# Survey on Aging in sub-Saharan Africa – Ageing Survey 2017 CAPI Documentation

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# UNITED NATIONS Department of Economic and Social Affaires



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# **Aging2016 CAPI Documentation**

#### Introduction

This document gives a general description of the CSPro CAPI software that has been developed for the Multiple Indicator Survey on Ageing in sub-Saharan Africa. The first survey was carried out in Malawi by the National Statistical Office, Zomba, Malawi, and the United Nations Department of Economic and Social Affairs.

Computer-assisted personal interviewing (CAPI) refers to survey data collection by an in-person interviewer (i.e. face-to-face interviewing) who uses a computer to administer the questionnaire to the respondent and captures the answers onto the computer. CSPro is a free software package used by hundreds of or organizations and tens of thousands of individuals for entering, editing, tabulating, and disseminating census and survey data. CSPro is designed to be as user-friendly and easy to use as possible, yet powerful enough to handle the most complex applications. It can be used by a wide range of people, from non-technical staff assistants to senior demographers and programmers. The funding for CSPro comes from USAID. Additional information on CAPI is available on the US Census Bureau website.

The CAPI for the Multiple Indicator Survey on Ageing in sub-Saharan Africa has been programmed by Dr. David Beckles, project consultant.

Useful links and addresses:

- U.S. Census Bureau website: <a href="http://www.census.gov/ipc/www/cspro">http://www.census.gov/ipc/www/cspro</a>
- o CSPro Users website: http://www.csprousers.org

#### **Software Installation**

Installation is fairly straightforward. All the necessary files are in the folder Aging2016Deployment that is distributed as a zip archive, and whose contents have the structure shown in Illustration 1 Deployment Files and Folders. A brief description of the files and folders follows.

#### Folder Aging2016Deployment contains the files:

- Aging2016Household.zip The packed CSPro household interview application
- Aging2016HouseholdListing.zip The packed CSPro household listing application
- Aging2016Individual.zip The packed CSPro individual interview application
- Aging2016InterviewsMenu.zip The packed CSPro menu application
- Aging2016SendPenUpdates.pnc The synchronization script for updates
- ListingMenu.zip The packed CSPro household listing menu application
- ReadMe.txt A text file containing installation instructions

#### Sub-folder Aging2016 contains the files:

- Aging2016Household.pen The household interview CAPI application
- Aging2016HouseholdListing.pen The household listing CAPI application
- Aging2016Individual.pen The individual interview CAPI application
- Aging2016InterviewsMenu.pen The interviews menu CAPI application
- Aging2016InterviewsMenu.pff The pff file for the interviews menu application
- BluetoothServerNoName.pnc The synchronization script

**Sub-folder AllData** – Used for data from team members and for concatenated data.

**Sub-folder Data** – Used for data from the household and individual interviews and the menu. The initial distribution contains the files:

- Aging2016InterviewsMenu.dat
- Aging2016InterviewsMenu.dat.csidx
- Aging2016InterviewsMenu.dat.csnot
- Aging2016InterviewsMenu.dat.lst
- Aging2016InterviewsMenu.dat.sts

Sub-folder ListingMenu – Used for the household listing menu application and its files

- ListingMenu.dat The data file for the household listing menu application
- ListingMenu.pen The household listing menu CAPI application
- ListingMenu.pff The pff file for the household listing menu application

**Sub-folder Lookups** – These are lookup files used by the three applications

- Clusters.dat Cluster numbers and their geography codes
- InterviewPersonnel.dat IDs, names, etc. of the household interview staff
- Personnel.dat IDs, names, etc. of the household listing staff
- SelectedHouseholds.dat IDs of the sample households
- TeamParms.dat Cluster, etc. currently assigned to the teams.

Sub-folder Pff – This is a working folder and must be present

**Sub-folder Resources** – This contains the images that are displayed in some of the value lists. The initial distribution contains the following files:

- calamine.jpg
- cardboard.jpg
- cement.jpg
- ceramic.jpg
- metal.jpg
- palm.jpg
- roofless.jpg
- rustic.jpg
- · shingles.jpg
- sod.jpg
- Thatch.jpg
- wooden.jpg
- WoodPlank.jpg

To install the software on a tablet, simply copy the folder Aging2016 and its contents to the csentry folder on the tablet, and then follow the instructions in the CSPro synchronization help file, to be found at <a href="https://www.census.gov/population/international/files/cspro/CSPro%20Synchronization%20Help.pdf">https://www.census.gov/population/international/files/cspro/CSPro%20Synchronization%20Help.pdf</a> to install the BluetoothServerNoName.pnc synchronization script.

An additional step is required on Team Leader's machines, in that the additional synchronization script Aging2016SendPenUpdates.pnc must be installed on each Team leader's tablet.

```
F:\AGING2016DEPLOYMENT
                        Aging2016Household.zip
                        Aging2016HouseholdListing.zip
Aging2016Individual.zip
                        Aging2016InterviewsMenu.zip
                        Aging2016SendPenUpdates.pnc
                        ListingMenu.zip
                        ReadMe.txt
                             Aging2016Household.pen
Aging2016HouseholdListing.pen
/tmp/dpe/7e3119f3f7e2/bc1
                                                                             :19 Sep 2017 20:25 Rev. 4
4dcb-93bc-e05ac228b822-
                             Aging2016Individual.pen
8086462599446434737/39
787.docx
                             Aging2016InterviewsMenu.pen
                             Aging2016InterviewsMenu.pff
                             BluetoothServerNoName.pnc
                             AllData
                             Data
                                  Aging2016InterviewsMenu.dat
                                  Aging2016InterviewsMenu.dat.csidx
```

### **Software Overview**

The software consists of five CSPro CAPI applications:

Aging2016InterviewsMenu – The main CAPI application used for setting up and starting the interviews

Aging2016Household – The CAPI application for applying the household questionnaire

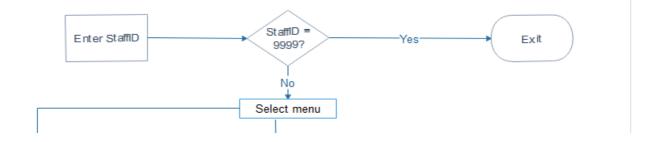
Aging2016Individual – The CAPI application for applying the individual questionnaire.

ListingMenu – The CAPI application used for setting up and starting the household listing application.

Ahing2016HouseholdListing – The CAPI application used for listing the households in a cluster.

# Aging2016InterviewsMenu

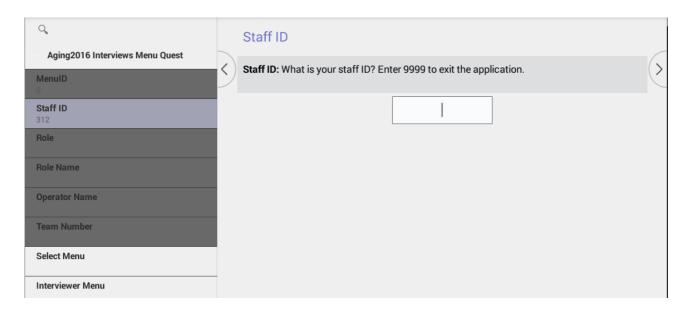
This application comprises a hierarchy of menus that enables the user to perform the functions permitted by the application. A flowchart that shows the control flow in this menu application is given in Illustration 2 InterviewsMenu Control Flow.



The menu application recognises two categories of users, Team Leaders and Interviewers. Both categories can use the interview applications to carry out household and individual interviews, but only team leaders can carry out any of the control and maintenance functions of the software.

To use the software, the user must first login by entering their staff ID on the opening screen. See Illustration 3 Interviews Menu Opening Screen for an example. If the staff ID entered is that of a team

leader then the Team Leader Menu is displayed, see Illustration 4 Team Leader Menu. Otherwise the Interviewer Menu, Illustration 14 Interviewer Menu is displayed.



#### **Team Leader Menu**

The following functions are available from the Team Leader Menu:

- 1. Set Cluster Select the cluster that the team will be working on. Note that this setting will be local to the team leader's machine and is only sent to another team member when the team leader assigns or un-assigns one or more households to the team member.
- 2. Assign households to team members
  Assign one or more households to a team member. The software will only allow team members,
  including the team leader, to conduct interviews at households that have been assigned to
  them.
- 3. Un-assign households from team members
  Remove one or more household assignments from a team member. After a household
  assignment has been removed from a team member that member will no longer be able to carry
  out household or individual interviews in that household.
- 4. Receive data from team members
  This causes data for the current cluster to be transmitted from the tablets of selected team
  members to the team leader's tablet.
- 5. Concatenate data
  This concatenates the various data files for the current cluster into single files for the cluster.
- Send data to central office
   This sends the concatenated data files to the team's dropbox. Each team has its own individual dropbox
- 7. Review team performance
  This displays a summary of the household and individual interviews on the team leader's tablet so that progress may be monitored.
- 8. Logout
  This terminates the menu application

Functions 7 Assign households to team members to 7 Send data to central officeuse the synchronization features provided by CSPro on the tablets. For a description of these features and

instructions on how to set them up and to use them please see the CSPro synchronization help file, to be found at <a href="https://www.census.gov/population/international/files/cspro/CSPro%20Synchronization">https://www.census.gov/population/international/files/cspro/CSPro%20Synchronization</a> %20Help.pdf

#### Set Cluster

When this function is selected, a list of the clusters that have been assigned to the team is displayed. An example is given in Illustration 5 Cluster Selection Screen. Select a cluster and click 'Select'. Control is then returned to the Team Leader menu.

# Assign Households to Team Members

When this function is selected, a list of the team members is displayed. See Illustration 6 Select Team Member for Household Assignment for an example.

Select the team member to whom households are to be assigned and click the Next (>) button. A list of the available households in the cluster will be displayed. See Illustration 7 Available Households.

Select one or more households to be assigned to the selected team member and click the Next (>) button.

The application will then attempt to send a number of configuration files to the tablet of the selected team member. A synchronization message similar to that in Illustration 8 Synchronization Message 1 will be displayed.

Start the synchronization script on the selected team member's tablet, click the OK button in the message box. A server connection message similar to that in Illustration 9 Server Connection Message will be displayed.

If the connection cannot be established between the team leader's and the team member's machines a message similar to that in Illustration 10 Connection Failure Message will be displayed.

# Un-assign Households from Team Members

Apart from some obvious changes this function is almost identical to the previous one, *Assign households to team members*.

#### Receive data from team members

By using this function, data can transferred from the tablets of some or all of the team members to the team leader's tablet.

When this function is selected a multiple selection list of all the team members is displayed. See Illustration 11 Team Members Multi-selection List for an example.

Select the team member or members from whom the data for the current cluster is to be transferred and click the Next (>) button.

For each team member that was selected, the following sequence of activities will occur:

- 1. A synchronization message similar to the one in Illustration 8 Synchronization Message 1 will be displayed.
- 2. Start the synchronization script on the tablet that is named in the message, then click the OK button in the message box.
- 3. A server connection message similar to that in Illustration 9 Server Connection Message will be displayed, followed by one or more confirmatory messages as the files are transferred.

When the actions have been completed for all the selected team members, control will be returned to the Team leader Menu.

#### Concatenate Data

When selected, this function concatenates the household data from each team member into a single file on the team leader's tablet. Similarly, it concatenates the individual data from each team member into a single file. When these operations are completed messages similar to those in Illustration 12 Household Data Concatenation Message and Illustration 13 Individual Data Concatenation Message will be displayed.

#### Send Data to Central Office

This function opens a connection to the team's dropbox and then uploads all the concatenated files to it. Further details can be found in the CSPro synchronization help file at <a href="https://www.census.gov/population/international/files/cspro/CSPro%20Synchronization%20Help.pdf">https://www.census.gov/population/international/files/cspro/CSPro%20Synchronization%20Help.pdf</a>

#### Interviewer Menu

This is shown in Illustration 14 Interviewer Menu and provides the following functions:

- 1. Household Interview Select a household and then launch the household interview application for the selected household.
- 2. Individual Interview First, select a household, next select an individual within the household, then launch the individual interview application for the selected individual.
- 3. Logout Terminate the application.

#### Household Interview

When this menu option is selected a list of the households that have been assigned to the user is displayed. See Illustration 15 Select Household for Interview for an example.

Select the household to be interviewed and click the Select button. The household interview application will be loaded and its opening screen will be displayed. See Illustration 16 Start Screen of Household Interview for an example.

When the interview is completed control will be returned to the opening screen of the Interviews Menu application.

#### Individual Interview

When this menu option is selected a list of the households that have been assigned to the user and for which there is at least one person in the household roster is displayed. See Illustration 15 Select Household for Interview for an example.

Select the household containing the person to be interviewed and click the Select button. A list of the persons in the household will then be displayed. See Illustration 17 Select Person for Interview for an example.

Select the person to be interviewed and click that Select button. The individual interview application will be loaded and its opening screen displayed. See Illustration 18 Start Screen of Individual Interview for an example.

When the interview is completed control will be returned to the opening screen of the Interviews Menu application.

# Household Listing Menu

This application comprises a hierarchy of menus that enables the user to perform the functions permitted by the application. A flowchart that shows the control flow in this menu application is given in Illustration 19 Household Listing Menu - Control Flow.

The household listing menu application recognises two categories of users, Team Leaders and Interviewers. Both categories can use the household listing application to carry out household listing interviews, but only team leaders can carry out any of the control and maintenance functions of the software.

To use the software, the user must first login by entering their staff ID on the opening screen. See Illustration 20 Household Listing Menu - Opening Screen for an example. If the staff ID entered is that of a team leader then the Team Leader Opening Menu is displayed, see Illustration 21 Household Listing Menu - Team Leader Opening Menu. Otherwise the Interviewer Menu, Illustration 22 Household Listing Menu - Interviewer Opening Menu is displayed.

### **Team Leader Listing Menu**

This menu is displayed when the Team Leader Menu is selected from the Team Leader Opening Menu. See Illustration 23 Household Listing Menu - Team Leader Listing Menu.

The following functions are available from this menu:

- 1. Set cluster Set the number of the cluster that the team will be working on and send this setting to one or more team members.
- 2. Receive data Download data for the current cluster from the tablets of selected team members to the team leader's tablet.
- 3. Concatenate data Concatenate the data for the current cluster that has been received from the team members.
- 4. Logout Terminate the application.

#### Set Cluster

When this function is selected, a list of the clusters that have been assigned to the team is displayed. An example is given in Illustration 24 Household Listing Menu - Cluster Selection Screen. Select a cluster and click 'Select'.

The Team Member selection screen will then be displayed. This is a multiple selection list of all the members of the team. See Illustration 25 Household Listing Menu - Team Member Selection Screen for an example. Select the team members to whom the cluster number is to be sent. Note that this approach allows a team to be working on more than one cluster at the same time, although each member can work on only a single cluster at a time. When the team member or members have been selected click the Next (>) button.

The application will then attempt to send the cluster information to the tablets of the selected team members. The following sequence of operations is carried out for each tablet.

- A synchronization message similar to the one in Illustration 26 Household Listing Menu -Synchronization Message 1 will be displayed.
- Start the synchronization script on the tablet that is named in the message, then click the OK button in the message box.
- A server connection message similar to that in Illustration 27 Household Listing Menu Server Connection Message will then be displayed.
- If the connection is made successfully a confirmatory message will be displayed after the data
  is transferred. If the connection cannot be established between the team leader's and the team
  member's machines a message similar to that in Illustration 28 Household Listing Menu Connection Failure Message will be displayed.

When the actions have been completed for all the selected team members, control will be returned to the Team Leader Listing Menu.

#### Receive data from team

By using this function, data can transferred from the tablets of some or all of the team members to the team leader's tablet.

When this function is selected a multiple selection list of all the team members is displayed. See Illustration 25Household Listing Menu - Team Member Selection Screen for an example.

Select the team member or members from whom the data for the current cluster is to be transferred and click the Next (>) button.

For each team member that was selected, the following sequence of activities will occur:

- 1. A synchronization message similar to the one in Illustration 26 Household Listing Menu Synchronization Message 1 will be displayed.
- 2. Start the synchronization script on the tablet that is named in the message, then click the OK button in the message box.
- 3. A server connection message similar to that in Illustration 27 Household Listing Menu Server Connection Message will be displayed, followed by one or more confirmatory messages as the files are transferred.

When the actions have been completed for all the selected team members, control will be returned to the Team Leader Listing Menu.

#### Concatenate Data

When selected, this function concatenates the household listing data from each team member into a single file on the team leader's tablet.

#### Interviewer Listing Menu

This menu is displayed when the 'Interviewer' option is selected from either the Team Leader Opening Menu, Illustration 21Household Listing Menu - Team Leader Opening Menu or the Interviewer Opening Menu, Illustration 22 Household Listing Menu - Interviewer Opening Menu. See Illustration 29 Household Listing Menu - Interviewer Listing Menu.

The functions available from this menu are:

- 1. List Households (Add Mode) This is to be used when a new household is to be added to the data file. It opens the Household Listing application in Add mode.
- 2. List Households (Modify Mode) This is to be used when changes have to be made to the data for a household that already exists in the data file. It opens the Household Listing application in modify mode, which will then present the user with a case selection screen similar to the one shown in Illustration 30 Household Listing Case Selection Screen. This shows a list of all the households that have been listed in the cluster. Select a household by clicking on it in the displayed list.

# **Household Listing Application**

This application will guide the user through the data fields that are captured for each household during the listing exercise, as follows:

- 1. Dwelling Number The number assigned to the dwelling by the enumerator.
- 2. Lister Letter The unique letter that has been assigned to the enumerator. This ensures the uniqueness of the household identifiers, even if two or more enumerators assign the same dwelling number to different dwellings.
- 3. Household Sequence Number This is assigned by the enumerator so that different households in the same dwelling can be distinguished.
- 4. Village Name The name of the village that contains the dwelling.
- 5. Household Head The name of the head of the household
- 6. Any persons aged 60 and older? Valid responses are 1 (Yes) and 2 (No). If the response is No then the listing is terminated, otherwise the enumerator records the name, sex, and age of each of the eligible persons in the household, i.e. those aged 60 and above.
  - 1. First Name The first name of the eligible person. If this is left blank then the listing of eligible persons will be terminated.
  - 2. Last Name The last name of the eligible person
  - 3. Sex The sex of the eligible person (1 Male, 2 Female)
  - 4. Age The age of the eligible person. This must be in the range 60 to 105, inclusive.
- 7. Remarks This is a text box for entering any useful remarks about the household, including directions.

At the start, and if necessary at the end, of the listing of a household, the application will ask the user to collect the GPS coordinates of the household, by displaying a message similar to that in Illustration 31 Household Listing - GPS Message.

