DEMOGRAPHIC SURVEILLANCE SYSTEM — MATLAB

VOLUME TWENTY TWO

REGISTRATION OF DEMOGRAPHIC EVENTS- 1991

SCIENTIFIC REPORT NO. 74
August 1994

INTERNATIONAL CENTRE FOR DIARRHOEAL DISEASE RESEARCH, BANGLADESH

DEMOGRAPHIC SURVEILLANCE SYSTEM - MATLAB

Volume Twenty Two

Registration of Demographic Events - 1991

International Centre for
Diarrhoeal Disease Research, Bangladesh
GPO Box 128, Dhaka-1000
Bangladesh

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ISBN 984-551-027-2

Cover design: Asem Ansari

August 1994

Scientific Report No. 74

Published by:

International Centre for Diarrhoeal Disease Research, Bangladesh
GPO Box 128, Dhaka 1000, Bangladesh
Telephone: 600171-8 (8 lines), 600271-2 (2 lines); Cable: CHOLERA DHAKA;
Telex: 675612 ICDD BJ; Fax: 880-2-883116 and 880-2-886050

Printed by Sheba Printing Press, Dhaka

PREFACE

The International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) is an autonomous, international, philanthropic, non-profit centre for research, education, training, and clinical service. The Centre is derived from the Cholera Research Laboratory (CRL). Its aims and objectives are to undertake and promote study, research, and dissemination of knowledge in diarrhoeal diseases and the directly related subjects of nutrition and fertility, with a view to developing improved health care methods and to prevent and control diarrhoeal diseases and improve public health programmes, especially in developing countries.

The ICDDR,B issues an annual report, working papers, scientific reports, special publications, monographs, theses, dissertations, an international journal on diarrhoeal diseases, and a bi-monthly newsletter which demonstrates the type of research activities currently in progress. The views expressed in these publications are those of the authors, and do not necessarily represent the views of the ICDDR,B.

ACKNOWLEDGEMENTS

From 1984 through 1989 the Demographic Surveillance System (DSS) of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) was supported by the Canadian International Development Agency (CIDA). It was supported in 1990 by the Government of the Netherlands and CIDA, and in 1991-92 by the Netherlands, UNDP, and UNFPA. The ICDDR,B is supported by countries and agencies which share its concern for the health problems of developing countries. Current donors include: the aid agencies of the Governments of Australia, Bangladesh, Belgium, Canada, China, Denmark, Germany, Japan, the Netherlands, Norway, Republic of Korea, Saudi Arabia, Sweden, Switzerland, the United Kingdom, and the United States; international organizations, including the Arab Gulf Fund, Asian Development Bank, International Atomic Energy Centre, the United Nations Children's Fund (UNICEF), the United Nations Development Programme (UNDP), the United Nations Population Fund (UNFPA), and the World Health Organization (WHO); private foundations, including the Ford Foundation, Population Council, Rockefeller Foundation and the Sasakawa Foundation; and private organizations, including American Express Bank, Bayer A.G., CARE, Helen Keller International, the Johns Hopkins University, Swiss Red Cross, and the University of California Davis.

The ICDDR,B is grateful to the British Overseas Development Administration for the generous grant which funded the completion of this report, including the provision of the services of Dr. John Blacker, who improved the content and accuracy of this report and ensured its rapid completion. Mr. Golam Mostafa and Mr. Sentu Gomes prepared the initial drafts and Dr. Karen Allen provided editorial and technical assistance.

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SUMMARY

This report presents the vital registration data for events taking place in 1991 in Matlab, Bangladesh. These data were collected by the Demographic Surveillance System of the International Centre for Diarrhoeal Disease Research, Bangladesh. The surveillance area is divided into a Maternal and Child Health and Family Planning (MCH-FP) intervention area and a Comparison area receiving government services.

In 1991 fertility resumed its long-term decline in both the MCH-FP and Comparison areas. The crude birth rate was 25.4 per thousand in the MCH-FP area and 32.7 in the Comparison area, while the total fertility rates were 3.0 and 4.3 respectively. These were the lowest figures recorded since the initiation of MCH-FP project in 1978.

In contrast infant mortality rose sharply in both areas, going up from 75.2 in 1990 to 80.0 in 1991 in the MCH-FP area, and from 87.5 to 114.9 in the Comparison area. Crude death rates also rose, from 7.6 to 8.1 and from 9.4 to 10.2 respectively. Thus with reduced birth rates and increased death rates, natural increase was reduced to the lowest levels recorded since the MCH-FP project began, except for 1984, which was also a year of exceptional mortality.

Rates of both in- and out-migration for the surveillance area as a whole continued at about their previous levels, with in-migration at 26.9 per thousand and out-migration at 41.9 per thousand, leaving a net out-migration of 15.0 per thousand. This offset the rate of natural increase, and reduced the overall rate of population growth to 0.5 percent per annum.

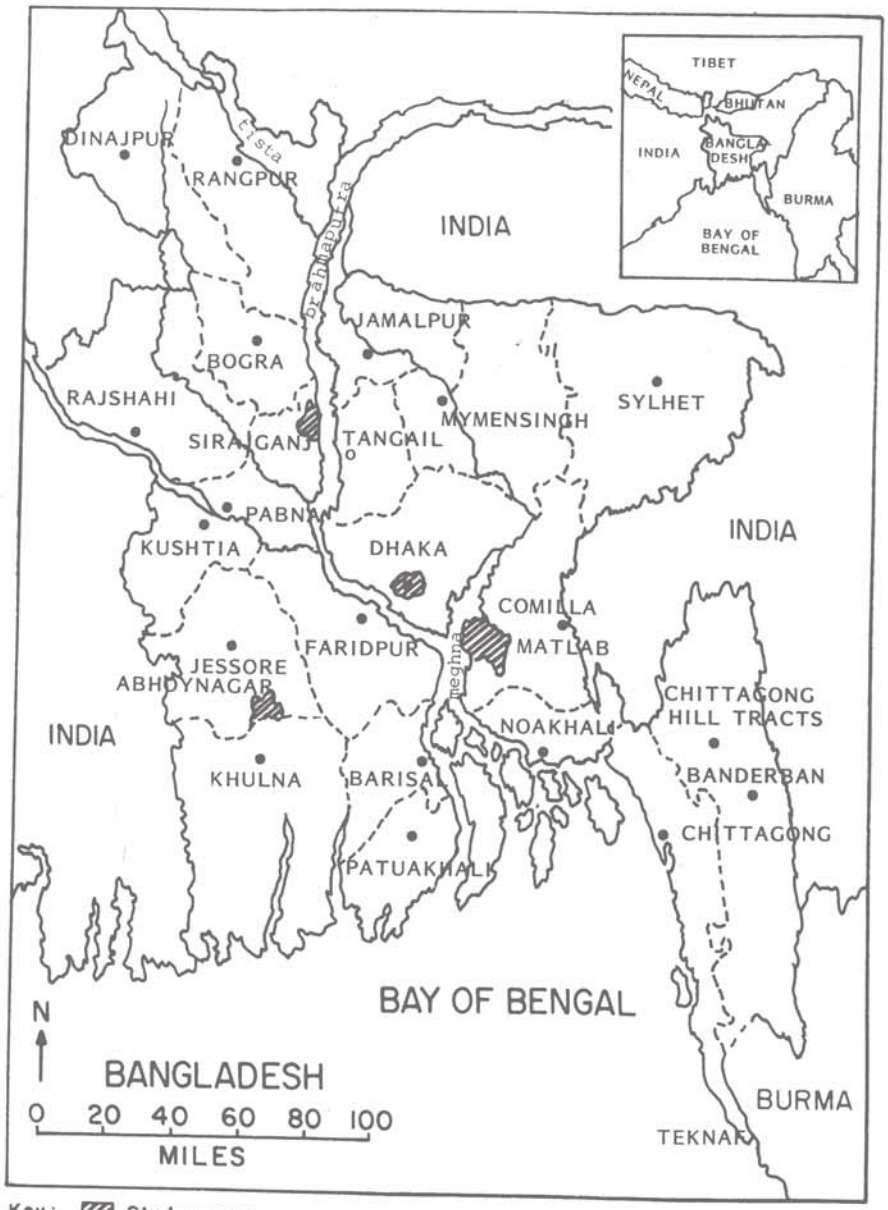
CHAPTER 1

INTRODUCTION

Since 1963 the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), formerly the Cholera Research Laboratory, has been conducting a health related research programme near the town of Matlab, in rural Bangladesh. Matlab is located about 55 kilometers southeast of the country's capital, Dhaka (Figure 1.1). The Demographic Surveillance System (DSS) is one of the components of this field programme. Since 1966 the DSS has maintained the registration of births, deaths, and migrations, in addition to carrying out occasional censuses. In 1975 the system was augmented to include marriages and divorces. Such information is gathered by Health Assistants who visit each household in their assigned areas regularly and fill out the event registration forms. A detailed description of the DSS and its operation appears in CRL Scientific Report No. 9 (March 1978). In October 1977 the surveillance area was reduced from 233 to 149 villages and a Maternal Child Health and Family Planning (MCH-FP) Programme was begun in 70 villages. The remaining 79 villages were treated as a comparison area (Figure 1.2). These changes are described in detail in the ICDDR,B Scientific Report No. 47 (May 1981).

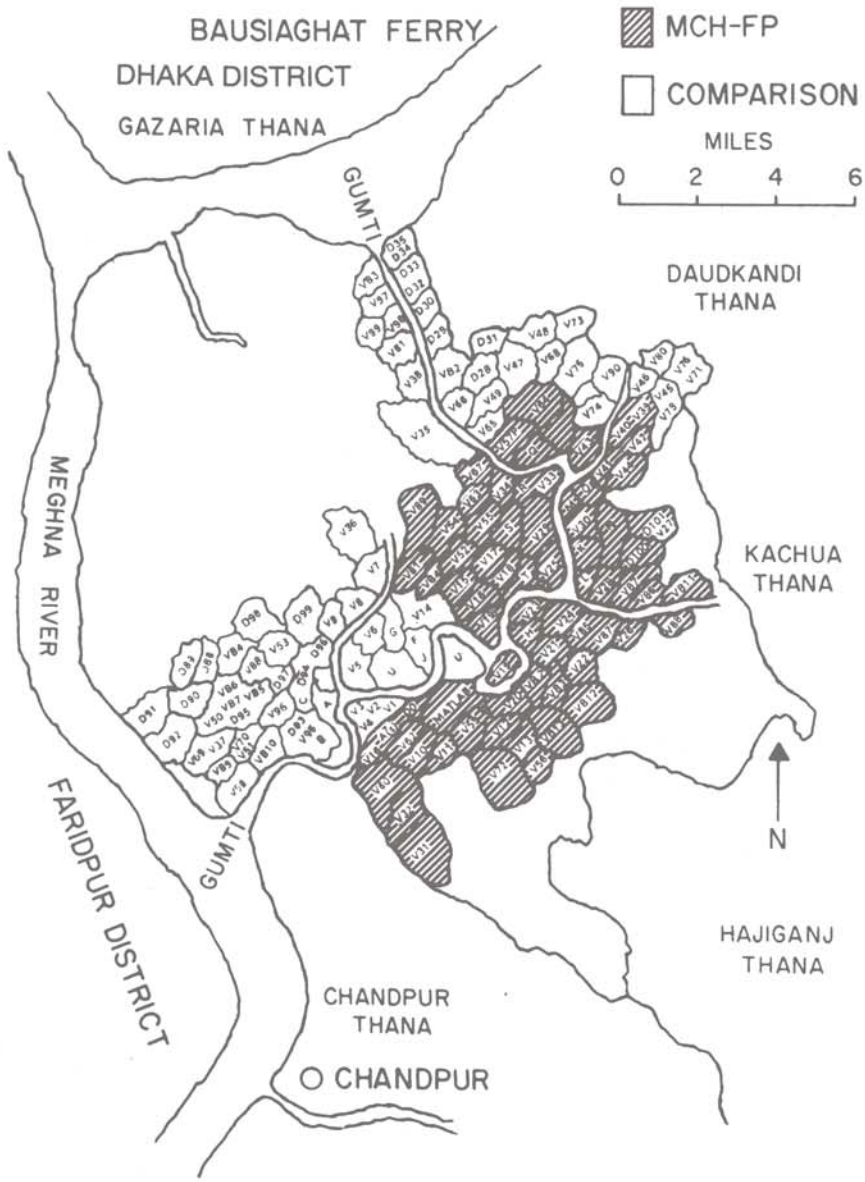
This is the twenty-second volume of a series of scientific reports of the Demographic Surveillance System produced by the ICDDR,B. Presented here are results obtained from the Matlab DSS in 1991, along with brief notes and explanations of the tables.

Figure 1.1: Map of Bangladesh showing the Study Area



Key: ▨ Study areas

Figure 1.2: Matlab Area Showing Villages of Demographic Surveillance System, 1991



CHAPTER 2

POPULATION CHANGES

Table 2.1 summarizes the principal vital statistics of the MCH-FP and Comparison areas from 1980 through 1991. The basic 1991 figures, by sex, are shown in Table 2.2. The 1991 total fertility rates showed an appreciable fall on those of the preceding year in both areas, thus continuing the long-term decline which began in 1983. In the MCH-FP area the total fertility rate fell from 3.4 in 1990 to 3.0 in 1991, and the crude birth rate from 28.3 to 25.4 per thousand. Likewise in the Comparison area the TFR fell from 5.0 to 4.3 and the crude birth rate from 37.8 to 32.7 per thousand. The trends in the total fertility rate in both areas are illustrated in Figure 2.1(a).

In contrast infant mortality increased in both areas: from 75.2 to 80.0 per thousand in the MCH-FP area, and from 87.5 to 114.9 per thousand in the Comparison area. Most of this rise was in the post-neonatal rates, which increased by 18% in the MCH-FP area and by 52% in the Comparison area. Neonatal mortality also increased in the Comparison area, but in the MCH-FP area there was virtually no change. Further features of this upsurge in infant mortality are discussed in Chapter 3. It was also reflected in the figures for under-five mortality, illustrated in Figure 2.1(b).

Migration figures, both in and out, showed little change on 1990. Out-migrants continued to outnumber in-migrants, thus offsetting the rate of natural increase so that the overall rate of population growth was reduced to 0.5 percent per annum.

Tables 2.3, 2.4, and 2.5 show the age and sex distributions for the whole study area, the MCH-FP and Comparison areas, and for the four blocks of the MCH-FP area. The age-sex distribution for the study area is illustrated by the population pyramid shown in Figure 2.2. The decline of fertility in the MCH-FP area has caused a small but significant change in the age structure of that population. Children under 15 years of age constituted 43.4 percent of the population at the beginning of the MCH-FP project in 1978; by 1991 this proportion had fallen to 38.8 percent. In the Comparison area, on the other hand, the proportion under 15 showed only minimal change, from 43.3 percent in 1978 to 42.9 percent in 1991.

Table 2.1: Vital Statistics of the Matlab MCH-FP and Comparison Areas, 1980-1991

Vital rates (per 1000)	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Crude birth rate												
MCH-FP area	37.1	35.3	36.9	34.2	30.7	34.6	33.6	33.6	30.9	28.4	28.3	25.4
Comparison area	45.5	43.8	44.7	42.6	37.3	42.6	39.6	39.2	40.4	36.6	37.8	32.7
Both areas	41.2	39.5	40.7	38.3	34.0	38.5	36.5	36.4	35.5	32.4	32.9	29.0
Total fertility rate**												
MCH-FP area	5.1	4.8	5.0	4.5	4.0	4.5	4.3	4.2	3.8	3.4	3.4	3.0
Comparison area	6.7	6.3	6.3	6.1	5.1	6.0	5.5	5.4	5.4	4.9	5.0	4.3
Both areas	5.9	5.5	5.6	5.3	4.5	5.2	4.9	4.8	4.5	4.1	4.1	3.6
Crude death rate												
MCH-FP area	11.3	11.9	12.5	11.9	13.4	10.2	9.9	9.3	8.7	8.0	7.6	8.1
Comparison area	14.9	14.4	15.9	16.7	17.3	14.2	12.2	11.2	11.0	9.5	9.4	10.2
Both areas	13.1	13.1	14.2	14.3	15.3	12.2	11.0	10.2	9.9	8.7	8.5	9.1
Neonatal mortality*												
MCH-FP area	59.3	66.4	58.1	56.4	57.9	52.5	45.4	43.8	42.8	46.0	47.8	47.7
Comparison area	72.7	69.5	68.1	70.3	71.4	69.4	53.0	54.9	57.7	52.7	53.3	63.2
Both areas	66.6	68.1	63.5	64.0	65.3	61.7	49.4	49.7	51.1	49.7	50.9	56.3
Post-neonatal mortality*												
MCH-FP area	32.6	36.1	47.5	41.8	56.9	33.8	36.4	34.6	38.0	28.3	27.4	32.3
Comparison area	41.3	45.0	50.2	42.2	55.7	49.1	39.7	39.5	39.0	38.0	34.1	51.7
Both areas	37.3	41.0	49.0	42.0	56.2	42.1	38.2	37.2	38.6	33.6	31.2	43.0
Infant mortality*												
MCH-FP area	91.9	102.5	105.6	98.2	114.8	86.3	81.8	78.4	80.8	74.3	75.2	80.0
Comparison area	114.0	114.5	118.3	112.5	127.1	118.5	92.7	94.4	96.7	90.7	87.5	114.9
Both areas	103.9	109.1	112.5	106.0	121.5	103.8	87.6	86.9	89.7	83.3	82.1	99.2
Child mortality (1-4 yrs)												
MCH-FP area	18.6	19.1	18.8	21.9	23.1	16.4	13.4	9.9	7.6	6.4	5.3	7.0
Comparison area	25.4	24.8	27.4	35.3	39.2	24.6	20.7	15.0	14.4	11.5	9.3	9.1
Both areas	22.1	22.0	23.3	29.1	31.6	20.7	17.2	12.6	11.1	9.0	7.4	8.1
Under five mortality*												
MCH-FP area	155.3	169.6	169.4	172.3	192.0	143.9	129.8	113.1	107.4	97.5	94.8	105.7
Comparison area	197.6	197.5	207.2	227.0	252.7	200.1	164.0	145.2	146.1	131.1	120.4	146.2
Both areas	177.7	184.8	189.7	202.1	224.8	174.4	148.0	130.2	128.3	115.7	108.7	128.1
Rate of natural increase												
MCH-FP area	25.8	23.4	24.3	22.3	17.3	24.4	23.7	24.3	22.1	20.4	20.7	17.3
Comparison area	30.8	29.4	28.8	25.6	20.0	28.4	27.4	28.0	29.4	27.1	28.4	22.5
Both areas	28.2	26.4	26.5	24.1	18.6	26.3	25.5	26.1	25.7	23.6	24.4	19.9
In-migration	29.7	27.3	24.5	24.6	24.2	23.9	28.3	33.6	26.5	28.3	26.0	26.9
Out-migration	36.6	35.0	26.5	35.8	42.7	42.1	41.7	44.3	41.5	43.9	42.4	41.9
Growth (%)	2.1	1.9	2.5	1.3	0.0	0.8	1.2	1.5	1.1	0.9	0.8	0.5

*Per 1000 live births.
**Per woman.

Figure 2.1 Trends in Fertility and Under Five Mortality by Area, 1980-1991

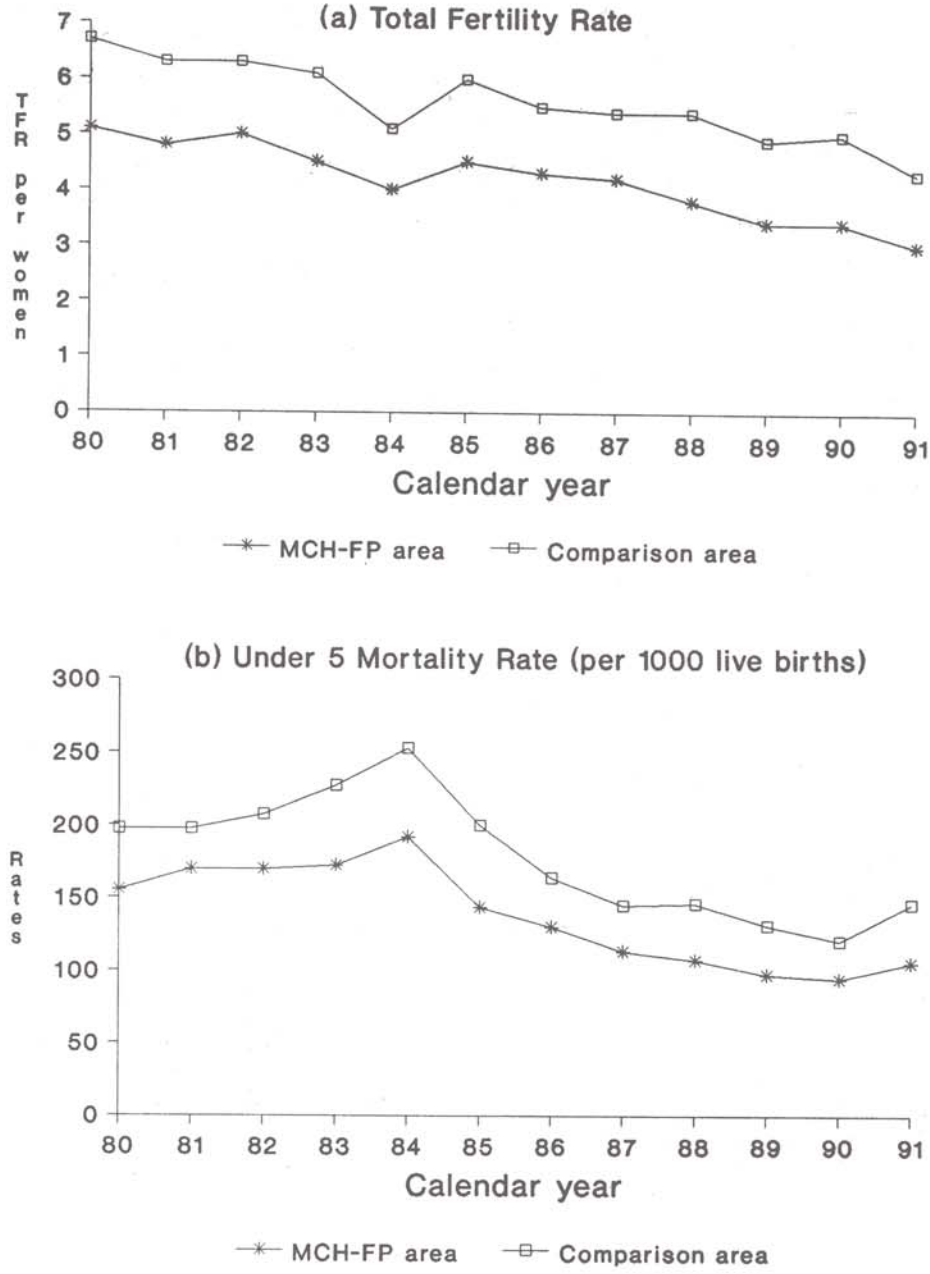


Table 2.2: Mid-year Population, Events Registered, and Population Changes in 1991

	Number			Rate per 1000		
	Total	Males	Females	Total	Males	Females
Total population as of 30 June 1991:						
MCH-FP area	104923	52490	52433	-	-	-
Comparison area	100596	50457	50139	-	-	-
Both areas	205519	102947	102572	-	-	-
Events registered (Jan - Dec 1991)						
Births						
MCH-FP area	2664	1357	1307	25.4	-	-
Comparison area	3291	1688	1603	32.7	-	-
Both areas	5955	3045	2910	29.0	-	-
Deaths						
-Infant*						
MCH-FP area	213	110	103	80.0	81.1	78.8
Comparison area	378	207	171	114.9	122.6	106.7
Both areas	591	317	274	99.2	104.1	94.2
-All deaths						
MCH-FP area	850	460	390	8.1	8.8	7.4
Comparison area	1023	542	481	10.2	10.7	9.6
Both areas	1873	1002	871	9.1	9.7	8.5
In-migration	5529	2366	3163	26.9	23.0	30.8
Out-migration	8612	4016	4596	41.9	39.0	44.8
Marriage	2849	-	-	13.9	-	-
Divorce**	397	-	-	139.3	-	-
Population change (Jan - Dec 1991)						
Net migration	-3083	-1650	-1433	-15.0	-16.0	-14.0
Natural increase						
MCH-FP area	1814	897	917	17.3	17.1	17.5
Comparison area	2268	1146	1122	22.5	22.7	22.4
Both areas	4082	2043	2039	19.9	19.8	19.9
Net increase	999	393	606	4.9	3.8	5.9

*Rate per 1000 live births.
**Rate per 1000 marriages.

Table 2.3: Mid-year Population by Age and Sex, 1991

Age (years)	Number			Percent		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	205519	102947	102572	100.0	100.0	100.0
Under 1	6063	3059	3004	3.0	3.0	2.9
1 - 4	24075	12082	11993	11.7	11.7	11.7
1	5905	2965	2940	2.9	2.9	2.9
2	6186	3052	3134	3.0	3.0	3.1
3	5949	3020	2929	2.9	2.9	2.9
4	6035	3045	2990	2.9	3.0	2.9
5 - 9	27812	14374	13438	13.5	14.0	13.1
10-14	25988	13697	12291	12.6	13.3	12.0
15-19	20824	11040	9784	10.1	10.7	9.5
20-24	19067	9148	9919	9.3	8.9	9.7
25-29	16364	7453	8911	8.0	7.2	8.7
30-34	13606	6895	6711	6.6	6.7	6.5
35-39	9519	4781	4738	4.6	4.6	4.6
40-44	7678	3578	4100	3.7	3.5	4.0
45-49	8071	3484	4587	3.9	3.4	4.5
50-54	6916	3257	3659	3.4	3.2	3.6
55-59	6668	3332	3336	3.2	3.2	3.3
60-64	4635	2372	2263	2.3	2.3	2.2
65-69	3625	1911	1714	1.8	1.9	1.7
70-74	2162	1150	1012	1.1	1.1	1.0
75-79	1397	740	657	0.7	0.7	0.6
80-84	632	351	281	0.3	0.3	0.3
85+	417	243	174	0.2	0.2	0.2

Table 2.4: Mid-year Population by Area, Age, and Sex, 1991

Age (years)	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	104923	52490	52433	100596	50457	50139
Under 1	2709	1382	1327	3354	1677	1677
1 - 4	11310	5738	5572	12765	6344	6421
1	2713	1372	1341	3192	1593	1599
2	2843	1438	1405	3343	1614	1729
3	2825	1435	1390	3124	1585	1539
4	2929	1493	1436	3106	1552	1554
5 - 9	13600	6932	6668	14212	7442	6770
10-14	13124	6913	6211	12864	6784	6080
15-19	11129	5936	5193	9695	5104	4591
20-24	10121	4855	5266	8946	4293	4653
25-29	8705	3878	4827	7659	3575	4084
30-34	7100	3579	3521	6506	3316	3190
35-39	5042	2526	2516	4477	2255	2222
40-44	4035	1884	2151	3643	1694	1949
45-49	4310	1869	2441	3761	1615	2146
50-54	3581	1678	1903	3335	1579	1756
55-59	3409	1741	1668	3259	1591	1668
60-64	2422	1262	1160	2213	1110	1103
65-69	1911	996	915	1714	915	799
70-74	1083	585	498	1079	565	514
75-79	763	410	353	634	330	304
80-84	322	179	143	310	172	138
85+	247	147	100	170	96	74

Table 2.5: Mid-year Population in MCH-FP Area by Age, Sex, and Block, 1991

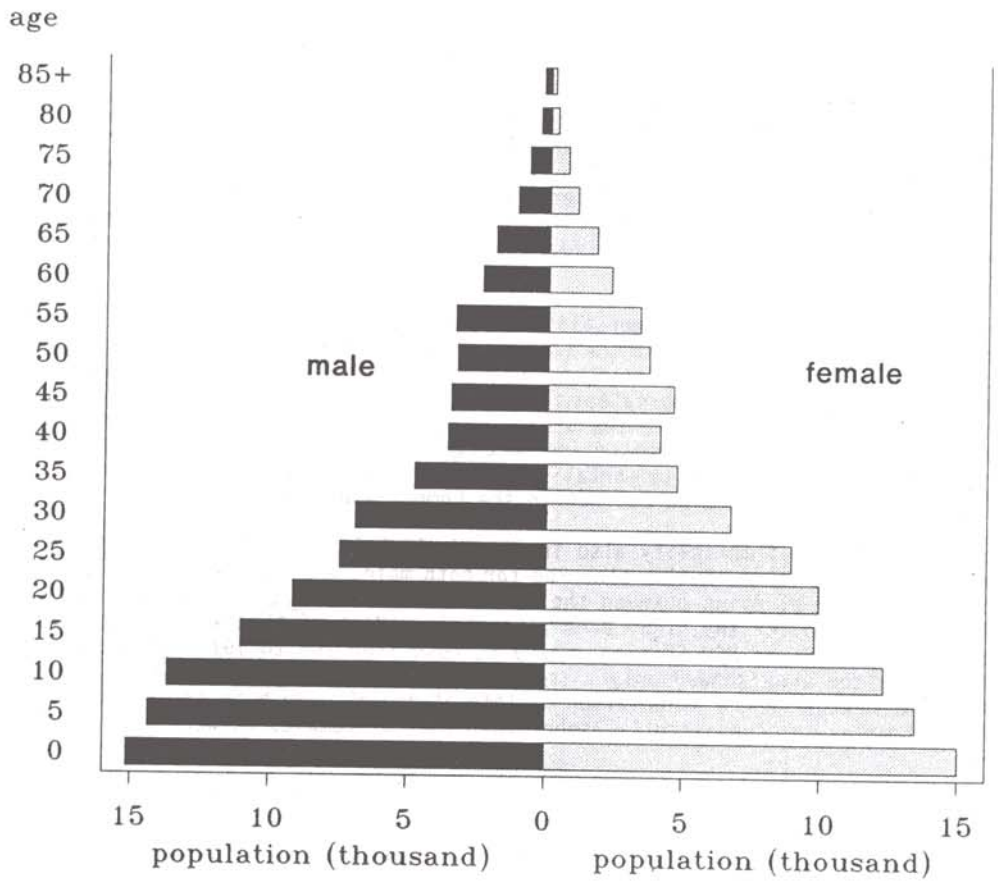
Age (years)	Block A			Block B		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	28825	14384	14441	26414	13084	13330
Under 1	763	390	373	698	337	361
1 - 4	3181	1589	1592	3000	1557	1443
1	780	369	411	734	386	348
2	823	415	408	721	375	346
3	781	404	377	740	390	350
4	797	401	396	805	406	399
5 - 9	3787	1920	1867	3579	1849	1730
10-14	3629	1901	1728	3280	1712	1568
15-19	2991	1614	1377	2801	1466	1335
20-24	2845	1352	1493	2439	1134	1305
25-29	2526	1089	1437	2079	890	1189
30-34	1929	972	957	1685	846	839
35-39	1359	683	676	1229	573	656
40-44	1129	532	597	1012	459	553
45-49	1189	515	674	1044	429	615
50-54	922	478	444	901	405	496
55-59	833	435	398	863	427	436
60-64	614	316	298	646	331	315
65-69	475	259	216	519	280	239
70-74	263	135	128	274	170	104
75-79	212	103	109	201	121	80
80-84	100	57	43	88	52	36
85+	78	44	34	76	46	30

(continued)

Table 2.5 (cont.): Mid-year Population in MCH-FP Area by Age, Sex, and Block, 1991

Age (years)	Block C			Block D		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	27595	13960	13635	22089	11062	11027
Under 1	686	362	324	562	293	269
1 - 4	2829	1430	1399	2300	1162	1138
1	669	335	334	530	282	248
2	684	337	347	615	311	304
3	724	362	362	580	279	301
4	752	396	356	575	290	285
5 - 9	3463	1788	1675	2771	1375	1396
10-14	3507	1828	1679	2708	1472	1236
15-19	3052	1633	1419	2285	1223	1062
20-24	2746	1355	1391	2091	1014	1077
25-29	2262	1064	1198	1838	835	1003
30-34	1939	989	950	1547	772	775
35-39	1348	679	669	1106	591	515
40-44	1072	520	552	822	373	449
45-49	1142	507	635	935	418	517
50-54	936	434	502	822	361	461
55-59	938	498	440	775	381	394
60-64	595	325	270	567	290	277
65-69	480	237	243	437	220	217
70-74	295	149	146	251	131	120
75-79	176	93	83	174	93	81
80-84	75	37	38	59	33	26
85+	54	32	22	39	25	14

Figure 2.2: Age Pyramid of the 1991 Mid-year Population



CHAPTER 3

MORTALITY

Tables 3.1 to 3.3 show the distribution of deaths by sex and age for the whole study area, for the MCH-FP and Comparison areas, and for the four blocks of the MCH-FP area. Tables 3.4 and 3.5 show the corresponding age-sex-specific mortality rates for the whole study area and for the MCH-FP and Comparison areas. Figure 3.1 illustrates the life table probability of survival by age and sex. Tables 3.6 to 3.10 show the abridged life tables derived from the mortality rates.

As noted in Chapter 2, infant mortality rate rose by about 5 points in the MCH-FP area, and by about 27 points in the Comparison area. Most of the increase in the Comparison area was in the post-neonatal period. A more detailed age breakdown is shown in Table 3.5. The greatest relative increase was in the Comparison area mortality rate for 6 to 11 months of age, which doubled between 1990 and 1991. Neonatal mortality also increased in the Comparison area, but not in the MCH-FP area; on the other hand child mortality, between 1 and 4 years of age, increased slightly in the MCH-FP area but not in the Comparison area.

The levels of adult mortality also increased slightly in comparison with 1990. The rise was not large, but it occurred for both males and females in both areas. The probability of dying between the ages of 15 and 60 ($_{45}q_{15}$) rose from 179 to 194 per thousand for the study area as a whole. Most of this was attributable to the change in the MCH-FP area, where it rose from 166 to 191. The rate for the Comparison area showed only a small change from 193 to 198. There was no important change in the expectation of life at age 60. In both areas mortality of adult males was consistently higher than that of females between ages 35 and 75.

Table 3.11 shows the distribution of deaths by age and month of occurrence. Deaths for all ages combined tend to peak in the winter months, with modal values between November and January. Neonatal deaths were also most frequent in these months, doubtless reflecting the seasonal variation in births, described in Chapter 4. Post-neonatal deaths tend to have both winter and spring peaks. Child deaths usually peak in the spring, but in 1991 there was an unusual peak of child deaths in October.

Tables 3.12 through 3.15 show distributions of deaths by sex, cause and age and by MCH-FP and Comparison area. Table 3.16 gives the age-standardized mortality rates by cause of death, using the World Health Organization "World Standard" age distribution (World Health Statistics Annual 1991). Compared to 1990, there was an upsurge in the mortality rate from diarrhoea, especially in the Comparison area. Gastro-intestinal mortality was the only cause which declined for both sexes in both areas. Comparing the MCH-FP project area with the Comparison area, the main reason that the latter had higher overall mortality rates for both sexes was higher mortality from diarrhoea and respiratory infections. Other differences between the two areas varied by sex.

Table 3.1: Deaths by Age and Sex, 1991

Age	Both sexes	Males	Females
All ages	1873	1002	871
Under 1 year	591	317	274
Under 1 month	335	182	153
1-5 months	174	99	75
6-11 months	82	36	46
1 - 4 years	195	94	101
1	90	35	55
2	52	29	23
3	32	17	15
4	21	13	8
5 - 9	54	23	31
10-14	20	11	9
15-19	19	8	11
20-24	25	9	16
25-29	30	9	21
30-34	25	12	13
35-39	26	15	11
40-44	36	19	17
45-49	48	28	20
50-54	63	35	28
55-59	98	60	38
60-64	105	56	49
65-69	157	93	64
70-74	136	77	59
75-79	108	62	46
80-84	70	38	32
85+	67	36	31

Table 3.2: Deaths by Area, Age, and Sex, 1991

Age	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	850	460	390	1023	542	481
Under 1 year	213	110	103	378	207	171
Under 1 month	127	65	62	208	117	91
1-5 months	58	34	24	116	65	51
6-11 months	28	11	17	54	25	29
1 - 4 years	79	38	41	116	56	60
1	40	17	23	50	18	32
2	16	7	9	36	22	14
3	14	9	5	18	8	10
4	9	5	4	12	8	4
5 - 9	26	14	12	28	9	19
10-14	13	9	4	7	2	5
15-19	10	3	7	9	5	4
20-24	12	7	5	13	2	11
25-29	11	1	10	19	8	11
30-34	13	4	9	12	8	4
35-39	10	5	5	16	10	6
40-44	23	14	9	13	5	8
45-49	25	14	11	23	14	9
50-54	30	17	13	33	18	15
55-59	52	32	20	46	28	18
60-64	55	31	24	50	25	25
65-69	76	45	31	81	48	33
70-74	66	33	33	70	44	26
75-79	62	39	23	46	23	23
80-84	37	22	15	33	16	17
85+	37	22	15	30	14	16

Table 3.3: Deaths in MCH-FP Area by Age, Sex, and Block, 1991

Age	Block A			Block B		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	240	116	124	232	127	105
Under 1 year	65	32	33	63	33	30
Under 1 month	36	18	18	40	19	21
1-5 months	19	10	9	16	11	5
6-11 months	10	4	6	7	3	4
1 - 4 years	30	15	15	20	8	12
1	15	7	8	12	6	6
2	5	2	3	5	2	3
3	6	4	2	2	0	2
4	4	2	2	1	0	1
5 - 9	12	6	6	5	2	3
10-14	1	1	0	7	5	2
15-19	2	0	2	3	1	2
20-24	5	3	2	4	3	1
25-29	4	0	4	4	1	3
30-34	4	0	4	3	2	1
35-39	2	0	2	4	3	1
40-44	8	4	4	7	5	2
45-49	11	6	5	7	5	2
50-54	6	3	3	5	1	4
55-59	12	5	7	11	5	6
60-64	10	6	4	16	8	8
65-69	17	8	9	20	12	8
70-74	11	6	5	22	13	9
75-79	12	7	5	14	9	5
80-84	17	8	9	6	4	2
85+	11	6	5	11	7	4

(continued)

Table 3.3 (cont.): Deaths in MCH-FP Area by Age, Sex, and Block, 1991

Age	Block C			Block D		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	210	120	90	168	97	71
Under 1 year	49	29	20	36	16	20
Under 1 month	33	19	14	18	9	9
1-5 months	13	8	5	10	5	5
6-11 months	3	2	1	8	2	6
1 - 4 years	16	5	11	13	10	3
1	7	1	6	6	3	3
2	5	2	3	1	1	0
3	3	2	1	3	3	0
4	1	0	1	3	3	0
5 - 9	2	1	1	7	5	2
10-14	5	3	2	0	0	0
15-19	1	0	1	4	2	2
20-24	3	1	2	0	0	0
25-29	1	0	1	2	0	2
30-34	4	1	3	2	1	1
35-39	4	2	2	0	0	0
40-44	4	3	1	4	2	2
45-49	4	2	2	3	1	2
50-54	10	8	2	9	5	4
55-59	15	11	4	14	11	3
60-64	15	9	6	14	8	6
65-69	21	14	7	18	11	7
70-74	20	8	12	13	6	7
75-79	16	11	5	20	12	8
80-84	11	7	4	3	3	0
85+	9	5	4	6	4	2

Table 3.4: Death Rates by Age and Sex, 1991

Age	Both sexes	Males	Females
All ages	9.1	9.7	8.5
Under 1 year*	99.2	104.1	94.2
Under 1 month*	56.3	59.8	52.6
1-5 months*	29.2	32.5	25.8
6-11 months*	13.8	11.8	15.8
1 - 4 years	8.1	7.8	8.4
1	15.2	11.8	18.7
2	8.4	9.5	7.3
3	5.4	5.6	5.1
4	3.5	4.3	2.7
5 - 9	1.9	1.6	2.3
10-14	0.8	0.8	0.7
15-19	0.9	0.7	1.1
20-24	1.3	1.0	1.6
25-29	1.8	1.2	2.4
30-34	1.8	1.7	1.9
35-39	2.7	3.1	2.3
40-44	4.7	5.3	4.1
45-49	5.9	8.0	4.4
50-54	9.1	10.7	7.7
55+59	14.7	18.0	11.4
60-64	22.7	23.6	21.7
65-69	43.3	48.7	37.3
70-74	62.9	67.0	58.3
75-79	77.3	83.8	70.0
80-84	110.8	108.3	113.9
85+	160.7	148.1	178.2

*Rate per 1000 live births.

Table 3.5: Death Rates by Area, Age, and Sex, 1991
(per 1000 population)

Age	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	8.1	8.8	7.4	10.2	10.7	9.6
Under 1 year*	80.0	81.1	78.8	114.9	122.6	106.7
Under 1 month*	47.7	47.9	47.4	63.2	69.3	56.8
1-5 months*	21.8	25.1	18.4	35.2	38.5	31.8
6-11 months*	10.5	8.1	13.0	16.4	14.8	18.1
1 - 4 years	7.0	6.6	7.4	9.1	8.8	9.3
1	14.7	12.4	17.2	15.7	11.3	20.0
2	5.6	4.9	6.4	10.8	13.6	8.1
3	5.0	6.3	3.6	5.8	5.0	6.5
4	3.1	3.3	2.8	3.9	5.2	2.6
5 - 9	1.9	2.0	1.8	2.0	1.2	2.8
10-14	1.0	1.3	0.6	0.5	0.3	0.8
15-19	0.9	0.5	1.3	0.9	1.0	0.9
20-24	1.2	1.4	0.9	1.5	0.5	2.4
25-29	1.3	0.3	2.1	2.5	2.2	2.7
30-34	1.8	1.1	2.6	1.8	2.4	1.3
35-39	2.0	2.0	2.0	3.6	4.4	2.7
40-44	5.7	7.4	4.2	3.6	3.0	4.1
45-49	5.8	7.5	4.5	6.1	8.7	4.2
50-54	8.4	10.1	6.8	9.9	11.4	8.5
55-59	15.3	18.4	12.0	14.1	17.6	10.8
60-64	22.7	24.6	20.7	22.6	22.5	22.7
65-69	39.8	45.2	33.9	47.3	52.5	41.3
70-74	60.9	56.4	66.3	64.9	77.9	50.6
75-79	81.3	95.1	65.2	72.6	69.7	75.7
80-84	114.9	122.9	104.9	106.5	93.0	123.2
85+	149.8	149.7	150.0	176.5	145.8	216.2

*Rate per 1000 live births.

Figure 3.1: Probability of Survival from Birth to Age (x) by Sex, 1991

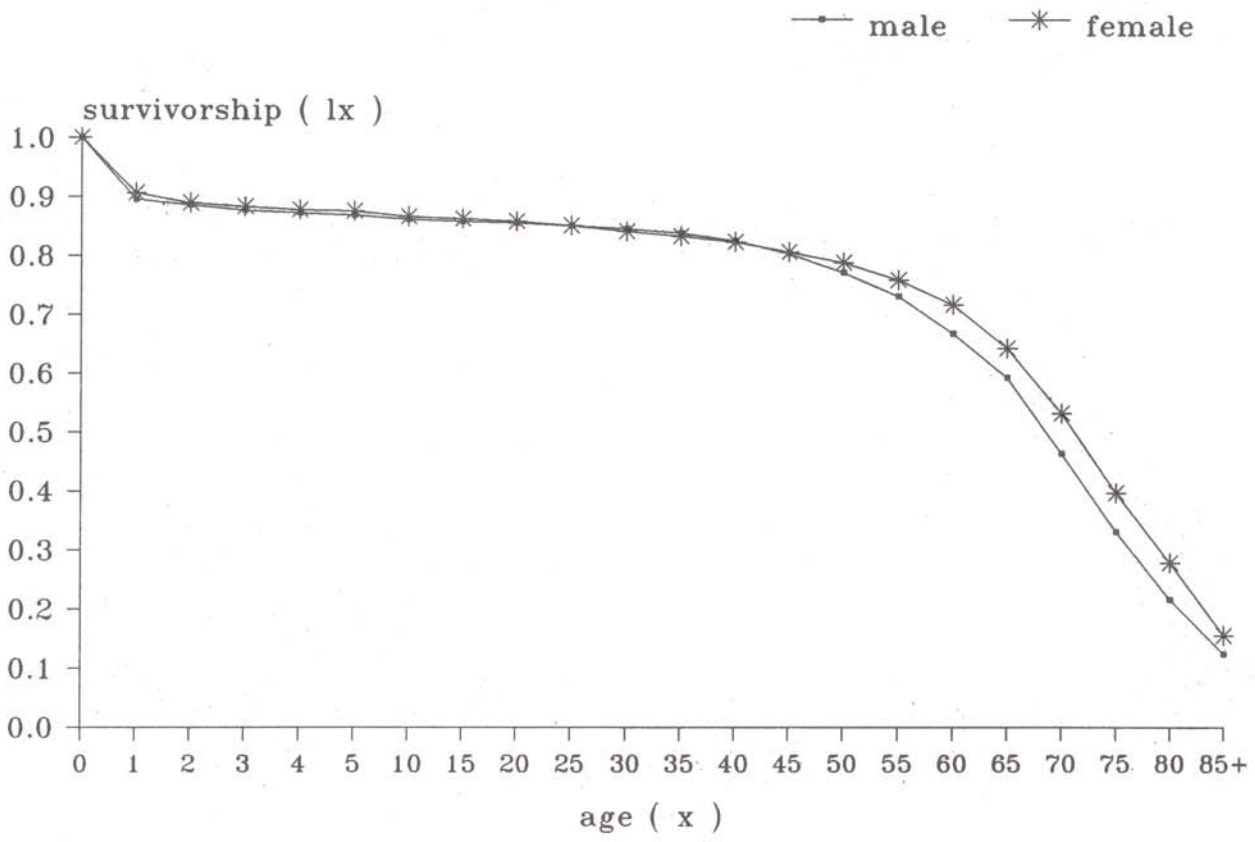


Table 3.6: Abridged Life Table, 1991

Age (years)	$_nq_x$	l_x	L_x	e^0
0	99.2	100000	92815	61.3
1	15.1	90076	89272	67.0
2	8.4	88713	88342	67.1
3	5.4	87970	87734	66.6
4	3.5	87498	87346	66.0
5	9.7	87194	434029	65.2
10	3.8	86352	430994	60.8
15	4.6	86020	429198	56.0
20	6.5	85628	426852	51.3
25	9.1	85069	423553	46.6
30	9.1	84292	419683	42.0
35	13.6	83521	414990	37.4
40	23.2	82388	407521	32.8
45	29.3	80477	396921	28.6
50	44.6	78116	382494	24.3
55	71.0	74632	360791	20.4
60	107.5	69329	329131	16.7
65	196.2	61873	280322	13.4
70	272.8	49733	215655	11.0
75	324.7	36167	151908	9.2
80	432.5	24423	95363	7.4
85+	1000.0	13861	86268	6.2

Table 3.7: Abridged Life Tables by Sex, 1991

Age (years)	Males				Females			
	$_nq_x$	l_x	L_x	e^0	$_nq_x$	l_x	L_x	e^0
0	104.1	100000	92463	60.4	94.2	100000	93183	62.3
1	11.7	89589	88969	66.4	18.5	90584	89594	67.7
2	9.5	88538	88119	66.2	7.3	88905	88580	68.0
3	5.6	87701	87455	65.8	5.1	88255	88030	67.5
4	4.3	87208	87023	65.2	2.7	87804	87687	66.8
5	8.0	86837	432588	64.4	11.5	87570	435530	66.0
10	4.0	86145	429928	59.9	3.7	86565	432095	61.7
15	3.6	85799	428282	55.2	5.6	86248	430128	56.9
20	4.9	85489	426478	50.4	8.0	85765	427235	52.3
25	6.0	85069	424167	45.6	11.7	85076	423078	47.7
30	8.7	84557	421096	40.8	9.6	84079	418523	43.2
35	15.6	83824	416108	36.2	11.5	83268	414122	38.6
40	26.2	82519	407588	31.7	20.5	82306	407627	34.0
45	39.4	80354	394422	27.5	21.6	80616	399060	29.7
50	52.4	77185	376518	23.5	37.6	78876	387508	25.2
55	86.4	73139	350909	19.7	55.5	75911	369759	21.1
60	111.8	66820	316528	16.3	103.0	71699	341157	17.2
65	217.8	59347	265661	13.0	171.5	64312	295318	13.9
70	287.7	46418	199480	10.9	255.4	53285	233442	11.2
75	346.9	33062	136901	9.2	298.9	39675	169351	9.2
80	425.0	21592	84763	7.8	441.7	27818	107891	7.0
85+	1000.0	12415	83801	6.8	1000.0	15532	87178	5.6

Table 3.8: Abridged Life Tables by Area, 1991

Age (years)	MCH-FP area				Comparison area			
	$_nq_x$	l_x	L_x	e^0	$_nq_x$	l_x	L_x	e^0
0	80.0	100000	94211	63.1	114.9	100000	91684	59.8
1	14.6	92005	91210	67.6	15.5	88514	87702	66.5
2	5.6	90658	90403	67.6	10.7	87138	86672	66.5
3	4.9	90149	89926	67.0	5.7	86205	85957	66.2
4	3.1	89703	89566	66.3	3.9	85710	85544	65.6
5	9.5	89428	445178	65.5	9.8	85379	424964	64.9
10	4.9	88577	441877	61.1	2.7	84542	422180	60.5
15	4.5	88139	439786	56.4	4.6	84312	420661	55.6
20	5.9	87744	437525	51.6	7.2	83922	418207	50.9
25	6.3	87225	434861	46.9	12.3	83314	414198	46.2
30	9.1	86676	431557	42.2	9.2	82286	409689	41.8
35	9.9	85886	427473	37.6	17.7	81531	404316	37.1
40	28.1	85038	419654	32.9	17.7	80086	397155	32.8
45	28.6	82646	407756	28.8	30.2	78668	387852	28.3
50	41.1	80281	393752	24.6	48.4	76297	372912	24.1
55	73.6	76982	371678	20.5	68.3	72607	351467	20.2
60	107.8	71312	338503	16.9	107.3	67646	321182	16.5
65	181.6	63626	290568	13.6	212.2	60389	271181	13.1
70	265.4	52070	226779	11.1	280.1	47574	205392	11.0
75	338.3	38249	159264	9.2	308.0	34249	145369	9.2
80	444.7	25308	97939	7.6	419.5	23702	93411	7.2
85+	1000.0	14054	93821	6.7	1000.0	13758	77961	5.7

Table 3.9: Abridged Life Tables for MCH-FP Area by Sex, 1991

Age (years)	Males				Females			
	$_nq_x$	l_x	L_x	e^0	$_nq_x$	l_x	L_x	e^0
0	81.1	100000	94131	62.2	78.8	100000	94294	64.1
1	12.3	91894	91226	66.7	17.0	92119	91195	68.6
2	4.9	90762	90542	66.5	6.4	90553	90264	68.8
3	6.3	90321	90039	65.8	3.6	89974	89813	68.2
4	3.3	89757	89607	65.3	2.8	89651	89527	67.4
5	10.1	89457	445209	64.5	9.0	89402	445163	66.6
10	6.5	88557	441462	60.1	3.2	88601	442348	62.2
15	2.5	87983	439402	55.5	6.7	88316	440212	57.4
20	7.2	87761	437350	50.6	4.7	87723	437655	52.8
25	1.3	87130	435392	46.0	10.3	87307	434459	48.0
30	5.6	87018	433971	41.0	12.7	86407	429502	43.5
35	9.9	86533	430698	36.2	9.9	85309	424600	39.0
40	36.5	85680	421148	31.6	20.7	84465	418282	34.4
45	36.8	82551	405710	27.7	22.3	82715	409312	30.0
50	49.5	79512	388416	23.6	33.6	80871	398055	25.7
55	88.1	75577	362298	19.7	58.3	78151	380150	21.5
60	116.1	68917	325757	16.3	98.7	73593	350938	17.6
65	203.8	60915	274824	13.1	156.8	66332	306985	14.3
70	248.2	48499	213371	10.8	285.2	55932	240734	11.4
75	384.2	36462	147284	8.6	281.1	39980	172499	10.0
80	467.5	22453	85409	7.4	414.8	28740	113652	7.9
85+	1000.0	11955	79883	6.7	1000.0	16819	112125	6.7

Table 3.10: Abridged Life Tables for Comparison Area by Sex, 1991

Age (years)	Males				Females			
	$_nq_x$	l_x	L_x	e^0	$_nq_x$	l_x	L_x	e^0
0	122.6	100000	91122	58.9	106.7	100000	92277	60.6
1	11.2	87737	87155	66.1	19.8	89333	88288	66.8
2	13.5	86751	86164	65.9	8.1	87562	87209	67.2
3	5.0	85576	85361	65.7	6.5	86856	86575	66.7
4	5.1	85146	84927	65.1	2.6	86293	86183	66.2
5	6.0	84708	422362	64.4	13.9	86072	427589	65.3
10	1.5	84197	420700	59.8	4.1	84872	423556	61.2
15	4.9	84073	419419	54.9	4.3	84523	421770	56.5
20	2.3	83662	417863	50.1	11.8	84156	418497	51.7
25	11.1	83467	415194	45.2	13.4	83166	413264	47.3
30	12.0	82538	410408	40.7	6.3	82053	409085	42.9
35	21.9	81548	403604	36.2	13.4	81540	405177	38.1
40	14.7	79758	396094	31.9	20.3	80446	398452	33.6
45	42.5	78589	385199	27.4	20.8	78811	390272	29.3
50	55.5	75250	366533	23.5	41.9	77174	378372	24.8
55	84.5	71072	341311	19.7	52.6	73942	360662	20.8
60	107.0	65065	308979	16.3	107.6	70050	332542	16.8
65	232.8	58106	257906	12.9	188.0	62513	284502	13.5
70	326.7	44577	186996	11.0	225.5	50762	226258	11.0
75	297.7	30014	128203	10.1	318.9	39317	165743	8.5
80	377.5	21079	85535	8.3	468.3	26778	101800	6.3
85+	1000.0	13122	89980	6.9	1000.0	14237	65846	4.6

Table 3.11: Deaths by Age and Month, 1991

Month	All ages	Age at death			
		Under 1 month	1-11 months	1-4 years	5 years and over
January	197	34	22	10	131
February	130	25	14	13	78
March	132	19	18	20	75
April	163	20	39	23	81
May	130	24	32	18	56
June	132	22	19	19	72
July	144	18	12	21	93
August	132	25	17	13	77
September	120	28	10	10	72
October	190	31	16	29	114
November	198	48	20	10	120
December	205	41	37	9	118
Total	1873	335	256	195	1087

Table 3.12: Male Deaths by Cause and Age, 1991

Cause	All ages	Age at death (years)																	
		<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
DIARRHOEAL																				
Diarrhoea	98	39	24	2	0	0	1	1	0	1	0	0	0	3	1	5	8	5	5	3
Dysentery	19	4	7	0	0	1	0	0	0	1	0	0	0	1	0	1	2	0	1	1
INFECTIOUS																				
Tuberculosis	27	0	0	0	0	1	0	1	1	0	1	3	2	3	4	6	3	1	1	0
Tetanus (non-neonatal)	3	1	0	1	0		0				1		0					0	0	
Other infectious	27	6	6	3	2	0	1	0	0	0	0	1	1	1	2	2	0	2	0	0
MALIGNANT NEOPLASMS	19	0	0	0	0	1	0	0	0	1	1	4	0	4	1	4	2	0	1	0
NUTRITIONAL	24	17	4	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
CARDIO-VASCULAR	58	0	0	0	0	0	0	0	0	2	3	2	5	8	8	9	9	5	2	5
RESPIRATORY																				
ARI, pneum, influenza	93	76	14	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0
COPD*	50	0	2	0	0	0	0	0	0	1	0	1	6	8	3	11	8	7	2	1
GASTRO-INTESTINAL	42	0	0	0	0	0	1	0	1	2	5	4	5	8	6	6	3	1	0	0
DIRECT OBSTETRIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NEONATAL																				
Tetanus (neonatal)	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	151	151	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																				
Suicide	3	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0
Homicide	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Drowning	37	3	28	2	1	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0
Other accidents etc.	21	0	0	0	1	2	4	3	2	0	1	1	2	1	0	2	0	1	1	0
OTHER AND UNSPECIFIED																				
Senility	108	0	0	0	0	0	0	0	0	0	0	0	0	1	7	14	26	21	16	23
Other causes n.e.c.**	109	3	5	5	4	0	0	2	3	2	5	3	1	7	13	18	11	15	9	3
Unknown	105	10	4	8	3	3	1	2	2	5	2	9	12	15	8	13	5	3	0	0
TOTAL	1002	317	94	23	11	8	9	9	12	15	19	28	35	60	56	93	77	62	38	36

*Chronic obstructive pulmonary disease.
**Not elsewhere classified.

Table 3.13: Female Deaths by Cause and Age, 1991

Cause	All ages	Age at death (years)																		
		<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
DIARRHOEAL																				
Diarrhoea	104	41	30	10	0	0	1	0	0	0	0	1	1	1	2	1	6	5	2	3
Dysentery	17	6	5	1	0	0	0	0	0	0	0	0	1	0	1	1	2	0	0	0
INFECTIOUS																				
Tuberculosis	13	0	0	0	1	0	0	2	2	1	3	0	0	3	0	0	1	0	0	0
Tetanus (non-neonatal)	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other infectious	27	7	4	2	0	2	1	2	2	0	0	1	2	0	0	3	1	0	0	0
MALIGNANT NEOPLASMS	18	0	0	0	0	0	1	0	0	3	1	1	3	4	2	1	1	0	1	0
NUTRITIONAL	31	11	13	3	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0
CARDIO-VASCULAR	46	0	0	0	0	0	0	0	0	0	1	2	3	4	8	11	6	4	1	6
RESPIRATORY																				
ARI, pneum, influenza	65	53	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
COPD*	37	1	1	0	1	0	0	1	0	2	4	5	2	3	2	9	4	1	1	0
GASTRO-INTESTINAL	22	0	0	0	1	1	0	3	0	0	1	3	3	2	6	1	0	1	0	0
DIRECT OBSTETRIC	10	0	0	0	0	1	3	2	2	0	1	1	0	0	0	0	0	0	0	0
NEONATAL																				
Tetanus (neonatal)	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	128	128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																				
Suicide	13	0	0	0	0	3	2	3	1	0	1	1	1	0	1	0	0	0	0	0
Homicide	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drowning	24	1	19	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Other accidents etc.	12	2	2	2	1	0	1	1	0	0	0	0	0	0	1	1	0	1	0	0
OTHER AND UNSPECIFIED																				
Senility	103	0	0	0	0	0	0	0	0	0	0	0	0	4	11	14	20	16	22	16
Other causes n.e.c.**	102	3	7	2	2	2	1	5	3	2	3	2	3	9	9	14	12	14	4	5
Unknown	88	12	11	5	2	2	6	2	3	3	2	1	7	7	6	8	6	4	1	0
TOTAL	871	274	101	31	9	11	16	21	13	11	17	20	28	38	49	64	59	46	32	31

*Chronic obstructive pulmonary disease.
**Not elsewhere classified.

Table 3.14: Male Deaths by Cause, Age, and Area, 1991

Cause	All ages		Age at death (years)													
			<1		1-4		5-14		15-44		45-64		65-84		85+	
	M	C	M	C	M	C	M	C	M	C	M	C	M	C	M	C
DIARRHOEAL																
Diarrhoea	29	69	9	30	7	17	1	1	1	2	3	1	6	17	2	1
Dysentery	8	11	1	3	2	5	0	0	1	1	0	1	3	1	1	0
INFECTIOUS																
Tuberculosis	10	17	0	0	0	0	0	0	2	2	3	9	5	6	0	0
Tetanus (non-neonatal)	0	3	0	1	0	0	0	1	0	1	0	0	0	0	0	0
Other infectious	13	14	2	4	2	4	4	1	1	0	1	4	3	1	0	0
MALIGNANT NEOPLASMS	13	6	0	0	0	0	0	0	2	1	6	3	5	2	0	0
NUTRITIONAL	15	9	11	6	2	2	1	0	0	1	1	0	0	0	0	0
CARDIO-VASCULAR	35	23	0	0	0	0	0	0	4	1	14	9	14	11	3	2
RESPIRATORY																
ARI, pneum, influenza	27	66	17	59	8	6	0	1	0	0	1	0	1	0	0	0
COPD*	22	28	0	0	1	1	0	0	0	1	6	12	15	13	0	1
GASTRO-INTESTINAL	17	25	0	0	0	0	0	0	4	5	8	15	5	5	0	0
DIRECT OBSTETRIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NEONATAL																
Tetanus (neonatal)	3	4	3	4	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	55	96	55	96	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																
Suicide	3	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0
Homicide	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Drowning	21	16	2	1	14	14	3	0	1	0	0	0	1	1	0	0
Other accidents etc.	9	12	0	0	0	0	1	0	6	6	1	3	1	3	0	0
OTHER AND UNSPECIFIED																
Senility	63	45	0	0	0	0	0	0	0	0	6	2	44	33	13	10
Other causes n.e.c.**	57	52	3	0	2	3	6	3	5	7	12	12	26	27	3	0
Unknown	59	46	7	3	0	4	7	4	5	10	30	14	10	11	0	0
TOTAL	460	542	110	207	38	56	23	11	34	38	94	85	139	131	22	14

*Chronic obstructive pulmonary disease.
**Not elsewhere classified.

Table 3.15: Female Deaths by Cause, Age, and Area, 1991

Cause	All ages		Age at death (years)													
			<1		1-4		5-14		15-44		45-64		65-84		85+	
	M	C	M	C	M	C	M	C	M	C	M	C	M	C	M	C
DIARRHOEAL																
Diarrhoea	32	72	17	24	5	25	3	7	0	1	3	2	3	11	1	2
Dysentery	9	8	1	5	3	2	1	0	0	0	2	0	2	1	0	0
INFECTIOUS																
Tuberculosis	6	7	0	0	0	0	1	0	3	5	1	2	1	0	0	0
Tetanus (non-neonatal)	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0
Other infectious	12	15	1	6	1	3	2	0	5	2	1	2	2	2	0	0
MALIGNANT NEOPLASMS	10	8	0	0	0	0	0	0	5	0	3	7	2	1	0	0
NUTRITIONAL	15	16	6	5	9	4	0	3	0	0	0	4	0	0	0	0
CARDIO-VASCULAR	23	23	0	0	0	0	0	0	1	0	7	10	12	10	3	3
RESPIRATORY																
ARI, pneum, influenza	18	47	15	38	3	5	0	3	0	0	0	0	0	0	0	1
COPD*	20	17	0	1	1	0	0	1	4	3	6	6	9	6	0	0
GASTRO-INTESTINAL	12	10	0	0	0	0	1	0	2	3	8	6	1	1	0	0
DIRECT OBSTETRIC	4	6	0	0	0	0	0	0	4	5	0	1	0	0	0	0
NEONATAL																
Tetanus (neonatal)	1	5	1	5	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	54	74	54	74	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																
Suicide	10	3	0	0	0	0	0	0	7	3	3	0	0	0	0	0
Homicide	2	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0
Drowning	10	14	1	0	7	12	2	1	0	0	0	1	0	0	0	0
Other accidents etc.	5	7	1	1	2	0	1	2	0	2	0	1	1	1	0	0
OTHER AND UNSPECIFIED																
Senility	54	49	0	0	0	0	0	0	0	0	9	6	38	34	7	9
Other causes n.e.c.**	55	47	0	3	3	4	2	2	8	8	16	7	22	22	4	1
Unknown	37	51	3	9	7	4	3	4	6	12	9	12	9	10	0	0
TOTAL	390	481	103	171	41	60	16	24	45	44	68	67	102	99	15	16

*Chronic obstructive pulmonary disease.
**Not elsewhere classified.

Table 3.16: Age-standardized Mortality Rates by Cause of Death, 1991

Cause of death	Males		Females	
	MCH-FP area	Comparison area	MCH-FP area	Comparison area
Diarrhoea	55.44	126.60	69.87	148.80
Dysentery	16.48	18.74	19.80	13.82
Tuberculosis	22.72	41.94	13.71	16.67
Tetanus (non-neonatal)		6.12	1.86	1.58
Other infectious	24.20	26.05	24.34	28.32
Malignant neoplasms	30.39	13.42	27.96	19.54
Nutritional	27.55	14.37	26.08	26.56
Cardio-vascular	78.81	59.48	75.86	82.23
ARI, pneumonia, influenza	49.37	100.45	32.90	74.82
C.O.P.D.*	49.28	68.44	55.47	44.63
Gastro-intestinal	39.61	63.41	28.05	24.56
Direct obstetric	-	-	7.33	12.90
Neonatal tetanus	5.55	6.10	1.86	7.37
Other neonatal	101.80	146.43	100.55	109.04
Suicide	6.39	1.53	19.38	6.67
Homicide	2.31	-	3.72	1.44
Drowning	35.71	23.36	16.60	20.82
Other accidents	18.58	28.12	10.73	14.70
Senility	140.12	116.22	211.58	240.44
Other n.e.c.**	123.43	124.47	164.49	141.62
Unknown	123.49	104.08	84.90	121.52
All causes	951.24	1089.34	997.06	1158.04

*Chronic obstructive pulmonary disease.
**Not elsewhere classified.

CHAPTER 4

FERTILITY

Table 4.1 shows the number of pregnancies and their outcomes in 1991. Compared with 1990, the number of live births fell by 747, or 11 percent. The decline occurred in both areas, being of the order of 10 percent in the MCH-FP area, and 12 percent in the Comparison area. In the study area as a whole, 87.4 percent of pregnancies resulted in a live birth; a proportion which remains remarkably constant from year to year.

Table 4.2 shows the distribution of pregnancy outcomes, and live births by month of occurrence. Figure 4.1 illustrates the monthly pattern of births and deaths in 1991. The pregnancy and birth data show the usual marked seasonal variation, peaking in October-November. The sex ratio of the live births was 104.6 males per 100 females. This is a more normal figure than those recorded in 1989 and 1990, when more girls were born than boys, but it must be remembered that this ratio is subject to large random variations. Given the annual number of births recorded in Matlab, the sex ratio at birth could vary randomly by as much as +/- 5 percentage points (95% confidence interval).

Table 4.3 shows the age-specific fertility rates for the study area, together with the total fertility rate, general fertility rate, and gross and net reproduction rates. Table 4.4 shows the corresponding rates for the MCH-FP and Comparison areas, which are also illustrated in Figure 4.2. Table 4.5 shows the rates for the four blocks of the MCH-FP area. As noted above in Chapter 2, the total fertility rates in both areas declined appreciably in comparison with 1990: in the MCH-FP area it fell by about 12% and in the Comparison area by 14%. Comparisons of the age-specific rates with those for 1990 show that the rates declined for all age groups of women in both areas, except the 15-19 group in the Comparison area. The relative difference between the rates for the two areas are greatest for the 35-39 and 40-44 age groups; the absolute difference is greatest for the 20-24 and 25-29 age groups.

Table 4.1: Number and Rates of Pregnancy Outcomes by Type and Area, 1991

Type of pregnancy outcome	Both areas		MCH-FP area		Comparison area	
	No.	Rate	No.	Rate	No.	Rate
Total pregnancies*	6737	138.2	3004	115.9	3733	163.5
Live birth pregnancies**	5885	873.5	2635	877.2	3250	870.6
Fetal wastage	852	126.5	369	122.8	483	129.4
Early (miscarriage)	642	95.3	278	92.5	364	97.5
Late (still-births)	210	31.2	91	30.3	119	31.9
Multiple birth pregnancies	81		33		48	
Live birth pregnancies	78		32		46	
Three live births	1		0		1	
Two live births	68		29		39	
One live birth	9		3		6	
Miscarriage pregnancies	3		1		2	

*Rates per 1000 women of age 15-49 years.
**Ratio per 1000 total pregnancies.

Table 4.2: Pregnancy Outcomes by Month, 1991

Months	Pregnancy outcome					No.of live born children			
		Miscarriage		Still birth	Live* birth	Both sexes	Males	Females	Ratio
	All	Induced	Spon.						
All months	6737	225	417	210	5885	5955	3045	2910	1.0463
January	697	23	35	28	611	614	323	291	1.1099
February	462	13	25	22	402	406	206	200	1.0300
March	624	28	35	17	544	547	279	268	1.0410
April	481	25	43	11	402	413	201	212	0.9481
May	484	21	44	16	403	412	207	205	1.0097
June	445	20	49	10	366	371	193	178	1.0842
July	426	15	27	13	371	377	204	173	1.1791
August	552	26	49	16	461	468	227	241	0.9419
September	565	16	26	18	505	508	254	254	1.0000
October	686	16	36	19	615	623	316	307	1.0293
November	727	8	25	17	677	685	365	320	1.1406
December	588	14	23	23	528	531	270	261	1.0344

*For any multiple pregnancy, the outcome is recorded as live birth if at least one of the issues is live born.

Figure 4.1: Number of Births and Deaths by Month, 1991

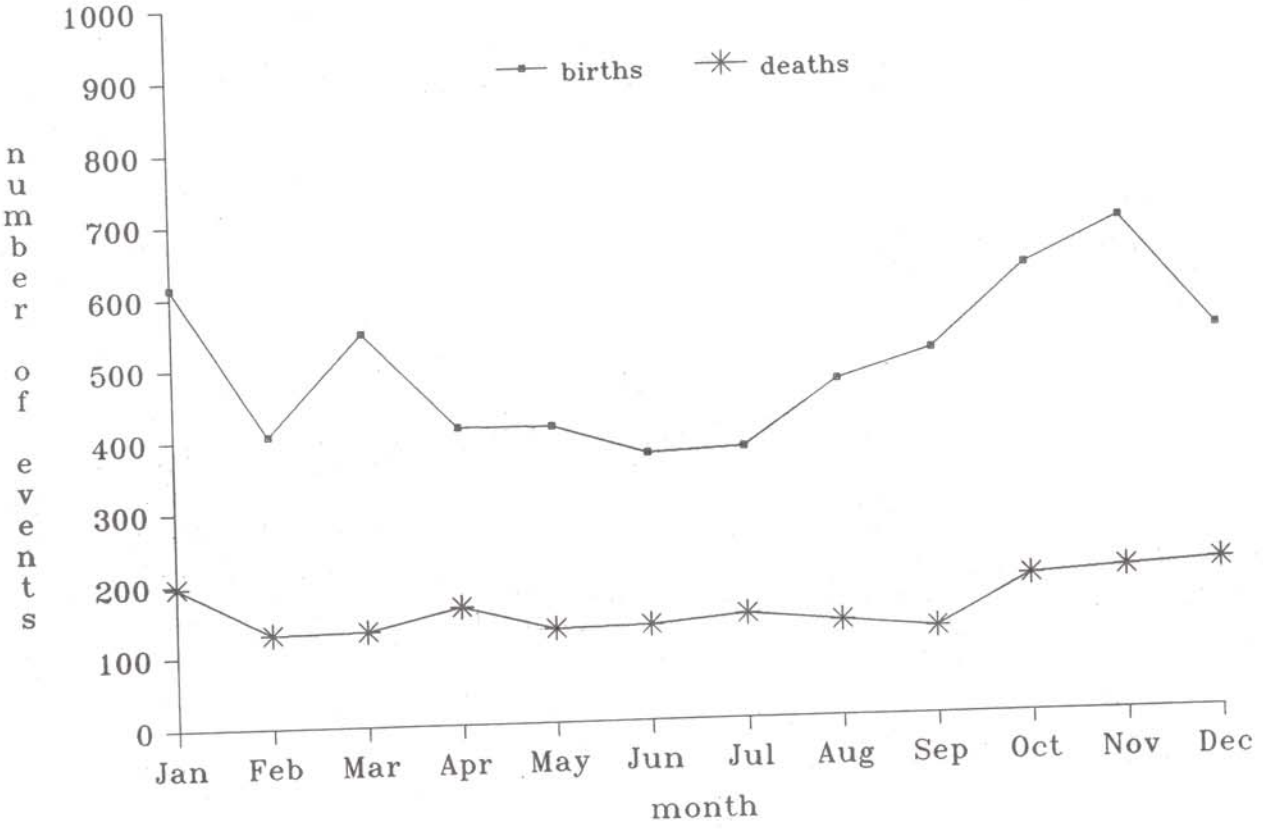


Table 4.3: Age-specific Fertility Rates and Indices, 1991

Age (years)	Number of live births	Number of women	ASFR (per 1000)
All ages	5955	48750	122.2
15-19*	695	9784	71.0
20-24	2045	9919	206.2
25-29	1814	8911	203.6
30-34	901	6711	134.3
35-39	355	4738	74.9
40-44	117	4100	28.5
45-49**	28	4587	6.1

Total Fertility Rate (TFR)	=	3623
General Fertility Rate (GFR)	=	122
Gross Reproduction Rate (GRR)	=	1770
Net Reproduction Rate (NRR)	=	1496

*Birth to mothers under age 15 were included in this group.

**Birth to mothers age 50 and above were included in this group.

Table 4.4: Age-specific Fertility Rates and Indices by Area, 1991

Age (years)	MCH-FP area			Comparison area		
	Births	Women	Rate	Births	Women	Rate
All ages	2664	25915	102.8	3291	22835	144.1
15-19*	325	5193	62.6	370	4591	80.6
20-24	913	5266	173.4	1132	4653	243.3
25-29	828	4827	171.5	986	4084	241.4
30-34	413	3521	117.3	488	3190	153.0
35-39	134	2516	53.3	221	2222	99.5
40-44	37	2151	17.2	80	1949	41.0
45-49**	14	2441	5.7	14	2146	6.5

TFR	=	3005	TFR	=	4327
GFR	=	103	GFR	=	144
GRR	=	1474	GRR	=	2107
NRR	=	1278	NRR	=	1741

*Birth to mothers under age 15 were included in this group.
**Birth to mothers age 50 and above were included in this group.

Table 4.5: Age-specific Fertility Rates and Indices for MCH-FP Area by Block, 1991

Age (years)	Block A			Block B		
	Births	Women	Rate	Births	Women	Rate
All ages	782	7211	108.4	711	6492	109.5
15-19*	85	1377	61.7	95	1335	71.2
20-24	294	1493	196.9	238	1305	182.4
25-29	232	1437	161.4	215	1189	180.8
30-34	110	957	114.9	111	839	132.3
35-39	46	676	68.0	33	656	50.3
40-44	13	597	21.8	10	553	18.1
45-49**	2	674	3.0	9	615	14.6
TFR =		3139		TFR =		3248
GFR =		108		GFR =		110
GRR =		1533		GRR =		1608

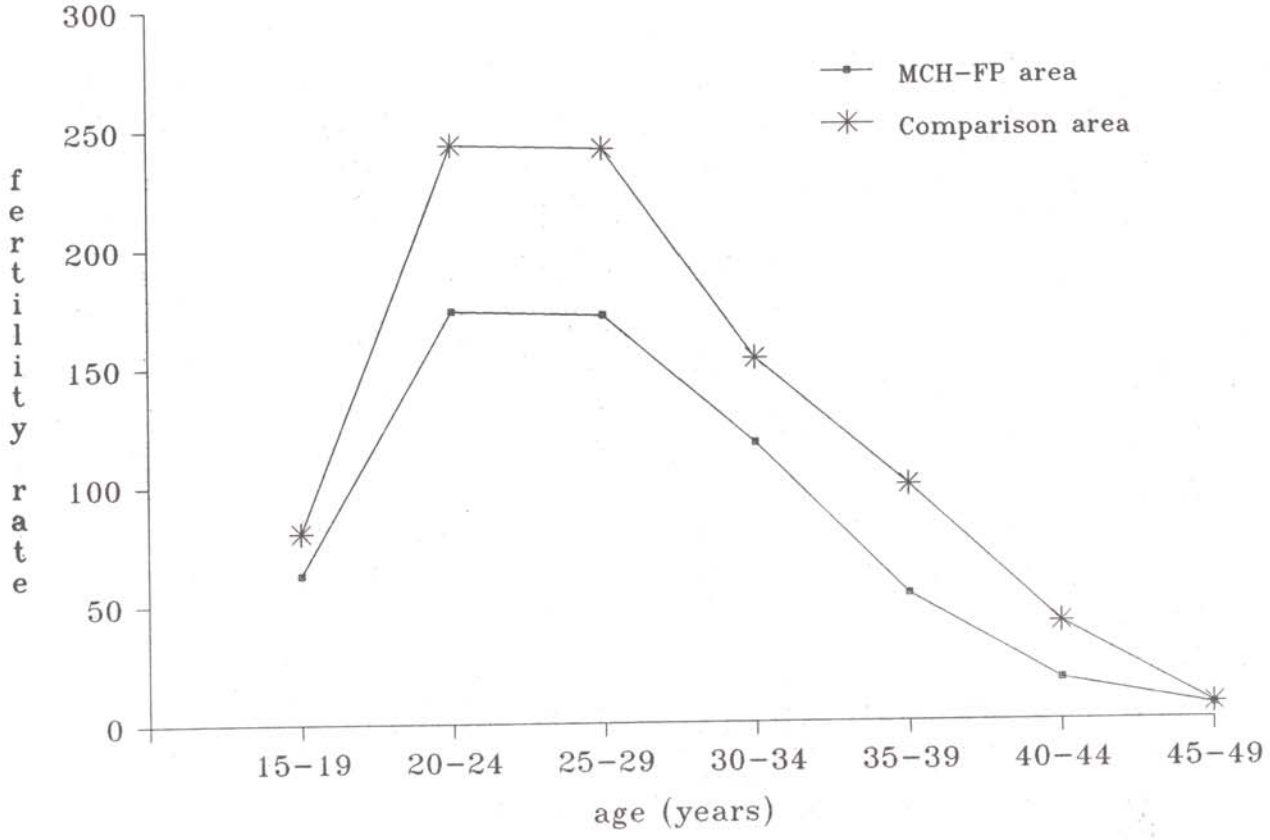
(continued)

Table 4.5 (cont.): Age-specific Fertility Rates and Indices for MCH-FP Area by Block, 1991

Age (years)	Block C			Block D		
	Births	Women	Rate	Births	Women	Rate
All ages	678	6814	99.5	493	5398	91.3
15-19*	90	1419	63.4	55	1062	51.8
20-24	228	1391	163.9	153	1077	142.1
25-29	211	1198	176.1	170	1003	169.5
30-34	109	950	114.7	83	775	107.1
35-39	33	669	49.3	22	515	42.7
40-44	6	552	10.9	8	449	17.8
45-49**	1	635	1.6	2	517	3.9
TFR	=	2900		TFR	=	2674
GFR	=	100		GFR	=	91
GRR	=	1394		GRR	=	1340

*Birth to mothers under age 15 were included in this group.
**Birth to mothers age 50 and above were included in this group.

Figure 4.2: Age-specific Fertility Rates by Area, 1991



CHAPTER 5

MARRIAGE AND DIVORCE

The number of marriages registered in 1991 was 2,849, giving a crude marriage rate of 13.9 per thousand. These figures show a decline on those of 1990, but are still well above the low figure of 2,540, or 12.7 per thousand, recorded in 1988.

Tables 5.1 and 5.2 show the distributions of grooms and brides by age at marriage and previous marital status. The mean ages at marriage -- 27.2 and 19.4 for all grooms and brides; 25.9 and 18.8 for those marrying for the first time -- show little change on 1990. In general, however, there would appear to have been a long-term rise in age at marriage of females in Matlab: the mean age has been over 19 for every year since 1985, while prior to that date it was consistently below that age. Table 5.3, marriage rates by age and sex, shows that the biggest drop from 1990 was in the 20-24 age group for both sexes. Table 5.4 is a cross-tabulation of marriages by groom's and bride's ages.

Table 5.5 shows that divorces numbered 397 in 1991, which constituted a decrease from the 1990 figure of 412. In general, the incidence of divorce in Matlab appears to have fallen: from 1978 to 1981, the numbers of divorces were consistently over 500; since 1981 they have been below that figure. Table 5.5, showing the number of divorces by partner's age, indicates that the peak ages of divorce for men are 25 to 34, compared to 15 to 24 for women. This reflects the sex difference in age at marriage.

Table 5.6 and Figure 5.1 show the distributions of marriages and divorces by month. July is often a peak month for marriages, but no regular seasonal pattern is discernible in the number of divorces.

Table 5.7 gives marriage duration data by sex and age. The largest percentage of divorces occurs among couples married twelve to twenty-three years.

Table 5.1: Groom's Age at Marriage by Previous Marital Status, 1991

Age (years)	All grooms		Previous marital status							
			Single		Married		Divorced		Widowed	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
All ages	2849	100.0	2327	100.0	135	100.0	280	100.0	107	100.0
10-14	1	0.0	1	0.0	0	0.0	0	0.0	0	0.0
15-19	112	3.9	106	4.6	2	1.5	4	1.4	0	0.0
20-24	808	28.4	744	32.0	13	9.6	48	17.1	3	2.8
25-29	1169	41.0	1042	44.8	20	14.8	94	33.6	13	12.1
30-34	565	19.8	396	17.0	49	36.3	91	32.5	29	27.1
35-39	99	3.5	32	1.4	23	17.0	26	9.3	18	16.8
40-44	33	1.2	2	0.1	13	9.6	10	3.6	8	7.5
45-49	25	0.9	2	0.1	5	3.7	3	1.1	15	14.0
50-54	23	0.8	2	0.1	6	4.4	2	0.7	13	12.1
55-59	6	0.2	0	0.0	1	0.7	1	0.4	4	3.7
60-64	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
65+	8	0.3	0	0.0	3	2.2	1	0.4	4	3.7
Median age*	26.0		26.0		32.0		29.0		36.0	
Mean age*	27.2		25.9		34.1		29.6		39.3	
Standard dev.*	5.9		4.0		9.2		6.3		10.8	

*Mean, median, and standard deviation were calculated from ungrouped age data.

Table 5.2: Bride's Age at Marriage by Previous Marital Status, 1991

Age (years)	All brides		Previous marital status					
			Single		Divorced		Widowed	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent
All ages	2849	100.0	2452	100.0	374	100.0	23	100.0
10-14	114	4.0	114	4.6	0	0.0	0	0.0
15-19	1634	57.4	1546	63.1	84	22.5	4	17.4
20-24	854	30.0	696	28.4	157	42.0	1	4.3
25-29	186	6.5	83	3.4	92	24.6	11	47.8
30-34	41	1.4	8	0.3	30	8.0	3	13.0
35-39	13	0.5	1	0.0	9	2.4	3	13.0
40-44	3	0.1	1	0.0	2	0.5	0	0.0
45+	2	0.1	1	0.0	0	0.0	1	4.3
Unknown	2	0.1	2	0.1	0	0.0	0	0.0
Median age*	19.0		18.0		22.5		27.0	
Mean age*	19.4		18.8		23.4		28.1	
Standard dev.*	3.9		3.1		4.8		8.2	

*Mean, median, and standard deviation were calculated from ungrouped age data.

Table 5.3: Marriage Rates by Age and Sex, 1991

Age (years)	Males			Females		
	Marriages	Population	Rate*	Marriages	Population	Rate*
10-14	1	13697	0.1	114	12291	9.3
15-19	112	11040	10.1	1634	9784	167.0
20-24	808	9148	88.3	854	9919	86.1
25-29	1169	7453	156.8	186	8911	20.9
30-34	565	6895	81.9	41	6711	6.1
35-39	99	4781	20.7	13	4738	2.7
40-44	33	3578	9.2	3	4100	0.7
45+	62	16840	3.7	4	17683	0.2

*Rates per 1000 population irrespective of previous marital status.

Table 5.4: Number of Marriages by Groom's and Bride's Age at Marriage, 1991

Groom's age (years)	All	Bride's age (years)							
		10-14	15-19	20-24	25-29	30-34	35-39	40-44	45+
All ages	2849	114	1634	854	186	41	13	3	4
10-14	1	0	0	1	0	0	0	0	0
15-19	112	6	80	22	3	1	0	0	0
20-24	808	57	564	171	13	1	0	0	2
25-29	1169	38	725	358	42	4	1	0	1
30-34	565	13	231	239	71	9	1	0	1
35-39	99	0	26	35	28	7	3	0	0
40-44	33	0	6	12	8	3	2	2	0
45-49	25	0	1	8	8	6	2	0	0
50-54	23	0	0	6	8	5	3	1	0
55-59	6	0	1	1	2	2	0	0	0
60-64	0	0	0	0	0	0	0	0	0
65+	8	0	0	1	3	3	1	0	0

Table 5.5: Number of Divorces by Partners' Age at Divorce, 1991

Male's age (years)	All	Female's age (years)							
		10-14	15-19	20-24	25-29	30-34	35-39	40-44	45+
All ages	397	2	129	164	73	15	10	2	2
10-14	0	0	0	0	0	0	0	0	0
15-19	11	0	10	1	0	0	0	0	0
20-24	84	2	41	35	5	1	0	0	0
25-29	115	0	47	56	10	0	2	0	0
30-34	120	0	25	60	32	2	1	0	0
35-39	28	0	2	9	14	2	1	0	0
40-44	16	0	2	1	5	4	4	0	0
45-49	11	0	1	1	4	3	2	0	0
50-54	2	0	0	0	2	0	0	0	0
55-59	2	0	0	0	0	1	0	1	0
60-64	3	0	0	1	0	1	0	0	1
65+	5	0	1	0	1	1	0	1	1

Table 5.6: Marriages and Divorces by Months, 1991

Month	Marriage		Divorce	
	Number	Percent	Number	Percent
January	244	8.6	49	12.3
February	246	8.6	33	8.3
March	280	9.8	37	9.3
April	182	6.4	26	6.5
May	180	6.3	29	7.3
June	249	8.7	27	6.8
July	289	10.1	35	8.8
August	268	9.4	35	8.8
September	224	7.9	24	6.0
October	260	9.1	37	9.3
November	210	7.4	32	8.1
December	217	7.6	33	8.3
Total	2849	100.0	397	100.0

Figure 5.1: Marriages and Divorces by Month, 1991

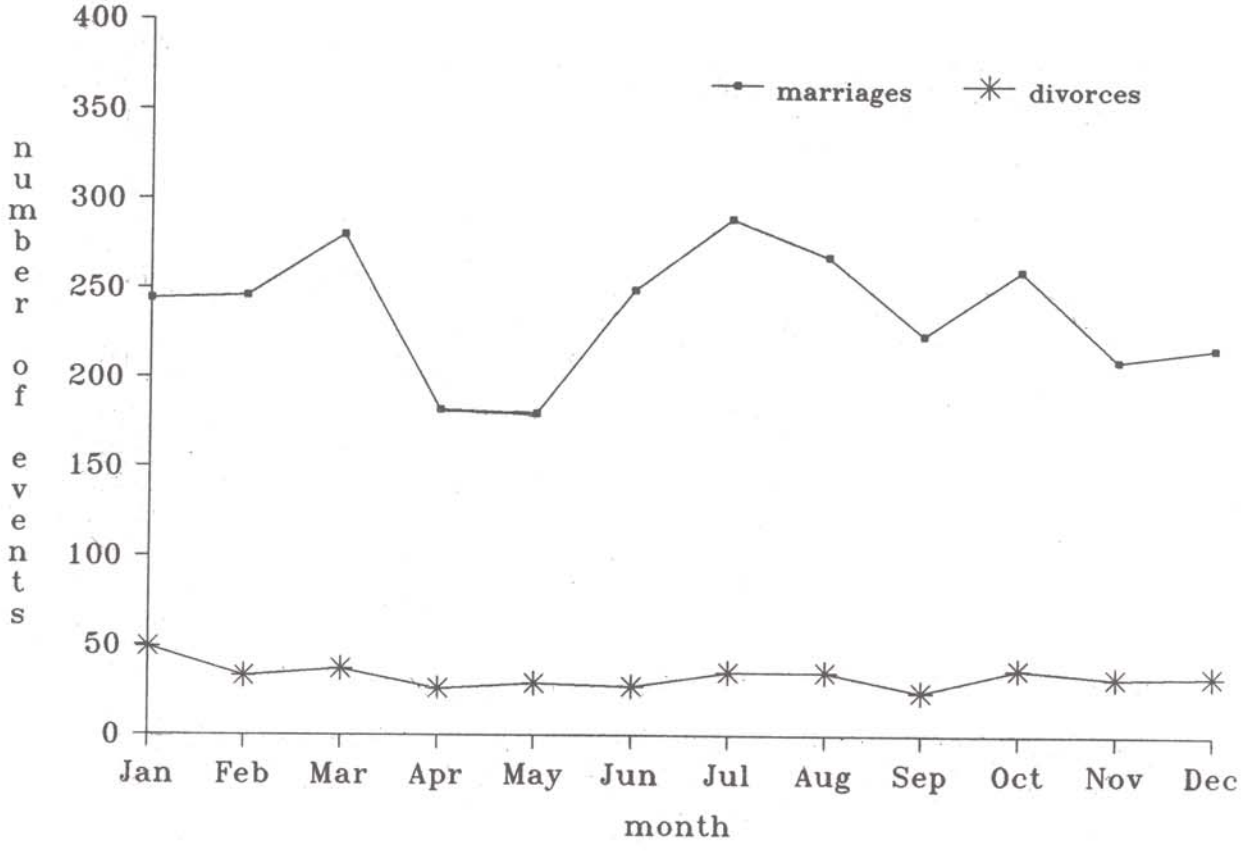


Table 5.7: Number of Divorces by Sex, Age, and Duration of Marriage, 1991

Age at divorce	Duration of marriage (months)															
	All duration		Under 6		6-11		12-23		24-35		36-47		48-59		60+	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
All ages	397	397	59	59	53	53	96	96	63	63	44	44	19	19	63	63
Under 20	11	131	3	27	4	31	3	43	1	20	0	5	0	2	0	3
20-24	84	164	12	15	14	13	24	38	16	34	11	32	3	11	4	21
25-29	115	73	16	12	22	5	30	11	21	7	12	6	4	4	10	28
30-34	120	15	16	1	12	2	23	3	17	1	17	1	10	2	25	5
35-39	28	10	7	4	1	2	6	1	3	0	2	0	1	0	8	3
40-49	27	3	3	0	0	0	6	0	4	1	2	0	0	0	12	2
50+	12	1	2	0	0	0	4	0	1	0	0	0	1	0	4	1

CHAPTER 6

MIGRATION

An "out-migrant" is defined as a person originally listed on a DSS census as a resident, or a person who became a resident after the census by birth or immigration, who subsequently moved out of the surveillance (DSS) area permanently. Likewise, an "in-migrant" is an individual not recorded in the census who has permanently moved into the surveillance area. Those who stay in the area continuously for at least six months in a year or come home at least once a month to stay overnight are treated as permanent residents. It may be noted that these definitions refer to the surveillance areas as a whole. People who move from the Comparison area into the MCH-FP area, or vice versa, do not feature in the tables which show the numbers of migrants in the two areas.

The number of in-migrants in 1991 was 5,529, giving a crude rate of in-migration of 26.9 per thousand. Out-migrants numbered 8,612 and the out-migration rate 41.9 per thousand. The figure of in-migrants was up, and that of out-migrants slightly down, on the 1991 figures, so the net loss of migrants decreased from 3,340 in 1990 to 3,083 in 1991. Females once again outnumbered males, both among those coming in and those going out.

The numbers for the MCH-FP and Comparison areas, shown in Tables 6.2 and 6.3 by age and sex, are fairly evenly distributed between the two areas, but with rather larger numbers of in-migrants coming into the Comparison area.

Table 6.4 shows the age-specific migration rates, which are illustrated in Figure 6.1. They show the bi-modal age distributions commonly found for migrant populations, with a primary peak of young adults and a secondary peak of very young children moving with their parents. For males the ages of the out-migrants tended to be rather younger than those of the in-migrants, while for females the shapes of the distributions were similar. Females tend to be younger than males when they migrate, possibly reflecting the tendency for wives to be younger than their husbands.

Tables 6.5 to 6.8 show the distributions of in- and out-migrants by age, sex and the cause of movement. The classification by cause follows that used in the 1990 report, which constituted a revision of that adopted in previous DSS annual reports, and it is hoped that users will find it more meaningful. Acquiring or seeking a job accounted for about half of male out migration. The most important reason for male in- migration and for female in- and out- migration was joining a spouse or parents.

Table 6.9 and Figure 6.2 show the numbers moving in and out by month. As in previous years, January is the preferred month for migrating.

Table 6.1: In- and Out-migration by Age and Sex, 1991

Age (years)	In-migration			Out-migration		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	5529	2366	3163	8612	4016	4596
Under 5	923	443	480	1236	620	616
0	248	118	130	288	134	154
1	192	79	113	279	146	133
2	189	102	87	238	119	119
3	161	73	88	224	124	100
4	133	71	62	207	97	110
5 - 9	583	302	281	764	382	382
10-14	417	205	212	755	348	407
15-19	891	170	721	1527	487	1040
20-24	914	215	699	1719	690	1029
25-29	611	267	344	1011	522	489
30-34	451	262	189	607	383	224
35-39	253	179	74	309	222	87
40-44	133	104	29	179	116	63
45-49	96	69	27	124	63	61
50-54	66	46	20	99	55	44
55-59	76	50	26	90	48	42
60-64	30	18	12	67	21	46
65+	85	36	49	125	59	66

Table 6.2: In-migration by Age, Sex, and Area, 1991

Age (years)	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	2556	1054	1502	2973	1312	1661
Under 5	431	198	233	492	245	247
0	134	59	75	114	59	55
1	89	31	58	103	48	55
2	86	44	42	103	58	45
3	66	32	34	95	41	54
4	56	32	24	77	39	38
5 - 9	240	125	115	343	177	166
10-14	187	95	92	230	110	120
15-19	437	77	360	454	93	361
20-24	452	95	357	462	120	342
25-29	297	134	163	314	133	181
30-34	197	111	86	254	151	103
35-39	117	80	37	136	99	37
40-44	52	42	10	81	62	19
45-49	50	39	11	46	30	16
50-54	27	18	9	39	28	11
55-59	21	15	6	55	35	20
60-64	14	11	3	16	7	9
65+	34	14	20	51	22	29

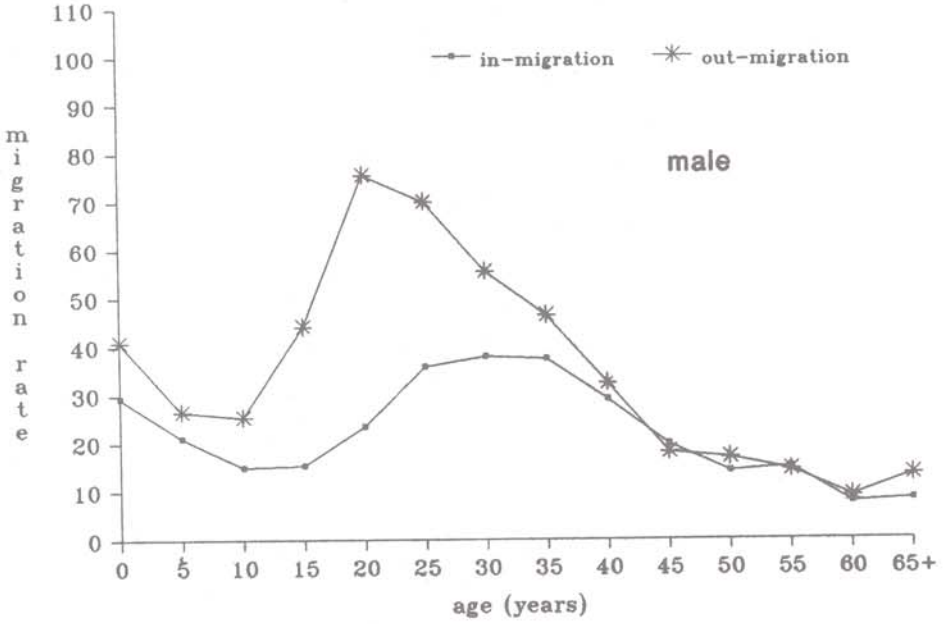
Table 6.3: Out-migration by Age, Sex, and Area, 1991

Age (years)	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	4320	2004	2316	4292	2012	2280
Under 5	607	301	306	629	319	310
0	146	64	82	142	70	72
1	132	68	64	147	78	69
2	120	62	58	118	57	61
3	109	61	48	115	63	52
4	100	46	54	107	51	56
5 - 9	372	188	184	392	194	198
10-14	343	169	174	412	179	233
15-19	766	238	528	761	249	512
20-24	910	359	551	809	331	478
25-29	516	255	261	495	267	228
30-34	314	195	119	293	188	105
35-39	157	112	45	152	110	42
40-44	89	59	30	90	57	33
45-49	57	30	27	67	33	34
50-54	52	32	20	47	23	24
55-59	41	23	18	49	25	24
60-64	30	10	20	37	11	26
65+	66	33	33	59	26	33

Table 6.4: Age and Sex-specific Migration Rates by Direction, 1991
(per 1000 population)

Age (years)	Both sexes		Males		Females	
	In	Out	In	Out	In	Out
All ages	26.9	41.9	23.0	39.0	30.8	44.8
Under 5	30.6	41.0	29.3	40.9	32.0	41.1
0	40.9	47.5	38.6	43.8	43.3	51.3
1	32.5	47.2	26.6	49.2	38.4	45.2
2	30.6	38.5	33.4	39.0	27.8	38.0
3	27.1	37.7	24.2	41.1	30.0	34.1
4	22.0	34.3	23.3	31.9	20.7	36.8
5 - 9	21.0	27.5	21.0	26.6	20.9	28.4
10-14	16.0	29.1	15.0	25.4	17.2	33.1
15-19	42.8	73.3	15.4	44.1	73.7	106.3
20-24	47.9	90.2	23.5	75.4	70.5	103.7
25-29	37.3	61.8	35.8	70.0	38.6	54.9
30-34	33.1	44.6	38.0	55.5	28.2	33.4
35-39	26.6	32.5	37.4	46.4	15.6	18.4
40-44	17.3	23.3	29.1	32.4	7.1	15.4
45-49	11.9	15.4	19.8	18.1	5.9	13.3
50-54	9.5	14.3	14.1	16.9	5.5	12.0
55-59	11.4	13.5	15.0	14.4	7.8	12.6
60-64	6.5	14.5	7.6	8.9	5.3	20.3
65+	10.3	15.2	8.2	13.4	12.8	17.2

Figure 6.1: Rate of In- and Out-migration by Sex and Age, 1991



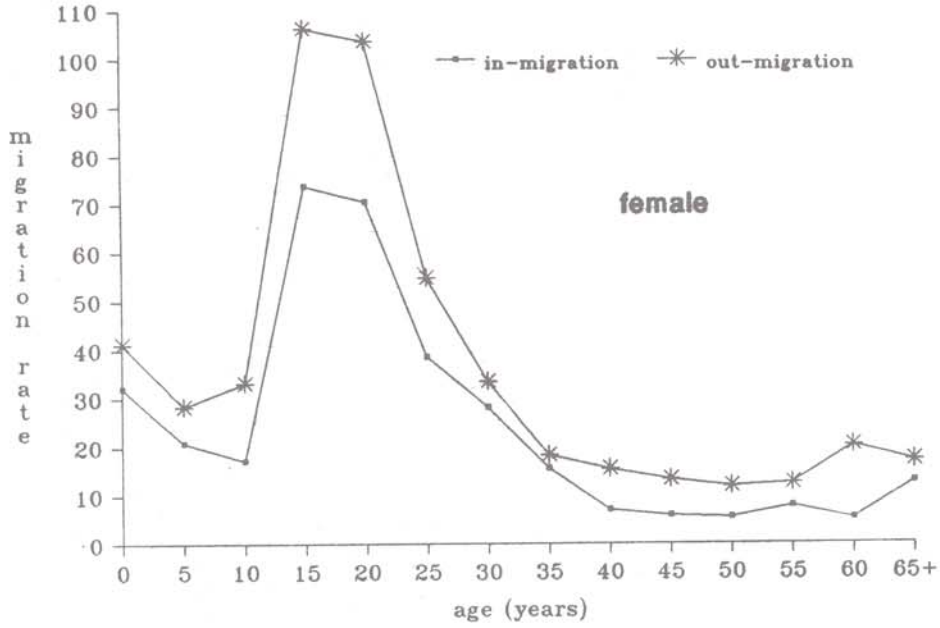


Table 6.5: Male Out-migration by Cause of Movement and Age, 1991

Cause of movement	Total	Age (years)													
		<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All migrants	4016	620	382	348	487	690	522	383	222	116	63	55	48	21	59
Work/Economic/Educational															
- acquired/seeking job	2012	0	1	69	290	520	426	316	174	85	49	33	22	11	16
- job completion/retirement	9	0	0	1	1	2	1	1	1	1	0	0	0	0	1
- to acquire education	239	0	10	51	87	63	22	4	0	1	0	1	0	0	0
- educ. completed/interrupt	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0
- student lodging	2	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Housing/Environmental															
- acquired/seeking new land/house	102	0	1	0	4	6	15	16	16	15	5	8	8	0	8
- river erosion	14	0	0	0	2	2	1	1	2	0	3	1	2	0	0
Marriage/Familial															
- marriage	2	0	0	0	1	0	1	0	0	0	0	0	0	0	0
- separation/divorce/widow	5	0	0	0	0	1	0	2	0	0	0	0	0	0	2
- move with or join spouse/parents	1496	616	369	220	98	72	37	24	17	5	5	2	8	6	17
- adoption	4	3	1	0	0	0	0	0	0	0	0	0	0	0	0
- family friction/breakdown	41	1	0	5	1	9	11	8	3	2	0	0	1	0	0
- health or old age care	13	0	0	0	0	0	0	0	0	0	0	4	1	1	7
Legal problems	24	0	0	1	1	7	2	6	4	2	0	0	0	0	1
Other and not stated															
- other n.e.c.*	44	0	0	0	1	7	4	4	4	5	1	6	5	1	6
- unknown or not stated	7	0	0	0	1	0	1	1	1	0	0	0	1	2	0

*Not elsewhere classified.

Table 6.6: Female Out-migration by Cause of Movement and Age, 1991

Cause of movement	Total	Age (years)												
		<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All migrants	4596	616	382	407	1040	1029	489	224	87	63	61	44	42	46	66
Work/Economic/Educational															
- acquired/seeking job	478	0	10	89	147	111	60	30	8	8	7	1	2	5	0
- job completion/retirement	5	0	0	0	3	1	1	0	0	0	0	0	0	0	0
- to acquire education	90	1	11	21	30	25	2	0	0	0	0	0	0	0	0
- educ. completed/interrupt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- student lodging	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Housing/Environmental															
- acquired/seeking new land/house	43	0	0	2	2	7	11	6	3	3	4	0	1	0	4
- river erosion	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Marriage/Familial															
- marriage	860	1	1	27	467	281	60	15	5	1	0	1	1	0	0
- separation/divorce/widow	145	1	0	1	40	69	20	5	3	0	1	1	1	0	3
- move with or join spouse/parents	2876	600	359	261	336	515	327	163	65	49	47	38	34	34	48
- adoption	14	12	1	0	1	0	0	0	0	0	0	0	0	0	0
- family friction/breakdown	26	0	0	1	6	12	4	2	1	0	0	0	0	0	0
- health or old age care	16	0	0	0	0	1	0	0	0	1	0	1	1	5	7
Legal problems	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Other and not stated															
- other n.e.c.*	37	1	0	5	7	5	3	3	1	1	2	2	2	2	3
- unknown or not stated	4	0	0	0	0	2	1	0	0	0	0	0	0	0	1

*Not elsewhere classified.

Table 6.7: Male In-migration by Cause of Movement and Age, 1991

Cause of movement	Total	Age (years)													
		<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All migrants	2366	443	302	205	170	215	267	262	179	104	69	46	50	18	36
Work/Economic/Educational															
- acquired/seeking job	379	0	1	3	24	45	84	82	59	34	17	13	11	3	3
- job completion/retirement	266	0	0	6	7	31	53	58	30	21	15	9	17	7	12
- to acquire education	138	1	21	54	33	23	4	0	0	1	0	0	0	0	1
- educ. completed/interrupt	4	0	0	0	2	1	1	0	0	0	0	0	0	0	0
- student lodging	6	0	0	0	1	4	0	1	0	0	0	0	0	0	0
Housing/Environmental															
- acquired/seeking new land/house	286	0	2	4	31	37	46	43	40	26	15	14	13	5	10
- river erosion	10	0	0	0	0	0	1	0	5	2	0	1	1	0	0
Marriage/Familial															
- marriage	26	0	0	0	0	4	7	8	2	3	2	0	0	0	0
- separation/divorce/widow	5	0	0	0	0	0	1	2	1	0	0	1	0	0	0
- move with or join spouse/parents	1129	438	277	135	59	49	53	49	31	9	11	7	4	1	6
- adoption	7	4	1	0	0	1	0	0	0	0	0	0	1	0	0
- family friction/breakdown	19	0	0	0	0	2	5	5	2	3	2	0	0	0	0
- health or old age care	9	0	0	0	1	2	0	1	2	0	1	0	0	0	2
Legal problems	26	0	0	0	1	8	6	2	2	2	3	1	1	0	0
Other and not stated															
- other n.e.c.*	56	0	0	3	11	8	6	11	5	3	3	0	2	2	2
- unknown or not stated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*Not elsewhere classified.

Table 6.8: Female In-migration by Cause of Movement and Age, 1991

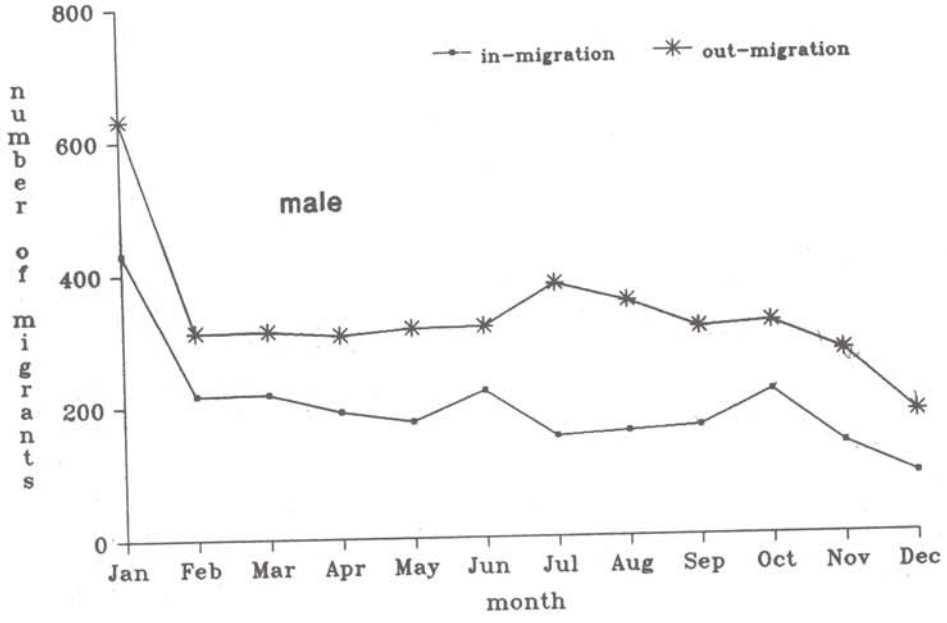
Cause of movement	Total	Age (years)													
		<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All migrants	3163	480	281	212	721	699	344	189	74	29	27	20	26	12	49
Work/Economic/Educational															
- acquired/seeking job	123	0	2	9	10	35	34	18	7	2	1	0	3	1	1
- job completion/retirement	42	0	0	4	18	6	3	6	3	0	1	0	0	0	1
- to acquire education	70	0	22	29	15	4	0	0	0	0	0	0	0	0	0
- educ. completed/interrupt	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
- student lodging	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Housing/Environmental															
- acquired/seeking new land/house	71	1	0	1	1	10	19	15	3	3	2	3	2	2	9
- river erosion	5	0	0	0	0	2	1	1	1	0	0	0	0	0	0
Marriage/Familial															
- marriage	785	0	0	4	435	277	50	16	3	0	0	0	0	0	0
- separation/divorce/widow	208	0	0	7	60	74	46	11	5	1	0	0	2	0	2
- move with or join spouse/parents	1751	468	249	153	168	265	174	115	48	23	21	15	17	8	27
- adoption	17	11	5	0	0	1	0	0	0	0	0	0	0	0	0
- family friction/breakdown	27	0	0	0	4	12	9	2	0	0	0	0	0	0	0
- health or old age care	9	0	0	0	1	1	0	1	0	0	1	0	0	0	5
Legal problems	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0
Other and not stated															
- other n.e.c.*	51	0	1	5	9	10	8	4	4	0	1	2	2	1	4
- unknown or not stated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

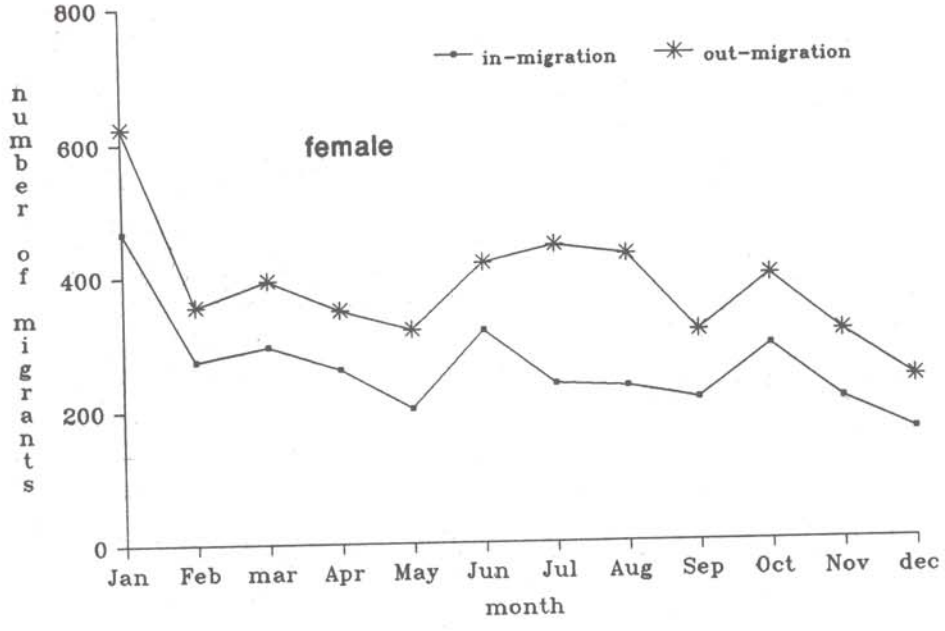
*Not elsewhere classified.

Table 6.9: In- and Out-migration by Sex and Month, 1991

Age (years)	In-migration			Out-migration		
	Both sexes	Males	Females	Both sexes	Males	Females
January	896	430	466	1255	632	623
February	491	217	274	666	311	355
March	513	218	295	705	312	393
April	452	191	261	655	306	349
May	377	175	202	634	315	319
June	538	221	317	735	317	418
July	388	151	237	824	380	444
August	390	158	232	782	353	429
September	377	164	213	627	312	315
October	508	216	292	717	320	397
November	347	136	211	588	276	312
December	252	89	163	424	182	242
All months	5529	2366	3163	8612	4016	4596

Figure 6.2: Number of In- and Out-migrants by Sex and Month, 1991





Appendix A

Names and Codes of Villages in the DSS Area, 1991

	MCH-FP area				Comparison area			
Block*	Village code	Village name	Village code	Village name	Village code	Village name	Village code	Village name
A	D	Charmukundi	V59	Doshpara	A	Uddamdi	V78	Soladana
	W	Kaladi	V60	Suvankardi	B	Charmasua	V79	Pitambordi
	V10	Dhakirgaon	V61	Munsabdi	C	Sarderkandi	V80	Daribond
	V11	Nabakalash	V62	Shilmondi	F	Sepoykandi	V90	Narinda
	V31	Dighaldi	V72	Upadi	G	Thatalia	V95	Baluchar
	V32	Mobarakdi			J	Char Harigope	V96	Rampur
B	H	Lamchari	V26	Narayanpur	U	Baispur	V97	Dhanagoda
	V12	Bhangerpar	V56	Palipara	V01	Kadamtali	V98	Santoshpur
	V13	Baburpara	V82	Dhanarpar	V02	Nilokhi	V99	Baluakandi
	V19	Lakshmipur	V83	Padmapal	V03	Char Nilokhi	VB1	Taltoli
	V20	Dagorpur	V85	Bhanurpara	V04	Char Pathalia	VB2	Sree Rayerchar
	V21	Khadergaon	V87	Hurmaisha	V05	Gazipur	VB3	Rayerkandi
	V22	Beloti	VB12	Nagda	V06	Fatepur	VB4	Ramdaspur
	V23	Baluchar	VB13	Nacgaon	V07	Nayakandi	VB5	Thakurpara
	V24	Machuakhal			V08	Goalbhar	VB6	Sarkerpara
C	K	Shahpur	V40	Masunda	V09	Naburkandi	VB7	Mirpur
	L	Tatkhana	V41	Paton	V14	Enayetnagar	VB8	Farazikandi
	M	Char Nayergaon	V42	Adhara (South)	V35	Durgapur	VB9**	Ramanathgonj
	N	Aswinpur	V43	Kanachak	V36	Ludhua	VB10	South Rampur
	O	Nayergaon	V44	Panchkona	V37**	Charputia	D28	Bazarkhola
	P	Titerkandi	V64	Kawadi	V38	Galimkha	D29	Kirtonkhola
	Q	Char Shibpur	V86	Adhara	V45	Bakchar	D30	Banuakandi
	V27	Panchghoria	V88	Datikara	V46	Silinda	D31	Harina Bazarkhola
	V28	Khidirpur	VB11	Mehron	V47	Tulatali	D32	Khalisha
	V30	Harion	D100	Rarogaon	V48	Gangkandi	D33	Nayanagar
	V39	Gobindapur	D101	Naojan	V49	Harina Bhabanipara	D34 D35	Saidkharkandi Molla Kandi
U	R	Nandalalpur	V52	Nayakandi	V50	Bakharpur	D88	Sankibhanga
	S	Tatua	V54	Balakandi	V51	Induriakandi	D89	Sankibangha Namapara
	T	Amuakanda	V55	Induria	V53	Chhoto Haldia		
	V15	Bhati Rasulpur	V57	Baluchar	V58**	Muhisimuri	D90	Zahirabaj
	V16	Binandapur	V63	Islamabad (East)	V65	Nayachar	D91**	North Joypur
	V17	Hatighata			V66	Thatalia	D92**	West Joypur
	V18	Torkey	V67	Majlishpur	V68	Sobahan	D93	Maizkandi
	V25	Char Pathalia	V81	Sonaterkandi	V69**	Naobangha	D94	Hazipur
	V29	Shibpur(South)	V84	Shanhajkandi	V70**	South Joypur	D95	Tapaderpara
	V33	Shibpur(North)	V89	Islamabad (Middle)	V71	Khamarpara	D96	Rampur
	V34	Satparia			V73	Sadardia	D97	Nayakandi
					V74	Ketundia	D98	Bara Haldia
					V75	Mukundia	D99	Hondertoli
					V76	Chosoi		

*Division by block applies only to the MCH-FP area.
**Lost due to river erosion.

Appendix B

Mid-year Population, Births, and Deaths by Village, 1991

Village* code	Population	Live births	Deaths	Birth rate	Death rate
D	1753	46	22	26.2	12.5
W	3211	67	24	20.9	7.5
V10	1550	46	11	29.7	7.1
V11	1635	37	11	22.6	6.7
V31	8755	231	56	26.4	6.4
V32	2633	75	28	28.5	10.6
V59	984	27	7	27.4	7.1
V60	906	28	13	30.9	14.3
V61	688	21	7	30.5	10.2
V62	859	26	4	30.3	4.7
V72	5851	178	57	30.4	9.7
Block A	28825	782	240	27.1	8.3
H	1169	37	11	31.7	9.4
V12	525	17	5	32.4	9.5
V13	738	13	4	17.6	5.4
V19	3001	71	27	23.7	9.0
V20	1153	36	11	31.2	9.5
V21	473	17	5	35.9	10.6
V22	570	12	2	21.1	3.5
V23	511	9	2	17.6	3.9
V24	2664	78	28	29.3	10.5
V26	2604	63	29	24.2	11.1
V56	1461	32	11	21.9	7.5
V82	1454	44	19	30.3	13.1
V83	523	17	5	32.5	9.6
V85	448	11	3	24.6	6.7
V87	582	17	5	29.2	8.6
VB12	4035	112	29	27.8	7.2
VB13	4503	125	36	27.8	8.0
Block B	26414	711	232	26.9	8.8

(continued)

Appendix B (cont.)

Village* code	Population	Live births	Deaths	Birth rate	Death rate
K	897	20	4	22.3	4.5
L	480	7	5	14.6	10.4
M	153	7	2	45.8	13.1
N	2093	44	13	21.0	6.2
O	1387	29	12	20.9	8.7
P	1897	49	26	25.8	13.7
Q	320	8	3	25.0	9.4
V27	903	13	10	14.4	11.1
V28	1390	44	13	31.7	9.4
V30	571	14	1	24.5	1.8
V39	346	7	2	20.2	5.8
V40	734	19	4	25.9	5.4
V41	1476	49	11	33.2	7.5
V42	727	21	5	28.9	6.9
V43	832	22	4	26.4	4.8
V44	594	18	3	30.3	5.1
V64	4555	99	21	21.7	4.6
V86	789	16	6	20.3	7.6
V88	491	19	13	38.7	26.5
VB11	2504	50	20	20.0	8.0
D100	3226	88	27	27.3	8.4
D101	1230	35	5	28.5	4.1
Block C	27595	678	210	24.6	7.6
R	1363	33	9	24.2	6.6
S	965	27	9	28.0	9.3
T	1503	39	16	25.9	10.6
V15	569	13	7	22.8	12.3
V16	769	18	5	23.4	6.5
V17	1048	20	7	19.1	6.7
V18	3657	81	31	22.1	8.5
V25	1195	32	7	26.8	5.9
V29	478	6	3	12.6	6.3
V33	559	13	9	23.3	16.1
V34	794	11	5	13.9	6.3
V52	238	7	2	29.4	8.4
V54	626	13	6	20.8	9.6
V55	504	7	3	13.9	6.0
V57	1103	27	6	24.5	5.4
V63	2067	45	14	21.8	6.8
V67	581	6	7	10.3	12.0
V81	614	17	3	27.7	4.9
V84	2125	45	5	21.2	2.4
V89	1331	33	14	24.8	10.5
Block D	22089	493	168	22.3	7.6
MCH-FP area	104923	2664	850	25.4	8.1

(continued)

Appendix B (cont.)

Village* code	Popula-tion	Live births	Deaths	Birth rate	Death rate
A	2756	68	18	24.7	6.5
B	2032	72	17	35.4	8.4
C	3639	131	36	36.0	9.9
F	1225	39	11	31.8	9.0
G	2476	88	30	35.5	12.1
J	510	18	6	35.3	11.8
U	8105	276	75	34.1	9.3
V01	648	20	9	30.9	13.9
V02	510	18	5	35.3	9.8
V03	682	27	6	39.6	8.8
V04	275	9	2	32.7	7.3
V05	3343	108	33	32.3	9.9
V06	2303	62	25	26.9	10.9
V07	403	13	3	32.3	7.4
V08	1190	33	6	27.7	5.0
V09	1143	36	14	31.5	12.2
V14	865	23	9	26.6	10.4
V35	3515	133	47	37.8	13.4
V36	4892	149	56	30.5	11.4
V37	-	-	-	-	-
V38	1685	62	21	36.8	12.5
V45	1100	35	11	31.8	10.0
V46	374	15	4	40.1	10.7
V47	1817	60	21	33.0	11.6
V48	605	16	2	26.4	3.3
V49	1298	50	15	38.5	11.6
V50	153	4	1	26.1	6.5
V51	981	46	10	46.9	10.2
V53	3240	94	24	29.0	7.4
V58	-	-	-	-	-
V65	751	20	5	26.6	6.7
V66	809	20	14	24.7	17.3
V68	894	38	15	42.5	16.8
V69	-	-	-	-	-
V70	-	-	-	-	-
V71	443	14	10	31.6	22.6
V73	815	29	14	35.6	17.2
V74	1385	58	22	41.9	15.9
V75	386	11	2	28.5	5.2
V76	1658	58	13	35.0	7.8
V78	258	6	0	23.3	0.0
V79	358	12	6	33.5	16.8
V80	1104	39	9	35.3	8.2
V90	1173	36	3	30.7	2.6
V95	1609	52	14	32.3	8.7
V96	650	18	3	27.7	4.6
V97	421	13	4	30.9	9.5
V98	162	5	0	30.9	0.0
V99	722	19	8	26.3	11.1

(continued)

Appendix B (cont.)

Village* code	Population	Live births	Deaths	Birth rate	Death rate
VB1	1136	26	7	22.9	6.2
VB2	975	40	8	41.0	8.2
VB3	2877	82	37	28.5	12.9
VB4	3772	103	42	27.3	11.1
VB5	1021	33	11	32.3	10.8
VB6	684	16	6	23.4	8.8
VB7	253	9	1	35.6	4.0
VB8	1337	41	15	30.7	11.2
VB9	-	-	-	-	-
VB10	2674	91	27	34.0	10.1
D28	1210	38	9	31.4	7.4
D29	153	2	1	13.1	6.5
D30	739	26	8	35.2	10.8
D31	1063	38	13	35.7	12.2
D32	677	21	9	31.0	13.3
D33	1063	30	10	28.2	9.4
D34	1396	46	17	33.0	12.2
D35	650	13	4	20.0	6.2
D88	1529	49	18	32.0	11.8
D89	1187	45	9	37.9	7.6
D90	1145	36	11	31.4	9.6
D91	-	-	-	-	-
D92	-	-	-	-	-
D93	1090	52	14	47.7	12.8
D94	1266	62	21	49.0	16.6
D95	478	19	5	39.7	10.5
D96	710	20	8	28.2	11.3
D97	885	28	9	31.6	10.2
D98	3213	110	28	34.2	8.7
D99	2050	62	16	30.2	7.8
Comparison area	100596	3291	1023	32.7	10.2

*See village name in Appendix A.

Appendix C

Life Table Equations

1. $$ {}_nq_x = \frac{{}_nm_x}{{}^1/_n + {}_nm_x \left[{}^1/_2 + {}^n/_{12} \left({}_nm_x - \ln C \right) \right]} $$

2. $$ \ell_0 = 100{,}000 $$

   $$ \ell_x = \left(1 - {}_nq_{x-1}\right) \ell_{x-n} $$

3. $$ L_0 = 0.276\ell_0 + 0.724\ell_1 $$

   $$ L_1 = 0.410\ell_1 + 0.590\ell_2 $$

   $$ L_i = \tfrac{1}{2} \left(\ell_i + \ell_{i+1} \right), \quad i = 2, 3, 4 $$

   $$ {}_nL_x = \frac{{}_nd_x}{{}_nm_x} \quad \text{for } 5 \le x \le 80 $$

   $$ {}_\infty L_{85} = \frac{\ell_{85}}{{}_\infty m_{85}} \quad \text{for the last age group 85+} $$

4. $$ e_x = \frac{T_x}{\ell_x} \quad \text{where } T_x = \sum_{y=x}^{\infty} L_y $$

Note: Greville's method, as suggested in Shryock, H.S., Seigel, J.S., and Associates, The Methods and Materials of Demography (revised), U.S. Dept. of Commerce, Bureau of the Census, 1975, Vol. II p.414 and pp. 444-5.

(ln C assumed to be 0.095; separation factors in Equation 3 correspond to an infant mortality rate of 100.)

Appendix D

Staff of the DSS, 1991

Matlab Field Station

Supervisory Staff:

Mr. A.M. Sarder, Manager
Mr. A.K.M. Nurul Islam, SFRO
Mr. Liaquat Ali Mondal, FRO
Mr. Md. Ismail, FRO
Mr. Md. Khalilur Rahman I, Asst. Supvr.

Senior Health Assistants:

Mr. Md. A. Mannan Bakaul
Mr. Aftekharuzzaman
Mr. M. A. Satter Miah
Mr. Md. Serajul Hoque
Mr. K. J. M. Mannan Pathan
Mr. A. Rashid Miah
Mr. A. Latif Patwary
Mr. AFM Aminul Islam Khan
Mr. Monoranjan Das

Paramedic:

Mr. Md. Monirul Alam Bhuiya

Admin. Assistant:

Mr. A.K.M. Mozibul Hoque

Health Assistants:

Mr. Md. Nasir Ahmed
Mr. Md. Shahidur Rahman
Mr. Alfazuddin Ahmed Chowdhury
Mr. Sadiquzzaman
Mr. Shah Mostafa Kamal
Mr. Md. Mozammel Hoque
Mr. Sk. A. Jabber
Mr. A. Malek Patwary
Mr. Md. Idrish Ali Miah I
Mr. Md. Abul Kashem
Mr. Md. Idrish Ali Miah II
Mr. Md. Zahirul Hoque
Mr. Md. Nurul Hoque
Mr. Md. Golam Hossain
Mr. Paresh Ch. Chakraborty
Mr. Md. Monirul Hoque
Mr. Jabed Ali

Recorders:

Ms. Shahana Ahmed, HA
Ms. Monowara Begum, HA

Dhaka-based Staff

Dr. Michael A. Strong
Mr. Saker A. Chowdhury
Ms. Lutfun Nahar
Dr. Mridul K. Chowdhury
Mr. Abbas Bhuiya
Mr. Abdur Razzque
Mr. Nurul Alam
Mr. Md. Ibrahim Mollah
Mr. Md. Golam Mostafa
Mr. Sentu B. Gomes
Mr. M.A. Jalil Sarker
Ms. Rahima Mazhar
Mr. ABM Delwar Hossain
Mr. Md. Kapil Ahmed
Mr. Sajal K. Saha
Ms. Habiba Rahman
Mr. Arifur Rahim
Ms. Nasrin Aktar
Mr. Nizam Uddin Khan
Mr. Birendra N. Adhikary
Mr. Md. Sohel Anwar
Mr. Tazek Ahmed Chowdhury

An Appeal

Hospital Endowment Fund

Each year, ICDDR,B treats over 70,000 patients attending its two hospitals, one in urban Dhaka, the other in rural Matlab. Though they are planted in Bangladeshi soil, they grow because of the dedication of thousands of concerned people throughout the world. The patients are mostly children with diarrhoea and associated illnesses and the services are offered free to the poorer section of the community

Since these services are entirely dependent on financial support from a number of donors, now we at the ICDDR,B are establishing an entirely new endeavour: an ENDOWMENT FUND. We feel that, given securely implanted roots, the future of the hospitals can confidently depend upon the harvest of fruit from perpetually bearing vines.

To generate enough income to cover most of the patient costs of the hospitals, the fund will need about five million dollars. That's a lot of money, but look at it this way:

JUST $150 IN THE FUND WILL COVER THE COST OF TREATMENT FOR ONE CHILD EVERY YEAR FOREVER!

We hope you will come forward with your contribution so that we can keep this effort growing forever or until the world is free of life-threatening diarrhoea. IT IS NOT AN IMPOSSIBLE GOAL.

Cheques may be made out to: ICDDR,B Hospital Endowment Fund.

For more information please call or write to:
Chairman, Hospital Endowment Fund Committee
GPO Box 128 - Dhaka, 1000, Bangladesh

Telephone: 600-171 through 600-178
Fax: (880-2)-883116

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