2.1 **Study Type, Data Collection Technique and Tools**

The study was a cross-sectional survey. The technique used for collection of data was face-to-face interview using a questionnaire.

The questionnaire comes in a modular form and consists of two parts:

A - Household questionnaire
B - Individual questionnaire

The modules are the following:

**A. Household Questionnaire**

0100 - Sampling
0200 - Geo-coding (*WHO provided the technical and logistics support*)
0400 - Household Roster
0500 - Household Questionnaire
0600 - Health Insurance
0700 - Permanent Income
0800 - Expenditures
0900 - Health Occupation

**B. Individual Questionnaire**

1000 - Socio-Demographic Characteristics
2000 - Health State Description
3000 - Health State Valuations
4000 - Risk Factors
5000 - Mortality (*module not included in the survey in Mauritius*)
6000 - Coverage  
7000 - Health Systems Responsiveness  
8000 - Health Goals and Social Capital  

The original version of the questionnaire was in English. Translation into Creole, the language of virtually everyone in Mauritius, was conducted by a professional, and reviewed by a Committee composed of 4 Community Physicians, Project Senior Supervisor and one Supervisor under the guidance of the Principal Investigator.

2.2 Sampling

In consultation with WHO Geneva, it was decided to conduct 4,000 interviews on a representative sample of Mauritian adult population (18 and above).

The study sample was selected using a multi-stage sampling described as follows:-

(i) First stage – selection of 100 Enumeration Areas

A national sampling frame exists at the Central Statistics Office. Mauritius is divided into 3,476 Enumeration Areas. From this list, 100 EA’s were selected randomly using the probability proportional to size. The map showing the sampling distribution is shown in Figure 2.1 (source: WHO, Geneva).
Figure 2.1: MAURITIUS WHS 2003 - Sampling Distribution
(ii) **Second stage – Random selection of 4400 households**

Enumeration of households in the 100 selected Enumeration Areas was carried out in January 2003 (Maps of the selected EA’s were provided by the Central Statistics Office). From each of 100 lists of households, 44 households were randomly selected making provision for a non-response rate of 10%. These households were contacted again to fill in the household questionnaire where a listing of all members of each household selected was done (together with collection of other household characteristics)

(iii) **Selection of respondents for the survey**

The respondents for the survey were selected among all eligible members of the household using KISH tables. Kish tables provide a method by which each eligible person in a household has an equal chance of selection into the survey sample.

The respondent eventually selected was administered the individual questionnaire.

2.3 **Data Collection**

A pool of one Senior Supervisor, 5 Supervisors and 100 Interviewers (all public officers) were involved in fieldwork. The whole fieldwork was under the supervision of the Principal Investigator of the study.

Data collection was conducted in 3 phases according to the sampling method used. The interview in all the 3 phases took place at the residence of the respondent.
2.3.1 First phase – listing of households

During this phase of data collection carried out in January 2003, some 10,810 households were visited for the purpose of the listing.

2.3.2 Pilot phase

A pilot survey was conducted on a representative sample of 100 respondents in April - May 2003. Because of budgetary constraints, these 100 interviews were part of the 4,000 interviews planned and used in the final analysis of the survey data.

A team comprising of the Senior Supervisor, all 5 Supervisors working for the survey and 12 interviewers (6 pairs, each pair comprising of one male and one female interviewer) participated in the pilot study which covered 12 EAs scattered all over the island. The individual interviews were conducted by interviewers of same sex as respondents, the reason why interviewers were grouped in pair. Each pair of interviewers worked under the direct guidance of one supervising staff. A five-day training workshop for the pilot phase was organised in April 2003 and conducted by the Principal Investigator and the Senior Supervisor according to WHO guidelines. 44 re-interviews were also conducted during the pilot phase by the Supervisors and female Interviewers. However the re-interviews were not done within the 7-day window because most of the interviews were conducted during weekends and the interviewers had first of all to complete their initial interviews in their 2 EA’s allocated to them before they started conducting the re-interviews in a second pair of EA’s.
A debriefing session was also organised with the field staff to share and discuss the field experiences and make suggestions for possible improvements during the main phase of the survey.

### 2.3.3 Main Phase

The main phase spanned from June to September 2003. The interviewers attended a 5-day training workshop which had to be spread over a few weekends because interviewers had to be trained in 2 batches.

Data Collection was done mainly in the evenings and during weekends. Throughout the duration of the fieldwork, the Principal Investigator and the Senior Supervisor organised regular reporting back meetings with the Supervisors to review progress, examine any difficulty encountered and check that complete and accurate data were collected. Any ambiguity was corrected on revisits.

In addition, to the general supervision, the Supervisors randomly selected a few respondents to check the accuracy of the responses recorded by the interviewers. Three interviewers were suspected of falsification and 100% of their interviews were redone by better performing interviewers. On the other hand, WHO Geneva was closely monitoring the quality standards. A visit of a WHO quality assurance adviser was effected in June 2003.

### 2.4 Data Processing and Entry

A first editing of the questionnaires was done by the supervisors which included checking and correcting for errors in sampling, consistency, skip patterns and range values. A final check on the quality of data was done by the Principal Investigator. The data were then entered by the staff of Mauritius Institute of Health using the data entry programme provided by WHO, Geneva. Double data
entry was effected to ensure that good quality data were submitted to WHO team for an eventual cleaning. Data were submitted periodically to WHO as they were collected using e-mail attachments. This enabled further analytical checks on quality (e.g. missing or incorrect information, duplicated data etc). WHO provided regular feedback to us. The full data set was submitted to WHO in January 2004.

2.5 Ethical Clearance and Confidentiality Consideration

Ethical clearance for the survey was obtained from the Ministry of Health and Quality of Life. Some sensitive issues of the questionnaire also received the approval of the Steering Committee.

Participation of a selected respondent was voluntary. Respondents were notified of the survey by receiving a personal letter from the Director, MIH explaining what the survey is about and were invited to collaborate with the research team. A public announcement was also made on TV and Radio. Each interviewer carried with him/her an identification card with a photograph. Before starting the interview each interviewer had to read the Informed Consent Form provided by WHO.

Information disclosed during the interview were kept strictly confidential and used only for the purpose of the survey.
2.6 **Response Rate**

Table 2.1: **Number of households, number of eligible respondents and response rates**

<table>
<thead>
<tr>
<th>Results</th>
<th>Residence</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Urban</td>
<td>Rural</td>
</tr>
<tr>
<td><strong>Household interviews</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selected</td>
<td>1978</td>
<td>2419</td>
</tr>
<tr>
<td>Interviewed</td>
<td>1765</td>
<td>2199</td>
</tr>
<tr>
<td>Household response rate</td>
<td>89.2</td>
<td>90.9</td>
</tr>
<tr>
<td><strong>Individual interviews</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selected *</td>
<td>1974</td>
<td>2418</td>
</tr>
<tr>
<td>Interviewed</td>
<td>1719</td>
<td>2169</td>
</tr>
<tr>
<td>Individual Response Rate</td>
<td>87.1</td>
<td>89.7</td>
</tr>
</tbody>
</table>

*Population excluded: non-eligible respondents, house vacant.*

Taking into account the duration of the individual interview (between 2 to 2½ hours), an incentive of Rs 100/- was given to all respondents after completion of the individual interviews to increase response rates and motivate respondents.
The sample population deviation index by age categories (figure 2.2) shows how closely the distribution of the study sample in the different age groups by sex matches that of the general population distribution. A perfect match is indicated by 1, whereas values greater than 1 indicate that the population in that age group has been over sampled. Similarly values less than 1 indicate that the population in that group is underrepresented in the study sample. Further, the sex distribution (i.e. the ratio of males to females) for the survey is comparable to the general population.
2.8 **WHS 2003 National Report**

The WHS 2003 national report presents an analysis of the survey data for Mauritius; it covers an assessment of risk factors, coverage of health care, health systems goals, health state descriptions, health systems responsiveness and health expenditure. In May 2005 the WHO Geneva team provided support to the local team by providing a set of tabulations and guidance for the writing up of the report. The results are viewed across different subgroups of the population with respect to sex, age, residence (urban and rural settings) and asset quintiles. The households have been classified into five different socio-economic categories called asset or income quintiles using an index, construction of which combines information on household expenditures, household head characteristics, household ownership of certain assets (like car, TV, washing machine, DVD player, cellular phone, computer, access to internet etc) and housing characteristics.

2.9 **Use of WHS Data for Other Publications**

The WHS was conducted in 72 countries from all the six WHO regions; 18 countries including Mauritius were from the WHO AFRO Region. Mauritius was one of the 27 countries where Global Positioning System (GPS) devices were used during the WHS in order to collect the location (i.e. the latitude and longitude) of each surveyed household.

This preliminary report contains the highlights and the rationale for presenting the selected results. A number of more detailed technical reports on the WHS results at regional and international levels would be published within and across modules covered by the survey. The geographic information collected would also be explored by WHO to generate thematic maps, perform specific analysis apply models, and look for relationships with other data collected at the same geographic entity level.