

CHAPTER XV SOURCES AND QUALITIES OF DEMOGRAPHIC DATA

A. QUALITY OF THE 1981 CENSUS*

Introduction

Census taking in Nepal has had a fairly long history of some 70 years, the first census count took place in 1911. Thereafter census counts were conducted at almost 10 years intervals. However, it was only in 1952/54 internationally comparable data were collected strictly speaking, even the 1952/54 census was not scientific because only one half of Nepal was enumerated in 1952 and the other half in 1954. The first census of Nepal that was scientific on all accounts was the census of 1961 and since then various attempts were made to improve the data collection method in the subsequent decennial censuses of 1971 and 1981.

Organization of the 1981 Census

Various efforts were made to improve the data collection procedures for the 1981 census undertaking. For the rural areas 2,912 village Panchayat level cartographic maps were prepared. These maps were extensively used by enumerators to locate scattered pockets of villages in the rural areas and blocks of households in the urban dwellings. The Central Bureau of Statistics formed a consultative group for technical backstopping in designing the 1981 census operation but its formulation was too late, therefore, no significant contribution could be made by the committee.

Apparently, the 1981 census was well organized in almost all respects. In 1980 a

pilot census was carried out in six districts to test the content and wording of the census questionnaire. Subsequently the language was slightly modified but the rest of the items were kept intact.

Each administrative district was used as a census district and was headed by a District Census Officer who was assisted by two senior assistants. All three personnel were given intensive training for two months at the headquarters of Central Bureau of Statistics (CBS) in Kathmandu.

In each district the District Census Officer (DCO) recruited supervisors from within the District* and gave them two weeks training in data collection. The DCO's two assistants were also involved in the training. In all 1,500 supervisors were employed for census operation, they were high school graduates (grade 10) and above.

Altogether 15,000 enumerators were employed for the period of census operation in 1981. The minimum educational qualification of the enumerators was just literacy but most of them who were locally employed had completed 8 or more years of school education. The enumerators were trained in the District Census Office under the direction of DCO who was assisted by his two senior assistants in this task's of training. In few districts some supervisors were also involved in the training programme. All enumerators were males.

• For detail, see Karki, Y.B., 1985. "The Organization and Quality of the 1981 Censuses of Nepal", Presented at 'Data Users,' Seminar, held on March 4-5, 1985, Kathmandu.

* The local political leaders put strong pressure on DCOs to employ their people even though other competent people could be recruited from within the districts.

Table 15.1 below shows Nepal's total population and census operation field staff by census year. Because of growing population, census man - power had to be increased. Over the years enumerator /supervisor ratio has been substantially improved from 85 in 1952/54 to 10 in 1981 but the population / enumerator ratio reduced by more than half (Table 15.1). The former ratio is comparable with China's corresponding ratio of 5 but the population/ enumerator ratio of about 1,000 persons in Nepal is too high compared with China's respective ratio of about 200 persons¹. This implies heavy work load on each enumerator in Nepal and as a result the quality of the 1981 census data is expected to suffer.

Table 15.1- Population and census operation field staff by Census years 1952/54-1981

Census year	Population (in million)	Supervisors	Enumerators	Population/enumerator ratio	Enumerator/supervisor ratio
(1)	(2)	(3)	(4)	(5)	(6)
1952/54	8.26	200	17,000	486	85
1961	9.41	300	15,933	591	53
1971	11.56	500	12,000	963	24
1981	15.02	1,500	15,000	1,001	10

Questionnaire

Individual enumeration in 1981 was preceded by household listing. The household list in 1981 was extensive compared to the household list of 1971 census (see Table 15.2).

¹ Hearn, R.L., 1983., "Ninth Population Census Conference : Focus on Data Processing and Analysis", Asian and Pacific Census Forum, Vol.9, No.4.

Table 15.2 – Items asked in household schedules in 1971 and 1981 censuses

Topics	1971	1981
Name and caste of head of household	x	X
Number of family members by sex (any member away from home for more than 6 months was excluded)	x	x
Number of absentee members of the family	x	x
Sex of absentees	-	x
Age of absentees	-	x
Destination of absentee members	-	x
Reason for leaving home	-	x
Number of deaths in the family during last 12 months	x	x
Sex of the deceased	-	x
Age at death	-	x
Number of disabled persons in the family	x	x
Sex of disabled person	-	x
Age of disabled person	-	x
Male marriages during last year	x	-
Male divorces during last years	x	-
Number of transistor radios owned by family	-	x
Occupation (Agriculture, cottage industry, etc.) of family	-	x

The individual characteristics questionnaire was also more comprehensive in 1981 than in 1971. Table 15.3 compares the items asked of individuals in the last two censuses:

Table 15.3- List of personal topics asked in 1971 and 1981 census of Nepal

Topic	1971	1981
Personal Characteristics		
Name and caste of head of household	x	x
Relationship to head of household	x	x
Identification number of mother	-	x
Sex	x	x
Age	x	x
Language	x	x
Religion	x	x
Literacy	x	x
School enrolment	x	-
Specialised subjects (for those above S.L.C)	-	x
Marital status	x	x
Children ever born alive	x	x
Children born in last 12 months	x	x

Table 15.3 continued....

Geographic characteristics		
Citizenship	x	x
Place of birth	x	x
Duration of stay in the current place (for those born outside the current district)	-	x
Reason for residence in the current district (for those born outside the current district)	-	x
Type of activity		
Gainfully employed/not employed in the last 7 days	-	x
If unemployed, was the person looking/not looking for employment	-	x
Gainfully employed/not employed for at least 8 months during the last 12 months	x	x
Not working (because of being a student, disabled, etc.)	x	x
Employment status (Asked of those who were employed for at least 8 months last year)		
Main occupation and main industry	x	x
Employer/employee/self-employed/partially employed	x	x

In order to simplify the job of editing and coding many of the items both in household and individual schedules were preceded. But there are some unavoidable problems with preceded answers. First, they make the questionnaires too long and unwieldy. This has what exactly happened with the 1981 questionnaires. One questionnaire is 21" long and 15.5" wide which is certainly too clumsy to carry around and complete. Secondly, in pre-coded questions the respondent is given a limited number of answers from which to choose which can often conceal information. Finally, once a tick has been put on the preceded answer there would be no way to check whether the interviewer did it correctly or not. It is, of course, necessary to have some answers preceded such as, "yes" or "No" type answers and some multiple choice responses but not at the cost of limiting response categories.

Field Work and Coding

The field work in 1981 also took place in the month of June as in all other previous censuses. The count

approximately took 18 days to complete in 1981. In 1961 and 1971 the corresponding days were 18 and 15. The field supervisor checked each enumerator's work in his area for major inconsistencies. The completed schedules returned to the headquarters from the field, were carefully edited which was followed by coding operation. For coding 20 supervisors and 200 coders were employed. The job was completed in less than 9 months.

Computer Data Processing

Although editing and coding were done promptly, transcription of data on to computer disc was delayed for almost a year. The main reasons were as follows:

- a) main frame is being changed from IBM to ICL system,
- b) physical facilities like concrete building, air-conditioning system, etc. for installing the newly acquired ICL computer were not quite ready.

It is, therefore, not surprising that data processing took 3.5 years compared to only 1.5 years to process the 1971 census data when the computer facility was ready for use. Table 15.4 shows time taken by census processing.

Table 15.4-Time taken by census processing

Census year	Number of years	Type of processing
1952/54	2	Manual
1961	4.5	Manual
1971	1.5	Computer
1981	3.5*	Computer

* However, if the time of data processing is computed from the time of functioning of the newly acquired ICL machine, this is estimated to be less than one year.

Post-enumeration Survey

About one month after the complete enumeration, post-enumeration survey (PES) began but because the manpower involved was not different from the main census operation, the quality of the PES data was highly suspect.

Also the rainy season had just began which made the situation worse in the hills and mountains. In addition, it was found by external experts that the design and the questionnaire of the PES were not well thought out. For all these reasons no use was made of PES data to evaluate the total enumeration in 1981 (*see, Chapter I; for details*).

The Quality of the 1981 Census Data

The quality of the 1981 census data is evaluated in two steps. The first step examines the overall coverage of the total count relative to the 1971 count by applying a mathematical procedure developed by Luther, Norman Y. (1983)².

The second step concerns with the evaluation of the quality of the census data on selected personal characteristics such as age reporting, migration characteristics, etc.

Census Coverage

Census coverage is usually measured by the data produced by well organized and supervised post-enumeration survey. As stated above this was not feasible in the case of Nepal. Therefore, an attempt has been made to measure the relative differences in census coverage by examining the two successive censuses of 1971 and 1981.

The method applied here was originally suggested by Preston and Hill (1980)³. but later it was more fully developed by Luther, and Norman (1983)⁴. The Technique measures the relative difference in census coverage, not the actual coverage or actual under enumeration of individual censuses. Still this is sufficient when

one is interested in the growth in absolute numbers.

Application of the technique to the censuses of 1971 and 1981 of Nepal showed no improvement in census coverage in 1981. The 'K' value which measures relative difference in census coverage, is close to 1 in the case of Nepal, indicating no difference in coverage between the two censuses.

Accuracy of Reported Ages

Just like in many developing societies, a large number of Nepalese do not know their precise dates of birth, so that their ages have to be estimated by indirect means. Such estimates are clearly subject to substantial errors. A common and conspicuous form of these errors consists in rounding the ages to the nearest figure ending in 0 or 5; for example persons really aged 39 or 41 will round their ages to 40. This type of "digital preference" can cause marked heaping of population at certain ages. The heaping is most conspicuous on ages ending in 0 or 5, but there is also a subsidiary heaping on ages ending in 2 and 8; the numbers at ages ending in 1, 3, 4, 6, 7 and 9 are correspondingly reduced.

Digital preference of this kind is, to a greater or lesser degree, world - wide. A summary index of the degree of heaping on the ages ending in 0 and 5, known as "Whipple's index" has been calculated (UN, 1962)⁵ to measure the reliability of the reported age distribution. And this index calculated for the census years 1971 and 1981 suggest an unusually heavy degree of heaping and shows no improvement over the years (see Table 3.9).

In Nepal the degree of age misreporting is lower in the survey than in either of the 1971 or 1981 censuses (see Table 15.5). This is expected because survey is a small operation compared to census undertaking and close

² Luther, N.Y.,1983. "Measuring changes in census Coverage", Asian and Pacific Census Forum, Vol.9, No.3.

³ Preston, Samuel and Hill, Kenneth (1980). "Estimating the completeness of death registration", Population studies, Vol.34, No. 2.

⁴ Luther, N.Y., 1983. "Measuring Changes in Census Coverage". Asian and Pacific Census Forum, Vol.9.No.3.

⁵ United Nations, 1962. Demographic Year Book, p.17

supervision of work of the enumerators is more possible in the former than the latter.

Table 15.5- Whipple's indices for Nepal

Year	Sex	Data source	Whipple's index
1971	Male	Census	240.3
1971	Female	Census	253.0
1976	Male	Survey	212.6
1976	Female	Survey	195.3
1981	Male	Census	248.1
1981	Female	Census	254.9

Source: Same as in 1, 2 & 3 of Table 15.6

Evaluation of Fertility Data

Information on fertility of women is not easy to collect. In the case of Nepalese society it is even more difficult. In order to obtain good quality fertility data as large an operation as the census undertaking is perhaps not appropriate particularly in Nepal. This is indicated by the quality of fertility data collected in the last two census of 1971 and 1981.

In Table 15.6 mean number of children ever born alive by women obtained from censuses and surveys of Nepal and Thailand are shown. Accordingly, Nepal's fertility based on census data should be around 4 in 1971/1981 and based on survey data it comes to around 5.7 in 1976 and 5.2 in 1981. Similarly for Thailand the fertility level is about 6 during the first half of 1970s. However, in the case of Nepal the difference between the census and survey figures is in the range of 25% to 40%. The corresponding figure between 1971 census of Thailand and 1975 survey is only about 3%. Clearly then children ever born is highly under – reported in both the censuses (1971 and 1981) of Nepal.

Under - reporting of parity can also be checked by examining inter censal or inter survey cohort parity increment. The intercensal cohort parity increment shows that women aged 35 -39 reported lower parity in 1981 than in 1971. Similarly, Women aged 35 -39 and 40 – 44 in 1976 reported lower parities in 1981 survey.

Table 15.6 Evaluation of average parities: Nepal and Thailand

Age Group	Nepal					Thailand			
	Census		Cohort parity increment	Survey		Census	Survey		Cohort parity increment
	1971 ¹	1981 ²	1971-81	1976 ³	1981 ⁴	1976-81	1970 ⁵	1975 ⁵	1970-75
15-19	0.165	0.240	(.240)	0.188	0.20	(.20)	0.131	0.127	(.127)
20-24	1.024	1.015	(1.015)	1.316	1.32	1.13	0.994	0.884	0.753
25-29	2.132	1.968	1.803	2.848	2.59	1.27	2.409	2.126	1.152
30-34	3.040	2.796	1.772	4.051	3.82	0.97	3.819	3.485	1.076
35-39	3.665	3.309	1.177	5.069	4.38	0.33	5.082	4.66	0.841
40-44	3.932	3.569	0.529	5.473	5.01	-0.06	5.921	5.697	0.615
45-49	3.973	3.582	-0.083	5.660	5.22	-0.25	6.120	6.312	0.391

1. Central Bureau of Statistics, 1975- Population Census 1971.
2. Central Bureau of Statistics, 1984- Population Census 1981, Vol. II.
3. Nepal Family Planning/Maternal and Child Health Project, 1977-Nepal Fertility Survey 1976, First Report.
4. Nepal Family Planning/Maternal and Child Health Project, 1983-Nepal Contraceptive Prevalence Survey Report 1981
5. United Nations, 1983. Manual X: *Indirect Techniques for Demographic Estimation*: New York.

Because the data quality is better in Thailand and this type of error is not found there.

Unacceptably low quality of fertility data of censuses of Nepal is most likely due to the following reasons:

- i) Poor education and training of enumerators.
 - ii) Interviewing of female respondents by male enumerators. Interviewers all males were instructed to interview female not the head of the household about life – time fertility. But it is unlikely that they did so given the cultural situation which inhibits women to talk to male strangers. Besides most women leave everything to be answered by the head of the household.
 - iii) The wording of the question about children ever born alive by a woman is not good enough to elicit the right type of information. The question reads: How many children were born alive until now including live born children who died later? The standard way to obtain correct information on children ever born would be to ask the following questions:
 - a) how many children were born to this woman who are now living with her?(response recorded by sex).
 - b) How many children were born to this woman who are now living else- where? (response recorded by sex).
 - c) How many children were born to this woman who have died? (response recorded by sex).
 - iv) It may be that information about the children were collected mostly for currently married women only. This information for other ever married women namely, widowed, divorced and separated were perhaps mostly omitted.
- Other common errors encountered in trying to collect information on children ever born are:
- v) There may have been a selective survival

of women who had given birth relatively few children.

- vi) Older women may have omitted some of their off springs when stating the number of children they had given birth.

Whatever the relative contribution of these factors, it is clear that the reported completed family size of women aged 45 – 49 in census cannot be accepted as an index of fertility level. Comparison of census data with survey figures clearly indicates that the bias is not only confined to women above 45, it is also true of early ages (Table 15.7).

It is not only children ever born (life – time fertility) badly reported in Nepal censuses but also the current fertility. Table 15.7 compares current fertility derived from the 1981 census with that obtained from the 1976 survey. Although the current fertility data in Table 15.7 relate to two different points of time they cannot be expected to differ by a margin of about 50 percent. Clearly the census data is seriously under - reported. This extremely low reporting of births that occurred in the past

Table 15.7 Age-specific fertility rates per woman derived from births in the past year 1976 survey and 1981 census

Age Group	Nepal fertility survey	
	1976 ^a	1981 census ^b
15-19	.145	.0341
20-24	.290	.1132
25-29	.295	.1307
30-34	.269	.1203
35-39	.169	.1013
40-44	.075	.0699
45-49	.023	.0487
TFR	6.33	3.091

- a. Goldman N. et al, 1979. The Quality of Data in the Nepal Fertility Survey, Scientific Report No. 6, World Fertility Survey, London
- b. Central Bureau of Statistics, 1984- Population Census 1981, Vol. II

Year may be attributed to the following possible causes:

- i) The question asked in the 1981 census to obtain information on current fertility was not very appropriate. The question was: “ During the period from mid April 1980 to mid April 1981 (1st Baisakh 2037 to end of Chaitra 2037) how many children were born alive to this woman” (live births were recorded by sex). This type of question is subject to substantial reference period error in the Nepalese society where the vast majority of women are illiterate and hardly remember the date of occurrence of a vital event. Also when a question is asked by limiting the reference period to 12 months only many women are likely to deliberately displace the event in order to avoid all the problems answering the question. Perhaps more reliable data on births last year could have been obtained if the question was asked on most recent live birth. This was also what the Census Planning Meeting had recommended of the 1976/77 round of censuses of the Pacific region island countries (Greenewegen, 1979)⁶. In this way every ever married woman would be compelled to report about her most recent live birth. For this enumerators can be instructed to concentrate on the last births that occurred during the past 3 years.
- ii) Some births were recorded as having occurred the 12 months preceding the census but were attributed to women over the age 50. In fact more births (25,874) were recorded as having occurred to women aged 50+ than to women aged

45-49 (14,078). Since it is rare for a woman to be able to bear a child beyond age 50 it is possible that either the births were wrongly dated or the ages of the women had been misreported. The 1981 census data indicates that the latter was the more likely case.

Comments on other Items

It is very likely that just as the demographic data other data collected by the censuses of Nepal could be suspected for their reliability. Other data like the economic characteristics, education etc. of successive censuses do not compare very well as the definition adopted in each census is some what different.

Change of district boundaries between censuses has seriously affected population growth rates during the intercensal period. For example, Kalikot District which shows growth rate of 24.2% during the intercensal period. For any area that has not experienced heavy in – migration the growth rate of this magnitude can only be attributed to boundary change. If detailed information on boundary change were available a more reasonable population growth trend could have been established for Kalikot and for other districts.

Factor Affecting Quality of 1981 Census Data

Despite seemingly well organized census operation of 1981 the quality of data is not upto the standard expected. It is difficult to say what went wrong. But it is certain that the educational level of enumerators was too low and they did not seem to have got thorough training. Besides the number of enumerators was too small to cope with the population that had increased rapidly during the 1971-81 intercensal period.

⁶ Greenewegen, Ko (1979). “Censuses in the South Pacific, 1976-77”, Asian and Pacific Census Forum, vol.5, No.4.

Data processing was another area where many things could have gone wrong. Mistake could have crept in even if the completed questionnaires were carefully edited and checked.

Nepal's stage of socio-economic development also in part accounts for low quality census operation. The problems of census taking in Nepal has long been recognized (CBS, 1977)⁷ but perhaps are still not widely appreciated. These problems relate mainly to the dispersal of the population over numerous hills, mountains, valleys and low lands and Nepal's mountains and hills comprise about 83% of the total land area (CBS, 1982)⁸.

Problems of transportation and communication between the capital city and the rest of the country can be very difficult. Despite fairly fast construction of roads in the recent past most of Nepal is still not easily accessible. In the 1981 census round the bulk of census materials like questionnaire, stationary, enumerator's manual etc., were transported on human backs. The problems of transportation, communications and logistics that arise due to the physical features of the country are likely to persist well into the future. Additionally, because of the low level of education, people are not very well aware of the need for and use of, census data for social and economic planning.

B. SURVEY

Though censuses in Nepal have been carried out approximately every ten years, there seems to be a great dearth of survey data for the intercensal period. There is as yet, no periodicity in conducting Demographic

Surveys. Whatever surveys have been conducted, they have been done in an Ad hoc basis. A brief description of major demographic surveys undertaken in Nepal is given below.

National Health Survey

The first major national survey generating demographic data is the National Health Survey, undertaken by Department of Health in 1966. However, in this survey only about 80 per cent of all sample villages were covered. Because of this sizable non-coverage of sample villages, the estimates of demographic parameters obtained from this survey data are of limited quality. However, the important contribution which this survey made was to use the survey methodology for demographic estimation in Nepal for the first time.

Family Planning Knowledge, Attitude and Practice (KAP) and Fertility surveys

The KAP and Fertility Surveys were conducted in four districts to gather basic information on the family planning programme and the base line demographic data for launching experimental pilot projects. The sampling of panchayats was based on probability proportional to the size of 1971 census population and the sample size was about 1500 married women aged 15-44 years in each district. The purpose was to determine whether the integrated family planning programme was more effective than the vertical programme or vice versa. The coverage of this survey was expanded to two more districts in subsequent years. The longitudinal survey was carried out in these districts annually from 1974 to 1978 to measure changes in demographic parameters of the areas under two population programmes. The major objective of this longitudinal survey was to assess the impact of each type of family planning programme on changes in fertility and mortality overtime. The Survey was undertaken by

⁷ Central Bureau of Statistics, 1977, The Analysis of the Population Statistics of Nepal, Kathmandu.

⁸ Central Bureau of Statistics 1982. Statistical Pocket Book.

Nepal Family Planning and Maternal Child Health Project.

National Fertility Survey (NFS)

The NFS was undertaken in 1976 with the joint collaboration of His Majesty's Government of Nepal, Family Planning and Maternal Child Health Project (FP/MCH) and World Fertility Survey (WFS) Project. The WFS staff were involved in all phases of the survey to ensure that the survey was carried out according to WFS prescribed format. The main objective was to provide estimates of fertility levels at national and regional level and to ascertain determinants of fertility. The survey covered thirty-three districts and 5940 currently married women in the reproductive ages (15-49).

Demographic Sample surveys

The longitudinal demographic sample surveys were undertaken in 1974/75, 1976 and 1977/78 by Central Bureau of Statistics (CBS). The objectives of these surveys were to estimate the population growth rate and its components-fertility, mortality and migration. The longitudinal surveys were preferred over the single round retrospective survey because the former can detect and correct omissions and errors. The longitudinal survey gives series of estimates which would allow to judge the reliability of estimates. These surveys were done with the joint collaboration of His Majesty's Government of Nepal, Central Bureau of Statistics and United Nations. The overall sample size was 6 per cent of the total population or about 75,000 persons distributed in 191 wards of 15 districts.

Mid-term Population sample survey

The mid-term population sample survey was conducted in 1976 by Central Bureau of Statistics in collaboration with United Nations. The major objectives of the survey were to provide up-to-date estimates of a) population by age and sex; b) economically

active population by profession; c) literacy; d) migration and e) other miscellaneous statistics for the intercensal period 1971 and 1981. The secondary objective was to establish some trends for future population sample estimation by drawing representative sample to get reliable national estimates. This was the first time when a mid-term (i.e. between two censuses 1971 and 1981) sample survey was conducted. Altogether, 35.01 per cent of the total population of Nepal drawn from 75 districts was covered.

The Second National Family Planning Follow Up Survey

This survey was conducted in 1978. The sampling design was to select 31 districts and interview 6000 acceptors. The field operation was completed but the final report did not come out because of data processing difficulties.

The survey was conducted by Nepal Family Planning and Maternal Child Health Project (FP/MCH)

Contraceptive Prevalence Survey

The Contraceptive prevalence survey was undertaken in 1981 with the joint collaboration of FP/MCH project and Westinghouse Health systems, Washington D.C., USA. The primary focus of the survey was to the country. The sample design of the study was the same as that of the Nepal Fertility survey of 1976. The study was confined to currently married women in the reproductive ages (15-49 years). The sample successfully interviewed 5880 of 5924 eligible women, drawn from 33 districts of the country.

Fertility and Mortality Survey

The Fertility and Mortality Survey was conducted in 1984 by New Era, a private research institution with financial and technical support from the National Commission on Population. This survey is expected to help

determine and delineate factors influencing fertility and mortality by geographic regions. The sample design of the survey is the same as that of the Nepal Fertility Survey of 1976. The study was confined to ever married women in the reproductive ages (15-49 years), and 6184 eligible women from 20 districts were selected for interview. However, only 80.5 per cent or 4979 women could be successfully interviewed. Given the very low response rate, the reliability of the fertility and mortality estimates derived from this survey are questionable and therefore, the results of the survey are of limited value.

The major drawbacks of the demographic surveys in Nepal, are as follows: (i) often a large amount of data are collected which are seldom or never used. This could also affect the quality of survey data by burdening the work load of the interviewers and also by increasing boredom and suspicion of the respondents; (ii) there exists a wide time gap between data collection and data analysis for variety of reasons. As a result timely input of survey results to the formulations and evaluations of programmes/ policies cannot be ensured and (iii) though surveys are major source of getting demographic information, yet there is no definite time frame for under taking the surveys.

C. VITAL REGISTRATION

Background*

The village Panchayat Law of 1962 gave the legal provisions to Panchayats** to register vital events. In 1964, Central Bureau

*For details, see Joshi, P.L., 1986. Overview and Evaluation of Vital Statistics Programme 1976-1986", National Commission on Population, Kathmandu, (mimeo).

** Local Self government.

of Statistics (CBS) started a vital registration pilot project in three Panchayats of Kathmandu valley with some success. But the practice was discontinued. In 1972, the vital registration project on the sample basis was carried out by Family Planning and Maternal Child Health Project (FP/MCH) in Banke and Nuwakot districts to evaluate the family planning programme. The family planning staff posted in different Panchayats in these two districts used to devote two working days in a month to register vital events continuously in their respective Panchayats besides collecting information during home visits on other days. The staff from the central office in Kathmandu did six monthly surveys in these areas. This dual system of registration checked the accuracy of each method against each other and gave a method to estimate vital events missed by both surveys and registration.

This project continued for four years till 1976 at least in one district, Nuwakot. The results revealed that in the first six months, the coverage was poor but then the coverage began to improve to the acceptable limits and then in the final year, the coverage was poor because of the poor supervision. The project was terminated in 1976 because it was argued that the collection of vital events is not the responsibility of FP/MCH, therefore, the resources of FP/MCH project should not be diverted for vital events collection.

Vital Statistics Programme: Past and Present

The office of the Registrar under the Ministry of the then Home and Panchayat (later on Home Ministry) was made responsible for setting up vital registration system in Nepal in 1976/77 (mid-July, 1976 to mid-July 1977). The vital events began to be registered from April 1978. This registration activity was undertaken after the enactment of

Registration Act of 1976 and Household Listing Act of 1977. The actual operation started with ten districts (one in Kathmandu and nine in the Terai); The number increased to twenty-one in 1979/80, thirty-four in 1980/81 and forty in 1981/82.

At present the vital statistics programme is being carried out in forty districts by Registrar's office. At the district level there are district level cells attached to the office of the Chief District Officer (CDO). There is at least one junior level staff in the district cell who is responsible for collecting filled in vital statistics form from village Panchayat secretaries and sending those to the central office. The district level cell is responsible for supplying forms and necessary materials to village Panchayat secretaries who are responsible for registering vital events that occurred in their respective Panchayats.

Vital events are recorded by the completion of a notification form. Information on the forms are recorded in the local registrar's permanent record book. These forms are then transmitted to the district cell which after reviewing send them to Registrar's office in Kathmandu.

Achievement

Table 15.8 shows the coverage of districts and achievement in birth and death registration since 1978/79 when the programme was initiated.

The table shows that the coverage of districts increased to 40 by 1981/82 which remained constant since then. There is an increasing trend in the coverage of births and deaths; but in case of death, the figure slightly decreased in the year 1983/84.

Table 15.8- Coverage of districts and achievement in birth and death registration since 1978/79

Item	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
District covered	10	21	34	40	40	40	40	40
Population covered	3,221,305	6,566,841	9,361,410	10,807,000	11,163,612	11,531,991	11,912,527	12,305,619
Registered events								
Births	32,347	34,969	43,517	54,202	68,010	97,778	108,352	126,613
Deaths	6,424	9,645	12,698	17,082	18,119	16,071	20,181	23,466
Percentage of Coverage ¹								
Births (%)	22.7	12.0	10.5	11.5	14.1	20	21.7	25.2
Deaths (%)	10.7	8.0	7.5	8.9	9.3	8.1	10.1	11.6

¹ Population in district where vital statistics programmes has been carried out was estimated for each year by using the rate of growth of population observed during the intercensal period 1971-81 with adjustment for boundary changes. From the knowledge of CBR and CDR for the years 1981 and 1985, corresponding figures were estimated for each year by assuming liner trend. In this way, the percentage of coverage of births and deaths are estimated for each financial year.

The percentage of coverage in vital events registration increased significantly since 1983/84 when the relaxation on fines for not registering vital events in time was greatly reduced. It is to be noted that this is the year when incentive payment was discontinued to local registrars. Hence, it is suspected that

many of the registered births and deaths from 1983/84 onwards must have occurred in preceding years. The percentage of coverage has been estimated to be 25.2% for births and 11.6% for deaths for the year 1985/86, which is encouraging; but the magnitude of the proportion of births from previous years

Registered in the year 1985/86 is unknown

Pilot Projects

In order to seek new approaches for increasing the effectiveness of the vital statistics programme, the Registrar's office in coordination with UNFPA conducted several experiments with various sets of alternatives using Pradhan Pancha, Village Panchayat secretary, cooperative worker, forest worker, health worker, malaria worker and ward chief as local registrars.

It was found that the Panchayat using forest worker as registration followed by Panchayat using village Panchayat secretary as registrar and then by another Panchayat using the cooperative worker as registrar. Another Panchayat using village Panchayat secretary as registrar was low in the ranking which showed that there might be large variation in the performance using Panchayat secretaries as local registrars. However, the experiment showed that the best performance can be achieved by using mobile local registrars who go from house to house to register vital events. But, most of the Pradhan Panchas interviewed were of the opinion that Panchayat secretaries should be made responsible for vital events registration. The general consensus in the office of the Registrar was that the improvement in experimental areas was primarily due to the intensive campaigning about the vital registration system in these areas rather than by any other factors.

In spite of the intensive efforts in experimental areas, the coverage of the birth registration ranged from 19 per cent to 77 per cent and the death registration ranged from 3 per cent to 40 per cent.

Sample Registration Scheme (SRS)

Noting the fact that facilities and resources, efforts and dedications which were available for the experimental areas might not

be available on a national scale and even though available, it will take decades to gradually expand from eight experimental Panchayats to cover about 4000 Panchayats on a national scale and to yield sufficiently accurate data, the sample registration scheme was initiated in 1984.

The objectives of the Sample Registration Scheme were as follows:

1. Test varieties of ideas to make the vital events registration effective on a national scale;
2. gradually expand these wards to Panchayats and then to districts so that vital registration system can be expanded on a national scale and
3. obtain reasonably reliable vital statistics data on sample basis within a period of about 10 years.

The procedure included the dual system of recording vital events by continuous enumeration and periodic surveys at an interval of six months. The project was initiated in 50 wards of 25 Panchayats in 10 districts on first of *Baisakh* 2041, i.e. on April 13, 1984. The continuous registration of vital events in each ward was done by respective Panchayat secretary. The six monthly surveys were done by the central staff of the Registrar's office, Ministry of Home Affairs. Before the initiation of the project, base line information were planned to be collected and special seminars were conducted by the staffs of Registrar's office in each ward so as to acquaint the local people the purpose of registering vital events and to seek their cooperation in increasing the coverage of vital events in their respective wards. This system gave the estimated coverage of vital events in their respective wards. This system gave the estimated coverage of births and deaths to be 75.8 per cent and 65.7 per cent respectively.

Civil Registration System

Setting up an effective civil registration system in one district was initially planned to

be undertaken in the second half of the year 1985 by Registrar's office under the Ministry of Home Affairs. However, civil registration programme has been initiated under National Commission on Population since May 1986. the programme covers ten Panchayats of five districts. If implemented on a national scale, the programme is expected to maintain updated civil registration list to the ward level and help determine the population size along with the flow of migration on a continuing basis. Patterns and types of migration can also be determined.

Budget

The Table 15.9 shows the budget of

Table 15.9- HMG and UNFPA budget for the vital statistics programme since 1976/77

Year/Budget	(in 000 Rs.)	
	HMG	UNFPA
033/34 (1976/77)	158	646
034/35 (1977/78)	225	600
035/36 (1978/79)	366	39
036/37 (1979/80)	403	1,134
037/38 (1980/81)	533	2,816
038/39 (1981/82)	650	2,448
039/40 (1982/83)	882	1,760
040/41 (1983/84)	1,200	563
041/42 (1984/85)	1,413	366
042/43 (1985/86)	1,872	237

HMG and UNFPA for the vital statistics programme since the beginning of the programme.

HMG's share of the budget increased from Rs. 158,000 in 1976/77 to Rs. 1,872,000 in 1985/86 whereas UNFPA's share of the budget was Rs.646,000 in 1976/77; peak point was reached in 1981/82 with an approved budget of Rs. 2,448,000 and it decreased to Rs.237,000 in 1985/86.

Because of various reasons, UNFPA's portion of actual expenditure was far lower than the budget approved. For example, during the 6th five year plan (1980-85), the actual

expenditure was Rs. 3,613,288.92 and the budget allotted was Rs. 7,953,000.00 and thus, the percent of the budget spent was 45.4%.

Factors Affecting Low Coverage in the Vital Statistics Programme

There are two major reasons for the low coverage in the vital statistics programme, viz:

1. Organizational and administrative problems; and low
2. socio-economic development

Organizational and Administrative Problems

The organizational and administrative problems include some of the administrative decisions which might have resulted in low coverage of vital events.

- i) The evaluation of 10 districts conducted in January 1980 showed that the completeness of the birth registration was 38.3% and for deaths, it was 13.6% (the corresponding revised estimates are 22.7% and 10.7% respectively). With such low coverage in births and deaths in the beginning of the programme and not to speak about the low coverage of other events like marriage, divorce and migration, serious thoughts should have been given to improve data rather than expanding the programme from 21 districts in 1979/80 to 34 in 1980/81 and then further expansion to 40 districts in 1981/82.

The analysis showed clearly that female births and higher order births were significantly under registered relative to male births and first and second order births respectively. Infant deaths were highly under registered. Emphasis should have been put to decrease the errors caused by above factors. The further expansion of districts might have lowered the quality of data. Improvement in quality and compilation of vital statistics data should have

been given serious consideration before expanding the programme.

- ii) Incentive payments were given to local registrars to boost their moral so that they would give more time in increasing the coverage of vital registration data. But, because of frequent changes in decisions, apprehension was made that further deterioration in reporting might have occurred. Initially, Rs.30.00 per month was given to each Panchayat secretaries who were local registrars. This decision was changed in 1982/83 so that Rs. 10.00 per month was given as incentive payment in addition to Rs.1.00 for each vital events registered. Because of this change in the decision, it was found that the vital events registration decreased to a considerable extent. In 1983/84, decision was taken not to give incentive payment to local registrars which must have affected a great deal in programme performance. Local registrars were very unhappy about the decision and they were very unhappy about the decision and they were little enthusiastic about the vital events registration.
- iii) Panchayat secretaries who are local registrars in their respective areas are under the Ministry of Panchayat and Local Development whereas the Vital Registration office is under the Ministry of Home Affairs. As such, the vital registration office does not have direct control over the registrars which must have affected the coverage of vital registration.
- iv) Vital events have to be registered within 35 days of occurrence of events, otherwise a fine will be imposed, otherwise a fine will be imposed. This act was promulgated to decrease the time lapse between the registration and actual occurrence of events. However, people are reluctant to

register events by paying fine after 35 days of occurrence of events. Thus, a large proportion of events must have gone unregistered. In case of death registration, the problem is more crucial. When the mourning period is forty-five days for the general population, the majority of people must have found inconvenient to report within 35 days and thus, it is likely that a large number of deaths must have gone unregistered. However, because of the necessity of the deceased person's death certificate for the transaction of his/her property, it is likely that problems are not crucial in adult deaths as in infant deaths.

- v) There has been a considerable financial constraint to carry out the vital events registration programme. Many of the local registrars complained about the lack of stationery and storage capacities. The staff in district offices lacked the office furniture. They have to supply necessary forms and collect reports from local registrars but because of the lack of funds, it has been reported that their activities have been seriously hampered. Necessary publicity material which had been printed according to the plan could not be dispatched to local Panchayats due to lack of funds.
- vi) Adequate trained manpower is a problem, without them, it is not possible to carry out pilot projects which are expected to increase the effectiveness of the vital registration programme.

Socio and Economic Development

People with low level of socio and economic development might be reluctant in registering vital events because the certificates which they get in return don't bring any direct

and immediate benefits as they would be living in a social setting where these certificates would hardly carry any meaning to the general population. This is one of the main reasons why vital registration system has not been effective in Nepal.

The operation of the vital registration programme has been difficult because of the transport and communication problems and other related national problems which can hardly be solved by the vital statistics programme alone.