



Malawi Government  
National Statistical Office

**SECOND INTEGRATED HOUSEHOLD SURVEY, 2004**

**DATA ENTRY MANUAL**  
**MARCH 2004 – MARCH 2005**

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# TABLE OF CONTENTS

<b>1. Introduction</b> .....	<b>3</b>
1.1 Survey objectives.....	3
1.2. Survey methods.....	3
<b>2. Workload of Data Entry Operators</b> .....	<b>4</b>
<b>3. The Data Entry Application</b> .....	<b>4</b>
3.1 Before you start.....	5
3.2 Opening the data entry application .....	5
3.1 The batch control menu .....	6
<b>4. The Add Cases Mode</b> .....	<b>7</b>
4.1 Moving around a case in Add Cases mode .....	8
4.2 CSEntry toolbar summary.....	8
4.3 Errors in skip patterns .....	8
4.4 Error messages .....	9
4.5 Completion of key entry .....	10
4.6 Exiting the system.....	11
<b>5. Verify Cases</b> .....	<b>11</b>
<b>6. Modify Cases</b> .....	<b>11</b>
<b>7. To Delete a Case</b> .....	<b>12</b>
<b>8. Other features of the IHS-2 data entry application</b> .....	<b>13</b>
8.1 Text description of the “Other, specify” category .....	13
8.2 Version of CSPro used for application and mode of operation .....	14
8.3 IHS-2 directories.....	14

# 1. Introduction

## 1.1 SURVEY OBJECTIVES

You have been selected as one of the data entry operators for the implementation of the second Malawi Integrated Household Survey (IHS). The National Statistical Office (NSO) carries out the IHS approximately every five to six years. The first IHS was conducted between October 1997 and September 1998.

The principal focus of the survey is an issue of interest to us all – the welfare level of Malawian individuals and households. The survey data will be used in analyses to determine what proportion of Malawians are unable to meet their basic needs to enjoy an adequate standard of living and are living in poverty. These studies will also consider what accounts for some households being able to attain and sustain such a standard of living and what might be done to assist those households and individuals now living in poverty to escape poverty. The information collected in the IHS also will be used in a range of other studies, including examining employment, health, nutritional status, agriculture, as well as better understanding how households respond to changes in the macroeconomic environment. The data collected using the IHS is particularly rich because it integrates such a wide range of aspects of household and individual characteristics.

The enumeration of households in the IHS is spread over a year. This is done so that analysts are able to take into account the different conditions that households experience, particularly farming households, in both the rainy season and in the dry season. The lengthy enumeration period is also necessary in view of the size of the questionnaire and the fact that it may well take a day to properly administer a questionnaire to a household. Each enumerator will be responsible for the complete administration of the household survey questionnaire to 20 households in each of the twelve months the survey is being implemented across Malawi.

## 1.2. SURVEY METHODS

The second Malawi Integrated Household Survey is designed to be nationally representative. That is, the information collected from the survey households will be used to estimate the characteristics of all households resident in Malawi. This is made possible through the use of random selection procedures to select households for interviewing.

The survey results will also be used to make district-level estimates of household characteristics. The IHS-2 is based on 30 strata – that is, populations for which the survey data should allow us to make reliable estimates of the characteristics of households and individuals in that population. The 30 strata are made up of 26 districts of Malawi (all districts, except Likoma), plus the four urban centres of Lilongwe, Blantyre, Mzuzu, and Zomba. A minimum of 240 households are to be interviewed in each district, with larger numbers of IHS survey households in the more populous strata, such as Lilongwe rural, Mangochi, Blantyre city, and some others. The total planned sample size is 11,280 households – nationally, 940 households will be interviewed each month over twelve months.

The survey uses two questionnaires:

- 1) A household questionnaire to collect detailed information on all aspects of the selected households in order to analyze the living standards of the population of Malawi.
- 2) With the view that household living standards also depend on community conditions, a community questionnaire is also to be administered in each EA in which the IHS-2 is to be administered. This questionnaire collects information from a small number of knowledgeable community residents on economic infrastructure, education and health services, etc. and prices of goods in the community where the survey households are living.

The data collected in the two types of questionnaires will be key entered by the data entry operators working under the supervision of the Data Entry Supervisor. This manual is designed to provide you with the information you need to do the data entry procedures for the two surveys.

## **2. Workload of Data Entry Operators**

At the beginning of every month, each data entry operator (DEO) will receive four (4) batches of questionnaires that were collected by the enumerators in the previous month. Each batch will consist of twenty (20) household questionnaires and one (1) community questionnaire. Each batch represents the data collected from one enumeration area (EA).

Each batch of questionnaires will be double entered in four (4) days. This means that each DEO will enter the data from the 20 household questionnaires from their batch in two (2) days and will then key enter the 20 household questionnaires from another DEOs batch in the remaining two (2) days. The data entry of the two DEOs will be compared to find if any key entry errors have been made. Once these errors will be corrected the batches will be considered completely entered. After the household questionnaires for the batches have been double entered, the community questionnaires will be double entered and verified.

## **3. The Data Entry Application**

The Data Entry Application for the preparation of data collected in the IHS-2 was developed in the CSPro software package. This software package allows for certain features to be pre-programmed.

- Skip patterns in the questionnaire will be automatic in the data entry. Labels and codes that appear on rosters, e.g., food/nonfood items, crops or livestock, will also automatically appear on the data entry form.
- The program also automatically checks whether the value entered for a particular question falls within the range of values acceptable for the question. If the DEO enters a value that is 'out-of-range', a warning is displayed on the screen and the DEO cannot proceed unless the DEO corrects the entry or confirms that the value entered should be accepted.

- The consistency of responses within a form and across various forms is checked against pre-programmed requirements. For example, a 3-year old child (as identified in the Household Roster Module) cannot have completed secondary education (as identified in the Education Module).

The application is programmed to automatically follow the flow of the questionnaire, that is, the order of entry follows the order in which the questions appear on the questionnaire. It is also programmed to respect the skip patterns followed by enumerators in implementing the questionnaire.

This feature will mean that DEOs should watch their progress carefully as they key in data. They will be required to ensure that the data are being keyed into the correct variables.

### 3.1 BEFORE YOU START

- Set the “Num Lock” key on. Use the keypad to facilitate the entry of numeric data.
- Arrange the questionnaires in the batch in order of questionnaire number.

The most basic data entry definitions are as follows:

**CASE** – A case is the primary unit of data in the data file. For IHS-2, a case refers to a questionnaire.

**FORM** – A form contains fields, boxes and text and is what appears on the screen. The forms for IHS-2 correspond to the different modules of the questionnaire.

**FIELD** – The basic element of a data entry form into which data are keyed in.

### 3.2 OPENING THE DATA ENTRY APPLICATION

- To begin, double-click on the icon for the key entry of the data. This will run the **CSEntry** module of CSPRO that will allow entry of the data using the IHS-2 application.

Figure 1. Data Entry Icon

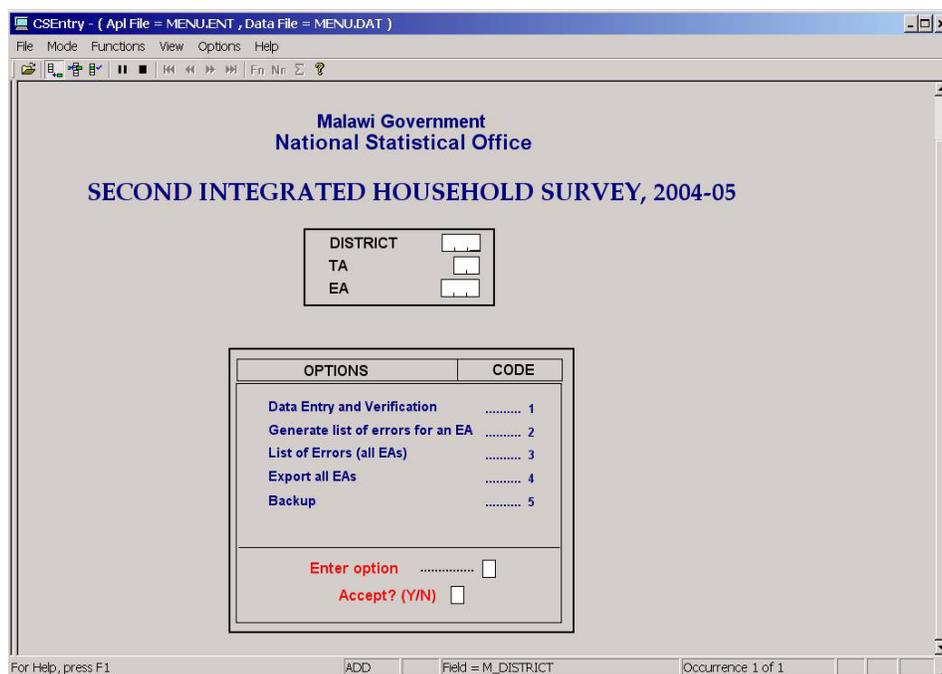


The batch control menu will then appear on the screen.

- Enter the batch identification numbers: district code, traditional authority code (TA), enumeration area code (EA).

The menu is programmed to save (or write the data for) each enumeration area into a file that has the following format: F99999999.DAT. The first three 9s are reserved for the district number, the next two for the traditional area and the last three for the enumeration area. This file will be referred to as the data file.

Figure 2. Batch control menu for Data Entry



### 3.1 THE BATCH CONTROL MENU

It is expected that the DEOs will be in one of the three modes in CSEntry each time they are doing data entry: the ADD CASES mode, the VERIFY CASES mode and the MODIFY CASES mode.

There are five options available:

Option 1 - Enter or modify data . This option is used to add cases, modify cases or verify cases of the selected EA. This is the option that will be most often used by the DEOs.

Option 2 - List of Errors (this EA). This option generates a list of errors detected during the entry of the data from the corresponding EA.

Option 3 – List of errors (all EAs). This option provides the same information as the previous option, with the difference that this option provides the number of errors found in all EAs.

Option 4 - Export (all households). This option is used to export the data as key entered into either SPSS or STATA format. The data will be exported to directory C:\IHS2

Option 5 - Backup. This option makes a backup copy of the data to be stored in the archives. The backup will be done at regular intervals.

#### 4. The Add Cases Mode

- To begin to add cases, enter the key variables (District, TA, EA) for the batch to be entered and select option 1 on the batch control menu.
- If not already selected, click on  on the toolbar or press CTRL+ A to begin adding a case.

CSEntry then puts the cursor on the first field of the first form. Note that the forms have been designed so that they appear like the questionnaire and that the questions in the questionnaires and in the application have been named according to module in which they are found. For example, questions in Module B are named B01, B02, B03, etc.

- Key in the values in sequence, pressing < ENTER > after a field is filled in.

The screen is sometimes split to show the form on the right and the fields being entered on the left. Press CTRL+U to toggle full screen and off.

The program for data entry has been written so that the DEO only sees the variables that must be keyed. The application requires that the < key be pressed after filling in the field in order to move on to the next applicable field. The logic written up for the application determines which field is the next applicable field.

To make a correction in a numeric field, press the <SPACEBAR> or the <DELETE> key to clear the field. To make a correction in an alphanumeric field, use the <BACKSPACE> or the <DELETE> key to clear the field one character at a time.

Continue entering the data for all the questions in the questionnaire, verifying that the flow is correct and that the questions are following the correct sequence. After entering the data for the entire questionnaire, make sure that the data that have been entered are the same as was written in the questionnaire. It is most important that the data are entered correctly.

## 4.1 MOVING AROUND A CASE IN ADD CASES MODE

It will sometimes be necessary to return to a previous field to review an entry or to make a correction, for instance.

- **To move to the previous field**, press the Up arrow key  $\uparrow$  or press  $\hat{\ } + \%o$  at the same time. Repeating this step takes the cursor back one field at a time.
- **To move to the next field** press the Down arrow key  $\downarrow$ , the  $\%o$  key or  $\langle$ . Repeating this step takes the cursor forward one field at a time.
- **To move to any field** (backwards or forwards) press the X function key. You will be prompted for the field and occurrence number, if applicable.

## 4.2 CSEENTRY TOOLBAR SUMMARY

Following are the functions of the other keys in the CSEentry toolbar that have not yet been described.

- ⏸ - Pause the timer, save temporarily
- - Stop the session
- ⏪ - Move to the first case in tree order
- ⏩ - Move to the previous case in tree order
- ⏴ - Move to the next case in tree order
- ⏵ - Move to the last case in tree order

## 4.3 ERRORS IN SKIP PATTERNS

If the fields that control the skip patterns have been entered incorrectly, the program may automatically advance to questions for which there are no responses in the questionnaire or, worse, skip fields for which there are valid responses. Verify the information you entered in the field that controls the skip pattern. Inform the data entry of any coding errors.

**IMPORTANT:** If the DEO finds an error in the skip pattern programming in the application, s/he should immediately inform the Data Entry Supervisor. Note that because of the way the application has been designed, a field may not be left blank unless previously defined as a special field or because of a valid skip pattern.

As a general note, if the DEOs have any questions about how to enter the data or how to resolve any errors that occur, they should consult with the Data Entry Supervisor.

#### 4.4 ERROR MESSAGES

CSEntry automatically displays an error message (see Figure 3) when the value keyed in falls outside the range of values defined in the dictionary for the particular field.

Figure 3. Confirmation message for the entry of an invalid value, outside of range



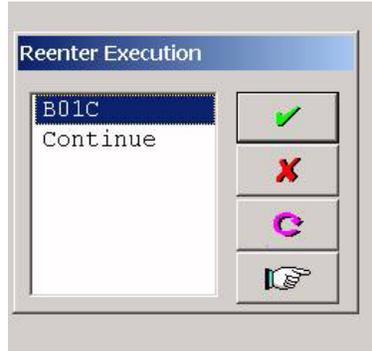
It also displays an error message when the value keyed in resulted in an inconsistency as determined by the underlying logic.

Figure 4. Error message for inconsistent logic



After clicking OK, the application may display the following message

Figure 5. Message requesting action on value that resulted in data inconsistency

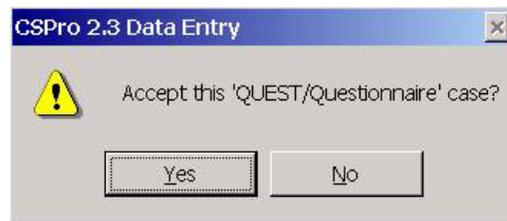


Click on the check mark if you want to change the entry and the cross mark if you do not want to change the entry.

#### 4.5 COMPLETION OF KEY ENTRY

At the end of the entry of data from the questionnaire, the program will ask for a confirmation with the following message:

Figure 6. Message to confirm current questionnaire is to be saved



Selecting 'yes' will write the case to the data file. After the case is saved, the first form then appears in blank, and you can start entering a new case. If you want to terminate the data entry program at this point, or need to change the EA, press the keys ALT + F4. The following message will be displayed:

Figure 7. Menu to confirm current questionnaire is **not** to be saved



The 'current' questionnaire here actually refers to the blank form for the new case as described above. This may safely be discarded. Use caution in pressing ALT+F4 in the middle of entering data as you may inadvertently discard the case you are keying in.

#### 4.6 EXITING THE SYSTEM

- Press ALT + F4 to exit the system.

### 5. Verify Cases

Keying a case a second time (double-entry) allows us to verify the entries and thereby reduce data entry error.

- To begin a verify mode session, enter the batch to be verified in the batch control menu and select option 1.
- Click on  on the toolbar or press CTRL+V to begin verifying a case.

Note that the cases will be verified in the order they appear on the tree list. If the session is stopped for any reason, CSEntry will remember the last case that was verified.

In verify mode, the fields will appear blank as in the Add Cases mode. Each time data are entered in the field, CSEntry compares the data entered with that in the data file. When the two match, the cursor moves on to the next field. When they do not match, the following message appears on the screen.



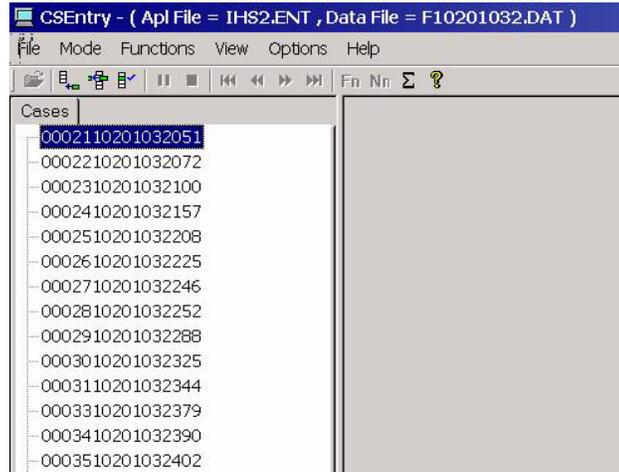
- Reenter the data (value).

If this second entry (in verify mode) matches either the original entry written to the data file or the first data entered (in verify mode), the system will take the second entry as a valid entry and move on to the next field. If it matches neither, the system will ask for the data to be reentered yet one more time.

### 6. Modify Cases

- To begin a modify mode session, enter the batch to be modified in the batch control menu and select option 1.
- All the cases that have been entered in the selected batch will appear on the tree at the left side of the screen.

Figure 8. Tree showing list of cases entered



- Highlight the case to be modified and click on  the toolbar or press CTRL+M to begin modifying a case.
- Use the commands in 4.1 to move around a case in the modify cases mode.

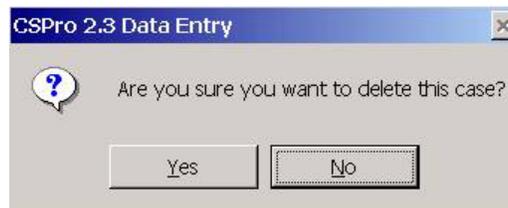
## 7. To Delete a Case

- In the batch control menu, enter the batch ID from which a case needs to be deleted and select option 1.

It is important that you are **not** in ADD, VERIFY or MODIFY mode when you delete a case.

- All the cases that have been entered in the selected batch will appear on the tree on the left side of the screen.
- Highlight the case you want to delete and press < DELETE >. The following message will appear to confirm whether the case should be deleted.

Figure 9. Message to confirm that a case is to be deleted



## 8. Other features of the IHS-2 data entry application

### 8.1 TEXT DESCRIPTION OF THE “OTHER, SPECIFY” CATEGORY

The questionnaire contains several questions for which not all possible responses could, for practical reasons, be precoded and printed on the questionnaire. For example, Question D05A on illness does not have codes for all types of illnesses. Such questions have codes for the most common responses and a code of “Other, specify” to record all the rest of the responses. When this occurs, enumerators are to write down the actual response somewhere on the page. Additional fields have therefore been created to enter this text description to accompany the “other, specify” category. The labels for these extra fields start with the question name and are suffixed by “OTH”. For example, if the illness reported is cancer, the DEO should enter “30” under D05A and enter “cancer” under D05AOTH. These ‘other’ columns will automatically be skipped if they are not applicable.

On roster type modules, the additional text field(s) appear at the end of the roster template (Figure 10, example 1) and on single line modules, the text field(s) appear at the bottom or the side of the template (Figure 10, example 2).

Figure 10. Fields for recording text descriptions of the “other, specify” category

Example 1.

MODULE D: HEALTH						
D10	D11	D12	D05AOTH	D05B	D07A	
During the past 2 weeks did anyone else in the household have to stop their normal activities.....	How many days in the past two weeks did someone stop.....	How much in total did you spend in the past 4 weeks for all illnesses and injuries, including for medicine, tests, consultations ,inpatient fees	D05A - Other response, illness or injury	D05B - Other response, illness or injury	D07A - Other response, action taken to find relief	
1	<input type="checkbox"/>	<input type="checkbox"/>				
2	<input type="checkbox"/>	<input type="checkbox"/>				
3	<input type="checkbox"/>	<input type="checkbox"/>				
4	<input type="checkbox"/>	<input type="checkbox"/>				
5	<input type="checkbox"/>	<input type="checkbox"/>				
6	<input type="checkbox"/>	<input type="checkbox"/>				
7	<input type="checkbox"/>	<input type="checkbox"/>				
8	<input type="checkbox"/>	<input type="checkbox"/>				
9	<input type="checkbox"/>	<input type="checkbox"/>				

## Example 2

**MODULE G: HOUSING**

G01	G02	G03	G04	G05
Do you own or are purchasing this house, is it provided to you by an employer do you use it for free, or do you rent this house?	If you sold this dwelling today how much would receive for it?	Estimate of rental value of dwelling unit	How much do you pay to rent this dwelling	How many years ago was this house built
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> <input type="text"/>	<input type="checkbox"/> <input type="text"/>

G06 - Other response, type of dwelling

G08 - Other response, wall material

G09 - Other response, roof material

G10 - Other response, floor material

## 8.2 VERSION OF CSPRO USED FOR APPLICATION AND MODE OF OPERATION

The application was created using CSPROX for CSPRO version 2.3. It is designed to run in system-controlled mode.

## 8.3 IHS-2 DIRECTORIES

The following directories will be used.

- C:\CSPROX: Directory which stores the software
- C:\IHS2: Applications for the data entry and batch processing
- C:\IHS2\DATA: Data files of the selected EAs and auxiliary information (lookup tables)
- C:\IHS2\WORK: Working directory
- C:\IHS2\BACKUP: Directory of back up files

