DEMOGRAPHIC SURVEILLANCE SYSTEM— MATLAB

VOLUME EIGHT

CENSUS UPDATE 1978

REPORT PREPARED BY

Stan Becker
Abdur Razzaque
A.M. Sarder

INTERNATIONAL
CENTRE FOR
DIARRHOEAL DISEASE
RESEARCH,
BANGLADESH

DACCA, BANGLADESH

DEMOGRAPHIC SURVEILLANCE SYSTEM - MATLAB

Volume Eight

Census Update 1978

Report prepared by:

Stan Becker[1]
Abdur Razzaque[2]
A.M. Sarder[3]

INTERNATIONAL CENTRE FOR
DIARRHOEAL DISEASE RESEARCH, BANGLADESH
G.P.O. Box 128, Dacca 2
Bangladesh

---

1 Former Associate Scientist
2 Senior Statistical Officer
3 Senior Field Research Officer

PREFACE

The International Centre for Diarrhoeal Disease Research,
Bangladesh (ICDDR,B) is an autonomous, international, philan-
thropic and non-profit centre for research, education and
training as well as clinical service. The Centre is derived
from the Cholera Research Laboratory (CRL). The activities of
the institution are to undertake and promote study, research
and dissemination of knowledge in diarrhoeal diseases and
directly related subjects of nutrition and fertility with a
view to develop improved methods of health care and for the
prevention and control of diarrhoeal diseases and improvement
of public health programmes with special relevance to develop-
ing countries. ICDDR,B issues annual report, working paper,
scientific report, special publication, monograph, thesis and
dissertation, and newsletter which demonstrate the type of
research activity currently in progress at ICDDR,B. The views
expressed in these papers are those of authors and do not
necessarily represent views of International Centre for
Diarrhoeal Disease Research, Bangladesh. They should not be
quoted without the permission of the authors.

CONTENTS

ABSTRACT

This is the Eighth volume in a series of scientific reports
produced by the International Centre for Diarrhoeal Disease
Research, Bangladesh (former Cholera Research Laboratory)
presenting the annual results of the Demographic Surveillance
System (DSS) in the Matlab area. The surveillance system
consists of two types of operations: Continuing registration of
vital events, marriages and divorces and migration, cross-
sectional censuses taken at different points in time. Five
censuses were taken in the various areas that were under
surveillance at one time or other, namely in 1966 and 1970 in
the Old Trial Area (OTA), in 1968 in the New Trial Area (NTA)
and in 1974 the whole area. During 1978 the DSS area was reduced
and a "census update" was done for the reduced surveillance area
of 149 villages.

The results of the "census update"--till 31 December 1978--
are described and analysed in this volume. The contents are sub-
divided into four sections: (1) Introduction, (2) Methods and
Procedures, (3) Results and (4) Appendices.

INTRODUCTION

In theory in a population which has had one census and has accurate migration and vital event registration, there is never a need for a second census to determine the population size at any later date. In addition, to the extent that migration and birth records include other characteristics such as place of residence, age, sex and marital status, distributions of these variables for the whole population can also be obtained at any later date without another census. The procedure needed to transform the theory into reality is updating of the population of the first census by (1) adding births and in-migrants, (2) deleting deaths and out-migrants, (3) changing marital status according to the marriage/divorce/death registration. Obviously characteristics of the population which change but are not registered, require a second "census" in order to ascertain new distributions of these characteristics. Most socio-economic variables fall in this category.

In this section the background of such an updating census for the vital registration area of Matlab, Bangladesh is described. The second section of the report details the methods and procedures that were used in the updating census. Finally, in the third section, tabulations of the data are presented.
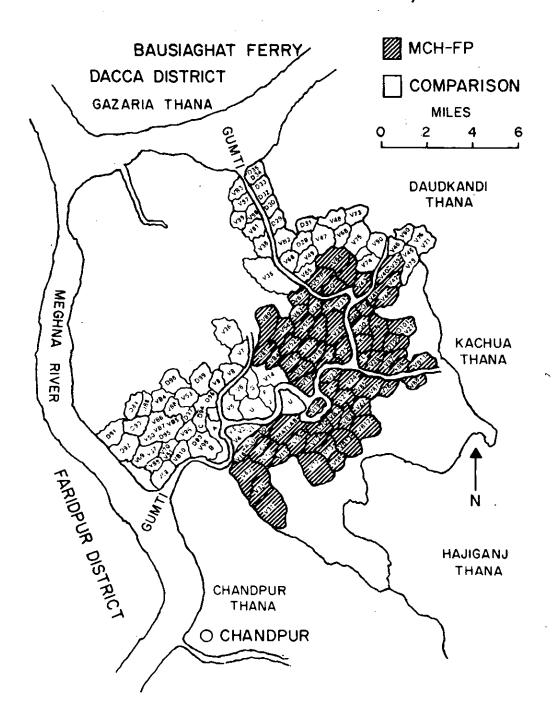
The Matlab Demographic Surveillance System

The characteristics of the area and people of Matlab have been the subject of other reports and will not be repeated here (see Ruzicka and Chowdhury, 1978). Vital registration procedures and procedures of the 1974 census have also been described (Cholera Research Laboratory, 1978). Changes which occurred in the size of the vital registration area in October 1978 are particularly relevant here (see Chowdhury *et al.*, 1981 page 2). In that month the number of villages in the registration system was reduced from 233 to 149. Thus the updating census was relevant for the 149 retained village only. (See Figure 1).

Data Sources for the 1978 Update Census: Census, Migration and Vital Event Data

Between April and July of 1974 a complete census of the 233 villages in the Matlab area was undertaken. A census record was completed for each household where the latter was defined as the group of persons who shared common cooking and eating facilities. Information was collected on relationship of each person to the head of the household, age, sex and marital status. (A copy of the household form is given in Appendix A). The sheets for each household were bound together by village. Vital registration events occurring in the household in the subsequent period were routinely entered in it by the demographic surveillance staff.

Migration in the DSS area is indicated when a person changes residence for a duration of more than six months. In and out migration forms are completed for migrants entering or leaving the registration area. These records include information on village residence, household residence, age, sex and marital status of the migrant.

FIGURE I: MATLAB AREA SHOWING VILLAGES OF DEMOGRAPHIC SURVEILLANCE SYSTEM, 1978

Migrants within a village or between villages of the vital registration area are classified as internal migrants. Though separate forms are not routinely collected for these migrants, they are noted in the Matlab census books. These recordings identify the individual, the sending and receiving village and the receiving household. Since the individual is identified, all of his/her recorded characteristics from census (or in-migration records) are automatically known.

Pregnancy terminations are routinely recorded in the vital registration system. Only live births records are needed for an updating census, of course. These records include information on village of occurrence of the birth (and village of usual residence of the mother if it is different from the village of occurrence), household residence, relationship to the head of the household, sex and date of the event. (Age and marital status for newborns have obvious values).

Deaths in the vital registration system constitute deletions to be made in the process of an updating census. Thus if the deceased individual and date of death are properly identified, further information is unnecessary.

Marriages and divorces have been registered in the DSS area since 1975. Among other things, these records include data on village residence, household residence, age and sex of both partners

Updating Possibilities with Existing Records

The number of items that can be updated with vital registration and census records is limited by the amount of information available on the records. The possibilities of variables for updating are described below:

On the most basic level population size of the whole DSS area and of each village are needed. Clearly with the availability of birth, death, in and out migration, and internal migration this updating is possible. This is true despite the fact that the composition of the DSS area changed in 1978, i.e. some migrations which would previously have been defined as internal migrations, become in or out migrations after the change.

For characteristics of the population, it is important to note that updating can be done for a given characteristics only if all the pertinent records include that characteristic. Thus for example since marriage and divorce registration were not in effect until 1975, marital status for individuals in the 1974 census cannot be entirely updated to 1978 with vital registration records.

Which characteristics then can be updated from existing records? First, since sex is indicated on all records (and is effectively unchangeable) the sex distribution of the population can be easily obtained in an updated census.

Second, since age, or date of birth is always indicated, this too can be updated with existing records. Note that age continuously changes but in a completely predictable manner so that only age at the time of a migration or vital event is needed in order to update.

Third, household of residence can be at least partially updated with existing records. All DSS events identify individuals within households so households can be updated in this sense. However, if households split and remain in the same village, there is no indication given in the existing records. Such splittings occur when groups of individuals within the household form separate cooking and eating groups. Of course if any of the new households move to another village, updating is not a problem since migration records capture the event.

Relationship to head of household is a variable that remained unchanged between 1974 and 1978 for many individuals in the DSS area. However, technically it cannot be updated with surveillance records alone since indications of relationship to head are not available in the case of in-migrants and split households.

These inadequacies of existing records for updating household residence and relation to lead us to consider updating possibilities with records in conjunction with a field visit.

Updating Possibilities with Existing Records Complemented by a Field Visit

Since household residence, marital status and relationship to head of household are known for the vast majority of individuals in the DSS area from census and vital registration records a brief visit to each household could provide the needed information on household residence for individuals in split households and confirm or obtain information on marital status and relationship to head for all individuals. At the same time such a visit could provide a check of the accuracy of the information obtained through the record update. Such a check is especially valuable the first time that updating is done.

Given these considerations it was decided to do an updating census which would include both a record update and field check. Thus the update would include the following information for all individuals; name, individual number, household number of residence, village of residence, age (and date of birth) sex, marital status, relationship to head of household, and original census number if different from the current one.

METHODS AND PROCEDURES

The execution of the 1978 updating census had five distinct stages delineated by the place where the work was done. First, a new list and computer card file of the 1974 census was made for each village, by computer

in Dacca. At the second stage, the computer lists were updated by coders using the records available in the Matlab field station. The third stage, back in Dacca, involved punching the additions to the 1974 census file and taking out the deletions (births, in-migrants) (deaths, out-migrants) and other computer tasks needed to print an updated census list. The fourth stage took place in the villages of Matlab where split households, relationship to head and marital status were updated and checking was done. The fifth and final stage, back in Dacca, involved final updating of the computer file to accommodate split households and other updated information and corrections from the field work in Matlab. The exact procedures of each these stages are out-lined below.

Preliminary Work: Definition of Study Population

It was decided that the resident population of the 149 villages in the retained DSS area would constitute the population for the census-update. A resident was defined as a person present in the village for at least six months in a year or a person who returns to the village at least once a month and stays at least one night. The reference date for the update was chosen as December 31, 1978.

Stage 1: Dacca: Computer Printing of the 1974 Census:

The immediate task was to use the computer files of the 1974 census to print the census in a form that would be easy for updating. The 1974 house-hold form and its coding scheme are shown in Appendix A and B respectively. These census data had been edited previously.

The computer programme to do the printing had four basic components. First, since only individual records were available in the census file, it was necessary to search consecutive records to determine the size of the household and put all the members together. Second, for individuals who only had age given in the census (birth date was known for most persons born after 1966), the age was converted into a year of birth. This was done so age could be easily calculated at any given date in the future. Third, many data items which were collected in the 1974 census but which could not be easily updated, were deleted. Fourth, the relevant information for each individual had to be punched on data cards for later processing.

Stage 2: Matlab Updating:

The 1974 census print for each village was taken to the Demographic Surveillance System office in the Matlab Field Station in July 1979. Eight coders and 2 supervisors were engaged in the updating work. The coders used the Matlab 1974 census books which included entries of deaths, birth and migrations for the period between 1974 and December 31, 1978.

The coders had four tasks for the updating work.

1. Deletions. Persons who had, between 1974 and December 31, 1978, died, migrated out of the area, or migrated to another village in the DSS or another household in the same village, were to be crossed out in the census print.

2. Insertions. Persons who had between 1974 and December 31, 1978, come into a household by birth, in-migration or internal migration and who were still there on December 31 were to be included. Thus persons who came into the household by birth or in-migration after 1974 but who out-migrated or died before December 31, 1978 were not to be included. For the individuals to be included, information was coded with the same coding format as the cards punched in Dacca (see Appendix C).

    Several details regarding the numbering system need mentioning. Contrary to the practice of previous censuses a new numbering system was not introduced with the 1978 update. Thus when deletions occurred, gaps occurred in the sequence numbers of individuals within the household. With respect to insertions, the following practice was followed. For individuals who had in-migrated or were born in the area after 1974, numbers beginning with 40 had already been assigned. For internal migrants (from other DSS villages) the previous census number was retained for reference (see cols. 57-65 of the individual card) but the person was given a new individual number starting with 60 in the household of residence.*

3. Header Card. To facilitate computer processing and checking, construction of a header card for each household was essential. The information contained on this card was: the village and household number, the bari name, or sequential number for the bari, the total number of persons in the household at the time of the update and the individual number of the household head (see Appendix D). After initial checking of the coding work it was determined that to keep the error level to an absolute minimum complete checking rather than spot checking was required. The coding and checking work lasted four months. Upon its completion two things were sent to Dacca for each village the census print with the deletions indicated and a list of coded insertions and header cards.

Stage 3: Dacca Updating:

The creation of an updated computer file in Dacca had three steps. First, with the census prints from Matlab, and the 1974 census books (Dacca copy) coders checked that the total number of individuals in the updated household

---

* The numbers were used for data processing purposes in Dacca only as it was subsequently decided to assign new numbers sequentially with a second census update in 1982.

corresponded to the sum of the number of persons to be included and the number of persons in the 1974 census who were still present. Simultaneously they crossed out the individuals to be deleted in the Dacca census volumes and wrote the year of birth in the volume in preparation for keypunching. Also cards for deleted individuals were pulled out from the punched census file.

Data entry personnel punched the lists of insertions and header cards which had been sent from Matlab. Then with the census volume and the 1974 punched file (minus deletions) they punched the names and birth years for all individuals.

The last step was the assembly of the updated file. Since the header card and insertions were serially arranged (the header card has 000 in the column for individual number) it was possible to do this by sorting machine. The cards were then listed and coding personnel checked to make sure the total number of individuals entered on the header card corresponded with the actual number of individual cards that followed.

At this point a design and programme for the final census print was also ready. As in earlier census, it included one page for each household. An example of the output is given in Appendix E. As cholera vaccine trial was anticipated, and indeed was one impetus for the census update, space was made on the form for vaccine type. With this programme the updated census was printed for each village in preparation for the next stage.

Stage 4: Field Checking:

The printed census updates for all villages were sent to Matlab. Prior to this several pretests were done to determine the best field checking and updating procedures. Six teams of two persons each were engaged to do the field checking. One person in each team was a senior field assistant from the demographic surveillance system. The second team member was a health assistant. Each team was responsible for villages of a certain geographic area including approximately 30,000 persons. Each team was trained by the DSS supervisor and/or the investigator and assistants from Dacca.

The objectives of the field work were:

1. To obtain basic data pertaining to residents as of December 31, 1978 which could not be obtained from the update with the Matlab books.

    a. Changes in marital status

    b. Split households

    c. Changes in relation to head.

2. To check the accuracy of the computer update

   a. Most importantly to determine if any persons were wrongly included/excluded.

   b. Other demographic characteristics.

Field work: From the updating of view all the households to be interviewed could be classified as follows, noting that the current status is the status as of December 31, 1978.

   i. Current head of household is same person as head in 1974.

   ii. New head of household (1974 head either died or out-migrated but not a split household).

   iii. New head of household – split household

      a. 1974 head still in one household

      b. Two or more new heads of household.

The work was complicated by the fact that it was done in the summer of 1980 but the reference date for all the questions was December 1978. Fortunately the Matlab 1974 census volumes are continually updated and thus could be used to determine the timing of events. The teams therefore, carried these volumes and the 1978 update print.

For households which were in the update, the first task was to determine if the head of the household was the same (in December 1978) or not. If so, the names and marital statuses of other individuals in the household in December 1978 were determined and these were checked with the printed update and the census volume. If the head of household had changed, the new head was determined and relationship to head for each individual was rechecked. If an individual was found that should have been in the update, but was not, his name, sex, etc. were written on the update. Conversely if persons should have been deleted but were not, they were crossed out of the update.

Information for entire households which were present in December 1978 but were not present at the time of the interview had to be determined from neighbours.

Split households required special treatment in addition to the above. If the household in the 1974 census was split in 1978, it was necessary to change the composition of the original household and create one or more new households. Note that the case of a split household where one or more the new households moved to another village, would have been caught in the updating procedures. It should also be noted that households which had split between 1974 and 1978 and then had left the village between 1978 and 1980 could not be updated. The number of such households could be expected to be very small, however.

If a household had split, the first item to determine was the identification of the heads in the new households. If the original head remained in one of the new households, the original household number was kept with him/her. Otherwise, the original household number was retained by the household with the eldest son by convention.

The new households were given a new number starting after the last household number in the village. For these households, individual numbers restarted with 1, 2, ... but the previous census number was of course retained in the appropriate place. Names and other information for all individuals in the new households were written on the reverse side of the original household sheet. In all cases the total number of individuals in each household was recalculated.

Stage 5: Final Updating and File Editing in Dacca:

The census prints with the corrections and updating done in the field, were brought to Dacca for final processing. As a first step the updated census card files of stage 3 were transferred to magnetic tape and then to diskettes so they could be brought to the IBM System-34 recently acquired by the Centre. This transfer greatly facilitated the updating work since, insertions, deletions and corrections are very easily done from terminals with screen displays. Thus the corrections and data for split households were keyed into the file.

One problem with the new computer system, however, in that, unlike with key punch machines, no method of validation was available. To check for these and other errors persisting in the data set, an edit programme was written. Though the programme could locate range errors and inconsistent codes, it could not detect data entry which are within range and consistent (e.g., age entered in 28 instead of 25). However, an analysis of such errors revealed that they were below 1 percent, so full manual verification of the study was not deemed essential.

RESULTS

The total population residing in the 149 villages of the surveillance area on of January 1, 1979 was 174,860 of which 88,163 were male and 86,697 were female. The distribution by age (Table I) shows that 44 percent of the population is below age 15. Considering the ratio of males to females of each age group, the absence of males in the age groups from 25 to 44 is most striking. This is due to the considerable out-migration of males in these age groups for employment outside the area. This pattern is documented in earlier reports of the demographic surveillance system. (See Figure 11 of the 1978 Matlab DSS report.)

computer records since a separate code was not given for those families. These families can be the studied in future work.

If a household had split, the first item to determine was the identification of the heads in the new households. If the original head remained in one of the new households, the original household number was kept with him/her. Otherwise, the original household number was retained by the household with the eldest son by convention.

The new households were given a new number starting after the last household number in the village. For these households, individual numbers restarted with 1, 2, ... but the previous census number was of course retained in the appropriate place. Names and other information for all individuals in the new households were written on the reverse side of the original household sheet. In all cases the total number of individuals in each household was recalculated.

Stage 5: Final Updating and File Editing in Dacca:

The census prints with the corrections and updating done in the field, were brought to Dacca for final processing. As a first step the updated census card files of stage 3 were transferred to magnetic tape and then to diskettes so they could be brought to the IBM System-34 recently acquired by the Centre. This transfer greatly facilitated the updating work since, insertions, deletions and corrections are very easily done from terminals with screen displays. Thus the corrections and data for split households were keyed into the file.

One problem with the new computer system, however, in that, unlike with key punch machines, no method of validation was available. To check for these and other errors persisting in the data set, an edit programme was written. Though the programme could locate range errors and inconsistent codes, it could not detect data entry which are within range and consistent (e.g., age entered in 28 instead of 25). However, an analysis of such errors revealed that they were below 1 percent, so full manual verification of the study was not deemed essential.

RESULTS

The total population residing in the 149 villages of the surveillance area on of January 1, 1979 was 174,860 of which 88,163 were male and 86,697 were female. The distribution by age (Table I) shows that 44 percent of the population is below age 15. Considering the ratio of males to females of each age group, the absence of males in the age groups from 25 to 44 is most striking. This is due to the considerable out-migration of males in these age groups for employment outside the area. This pattern is documented in earlier reports of the demographic surveillance system. (See Figure 11 of the 1978 Matlab DSS report.)

TABLE I--SEX AND AGE STRUCTURE OF THE POPULATION *

Age group	Sex			Sex ratio 100 M/F	Percentage distribution		
	Both Sexes	Males	Females		Both Sexes	Males	Females
All ages	174860	88163	86697	101.7	100	100	100
0-4	27747	14258	13489	105.7	16	16	15
0	5458	2764	2694	102.6	3	3	3
1	6797	3482	3315	105.0	4	4	4
2	6116	3120	2996	104.1	4	4	3
3	4005	2121	1884	112.6	2	2	2
4	5371	2771	2600	106.6	3	3	3
5-9	26243	13705	12538	109.2	15	16	15
10-14	23715	12034	11681	103.0	14	14	14
15-19	22286	11043	11243	98.2	13	12	13
20-24	14214	7256	6958	104.3	8	8	8
25-29	8821	4231	4590	92.2	5	5	5
30-34	8997	3914	5083	77.0	5	4	6
35-39	8217	3643	4574	79.6	5	4	5
40-44	8578	4258	4320	98.6	5	5	5
45-49	6535	3361	3174	105.9	4	4	4
50-54	5736	2991	2745	109.0	3	3	3
55-59	4398	2348	2050	114.5	2	3	2
60-64	3515	1879	1636	114.9	2	2	2
65+	5858	3242	2616	123.9	3	4	3

*   On December 31, 1978.

Table II shows several ratios derived from the age-sex data. The child-woman ratio is 755. The overall dependency ratio gives a rough estimate of the number of dependents per person in the years of age that are generally associated with economic productivity. In Matlab on December 31, 1978 its value was 92, with 85 child dependents per 100 persons in the age group 15-64, and 6 aged dependents. Table III gives a comparison of these ratios with those for several countries around 1960. Clearly both the child woman ratio and the child dependency ratios are very high in Matlab.

The distribution by marital status within age and sex groups (Table IV) shows that over 90 percent of males are ever-married by age 30-34 while for females over 90 percent have been ever-married by age 20-24, reflecting the large differential in age at marriage according to sex in Bangladesh. (For precise documentation see Table 7 of the 1976 Matlab DSS report.) The highest proportions of divorced persons are seen in the age group 20-24 for males. The patterns of these figures indicate that the proportion of divorced persons who remarry is quite substantial.

The relation of each individual to the household head is also known. Several characteristics of the family structure in Bangladesh are apparent from tabulation of these data by age and sex group (Table V). The family structure is patriarchal. 25,000 households are headed by males while only 4,000 are headed by females. After marriage, the usual pattern is for the wife to join the household of the husband. Thus while there are 52,000 sons residing in the households, there are only 38,000 daughters. The male of the oldest generation is typically the head of household. Thus 49,000 mothers of the household head are listed, while only 800 fathers are so listed, i.e. while the father remains alive he is usually considered household head.

Regarding marital status of the household heads, 94 percent of the male heads are married, while among female household heads 64 percent are widowed (Table VI). In the 36 percent of cases where a female household head is married, it may be a family where the husband has been absent for a long period.

Next we consider the village as the unit of study. The median village size is 750 - 1000; the modal size is 500 - 750 (Table VII). Very few villages have less than 200 persons or more than 2,500 persons. The distribution of villages by percentage of the population which is Muslim is shown in Table VIII. Four villages are completely Hindu villages, 59 are completely Muslim and 66 villages have both religions represented. Within Muslim and Hindu households, the number of persons per household does not vary by religion (Table IX); the mean household size is six persons for both religious groups. The number of households which split between 1974 and December 1978 unfortunately cannot be ascertained directly with the available computer records since a separate code was not given for those families. These families can be the studied in future work.

Appendix F gives information for each village of the study area. Given are: a) the number of males and females and total population residing in the village, b) the number of Muslims in the village and c) the number of households in the village. These data may serve as a base for studies which require sampling of villages, households or individuals.

TABLE II--CHILD-WOMAN RATIO AND DEPENDENCY RATIOS

Population*by age

All ages	174860
Children 0-14	77705
" 0-4	27747
" 5-14	49958
Woman 15-44	36768
Persons 15-64	91297
Persons 65+	5858

Ratios

Child-woman ratio	75.5
Total dependency ratio	91.5
Child dependency ratio	85.1
Aged dependency ratio	6.4

* On December 31, 1978.

TABLE III—CHILD-WOMEN AND DEPENDENCY RATIOS IN VARIOUS PLACES OF THE WORLD

Place and time	Child-women ratio	Total	Dependency ratio*	
			Child	Aged
Matlab (1978)	755	92	85	6
Chile (1960)	619	78	71	8
Italy (1961)	331	52	37	15
Sweden (1960)	286	51	33	18
Taiwan (1956)	872	87	83	5
U.S.A. (1960)	488	67	52	16

Source: H.S. Shryock and J.S. Siegel, Methods and Materials of Demography
       Table 8-25, page 235 and Table 17-4, page 504.

* Rounded off to the nearest integer.

TABLE IV--NUMBER AND PERCENTAGE DISTRIBUTION OF THE POPULATION BY MARITAL STATUS SEX AND AGE

Age group	Males All marital status	Single	Married	Widowed	Divorced	Females All marital status	Single	Married	Widowed	Divorced
All ages	88163	57021	29995	787	360	86697	43946	33654	8017	1080
		Percentage					Percentage			
0-4	14258	100	-	-	-	13489	100	-	-	-
5-9	13705	100	-	-	-	12538	100	-	-	-
10-14	12034	100	-	-	-	11681	97	3	-	-
15-19	11043	97	3	-	-	11243	54	44	-	2
20-24	7256	69	30	-	1	6958	7	87	1	5
25-29	4231	25	73	-	2	4590	1	94	2	3
30-34	3914	5	93	-	2	5083	-	94	4	2
35-39	3643	1	98	-	1	4574	-	89	10	1
40-44	4258	-	98	1	1	4320	-	81	18	1
45-49	3361	-	97	2	1	3174	-	70	29	1
50-54	2991	-	97	2	1	2745	-	60	39	1
55-59	2348	-	95	4	1	2050	-	47	52	1
60-64	1879	-	93	6	1	1636	-	32	67	1
65-69	1320	-	92	7	1	1153	-	20	79	1
70+	1922	-	82	17	1	1463	-	8	91	1

— Less than .5 percent.

TABLE V--NUMBER AND PERCENTAGE DISTRIBUTION OF THE POPULATION BY RELATION TO HEAD, SEX AND AGE

Relation to head	Males								Females							
	All ages	0-9	10-19	20-29	30-39	40-49	50+	Mean age	All ages	0-9	10-19	20-29	30-39	40-49	50+	Mean age
All relation	88163	27963	23077	11487	3557	7619	10460	22.18	86697	26027	22924	11548	9657	7494	9047	22.33
		Percentage									Percentage					
Head	25079	-	1	11	22	28	38	44.04	4437	-	3	14	24	29	30	41.89
Wife	-	-	-	-	-	-	-	-	23514	-	6	27	33	22	12	35.63
Son	51642	44	39	14	3	-	-	12.79	-	-	-	-	-	-	-	-
Daughter	-	-	-	-	-	-	-	-	38229	55	41	3	1	-	-	9.96
Grand child	5037	83	16	1	-	-	-	6.81	4574	86	14	-	-	-	-	6.45
Sister/Brother	3153	7	43	34	11	4	1	21.30	1754	10	63	14	5	3	5	19.18
Aunt/Uncle/ Cousin	49	2	31	10	12	12	33	35.00	106	-	9	2	2	7	80	49.62
Daughter/ Son-in-law	240	-	4	41	38	14	3	32.63	5769	-	48	44	7	1	-	21.01
Father/Mother	810	-	-	-	-	3	97	54.69	4929	-	-	-	2	7	81	52.93
Nephew/Niece	1255	65	27	7	1	-	-	9.68	1036	71	27	2	-	-	-	8.21
Other	574	28	29	16	8	4	15	22.47	2263	9	27	24	6	4	30	30.84
No relation	324	2	24	26	20	11	17	31.35	86	9	49	10	12	5	15	25.00

TABLE VI--NUMBER AND PERCENT OF HOUSEHOLD HEADS BY SEX AND MARITAL STATUS

Sex of household head	All marital statuses	Single	Married	Widowed	Divorced
Male	25079	896	23508	500	175
Female	4437	42	1587	2720	88
Percentage distribution					
Male	100	3	94	2	1
Female	100	1	36	61	2

TABLE VII--DISTRIBUTION OF THE VILLAGES AND POPULATION BY VILLAGE SIZE

Village size number of inhabitants	Villages		Total Population	
	Number	Percentage	Number	Percentage
Total	149	100	174,860	100
<200	7	5	1,172	1
200-499	28	19	10,386	6
500-749	33	22	20,614	12
750-999	19	13	16,350	9
1000-1499	28	19	32,840	19
1500-1999	8	5	13,647	8
2000-2499	12	8	26,363	15
2500-2999	6	4	16,710	9
3000-3999	3	2	10,275	6
4000-4999	3	2	12,863	7
5000+	2	1	13,640	8

TABLE VIII—NUMBER OF VILLAGES BY PERCENTAGE MUSLIM IN THE VILLAGE POPULATION

Percentage Muslim in the village	Number of villages	Percent
All villages	149	100
0.0	4	3
0.1-4.9	6	4
5.0-14.9	2	1
15.0-24.9	–	–
25.0-49.9	7	5
50.0-74.9	15	10
75.0-84.9	13	9
85.0-94.9	19	13
95.0-99.9	24	16
100.0	59	39

TABLE IX—PERCENTAGE DISTRIBUTION OF HOUSEHOLDS BY NUMBER OF MEMBERS AND RELIGION OF THE HOUSEHOLD HEAD

Religion of household head	All	1	2	3	4	5	6	7	8	9	10	11	12+	Mean number of members
Islam	100	3	5	9	13	16	16	14	10	6	3	2	3	5.9
Hindu	100	3	5	9	12	17	17	13	9	6	3	2	4	6.0

Village : _____   Code : _____   Family No. : $\frac{\text{Appendix A}}{\text{_____}}$ Previous Family No. : _____   CENSUS — 1974
CHOLERA RESEARCH LABORATORY
Bari :_____   Religion :_____   MATLAB, COMILLA

Ind. No.	Mother's No.	Dwelling No.	N a m e	Age	Sex	Marital Status	Relation to Head	Date of Birth	Date of Death	Date of M-In	Date of M-Out	IMMUNIZATION SCHEDULE								Remarks
												T	Date	T	Date	T	Date	T	Date	
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				
18																				

Any Dwelling with Tin Roof ?   Yes ☐   No ☐

Date of Census : _____   Signature :_____   Family Type :_____   Family No. : _____

19

CENSUS 1974

CARD PLAN

Item	Col.	Code
Study No.	1 - 3	118
Village	4 - 6	Self Coded
Family No.	7 - 10	"
Ind. No.	11 - 12	"
Mother's No.	13 - 14	Blank = 00
Age	15 - 16	Self Coded
Sex	17	Male = 1, Female = 2
Marital status	18	
Relation to head	19 - 20	
Date of birth:		
Day	21 - 22	
Month	23 - 24	
Year	25 - 26	
Vaccine	27	
VTS. No.(old) Village	28 - 30	
Family No.	31 - 34	
Ind. No.	35 - 36	
Religion	37	Islam = 1, Hindu = 2, Other = 3
Family type	38 - 39	
Family size	40 - 41	Self Coded
Education to the head	42	1-9,10 = 0,10+ = -,Maktab = & No formal education = Blank
Occupation of the head	43 - 44	
2nd Occupation	45 - 46	
Education of the Ind.	47	
Occupation of the Ind.	48 - 49	
2nd Occupation of the Ind.	50 - 51	
No. of Rooms	52	Self Coded
Structure of the largest		
room (Roof)	53	Tin = 1, Other = 2
(Wall)	54	Tin = 1, Tin Mixed = 2, Other = 3

APPENDIX B (Contd.)

Item	Col.	Code
Dimension (feet) Length Breadth	55 - 56 57 - 58	Sum for all rooms
Possession of items	59 - 60	remittances = 1 radio = 2 watch/clock = 4 hurricane = 8 quilt = 16
No. of Cows	61	
No. of Boats	62	
Source of water (A) Drinking	63	River = 1, Canal = 2, Tank = 3, Ditch = 4, Tube-well = 5, Other = 6, Unknown = 7
(B) Cooking	64	
(C) Bathing	65	
(D) Washing	66	
Used Fixed Latrine	67	Yes = 1, No = 2
Distance : more than 15 yards from used water source	68	" "
Habit of washing (after use of latrine)	69	" "
Highest level of education in the family	70	1-9, 10 = 0, 10+ = -, Maktab = &, None = Blank

Date of Migration In

Day	71 - 72	
Month	73 - 74	Unknown = 00
Year	75 - 76	
Where from	77	(VTS.NO. = 1, Without VTS. No. = 2)

APPENDIX B (Contd.)

CODE SHEET

Marital Status   (18):-   (0) Never Married, (1) Married
                                 (2) Widow, (3) Divorce, (4) Separated

Relation to Head (19-20):-   No relation = 00, Self = 01
                                          Wife   = 02,   Son = 03
                                          Daughter = 04, Daughter-in-law = 05
                                          Grand Son = 06, Grand Daughter = 07
                                          Sister = 08, Brother = 09
                                          Uncle = 10, Aunt = 11
                                          Cousin = 12, Others = 13
                                          Daughter's husband = 14, Father = 15
                                          Mother = 16, Unk = 17

Vaccine given (27):-   AA = 1, BB = 2, A-= 3, B- = 4
                         - A = 5, -B = 6, -- = 7
                         Vaccine not assigned = Blank.

Religion (37):-   Islam = 1, Hindu = 2, Other = 3

Family Type (38-39):-   Single person family = 01
                         Only Head & Wife   = 02
                         2 + Unmarried children = 03
                         2 + 3 + Married children = 04
                         Head + Unmarried children = 05
                         2 + Mother or Father   = 06
                         3 + Mother or Father   = 07
                         4 + Mother or Father   = 08
                         Head + Brother or Sister = 09
                         9 + Mother or Father   = 10
                         1 + Mother or Father   = 11
                         4 + Son's Wife/Daughter's husband +
                         Grand Children   = 12
                         Others not Classified
                         above   = 13

Education of the Head (42):- 1-9, 10 = 0, 10 + = -, Maktab = &
                         No formal education = Blank.

Occupation of the Head (43-44):- Owner worker (1a) = 01
                              Owner doesn't work (1b) = 02

                         Rent or share crops someone else's
                                  land   (1c) = 03
                         Catches fish (2a) = 04, Sells fish only (2b) = 05
                         Rent fishing equipment to others (2c) = 06
                         Agricultural Labour (3) = 07
                         Domestic Labour (4) = 08
                         Mill - worker or worker in a large factory
                                  (5) = 09

APPENDIX B (Contd.)

Unskilled Labourer (6) = 10
(not 3, 4, 5, 10)

Skilled Labourer (7) = 11
(not 8, 9, 11)

Boatman (8) = 12, Cottage Industry (9) = 13

Unskilled service employee (10) = 14
(not 4, 8, 9)

Skilled service employee (11) = 15

Businessman, Jute (12) = 16

Businessman, Mobile Business (13) = 17

Businessman, Established Business (14) = 18

Beggar (15) = 19, Student (16) = 20

Disabled (17) = 21, Unemployed (18) = 22

Other (19) = 23, Unknown (20) = 24

House wife (0) = 25, Blank = Blank

2nd occupation of the Head (45-46):- Same as above.

CENSUS 1974/1978

Individual Cards

Item	Column	Code
Study number	1-3	218
Present village number	4-6	See instruction sheet
Present family number	7-10	—
Individual number	11-12	60 if another census number
Mother's number	13-14	blank if not given
Sex	17	Male 1, Female 2
Current Marital Status	18	See attached list
Relation to Head	19-20	See attached list

Date of birth

Day	21-22	Blank if unknown
Month	23-24	Blank if unknown
Year	25-26	(only the last two digits of the year of birth to be written)
Name	27-56	

Other 1974 census number assigned

Village	57-59
Family	60-63
Individual	64-65
J.H.U. number	66-68

For new family (NH.F.) Family number 69-72

APPENDIX_C (Contd.)

CODES FOR MARITAL STATUS AND RELATION TO HEAD

Marital Status:

- 0 Never married
- 1 Married
- 2 Widow
- 3 Divorce
- 4 Separated

Relation to Head of
  Household:

00	no relation	18	nephew
01	self	19	niece
02	wife	20	brother's wife
03	son	21	husband
04	daughter	22	sister-in-law
05	daughter-in-law	23	mother-in-law
06	grandson	24	father-in-law
07	granddaughter	25	adopted son
08	sister	26	adopted daughter
09	brother	27	step mother
10	uncle	28	step brother
11	aunt	29	step sister
12	cousin	30	brother-in-law
13	others	31	grand father
14	daughter's husband	32	grand mother
15	father	33	adopted father
16	mother	34	adopted mother
17	unknown	35	adopted brother

CENSUS 1974/1978

Household Header Card

	Item	Column	Code
1.	Study number	1-3	218
2.	Village number	4-6	
3.	Family number	7-10	
4.	Header identification	11-12.	
5.	Bari name	13-41, 42 blank	
	Bari code	43-44	
6.	Number of persons in household at time of update	45-46	
7.	1974 family number the same?	47	1 = Yes, 2 = No
8.	Individual number of household head	48-49	
9.	Religion	50, 51-65 blank	Muslim = 1, Hindu = 2, Other = 3
10.	Johns Hopkins' village number	66-68	

CENSUS 1978

INTERNATIONAL CENTRE FOR DIARRHOEAL
DISEASE RESEARCH, BANGLADESH
MATLAB, COMILLA

Village: Code: Bari Name: Family No.:   Religion:

Ind. No.	Mother No.	Name	Age	Sex	Marital Status	Rela-tion to Head	Date of Birth	Date of Death	Date of M-In	Date of M-Out	Other 74 Census No. V	Immunization Schedule Date V Date V Date	Remarks

Date of Census   Signature   Family Type   Family Size

TOTAL POPULATION, POPULATION BY SEX, NUMBER OF HOUSEHOLDS
AND NUMBER OF MUSLIMS, BY VILLAGE

Code No.		Village	Both Sexes	Males	Females	No. of Muslims	No. of Households
		MCH-FP Area					
D		Charmukundi	1357	696	661	1042	219
W		Kaladi	2154	1099	1055	823	339
V	10	Dhakirgaon	1260	667	593	1260	214
V	11	Nabakalash	1149	583	566	1149	198
V	31	Dighaldi	7285	3658	3627	7134	1206
V	32	Mobarakdi	2072	1027	1045	1711	367
V	59	Dashpara	792	400	392	565	129
V	60	Suvankardi	772	377	395	772	139
V	61	Munsabdi	583	276	307	583	103
V	62	Shilmondi	684	347	337	458	116
V	72	Upadi	4616	2321	2295	3576	792
H		Lamchari	1176	589	587	63	204
V	12	Bhangerpur	396	206	190	396	70
V	13	Babur para	667	333	334	667	106
V	19	Lakshmipur	2906	1470	1436	2268	479
V	20	Dagarpur	932	453	479	821	158
V	21	Khadergaon	407	197	210	407	66
V	22	Beloti	565	264	301	565	101
V	23	Baluchar	524	284	240	13	96
V	24	Machuakhal	2207	1129	1078	2070	374
V	26	Narayanpur	2199	1106	1093	1519	357
V	56	Pailpara	1197	618	579	1197	203
V	82	Dhanarpar	1164	558	606	928	197
V	83	Padmapal	407	190	217	401	71
V	85	Bhanurpara	368	175	193	368	57
V	87	Hurmaisha	500	256	244	500	91
VB	12	Nagda	3313	1666	1647	3179	558
VB	13	Naogaon	3782	1830	1952	3701	656
K		Shapur	783	405	378	783	130
L		Tatkhana	346	176	170	230	51
M		Char Nayergaon	127	69	58	6	16
N		Aswinpur	1763	912	851	1753	289
O		Nayergaon	1056	517	539	430	183
P		Titerkandi	1658	826	832	63	269
Q		Char Shibpur	314	165	149	0	49
V	27	Panchghoria	783	405	378	680	124
V	28	Khidirpur	1093	535	558	861	191

APPENDIX F (Contd.)

Code No.	Village	Both Sexes	Males	Females	No. of Muslims	No. of Households
V 30	Harion	463	231	232	463	71
V 39	Gobindapur	324	175	149	324	48
V 40	Masumdia	626	324	302	626	104
V 41	Paton	1179	591	588	957	210
V 42	Adhara (South)	600	315	285	600	99
V 43	Kanachak	812	406	406	518	135
V 44	Panchdona	489	240	249	489	82
V 64	Kawadi	4073	2083	1990	3732	683
V 86	Adhara	648	344	304	534	96
V 88	Datikara	377	208	169	145	48
VB11	Mehron	2118	1079	1039	0	362
D100	Barogaon	2803	1423	1380	2803	455
D101	Naojan	1101	571	530	1077	178
R	Nandalalpur	1199	608	591	1034	208
S	Tatua	1024	509	515	471	168
T	Amuakanda	1315	658	657	792	203
V 15	Bhati Rasulpur	522	258	264	522	100
V 16	Binandapur	705	349	356	705	120
V 17	Hatighata	1024	512	512	966	171
V 18	Torkey	3180	1610	1570	3099	527
V 29	Shibpur (South)	624	332	292	6	108
V 33	Shibpur (North)	693	331	362	1380	125
V 34	Satparia	707	361	346	655	125
V 52	Nayakandi	225	119	106	225	38
V 54	Balairkandi	495	251	244	333	84
V 55	Induria	481	234	247	418	76
V 57	Baluchar	933	482	451	933	157
V 63	Islamabad (East)	1900	967	933	1900	309
V 67	Majlishpur	509	257	252	494	82
V 81	Sonaterkandi	511	264	247	511	80
V 84	Shahabajkandi	1809	893	916	1805	309
V 89	Islamabad (Middle)	1203	616	587	1078	205
V 25	Char Pathalia	1221	622	599	91	209
	Comparison Area					
A	Uddamdi	2193	1126	1067	1826	366
B	Charmasua	1585	826	759	1585	273
C	Sarderkandi	2767	1370	1397	2698	495
F	Sepoykandi	1142	576	566	961	196
G	Thatalia	2041	1011	1030	2041	353
J	Char Harigope	321	177	144	0	54
U	Baishpur	6355	3213	3142	5378	1065
V 01	Kadamtali	672	311	361	672	117

APPENDIX F (Contd.)

Code No.	Village	Both Sexes	Males	Females	No. of Muslims	No. of Households
V 02	Nilokhi	401	193	208	401	68
V 03	Char Nilokhi	592	274	318	592	101
V 04	Char Pathalia	202	112	90	202	35
V 05	Gazipur	2701	1365	1336	2701	447
V 06	Fatepur	2040	1006	1034	1949	338
V 07	Nayakandi	352	198	154	352	60
V 08	Goalbhar	1033	515	518	1025	185
V 09	Naburkandi	872	408	464	872	166
V 14	Enayet Nagar	903	449	454	841	153
V 35	Durgapur	2990	1542	1448	1008	458
V 36	Ludhua	4174	2079	2095	4133	693
V 37	Charputia	324	161	163	324	53
V 38	Galimkha	1349	716	633	1007	216
V 45	Bakchar	739	372	367	739	115
V 46	Silinda	278	143	135	278	49
V 47	Tulatali	1555	791	764	1536	280
V 48	Gangkanda	564	282	282	556	94
V 49	Harina Bhabanipur	996	511	485	991	179
V 50	Bakharpur	759	381	378	694	123
V 51	Induriakandi	1376	711	665	1365	230
V 53	Chhoto Haldia	2543	1251	1292	2543	441
V 58	Mohishmari	1112	573	539	1112	178
V 65	Nayachar	549	275	274	549	98
V 66	Thatalia	736	384	352	15	140
V 68	Sobahan	686	342	344	504	116
V 69	Naobanga	1038	491	547	1038	192
V 70	South Joypur	613	310	303	613	99
V 71	Khamarpara	321	167	154	321	56
V 73	Sadardia	670	354	316	609	122
V 74	Ketundi	1042	541	501	1042	164
V 75	Mukundi	333	176	157	333	48
V 76	Chosoi	1290	648	642	1290	207
V 78	Soladana	200	107	93	200	27
V 79	Pitambordi	292	147	145	292	52
V 80	Daribond	838	419	419	812	135
V 90	Narinda	933	492	441	904	147
V 95	Baluchar	804	412	392	804	140
V 96	North Rampur	434	226	208	434	78
V 97	Dhonagoda	402	202	200	386	78
V 98	Santoshpur	185	103	82	9	22
V 99	Baluakandi	634	320	314	580	99
VB1	Tatolia	1089	565	524	1049	180

APPENDIX F (Contd.)

Code No.	Village	Both Sexes	Males	Females	No. of Muslims	No. of Households
VB2	Sree Rayerchar	730	372	358	691	124
VB3	Rayerkandi	2312	1185	1127	1516	382
VB4	Ramdaspur	2350	1145	1205	2317	430
VB5	Thakurpara	655	340	315	381	101
VB6	Sarderpara	304	149	155	140	56
VB7	Mirpur	163	89	74	163	32
VB8	Farazikandi	868	442	426	868	166
VB9	Ramanathganj	163	87	76	133	33
VB10	South Rampur	1421	736	685	1332	246
D 28	Bazarkhola	1044	499	545	1044	175
D 29	Kirtonkhola	155	73	82	0	23
D 30	Banuakandi	634	326	308	591	103
D 31	Harina Bazarkhola	939	474	465	496	160
D 32	Khalisha	487	258	229	267	77
D 33	Nayanagar	830	431	399	830	137
D 34	Saidkharkandi	1186	589	597	1111	199
D 35	Mollakandi	609	307	302	575	107
D 88	Sankibanga (North+ South)	1729	866	863	1729	305
D 89	Sankibanga Nampara	548	280	268	162	94
D 90	Zahirabaj	2318	1156	1162	2159	411
D 91	North Joypur	978	492	486	978	168
D 92	West Joypur	648	338	310	587	118
D 93	Maizkandi	640	333	307	640	113
D 94	Hazipur	823	398	425	823	145
D 95	Tapader Kandi	343	179	164	247	50
D 96	Shakhari para	179	92	87	179	31
D 97	Nayakandi	527	264	263	527	96
D 98	Bara Haldia	2359	1160	1199	2302	403
D 99	Mandertoli	1648	772	876	1647	297

A. Annual Report:

5. Annual Report 1980. 103 p.

B. Working Paper:

25. Becker S, Mahmud S, Sarder AM. Validation study of pregnancy
    histories and indirect techniques of fertility and mortality
    estimation in Matlab, Bangladesh. Volume 1. Methods and Study
    of Possible Contamination. Apr 1982. 59 p.

C. Scientific Report:

54. Khan MU, Shahidullah M, Ahmed WU, Barua DK, Begum T, Purification D,
    Rahman N. Intervention of shigellosis by hand washing. Dec 1981.
    16 p.

D. Special Publication:

17. Rahaman MM, Aziz KMS, Rahman S eds. Proceedings of the 1st Asian
    Conference on Diarrhoeal Disease. Feb 1982. 262 p.

E. Monograph:

2. Maloney C, Aziz KMA, Sarker PC. Beliefs and fertility in
    Bangladesh. Dec 1981. 385 p. (Price: US $ 30.00/£ 15.00).

F. Thesis and Dissertation:

3. Shahid NS. Complications of measles in rural Bangladesh (Long term
    complications in the under-two). June 1981. 38 p.

G. Newsletter:

Glimpse: ICDDR,B Newsletter. Vol. 1, No. 1, Jan 1979 -

---

* List of previous publications, such as, annual reports, working papers,
  scientific reports, special publications and thesis and dissertations, can
  be obtained on request. For further information, write to Head, Library
  and Publication Branch, International Centre for Diarrhoeal Disease
  Research, Bangladesh, G.P.O. Box 128, Dacca 2, Bangladesh.