.9171	4.2815	1.2781	7.3488	10.2244	3.4507	4.0259	0.3834	4.7927	10.6078	15.5923	63.9027
Total	7.9610	12.0217	2.0039	10.8607	11.6804	17.5364	24.1985	22.8283	78.3434	157.7702	125.2024	470.4070

Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Output, Employment, and Productivity

1995

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	79190.	3.8	0.020	0.495	127.7973	26.5	0.010	619.65	0.010
FISHING	56266.	2.7	0.040	0.490	16.9913	3.5	0.020	3311.43	0.020
MINING & QUARRYING	15540.	0.8	0.030	0.660	1.8749	0.4	0.020	8288.74	0.010
MANUFACTURING	274916.	13.3	0.070	0.555	11.0364	2.3	0.039	24909.81	0.030
CONSTRUCTION	190804.	9.2	0.050	0.896	119.8159	24.8	0.045	1592.48	0.005
TRADE(WHOLE&RETAIL)	356477.	17.3	0.030	0.829	57.9121	12.0	0.025	6155.48	0.005
HOTELS & RESTAURANTS	19079.	0.9	0.020	0.746	12.2395	2.5	0.015	1558.84	0.005
TRANSPORT & COMMUN.	159903.	7.7	0.030	0.660	16.0735	3.3	0.020	9948.23	0.010
FINANCE,R.E. & B.S.	346720.	16.8	0.030	0.327	7.1108	1.5	0.010	48759.78	0.020
PERSON. & COMM. SER.	57738.	2.8	0.050	0.896	46.7881	9.7	0.045	1234.04	0.005
GOVERNMENT SERVICES	508981.	24.6	0.020	0.746	64.8565	13.4	0.015	7847.81	0.005
Total	2065614.	100.0	0.035	0.738	482.4963	100.0	0.026	4281.10	0.009

Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Employment by Occupation

1995

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0511	0.0639	0.0128	0.0511	0.0767	0.1150	0.1150	0.1150	0.8307	40.7929	85.5731	127.7973
FISHING	0.0068	0.0085	0.0017	0.0068	0.0102	0.0136	0.0153	0.0153	0.1104	5.4236	11.3791	16.9913
MINING & QUARRYING	0.1059	0.0847	0.0225	0.1185	0.0204	0.1685	0.2831	0.1404	0.3253	0.3165	0.2889	1.8749
MANUFACTURING	0.0982	0.5584	0.0033	0.0695	0.0276	0.5309	0.9215	0.5849	2.4711	5.0712	0.6997	11.0364
CONSTRUCTION	3.1272	1.7972	0.1438	1.4138	0.0959	1.8452	11.6701	0.1677	36.4121	61.1420	2.0009	119.8159
TRADE(WHOLE&RETAIL)	0.9440	2.9941	0.0927	1.0193	0.3938	7.9166	5.6522	19.0241	5.2005	11.4608	3.2141	57.9121
HOTELS & RESTAURANTS	0.0184	0.1762	0.0024	0.0257	0.1077	0.5422	0.1127	0.8323	6.9569	1.6376	1.8274	12.2396
TRANSPORT & COMMUN.	0.0868	0.4533	0.1945	0.1173	0.2958	1.2409	0.6896	0.1559	0.6944	10.5297	1.6154	16.0735
FINANCE,R.E. & B.S.	1.3134	1.4350	0.1230	0.4835	0.0171	1.8481	0.4032	0.1564	0.2510	0.7801	0.3001	7.1108
PERSON. & COMM. SER.	0.4913	0.3837	0.1497	0.3182	0.4538	0.2199	1.0527	1.8435	23.2069	14.4622	4.2062	46.7881
GOVERNMENT SERVICES	1.9457	4.3454	1.2971	7.4585	10.3770	3.5022	4.0860	0.3891	4.8642	10.7662	15.8250	64.8565
Total	8.1887	12.3004	2.0435	11.0822	11.8760	17.9431	25.0014	23.4248	81.3235	162.3829	126.9299	482.4964

Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Output, Employment, and Productivity

1996

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	80774.	3.8	0.020	0.495	129.0626	26.1	0.010	625.85	0.010
FISHING	58516.	2.7	0.040	0.490	17.3245	3.5	0.020	3377.65	0.020
MINING & QUARRYING	16006.	0.7	0.030	0.660	1.9120	0.4	0.020	8371.62	0.010
MANUFACTURING	294160.	13.8	0.070	0.555	11.4650	2.3	0.039	25657.11	0.030
CONSTRUCTION	200344.	9.4	0.050	0.896	125.1808	25.3	0.045	1600.44	0.005
TRADE(WHOLE&RETAIL)	367171.	17.2	0.030	0.829	59.3527	12.0	0.025	6186.25	0.005
HOTELS & RESTAURANTS	19461.	0.9	0.020	0.746	12.4222	2.5	0.015	1566.63	0.005
TRANSPORT & COMMUN.	164700.	7.7	0.030	0.660	16.3918	3.3	0.020	10047.71	0.010
FINANCE,R.E. & B.S.	357122.	16.7	0.030	0.327	7.1805	1.5	0.010	49734.97	0.020
PERSON. & COMM. SER.	60625.	2.8	0.050	0.896	48.8831	9.9	0.045	1240.21	0.005
GOVERNMENT SERVICES	519161.	24.3	0.020	0.746	65.8245	13.3	0.015	7887.05	0.005
Total	2138040.	100.0	0.035	0.739	494.9996	100.0	0.026	4319.28	0.009

Date produced:

MANPOWER PROJECTIONS 20 YEARS

Employment by Occupation

1996

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0516	0.0645	0.0129	0.0516	0.0774	0.1162	0.1162	0.1162	0.8389	41.1968	86.4203	129.0626
FISHING	0.0069	0.0087	0.0017	0.0069	0.0104	0.0139	0.0156	0.0156	0.1126	5.5300	11.6022	17.3245
MINING & QUARRYING	0.1080	0.0864	0.0229	0.1208	0.0208	0.1719	0.2887	0.1432	0.3317	0.3227	0.2946	1.9120
MANUFACTURING	0.1020	0.5801	0.0034	0.0722	0.0287	0.5515	0.9573	0.6076	2.5670	5.2682	0.7269	11.4650
CONSTRUCTION	3.2672	1.8777	0.1502	1.4771	0.1001	1.9278	12.1926	0.1753	38.0424	63.8797	2.0905	125.1808
TRADE(WHOLE&RETAIL)	0.9674	3.0685	0.0950	1.0446	0.4036	8.1135	5.7928	19.4974	5.3299	11.7459	3.2941	59.3527
HOTELS & RESTAURANTS	0.0186	0.1789	0.0025	0.0261	0.1093	0.5503	0.1144	0.8447	7.0608	1.6621	1.8546	12.4223
TRANSPORT & COMMUN.	0.0885	0.4622	0.1983	0.1197	0.3016	1.2654	0.7032	0.1590	0.7081	10.7382	1.6474	16.3918
FINANCE,R.E. & B.S.	1.3262	1.4490	0.1242	0.4883	0.0172	1.8662	0.4071	0.1580	0.2535	0.7877	0.3030	7.1805
PERSON. & COMM. SER.	0.5133	0.4008	0.1564	0.3324	0.4742	0.2298	1.0999	1.9260	24.2460	15.1098	4.3946	48.8831
GOVERNMENT SERVICES	1.9747	4.4102	1.3165	7.5698	10.5319	3.5545	4.1469	0.3949	4.9368	10.9269	16.0612	65.8245
Total	8.4247	12.5872	2.0842	11.3096	12.0753	18.3609	25.8348	24.0378	84.4278	167.1680	128.6894	494.9997

229

Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Output, Employment, and Productivity

1997

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	82389.	3.7	0.020	0.495	130.3405	25.7	0.010	632.11	0.010
FISHING	60857.	2.7	0.040	0.490	17.6642	3.5	0.020	3445.21	0.020
MINING & QUARRYING	16487.	0.7	0.030	0.660	1.9498	0.4	0.020	8455.34	0.010
MANUFACTURING	314751.	14.2	0.070	0.555	11.9103	2.3	0.039	26426.82	0.030
CONSTRUCTION	210361.	9.5	0.050	0.896	130.7859	25.7	0.045	1608.44	0.005
TRADE(WHOLE&RETAIL)	378186.	17.1	0.030	0.829	60.8292	12.0	0.025	6217.18	0.005
HOTELS & RESTAURANTS	19850.	0.9	0.020	0.746	12.6076	2.5	0.015	1574.47	0.005
TRANSPORT & COMMUN.	169641.	7.7	0.030	0.660	16.7164	3.3	0.020	10148.19	0.010
FINANCE,R.E. & B.S.	367836.	16.6	0.030	0.327	7.2509	1.4	0.010	50729.67	0.020
PERSON. & COMM. SER.	63656.	2.9	0.050	0.896	51.0719	10.1	0.045	1246.41	0.005
GOVERNMENT SERVICES	529544.	23.9	0.020	0.746	66.8069	13.2	0.015	7926.49	0.005
Total	2213558.	100.0	0.035	0.740	502.9334	100.0	0.026	4357.97	0.009

Simulation: FINS2
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Employment by Occupation

1997

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0521	0.0652	0.0130	0.0521	0.0782	0.1043	0.1173	0.1173	0.8472	41.6047	87.2890	130.3405
FISHING	0.0071	0.0088	0.0018	0.0071	0.0106	0.0141	0.0159	0.0159	0.1148	5.6384	11.8297	17.6641
MINING & QUARRYING	0.1102	0.0881	0.0234	0.1232	0.0213	0.1753	0.2944	0.1460	0.3383	0.3291	0.3005	1.9498
MANUFACTURING	0.0784	0.1956	0.0507	0.1412	0.0240	0.5001	0.7252	0.2482	4.5228	2.0815	0.6578	9.2256
CONSTRUCTION	2.8546	1.3073	0.2399	1.6672	0.1439	2.7106	14.0090	0.2519	32.1800	58.3869	6.1769	119.9282
TRADE(WHOLE&RETAIL)	1.0991	3.8550	0.1640	0.8530	0.2707	10.9826	6.3648	12.5738	16.0268	24.3765	5.4380	82.0042
HOTELS & RESTAURANTS	0.0215	0.1916	0.0007	0.0196	0.1238	0.5500	0.1264	0.2372	1.4344	1.9056	1.9062	6.5170
TRANSPORT & COMMUN.	0.1094	0.5400	0.3907	0.2466	0.2084	1.2589	0.9255	0.1389	0.9151	3.6343	8.9964	17.3641
FINANCE,R.E. & B.S.	1.2748	1.5417	0.0983	0.6033	0.0961	1.9549	0.1679	0.3092	0.3752	0.6112	0.1413	7.1740
PERSON. & COMM. SER.	0.3067	1.1378	0.2267	0.5556	0.1378	1.3689	2.7779	2.9334	6.6447	11.5116	16.8451	44.4462
GOVERNMENT SERVICES	2.0042	4.4761	1.3361	7.6828	10.6891	3.6076	4.2088	0.4008	5.0105	11.0899	16.3009	66.8069
Total	7.9180	13.4072	2.5453	11.9516	11.8038	23.2273	29.7332	17.3727	68.4098	161.1697	155.8818	503.4205

Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Output, Employment, and Productivity

1998

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	84037.	3.7	0.020	0.495	131.6310	25.2	0.010	638.43	0.010
FISHING	63291.	2.8	0.040	0.490	18.0106	3.5	0.020	3514.11	0.020
MINING & QUARRYING	16981.	0.7	0.030	0.660	1.9884	0.4	0.020	8539.89	0.010
MANUFACTURING	336783.	14.7	0.070	0.555	12.3728	2.4	0.039	27219.62	0.030
CONSTRUCTION	220880.	9.6	0.050	0.896	136.6420	26.2	0.045	1616.48	0.005
TRADE(WHOLE&RETAIL)	389532.	17.0	0.030	0.829	62.3423	12.0	0.025	6248.27	0.005
HOTELS & RESTAURANTS	20247.	0.9	0.020	0.746	12.7957	2.5	0.015	1582.34	0.005
TRANSPORT & COMMUN.	174730.	7.6	0.030	0.660	17.0474	3.3	0.020	10249.67	0.010
FINANCE,R.E. & B.S.	378871.	16.5	0.030	0.327	7.3220	1.4	0.010	51744.27	0.020
PERSON. & COMM. SER.	66839.	2.9	0.050	0.896	53.3587	10.2	0.045	1252.64	0.005
GOVERNMENT SERVICES	540135.	23.6	0.020	0.746	67.8040	13.0	0.015	7966.12	0.005
Total	2292326.	100.0	0.036	0.740	521.3148	100.0	0.026	4397.20	0.009

Simulation: FINS2
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Employment by Occupation

1998

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0527	0.0658	0.0132	0.0527	0.0790	0.1053	0.1185	0.1185	0.8556	42.0166	88.1533	131.6310
FISHING	0.0072	0.0090	0.0018	0.0072	0.0108	0.0144	0.0162	0.0162	0.1171	5.7489	12.0616	18.0105
MINING & QUARRYING	0.1123	0.0899	0.0239	0.1257	0.0217	0.1788	0.3003	0.1489	0.3450	0.3356	0.3064	1.9884
MANUFACTURING	0.0815	0.2032	0.0527	0.1466	0.0249	0.5195	0.7534	0.2578	4.6985	2.1623	0.6834	9.5839
CONSTRUCTION	2.9824	1.3659	0.2506	1.7418	0.1504	2.8320	14.6363	0.2632	33.6208	61.0012	6.4535	125.2981
TRADE(WHOLE&RETAIL)	1.1264	3.9509	0.1681	0.8742	0.2774	11.2558	6.5231	12.8865	16.4255	24.9829	5.5732	84.0441
HOTELS & RESTAURANTS	0.0218	0.1945	0.0007	0.0198	0.1257	0.5582	0.1283	0.2408	1.4558	1.9340	1.[illegible]947	6.6142
TRANSPORT & COMMUN.	0.1116	0.5507	0.3984	0.2515	0.2125	1.2838	0.9438	0.1417	0.9332	3.7063	9.1745	17.7080
FINANCE,R.E. & B.S.	1.2873	1.5568	0.0992	0.6092	0.0971	1.9741	0.1695	0.3122	0.3789	0.6172	0.1427	7.2443
PERSON. & COMM. SER.	0.3204	1.1888	0.2368	0.5805	0.1440	1.4302	2.9023	3.0648	6.9422	12.0270	17.5994	46.4363
GOVERNMENT SERVICES	2.0341	4.5429	1.3561	7.7975	10.8486	3.6614	4.2717	0.4068	5.0853	11.2555	16.5442	67.8040
Total	8.1377	13.7183	2.6015	12.2067	11.9920	23.8135	30.7633	17.8574	70.8579	165.7876	158.6269	516.3628

Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Output, Employment, and Productivity

1999

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Output Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	85718.	3.6	0.020	0.495	132.9342	24.8	0.010	644.81	0.010
FISHING	65823.	2.8	0.040	0.490	18.3637	3.4	0.020	3584.39	0.020
MINING & QUARRYING	17491.	0.7	0.030	0.660	2.0278	0.4	0.020	8625.29	0.010
MANUFACTURING	360358.	15.2	0.070	0.555	12.8533	2.4	0.039	28036.21	0.030
CONSTRUCTION	231923.	9.8	0.050	0.896	142.7603	26.7	0.045	1624.57	0.005
TRADE(WHOLE&RETAIL)	401218.	16.9	0.030	0.829	63.8931	11.9	0.025	6279.51	0.005
HOTELS & RESTAURANTS	20652.	0.9	0.020	0.746	12.9867	2.4	0.015	1590.25	0.005
TRANSPORT & COMMUN.	179972.	7.6	0.030	0.660	17.3849	3.2	0.020	10352.16	0.010
FINANCE,R.E. & B.S.	390237.	16.4	0.030	0.327	7.3938	1.4	0.010	52779.15	0.020
PERSON. & COMM. SER.	70181.	3.0	0.050	0.896	55.7479	10.4	0.045	1258.90	0.005
GOVERNMENT SERVICES	550938.	23.2	0.020	0.746	68.8160	12.9	0.015	8005.95	0.005
Total	2374510.	100.0	0.036	0.741	535.1617	100.0	0.027	4437.00	0.009

Simulation: FINS2
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Employment by Occupation

1999

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0532	0.0665	0.0133	0.0532	0.0798	0.1063	0.1196	0.1196	0.8641	42.4326	89.0261	132.9343
FISHING	0.0073	0.0092	0.0018	0.0073	0.0110	0.0147	0.0165	0.0165	0.1194	5.8617	12.2981	18.3636
MINING & QUARRYING	0.1146	0.0917	0.0243	0.1282	0.0221	0.1823	0.3062	0.1519	0.3518	0.3423	0.3125	2.0278
MANUFACTURING	0.0846	0.2111	0.0548	0.1523	0.0259	0.5397	0.7826	0.2678	4.8809	2.2463	0.7099	9.9560
CONSTRUCTION	3.1159	1.4270	0.2618	1.8198	0.1571	2.9588	15.2916	0.2749	35.1263	63.7326	6.7425	130.9085
TRADE(WHOLE&RETAIL)	1.1544	4.0491	0.1723	0.8960	0.2843	11.5357	6.6854	13.2071	16.8341	25.6044	5.7119	86.1347
HOTELS & RESTAURANTS	0.0222	0.1974	0.0007	0.0201	0.1275	0.5666	0.1302	0.2444	1.4775	1.9629	1.9635	6.7130
TRANSPORT & COMMUN.	0.1138	0.5616	0.4063	0.2564	0.2167	1.3093	0.9625	0.1445	0.9517	3.7797	9.3562	18.0586
FINANCE,R.E. & B.S.	1.2999	1.5721	0.1002	0.6152	0.0980	1.9934	0.1712	0.3153	0.3826	0.6233	0.1441	7.3153
PERSON. & COMM. SER.	0.3348	1.2420	0.2474	0.6064	0.1504	1.4943	3.0322	3.2020	7.2531	12.5655	18.3874	48.5156
GOVERNMENT SERVICES	2.0645	4.6107	1.3763	7.9138	11.0106	3.7161	4.3354	0.4129	5.1612	11.4235	16.7911	68.8160
Total	8.3652	14.0383	2.6593	12.4689	12.1834	24.4172	31.8336	18.3570	73.4026	170.5747	161.4433	529.7434

Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Output, Employment, and Productivity

2000

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	87432.	3.6	0.020	0.495	134.2504	24.4	0.010	651.26	0.010
FISHING	68456.	2.8	0.040	0.490	18.7238	3.4	0.020	3656.08	0.020
MINING & QUARRYING	18015.	0.7	0.030	0.660	2.0680	0.4	0.020	8711.54	0.010
MANUFACTURING	385583.	15.7	0.070	0.555	13.3525	2.4	0.039	28877.30	0.030
CONSTRUCTION	243520.	9.9	0.050	0.896	149.1525	27.1	0.045	1632.69	0.005
TRADE(WHOLE&RETAIL)	413254.	16.8	0.030	0.829	65.4825	11.9	0.025	6310.91	0.005
HOTELS & RESTAURANTS	21065.	0.9	0.020	0.746	13.1805	2.4	0.015	1598.20	0.005
TRANSPORT & COMMUN.	185371.	7.5	0.030	0.660	17.7292	3.2	0.020	10455.69	0.010
FINANCE,R.E. & B.S.	401944.	16.3	0.030	0.327	7.4663	1.4	0.010	53834.73	0.020
PERSON. & COMM. SER.	73690.	3.0	0.050	0.896	58.2440	10.6	0.045	1265.20	0.005
GOVERNMENT SERVICES	561956.	22.8	0.020	0.746	69.8431	12.7	0.015	8045.98	0.005
Total	2460287.	100.0	0.036	0.741	549.4929	100.0	0.027	4477.38	0.009

Simulation: FINS2
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Employment by Occupation

2000

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0537	0.0671	0.0134	0.0537	0.0806	0.1074	0.1208	0.1208	0.8726	42.8527	89.9075	134.2505
FISHING	0.0075	0.0094	0.0019	0.0075	0.0112	0.0150	0.0169	0.0169	0.1217	5.9766	12.5393	18.7237
MINING & QUARRYING	0.1168	0.0935	0.0248	0.1307	0.0225	0.1859	0.3123	0.1549	0.3588	0.3491	0.3187	2.0680
MANUFACTURING	0.0879	0.2193	0.0569	0.1583	0.0269	0.5606	0.8130	0.2782	5.0705	2.3335	0.7375	10.3427
CONSTRUCTION	3.2555	1.4909	0.2736	1.9013	0.1641	3.0913	15.9763	0.2872	36.6991	66.5863	7.0444	136.7700
TRADE(WHOLE&RETAIL)	1.1832	4.1499	0.1766	0.9183	0.2914	11.8227	6.8517	13.5356	17.2528	26.2413	5.8540	88.2774
HOTELS & RESTAURANTS	0.0225	0.2003	0.0007	0.0204	0.1294	0.5750	0.1322	0.2480	1.4996	1.9922	1.9928	6.8132
TRANSPORT & COMMUN.	0.1160	0.5727	0.4144	0.2615	0.2210	1.3352	0.9816	0.1473	0.9705	3.8545	9.5414	18.4162
FINANCE,R.E. & B.S.	1.3127	1.5875	0.1012	0.6212	0.0990	2.0130	0.1729	0.3184	0.3863	0.6294	0.1455	7.3870
PERSON. & COMM. SER.	0.3497	1.2976	0.2585	0.6336	0.1571	1.5612	3.1680	3.3454	7.5778	13.1282	19.2107	50.6879
GOVERNMENT SERVICES	2.0953	4.6795	1.3969	8.0320	11.1749	3.7715	4.4001	0.4191	5.2382	11.5940	17.0417	69.8431
Total	8.6008	14.3677	2.7188	12.7385	12.3782	25.0388	32.9457	18.8719	76.0481	175.5377	164.3335	543.5796

Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Output, Employment, and Productivity

2001

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	89181.	3.5	0.020	0.495	135.5796	24.0	0.010	657.77	0.010
FISHING	71194.	2.8	0.040	0.490	19.0909	3.4	0.020	3729.20	0.020
MINING & QUARRYING	18556.	0.7	0.030	0.660	2.1089	0.4	0.020	8798.66	0.010
MANUFACTURING	412574.	16.2	0.070	0.555	13.8710	2.5	0.039	29743.62	0.030
CONSTRUCTION	255696.	10.0	0.050	0.896	155.8309	27.6	0.045	1640.85	0.005
TRADE(WHOLE&RETAIL)	425652.	16.7	0.030	0.829	67.1114	11.9	0.025	6342.46	0.005
HOTELS & RESTAURANTS	21486.	0.8	0.020	0.746	13.3773	2.4	0.015	1606.19	0.005
TRANSPORT & COMMUN.	190932.	7.5	0.030	0.660	18.0803	3.2	0.020	10560.24	0.010
FINANCE,R.E. & B.S.	414002.	16.2	0.030	0.327	7.5395	1.3	0.010	54911.43	0.020
PERSON. & COMM. SER.	77375.	3.0	0.050	0.896	60.8520	10.8	0.045	1271.53	0.005
GOVERNMENT SERVICES	573196.	22.5	0.020	0.746	70.8856	12.6	0.015	8086.21	0.005
Total	2549843.	100.0	0.036	0.742	564.3274	100.0	0.027	4518.38	0.009

Simulation: FINS2
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Employment by Occupation

2001

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0542	0.0678	0.0136	0.0542	0.0813	0.1085	0.1220	0.1220	0.8813	43.2770	90.7977	135.5797
FISHING	0.0076	0.0095	0.0019	0.0076	0.0115	0.0153	0.0172	0.0172	0.1241	6.0938	12.7851	19.0908
MINING & QUARRYING	0.1192	0.0953	0.0253	0.1333	0.0230	0.1896	0.3184	0.1580	0.3659	0.3560	0.3250	2.1089
MANUFACTURING	0.0913	0.2278	0.0591	0.1644	0.0279	0.5824	0.8446	0.2891	5.2674	2.4242	0.7661	10.7443
CONSTRUCTION	3.4012	1.5577	0.2858	1.9864	0.1715	3.2297	16.6917	0.3001	38.3423	69.5678	7.3598	142.8941
TRADE(WHOLE&RETAIL)	1.2126	4.2531	0.1810	0.9411	0.2986	12.1168	7.0221	13.8723	17.6820	26.8940	5.9996	90.4733
HOTELS & RESTAURANTS	0.0228	0.2033	0.0007	0.0207	0.1314	0.5836	0.1341	0.2517	1.5220	2.0219	2.0226	6.9148
TRANSPORT & COMMUN.	0.1183	0.5841	0.4226	0.2667	0.2254	1.3616	1.0010	0.1502	0.9898	3.9308	9.7304	18.7809
FINANCE,R.E. & B.S.	1.3255	1.6030	0.1022	0.6273	0.1000	2.0327	0.1746	0.3215	0.3901	0.6355	0.1470	7.4595
PERSON. & COMM. SER.	0.3654	1.3557	0.2701	0.6620	0.1642	1.6311	3.3098	3.4952	7.9171	13.7160	20.0709	52.9575
GOVERNMENT SERVICES	2.1266	4.7493	1.4177	8.1518	11.3417	3.8278	4.4658	0.4253	5.3164	11.7670	17.2961	70.8855
Total	8.8448	14.7067	2.7799	13.0157	12.5764	25.6791	34.1014	19.4026	78.7984	180.6841	167.3002	557.8894

Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Output, Employment, and Productivity

2002

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	90964.	3.4	0.020	0.495	136.9220	23.6	0.010	664.35	0.010
FISHING	74042.	2.8	0.040	0.490	19.4652	3.4	0.020	3803.79	0.020
MINING & QUARRYING	19112.	0.7	0.030	0.660	2.1507	0.4	0.020	8886.65	0.010
MANUFACTURING	441454.	16.7	0.070	0.555	14.4097	2.5	0.039	30635.92	0.030
CONSTRUCTION	268480.	10.2	0.050	0.896	162.8085	28.1	0.045	1649.06	0.005
TRADE(WHOLE&RETAIL)	438421.	16.6	0.030	0.829	68.7809	11.9	0.025	6374.18	0.005
HOTELS & RESTAURANTS	21916.	0.8	0.020	0.746	13.5769	2.3	0.015	1614.23	0.005
TRANSPORT & COMMUN.	196660.	7.4	0.030	0.660	18.4383	3.2	0.020	10665.84	0.010
FINANCE,R.E. & B.S.	426422.	16.1	0.030	0.327	7.6134	1.3	0.010	56009.65	0.020
PERSON. & COMM. SER.	81244.	3.1	0.050	0.896	63.5767	11.0	0.045	1277.88	0.005
GOVERNMENT SERVICES	584659.	22.1	0.020	0.746	71.9436	12.4	0.015	8126.64	0.005
Total	2643376.	100.0	0.037	0.742	579.6858	100.0	0.027	4560.02	0.009

Simulation: FINS2
Date produced.

MANPOWER PROJECTIONS 20 YEARS

Employment by Occupation

2002

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0548	0.0685	0.0137	0.0548	0.0822	0.1095	0.1232	0.1232	0.8900	43.7055	91.6967	136.9220
FISHING	0.0078	0.0097	0.0019	0.0078	0.0117	0.0156	0.0175	0.0175	0.1265	6.2133	13.0358	19.4652
MINING & QUARRYING	0.1215	0.0972	0.0258	0.1359	0.0234	0.1933	0.3248	0.1611	0.3731	0.3630	0.3314	2.1507
MANUFACTURING	0.0949	0.2366	0.0614	0.1708	0.0290	0.6050	0.8774	0.3003	5.4720	2.5183	0.7959	11.1616
CONSTRUCTION	3.5535	1.6274	0.2986	2.0754	0.1792	3.3743	17.4391	0.3135	40.0591	72.6828	7.6893	149.2923
TRADE(WHOLE&RETAIL)	1.2427	4.3589	0.1855	0.9645	0.3061	12.4182	7.1968	14.2174	18.1219	27.5631	6.1488	92.7239
HOTELS & RESTAURANTS	0.0232	0.2063	0.0007	0.0211	0.1333	0.5923	0.1362	0.2555	1.5447	2.0521	2.0528	7.0181
TRANSPORT & COMMUN.	0.1207	0.5957	0.4309	0.2720	0.2298	1.3886	1.0208	0.1532	1.0094	4.0087	9.9231	19.1528
FINANCE,R.E. & B.S.	1.3385	1.6188	0.1032	0.6335	0.1009	2.0526	0.1763	0.3247	0.3940	0.6418	0.1484	7.5326
PERSON. & COMM. SER.	0.3818	1.4164	0.2822	0.6916	0.1715	1.7041	3.4580	3.6517	8.2716	14.3301	20.9696	55.3287
GOVERNMENT SERVICES	2.1583	4.8202	1.4389	8.2735	11.5110	3.8850	4.5324	0.4317	5.3958	11.9426	17.5542	71.9435
Total	9.0976	15.0558	2.8428	13.3008	12.7781	26.3386	35.3025	19.9498	81.6580	186.0212	170.3460	572.6913

Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Output, Employment, and Productivity

2003

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	92784.	3.4	0.020	0.495	138.2777	23.2	0.010	671.00	0.010
FISHING	77003.	2.8	0.040	0.490	19.8469	3.3	0.020	3879.86	0.020
MINING & QUARRYING	19686.	0.7	0.030	0.660	2.1933	0.4	0.020	8975.51	0.010
MANUFACTURING	472356.	17.2	0.070	0.555	14.9693	2.5	0.039	31555.00	0.030
CONSTRUCTION	281904.	10.3	0.050	0.896	170.0984	28.6	0.045	1657.30	0.005
TRADE(WHOLE&RETAIL)	451574.	16.5	0.030	0.829	70.4918	11.8	0.025	6406.05	0.005
HOTELS & RESTAURANTS	22355.	0.8	0.020	0.746	13.7796	2.3	0.015	1622.30	0.005
TRANSPORT & COMMUN.	202560.	7.4	0.030	0.660	18.8034	3.2	0.020	10772.50	0.010
FINANCE,R.E. & B.S.	439215.	16.0	0.030	0.327	7.6880	1.3	0.010	57129.84	0.020
PERSON. & COMM. SER.	85306.	3.1	0.050	0.896	66.4234	11.2	0.045	1284.27	0.005
GOVERNMENT SERVICES	596353.	21.8	0.020	0.746	73.0173	12.3	0.015	8167.27	0.005
Total	2741095.	100.0	0.037	0.742	595.5891	100.0	0.027	4602.33	0.009

Simulation: FINS2
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Employment by Occupation

2003

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0553	0.0691	0.0138	0.0553	0.0830	0.1106	0.1244	0.1244	0.8988	44.1382	92.6046	138.2777
FISHING	0.0079	0.0099	0.0020	0.0079	0.0119	0.0159	0.0179	0.0179	0.1290	6.3351	13.2914	19.8468
MINING & QUARRYING	0.1239	0.0991	0.0263	0.1386	0.0239	0.1972	0.3312	0.1643	0.3805	0.3702	0.3380	2.1933
MANUFACTURING	0.0986	0.2458	0.0638	0.1774	0.0302	0.6285	0.9115	0.3119	5.6845	2.6161	0.8268	11.5951
CONSTRUCTION	3.7126	1.7003	0.3120	2.1683	0.1872	3.5254	18.2199	0.3276	41.8528	75.9372	8.0336	155.9770
TRADE(WHOLE&RETAIL)	1.2737	4.4673	0.1901	0.9885	0.3137	12.7271	7.3758	14.5711	18.5727	28.2487	6.3018	95.0304
HOTELS & RESTAURANTS	0.0235	0.2094	0.0007	0.0214	0.1353	0.6012	0.1382	0.2593	1.5677	2.0827	2.0834	7.1228
TRANSPORT & COMMUN.	0.1231	0.6074	0.4395	0.2774	0.2344	1.4161	1.0411	0.1563	1.0293	4.0881	10.1196	19.5321
FINANCE,R.E. & B.S.	1.3517	1.6346	0.1042	0.6397	0.1019	2.0728	0.1780	0.3278	0.3978	0.6481	0.1498	7.6064
PERSON. & COMM. SER.	0.3989	1.4798	0.2948	0.7226	0.1792	1.7804	3.6129	3.8152	8.6420	14.9718	21.9085	57.8061
GOVERNMENT SERVICES	2.1905	4.8922	1.4603	8.3970	11.6828	3.9429	4.6001	0.4381	5.4763	12.1209	17.8162	73.0173
Total	9.3596	15.4152	2.9075	13.5941	12.9834	27.0181	36.5509	20.5139	84.6315	191.5571	173.4738	588.0051

Simulation: FINS
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Output, Employment, and Productivity

2004

Sector	Output Amount thousands	Output Share %	Output Growth Rate	Employment Elasticity	Employment Amount thousands	Employment Share %	Employment Growth Rate	Productivity Amount thousands	Productivity Growth Rate
AGRICULT.&LIVESTOCK	94639.	3.3	0.020	0.495	139.6467	22.8	0.010	677.71	0.010
FISHING	80083.	2.8	0.040	0.490	20.2361	3.3	0.020	3957.46	0.020
MINING & QUARRYING	20276.	0.7	0.030	0.660	2.2367	0.4	0.020	9065.27	0.010
MANUFACTURING	505421.	17.8	0.070	0.555	15.5506	2.5	0.039	32501.65	0.030
CONSTRUCTION	296000.	10.4	0.050	0.896	177.7147	29.0	0.045	1665.59	0.005
TRADE(WHOLE&RETAIL)	465121.	16.4	0.030	0.829	72.2454	11.8	0.025	6438.08	0.005
HOTELS & RESTAURANTS	22802.	0.8	0.020	0.746	13.9852	2.3	0.015	1630.41	0.005
TRANSPORT & COMMUN.	208637.	7.3	0.030	0.660	19.1758	3.1	0.020	10880.23	0.010
FINANCE,R.E. & B.S.	452391.	15.9	0.030	0.327	7.7634	1.3	0.010	58272.44	0.020
PERSON. & COMM. SER.	89571.	3.2	0.050	0.896	69.3976	11.3	0.045	1290.69	0.005
GOVERNMENT SERVICES	608280.	21.4	0.020	0.746	74.1072	12.1	0.015	8208.11	0.005
Total	2843222.	100.0	0.037	0.742	612.0594	100.0	0.028	4645.34	0.009

Simulation: FINS2
Date produced:

MANPOWER PROJECTIONS 20 YEARS

Employment by Occupation

2004

Units are thousands

Sector	Occupation A1	A2	B1	B2	B3	C1	C2	D1	D2	E	F	Total
AGRICULT.&LIVESTOCK	0.0559	0.0698	0.0140	0.0559	0.0838	0.1117	0.1257	0.1257	0.9077	44.5753	93.5215	139.6468
FISHING	0.0081	0.0101	0.0020	0.0081	0.0121	0.0162	0.0182	0.0182	0.1315	6.4593	13.5520	20.2360
MINING & QUARRYING	0.1264	0.1011	0.0268	0.1414	0.0244	0.2011	0.3377	0.1675	0.3881	0.3776	0.3447	2.2367
MANUFACTURING	0.1024	0.2554	0.0663	0.1843	0.0313	0.6529	0.9469	0.3241	5.9052	2.7177	0.8589	12.0454
CONSTRUCTION	3.8789	1.7765	0.3260	2.2654	0.1956	3.6833	19.0358	0.3423	43.7268	79.3374	8.3933	162.9611
TRADE(WHOLE&RETAIL)	1.3053	4.5785	0.1948	1.0131	0.3215	13.0437	7.5593	14.9335	19.0347	28.9514	6.4585	97.3944
HOTELS & RESTAURANTS	0.0239	0.2125	0.0007	0.0217	0.1374	0.6101	0.1402	0.2631	1.5911	2.1138	2.1145	7.2291
TRANSPORT & COMMUN.	0.1255	0.6195	0.4482	0.2828	0.2390	1.4441	1.0617	0.1594	1.0497	4.1690	10.3199	19.9188
FINANCE,R.E. & B.S.	1.3649	1.6506	0.1052	0.6460	0.1029	2.0931	0.1797	0.3311	0.4017	0.6544	0.1513	7.6810
PERSON. & COMM. SER.	0.4167	1.5461	0.3080	0.7549	0.1872	1.8601	3.7747	3.9860	9.0290	15.6422	22.8895	60.3945
GOVERNMENT SERVICES	2.2232	4.9652	1.4821	8.5223	11.8571	4.0018	4.6687	0.4446	5.5580	12.3018	18.0821	74.1071
Total	9.6311	15.7853	2.9741	13.8959	13.1923	27.7182	37.8486	21.0955	87.7236	197.2998	176.6864	603.8508

TABLES OUT OF TEXT

NATIONALITIES, SEX AND GROUPS OF GRADES AS ON 31ST DECEMBER 1984

Sl. No.	Group of Grades / Ministries/Organizations	Private Contracts				Group I				Group II				Group III				Total Omanis		Total Expatriates		Grand Total
		Omanis		Expatriates		Omanis		Expatriates		Omanis		Expatriates		Omanis		Expatriates						
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
1.	Ministry of Diwan Affairs	-	-	8	-	32	1	16	-	186	6	24	2	147	1	30	-	365	8	78	2	453
2.	Petroleum and Minerals	-	-	17	-	17	1	9	-	108	20	21	4	67	-	6	-	192	21	53	4	270
3.	Health	9	4	68	27	34	6	129	36	1099	272	1253	1815	2121	706	176	27	3263	988	1626	1905	7782
4.	Post, Telegraph & Telephones	-	1	3	-	17	1	3	1	320	21	43	7	169	-	28	-	506	23	77	8	614
5.	Communications	-	-	26	-	47	-	18	-	1361	10	565	25	1147	5	508	-	2555	15	1117	25	3712
6.	Interior	-	-	1	-	49	-	2	-	442	-	8	1	1304	2	72	-	1795	2	83	1	1881
7.	Social Affairs & Labour	1	1	20	1	20	1	52	-	669	35	410	16	524	7	130	-	1214	44	612	17	1887
8.	Justice, Awqaf & Islamic Affairs	-	-	1	-	32	-	-	-	601	-	75	-	978	30	62	-	1611	30	138	-	1779
9.	National Heritage & Culture	-	-	2	-	16	1	-	-	138	13	24	4	97	-	1	-	251	14	27	4	296
10.	Education & Youth Affairs	2	-	18	3	104	66	45	15	1592	682	5361	3021	2559	419	485	-	4257	1167	5909	3039	14372
11.	Commerce & Industry	1	-	7	-	22	7	8	-	207	15	70	9	79	1	21	-	309	23	106	9	447
12.	Electricity & Water	-	-	15	-	23	-	16	-	544	8	370	9	910	28	274	1	1477	36	675	10	2198
13.	Agriculture & Fisheries	-	-	13	-	41	-	41	1	777	6	383	32	1158	81	192	-	1976	87	634	33	2730
14.	Land Affairs & Municipalities	-	-	22	-	22	-	31	1	692	20	291	23	3986	35	651	1	4700	55	995	25	5775
15.	Foreign Affairs	-	-	-	-	76	1	2	-	232	4	7	1	89	-	5	-	397	5	14	1	417
16.	Information	-	-	50	-	11	1	35	2	626	54	67	27	273	1	62	1	910	56	214	30	1210
17.	Environment	-	-	1	-	1	-	-	-	4	1	-	1	5	-	1	-	10	1	2	1	14
18.	Office of Minister of State and Wali of Dhofar	-	-	6	-	33	-	12	-	844	-	345	4	1895	12	1064	2	2772	12	1427	6	4217
19.	Development Council	-	-	2	-	9	1	2	-	48	5	8	8	26	-	3	-	83	6	15	8	112
20.	Directorate General of Finance	-	-	20	-	17	-	13	-	230	26	49	9	51	-	11	-	298	26	93	9	426

Sl. No.	Group of Grades / Ministries/Organizations	Private Contracts				Group I				Group II				Group III				Total Omanis		Total Expatriates		Grand Total
		Omanis		Expat-riates		Omanis		Expat-riates		Omanis		Expat-riates		Omanis		Expat-riates						
		Male	Fe-male	Male	Fe-male	Male	Fe-male	Male	Fe-male	Male	Fe-male	Male	Fe-male	Male	Fe-male	Male	Fe-male	Male	Fe-male	Male	Fe-male	
21.	Diwan of Personnel Affairs	-	-	1	-	9	1	2	-	66	12	13	6	25	-	5	-	100	13	21	6	140
22.	Musandam Development Committee	-	-	-	-	-	-	4	-	49	1	137	1	334	-	102	-	383	1	243	1	628
23.	Environment Production Council	-	-	9	-	2	1	-	-	23	3	6	4	10	-	1	-	35	4	16	4	59
24.	Office of Deputy Prime Minister for Legal Affairs	-	-	4	-	3	-	2	-	15	1	2	3	10	1	6	-	28	2	14	3	47
25.	Public Authority for Water Resources	-	-	-	-	1	1	-	-	31	7	25	4	8	-	6	-	40	8	31	4	83
26.	Governor of Capital Office	-	-	2	-	15	-	-	-	44	4	3	4	94	-	16	-	153	4	21	4	182
27.	Authority for Settlement of Commercial Dispute	-	-	4	-	2	-	1	-	12	2	7	3	9	-	3	-	23	2	15	3	43
28.	Office of H.E.the Minister of State and H.M.'s Special Envoy.	1	-	-	-	4	1	-	-	6	1	2	3	16	-	4	-	27	2	6	3	38
29.	Tender Board	-	-	11	-	2	-	3	-	23	3	5	7	11	-	6	-	36	3	25	7	71
30.	Regional Development Committee	-	-	-	-	2	-	3	-	30	-	53	-	55	-	155	-	87	-	211	-	298
	Total	14	6	336	31	663	91	449	56	11019	1232	9627	5053	18157	1329	4086	32	29853	2658	14498	5172	52181 *
	GRAND TOTAL:	20		367		754		505		12251		14680		19486		4118		32511		19670		52181
	PERCENTAGE	0.038		0.7		1.44		0.97		23.48		28.13		37.34		7.89		62.3		37.69		100

* Excluding employees working for Ministry of Royal Court Affairs that was 9862 of which 4608 were Omanis. Employees in public sector organizations (see Table IV).

TABLE 2 : EMPLOYMENT OF NON-OMANIS IN THE PRIVATE SECTOR CLASSIFIED BY MAJOR ECONOMIC ACTIVITIES DURING 1980 TO 1984

ISCO CODE	ECONOMIC ACTIVITY	NUMBER OF LABOUR CARDS AND PERCENTAGE INCREASE OR DECREASE										% OF THE TOTAL					ANNUAL GROWTH (%)
		1980	GR(%)	1981	GR(%)	1982	GR(%)	1983	GR(%)	1984		1980	1981	1982	1983	1984	
1	Agriculture and Fishing	4655	+50.1	6988	-5.8	6583	+35.5	8921	+5	9360		3.51	4.26	3.52	3.79	3.47	21.2
2	Mining & Quarrying	2272	+18	2682	+27.5	3426	-0.8	3399	0.018	3460		1.71	1.64	1.83	1.44	1.28	11.2
3	Manufacturing	3876	108.8	8096	-0.77	8034	+18	9477	-41.35	5558		2.92	4.94	4.30	4.02	2.06	21.2
4.	Electricity, Gas and Water	723	-33.9	478	-11.5	423	-54	195	-5.1	185		0.55	0.29	0.23	0.08	0.07	-9.2
5.	Construction	33393	+45.3	48532	-4.6	46279	27.5	59022	-9.18	64441		25.11	29.60	24.77	25.05	23.91	14.75
61/62	Wholesale and Retail Trade	43693	-45.8	23692	+33.8	31703	17.2	37171	+60	59462		32.95	14.45	16.97	15.77	22.07	16.3
5/61/62	Construction and Trade Combined	26548	86	49407	34.8	66611	34.8	89793	11	99694		20.2	30.14	35.66	38.11	37.00	41.65
63	Restaurants & Hotels	1518	21.4	1843	10.5	2037	48.1	3017	14.65	2575		1.14	1.12	1.09	1.28	0.96	23.7

TABLE 2 : CONTINUED

ISCO CODE	ECONOMIC ACTIVITY	NUMBER OF LABOUR CARDS AND PERCENTAGE INCREASE OR DECREASE								% OF TOTAL					ANNUAL GROWTH (%)
		1980	GR(%)	1981	GR(%)	1982	GR(%)	1983	GR(%)	1984	1980	1981	1982	1983	1984	
7	Transport, Storage and Communications	2852	-20.8	2258	10	2483	2.5	2545	6.7	2716	2.15	1.38	1.33	1.08	1.01	-0.4
8	Financing, Insurance Real Estate and Business Services	3033	-18	2458	31.7	3272	14.7	3753	19.9	4499	2.29	1.52	1.75	1.59	1.67	12
9	Community, Social & Personal Services	2060	292.6	8088	0.6	8139	30.3	10606	-3.65	10219	1.55	4.93	4.36	4.50	3.79	80
X	More than one Activity	3678	146.0	9066	19	7345	1.8	7478	8.7	6824	2.77	5.53	3.93	3.17	2.53	30
0	Activity not stated	4317	-92.6	319	52.4	486	-44.9	268	55.6	417	3.26	0.19	0.26	0.11	0.15	-7.4
	TOTAL - All activities	132618	23.6	163934	14	186821	26	235645	14.3	269410	100.0	100.0	100.0	100.0	100.0	19.5
	LESS : Number of active labour card holders who left Oman	2023		3427		9508		4283		4405	-	-	-	-	-	-
	NET TOTAL	130595		160507		177313		231362		265005	-	-	-	-	-	-

TABLE 3 : OCCUPATIONAL DISTRIBUTION OF NON-OMANIS IN THE PRIVATE SECTOR CLASSIFIED BY MAJOR OCCUPATIONAL GROUPS DURING 1980 TO 1984

ISCO CODE	MAJOR OCCUPATIONAL GROUP	NUMBER OF LABOUR CARDS AND PERCENTAGE INCREASE OR DECREASE									% OF THE TOTAL					ANNUAL GROWTH (%)
		1980	GR(%)	1981	GR(%)	1982	GR(%)	1983	GR(%)	1984	1980	1981	1982	1983	1984	
0	(Professional, Technical and Related Workers	5435	22.2	6642	43.3	9519	23.6	11766	3.33	12158	4.1	4.1	5.1	5.0	4.5	23
1	"	3033	35	4099	11.2	4558	0.02	5063	2.9	5209	2.3	2.5	2.4	2.1	1.9	12.3
0/1	Total 0 and 1	8468		10741		14077		16829		17367	6.4	6.6	7.5	7.1	6.4	20.1
2	Administration and Managerial Workers	1259	15.5	1454	44	2097	10.25	2312	17	2704	0.9	0.9	1.1	1.0	1.0	21.7
3	Clerical & Related Workers	8865	1.4	8737	6.3	9287	18.56	11011	9.7	12080	6.7	5.3	5.0	4.7	4.5	9
4	Sales Workers	6455	39	8970	28.8	11553	35.43	15649	18.5	19286	4.9	5.5	6.2	6.6	7.2	30.4
5	Service Workers	9763	34.7	13155	17.4	15440	28.5	19838	18.75	23558	7.4	8.0	8.3	8.4	8.7	24.8
6.	Agriculture & Animal Husbandry Workers and Fishermen	6440	30.8	8421	4	8081	38.2	11167	14.3	12769	4.9	5.1	4.3	4.7	4.7	21.8

TABLE 3 CONTINUED

ISCO CODE	MAJOR OCCUPATIONAL GROUP	NUMBER OF LABOUR CARDS AND PERCENTAGE INCREASE OR DECREASE									% OF THE TOTAL					ANNUAL GROWTH (%)
		1980	GR(%)	1981	GR(%)	1982	GR(%)	1983	GR(%)	1984	1980	1981	1982	1983	1984	
7	Production & Related workers,	9549	32	12608	15.2	14521	8.1	15703	4.1	16359	7.2	7.7	7.8	6.7	6.1	14.8
8	Transport Equipment	22419	20.5	27008	8.8	29659	19.5	35451	18	41867	16.9	16.5	15.9	15.1	15.5	16.9
9	Operators and Labourers	57897	25.2	72475	12.8	81717	31.4	107359	14.4	122824	43.7	44.2	43.7	45.6	45.6	21
7/8/9	Total 7, 8, 9	89865	24.7	112091	12.3	125897	26	158513	14.2	181050	67.8	68.4	67.4	67.3	67.2	19.3
X	Not stated	1503	-75.7	365	6.6	389	-16.2	326	82.8	596	1.1	0.2	0.2	0.1	0.2	-0.6
	TOTAL 0 to X	132618	23.6	163934	14	186821	26	235645	14.3	269410	100.0	100.0	100.0	100.0	100.0	19.5
	LESS: Number of active labour card holders who left Oman	2023		3427		9508		4283		4405	-	-	-	-	-	-
	NET TOTAL	130595		160507		177313		231362		265005						

TABLE 4 : NUMBER OF LABOUR CARDS ISSUED BY THE DIRECTORATE GENERAL OF LABOUR AFFAIRS TO NON-OMANIS WORKING IN THE PRIVATE SECTOR BY MAJOR OCCUPATIONAL GROUPS

ISCO Code	Major Occupational Group	Number of Labour Cards				% of the Total			
		1985	1986	1987*	1988*	1985	1986	1987	1988
0	Professional, Technical and	13314	12424	7582	8821	4.7	4.6	3.5	3.5
1	Related workers	5051	5073	6749	7900	1.8	1.9	3.1	3.2
0/1	Total 0 and 1	18365	17497	14331	16721	6.5	6.5	6.6	6.7
2	Administration and Managerial Workers	3483	3379	3774	4294	1.2	1.3	1.7	1.7
3	Clerical and Related Workers	12449	12090	7821	8132	4.4	4.5	3.6	3.3
4	Sales Workers	21591	24989	23618	28924	7.6	9.3	10.9	11.6
5	Service Workers	25875	27618	29468	36051	9.1	10.3	13.6	14.5
6	Agriculture and Animal Husbandry Workers and Fishermen	14954	16719	16852	20711	5.3	6.3	7.8	8.3
7	Production & Related Workers	16289	16766	21421	25882	5.7	6.3	9.9	10.4
8	Transport Equipment	44294	41267	32414	35895	15.6	15.4	15.0	14.4
9	Operators and Labourers	126389	107038	66676	72260	44.4	40.0	30.8	29.0
	TOTAL 7/8/9	186972	165071	120511	134037	65.8	61.7	55.7	53.9
	Not Stated	644	182	13	-	0.2	0.1	0.006	-
	GRAND TOTAL	284333	267545	216388	248870	100.00	100.00	100.00	100.00
LESS:	Number of Active Labour Card Holders who left Oman	9349	19415	-	-	-	-	-	-
	NET TOTAL	274984	248130	-	-	-	-	-	-

* Excluding labour cards issued during the year 1987/88 whose holders left the country for Good before the end of the year.

TABLE 4 : NUMBER OF LABOUR CARDS ISSUED BY THE DIRECTORATE GENERAL OF LABOUR AFFAIRS TO NON-OMANIS WORKING IN THE PRIVATE SECTOR BY MAJOR OCCUPATIONAL GROUPS

ISCO Code	Major Occupational Group	Number of Labour Cards				% of the Total			
		1985	1986	1987*	1988*	1985	1986	1987	1988
0	Professional, Technical and	13314	12424	7582	8821	4.7	4.6	3.5	3.5
1	Related workers	5051	5073	6749	7900	1.8	1.9	3.1	3.2
0/1	Total 0 and 1	18365	17497	14331	16721	6.5	6.5	6.6	6.7
2	Administration and Managerial Workers	3483	3379	3774	4294	1.2	1.3	1.7	1.7
3	Clerical and Related Workers	12449	12090	7821	8132	4.4	4.5	3.6	3.3
4	Sales Workers	21591	24989	23618	28924	7.6	9.3	10.9	11.6
5	Service Workers	25875	27618	29468	36051	9.1	10.3	13.6	14.5
6	Agriculture and Animal Husbandry Workers and Fishermen	14954	16719	16852	20711	5.3	6.3	7.8	8.3
7	Production & Related Workers	16289	16766	21421	25882	5.7	6.3	9.9	10.4
8	Transport Equipment	44294	41267	32414	35895	15.6	15.4	15.0	14.4
9	Operators and Labourers	126389	107038	66676	72260	44.4	40.0	30.8	29.0
	TOTAL 7/8/9	186972	165071	120511	134037	65.8	61.7	55.7	53.9
	Not Stated	644	182	13	-	0.2	0.1	0.006	-
	GRAND TOTAL	284333	267545	216388	248870	100.00	100.00	100.00	100.00
LESS:	Number of Active Labour Card Holders who left Oman	9349	19415	-	-	-	-	-	-
	NET TOTAL	274984	248130	-	-	-	-	-	-

* Excluding labour cards issued during the year 1987/88 whose holders left the country for Good before the end of the year.

TABLE 5 : NON-OMANI WORKFROCE BY OCCUPATIONAL LEVEL IN THE PRIVATE SECTOR AND PERCENTAGE OF THEIR INCREASE OR DECREASE DURING THE PERIOD 1980 - 1984

OCCUPATIONAL LEVEL		NON-OMANI WORKFORCE AND PERCENTAGE OF THEIR INCREASE OR DECREASE									Annual Growth Rate (%)
		1980	GR(%)	1981	GR(%)	1982	GR(%)	1983	GR(%)	1984	
A-1	Scientific and Technical Occupations	4125	20.5	4969	20.3	5978	24.6	7450	13.4	8451	19.75
A-2	Other Professional Occupations	4180	31.3	5488	9.9	6032	28.6	7763	11	8621	20.2
B-1	Higher Level Technician Occupations	300	-28.3	215	74	374	-36.9	236	84	435	23.2
B-2	Other Technical and Sub-Professional Occupations	1014	43.8	1458	2.7	1497	57	2356	13.5	2675	29.2
B-3	Other Sub-Professional Occupations	131	-14.5	112	68.8	189	25.9	238	14.2	272	23.3
C-1	Skilled Office Occupations	4972	16.3	5783	22.8	7099	13	8025	24.2	9968	19
C-2	Skilled Manual Occupations	15006	18.1	17729	23.9	21980	17.4	25797	9.8	28318	17.3
D-1	Semi-Skilled Office Related Occupations	10309	15.5	11903	25.7	14958	20.4	18015	10.7	19936	18

TABLE 5 : CONTINUED

OCCUPATIONAL LEVEL		NON-OMANI WORKFORCE AND PERCENTAGE OF THEIR INCREASE OR DECREASE								Annual Growth Rate(%)
		1980	GR(%)	1981	GR(%)	1982	GR(%)	1983	GR(%)	1984	
D-2	Semi-Skilled Manual Occupations	9412	51	14202	2.5	14551	32.9	19340	18.4	22899	26.2
E	Un-Skilled Occupations	79660	27.6	101710	11.9	113774	28.4	146099	14.5	167239	20.6
	NOT STATED	1503	-75.7	365	6.6	389	-16.2	326	82.8	596	-0.6
	T O T A L	132618	23.6	163934	14	186821	26.1	235645	14.33	269410	19.5

TABLE 6 : NUMBER OF LABOUR CARDS ISSUED BY THE MINISTRY OF SOCIAL AFFAIRS & LABOUR TO NON-OMANIS WORKING IN THE PRIVATE SECTOR DURING 1984 CLASSIFIED BY MAJOR OCCUPATIONAL GROUPS & MONTHLY BASIC SALARY

ISCO Code	Major Occupational Groups	Number of workers: Upto 70	Monthly Salary in Rial Omani: 71-90	91-121	121-160	161-200	201-250	251-400	401-700	701-1000	More than 1000	Total No.of workers	Average salary R.O.	No.of workers for which salary not stated	Grand Total of workers
0	(Professional,														
	Technical &	93	90	496	1212	1381	1416	3182	2677	1015	319	11881	397	277	12158
1	related workers)	386	255	498	977	700	574	1178	445	101	33	5147	243	62	5209
	Total 0/1	479	345	994	2189	2081	1990	4360	3122	1116	352	17028	350	339	17367
2	Administrative and Managerial workers	2	3	39	87	112	193	817	771	392	245	2661	570	43	2704
3	Clerical and related workers	2529	2184	2389	1650	1003	808	1038	289	36	5	11931	142	149	12080
4	Sales workers	9680	3690	1767	1092	607	487	1213	439	125	46	19146	117	140	19286
5	Service workers	18981	2734	927	358	108	84	110	36	8	1	23347	66	211	23558
6	Agriculture, Animal Husbandry workers & Fishermen	11576	786	183	47	22	12	15	12	4	1	12658	58	111	12769
7	(Production &														
	Related workers	9947	2503	884	806	450	302	669	508	113	23	16205	110	154	16359
8	Transport Equipment	29629	6939	3121	1191	415	147	108	20	11	1	41582	70	285	41867
9	Operators & Labourers)	101039	13583	5495	1450	350	140	112	23	4	3	122199	62	625	122824
	Total 7/8/9	140615	23025	9500	3447	1215	589	889	551	128	27	179986	68	1064	181050
	Total (0 - 9)	183862	32767	15799	8870	5148	4163	8442	5220	1809	677	266757	97	2057	268814
	Not stated	298	81	51	36	28	9	42	27	9	2	583	136	13	596
	Grand Total	184160	32848	15850	8906	5176	4172	8484	5247	1818	679	267340	97	2070	269410*
	Percentage (%)	68.36	12.19	5.88	3.31	1.92	1.55	3.15	1.95	0.67	0.25	99.23	-	0.77	100.00

Note: Including 4405 employees who left Oman during 1984

TABLE 7 : VARIOUS ESTIMATES OF OMANI EMPLOYMENT IN THE MODERN PRIVATE SECTOR

Year	Estimates of this Note	World Bank (1978)	Development Council (Second Five Year Plan Document)	U.N. ECWA	World Bank (1981)
1972	--	20,500			
73	--	24,000			
74	26,300	25,000			
75	30,100	28,000			
76	28,700			28,000	
77[a]	27,450				
78	26,200	33,500	30,000		
79[a]	23,450				
80	20,700				36,000
81	22,700				
82	24,500				
83	26,600				
84[b]	28,890				
85[b]	31,370				

a Estimated by interpolation.

b Extrapolations using 1983 growth rate of Omani employment (8.6%)

TABLE 8 : COVERAGE OF THE AES SINCE 1974

Year	Number of Establishments			Response Rate	
	AES	CR	LC	AES/CR(%)	AES/LC(%)
1974	619	--	--	n.a.	n.a.
75	497	1,310	--	37.9	n.a.
76	855	3,517	--	24.3	n.a.
(77)	622	4,815	2,372	12.9	26.2
78	1,980	5,948	--	33.3	n.a.
80	6,004	7,963	--	75.4	n.a.
81	5,934	9,160	--	64.8	n.a.
82	6,451	10,768	10,484	59.9	61.5
83	6,543	13,360	11,930	49.0	54.8

AES Annual Employment Survey

CR Commercial Register

LC Labour Card file

TABLE 9 : COMPARISON OF EXPATRIATE EMPLOYEES RECORDED ON AES AND LC

Year	Number of Expatriates		Coverage	Correction
	AES	LC	AES/LC(%)	Factor
1974	25,210	42,000	60.0	1.59
75	30,866	65,000	47.5	2.11
76	40,690	86,987	46.8	2.14
(77)	30,714	96,745	(31.7)	(3.15)
78	43,751	102,164	42.8	2.34
80	90,437	132,618	68.2	1.47
81	110,025	163,934	67.1	1.49
82	126,972	186,821	68.0	1.47
83	151,500	235,645	64.3	1.56

TABLE 10 : ESTIMATES OF OMANI EMPLOYMENT IN THE MODERN PRIVATE SECTOR

Year	Recorded Number of Omanis on AES	Corrected Number of Omanis on AES(1)	Total Omani Employment(2)	Growth Rate %
1974	16,529	26,280	26,300	--
75	13,901	29,330	30,100	14.5
76	12,695	27,170	28,700	- 4.7
78	10,008	23,420	26,200	- 8.7[a]
80	11,982	17,620	20,700	-11.1[a]
81	12,752	19,000	22,700	9.7
82	13,815	20,310	24,500	7.9
83	14,040	21,840	26,600	8.6

(1) Applying the correction factors derived in Table 3.

(2) Includes Omanis working as taxi drivers.

a This figure is an average annual compound growth rate for the period 1978-1980.

TABLE 11 : TOTAL MODERN SECTOR EMPLOYMENT OF OMANIS

Year	Employment			Percentage of Employment (%)	
	Public Sector*	Private Sector	Total	in Public Sector	in Private Sector
1974	9,600	26,300	35,300	25	75
75	12,900	30,100	43,000	30	70
76	15,668	28,700	44,400	35	65
78	18,466	26,200	44,700	41	59
80	23,445	20,700	44,100	53	47
81	26,886	22,700	49,600	54	46
82	29,647	24,500	54,100	55	45
83	33,543	26,600	60,100	56	44
84	37,119.	28,181	65,300	57	43

* Omanis working in Police and Defense are not included. Up to 1980 employees of the Central Bank of Oman, Omantel, and P.D.O. are not included.

TABLE 12 : MAJOR GOVERNMENT AGENCIES CONCERNED WITH GOVERNANCE AND ADMINISTRATION

OF THE EDUCATION AND TRAINING SYSTEM OF OMAN

UNIT	MEMBERSHIP/ ADMINISTRATIVE STRUCTURE	FUNCTION
Development Council of the Sultanate of Oman	H.M. Sultan Qaboos, Chairman, Deputy Prime Minister of Finance and Economic Affairs, Deputy Chairman, various Ministers,includes Minister of Education	Reviews proposals for long-range national development by by sector and allocates resources to Ministries for five year development plan implementation. Coordinates resource allocation with Council of Financial Affairs.
Council for Education and Vocational Training	H.M.Sultan Qaboos, Chairman; Minister of Heritage and Culture, Vice-chairman; various ministers, including Education, Agriculture, Information, Social Affairs & Labour, Petroleum and Minerals, Commerce & Under Secretary of Finance. Adviser to H.M. for Economic Affairs, Tustice & Awquaf Affairs	Develops major policy proposals and cooidinates the efforts and activities of the various government agencies involved in education,training and manpower development.
The Civil Service Council	Minister of Sultan's Diwan Affairs, Chairman; Education, Social Affairs and Labour,Finance, Diwan of Staff Affairs.	Makes policy and reviews appointments of personal at special grades and appoints of Director Generals
The Office of the Deputy Prime Minister for Legal Affairs	Deputy Prime Minister and his Staff	Coordinates Ministerial Reorganization and legal Affairs concerned with government
Ministry of Finance and Economy	Budget Offices and Accounting Offices	Reviews annual recurrent budget proposals; approves budget and allocates funds; monitors expenditures and transactions.
Commission for Eduation, Culture and Science	An independent office with 2nd-level administrative representatives from various Ministries, Minister of Education is Chairman	Coordinates interaction of government agencies with international development agencies such as ALESCO, & UNESCO, and includes education,training manpower issues.
Council of Education	Inter council in the Ministry of Education with Director General and Directors in MOE,Minister of Education Chairman	Coordinate Education aspects with MOE. Draw short term policies and evaluate educational evaluation.
Council of Vocational Training	Inter council in MOSAL with members representative Public and Private sector at Director General level, Minister of Social Affairs & Labour Chairman	Coordinate manpower development issues,draw short term policies an Manpower development, evaluate the out put of manpower development schemes.

ALESCO : Arab Labour Educational,Social and Cultural Organization
UNESCO : United Nations Educational, Scientific, & Cultural Organization.

TABLE - 13 : Number of students enrolled and estimated outputs in Primary Education.

Academic Year	New Enrolment	Total Number of Students	Number of Completers
1986/87	41686	194520	16265
1987/88	43768	212836	19590
1988/89	45956	228462	23473
1989/90	48254	241324	26348
1990/91	50667	252878	27231
1991/92	52694	265015	28591
1992/93	54802	277248	30022
1993/94	56994	289579	31522
1994/95	59274	301963	33098
1995/96	61645	314433	34754
1996/97	64110	337010	36144
1997/98	66675	340091	37590
1998/99	69342	353694	39093
1999/2000	72115	367842	40657
2000/01	75000	382556	42284
2000/02	78000	397857	43975
2002/03	81120	413772	45734
2003/04	84365	430323	47564
2004/05	87739	44534	49466
2005/06	91249	465436	51445

TABLE - 14 : Number of students enrolled and estimated outputs in the Preparatory stage.

Year	New Enrolment	Total Number of students	Estimated Output
1986/87	16286	37669	7192
1987/88	18178	42516	8415
1988/89	21895	49020	9362
1989/90	26234	57811	10451
1990/91	29448	67369	12587
1991/92	30435	74263	15081
1992/93	31955	79029	16929
1993/94	33554	82611	17496
1994/95	35231	86741	18360
1995/96	36992	91077	19289
1996/97	38843	95632	20253
1997/98	40396	100025	21265
1998/99	42013	104309	22329
1999/2000	43952	108481	23222
2000/01	45440	112820	24152
2001/02	47259	117333	25117
2002/03	49148	122026	26121
2003/03	51115	126908	27167
2004/05	53160	126908	28253
2005/06	53160	131984	28253
2005/06	55285	137264	29384

TABLE - 15 : Number of Students enrolled and estimated output in the Secondary Stage.

Year	Number of Students Enrolled	Total Number Students	Estimated Output
1986/87	4774	12070	3090
1987/88	5716	13568	3128
1988/89	6888	15871	3554
1989/90	7440	18294	3255
1990/91	8305	20659	4979
1991/92	10003	23772	5539
1992/93	11985	28015	6184
1993/94	13453	32703	7447
1994/95	13904	36152	8923
1995/96	14599	38495	10016
1996/97	15329	40231	10351
1997/98	16095	42242	10869
1998/99	16900	44354	11412
1999/2000	17745	46572	11983
2000/01	18455	48723	12581
2001/02	19193	50816	13211
2002/03	19961	52848	13739
2003/04	20759	54962	14289
2004/05	21590	57160	14861
2005/06	22453	59446	15455

TABLE - 16 : Estimates of Student Enrolments and Output from Vocational Training Institutes.

Year	Students Enrolled		Total Number of Students		Output Estimates	
	Technical	Commercial	Technical	Commercial	Technical	Commercial
1987/88	900	450	1730	1091	241	238
1988/89	900	450	2269	1205	559	330
1989/90	900	450	2480	1280	770	405
1990/91	900	450	2480	1280	770	405
1991/92	1080	450	2660	1280	770	405
1992/93	1080	450	2822	1280	770	405
1993/94	1080	450	2976	1280	924	405
1994/95	1080	450	2976	1280	924	405
1995/96	1080	450	2976	1280	924	405
1996/97	1080	450	2976	1280	924	405
1997/98	1080	450	2976	1280	924	405
1998/99	1080	450	2976	1280	924	405
1999 / 2000	1080	450	2976	1820	924	405

Source :- MOSAL.