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DEMOGRAPHIC SURVEILLANCE SYSTEM — MATLAB

VOLUME TWENTY ONE

REGISTRATION OF DEMOGRAPHIC EVENTS 1990

SCIENTIFIC REPORT NO. 73
May 1994

INTERNATIONAL CENTRE FOR DIARRHOEAL DISEASE RESEARCH, BANGLADESH

DEMOGRAPHIC SURVEILLANCE SYSTEM - MATLAB

Volume Twenty One

Registration of Demographic Events - 1990

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

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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, 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.

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SUMMARY

This report presents the vital registration data for events taking place in 1990 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.

There was little change in fertility between 1989 and 1990 in both the MCH-FP and Comparison areas; in the MCH-FP area the crude birth rate was 28.3 per thousand and the total fertility rate 3.4 births per woman, being virtually identical with the preceding year. In the Comparison area there was small rise in the crude birth rate from 36.6 per thousand in 1989 to 37.8 in 1990, and the total fertility rose from 4.9 to 5.0.

Mortality continued to fall in both areas, the crude death rates dropping to 7.6 in the MCH-FP area and 9.4 in the Comparison area. These changes were due to falls in both child mortality and in adult mortality. In the MCH-FP area infant mortality rose marginally from 74.3 in 1989 to 75.2 in 1990, but mortality of children 1-4 continued to decline, so under-five mortality fell from 97.5 in 1989 to 94.4 per thousand live births. In the Comparison area mortality in both infancy and childhood fell, giving an infant mortality rate of 87.5 and an under five-mortality of 120.6 per thousand live births.

Rates of both in- and out-migration for the surveillance area as a whole fell slightly between 1989 and 1990. The in-migration rate was 26.0 and that of out-migration 42.4 per thousand, leaving a net out-migration of 16.4 per thousand, thus offsetting the rate of natural increase of 24.4, and reducing the overall rate of population growth to 0.8 percent per annum.

CHAPTER 1

INTRODUCTION

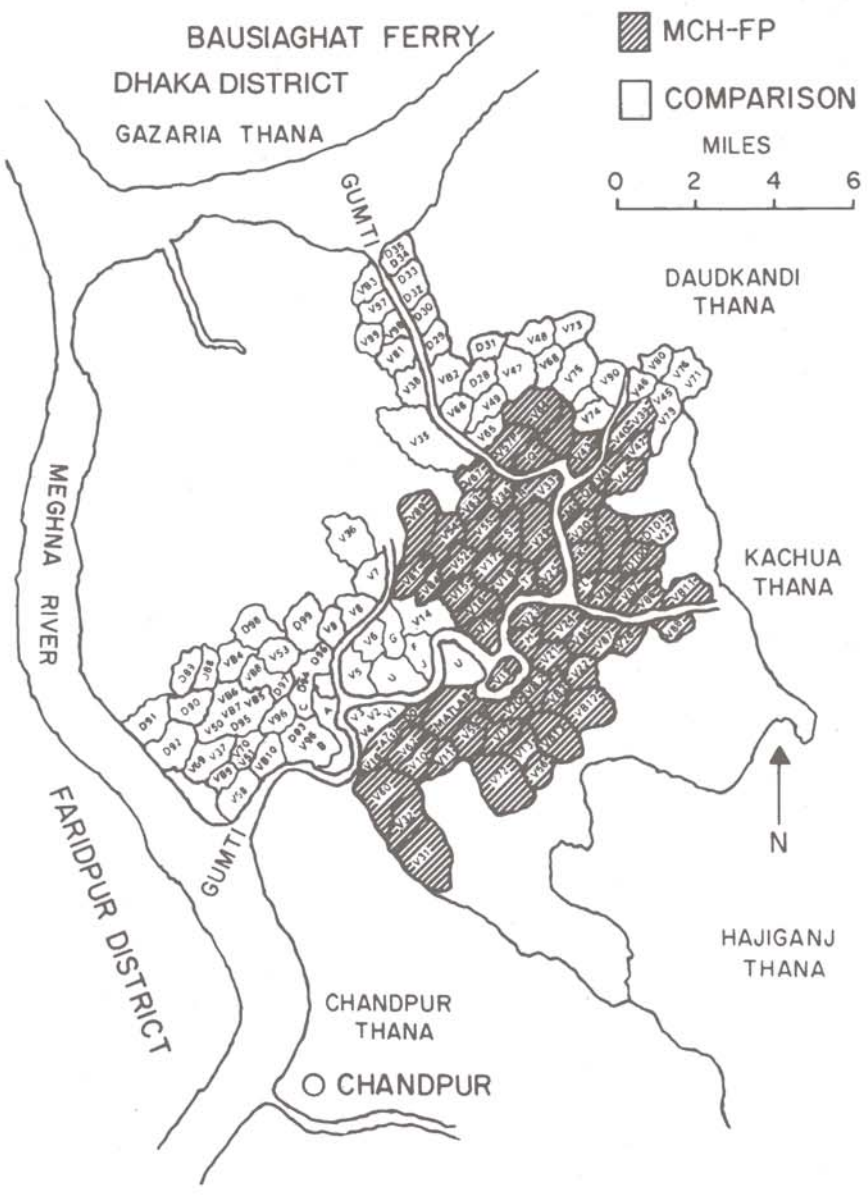
Since 1963 the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), formerly the Cholera Research Laboratory, has been conducting a health related research programme near the town of Matlab, in rural Bangladesh. Matlab is located about 55 kilometers southeast of the country's capital, 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-first 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 1990, 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, 1990



CHAPTER 2

POPULATION CHANGES

Table 2.1 summarizes the principal vital statistics of the MCH-FP and Comparison areas from 1978 up to 1990. The basic 1990 figures, by sex, are shown in Table 2.2. The 1990 fertility rates showed little change on those of the preceding year. In the MCH-FP area the total fertility rate remained unchanged at 3.4 and the crude birth rate was 28.3 per thousand. In the Comparison area the fertility indices rose marginally on the preceding year, the TFR going up from 4.9 to 5.0 and the crude birth rate from 36.6 to 37.8 per thousand. The trends in the total fertility rate in both areas are illustrated in Figure 2.1(a).

In the MCH-FP area infant mortality also showed a small increase on 1989, from 74.3 to 75.2, which was due to a rise in neonatal mortality; post-neonatal and child mortality 1-4 continued to fall so the under-five mortality dropped to 94.8 deaths in the first 5 years of life per 1000 live births. In the Comparison area both infant and under-five mortality declined, reaching 87.5 and 120.4 per thousand. The components of this decline will be analyzed further in Chapter 3. The trends are illustrated in Figure 2.1(b).

Migration figures, both in and out, showed a small decrease from 1989 to 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 0.8 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 the population. Children under 15 years of age constituted 43.4 percent of the population at the beginning of the project in 1978; by 1990 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 42.4 percent in 1990.

Table 2.1: Vital Statistics of the Matlab MCH-FP and Comparison Areas, 1978-1990

Vital rates (per 1000)	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Crude birth rate													
MCH-FP area	32.1	34.9	37.1	35.3	36.9	34.2	30.7	34.6	33.6	33.6	30.9	28.4	28.3
Comparison area	37.8	47.0	45.5	43.8	44.7	42.6	37.3	42.6	39.6	39.2	40.4	36.6	37.8
Both areas	34.8	40.9	41.2	39.5	40.7	38.3	34.0	38.5	36.5	36.4	35.5	32.4	32.9
Total fertility rate**													
MCH-FP area	4.5	4.9	5.1	4.8	5.0	4.5	4.0	4.5	4.3	4.2	3.8	3.4	3.4
Comparison area	5.5	6.9	6.7	6.3	6.3	6.1	5.1	6.0	5.5	5.4	5.4	4.9	5.0
Both areas	5.0	5.9	5.9	5.5	5.6	5.3	4.5	5.2	4.9	4.8	4.5	4.1	4.1
Crude death rate													
MCH-FP area	12.6	12.1	11.3	11.9	12.5	11.9	13.4	10.2	9.9	9.3	8.7	8.0	7.6
Comparison area	13.8	15.6	14.9	14.4	15.9	16.7	17.3	14.2	12.2	11.2	11.0	9.5	9.4
Both areas	13.2	13.8	13.1	13.1	14.2	14.3	15.3	12.2	11.0	10.2	9.9	8.7	8.5
Neonatal mortality*													
MCH-FP area	69.0	70.9	59.3	66.4	58.1	56.4	57.9	52.5	45.4	43.8	42.8	46.0	47.8
Comparison area	78.7	74.6	72.7	69.5	68.1	70.3	71.4	69.4	53.0	54.9	57.7	52.7	53.3
Both areas	74.1	73.0	66.6	68.1	63.5	64.0	65.3	61.7	49.4	49.7	51.1	49.7	50.9
Post-neonatal mortality*													
MCH-FP area	45.5	43.5	32.6	36.1	47.5	41.8	56.9	33.8	36.4	34.6	38.0	28.3	27.4
Comparison area	47.0	43.3	41.3	45.0	50.2	42.2	55.7	49.1	39.7	39.5	39.0	38.0	34.1
Both areas	46.3	43.4	37.3	41.0	49.0	42.0	56.2	42.1	38.2	37.2	38.6	33.6	31.2
Infant mortality*													
MCH-FP area	114.5	114.4	91.9	102.5	105.6	98.2	114.8	86.3	81.8	78.4	80.8	74.3	75.2
Comparison area	125.8	118.0	114.0	114.5	118.3	112.5	127.1	118.5	92.7	94.4	96.7	90.7	87.5
Both areas	120.5	116.4	103.9	109.1	112.5	106.0	121.5	103.8	87.6	86.9	89.7	83.3	82.1
Child mortality (1-4 yrs)													
MCH-FP area	22.5	17.1	18.6	19.1	18.8	21.9	23.1	16.4	13.4	9.9	7.6	6.4	5.3
Comparison area	22.1	26.2	25.4	24.8	27.4	35.3	39.2	24.6	20.7	15.0	14.4	11.5	9.3
Both areas	22.3	21.6	22.1	22.0	23.3	29.1	31.6	20.7	17.2	12.6	11.1	9.0	7.4
Under five mortality*													
MCH-FP area	188.0	170.8	155.3	169.6	169.4	172.3	192.0	143.9	129.8	113.1	107.4	97.5	94.8
Comparison area	199.8	200.7	197.6	197.5	207.2	227.0	252.7	200.1	164.0	145.2	146.1	131.1	120.4
Both areas	194.0	186.0	177.7	184.8	189.7	202.1	224.8	174.4	148.0	130.2	128.3	115.7	108.7
Rate of natural increase													
MCH-FP area	19.5	22.8	25.8	23.4	24.3	22.3	17.3	24.4	23.7	24.3	22.1	20.4	20.7
Comparison area	24.0	31.4	30.6	29.4	28.8	25.8	20.0	28.4	27.4	28.0	29.4	27.1	28.4
Both areas	21.6	27.1	28.2	26.4	26.5	24.1	18.6	26.3	25.5	26.1	25.7	23.6	24.4
In-migration	28.7	33.1	29.7	27.3	24.5	24.6	24.2	23.9	28.3	33.6	26.5	29.3	26.0
Out-migration	40.2	40.8	36.6	35.0	26.5	35.8	42.7	42.1	41.7	44.3	41.5	43.9	42.4
Growth (%)	1.0	1.9	2.1	1.9	2.5	1.3	0.0	0.8	1.2	1.5	1.1	0.9	0.8

*Per 1000 live births.
**Per woman.

Figure 2.1 Trends in Fertility and Under Five Mortality by Area in 1978-1990

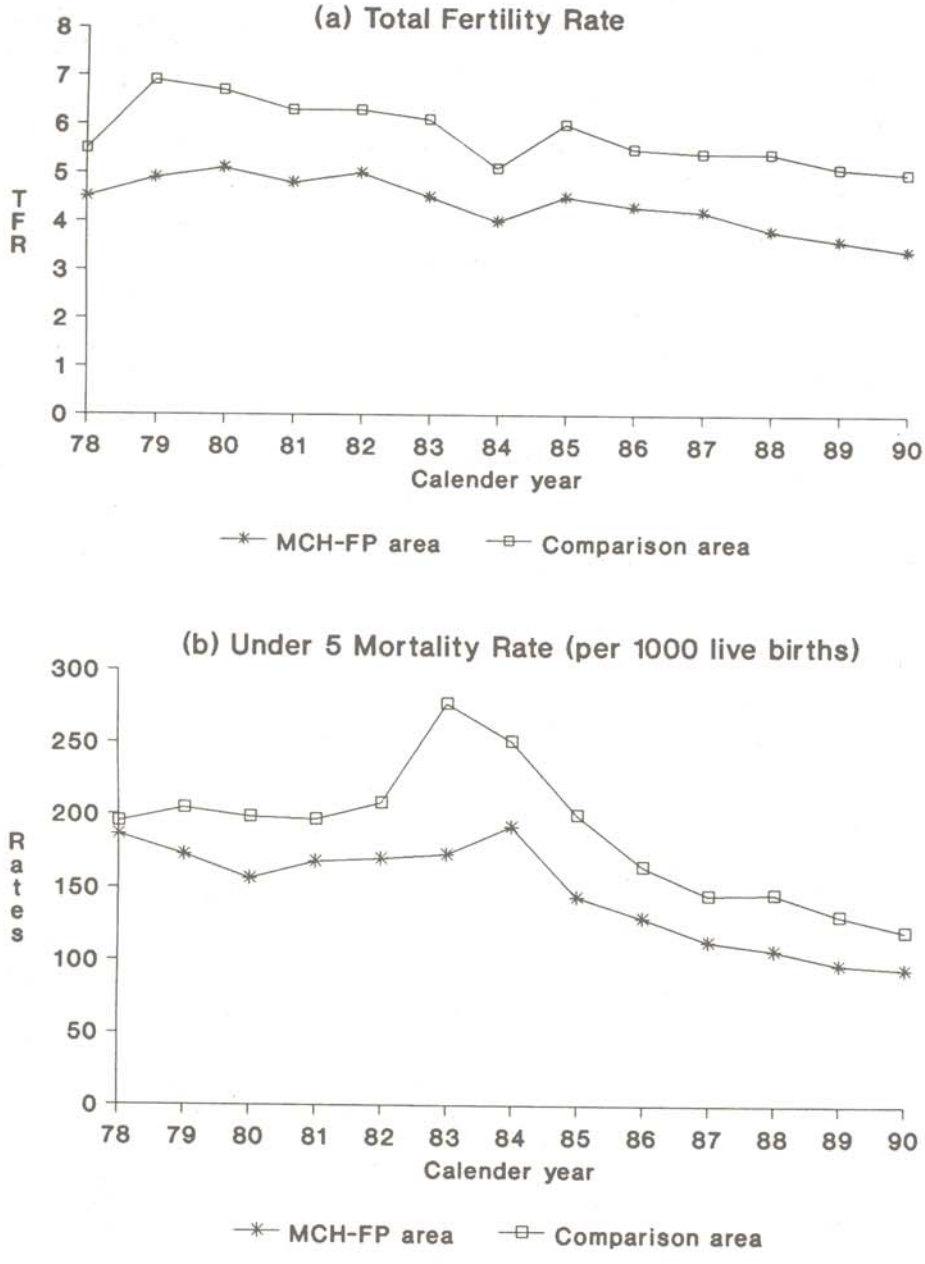


Table 2.2: Mid-year Population, Events Registered, and Population Changes in 1990

	Number			Rate per 1000		
	Total	Males	Females	Total	Males	Females
Total population as of 30 June 1990:						
MCH-FP area	104323	52212	52111	-	-	-
Comparison area	99167	49720	49447	-	-	-
Both areas	203490	101932	101558	-	-	-
Events registered (Jan - Dec 1990)						
Births						
MCH-FP area	2951	1508	1443	28.3	-	-
Comparison area	3750	1835	1915	37.8	-	-
Both areas	6701	3343	3358	32.9	-	-
Deaths						
-Infant*						
MCH-FP area	222	126	96	75.2	83.6	66.5
Comparison area	328	166	162	87.5	90.5	84.6
Both areas	550	292	258	82.1	87.3	76.8
-All deaths						
MCH-FP area	797	447	350	7.6	8.6	6.7
Comparison area	936	481	455	9.4	9.7	9.2
Both areas	1733	928	805	8.5	9.1	7.9
In-Migration	5293	2271	3022	26.0	22.3	29.8
Out-Migration	8633	4110	4523	42.4	40.3	44.5
Marriage	3054	-	-	15.0	-	-
Divorce**	412	-	-	134.9	-	-
Population change (Jan - Dec 1990)						
Net Migration	-3340	-1839	-1501	-16.4	-18.0	-14.8
Natural increase						
MCH-FP area	2155	1062	1093	20.7	20.3	21.0
Comparison area	2813	1353	1460	28.4	27.2	29.5
Both areas	4968	2415	2553	24.4	23.7	25.1
Net increase	1628	576	1052	8.0	5.7	10.4

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

Table 2.3: Mid-year Population by Age and Sex, 1990

Age (years)	Number			Percent		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	203490	101932	101558	100.0	100.0	100.0
Under 1	6111	3068	3043	3.0	3.0	3.0
1 - 4	24707	12484	12223	12.1	12.2	12.0
1	6281	3087	3194	3.1	3.0	3.1
2	6028	3085	2943	3.0	3.0	2.9
3	6106	3083	3023	3.0	3.0	3.0
4	6292	3229	3063	3.1	3.2	3.0
5 - 9	27025	14077	12948	13.3	13.8	12.7
10-14	24705	12975	11730	12.1	12.7	11.6
15-19	21866	11502	10364	10.7	11.3	10.2
20-24	19080	8882	10198	9.4	8.7	10.0
25-29	16631	7823	8808	8.2	7.7	8.7
30-34	12729	6523	6206	6.3	6.4	6.1
35-39	9070	4463	4607	4.5	4.4	4.5
40-44	7797	3546	4251	3.8	3.5	4.2
45-49	8050	3483	4567	4.0	3.4	4.5
50-54	7100	3448	3652	3.5	3.4	3.6
55-59	6295	3136	3159	3.1	3.1	3.1
60-64	4550	2389	2161	2.2	2.3	2.1
65-69	3431	1787	1644	1.7	1.8	1.6
70-74	2066	1081	985	1.0	1.1	1.0
75-79	1308	712	596	0.6	0.7	0.6
80-84	609	333	276	0.3	0.3	0.3
85+	360	220	140	0.2	0.2	0.1

Table 2.4: Mid-year Population by Area, Age, and Sex, 1990

Age (years)	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	104323	52212	52111	99167	49720	49447
Under 1	2785	1397	1388	3326	1671	1655
1 - 4	11790	5999	5791	12917	6485	6432
1	2877	1455	1422	3404	1632	1772
2	2844	1455	1389	3184	1630	1554
3	2970	1513	1457	3136	1570	1566
4	3099	1576	1523	3193	1653	1540
5 - 9	13257	6810	6447	13768	7267	6501
10-14	12654	6666	5988	12051	6309	5742
15-19	11619	6125	5494	10247	5377	4870
20-24	10165	4763	5402	8915	4119	4796
25-29	8782	4031	4751	7849	3792	4057
30-34	6647	3412	3235	6082	3111	2971
35-39	4866	2398	2468	4204	2065	2139
40-44	4120	1870	2250	3677	1676	2001
45-49	4276	1862	2414	3774	1621	2153
50-54	3661	1765	1896	3439	1683	1756
55-59	3231	1650	1581	3064	1486	1578
60-64	2394	1269	1125	2156	1120	1036
65-69	1756	933	823	1675	854	821
70-74	1082	568	514	984	513	471
75-79	703	383	320	605	329	276
80-84	319	178	141	290	155	135
85+	216	133	83	144	87	57

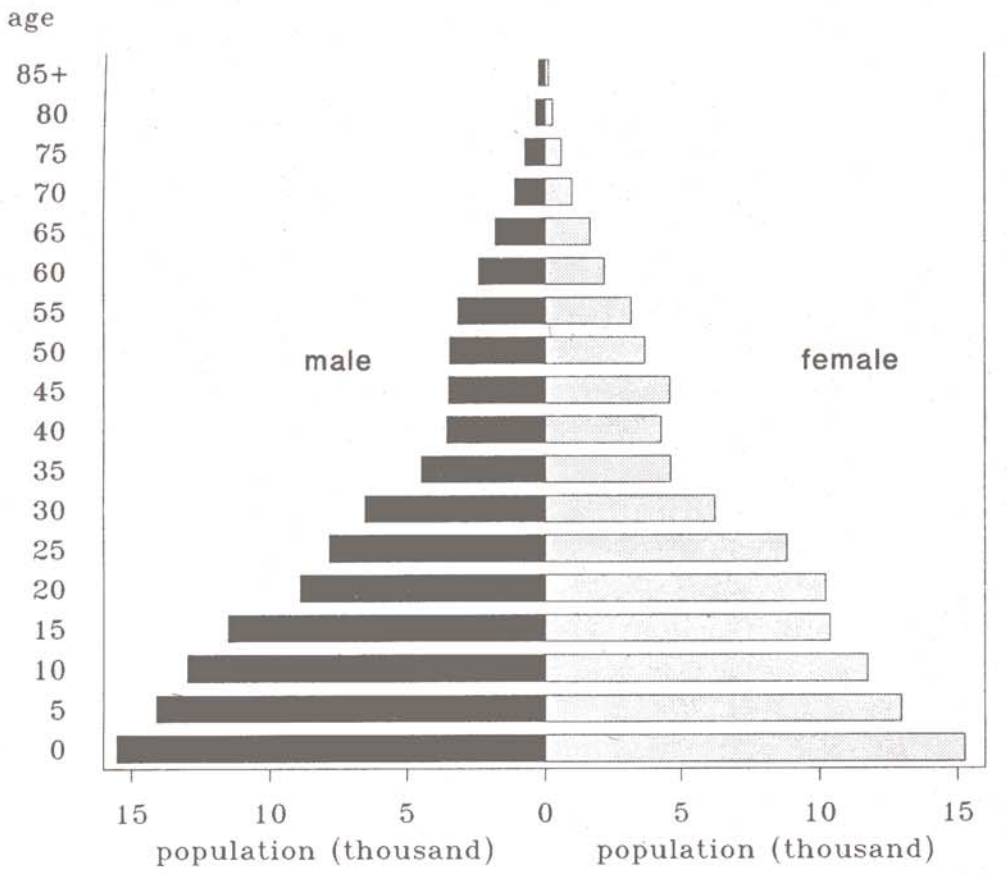
Table 2.5: Mid-year Population in MCH-FP Area by Age, Sex, and Block, 1990

Age (years)	Block A			Block B		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	28554	14272	14282	26423	13080	13343
Under 1	823	385	438	762	395	367
1 - 4	3300	1662	1638	3137	1627	1510
1	822	415	407	745	383	362
2	775	402	373	761	405	356
3	821	414	407	808	410	398
4	882	431	451	823	429	394
5 - 9	3662	1896	1766	3485	1801	1684
10-14	3459	1807	1652	3196	1659	1537
15-19	3129	1682	1447	2957	1519	1438
20-24	2915	1358	1557	2465	1111	1354
25-29	2484	1110	1374	2087	919	1168
30-34	1837	936	901	1576	799	777
35-39	1258	626	632	1202	566	636
40-44	1173	526	647	1049	450	599
45-49	1135	508	627	1019	419	600
50-54	920	486	434	933	437	496
55-59	796	411	385	824	423	401
60-64	601	322	279	649	329	320
65-69	417	231	186	471	259	212
70-74	286	133	153	285	177	108
75-79	194	100	94	174	101	73
80-84	101	54	47	82	48	34
85+	64	39	25	70	41	29

Table 2.5 (cont.): Mid-year Population in MCH-FP Area by Age, Sex, and Block, 1990

Age (years)	Block C			Block D		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	27516	13935	13581	21830	10925	10905
Under 1	672	336	336	528	281	247
1 - 4	2953	1495	1458	2400	1215	1185
1	695	344	351	615	313	302
2	732	366	366	576	282	294
3	763	397	366	578	292	286
4	763	388	375	631	328	303
5 - 9	3426	1795	1631	2684	1318	1366
10-14	3431	1798	1633	2568	1402	1166
15-19	3116	1646	1470	2417	1278	1139
20-24	2716	1311	1405	2069	983	1086
25-29	2357	1136	1221	1854	866	988
30-34	1798	941	857	1436	736	700
35-39	1339	655	684	1067	551	516
40-44	1059	514	545	839	380	459
45-49	1192	529	663	930	406	524
50-54	984	476	508	824	366	458
55-59	867	456	411	744	360	384
60-64	574	317	257	570	301	269
65-69	465	229	236	403	214	189
70-74	279	142	137	232	116	116
75-79	162	87	75	173	95	78
80-84	79	43	36	57	33	24
85+	47	29	18	35	24	11

Figure 2.2: Age Pyramid of the 1990 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 study area and for the MCH-FP and Comparison areas. Tables 3.6 to 3.10 show the abridged life tables derived from these rates.

As noted in Chapter 2, the under-five mortality rate fell by about 3 points in the MCH-FP area, and by more than 10 points in the Comparison area, thus reaching the lowest levels recorded since the beginning of the MCH-FP Project in 1978. The decline in both areas was attributable to reductions in the child (1-4 years) mortality rate, which had been declining steadily since 1984. Neonatal mortality rose slightly in both areas, and though post-neonatal mortality fell, in the MCH-FP area overall infant mortality showed a small rise, while that in the Comparison area declined. In both areas male mortality was higher than female in the first month of life, while female mortality was higher in childhood between 1 and 4 years of age.

The levels of adult mortality improved somewhat between 1989 and 1990. The probability of dying between the ages of 15 and 60 (45Q15) declined from 200 to 179 per thousand for the study area as a whole, most of which was attributable to the change in the MCH-FP area, where it fell from 205 to 166; the rate for the Comparison area showed only a marginal change from 194 to 193. Old age mortality also showed some improvement, and the expectation of life at age 60 increased in both areas and for both sexes. In both areas mortality of adult males was consistently higher than that of females.

Table 3.11 shows the distribution of deaths by age and month of occurrence. Adult deaths 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 and child deaths, on the other hand, were highest in April and May.

Table 3.12 to 3.15 show the distribution of deaths by age, sex, area and cause, and Table 3.16 gives the age-standardised mortality rates by cause of death, using the World Health Organization "World Standard" age distribution.

Reference

World Health Statistics Annual 1991. Geneva: WHO, 1992.

Table 3.1: Deaths by Age and Sex, 1990

Age	Both sexes	Males	Females
All age	1733	928	805
Under 1 year	550	292	258
Under 1 month	341	186	155
1-5 months	153	77	76
6-11 months	56	29	27
1 - 4 years	182	77	105
1	85	36	49
2	46	15	31
3	26	10	16
4	25	16	9
5 - 9	42	25	17
10-14	22	12	10
15-19	21	9	12
20-24	24	8	16
25-29	31	12	19
30-34	17	6	11
35-39	23	14	9
40-44	21	4	17
45-49	42	26	16
50-54	69	47	22
55-59	87	53	34
60-64	109	63	46
65-69	113	62	51
70-74	131	77	54
75-79	119	68	51
80-84	69	34	35
85+	61	39	22

Table 3.2: Deaths by Area, Age, and Sex, 1990

Age	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	797	447	350	936	481	455
Under 1 year	222	126	96	328	166	162
Under 1 month	141	82	59	200	104	96
1-5 months	55	30	25	98	47	51
6-11 months	26	14	12	30	15	15
1 - 4 years	62	30	32	120	47	73
1	34	14	20	51	22	29
2	14	8	6	32	7	25
3	6	2	4	20	8	12
4	8	6	2	17	10	7
5 - 9	23	16	7	19	9	10
10-14	10	6	4	12	6	6
15-19	10	4	6	11	5	6
20-24	14	4	10	10	4	6
25-29	13	6	7	18	6	12
30-34	12	5	7	5	1	4
35-39	10	5	5	13	9	4
40-44	12	3	9	9	1	8
45-49	23	14	9	19	12	7
50-54	34	25	9	35	22	13
55-59	36	23	13	51	30	21
60-64	61	36	25	48	27	21
65-69	52	30	22	61	32	29
70-74	53	29	24	78	48	30
75-79	75	43	32	44	25	19
80-84	38	19	19	31	15	16
85+	37	23	14	24	16	8

Table 3.3: Deaths in MCH-FP Area by Age, Sex, and Block, 1990

Age	Block A			Block B		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	202	112	90	209	120	89
Under 1 year	53	34	19	69	42	27
Under 1 month	32	20	12	45	28	17
1-5 months	12	7	5	18	11	7
6-11 months	9	7	2	6	3	3
1 - 4 years	19	8	11	17	7	10
1	10	2	8	10	4	6
2	5	3	2	3	1	2
3	2	1	1	2	1	1
4	2	2	0	2	1	1
5 - 9	6	2	4	7	5	2
10-14	2	1	1	2	2	0
15-19	2	0	2	2	1	1
20-24	6	2	4	1	1	0
25-29	4	3	1	2	1	1
30-34	4	2	2	3	1	2
35-39	3	1	2	1	1	0
40-44	2	0	2	4	1	3
45-49	4	2	2	5	4	1
50-54	8	7	1	10	6	4
55-59	5	3	2	7	4	3
60-64	16	8	8	12	8	4
65-69	12	8	4	10	8	2
70-74	15	8	7	14	7	7
75-79	22	12	10	17	7	10
80-84	9	3	6	15	8	7
85+	10	8	2	11	6	5

Table 3.3 (cont.): Deaths in MCH-FP Area by Age, Sex, and Block, 1990

Age	Block C			Block D		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	214	116	98	172	99	73
Under 1 year	56	27	29	44	23	21
Under 1 month	30	16	14	34	18	16
1-5 months	20	9	11	5	3	2
6-11 months	6	2	4	5	2	3
1 - 4 years	11	5	6	15	10	5
1	7	5	2	7	3	4
2	1	0	1	5	4	1
3	2	0	2	0	0	0
4	1	0	1	3	3	0
5 - 9	8	7	1	2	2	0
10-14	3	2	1	3	1	2
15-19	3	2	1	3	1	2
20-24	5	0	5	2	1	1
25-29	2	1	1	5	1	4
30-34	1	1	0	4	1	3
35-39	4	2	2	2	1	1
40-44	2	0	2	4	2	2
45-49	9	5	4	5	3	2
50-54	10	7	3	6	5	1
55-59	10	8	2	14	8	6
60-64	20	11	9	13	9	4
65-69	18	8	10	12	6	6
70-74	17	9	8	7	5	2
75-79	17	11	6	19	13	6
80-84	9	5	4	5	3	2
85+	9	5	4	7	4	3

Table 3.4: Death Rates by Age and Sex, 1990

Age	Both sexes	Males	Females
All ages	8.5	9.1	7.9
Under 1 year	82.1	87.3	76.8
Under 1 month*	50.9	55.6	46.2
1-5 months*	22.8	23.0	22.6
6-11 months*	8.4	8.7	8.0
1 - 4 years	7.4	6.2	8.6
1	13.5	11.7	15.3
2	7.6	4.9	10.5
3	4.3	3.2	5.3
4	4.0	5.0	2.9
5 - 9	1.6	1.8	1.3
10-14	0.9	0.9	0.9
15-19	1.0	0.8	1.2
20-24	1.3	0.9	1.6
25-29	1.9	1.5	2.2
30-34	1.3	0.9	1.8
35-39	2.5	3.1	2.0
40-44	2.7	1.1	4.0
45-49	5.2	7.5	3.5
50-54	9.7	13.6	6.0
55-59	13.8	16.9	10.8
60-64	24.0	26.4	21.3
65-69	32.9	34.7	31.0
70-74	63.4	71.2	54.8
75-79	91.0	95.5	85.6
80-84	113.3	102.1	126.8
85+	169.4	177.3	157.1

*Rate per 1000 live births.

Table 3.5: Death Rates by Area, Age, and Sex, 1990
(per 1000 population)

Age	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	7.6	8.6	6.7	9.4	9.7	9.2
Under 1 year*	75.2	83.6	66.5	87.5	90.5	84.6
Under 1 month*	47.8	54.4	40.9	53.3	56.7	50.1
1-5 months*	18.6	19.9	17.3	26.1	25.6	26.6
6-11 months*	8.8	9.3	8.3	8.0	8.2	7.8
1 - 4 years	5.3	5.0	5.5	9.3	7.2	11.3
1	11.8	9.6	14.1	15.0	13.5	16.4
2	4.9	5.5	4.3	10.1	4.3	16.1
3	2.0	1.3	2.7	6.4	5.1	7.7
4	2.6	3.8	1.3	5.3	6.0	4.5
5 - 9	1.7	2.3	1.1	1.4	1.2	1.5
10-14	0.8	0.9	0.7	1.0	1.0	1.0
15-19	0.9	0.7	1.1	1.1	0.9	1.2
20-24	1.4	0.8	1.9	1.1	1.0	1.3
25-29	1.5	1.5	1.5	2.3	1.6	3.0
30-34	1.8	1.5	2.2	0.8	0.3	1.3
35-39	2.1	2.1	2.0	3.1	4.4	1.9
40-44	2.9	1.6	4.0	2.4	0.6	4.0
45-49	5.4	7.5	3.7	5.0	7.4	3.3
50-54	9.3	14.2	4.7	10.2	13.1	7.4
55-59	11.1	13.9	8.2	16.6	20.2	13.3
60-64	25.5	28.4	22.2	22.3	24.1	20.3
65-69	29.6	32.2	26.7	36.4	37.5	35.3
70-74	49.0	51.1	46.7	79.3	93.6	63.7
75-79	106.7	112.3	100.0	72.7	76.0	68.8
80-84	119.1	106.7	134.8	106.9	96.8	118.5
85+	171.3	172.9	168.7	166.7	183.9	140.4

*Rate per 1000 live births.

Figure 3.1: Probability of Survival from Birth to Age (x) by Sex, 1990

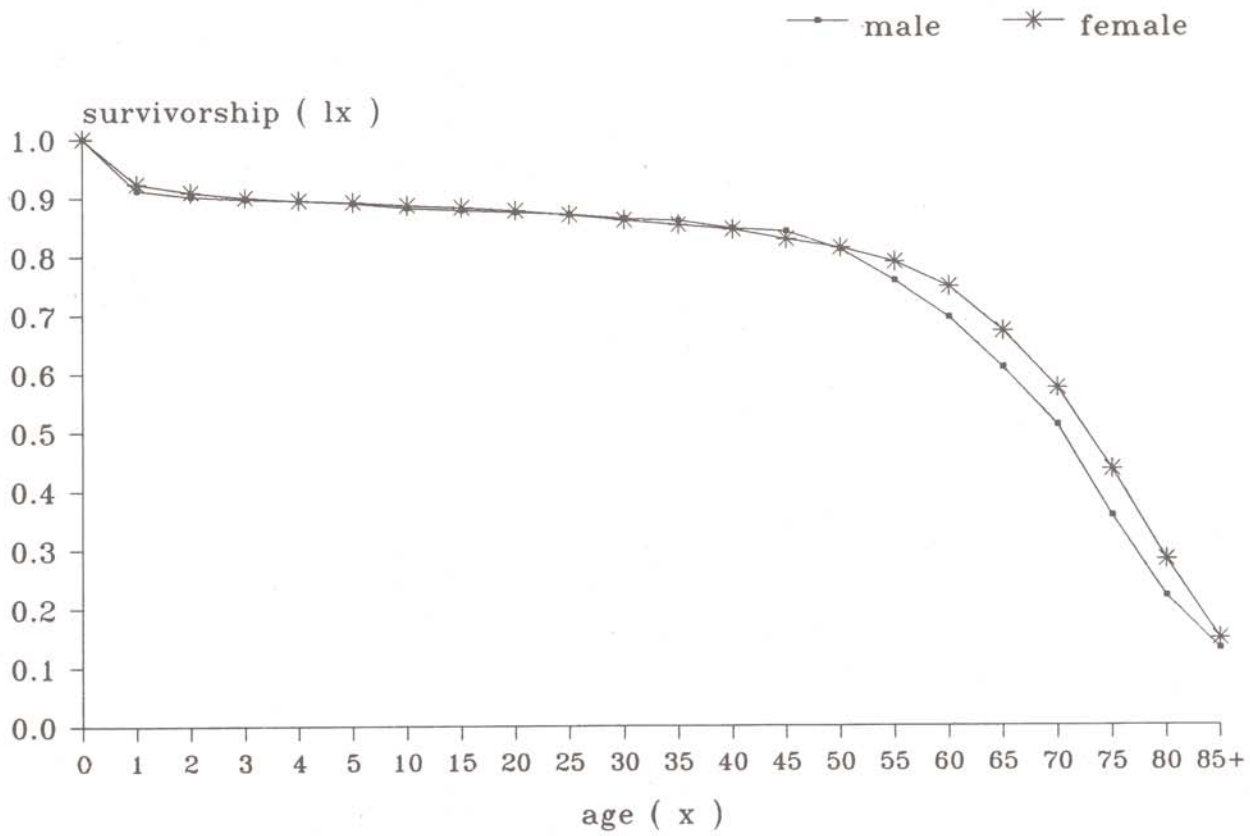


Table 3.6: Abridged Life Table, 1990

Age (years)	$_nq_x$	l_x	L_x	e^0
0	82.1	100000	94058	63.2
1	13.4	91792	91064	67.9
2	7.6	90558	90214	67.8
3	4.2	89870	89679	67.3
4	4.0	89488	89311	66.6
5	7.7	89133	444074	65.9
10	4.4	88443	441309	61.4
15	4.8	88050	439278	56.6
20	6.3	87628	436874	51.9
25	9.3	87079	433529	47.2
30	6.7	86270	430029	42.6
35	12.6	85696	425988	37.9
40	13.4	84616	420466	33.3
45	25.8	83483	412440	28.7
50	47.5	81332	397683	24.4
55	66.9	77467	375246	20.5
60	113.4	72281	342127	16.8
65	152.7	64085	297217	13.6
70	274.6	54296	235180	10.6
75	370.8	39384	160529	8.6
80	440.0	24779	96224	7.2
85+	1000.0	13877	81896	5.9

Table 3.7: Abridged Life Tables by Sex, 1990

Age (years)	Males				Females			
	$_nq_x$	l_x	L_x	e^0	$_nq_x$	l_x	L_x	e^0
0	87.3	100000	93676	62.3	76.8	100000	94437	64.3
1	11.6	91265	90641	67.2	15.2	92317	91488	68.6
2	4.9	90207	89988	67.0	10.5	90911	90435	68.7
3	3.2	89770	89624	66.3	5.3	89959	89721	68.4
4	4.9	89479	89258	65.6	2.9	89484	89352	67.7
5	8.8	89037	443367	64.9	6.5	89221	444760	66.9
10	4.6	88249	440307	60.4	4.3	88637	442317	62.4
15	3.9	87842	438419	55.7	5.8	88260	440126	57.6
20	4.5	87499	436588	50.9	7.8	87751	437171	52.9
25	7.6	87106	433993	46.1	10.7	87065	433168	48.3
30	4.6	86440	431286	41.5	8.8	86130	428898	43.8
35	15.6	86043	427123	36.6	9.7	85370	424936	39.2
40	5.6	84703	422419	32.2	19.8	84540	418830	34.5
45	36.7	84227	413972	27.4	17.4	82865	410999	30.2
50	66.1	81137	393193	23.3	29.7	81425	401527	25.7
55	81.3	75777	364487	19.7	52.5	79006	385389	21.4
60	124.1	69617	327715	16.3	101.4	74858	356486	17.4
65	160.3	60975	281671	13.2	144.5	67270	313344	14.1
70	303.2	51202	217966	10.2	242.0	57549	254089	11.0
75	385.5	35676	143989	8.5	352.9	43620	179913	8.7
80	406.2	21925	87227	7.3	478.4	28224	106473	7.1
85+	1000.0	13019	73439	5.6	1000.0	14723	93689	6.4

Table 3.8: Abridged Life Tables by Area, 1990

Age (years)	MCH-FP area				Comparison area			
	$_nq_x$	l_x	L_x	e^0	$_nq_x$	l_x	L_x	e^0
0	75.2	100000	94553	64.6	87.5	100000	93667	62.1
1	11.7	92477	91836	68.8	14.9	91253	90453	67.0
2	4.9	91391	91166	68.6	10.0	89896	89447	67.0
3	2.0	90942	90850	67.9	6.4	88997	88714	66.7
4	2.6	90758	90641	67.1	5.3	88431	88197	66.1
5	8.6	90524	450818	66.2	6.9	87962	438414	65.5
10	3.9	89742	447895	61.8	5.0	87357	435784	60.9
15	4.3	89388	446056	57.0	5.4	86923	433542	56.2
20	6.9	89004	443613	52.3	5.6	86457	431172	51.5
25	7.4	88393	440463	47.6	11.4	85974	427607	46.8
30	9.0	87741	436888	42.9	4.1	84993	424162	42.3
35	10.2	86953	432712	38.3	15.4	84644	420222	37.4
40	14.5	86063	427443	33.7	12.2	83345	414385	33.0
45	26.6	84818	418879	29.1	24.9	82331	406916	28.3
50	45.5	82565	404114	24.9	49.7	80282	392138	24.0
55	54.3	78812	384109	20.9	80.1	76291	367175	20.1
60	120.2	74532	351564	17.0	105.8	70180	333463	16.6
65	138.4	65574	306423	13.9	167.6	62756	288770	13.3
70	219.1	56500	252739	10.7	331.5	52239	218469	10.4
75	420.3	44120	173797	8.0	308.6	34921	148168	9.4
80	456.8	25579	98094	7.0	420.9	24146	95070	7.4
85+	1000.0	13894	81109	5.8	1000.0	13983	83898	6.0

Table 3.9: Abridged Life Tables for MCH-FP Area by Sex, 1990

Age (years)	Males				Females			
	$_nq_x$	l_x	L_x	e^0	$_nq_x$	l_x	L_x	e^0
0	83.6	100000	93951	63.1	66.5	100000	95183	66.1
1	9.6	91645	91127	67.8	14.0	93347	92578	69.8
2	5.5	90767	90518	67.5	4.3	92043	91845	69.8
3	1.3	90269	90210	66 8	2.7	91647	91521	69.1
4	3.8	90150	89979	65.9	1.3	91395	91335	68.3
5	11.7	89807	446616	65.2	5.4	91275	455238	67.4
10	4.5	88758	442872	60.9	3.3	90781	453208	62.7
15	3.3	88359	441134	56.2	5.4	90478	451256	57.9
20	4.2	88071	439506	51.3	9.2	89986	448015	53.2
25	7.4	87702	437012	46.6	7.3	89156	444272	48.7
30	7.3	87052	433794	41.9	10.8	88502	440310	44.1
35	10.4	86416	430013	37.2	10.1	87549	435708	39.5
40	8.0	85519	426022	32.5	19.8	86666	429363	34.9
45	37.0	84836	416915	27.8	18.5	84949	421117	30.5
50	68.6	81701	395447	23.7	23.5	83379	412368	26.1
55	67.5	76100	368525	20.3	40.3	81421	399488	21.6
60	132.9	70963	332541	16.6	105.6	78136	371305	17.4
65	149.4	61529	285870	13.7	125.7	69885	328708	14.2
70	227.3	52337	233032	10.6	209.9	61098	274715	10.8
75	436.9	40440	157387	8.0	399.7	48271	192924	8.0
80	420.4	22770	89682	7.3	499.8	28979	107485	6.7
85+	1000.0	13197	76312	5.8	1000.0	14495	85935	5.9

Table 3.10: Abridged Life Tables for Comparison Area by Sex, 1990

Age (years)	Males				Females			
	$_nq_x$	l_x	L_x	e^0	$_nq_x$	l_x	L_x	e^0
0	90.5	100000	93450	61.6	84.6	100000	93875	62.8
1	13.4	90954	90235	66.6	16.2	91540	90664	67.5
2	4.3	89736	89543	66.5	16.0	90054	89336	67.7
3	5.1	89351	89124	65.8	7.6	88617	88279	67.7
4	6.0	88897	88629	65.2	4.5	87941	87741	67.3
5	6.2	88361	440546	64.6	7.7	87542	436162	66.6
10	4.7	87815	438116	59.9	5.2	86871	433310	62.1
15	4.6	87399	436058	55.2	6.1	86418	430866	57.4
20	4.8	86993	433994	50.5	6.2	85887	428201	52.7
25	7.9	86572	431285	45.7	14.7	85351	423863	48.0
30	1.6	85889	429128	41.0	6.7	84098	419188	43.7
35	21.6	85751	424480	36.1	9.3	83533	415873	39.0
40	3.0	83901	418930	31.8	19.8	82756	409991	34.3
45	36.4	83651	411202	26.9	16.1	81116	402561	30.0
50	63.4	80607	391127	22.8	36.4	79808	392307	25.4
55	96.4	75494	360416	19.2	64.5	76903	372953	21.3
60	114.1	68218	322787	16.0	96.8	71940	343383	17.5
65	172.0	60437	277440	12.7	162.9	64980	299745	14.1
70	379.2	50041	202818	9.8	275.7	54392	235446	11.4
75	320.1	31064	130854	9.2	294.6	39395	168594	9.7
80	389.5	21120	85006	7.3	455.1	27789	106709	7.7
85+	1000.0	12894	70111	5.4	1000.0	15142	107888	7.1

Table 3.11: Deaths by Age and Month, 1990

Month	All ages	Age at death			
		Under 1 month	1-11 months	1-4 years	5 years and over
January	157	35	22	10	90
February	124	19	12	11	82
March	121	13	23	12	73
April	161	19	20	28	94
May	158	27	24	22	85
June	133	22	21	18	72
July	122	31	14	14	63
August	133	36	7	17	73
September	134	34	13	13	74
October	144	43	14	10	77
November	160	30	16	12	102
December	186	32	23	15	116
Total	1733	341	209	182	1001

Table 3.12: Male Deaths by Cause and Age, 1990

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	62	26	12	4	0	1	0	1	0	0	0	1	3	2	2	2	4	1	2	1
Dysentery	21	7	5	0	0	0	0	0	0	0	0	0	1	1	1	4	0	1	0	1
INFECTIOUS																				
Tuberculosis	27	1	0	0	0	0	1	1	1	1	0	1	6	4	4	3	1	2	1	0
Tetanus (non-neonatal)	2	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Other infectious	30	5	6	5	1	2	0	2	0	1	0	0	0	2	1	1	0	3	1	0
MALIGNANT NEOPLASMS	35	0	0	1	2	1	1	0	1	0	1	7	3	6	5	2	2	2	0	1
NUTRITIONAL	17	11	2	1	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0
CARDIO-VASCULAR	44	0	0	0	0	0	0	0	0	0	0	0	3	5	12	5	4	9	4	2
RESPIRATORY																				
ARI, pneum, influenza	77	66	7	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
COPD*	64	1	2	0	1	0	0	0	0	0	0	1	7	8	13	4	13	8	3	3
GASTRO-INTESTINAL	49	2	0	2	1	0	2	0	0	4	1	2	8	5	3	8	6	2	3	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	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	149	149	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																				
Suicide	7	0	0	0	1	0	1	3	0	2	0	0	0	0	0	0	0	0	0	0
Homicide	4	0	0	0	0	0	0	0	1	1	0	0	0	1	0	1	0	0	0	0
Drowning	37	2	32	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Other accidents, etc.	14	1	1	0	2	1	3	0	0	3	0	1	1	0	0	1	0	0	0	0
OTHER AND UNSPECIFIED																				
Senility	101	1	1	0	0	0	0	0	0	0	0	0	0	1	2	11	25	22	17	21
Other causes n.e.c.**	70	4	3	3	0	0	0	1	1	0	0	3	4	4	5	12	9	11	3	7
Unknown	108	6	6	5	4	3	0	4	2	2	2	10	10	12	14	8	10	7	0	3
Total	928	292	77	25	12	9	8	12	6	14	4	26	47	53	63	62	77	68	34	39

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

Table 3.13: Female Deaths by Cause and Age, 1990

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	76	24	29	0	0	0	0	1	0	0	1	0	0	3	1	5	5	4	2	1
Dysentery	16	0	8	2	0	1	0	0	0	0	0	0	0	1	0	2	1	1	0	0
INFECTIOUS																				
Tuberculosis	12	0	0	0	0	0	1	1	0	1	1	2	2	1	2	0	0	1	0	0
Tetanus (non-neonatal)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other infectious	39	9	6	3	0	1	5	2	1	1	2	2	0	0	2	2	1	1	1	0
MALIGNANT	17	0	1	0	1	1	0	2	0	0	3	1	1	2	4	0	1	0	0	0
NUTRITIONAL	26	20	4	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
CARDIO-VASCULAR	39	0	0	0	0	1	1	0	0	0	1	0	2	9	4	6	4	6	4	1
RESPIRATORY																				
ARI, pneum, influenza	63	43	18	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
COPD*	33	1	5	0	2	1	0	0	1	0	0	0	6	2	5	1	5	1	3	0
GASTRO-INTESTINAL	31	2	1	0	0	1	2	4	2	3	2	4	2	1	4	3	0	0	0	0
DIRECT OBSTETRIC	16	0	0	0	0	2	3	3	3	1	3	1	0	0	0	0	0	0	0	0
NEONATAL																				
Tetanus (neonatal)	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	140	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																				
Suicide	6	0	0	0	0	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0
Homicide	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drowning	24	2	18	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Other accidents, etc.	8	1	2	1	0	1	0	0	0	0	1	0	1	0	0	0	0	1	0	0
OTHER AND UNSPECIFIED																				
Senility	95	0	0	0	0	0	0	0	0	0	0	1	0	1	7	15	18	24	16	13
Other n.e.c.**	93	3	5	4	3	1	0	3	2	3	2	2	4	6	5	12	15	10	6	7
Unknown	66	8	8	3	4	0	1	2	2	0	0	3	4	8	11	5	3	2	2	0
Total	805	258	105	17	10	12	16	19	11	9	17	16	22	34	46	51	54	51	35	22

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

Table 3.14: Male Deaths by Cause, Age, and Area, 1990

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	27	35	12	14	4	8	3	1	0	2	5	3	3	6	0	1
Dysentery	11	10	6	1	0	5	0	0	0	0	1	2	3	2	1	0
INFECTIOUS																
Tuberculosis	13	14	1	0	0	0	0	0	2	2	6	9	4	3	0	0
Tetanus (non-neonatal)	1	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0
Other infectious	15	15	0	5	1	5	4	2	3	2	3	0	4	1	0	0
MALIGNANT NEOPLASMS	21	14	0	0	0	0	3	0	2	2	12	9	4	2	0	1
NUTRITIONAL	5	12	5	6	0	2	0	1	0	0	0	2	0	1	0	0
CARDIO-VASCULAR	27	17	0	0	0	0	0	0	0	0	12	8	13	9	2	0
RESPIRATORY																
ARI, pneum, influenza	27	50	24	42	2	5	1	1	0	0	0	0	0	2	0	0
COPD*	21	43	1	0	2	0	0	1	0	0	10	19	6	22	2	1
GASTRO-INTESTINAL	28	21	2	0	0	0	2	1	2	5	12	6	10	9	0	0
DIRECT OBSTETRIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NEONATAL																
Tetanus neonatal	1	9	1	9	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	70	79	70	79	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																
Suicide	1	6	0	0	0	0	0	1	1	5	0	0	0	0	0	0
Homicide	1	3	0	0	0	0	0	0	1	1	0	1	0	1	0	0
Drowning	21	16	2	0	17	15	2	0	0	0	0	1	0	0	0	0
Other accidents, etc.	8	6	0	1	0	1	2	0	5	2	1	1	0	1	0	0
OTHER AND UNSPECIFIED																
Senility	55	46	0	1	0	1	0	0	0	0	3	0	40	35	12	9
Other causes n.e.c.**	39	31	0	4	1	2	2	1	1	1	10	6	20	15	5	2
Unknown	55	53	2	4	3	3	3	6	9	4	23	23	14	11	1	2
Total	447	481	126	166	30	47	22	15	27	26	98	91	121	120	23	16

*Chronic obstructive pulmonary disease.
**No elsewhere classified.

Table 3.15: Female Deaths by Cause, Age, and Area, 1990

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	23	53	7	17	8	21	0	0	2	0	1	3	4	12	1	0
Dysentery	6	10	0	0	0	8	2	0	0	1	1	0	3	1	0	0
INFECTIOUS																
Tuberculosis	5	7	0	0	0	0	0	0	2	2	3	4	0	1	0	0
Tetanus (non-neonatal)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other infectious	20	19	6	3	0	6	0	3	8	4	4	0	2	3	0	0
MALIGNANT NEOPLASMS	9	8	0	0	0	1	1	0	4	2	4	4	0	1	0	0
NUTRITIONAL	7	19	6	14	1	3	0	1	0	1	0	0	0	0	0	0
CARDIO-VASCULAR	21	18	0	0	0	0	0	0	2	1	6	9	12	8	1	0
RESPIRATORY																
ARI, pneum, influenza	23	40	15	28	6	12	0	0	0	0	1	0	1	0	0	0
COPD*	11	22	1	0	1	4	0	2	2	0	3	10	4	6	0	0
GASTRO-INTESTINAL	18	13	1	1	0	1	0	0	6	8	8	3	3	0	0	0
DIRECT OBSTETRIC	7	9	0	0	0	0	0	0	6	9	1	0	0	0	0	0
NEONATAL																
Tetanus neonatal	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	53	87	53	87	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																
Suicide	4	2	0	0	0	0	0	0	4	2	0	0	0	0	0	0
Homicide	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drowning	14	10	1	1	11	7	2	1	0	0	0	0	0	1	0	0
Other accidents, etc.	6	2	0	1	2	0	1	0	2	0	0	1	1	0	0	0
OTHER AND UNSPECIFIED																
Senility	54	41	0	0	0	0	0	0	0	0	5	4	41	32	8	5
Other causes n.e.c.**	38	55	1	2	2	3	2	5	3	8	6	11	20	23	4	3
Unknown	31	35	5	3	1	7	3	4	3	2	13	13	6	6	0	0
Total	350	455	96	162	32	73	11	16	44	40	56	62	97	94	14	8

*Chronic obstructive pulmonary disease.
**No elsewhere classified.

Table 3.16: Age-standardised Mortality Rates by Cause of Death, 1990

Cause of death	Males		Females	
	MCH-FP area	Comparison area	MCH-FP area	Comparison area
Diarrhoea	51.45	65.57	55.50	111.50
Dysentery	21.95	19.29	16.64	16.61
Tuberculosis	29.14	35.50	11.08	19.42
Tetanus (non-neonatal)	1.63	2.60	-	-
Other infectious	30.21	25.64	42.32	40.73
Malignant neoplasms	45.81	35.61	19.83	20.42
Nutritional	9.16	21.10	12.28	29.44
Cardio-vascular	62.41	45.11	75.41	59.15
ARI, pneumonia, influenza	48.71	78.67	42.67	59.03
C.O.P.D.*	45.99	112.51	33.83	60.40
Gastro-intestinal	63.29	54.57	44.14	26.87
Direct obstetric	-	-	14.14	19.91
Neonatal tetanus	1.83	13.78	-	7.47
Other neonatal	128.17	120.93	94.35	129.90
Suicide	2.75	13.76	6.86	3.88
Homicide	2.16	8.07	-	-
Drowning	33.80	24.35	22.56	19.18
Other accidents	16.71	13.26	13.29	3.81
Senility	127.48	125.71	233.28	206.18
Other n.e.c.**	87.72	74.20	140.70	178.60
Unknown	121.56	121.46	78.39	81.69
All causes	932.18	1011.70	957.29	1094.17

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

CHAPTER 4

FERTILITY

Table 4.1 shows the number of pregnancies and their outcomes in 1990. Compared with 1989, the number of live births differed by only 15 in the MCH-FP area, while those in the Comparison area rose by 143. In the study area as a whole, 88 percent of pregnancies resulted in a live birth, which was almost identical to the proportion recorded the previous year.

Table 4.2 shows the distribution of pregnancies by outcome, and the live births by sex, and by month of occurrence. The data show the usual marked seasonal variation, peaking in October-November. For the second year running the sex ratio of the live births appeared abnormally low at 0.995, or 99.5 males per 100 females, 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, 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 showed little change on 1989: that in the MCH-FP area fell by less than 2 percent while that in the Comparison area rose by less than 3 percent. Comparisons with the age-specific rates for 1989 show that the rates for women under 25 rose in the MCH-FP area, but fell for women between 25 and 45; in the Comparison area the rates rose in all age groups except the oldest and the youngest. The relative difference between the rates for the two areas tends to increase with the ages of the mothers, as might be expected.

Table 4.1: Number and Rates of Pregnancy Outcomes by Type and Area, 1990

Type of pregnancy outcome	Both areas		MCH-FP area		Comparison area	
	No.	Rate	No.	Rate	No.	Rate
Total pregnancies*	7546	154.0	3187	126.4	4359	185.3
Live birth pregnancies**	6632	878.9	2926	890.2	3706	870.2
Fetal wastage pregnancies	914	121.1	361	109.8	553	129.8
Early (miscarriages)	691	91.6	261	79.4	430	101.0
Late (still-births)	223	29.6	100	30.4	123	28.9
Multiple birth pregnancies	75		28		47	
Live birth pregnancies	71		26		45	
Three live births	1		0		1	
Two live births	67		25		42	
One live birth	3		1		2	
Still-birth pregnancies	3		2		1	
Miscarriage pregnancies	1		0		1	

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

Table 4.2: Pregnancy Outcomes by Month, 1990

Months	Pregnancy outcome					No.of live born children			
		Miscarriage							
	All	Induced	Spon.	Still birth	Live* birth	Both sexes	Males	Females	Ratio
All months	7546	240	451	223	6632	6701	3343	3358	0.9955
January	648	17	31	20	580	583	284	299	0.9498
February	496	18	33	15	430	433	209	224	0.9330
March	531	30	41	15	445	450	231	219	1.0547
April	608	17	51	11	529	533	275	258	1.0658
May	539	18	53	11	457	459	214	245	0.8734
June	471	19	50	10	392	394	196	198	0.9898
July	548	26	39	20	463	472	235	237	0.9915
August	625	22	35	23	545	556	271	285	0.9508
September	718	31	30	28	629	636	344	292	1.1780
October	853	21	33	22	777	787	394	393	1.0025
November	821	10	31	20	760	767	376	391	0.9616
December	688	11	24	28	625	631	314	317	0.9905

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

Figure 4.1: Number of Births and Deaths by Month, 1990

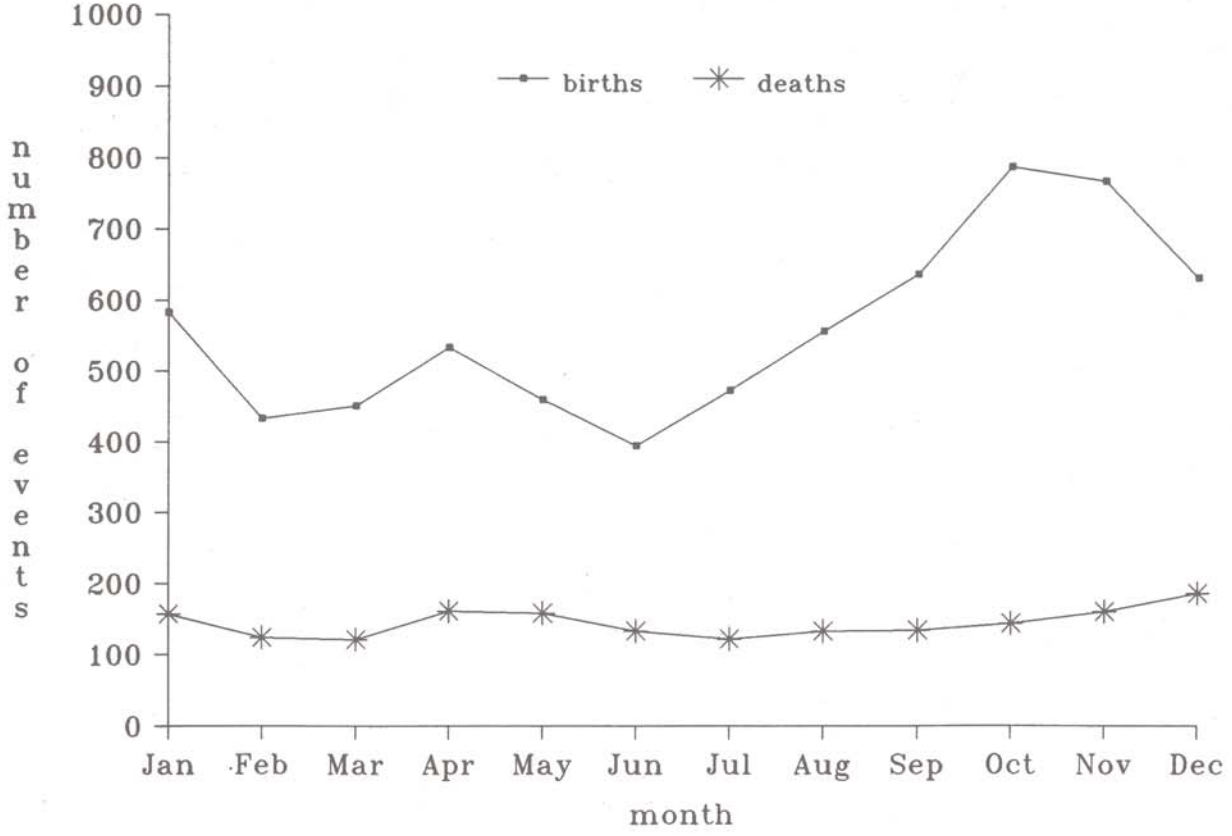


Table 4.3: Age-specific Fertility Rates and Indices, 1990

Age (years)	Number of live births	Number of women	ASFR (per 1000)
All ages	6701	49001	136.8
15-19*	718	10364	69.3
20-24	2391	10198	234.5
25-29	1941	8808	220.4
30-34	1012	6206	163.1
35-39	456	4607	99.0
40-44	151	4251	35.5
45-49**	32	4567	7.0

Total Fertility Rate (TFR)	=	4143
General Fertility Rate (GFR)	=	137
Gross Fertility Rate (GRR)	=	2076
Net Reproduction Rate (NRR)	=	1797

*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, 1990

Age (years)	MCH-FP area			Comparison area		
	Births	Women	Rate	Births	Women	Rate
All ages	2951	26014	113.4	3750	22987	163.1
15-19*	350	5494	63.7	368	4870	75.6
20-24	1111	5402	205.7	1280	4796	266.9
25-29	841	4751	177.0	1100	4057	271.1
30-34	409	3235	126.4	603	2971	203.0
35-39	172	2468	69.7	284	2139	132.8
40-44	52	2250	23.1	99	2001	49.5
45-49**	16	2414	6.6	16	2153	7.4
TFR	=	3361		TFR	=	5031
GFR	=	113		GFR	=	163
GRR	=	1644		GRR	=	2569
NRR	=	1459		NRR	=	2172

*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, 1990

Age (years)	Block A			Block B		
	Births	Women	Rate	Births	Women	Rate
All ages	812	7185	113.0	803	6572	122.2
15-19*	85	1447	58.7	110	1438	76.5
20-24	335	1557	215.2	282	1354	208.3
25-29	234	1374	170.3	218	1168	186.6
30-34	102	901	113.2	114	777	146.7
35-39	46	632	72.8	54	636	84.9
40-44	9	647	13.9	18	599	30.1
45-49**	1	627	1.6	7	600	11.7
	TFR =	3229		TFR =	3724	
	GFR =	113		GFR =	122	
	GRR =	1626		GRR =	1836	

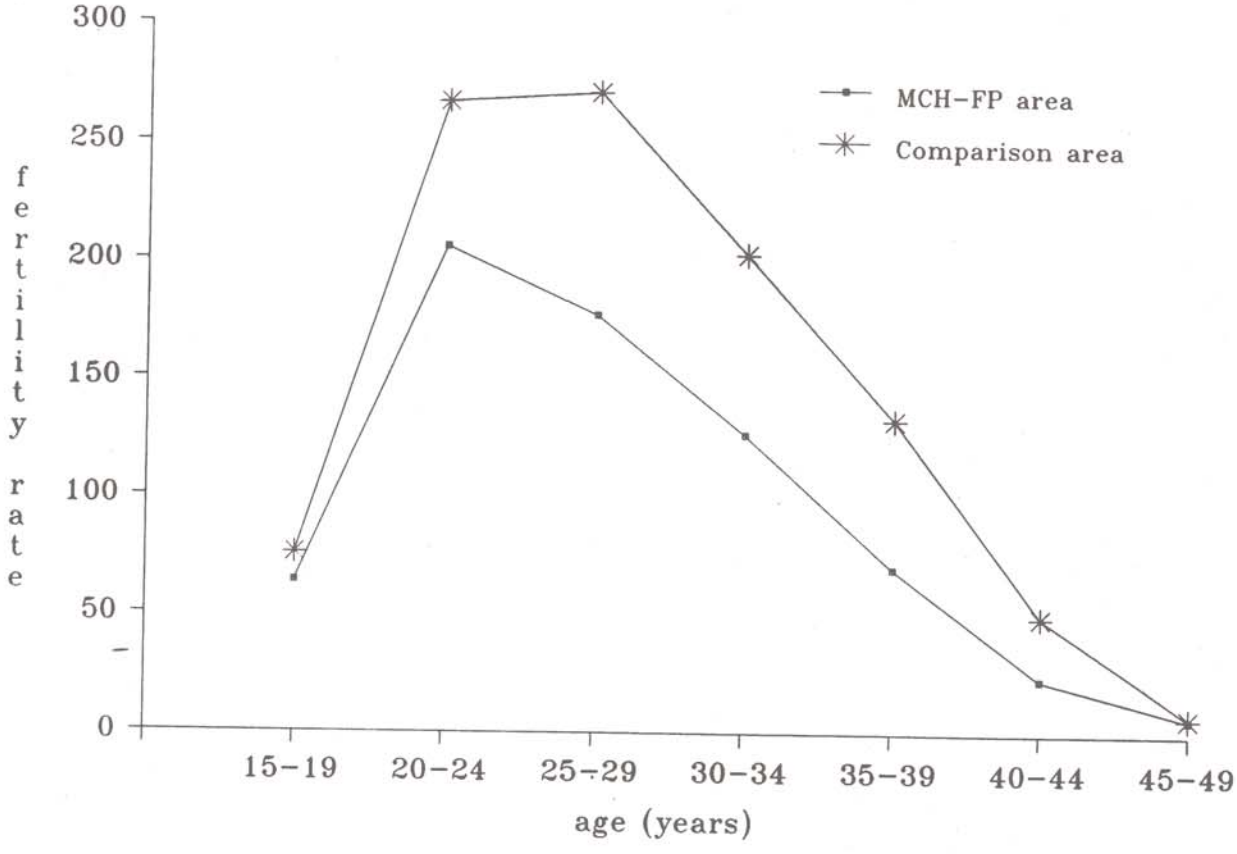
*Birth to mothers under age 15 were included in this group.
**Birth to mothers age 50 and above were included in this group.

Table 4.5 (cont.): Age-specific Fertility Rates and Indices for MCH-FP Area by Block, 1990

Age (years)	Block C			Block D		
	Births	Women	Rate	Births	Women	Rate
All ages	722	6845	105.5	614	5412	113.5
15-19*	89	1470	60.5	66	1139	57.9
20-24	277	1405	197.2	217	1086	199.8
25-29	208	1221	170.4	181	988	183.2
30-34	97	857	113.2	96	700	137.1
35-39	35	684	51.2	37	516	71.7
40-44	10	545	18.3	15	459	32.7
45-49**	6	663	9.0	2	524	3.8
TFR	=	3099		TFR	=	3432
GFR	=	105		GFR	=	113
GRR	=	1472		GRR	=	1648

*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, 1990



CHAPTER 5

MARRIAGE AND DIVORCE

The number of marriages registered in 1990 was 3,054, giving a crude marriage rate of 15.0 per thousand. These figures show little change on those of 1989, and 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 19.3 for all grooms and brides; 25.8 and 18.6 for those marrying for the first time -- show little change on 1989. 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.

Divorces numbered 412 in 1990, which constituted a decrease on the 1989 figure of 476. In general, however, the incidence of divorce in Matlab appears to have fallen: during the first four years of the present study, from 1978 to 1981, the numbers of divorces were consistently over 500; since 1981 they have been below that figure.

Table 5.6 shows the distributions of marriages and divorces by month. When compared with previous years no regular seasonal pattern is again discernible.

Table 5.1: Groom's Age at Marriage by Previous Marital Status, 1990

Age (years)	All grooms		Previous marital status							
			Single		Married		Widowed		Divorced	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
All ages	3054	100.0	2484	100.0	132	100.0	127	100.0	311	100.0
10-14	2	0.1	2	0.1	0	0.0	0	0.0	0	0.0
15-19	125	4.1	114	4.6	1	0.8	0	0.0	10	3.2
20-24	863	28.3	815	32.8	12	9.1	3	2.4	33	10.6
25-29	1235	40.4	1072	43.2	33	25.0	19	15.0	111	35.7
30-34	598	19.6	436	17.6	40	30.3	30	23.6	92	29.6
35-39	108	3.5	35	1.4	18	13.6	18	14.2	37	11.9
40-44	52	1.7	4	0.2	16	12.1	21	16.5	11	3.5
45-49	19	0.6	2	0.1	5	3.8	8	6.3	4	1.3
50-54	15	0.5	0	0.0	5	3.8	6	4.7	4	1.3
55-59	19	0.6	0	0.0	1	0.8	12	9.4	6	1.9
60-64	7	0.2	0	0.0	1	0.8	5	3.9	1	0.3
65+	9	0.3	3	0.1	0	0.0	5	3.9	1	0.3
Unknown	2	0.1	1	0.0	0	0.0	0	0.0	1	0.3
Median age*	26.0		26.0		32.0		30.0		36.0	
Mean age*	27.2		25.8		33.2		30.5		39.7	
Standard dev.*	6.5		4.5		7.9		7.8		12.1	

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

Table 5.2: Bride's Age at Marriage by Previous Marital Status, 1990

Age (years)	All brides		Previous marital status					
			Single		Widowed		Divorced	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent
All ages	3054	100.0	2623	100.0	38	100.0	393	100.0
10-14	116	3.8	113	4.3	0	0.0	3	0.8
15-19	1740	57.0	1641	62.6	2	5.3	97	24.7
20-24	947	31.0	781	29.8	7	18.4	159	40.5
25-29	172	5.6	74	2.8	15	39.5	83	21.1
30-34	54	1.8	9	0.3	7	18.4	38	9.7
35-39	16	0.5	1	0.0	5	13.2	10	2.5
40-44	2	0.1	1	0.0	0	0.0	1	0.3
45+	7	0.2	3	0.1	2	5.3	2	0.5
Median age*		19.0		18.0		22.0		27.5
Mean age*		19.3		18.6		23.2		28.6
Standard dev.*		4.0		3.1		5.4		6.7

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

Table 5.3: Marriage Rates by Age and Sex, 1990

Age (years)	Males			Females		
	Marriages	Population	Rate*	Marriages	Population	Rate*
10-14	2	12975	0.2	116	11730	9.9
15-19	125	11502	10.9	1740	10364	167.9
20-24	863	8882	97.2	947	10198	92.9
25-29	1235	7823	157.9	172	8808	19.5
30-34	598	6523	91.7	54	6206	8.7
35-39	108	4463	24.2	16	4607	3.5
40-41	52	3546	14.7	2	4251	0.5
45+	69	16589	4.2	7	17180	0.4

*Rates per 1000 population irrespective of previous marital status.

Table 5.4: Number of Marriages by Groom's and Bride's Age at Marriage, 1990

Groom's age (years)	All	Bride's age (years)								
		10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50+
All ages	3054	116	1740	947	172	54	16	2	5	2
10-14	2	0	2	0	0	0	0	0	0	0
15-19	125	7	100	16	2	0	0	0	0	0
20-24	863	55	573	218	14	2	0	0	0	1
25-29	1235	45	773	372	40	3	1	0	1	0
30-34	598	5	244	279	60	8	2	0	0	0
35-39	108	4	34	36	20	13	1	0	0	0
40-44	52	0	6	19	14	10	2	1	0	0
45-49	19	0	0	4	7	6	2	0	0	0
50-54	15	0	0	1	6	5	2	1	0	0
55-59	19	0	1	2	6	5	2	0	3	0
60-64	7	0	1	0	1	2	3	0	0	0
65+	9	0	5	0	2	0	1	0	1	0
Unknown	2	1	0	0	0	0	0	0	0	1

Table 5.5: Number of Divorces by Partners' Age at Divorce, 1990

Male's age (years)	All	Female's age (years)									
		10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50+	Unknown
All ages	412	6	146	151	74	20	4	5	1	4	1
10-14	0	0	0	0	0	0	0	0	0	0	0
15-19	13	0	10	1	1	0	0	0	0	0	1
20-24	58	4	35	15	4	0	0	0	0	0	0
25-29	130	1	61	53	13	2	0	0	0	0	0
30-34	125	0	33	58	31	2	1	0	0	0	0
35-39	31	1	3	10	10	6	1	0	0	0	0
40-44	26	0	3	10	6	4	0	3	0	0	0
45-49	10	0	0	2	4	3	1	0	0	0	0
50-54	6	0	1	1	1	2	0	1	0	0	0
55-59	6	0	0	1	2	0	0	1	1	1	0
60-64	2	0	0	0	1	0	0	0	0	1	0
65+	4	0	0	0	0	1	1	0	0	2	0
Unknown	1	0	0	0	1	0	0	0	0	0	0

Table 5.6: Marriages and Divorces by Months, 1990

Month	Marriage		Divorce	
	Number	Percent	Number	Percent
January	218	7.1	44	10.7
February	260	8.5	32	7.8
March	306	10.0	33	8.0
April	123	4.0	24	5.8
May	235	7.7	41	10.0
June	193	6.3	31	7.5
July	389	12.7	42	10.2
August	282	9.2	33	8.0
September	271	8.9	36	8.7
October	311	10.2	40	9.7
November	211	6.9	32	7.8
December	255	8.3	24	5.8
All months	3054	100.0	412	100.0

Figure 5.1: Marriages and Divorces by Month, 1990

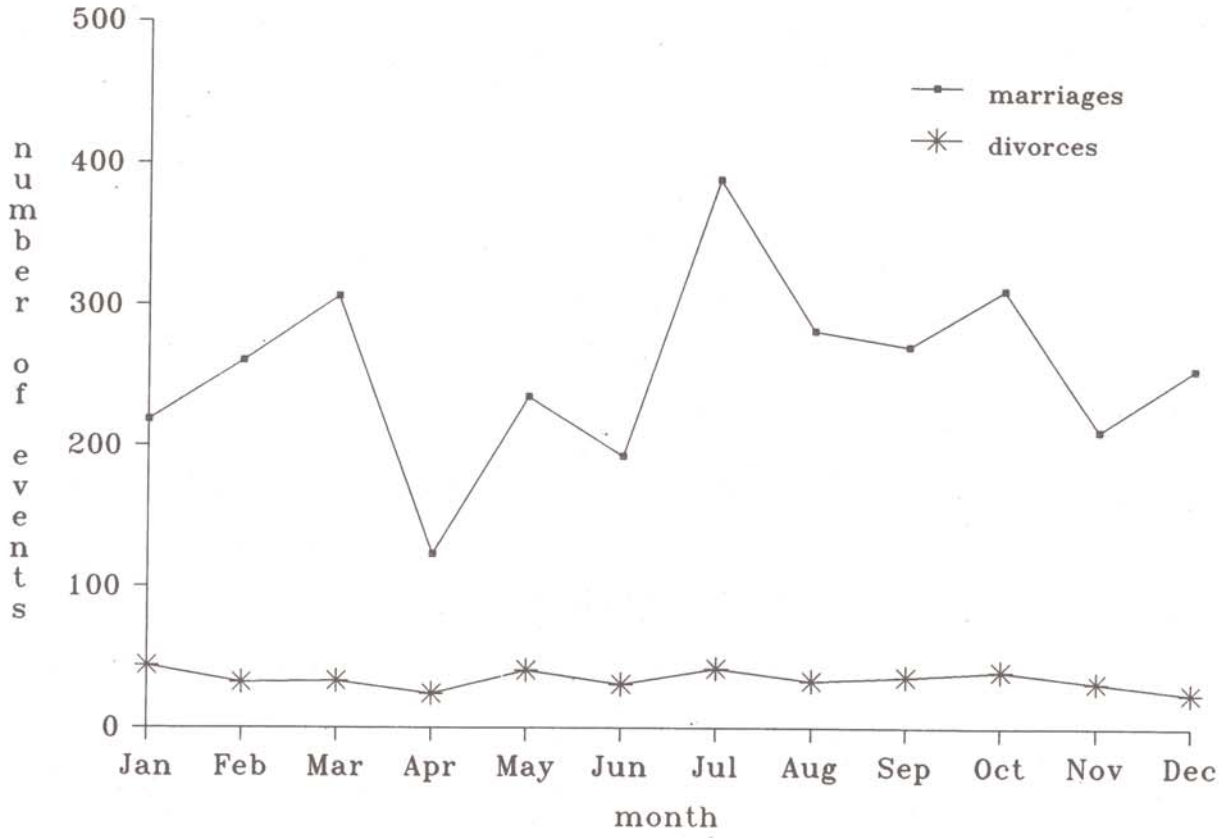


Table 5.7: Number of Divorces by Sex, Age, and Duration of Marriage, 1990

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	412	412	61	61	72	72	95	95	66	66	26	26	23	23	69	69
Under 20	13	152	6	36	3	46	2	46	1	14	0	3	0	2	1	5
20-24	58	151	10	13	15	20	12	37	14	30	3	14	2	16	2	21
25-29	130	74	18	6	25	4	37	10	22	19	7	6	9	4	12	25
30-34	125	20	13	4	17	2	34	1	16	2	9	2	9	0	27	9
35-39	31	4	5	0	4	0	4	0	5	0	1	0	1	0	11	4
40-44	36	6	8	2	3	0	5	1	5	1	4	1	1	0	10	1
50+	18	4	1	0	5	0	1	0	2	0	2	0	1	1	6	3
Unknown	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	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 1990 was 5,293, giving a crude rate of in-migration of 26.0 per thousand. Out-migrants numbered 8,633 and the out-migration rate 42.4 per thousand. The figures constitute small decreases on the 1989 numbers, but net loss of migrants increased slightly from 2,957 in 1989 to 3,340 in 1990. Females outnumbered males, among both 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 out-migrants leaving the Comparison area.

Table 6.4 shows the age-sex-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 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.

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 has been revised from that adopted in previous DSS annual reports, and it is hoped that users will find it more meaningful.

Table 6.9 and Figure 6.2 show the numbers moving in and out by month. As in previous years, January appears to be the preferred month for making such moves.

Table 6.1: In- and Out-migration by Age and Sex, 1990

Age (years)	In-migration			Out-migration		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	5293	2271	3022	8633	4110	4523
Under 5	903	428	475	1225	640	585
0	244	118	126	299	149	150
1	192	89	103	253	142	111
2	181	95	86	266	129	137
3	145	61	84	215	119	96
4	141	65	76	192	101	91
5 - 9	466	269	197	752	400	352
10-14	393	186	207	770	404	366
15-19	859	162	697	1683	578	1105
20-24	974	199	775	1702	672	1030
25-29	624	313	311	1061	568	493
30-34	418	266	152	532	347	185
35-39	207	158	49	264	159	105
40-44	149	112	37	159	95	64
45-49	72	49	23	138	73	65
50-54	63	39	24	89	46	43
55-59	60	37	23	93	53	40
60-64	33	19	14	66	33	33
65+	72	34	38	99	42	57

Table 6.2: In-migration by Age, Sex, and Area, 1990

Age (years)	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	2567	1051	1516	2726	1220	1506
Under 5	464	222	242	439	206	233
0	138	67	71	106	51	55
1	97	47	50	95	42	53
2	88	47	41	93	48	45
3	71	26	45	74	35	39
4	70	35	35	71	30	41
5 - 9	205	117	88	261	152	109
10-14	166	83	83	227	103	124
15-19	427	80	347	432	82	350
20-24	510	72	438	464	127	337
25-29	303	143	160	321	170	151
30-34	188	120	68	230	146	84
35-39	95	73	22	112	85	27
40-44	77	58	19	72	54	18
45-49	30	18	12	42	31	11
50-54	30	21	9	33	18	15
55-59	25	17	8	35	20	15
60-64	18	12	6	15	7	8
65+	29	15	14	43	19	24

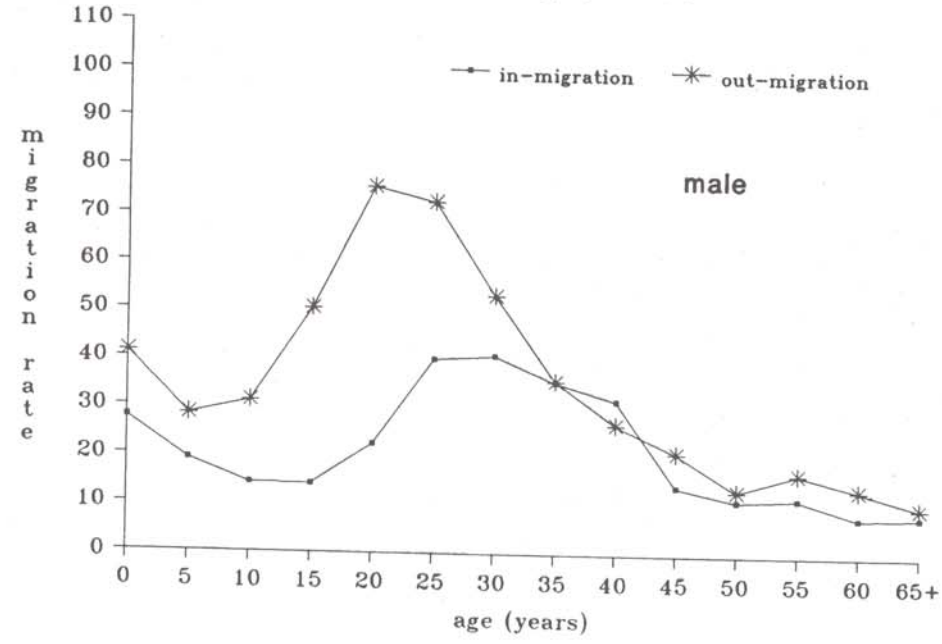
Table 6.3: Out-migration by Age, Sex, and Area, 1990

Age (years)	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	4120	1930	2190	4513	2180	2333
Under 5	551	279	272	674	361	313
0	133	65	68	166	84	82
1	107	55	52	146	87	59
2	121	57	64	145	72	73
3	108	55	53	107	64	43
4	82	47	35	110	54	56
5 - 9	333	170	163	419	230	189
10-14	357	186	171	413	218	195
15-19	823	264	559	860	314	546
20-24	859	341	518	843	331	512
25-29	517	277	240	544	291	253
30-34	253	167	86	279	180	99
35-39	131	78	53	133	81	52
40-44	85	51	34	74	44	30
45-49	67	36	31	71	37	34
50-54	36	23	13	53	23	30
55-59	39	24	15	54	29	25
60-64	30	18	12	36	15	21
65+	39	16	23	60	26	34

Table 6.4: Age and Sex-specific Migration Rates by Direction, 1990
(per 1000 population)

Age (years)	Both sexes		Males		Females	
	In	Out	In	Out	In	Out
All ages	26.0	42.4	22.3	40.3	29.8	44.5
Under 5	29.3	39.7	27.5	41.2	31.1	38.3
0	39.9	48.9	38.5	48.6	41.4	49.3
1	30.6	40.3	28.8	46.0	32.2	34.8
2	30.0	44.1	30.8	41.8	29.2	46.6
3	23.7	35.2	19.8	38.6	27.8	31.8
4	22.4	30.5	20.1	31.3	24.8	29.7
5 - 9	17.2	27.8	19.1	28.4	15.2	27.2
10-14	15.9	31.2	14.3	31.1	17.6	31.2
15-19	39.3	77.0	14.1	50.3	67.3	106.6
20-24	51.0	89.2	22.4	75.7	76.0	101.0
25-29	37.5	63.8	40.0	72.6	35.3	56.0
30-34	32.8	41.8	40.8	53.2	24.5	29.8
35-39	22.8	29.1	35.4	35.6	10.6	22.8
40-44	19.1	20.4	31.6	26.8	8.7	15.1
45-49	8.9	17.1	14.1	21.0	5.0	14.2
50-54	8.9	12.5	11.3	13.3	6.6	11.8
55-59	9.5	14.8	11.8	16.9	7.3	12.7
60-64	7.3	14.5	8.0	13.8	6.5	15.3
65+	9.3	12.7	8.2	10.2	10.4	15.7

Figure 6.1: Rate of In- and Out-migration by Sex and Age, 1990



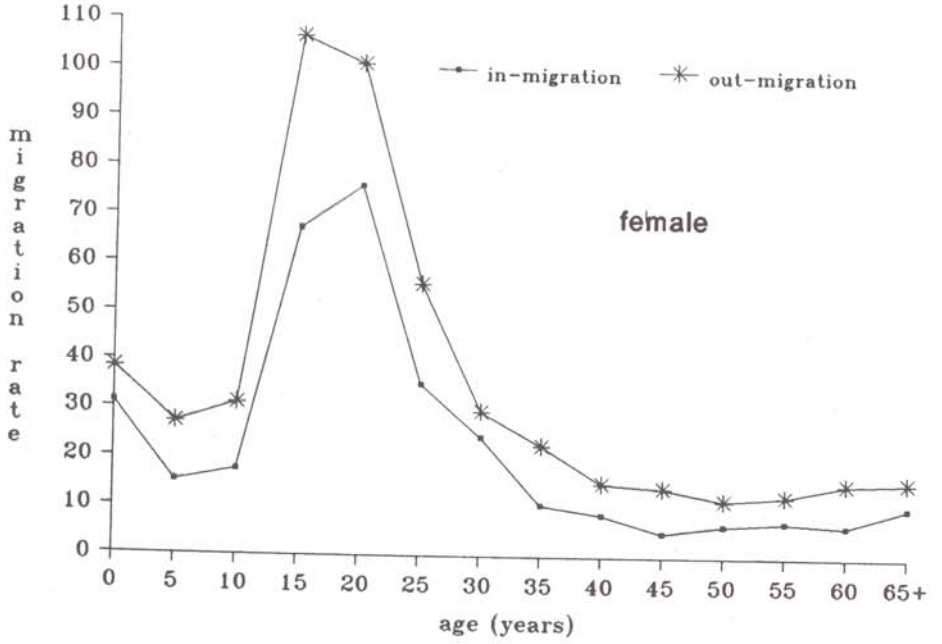


Table 6.5: Male Out-migration by Cause of Movement and Age, 1990

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	4110	640	400	404	578	672	568	347	159	95	73	46	53	33	42
Work/Economic/Educational															
-acquired/seeking job	1866	0	5	86	318	445	439	261	119	65	50	32	24	12	10
-job completion/retirement	9	0	0	1	0	3	1	3	0	0	0	0	0	0	1
-to acquire education	226	0	15	53	66	68	21	2	0	1	0	0	0	0	0
-educ. completed/interrupt	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
-student lodging	118	0	5	20	26	49	12	4	1	1	0	0	0	0	0
Housing/Environmental															
-acquired/seeking new land/house	133	1	0	2	9	7	17	25	17	10	12	10	10	6	7
-river erosion	46	0	0	0	0	1	8	11	7	3	5	0	7	1	3
Marriage/Familial															
-marriage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-separation/divorce/widow	6	0	1	0	0	2	2	0	0	1	0	0	0	0	0
-move with or join spouse/ parents	1555	635	372	236	145	69	42	23	6	4	1	1	4	6	11
-adoption	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0
-family friction/breakdown	45	0	0	1	6	10	13	7	5	2	0	0	1	0	0
-health or old age care	15	0	0	0	0	0	0	1	0	0	0	1	1	4	8
Legal problems	35	0	0	2	4	11	8	4	1	2	2	0	1	0	0
Other and not stated															
-other n.e.c.*	47	1	1	3	3	6	4	5	2	6	3	2	5	4	2
-unknown or not stated	5	0	1	0	1	1	0	1	1	0	0	0	0	0	0

*Not elsewhere classified.

Table 6.6: Female Out-migration by Cause of Movement and Age, 1990

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	4523	585	352	366	1105	1030	493	185	105	64	65	43	40	33	57
Work/Economic/Educational															
-acquired/seeking job	489	0	10	93	164	106	66	23	12	5	2	5	0	1	2
-job completion/retirement	7	0	0	1	4	1	0	1	0	0	0	0	0	0	0
-to acquire education	70	0	9	20	28	10	2	1	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	38	0	2	13	16	5	2	0	0	0	0	0	0	0	0
Housing/Environmental															
-acquired/seeking new land/house	43	2	3	2	2	8	4	6	5	4	0	2	2	2	1
-river erosion	5	0	0	0	0	1	0	1	1	1	0	1	0	0	0
Marriage/Familial															
-marriage	833	0	0	22	461	272	61	12	2	2	0	0	0	0	1
-separation/divorce/widow	141	0	0	2	43	58	19	8	2	2	1	1	0	2	3
-move with or join spouse/ parents	2762	572	323	207	371	550	328	132	79	47	57	26	29	18	23
-adoption	15	11	2	1	1	0	0	0	0	0	0	0	0	0	0
-family friction/breakdown	24	0	0	1	8	11	1	0	1	0	0	1	0	1	0
-health or old age care	51	0	0	0	1	0	1	0	1	0	3	4	7	9	25
Legal problems	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Other and not stated															
-other n.e.c.*	42	0	3	4	6	8	7	1	2	2	2	3	2	0	2
-unknown or not stated	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0

*Not elsewhere classified.

Table 6.7: Male In-migration by Cause of Movement and Age, 1990

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	2271	428	269	186	162	199	313	266	158	112	49	39	37	19	34
Work/Economic/Educational															
-acquired/seeking job	401	2	1	11	22	59	111	68	54	33	11	10	9	5	5
-job completion/retirement	211	0	0	2	6	21	50	51	26	20	8	10	9	4	4
-to acquire education	155	1	25	52	52	19	3	2	0	0	0	0	0	0	1
-educ. completed/interrupt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-student lodging	6	0	0	3	1	1	0	0	0	0	0	0	1	0	0
Housing/Environmental															
-acquired/seeking new land/house	243	1	0	4	23	37	42	53	20	20	14	9	6	4	10
-river erosion	21	0	0	0	1	1	3	3	2	1	4	1	3	1	1
Marriage/Familial															
-marriage	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
-separation/divorce/widow	2	0	0	0	1	0	0	0	0	1	0	0	0	0	0
-move with or join spouse/ parents	1036	419	242	109	38	42	67	51	27	24	5	3	1	2	6
-adoption	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0
-family friction/breakdown	18	0	0	0	0	2	4	8	3	1	0	0	0	0	0
-health or old age care	21	1	0	0	2	1	1	3	2	2	1	2	2	1	3
Legal problems	15	0	0	0	2	2	1	1	2	2	2	0	2	1	0
Other and not stated															
-other n.e.c.*	138	1	1	5	14	14	30	26	22	8	4	4	4	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 6.8: Female In-migration by Cause of Movement and Age, 1990

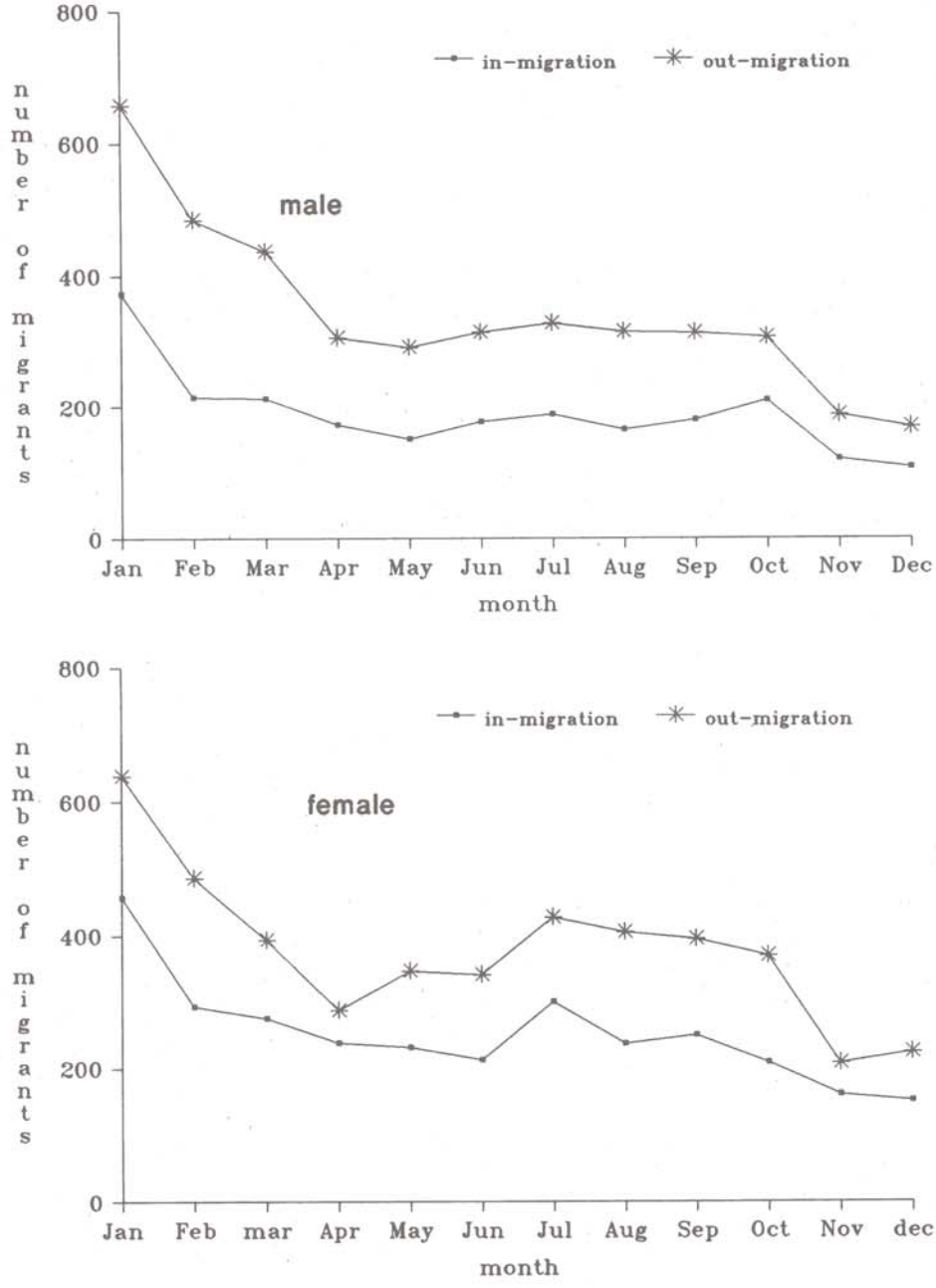
Cause of movement	Total	Age (years)													
		<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All migrants	3022	475	197	207	697	775	311	152	49	37	23	24	23	14	38
Work/Economical/Educational															
-acquired/seeking job	152	1	1	14	12	43	44	23	3	4	2	1	2	1	1
-job completion/retirement	41	0	0	6	25	5	5	0	0	0	0	0	0	0	0
-to acquire education	82	1	12	43	24	1	0	0	0	0	0	0	0	0	1
-educ. completed/interrupt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-student lodging	2	0	0	0	1	0	0	1	0	0	0	0	0	0	0
Housing/Environmental															
-acquired/seeking new land/house	120	0	0	2	9	40	19	20	4	6	6	3	3	3	5
-river erosion	14	0	2	2	0	0	1	5	0	2	0	0	0	1	1
Marriage/Familial															
-marriage	894	0	0	8	434	382	42	13	9	1	0	1	1	0	3
-separation/divorce/widow	165	0	0	1	47	64	33	12	1	3	3	0	1	0	0
-move with or join spouse/ parents	1406	460	179	123	115	210	145	72	25	18	10	16	9	8	16
-adoption	16	13	1	1	1	0	0	0	0	0	0	0	0	0	0
-family friction/breakdown	28	0	1	0	6	11	6	1	1	2	0	0	0	0	0
-health or old age care	17	0	0	0	1	3	2	2	0	1	1	0	3	0	4
Legal problems	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other and not stated															
-other n.e.c.*	85	0	1	7	22	16	14	3	6	0	1	3	4	1	7
-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, 1990

Age (years)	In-migration			Out-migration		
	Both sexes	Males	Females	Both sexes	Males	Females
January	830	373	457	1296	658	638
February	507	214	293	971	485	486
March	489	213	276	830	437	393
April	412	173	239	594	306	288
May	383	151	232	638	291	347
June	390	177	213	655	314	341
July	489	188	301	755	328	427
August	403	165	238	720	315	405
September	431	180	251	708	313	395
October	419	210	209	677	307	370
November	281	120	161	395	187	208
December	259	107	152	394	169	225
All months	5293	2271	3022	8633	4110	4523

Figure 6.2: Number of In- and Out-migrants by Sex and Month, 1990



Appendix A

Names and Codes of Villages in the DSS Area, 1990

	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
					U	Baispur	V97	Dhanagoda
B	H	Lamchari	V26	Narayanpur	V01	Kadamtali	V98	Santoshpur
	V12	Bhangerpar	V56	Palipara	V02	Nilokhi	V99	Baluakandi
	V13	Baburpara	V82	Dhanarpar	V03	Char Nilokhi	VB1	Taltoli
	V19	Lakshmipur	V83	Padmapal	V04	Char Pathalia	VB2	Sree Rayerchar
	V20	Dagorpur	V85	Bhanurpara	V05	Gazipur	VB3	Rayerkandi
	V21	Khadergaon	V87	Hurmaisha	V06	Fatepur	VB4	Ramdaspur
	V22	Beloti	VB12	Nagda	V07	Nayakandi	VB5	Thakurpara
	V23	Baluchar	VB13	Naogaon	V08	Goalbhar	VB6	Sarkerpara
	V24	Machuakhal			V09	Naburkandi	VB7	Mirpur
					V14	Enayetnagar	VB8	Farazikandi
C	K	Shahpur	V40	Masunda	V35	Durgapur	VB9**	Ramanathgonj
	L	Tatkhana	V41	Paton	V36	Ludhua	VB10	South Rampur
	M	Char Nayergaon	V42	Adhara (South)	V37**	Charputia	D28	Bazarkhola
	N	Aswinpur	V43	Kanachak	V38	Galimkha	D29	Kirtonkhola
	O	Nayergaon	V44	Panchdona	V45	Bakchar	D30	Banuakandi
	P	Titerkandi	V64	Kawadi	V46	Silinda	D31	Harina Bazarkhola
	Q	Char Shibpur	V86	Adhara	V47	Tulatali	D32	Khalisha
	V27	Panchghoria	V88	Datikara	V48	Gangkandi	D33	Nayanagar
	V28	Khidirpur	VB11	Mehron	V49	Harina Bhabanipara	D34	Saidkharkandi
	V30	Harion	D100	Barogaon			D35	Molla Kandi
	V39	Gobindapur	D101	Naojan	V50	Bakharpur	D88	Sankibhanga
					V51	Induriakandi	D89	Sankibangha
D	R	Nandalalpur	V52	Nayakandi	V53	Chhoto Haldia		Namapara
	S	Tatua	V54	Balakandi	V58**	Mohishmari	D90	Zahirabaj
	T	Amuakanda	V55	Induria	V65	Nayachar	D91**	North Joypur
	V15	Bhati Rasulpur	V57	Baluchar	V66	Thatalia	D92**	West Joypur
	V16	Binandapur	V63	Islamabad (East)	V68	Sobahan	D93	Maizkandi
	V17	Hatighata			V69**	Naobangha	D94	Hazipur
	V18	Torkey	V67	Majlishpur	V70**	South Joypur	D95	Tapaderpara
	V25	Char Pathalia	V81	Sonaterkandi	V71	Khamarpara	D96	Rampur
	V29	Shibpur(South)	V84	Shanbajkandi	V73	Sadardia	D97	Nayakandi
	V33	Shibpur(North)	V89	Islamabad (Middle)	V74	Ketundia	D98	Bara Haldia
	V34	Satparia			V75	Mukundia	D99	Mandertoli
					V76	Chosai		

*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, 1990

Village* code	Population	Live births	Deaths	Birth rate	Death rate
D	1724	44	12	25.5	7.0
W	3140	57	14	18.2	4.5
V10	1554	46	9	29.6	5.8
V11	1598	40	17	25.0	10.6
V31	8688	265	67	30.5	7.7
V32	2622	89	20	33.9	7.6
V59	964	31	9	32.2	9.3
V60	899	21	5	23.4	5.6
V61	689	18	4	26.1	5.8
V62	855	27	6	31.6	7.0
V72	5821	174	39	29.9	6.7
Block A	28554	812	202	28.4	7.1
H	1188	38	7	32.0	5.9
V12	512	16	6	31.3	11.7
V13	750	22	4	29.3	5.3
V19	3051	68	23	22.3	7.5
V20	1134	35	8	30.9	7.1
V21	459	18	8	39.2	17.4
V22	573	16	12	27.9	20.9
V23	540	16	6	29.6	11.1
V24	2699	92	25	34.1	9.3
V26	2640	56	20	21.2	7.6
V56	1440	48	11	33.3	7.6
V82	1434	55	9	38.4	6.3
V83	522	17	7	32.6	13.4
V85	459	15	6	32.7	13.1
V87	575	24	1	41.7	1.7
VB12	3960	149	25	37.6	6.3
VB13	4487	118	31	26.3	6.9
Block B	26423	803	209	30.4	7.9

(continued)

Appendix B (cont.)

Village* code	Population	Live births	Deaths	Birth rate	Death rate
K	876	14	2	16.0	2.3
L	467	21	4	45.0	8.6
M	147	1	0	6.8	0.0
N	2046	64	25	31.3	12.2
O	1358	28	13	20.6	9.6
P	1921	48	22	25.0	11.5
Q	362	9	0	24.9	0.0
V27	893	23	8	25.8	9.0
V28	1364	37	10	27.1	7.3
V30	554	15	3	27.1	5.4
V39	347	13	4	37.5	11.5
V40	727	13	5	17.9	6.9
V41	1467	40	8	27.3	5.5
V42	708	19	7	26.8	9.9
V43	872	22	7	25.2	8.0
V44	590	10	6	16.9	10.2
V64	4594	128	31	27.9	6.7
V86	802	21	6	26.2	7.5
V88	493	12	3	24.3	6.1
VB11	2484	72	18	29.0	7.2
D100	3205	81	22	25.3	6.9
D101	1239	31	9	25.0	7.3
Block C	27516	722	213	26.2	7.7
R	1348	32	10	23.7	7.4
S	962	35	6	36.4	6.2
T	1515	54	13	35.6	8.6
V15	552	12	7	21.7	12.7
V16	759	13	4	17.1	5.3
V17	1017	30	9	29.5	8.8
V18	3579	99	26	27.7	7.3
V25	1181	29	10	24.6	8.5
V29	489	13	5	26.6	10.2
V33	567	13	2	22.9	3.5
V34	768	20	7	26.0	9.1
V52	245	1	2	4.1	8.2
V54	600	18	2	30.0	3.3
V55	490	17	3	34.7	6.1
V57	1103	29	6	26.3	5.4
V63	2066	57	23	27.6	11.1
V67	565	24	5	42.5	8.8
V81	600	17	7	28.3	11.7
V84	2108	62	15	29.4	7.1
V89	1316	39	11	29.6	8.4
Block D	21830	614	173	28.1	7.9
MCH-FP area	104323	2951	797	28.3	7.6

(continued)

Appendix B (cont.)

Village* code	Population	Live births	Deaths	Birth rate	Death rate
A	2718	115	19	42.3	7.0
B	1995	88	19	44.1	9.5
C	3546	154	36	43.4	10.2
F	1215	32	9	26.3	7.4
G	2419	88	17	36.4	7.0
J	462	24	2	51.9	4.3
U	8097	311	89	38.4	11.0
V01	641	14	7	21.8	10.9
V02	518	11	7	21.2	13.5
V03	666	23	9	34.5	13.5
V04	267	10	3	37.5	11.2
V05	3318	111	31	33.5	9.3
V06	2255	83	18	36.8	8.0
V07	393	16	4	40.7	10.2
V08	1164	35	11	30.1	9.5
V09	1153	53	9	46.0	7.8
V14	875	37	8	42.3	9.1
V35	3474	127	46	36.6	13.2
V36	4747	173	43	36.4	9.1
V37	-	-	-	-	-
V38	1643	57	15	34.7	9.1
V45	1087	39	12	35.9	11.0
V46	370	13	5	35.1	13.5
V47	1800	67	13	37.2	7.2
V48	601	27	10	44.9	16.6
V49	1313	49	12	37.3	9.1
V50	156	6	0	38.5	0.0
V51	930	31	6	33.3	6.5
V53	3187	102	26	32.0	8.2
V58	-	-	-	-	-
V65	730	36	13	49.3	17.8
V66	769	30	7	39.0	9.1
V68	899	34	9	37.8	10.0
V69	-	-	-	-	-
V70	-	-	-	-	-
V71	454	19	2	41.9	4.4
V73	819	26	7	31.7	8.5
V74	1390	44	14	31.7	10.1
V75	390	20	5	51.3	12.8
V76	1616	57	15	35.3	9.3
V78	263	4	2	15.2	7.6
V79	335	13	7	38.8	20.9
V80	1094	38	15	34.7	13.7
V90	1158	43	7	37.1	6.0
V95	1569	77	19	49.1	12.1
V96	658	30	10	45.6	15.2
V97	437	16	7	36.6	16.0
V98	185	5	2	27.0	10.8
V99	706	28	8	39.7	11.3

(continued)

Appendix B (cont.)

Village* code	Population	Live births	Deaths	Birth rate	Death rate
VB1	1106	39	7	35.3	6.3
VB2	962	43	11	44.7	11.4
VB3	2836	113	29	39.8	10.2
VB4	3677	133	37	36.2	10.1
VB5	1023	49	8	47.9	7.8
VB6	732	27	5	36.9	6.8
VB7	257	7	3	27.2	11.7
VB8	1313	45	20	34.3	15.2
VB9	-	-	-	-	-
VB10	2614	115	14	44.0	5.4
D28	1186	40	9	33.7	7.6
D29	153	3	0	19.6	0.0
D30	729	24	8	32.9	11.0
D31	1078	38	11	35.3	10.2
D32	672	29	5	43.2	7.4
D33	1029	46	10	44.7	9.7
D34	1388	42	17	30.3	12.2
D35	681	13	8	19.1	11.7
D88	1509	64	10	42.4	6.6
D89	1206	43	10	35.7	8.3
D90	1164	34	9	29.2	7.7
D91	-	-	-	-	-
D92	-	-	-	-	-
D93	1065	51	7	47.9	6.6
D94	1225	58	18	47.3	14.7
D95	478	20	4	41.8	8.4
D96	665	21	1	31.6	1.5
D97	861	32	2	37.2	2.3
D98	3070	125	23	40.7	7.5
D99	2006	80	15	39.9	7.5
Comparison area	99167	3750	936	37.8	9.4

*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, 1990

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
Ms. Lutfun Nahar
Dr. Mridul K. Chowdhury
Mr. Abbas Bhuiya
Mr. Abdur Razzque
Mr. Md. Ibrahim Mollah
Mr. Md. Golam Mostafa
Mr. Sentu B. Gomes
Mr. Md. Kapil Ahmed
Mr. Arifur Rahim

Dr. Lokky Wai
Mr. Birendra N. Adhikary
Ms. Rahima Mazhar
Ms. Habiba Rahman
Ms. Nasrin Aktar
Ms. Nizam Uddin Khan
Mr. M.A. Jalil Sarker
Mr. ABM Delwar Hossain
Mr. Tazek Ahmed Chowdhury

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Hospital Endowment Fund

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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.

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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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