

PROJECT TITLE: Strengthening the capacity of African countries to use mobile technologies to collect data for effective policy and decision making (ZIMBABWE Component Only)

“DA PROJECT ZIMBABWE”

FINAL DETAILED REPORT

SUMMARY INFORMATION

PROJECT NUMBER: 2015-ROA-8592-2920-6875

DURATION: October 2014 – December 2015

STARTING DATE: October 2014

ENDING DATE: December 2015

REPORTING PERIOD: AS AT 31/12/15

TOTAL BUDGET: US\$212,518.20

FUND UTILIZATION RATE: 100%

PROJECT FUNDED BY: UNECA



Table of Contents

| | | |
|---------|---|-------------------------------------|
| 1.0 | Foreword..... | ERROR! BOOKMARK NOT DEFINED. |
| 1.1 | Background..... | 1 |
| 1.2 | ZIMSTAT Activities..... | 2 |
| 1.3 | Introduction..... | 3 |
| 2.1 | Testing the System..... | 4 |
| 3.1 | Training of Field Staff | 5 |
| 3.2. | Concepts And Definitions..... | 6 |
| 3.3 | Some Uses of the CPI..... | 8 |
| 3.4 | Price Collection And Data Processing..... | 9 |
| 3.5 | Field Work Instructions | 10 |
| 3.6 | Data Collection - Conduct of Enumerators..... | 13 |
| 3.7 | Price Collection - General Guide-Lines..... | 14 |
| 3.8 | Price Codes | 21 |
| 3.9 | Instructions on Particular Items | 22 |
| 4.1 | Training Field Staff on the Use of Tablets..... | 24 |
| 4.1.1 | General Information..... | 24 |
| 4.1.1.1 | System Overview | 24 |
| 4.1.1.2 | Acronyms And Abbreviations | 24 |
| 4.1.2 | System Summary | 25 |
| 4.1.2.1 | System Configuration | 25 |
| 4.1.2.2 | Data Flows | 25 |
| 4.1.2.3 | User Access Levels..... | 25 |
| 4.1.2.4 | Using the Tablet..... | 26 |
| 4.2 | Getting Started | 28 |
| 4.2.1 | Logging on..... | 28 |
| 4.2.2 | System Menu | 28 |
| 4.2.3 | Exit System | 32 |
| 4.2.4 | Sending Data to Server. | 33 |
| 4.3 | Technical Document | 34 |
| 4.3.1 | Introduction..... | 34 |

| | | |
|-------|--|-----|
| 4.3.2 | System Configuration | 34 |
| 4.4 | Consumer Price Survey Data Processing | 46 |
| 5.1 | First Phase of Data Collection..... | 48 |
| 6.1 | Second Phase of Data Collection | 49 |
| 7.1 | Appendix 1: Bulawayo Province 1 st Phase Data Collection Report | 51 |
| 7.2 | Appendix 2: Manicaland And Mashonaland West Provinces 1st Phase..... | 52 |
| 7.3 | Appendix 3: Minutes of the 1 st Management Meeting for CPS | 53 |
| 7.4 | Appendix 4: Minutes of the 2 nd Management Meeting for CPS | 57 |
| 7.5 | Appendix 5: Minutes of the 3 rd Management Meeting for CPS | 61 |
| 7.6 | Appendix 6: Zimstat Detailed Budget - Uneca Funded for CPS | 64 |
| 7.7 | Appendix 7: Comparison of Budget Requirements | 67 |
| 7.8 | Appendix 8: Results for the First Phase of Data Collection..... | 71 |
| 7.9 | Appendix 9: Results for the Second Phase of Data Collection | 85 |
| 7.10 | Appendix 10: Computation of CPI..... | 99 |
| 7.11 | Appendix 11: List of Items In the CPI Basket | 103 |
| 7.12 | Appendix 12: Report Writing Workshop Programme | 115 |
| 7.13 | Appendix 13: Report on the Baseline Survey on Current Use of Mobile Technology In Data Collection | 116 |

1.0 Foreword

The Zimbabwe National Statistics Agency (ZIMSTAT) wishes to thank the United Nations Economic Commission for Africa (UNECA) for financing the successful accomplishment of this pilot project.

We would like to also thank the ZIMSTAT Management for their contributions and preparation of this final report. The shared technical knowledge, experiences, and perspectives have produced a tool that will have a significant positive impact on the capability of Mobile Price Data Collection on Consumer Price Index for ZIMSTAT.

Special thanks are extended to the System Developers, Statisticians, Provincial Supervisors, Team Leaders and Enumerators for their dedication and team spirit throughout the project phase. Sincere appreciation is also extended to Accounts and Administration staff of the project for their invaluable contributions.



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1.1 Background

The United Nations Economic Commission for Africa (UNECA) has realized that using mobile devices for data collection has enumerable advantages in statistical production. It is currently implementing a series of pilot projects to strengthen the capacity of African countries to use the mobile technologies to collect data. Zimbabwe was included as one of the countries in the first round of the pilot projects and the Zimbabwe National Statistics Agency (ZIMSTAT) as the main partner working together with a chosen Training and Research Institute (TRI). Research and Information Services (RIS), in this case was identified as the TRI. Initially, the project was to be designed to collect data on village registers with village heads' secretaries as unpaid self-enumerators. The project came to a halt when RIS ran into problems with the Government of Zimbabwe pertaining to its registration. As a result, ZIMSTAT could not proceed with the village registers.

ZIMSTAT was then granted permission to implement the project on the collection of Consumer Price Survey (CPS) data without any TRI. While the initial project was implemented from October 2014 to March 2015, the replacement project was implemented from September to December 2015. This report is on CPS data collection using mobile devices.

As stipulated in the Letter of Agreement (LoA), ZIMSTAT carried out a baseline survey to establish the level of technological uptake in data collection in Zimbabwe. A report on the results of the baseline survey has been included in the appendix 13

1.2 ZIMSTAT Activities

The Census and Statistics Act of 2007 transformed the Central Statistical Office (CSO) into a semi-autonomous corporate body called the Zimbabwe National Statistical Agency (ZIMSTAT). The Act provides the legal and institutional framework governing the establishment and mandate of ZIMSTAT, including its relationship to other actors in the National Statistical System (NSS). The agency is responsible for the production and certification of official statistics in Zimbabwe.

ZIMSTAT's broad mandate as including conducting the national population census or any other censuses and surveys as may be required to produce economic and social data; coordinating and supervising the NSS; advising Government on all matters pertinent to statistics; promoting the use of sound statistical standards and methodologies in the national statistical system; compiling, analysing, publishing and disseminating statistical information alone or in partnership with other government ministries or actors in the national statistical system; and not least, the development and maintenance of a central business registry and a comprehensive statistics database.

ZIMSTAT has been collecting data using mobile technology since 2010 using some personal digital assistants (PDAs) for the Zimbabwe Demographic and Health Survey (ZDHS). In 2015 the ZDHS data was collected using tablets with Windows Operating System. The Agency was also responsible for collecting National Health Survey data in 2011 and 2015 using PDAs and tablets respectively.

1.3 Introduction

The Consumer Price Survey using mobile devices was tested in three provinces which are Manicaland, Bulawayo and Mashonaland West. Data collection was done in two phases in all the three Provinces and was done in October and November 2015. The system was first tested in Goromonzi District in September 2015 before the first phase of data collection.

2.1 Testing the System

The system was tested in Goromonzi District for a day and several issues were raised and System Developers were tasked to iron out all the issues raised before the first phase of data collection. Among the issues raised were:

- The tablet should be designed in such a way that the enumerator can be able to see previous price as it is in the hard copy. This will help enumerators to cross check the prices.
- The tablet should be designed as a data collection tool rather than a PC data capture tool. It should be harmonized with the hard copy.
- There was need to address the issues of security of tablets at Provincial and District Offices.
- The data transmitted should be secured. The channels of sending data should be looked at, so that data security is maintained as guided by the Census and Statistical Act. The data should be sent directly to ZIMSTAT server, making sure there would be no redirection of data.
- The diagram and documentation on how the data flows should be shown.
- The system should allow Team leaders, Provincial Supervisors and National Supervisors to check and make corrections where necessary on the data before it is finally sent to Head Office so that both the Team Leaders and Provincial Supervisors feel the ownership of data.

During the discussions it was highlighted that a system that allows the enumerator to send data to the Team leader then the Team Leader to send the data to the Provincial Supervisor. The Provincial Supervisor will then send the data to the Head Office should be developed.

3.1 Training of Field Staff

3.1.1 Training of Enumerators

The CPS computer assisted data collection training was conducted on 6 October 2015 in the three Provincial Capitals. The training was attended by the Provincial Supervisor, Team Leaders and enumerators. The Provincial Supervisor and a Team of Supervisors from Head Office conducted the training. The main objective of the training was to train the provincial participants in the use of mobile devices in CPS data collection.

The training mainly consisted of:

- How to access CSPro on the tablet
- Going step by step on how to enter the collected data on the CPS uploaded questionnaires
- How to handle the tablets to ensure safety and avoid breakages

3.1.2 Issues which were raised by Enumerators

There were several issues concerning the design of the questionnaire on the tablet. Among the issues raised by enumerators was that out of the several sections within the CPS questionnaires there was only one section for all the items and the previous price and item specification could not be seen on the tablet. Some of the issues raised were:

- There was need for the Team Leader and the Provincial Supervisor to acknowledge on the system that he/she has seen the data.
- The system could only allow 50 items per outlet.
- The system could not accommodate decimal places.
- The P-code system was not functioning as was desired.
- Item specifications in the system not matching with paper questionnaires
- The comment space not able to capture long comments.
- Unit of measurement for some items not being in the system.
- The issue of GPS coordinates was raised if the same building had more than one outlet. It was stated that the enumerator had to go out to capture the GPS coordinates after completing the questionnaire for each outlet. Although it was said the tablet can be configured to save the coordinates if the outlets are in the same building.
- Some of the gadgets were freezing during data collection.
- The tablet should be able to collect data on fruit and vegetable vendors.

The training was divided into two parts, firstly, the training of the concepts and definitions used in Consumer Price Survey and the techniques used in data collection by enumerators whether data collection is done by paper questionnaires or using the tablets. The second part of the training was to equip the enumerators with the knowledge of using the tablets. The following are the details of the concepts and definitions which the enumerators were being trained of.

3.2. Concepts and Definitions

3.2.1 Consumption

It is any activity in which households use up goods and/or services to satisfy their needs and wants but not for business purposes nor for the acquisition of wealth. Thus investment of all forms of assets is excluded in this case.

3.2.2 Price relative

It is the ratio of a single price at a given point in time to the corresponding price in the previous period.

3.2.3 Price index number

A price index measures the average change in price of given items over a given period of time. The Consumer Price Index expresses the average price of a basket of consumer goods and services as a percentage of the average price of the same goods and services at a previous or base period. Note that the all items or headline Consumer Price Index can be split into the non-food (core or underlying index) and food indices.

3.2.4 Weight

It measures the importance attached to an item or group of items in the basket of goods and services e.g. on average 33.5 of a household's consumption is on food according to the 2011/12 PICES.

3.2.5 A representative item

It is an item that has been selected to represent the consumption pattern in the basket of selected items in the Consumer Price Index. This should be an item that has the largest share of consumption compared to the items of the same type, e.g. 'lemon cream' may have the largest share of consumption compared to other cream biscuits. There are about 495 items in the CPI basket.

3.2.6 Brand

It is the trade name of the item that may be the manufacturer's name or the name that the item variety is commonly known as. Note that the same brand name may be used for different items, e.g. Read Seal for cooking oil, maize meal salt, and rice and the O.K. Pot 'O' Gold for a variety of items.

3.2.7 An item variety

It is the description and specification of the representative item to be priced. The item name may be too broad e.g. biscuits. The variety includes specification of quality, kind, style, size quantity and the brand name. Take special note that item variety means the full item specification that includes the brand.

| | | |
|----------|----------------------|--------------|
| Example: | Representative item: | Maize meal, |
| | Item variety: | Roller meal, |
| | Specification: | 5kg white, |
| | Brand: | Red seal |

3.2.8 Substitution:

This refers to the replacement of either item varieties or shops.

3.3 Some uses of the CPI

The CPI is a top mark macroeconomic indicator, and is very useful in decision making in government, in business, and in other sectors of the economy. The following are some of the important uses of CPI.

- It is a proxy for the measurement of all items inflation, food inflation and “core” or underlying inflation.
- is a proxy of the “cost of living”, it is not strictly a cost of living index, as it fixes the basket and the standard of living, yet consumers shop around, and substitute where necessary in line with consumer behavior.
- is used for indexation by government(for example, taxes, fines etc)
- indexation of wages
- indexation of contracts, the all items index is used in escalation clauses.
- national accounts deflation, and the determination of purchasing power, changes in national output may be exaggerated by changes in prices, that's the GDP in nominal terms is less informative than the GDP in real terms. Indices in general play a crucial role in converting nominal variables into real variables.
- determining bank interest rates, the bank rate and the repo rate, the decision as to whether to pursue a contractionary or expansionary monetary policy depends on changes in the CPI, of late most Central Banks observe the core index for purposes of monetary policy.

3.4 Price Collection and data processing

Prices of a sample of 495 items are collected at places where goods and services are sold to the final consumer, e.g. at supermarkets/department stores/modern grocery stores/other modern shops/markets/hotels, cafes and restaurants/private and public service providers.

Part of the price collection is entirely done by the Prices Section e.g. for items where price movements are considered to be uniform all over the country i.e. electricity, fares for buses, trains and fuel. The larger part is collected through the provincial offices, that is, the three provinces in this case.

It is crucial that collected prices are accurate. A too low price movement measured by the CPI relative to the true development might imply a low wage and salary adjustment. A too high price development measured by the CPI relative to the correct one might force government making wrong economic policies.

Once the forms/data files are sent to Head Office they are edited and then processed.

The processing procedure is as follows;

- a) Every form/data file is edited to find out whether the entries are consistent.
- b) The new prices are transferred to print-outs of the previous month's prices.
- c) Data is then captured into the computers.
- d) Input data is checked and verified by province.
- g) The final CPI is computed and analysed.

3.5 Field work instructions

Price collection is done every month within five days of the week. Prices are collected in the following;

Price collection centres

| Province | Centres |
|------------------|------------------|
| Manicaland | In all districts |
| Mashonaland West | In all districts |
| Bulawayo | In all districts |

The shops are frequented by all Zimbabweans of different walks of life.

3.5.1 Frequency of data collection

Every month price collection forms are sent to the Provincial offices, and on a specified times price collectors have to visit, observe and record prices of goods and services according to instructions given. The supervisors of the respective provincial offices should see to it that the instructions are followed and that the forms are returned to Head Office at a scheduled time. For the majority of items, prices are collected every month.

3.5.2 Choice of price collection day

All items have to be priced within 5 days, following the time table given for the Tablets testing for the two month October and November. The interval between price observations should be uniform for each outlet. Since the length of the month varies, this uniformity has to be followed carefully.

Always do the price collection in the same order. If you start with groceries, do so every month. In the case of green markets try to choose the same time of the day since prices may be higher in the morning and lower towards the evening. This makes the interval between observation come to about a month e.g. grocery shops could be done on the 13th or 14th every month.

3.5.3 Contacts with the outlets

The price collection is made by personal visits to the selected outlets by enumerators. The visits are important in order for enumerators to make sure that the price notations refer to the same commodity in terms of brand, size and specifications at each time, and that the chosen goods are really available. It also helps in coding of the type of price collected.

NOTE: No prices are to be collected by telephone or copied from price lists.

3.5.4 Contact person at the outlet

The personal contact between you and the respondent is of great value. Make an agreement with the manager on who should be your contact person(s). You have to inform these persons about the price collection and agree on the most suitable time for the collection work. In most shops the

goods are price-marked in which case you can do the work yourself, but your contact person still has to be informed on the day so as to give you any assistance required.

A report on how the results of the surveys are released, may also help you in situations where the manager may hesitate to participate in the survey.

3.5.5 Problems with the outlets.

NOTE: Any changes in the outlet should be done by the supervisor in consultation with the Prices Section.

When you approach an outlet it may appear that some changes have occurred since you last visited it. The outlet may have discontinued, temporarily closed, etc. What to do in such cases is addressed below.

3.5.5.1 The outlet will be discontinued.

You might get to know that a shop is going to be closed in the near future. You shall then collect prices as usual up to the closing time. Note on the form under the space for "collector's comments" when the shop will be closed. Inform the supervisor who in turn should find a suitable substitute outlet i.e. one with the same line of trade.

3.5.5.2 The outlet is temporarily (at most three months) closed.

If the outlet is temporarily closed for various reasons like renovations you shall suspend and then continue the price collection when the temporary closure has discontinued.

3.5.5.3 The outlet has changed name.

If the outlet has changed name, but the owner is the same, you shall note the new name in the space for price collector's comments. Continue to collect prices as usual if the line of trade has not changed.

3.5.5.4 The outlet has moved

If the outlet has changed physical address, you shall continue to collect prices as usual unless the move is to a different centre i.e. one that serves a different set of people. e.g. from a low density residential area to a high density residential area. Note the new address on the price collection form and inform Prices Section. If the move is to a different centre a substitute outlet has to be selected.

3.5.5.5 The outlet has a new owner

If ownership is changed, you have to inform the new owner what the price collection is all about, and get his permission to collect prices. Inform Prices Section about the change. If its line of trade has become different a new outlet has to be selected.

3.5.5.6 The respondent refuses to co-operate

If a respondent refuses to provide you with prices, you must explain what CPI is, and how important it is. If you still cannot get his permission, you have to inform your supervisor who will then communicate with the Prices Section after other means to persuade the shop-owner to comply.

It may occur that the respondent does not directly refuse to give you prices, but anyway makes it difficult for you to collect prices. You might also be suspicious that the prices you get may be incorrect. In these cases you have to inform Prices Section by use of the Comment section. Correspondence from the provincial office of any changes effected should be put in writing to the Prices Section through the Head of Household Surveys by the provincial supervisor.

3.6 Data collection - Conduct of Enumerators

The success of the Consumer Price survey depends upon public willingness and co-operation. However, it is important for you to note that the quality of the data you obtain from the shopkeepers depends very much on how well you have explained the purpose of the survey to the shopkeeper during the interview. There is need for you to remember the three Ps, namely; patience, politeness and perseverance. Be polite in dealing with the shopkeepers. Be patient when you interview them. You also need perseverance when the response is poor and you may have to revisit a shop.

Points to note

1. Set a time to visit a particular shop that does not inconvenience the shopkeeper, e.g. lunch time may be too busy a time for carrying out the survey. Do not enforce your presence to the extent of disturbing business and customers.
2. Know who you want to interview and ask for that person when you get to the shop, e.g. the shopkeeper, shop owner, etc.
3. Dress smartly in order to be presentable in front of the shopkeeper.
4. Stress to the shopkeeper the confidential nature of the survey, i.e. information provided will not be shown to anyone else and that this is guaranteed under the provisions of the Census and Statistics Act. Only aggregated information is published.

NOTE. Always carry along with you the current CPI leaflets and present them to respondents as feedback.

5. *Do not pass information collected to any third party.* Such information must be retained by you only. The fact that the ZIMSTAT is in no way connected to the Price Control Unit should also be cited and emphasised. Be careful not to disclose the information from one shop to another.
6. You need to inform the contact person that the exercise is ongoing until a change of the sample of outlets is done.

3.7 Price collection - General guide-lines

This Section deals with price collection issues. This is the most important part of the price index compilation. Always remember that it is absolutely imperative that the index rests upon the principle that *exactly the prices of same goods and services should be compared between two periods.*

3.7.1 Selection of outlets and items

The outlets have been selected so as to cover both those frequented mainly by low income and high income groups, and various shop types such as departmental store/supermarket, specialised shops and vendor's markets. For each selected shop there are forms with a list of goods or services to be priced. The same shops should be visited until otherwise decided. You are not allowed to change shops without consultation with the Prices Section. Thus the general rule is that prices should be collected from the predetermined shops. Changes may always be considered such as when a selected item is out of stock for a long time and it is available on a regular basis in other shops. The items were also selected for you. You are not to get prices from another shop and fill them up on a selected shop's form.

3.7.2 Item specification

Commodity specifications tell the price collector what item varieties are to be priced. The specification has to be so tight that it enables the price collector to identify the item without exercising any discretion at all. Such a tight specification will have to be very detailed and quite lengthy for a heterogeneous item like women's shoes or dresses, but may, despite its completeness, be relatively brief for a homogeneous item like maize meal.

The selected items to be priced are found on the forms/tablet. For most items, you have to select a particular variety. Every time there is a change in brand and specification it has to be recorded in the space for comments.

The varieties to be selected must be made by your selves. We have, however, given some suggestions on brands to be followed. You have to select a variety that fits the overall item and description provided by the Prices Section. Remember that the variety chosen in a particular outlet for a particular representative item should be likely to remain in stock for some time and is of quality which can be ascertained.

You must record the variety specifications and brand. The forms/tablet have space for that, and what you can record there is enough for the Prices Section. In some cases there is need to specify the variety in a more lengthy way, for instance in the case of clothing, footwear and furniture. Those specifications have to be there in order to make sure that you price same variety all the times, or, when the variety disappears from the shelves, you can assess that the chosen new variety is of the same quality.

The Specification under Brand column on the form/tablet must include label names, size or quantity if different from the one given, part number for car parts, car model etc.

3.7.3 Importance of specifications

The commodity specifications used for price collections of selected items are very important and should be strictly adhered to at all times. They ensure comparability between successive quotations and will assist in the selections and evaluations of substitutes. There should not be unnecessary substitution.

The specification mainly serves three purposes. Firstly, it of course tells the price collector what item variety is to be priced. Secondly, there will be an exact record of the variety that was priced so that even if the collector is replaced by another person, the same variety will be priced next time. Thirdly, the specification and any additional description, should also note those readily describable characteristics of the item which determine its value for money in the eyes of consumers. For instance a refrigerator, the specification includes capacity, number of doors, its code and the brand name e.g. 12 cubic feet, double door D300 Imperial.

3.7.4 How to select varieties

The variety you have to collect prices for must coincide with the requirements of how the representative item has been defined. If there are several varieties that fall under the item description, you have to choose the brand that is popular with consumers in that shop. It is important that you avoid choosing occasional and slow selling articles.

The variety you choose must have a reasonable quantity that has to be close to the given specification. There is a recommended quantity on the form. The final choice of item variety you have to do in co-operation with your contact person in the shop. If the shop does not have any varieties in accordance with the item definition, you shall leave the line blank indicating that it is not stocked.

Do not choose an item variety close to disappearance. If this is the case for the fast selling variety, you have to choose the second best sold item variety that fits the item description and specification. When an item is sold at a reduced price it can be foreseen that it will soon disappear from the shelves. You should not choose a new commodity that has a reduced price due to a clearance sale. If the commodity has a bonus price and the price is expected to return to normal level you can choose it if it fulfills conditions of a representative item.

Since outlets are chosen so as to include both those frequented by higher income groups and lower income groups, the selected variety of the same item may vary quite a lot among shops. Note that when the chosen item variety is on sale its price should still be recorded, but a commodity on sale should not be recorded for more than three months.

3.7.5 What to do if the item variety is missing or out of stock

It may occur that a previously chosen and priced item variety is not available when the price collection is made. In these cases you shall follow these rules;

- a) A commodity that is delivered every day is probably missing temporarily, for instance bread or vegetables. The shop may still have the current price of the commodity. Try to find out

the current price in spite of the fact that the commodity is missing. However, you shall record the price if the shop had traded the commodity at that price that week and comment on it. Ask your contact person about it.

- b) If the previous priced item variety is no longer traded, you have to select a new variety that fits the item description. If an item variety that is stocked regularly is temporarily out of stock at the time of price collection and you have verified that with the contact person put code 4i (see Section 8) if the same variety is still not available after code 42 select a new variety on 3rd month. When selecting the new variety consider the fast selling and try to get the one which is of about the same quality and quantity as well as price.

If there is no such variety that fits the item described, you should note this by using Price Code 4i on the form continuously until a suitable substitute is found e.g. maputi, or up to PCode 46 and drop it out, whichever comes first.

3.7.6 Price recording for the same commodity

It is important that you try to measure the price for the same item variety as long as the commodity is in stock. From time to time you have to check with your contact person whether the chosen item variety is still among the most sold. When it is not, you may consider choosing another item variety but always record the previous month's price.

3.7.7 Quantities

Some quantities are to be recorded, particularly for chicken and cheese when price per kilogram is not given, and fresh vegetables and fruits from vendors, when they differ from the item specification on the form. But in most cases a recommended quantity is given. When you choose the variety for a commodity, you choose the popular package. You shall stick to this quantity. If the package is no longer available, then you should price the new package and indicate the change on the comments section after 3 months.

3.7.8 How to record prices and quantities

Each month forms will be sent to provincial offices specifying items to be priced and from which outlet(s). The task is to collect the current prices for those selected items. Record the price in dollars. For instance, 70 cents should be recorded as 0, 70 and 7 cents as 0, 07.

Vegetables and fruits sold in markets should be weighed. It is essential that both prices and quantities are recorded. Complete the last columns for total weight, total Price and price per kg of form.

Some items may be specified by circumference, diameter and depth, e.g. frying pan, mugs, etc. A ruler or a measuring tape should be used when pricing such items, as these specifications are not marked on the items.

3.7.9 Which price should be recorded?

The price you should record is the cash price the customers actually pay. i.e. the prices including sales taxes and excise duties, etc.

When two prices are marked for the same item, verify the correct price, otherwise collect the price for the new stock.

You must record the price valid at the collection time. Do not consider any information that the price would be changed in the near future, for instance the next day.

Prices should exclude deposits or credit prices.

3.7.10 Price reductions and special sales

What should be measured is the actual regular transaction price paid by customers for cash sales, not credit sales.

Sale prices should be recorded with the following exceptions,

- 1) When it is a clearance sale for shop-soiled, damaged factory seconds or otherwise imperfect items and second hand clothes.
- 2) Special offers limited to a day or lasting for a limited time e.g. one hour, opening day offers, to first customers, lucky customers and mystery discounts.

Special care has to be taken with items which are sold on "Sales", but which are not regular stock, having been obtained by the retailer just for the sale. While such items may be sold at low prices, they may well be of less quality than the regular stock. You need to verify this with the shop assistance. Such items' prices should not be collected.

3.7.11 Conditional sales

Sometimes the sales of particular goods can be conditional as when cooking oil was sold in package with other goods, or the customer had to buy other goods of certain value before being allowed to buy cooking oil. In this case record the cooking oil price, and do not bother about the buying requirements.

3.7.12 Bonus offers

If the bonus consists of an extra amount of the item and the total quantity remains within the range of sizes in the specification, then it is possible to note both the new size and that it is a sale price. But if the bonus consists of providing some other item "free" along with the item bought, then collect the price of the item sold.

3.7.13 Discounts

If a discount is given on cash purchase, then the net price should be collected. But, if purchases have to accumulate to a certain amount before any rebate is gained, then ignore the rebate. Also ignore discounts offered to a section of consumers like trade discount.

3.7.14 Substitution

Substitution of item variety has to take place in the following cases:

- an item variety is known not to remain available from next month onwards
- an item variety is becoming less and less popular as compared to one of its competitors e.g. Orange crush vs Quench
- an item has been on sale for more than three months i.e. has to be substituted on the 4th month

In order to substitute, there has to be some other item varieties to replace it. Shortage of sugar for instance is not substitutable.

Note that the representative item can only be changed by the Prices Section, and the change will be effected on all provinces since this makes the fixed "basket" of goods/services.

Substitution of item varieties should not be done for:

- Item varieties not currently available, but likely to be in stock again i.e. items temporarily out of stock, for up to three months only. This you need to confirm with your contact person. Price code 4 is used to denote such a brand.
- Seasonally unavailable items like fresh fruits and vegetables.

Note that there is NO need to go back to the old item variety when it comes back to stock except when the new item variety goes out of stock. This enables a smooth flow of the same commodity.

When substitution is to be made, try to do it so that overlapping prices are obtained. There should be both the current price for new item and its previous price recorded.

Example: If for a certain item three varieties have been selected (A, B, and C). Suppose that at time t the price collector has to select a new variety, D, instead of A which has disappeared from the shelves, and has verified that it is not temporarily out of stock.

| Month | t-1 | t |
|-----------|------|------|
| <hr/> | | |
| Prices | | |
| Variety A | 5.00 | - |
| Variety B | 4.00 | 4.00 |
| Variety C | 6.00 | 6.00 |
| Variety D | (?) | 8.00 |

If the situation is as in the table above, the price of variety A in period t-1 is probably not comparable with the price of variety D in period t. Try therefore to ask for the price of the new variety D for the previous month if it is available so that the price relative can be calculated.

3.7.15 Editing of Completed Forms/data files

The price collector must quickly go through all the price forms before leaving the shop to check on accuracy and completeness. The team leaders should go through all completed forms and sign in

front of the enumerators' signature. Verify the correct use of Price codes and reasonability of substitution. Spot checks may be carried out during data collection. When the forms are handed in, quality control i.e. revisit to verify work is as recommended on randomly selected shops every month.

The Provincial Supervisor must check the work from the field, furthermore, assess the quality of work and alert Prices Section through a report of any problems encountered and changes effected.

3.7.16 Rejected observations

It is important to make checks before sending the forms to Prices Section or data to the saver. Make sure you always have the prices and your other notes on item specifications for the previous period of collection available. Make it a rule always to check the price changes if this is significantly higher than other similar commodities. If the price observation appears not to be correct, the price collector will have to seek some further clarification from the outlet manager and note such explanation explicitly for the benefit of the Prices Section. Price observations that show an abnormal difference from previous observations will be rejected by Prices Section.

3.7.17 Other information to and from ZIMSTAT and the field offices

The main flow of information to the head office, contains forms where the prices are recorded. The Prices Section must be informed on all other matters happening. Thus, the Section needs reports on any of the following when relevant.

3.7.17.1 Outlets coverage

- under the headings name of shop show name and forms covered
- dates of coverage

3.7.17.2 Co-operation and outlets developments

- problems encountered and resolutions taken on cooperation
- new developments on outlets/stocks, close downs, transfers, line of trade etc.

3.7.17.3 Quality control checks carried out and findings

- assessment of the quality of work

3.7.17.4 Price trends

- overall assessment of price trends
- items which changed prices and explanations of price movements including sales
- items out of stock

A chosen variety of goods might disappear or the sales decline. It is an important part of the work of the supervisors to ensure that the collectors select suitable substitutes in time. This means that the field office must accept that part of its task is to follow what is going on in retail outlets, to be aware of new shopping trends and availability of new products. The once selected varieties and outlets should be updated whenever necessary to reflect changes in consumption patterns. Hence

the field staff need to read trade journals, newspapers, talk to retailers and wholesalers and know about the appearance of new shops or the decline of old shops or markets. Overall, there is a need to be price conscious and observant of price trends prevailing. One needs to take note of price changes announced in the media and compare these with collected prices.

3.8 Price codes

The Price codes are

0. Normal price change
1. Change of item variety or quantity
2. Ordinary sale price/ Special offer
3. Return to ordinary price after sale price
- 4i. Item variety is temporarily out of stock for the “i”th time

Price codes will make it easier for those who examine the forms to decide whether or not a price recorded is to be approved. They form an important description and help the Prices Section assess and explain price changes. They need to be mastered beyond doubt of what each means.

Price codes should in principle always be noted

Price code zero (0) is used when the same commodity is priced and the price either a normal change (i.e. the change is not due to sale, discounts, or special offer) or does not change. A comment may be needed if the change either way (increase or decrease) is queer.

Price code 1 is to be used on substitution i.e. for change of item variety or quantity. It should be noted even if the price and quantity of the new variety is the same as the old one. *Note that substitute commodity on sale must not be chosen.* Always record the price of the new commodity for the previous month if available.

Price code 2 is to be used when the item is sold at sale price or clearance price that include cash discounts promotions and special offers. When the commodity has been on sale for three months, you have to choose a new item variety on the 4th month if it is still on sale.

Price code 3 is to be used when prices have returned to ordinary price after a sale. Price code 3 cannot follow any other code other than Price code 2.

Price code 4i

This code is recorded against the price of an *item variety* that is *temporarily* out of stock at the time of price collection after verifying with the shop assistant that the item will be back in stock in the near future. Price code 4i should not be maintained for more than *three months* (beyond Pcode 43).

All prices recorded should be accompanied by a price code in the Pcode column.

Items appearing for the first time in that shop must have Pcode zero and a comment should be given in the space for comments.

3.9 Instructions on particular items

These instructions tell you how to select and specify items that require far more specification than what is available on the form. Remember that on the forms you are allowed to change brand and quantity if the varieties already specified are no longer the most popular ones but always consult your supervisor and comment. For those items listed and commented upon below, you have to take into account the detailed instruction on how to select the varieties to be priced. You have to record a basic description on the forms, but you also have to record for yourself a detailed specification in a special notebook. The detailed specification is needed in order to collect prices for the same items.

Fresh fruits and vegetables price collection from vendor's market

Certain items require measurement to determine the mass. You are provided with a household scale for such use. This technique should generally be used on those items where price variability is high such as the fresh fruit and vegetables group. When you approach a vendor's market you should first of all make general observations to see whether the items you want to price and weigh are available. You record the price and weight of that particular item on the form you will be provided with. You then go to the second item say mangoes, for its record 1, when you have priced and measured items on vendor I you then go to record 2, 3 and so on depending on the size of the market until all available items have at most 4 recordings. You may cover many vendors to have the required 4 recordings per item since one vendor may not stock the whole range of items.

Remember that you must get the price of an item before weighing it.

The recordings must be in kilograms and in dollars, e.g. the price and weight of mangoes must be recorded as 0.50 and 0.700 kg respectively. Do not attempt to come up with an exact kg of an item, e.g. 1 kg of mangoes but weigh whatever heap, bundle, pocket of fruit and vegetables the vendor has.

Vary the heaps among the vendors. If you record the price and weight of three oranges for record I, then record say five oranges for record II, etc.

Always remember to zero the scale before weighing the next item.

If less than four vendors on the market have a particular item you may as well have more than one recording from one vendor in order to have the four records in the end. The columns for total price, total weight and price per kg have to be completed. Also note that fresh fruits and vegetables cannot be substituted.

Clothing

For your own records you have to make note on material, brand name, type of use, size and if the material is imported or domestically produced.

When a new-season fashion item is introduced, do not avoid it. In particular for women's clothing you have to note whether it is current fashion or not. Other things you may also need to observe are sleeveless or short (long) sleeve, collar or not, padded shoulder or not, how the piece is buttoned, etc.

Co-operate with the shop manager and choose some items (not all) to capture prices of new-fashion clothing. Follow the price for this piece of clothing as long as it is on the shelves. When a new fashion is introduced you should be able to select this new item and be able to ascertain whether or not the new one is of the same quality as the one it replaces.

Footwear

State the following characteristics : styles to be included (for high fashion shoes), material used for uppers and for sole, sole sewed or glued, high or low heel, make/brand, country of origin (imported or domestic made), high/medium/low priced. Record the shop code for the shoes if they are available.

Furniture

State brand name, type or wood or material, number of pieces, inclusion of mirrors, size, number of drawers, etc. Make the description distinct and easy to follow.

Motor spare parts

Firstly request to know what model of vehicle the dealer specialises in i.e. whose parts they stock regularly. Then give specification including sizes and car parts numbers are necessary.

The other part of the training includes the training of the field staff on how to use the tablet in data collection. The following information was covered in all the three Provinces during the one day training sessions.

4.1 Training Field Staff on the use of Tablets

4.1.1 General Information

This Consumer Price Survey User’s Manual provides the information necessary for the enumerator to effectively use the mobile data collection system.

4.1.1.1 System Overview

ZIMSTAT use mostly manual, paper-based data collection methods for specialized surveys, which provide the bulk of statistical data. Paper-based methods involve printing of the paper questionnaires, transporting them across to the fieldworkers, and getting them back to the head office. Due to these and other problems, computer assisted interviewing (CAI) methods are increasingly replacing pen-and-paper methods of survey data collection.

The advantages of CAI methods include: automatic transfer of the survey to central database; automatic validity checks; automatic data cleaning, more control of question sequencing by the interviewer; easier to scale up (or down) and adapt for other surveys; more privacy due to the reduction in intermediate processing and cleaning, and related reduction in operators involved.

One of the disadvantages of CAI methods is the initial and running costs of computer hardware and related infrastructure. However, the increasing power of handheld devices such as mobile phones, tablets and personal data assistants (PDAs) has resulted in affordable CAI alternatives.

The Consumer Price Survey mobile data collection system intends to reduce the time lag between data collection and publication of results.

4.1.1.2 Acronyms and Abbreviations

| | |
|---------|-------------------------------------|
| CAI | Computer Assisted Interviewing |
| CPS | Consumer Price Survey |
| FTP | File Transfer Protocol |
| PC | Personal Computer |
| PDA | Personal Digital Assistant |
| GPS | Global Positioning System |
| ZIMSTAT | Zimbabwe National Statistics Agency |

4.1.2 System Summary

Consumer Price Survey will, for the first time collect data through the mobile data collection devices. It will be on run a parallel basis with the traditional pen and paper data collection method.

4.1.2.1 System Configuration

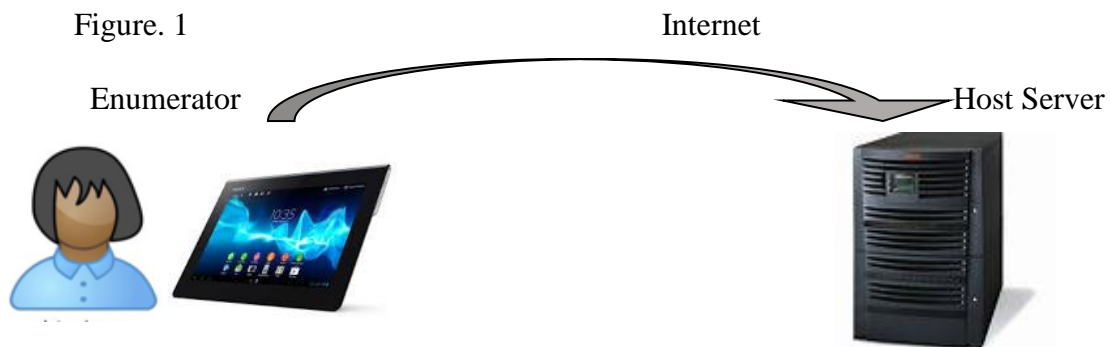
The system is running on an Android version 4.4.2 Tablet. An operator can use the keyboard that comes with the tablet or optionally use the in-built keyboard (which is more user-friendly). The CPS Data Entry Application was developed using CSEntry. It allows you to enter data into one or more data files.

4.1.2.2 Data Flows

The data captured from the field is sent directly to the central server through the File Transfer Protocol (FTP). The FTP is a standard network protocol used to transfer files between computers over the Internet. It connects anonymously as the tablets are configured to the server to allow data to flow.

CSEntry will first look on your file system for the synchronization file. The data should be sent to the server at the end of each day after fieldwork.

Figure 1 is a diagram showing the flow of data from field to the server.



4.1.2.3 User Access Levels

The data can only be accessed by the user himself/herself and the IT staff member who have the rights to access the server. After concatenation the data is sent to the Prices Section for further processing. However, the team leader or provincial supervisor can request to see the captured data on the tablet for spot checks in the field.

4.1.2.4 Using the Tablet

What is a tablet?

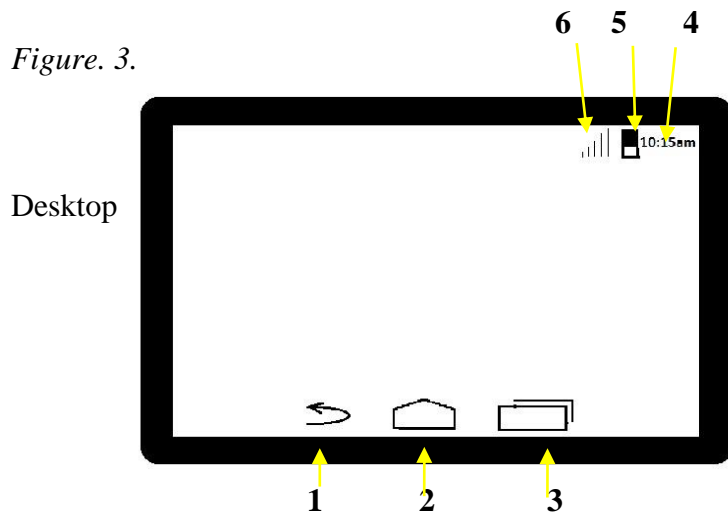
A tablet is a ultra-portable computers which can run a variety of software programs. Equipped with a touch screen interface, a tablet PC usually has a software application used to run a virtual keyboard. However, many tablet PCs support external keyboards. Although earlier tablet computers required a stylus, modern tablets are operated by fingers, and a stylus is an option. A tablet PC is also equipped with an accelerometer, which allows a user to view display screens in portrait or landscape mode.

For this CPS survey, we use a system of program developed using CSPro, which is a data entry and management software designed for surveys and censuses.

Figure. 2.



Figure. 3.



- 1 Back (returns to last interface)
- 2 Home
- 3 Recent Apps
- 4 Current time
- 5 Battery status
- 6 Network signal

Power button usage

Start up: Press the power button and hold for 2 seconds.

Shutdown: Press the power button and hold for 2 seconds ► tap power off ► tap OK

Lock screen: Short press power button to lock screen and unlock screen

Accessories

The tablet is accompanied with the following accessories:

- keyboard/cover
- Power charger
- USB charger
- Solar panel (1.5watt)

Taking Care of the Tablet

Keep out of the heat and sunlight

Don't leave your tablet out in direct sunlight for long periods of time. Of course, it's all right to bring your tablet outside while taking GPS coordinates; just make sure you aren't in direct sunlight for too long.

Don't drain battery

It damages your tablet to let the battery drop below 20%. Frequently charging your battery is better.

Protect screen from dirty

Protect the screen from greasy fingers, dirty hands, and fingernail scratches. These issues can deteriorate your screen over time and hinder usability. The screens work by running a small charge through your skin so that it knows where you are touching. So a regular pen or pencil will have no effect, it will just scratch or stain your screen.

Avoid water exposure

Avoid direct exposure to water, sand, dust and other environmental hazards.

Do not drop or compress tablet

The tablet will often have to be stored in bags, and it is in bags where they receive most of their damage. If they have things piled on top of them, they become bent, warped or broken. You need to keep in a clear sight (especially when travelling) that will stop the inevitable damage from pressures.

Avoid exposure to thieves

Keep the tablet out of sight of suspected thieves as much as possible.

No external devices connection

Do not connect personal memory cards or sticks to the tablet as there is a risk bringing in viruses.

No Wi-Fi

Never connect to Wi-Fi for communication as the purpose of having the device is for mobile data collection only.

4.2 GETTING STARTED

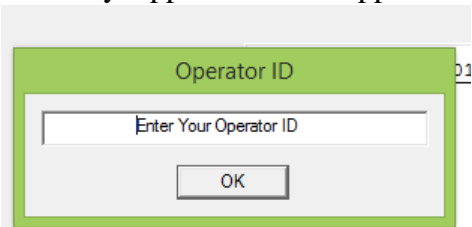
This section provides a general walkthrough of the system from initiation through exit.

4.2.1 Logging On

Double click (tap) on the CSEntry icon as shown below:



An Entry Application will appear where you click on **consumer**.

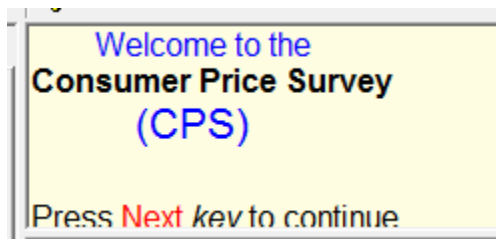


You then enter your operator ID which you will have been allocated and click OK. An Operator ID identifies you with your data you are going to collect.

4.2.2 System Menu

Click on **Start New Case**.

A welcoming screen will appear as shown below. Click **Next** button or arrow '>' key on the right side to continue.



NB: Whenever you want to navigate back use back arrow '<' key.

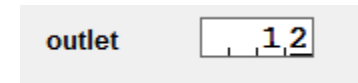
[Consumer System]

Geocode: Capture an 8 digit Geocode which you are provided for that Enumeration Area.

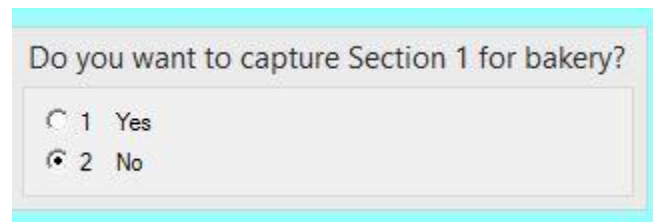
A screenshot of a form field labeled "geocode" with an 8-digit input box. The input box contains the number "12" in the last two positions, with vertical lines indicating the remaining six positions are empty.

Click **Next** button or > on the right side to continue.

Outlet Code: Enter an Outlet code as provided, eg '12' then press Next button.

A screenshot of a form field labeled "outlet" with a 2-digit input box. The input box contains the number "12".

Section Code: Select '1' for Yes if there are items to capture in a specific section, and '2' for No items.

A screenshot of a dialog box with the title "Do you want to capture Section 1 for bakery?". It contains two radio button options: "1 Yes" and "2 No". The "2 No" option is selected.

Item Code: Once you select ‘1’ for yes then the Item Codes automatically appear on the template in sequence on by one, eg 01.1.1.2.01 for Biscuits 200g Plain-Marie Lobels.

| | Section 2P1 to Section 2P6: Groceries: Groceries item number | Groceries Itemcode | Groceries Item description |
|----|---|-----------------------|--|
| 1 | 1 | 01, 1, 1, 2, 01 | Biscuits 200g-plain-marie - Lobels |
| 2 | 2 | 01, 1, 1, 2, 02 | Biscuits500g-loose-Lobels |
| 3 | 3 | 01, 1, 1, 2, 03 | Biscuits200g-lemon creams-Lobels |
| 4 | 4 | 01, 1, 1, 2, 04 | Biscuits200g-assorted-Iris |
| 5 | 5 | 01, 1, 1, 3, 01 | Flour2kg-self raising-Gloria |
| 6 | 6 | 01, 1, 1, 3, 02 | Flour2kg-plain-Gloria |
| 7 | 7 | 01, 1, 1, 4, 01 | Maize meal10kg-super refined-Pearlenta |
| 8 | 8 | 01, 1, 1, 4, 02 | Maize meal10kg-roller meal-Red seal |
| 9 | 9 | 01, 1, 1, 5, 01 | Spaghetti500g-MF |
| 10 | 10 | 01, 1, 1, 5, 02 | Macaroni375g-MF |

Item Brand: Capture the brand of the item on the space provided.

| |
|-------------------|
| item brand |
| |

Current Price: Enter the price of the item (in US dollars and cents, 2.45) on the space provided then press Next button.

| |
|----------------------|
| Current Price |
| Current price |
| 2 . 4 5 |

Price Code: Select the appropriate price code from the given list.

| Bakery Price code | |
|-------------------------|---|
| <input type="radio"/> 0 | 0. Normal price change |
| <input type="radio"/> 1 | 1. Change of item variety or quantity |
| <input type="radio"/> 2 | 2. Ordinary sale price/ Special offer |
| <input type="radio"/> 3 | 3. Return to ordinary price after sale price |
| <input type="radio"/> 4 | 4. Item variety is temporarily out of stock for the |

Previous Price: Enter the previous month price of the item.

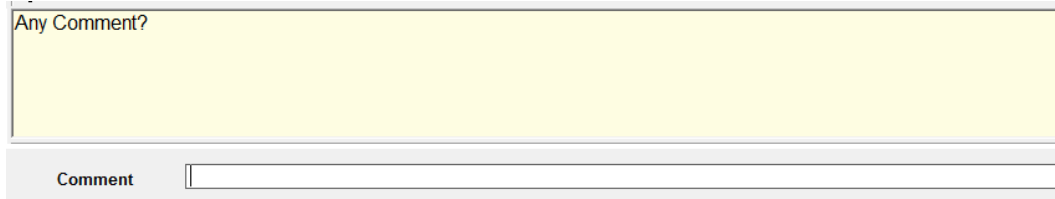
Quantity and Unit: Enter the quantity of items. Select the unit of measurement. If the item has no unit of measurement, you click on 'NA' for not applicable.

| Groceries Unit | | | | | |
|--------------------|---|--|--|----------------------|--|
| Groceries Quantity | | | | Groceries Item brand | |
| 1 | | | | LOBELS | |
| 1 | | | | BENA | |
| 1 | 1 | | | LOBELS | |
| 1 | 1 | | | LOBELS | |
| 1 | 2 | | | GLORIA | |
| 1 | 2 | | | GLORIA | |
| 1 | 2 | | | RED SEAL PEARLENTA | |
| 1 | 2 | | | RED SEAL | |

Price Code: This shows some price variations from the previous month. Select the price code from the list.

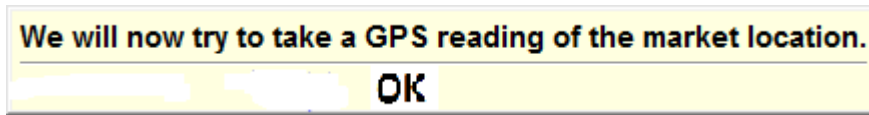
| Groceries Current price | Groceries Price code | | | |
|-------------------------|----------------------|--------|--|-----------------------|
| 0,-65 | 0 | | | |
| 1,-2,5 | 0 | | | |
| 0,-89 | 0 | | | |
| 1,-05 | 0 | 1,-05 | | |
| 1,-99 | 0 | 1,-85 | | NORMAL PRICE INCREASE |
| 2,-35 | 0 | 2,-35 | | |
| 7,-19 | 0 | 7,-20 | | NORMAL PRICE DECREASE |
| 4,-19 | 2 | 4,-69 | | ON PROMOTION |
| 1,-2,5 | 0 | 1,-2,5 | | |
| 0,-00 | 4 | 0,-00 | | OUT OF STOCK |

Comments: The system will prompt you to enter some comments if there are any worth noting down for each specific product or service. If not, simply press Next to move to next item or field.



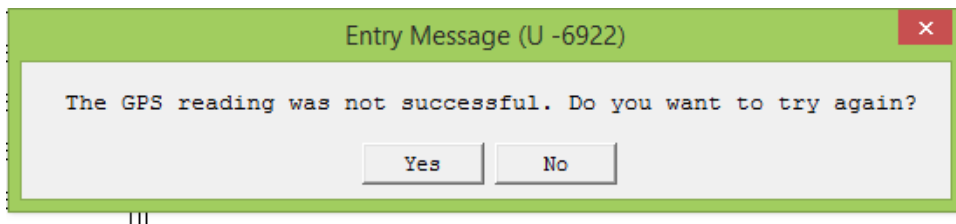
Date & GPS:

After capturing all the required items from the Outlet, you then walk just outside the outlet door (in open space). Click 'OK' after a message "We will try to take a GPS reading of the outlet location" has been displayed.



Obtaining GPS Location. Take your time as the GPS coordinates are being taken.

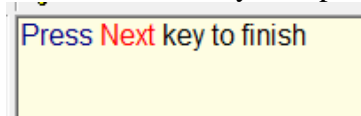
If the GPS has not successfully recorded a message below will be displayed.



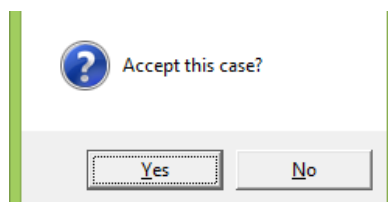
Click OK after a message of successful GPS capturing. Some 2 coordinates (Longitude and Latitude) will appear on the screen. Simply press Next and Next again to go to the last field.

4.2.3 Exit System

To exit from the system press Next button then ...





Click **Yes** to save the data and exiting the system.



4.2.4 Sending Data to Server.

Make sure that there is network (NetOne) and enough data bundles to send the data to the central server.

- At the bottom of the screen click on the arrow  to **Entry Applications** window.
- At the top right corner of the screen is an icon  where you select **Synchronize**.
- Select App to synchronize: click **consumer**.

You are advised to send data once a day after collecting from the outlets at the end of that day.

4.3 Technical Document

4.3.1 Introduction

This Consumer Price Survey's Technical Support Document provides the information necessary for the IT support personnel/ system developers to effectively configure or troubleshoot problems relating to the mobile data collection system.

4.3.2 System Configuration

The CPS system is running on an *Android version 4.4.2* Tablet. An operator can use the built-in Keyboard (Auto-keyboard) or External keyboard as an option, but the automatic built-in keyboard is more user friendly.

The specification of Tablet is:

Android version 4.4.2

Baseband version –MOLY.WR8.W1315.MD.WG.MP.V36.P53

Kernel version – 3.4.67

Internal memory – 4.51 GB

1.2 Servers Specifications

HP ProLiant ML350 G6 2.26GHZ QUAD CORE sff base server

Item specifics

| | | | |
|------------------------|----------------------------|-----------------|------------|
| Condition: | | Brand: | HP |
| Processor Speed: | 2.26 GHz | MPN: | 487930-001 |
| Number of Processors: | 1 | Model: | ML350 |
| Memory Type: | DDR3 SDRAM | Form Factor: | Tower |
| Memory (RAM) Capacity: | 6 GB | Processor Type: | Xeon |
| RAID Levels: | 0, 1, RAID 5+0, RAID 10, 5 | | |

2. Back-up Server:

HP ProLiant ML150 G6 Entry - Xeon E5502 1.86 GHz - 2 GB - 160 GB

Processor / Chipset

Number of Cores :Dual-Core

64-bit Computing

CPU Upgradability

Chipset Type :Intel 5500

Front Side Bus :800 MHz

Cache Memory

Installed Size :L3 cache - 4 MB

Cache Per Processor :4 MB (2 x 2 MB)

RAM: DDR3 SDRAM - ECC

Memory Speed 1066 MHz

Memory Specification Compliance PC3-10600

Form Factor DIMM 240-pin

Configuration Features

RAM Supported PC3-10600 - 24 GB – unbuffered, PC3-10600 - 48 GB - registered

Hard Drive: Interface Type

SATA 3Gb/s ,Spindle Speed :7200 rpm

Graphics Controller

Type :integrated

Video Memory :32 MB

Video Interfaces :VGA

Networking

Type integrated

Interface (Bus) Type :PCI Express

Ethernet Controller :HP NC107i

Data Link Protocol :Ethernet, Fast Ethernet, Gigabit Ethernet

1.3 System Development

The system was designed using CSEntry which is an Android version of Census and Survey Processing System (CSPro). CSPro is a software package for entering, editing, tabulating, and disseminating data from censuses and surveys. CSPro can be used to process data from censuses and surveys, both small and large such as Housing and Population, Demographic Characteristics, Health and Nutrition, Agriculture and Labour Force.

1.4 Data Flow

The data captured from the field is sent directly to the central server through the File Transfer Protocol (FTP). The FTP is a standard [network protocol](#) used to transfer files between computers over the Internet. It connects anonymously as the tablets are configured to the server through a Public IP Address to allow data to flow from the tablet to Central Server.

In the Android environment a user will only be able to run binary data entry applications ([.pen](#) files). This .pen file along with the .pff runtime script, constitute the two files needed to run a data entry application on an Android device.

CSEntry synchronisation scripts allow for the transfer of data from the Android tablet to the Central Server.

FTP synchronisation

The Connection section contained the following attributes:

[Connection]

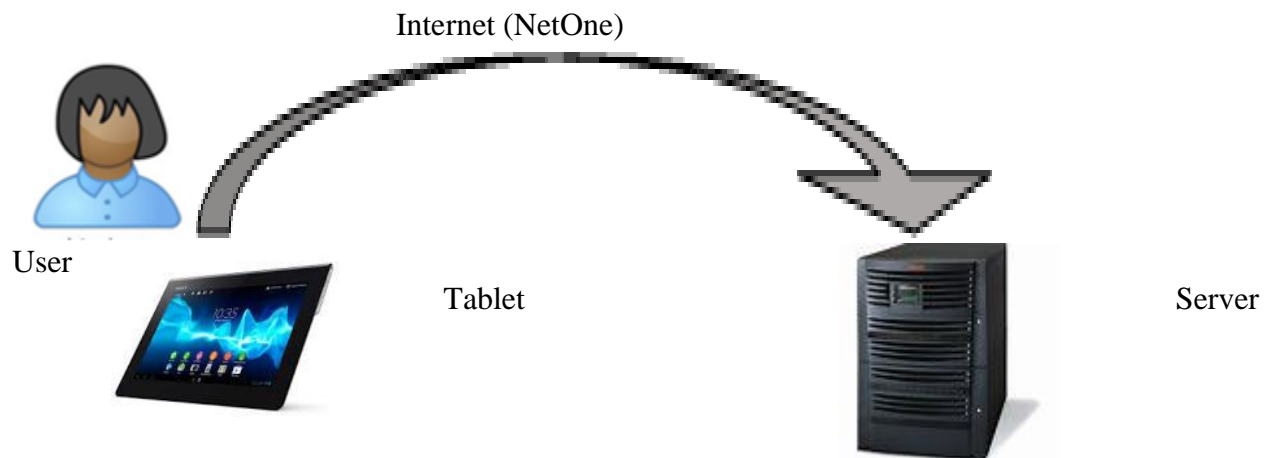
Type=FTP

Host=ftp://143.79.76.42

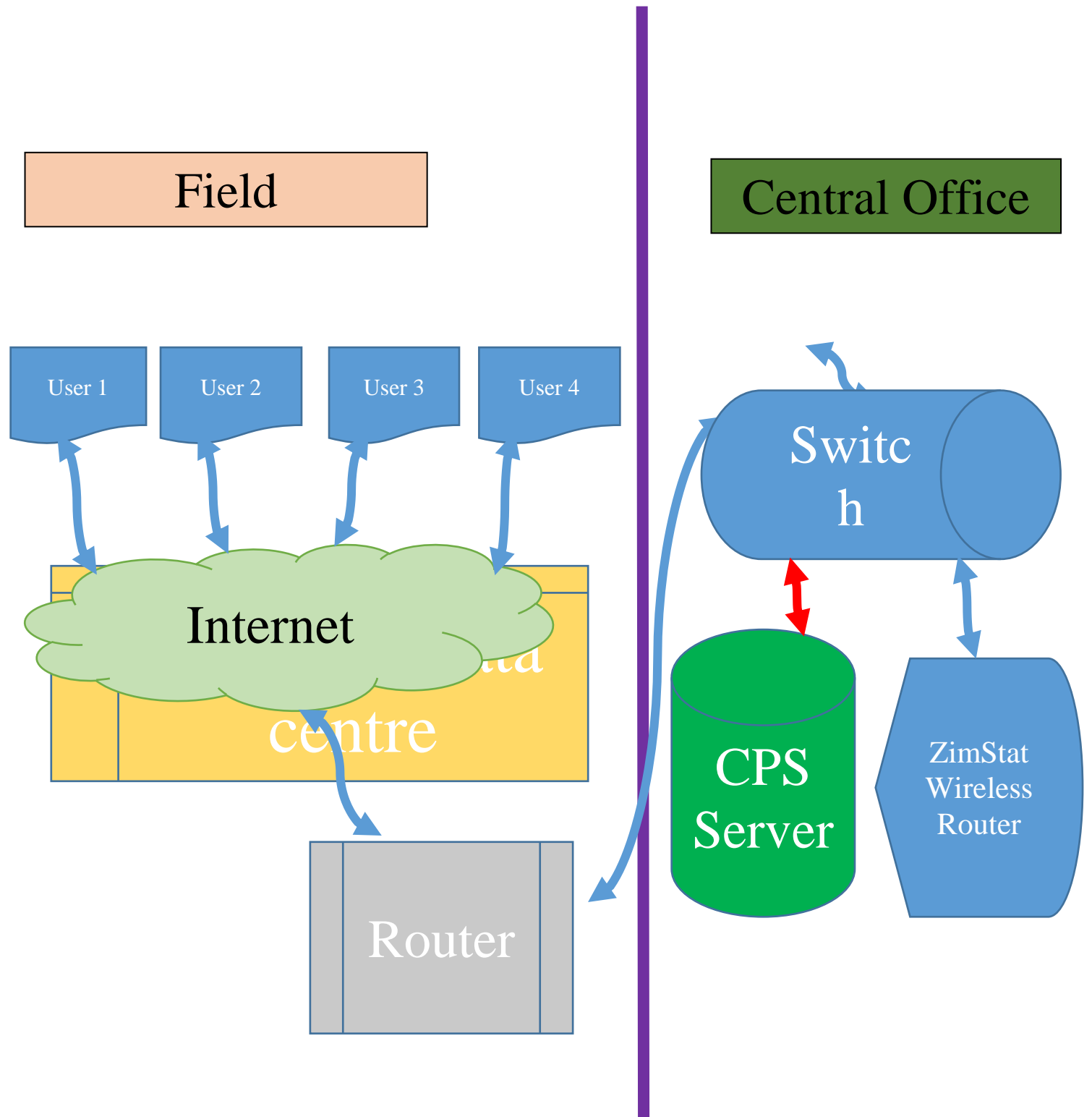
Username= *CSPRO1*

Password=*****

Below is a diagram showing the flow of data from field to the server.



NB: NetOne is a Mobile Service Provider



1.5 The File Transfer Protocol (FTP)



This is a standard network protocol used to transfer computer files from one host to another host over a TCP-based network, such as the Internet. FTP is built on a client-server architecture and uses separate control and data connections between the client and the server.

1.5.1 What is FTP?

The FTP (File Transfer Protocol) utility program is commonly used for copying files to and from other computers. These computers may be at the same site or at different sites thousands of miles apart. For CPS project, files are being copied from the Tablet to the Head Office Server.

For the purposes of this Project, the *local* machine refers to the machine you are initially logged into (Tablet), the one on which you type the **ftp** command. The *remote* machine is the other one, the one that is the argument of the **ftp** command.

1.5.2 Communication and data transfer

FTP may run in *active* or *passive* mode, which determines how the data connection is established. In both cases, the client creates a TCP control connection from a random, usually an unprivileged, port N to the FTP server command port 21. In active mode, the client starts listening for incoming data connections from the server on port M. It sends the FTP command PORT M to inform the server on which port it is listening. By default, M=N. The server then initiates a data channel to the client from its port 20, the FTP server data port. In situations where the client is behind a firewall and unable to accept incoming TCP connections, *passive mode* may be used.

In this mode, the client uses the control connection to send a PASV command to the server and then receives a server IP address and server port number from the server, which the client then uses to open a data connection from an arbitrary client port to the server IP address and server port number received.

1.5.3 Login

FTP login utilizes a normal username and password scheme for granting access. The username is sent to the server using the USER command, and the password is sent using the PASS command. If the information provided by the client is accepted by the server, the server will send a greeting to the client and the session will commence. If the server supports it, users may log in without

providing login credentials, but the same server may authorize only limited access for such sessions.

Setting up FTP Credentials on tablet:


It is very easy to set up FTP connection on tablet so that there will be connection to remote server:

Steps:

Open the system

Make sure there is network (Netone) and enough bundles to gain internet access

At the bottom of the screen click on the back arrow  to **Entry Application** window

At the top right corner of the screen where there is **Synchronize**,  Click Add New

Select FTP server from New **Synchronization window**

Enter FTP Server Details in the format:

ftp://[Public IP address]

Username: cspro

Password: [the provided password]

Tap next and select the .Pen file from the Consumer folder.

This will connect direct to server and show you all shared folders on the server,

Select the ***CPI_received*** folder and province where the tablet will work under.

Tap the next Tab and this will **Create** the Link, (**Consumer**), i.e. the cps link.

- Each tablet will Create own folder once is connected to the Server and that folder name is given automatically by the gadget(Android name/ email address on each gadget), if there is no email address created on tablet, the name is given as ***anonymous***

After you set up the connection to the server next time the synchronisation process will not ask for the user credentials. The system will save all username and password, up and until you reinstall the system or Uninstall the CSentry application.

Anonymous FTP

A host that provides an FTP service may provide anonymous FTP access. Users typically log into the service with an 'anonymous' (lower-case and case-sensitive in some FTP servers) account when prompted for user name. Many FTP hosts whose purpose is to provide software updates will allow anonymous logins but not for CPS project.

1.6 Taking Care of the Tablet

- **Keep out of the Heat.** Don't leave your tablet out in direct sunlight for long periods of time. Of course, it's all right to bring your tablet outside while taking GPS coordinates; just make sure you aren't in direct sunlight for too long.
- **Don't Drain Battery.** It damages your tablet to let the battery drop below 20%. Frequently charging your battery is better.

- **Protect screen from dirty.** Protect the screen from greasy fingers, dirty hands, and fingernail scratches. These issues can deteriorate your screen over time and hinder usability. The screens work by running a small charge through your skin so that it knows where you are touching. So a regular pen or pencil will have no effect, it will just scratch or stain your screen. It is advisable to put screen guards before using any tablet.
- **Avoid water exposure.** Avoid direct exposure to water, sand, dust and other environmental hazards.
- **Do not drop or compress tablet.** The tablet will often have to be stored in bags, and it is in bags where they receive most of their damage. They have things piled on top of them, and they are bent and warped. You need to keep in a clear sight that will stop the inevitable damage from pressures.
- **Avoid exposure to thieves.** Keep the tablet out of sight of suspected thieves as much as possible.
- **No external devices connection.** Do not allow enumerators to connect personal memory cards or sticks to the tablet. And you any System developer want to do so, He/ She must make sure that any external storage device to is free from viruses.
- **No wifi.** Never connect to Wi-Fi for communication, but as an IT personnel from Head Office you might need to do so if you want powerful connection for you to configure it to the server.

Server Side:

To see data receive from the tablets:

- Open Drive I//CPi_Receive
- All CPS data files from the field was set to be received in the CPi_receive folder.
- A unique identification was created for each tablet and the data file names had the same identification.

NB: the Server Login password was given as per request

1.7 How to setup Server:

Installing and enabling IIS and FTP on Windows Server 2008 R2

1. Open Server Manager, go to Roles and click “Add Roles”
2. In the Add Role Wizard, select Web Server (IIS) role to install
3. Click Next until you reach Select Role Services page, leave the default and check FTP Server, FTP Service and FTP Extensibility at the bottom. Click Next, follow the wizard and finish the role installation.
4. Now open IIS Manager from Start > Administrative Tools, expand the server, right click Sites, and click Add FTP Site, give it a site name and configure the physical path as needed.
5. Configure Binding and SSL. In our case, we’d like to bind to all unassigned IP addresses and do not use SSL.

6. Enable Basic Authentication and configure authorization. In our case I'll start with allowing All users both Read and Write permission as long as all users on the server are password protected.

Click Finish to finish the configuration.

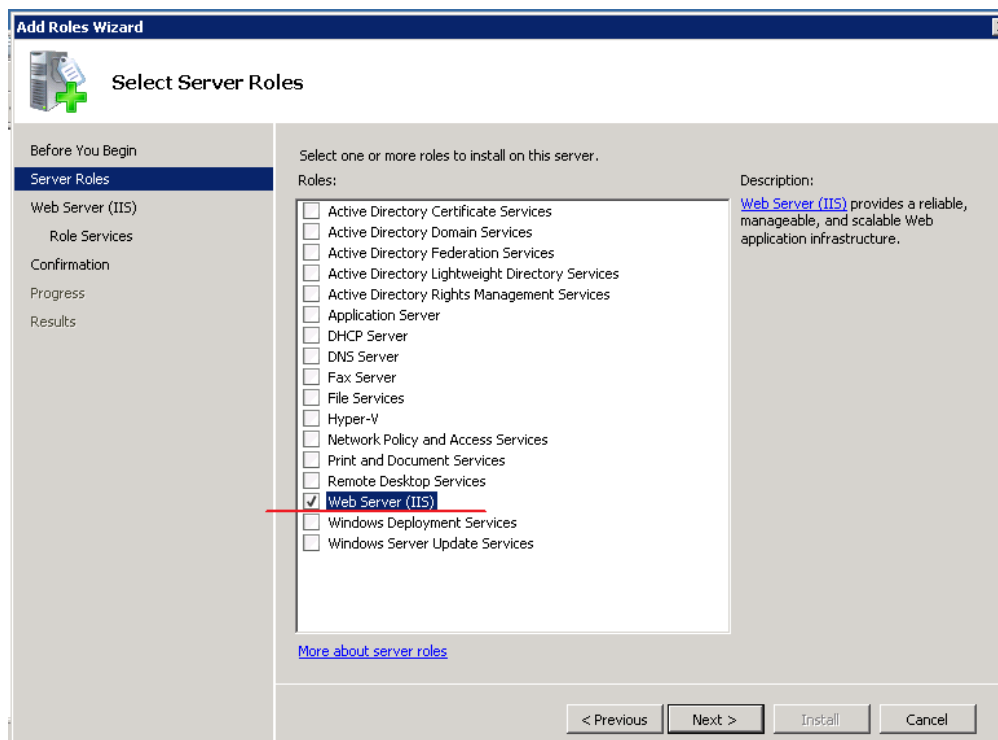
7. Open Windows Firewall with Advanced Security from Start > Administrative Tools, go to Inbound Rules in the left pane, and create a new rule by clicking New Rule in the Action Pane, select Port and click next.

8. Apply this rule to TCP port 21, and click Next

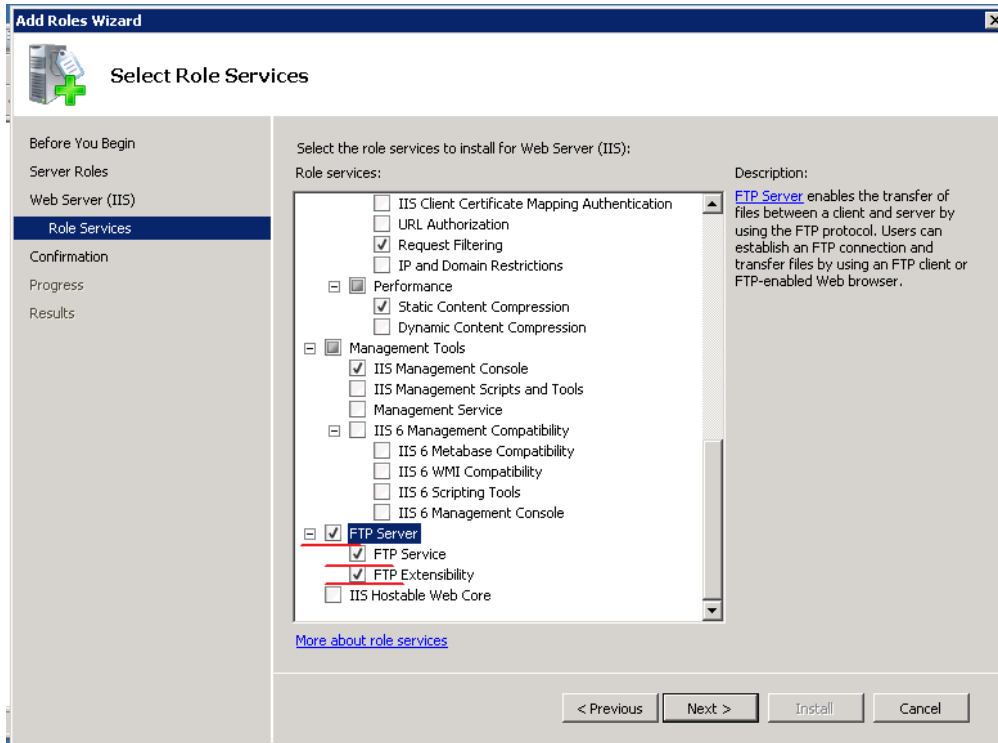
9. Keep the default configure for the rest of steps to Allow the connection and apply it to all profiles, name the rule and finish the wizard.

10. Now the FTP should be up and running, test the connection to confirm and you're good to go.

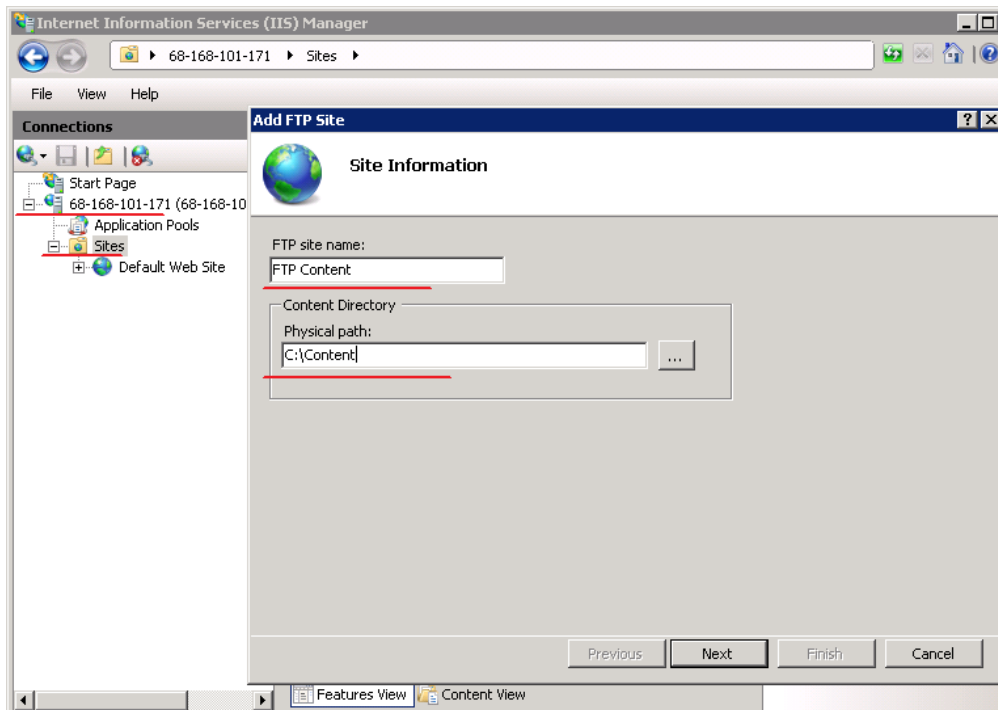
- Open Server Manager, go to Roles and click "Add Roles"



- Click Next until you reach Select Role Services page, leave the default and check FTP Server, FTP Service and FTP Extensibility at the bottom. Click Next, follow the wizard and finish the role installation.




- Now open IIS Manager from Start > Administrative Tools, expand the server, right click Sites, and click Add FTP Site, give it a site name and configure the physical path as needed.



- Configure Binding and SSL. In our case, we'd like to bind to all unassigned IP addresses and do not use SSL.

Add FTP Site [?] [X]

 **Binding and SSL Settings**

Binding

IP Address: Port:

Enable Virtual Host Names:
Virtual Host (example: ftp.contoso.com):

Start FTP site automatically


SSL

No SSL
 Allow SSL
 Require SSL

SSL Certificate:

- Enable Basic Authentication and configure authorization. In our case I'll start with allowing All users both Read and Write permission as long as all users on the server are password protected.

Add FTP Site [?] [X]

 **Authentication and Authorization Information**

Authentication

Anonymous
 Basic

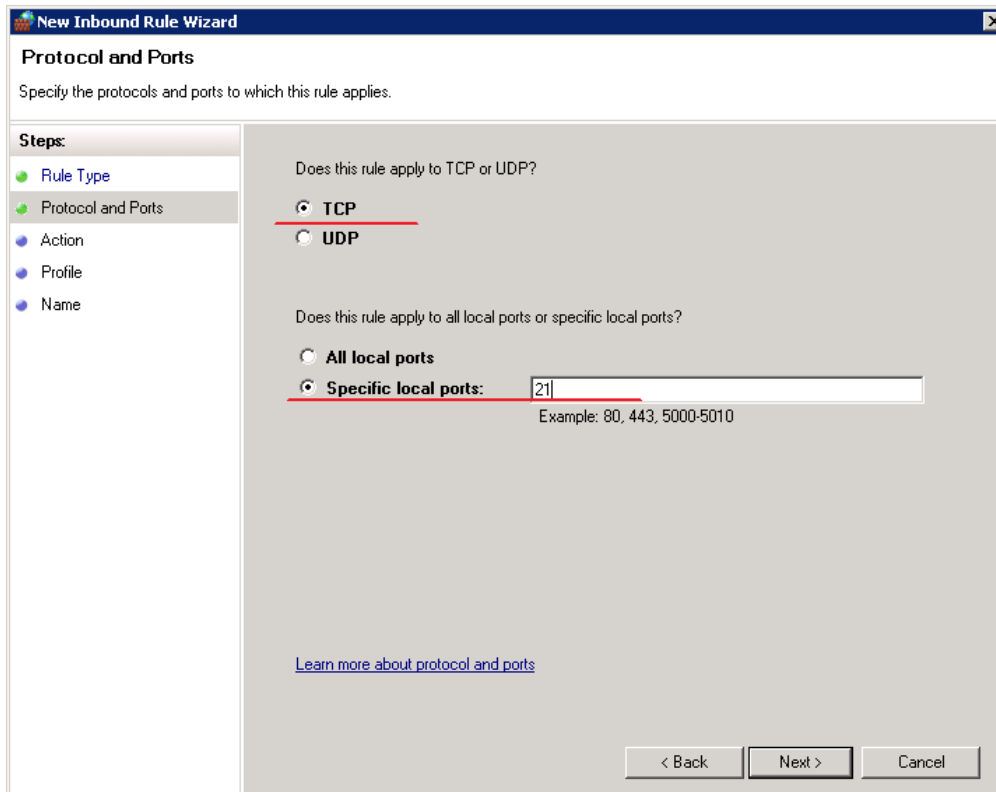
Authorization

Allow access to:

Permissions

Read
 Write

- Open Windows Firewall with Advanced Security from Start > Administrative Tools, go to Inbound Rules in the left pane, and create a new rule by clicking New Rule in the Action Pane, select Port and click next.
- Apply this rule to TCP port 21, and click Next



- Keep the default configure for the rest of steps to Allow the connection and apply it to all profiles, name the rule and finish the wizard.

Solution benefits

Below listed are the solution benefits realized from the use of the system.

Data security: - This functionality is realized by the use of an MS SQL database that is going to be used for the storage of the data. MS SQL database comes with a security policy that can be taken advantage of to ensure the data security.

Data Integrity: - This benefit is again realized from the use of the MS SQL database and the system's parameterization structure.

Easy backup of record: - Databases can be easily backed-up recommendable off-site without much effort put to it. In case of any accident restoration can be done as of last backup done.

User control: - Each user will have a user name a password and user roles assigned to them. This makes it easy to know who is doing what in the system. Audit issues become less of a hustle.

4.4 Consumer Price Survey Data Processing

The CPS data was captured using CSPro for Android on tablets. The data was then sent to the central server after checking for errors by the Team leaders, Provincial Supervisors and Head office Supervisors. The CSPro data was in ASCII format which makes it impossible to read if hacked without a data dictionary.

The data was then copied from the central server by Systems Developers for processing. The process consist of checking for errors on the data and outliers. The data was then merged into one file in CSPro.

The data was exported to SAS to create a permanent SAS dataset. CSPro is very compatible with the following statistical packages i.e. SAS, SPSS, STATA and R.

Average prices at Provincial levels were calculated using the following SAS program:

```
/*-----*/
/*          */
/* START OF A SAS PROGRAM */
/*-----*/

proc sort data = sasdlb.cp102015;
  by geocode itemcode outlet province;
run;

data tmp_t001;
  set sasdlb.cp102015;
run;

/*-----*/
proc sort data = tmp_t001; by province itemcode ;run;

data logs;
  set tmp_t001;
  array L (1) cprice ;
  do I = 1 to 1;
  if L(I) > 0 then L(I) = LOG(L(I));
    ELSE L(I) = .;
  end;
run;

/*-----*/

proc means data = logs noprint; by province itemcode;
  var cprice ;
  output out = meanlogs mean = avprice;
run;

/*-----*/
```

```
data expo (keep = itemcode avprice);  
  set meanlogs;  
  array MLOG(1) avprice ;  
  do I = 1 to 1;  
    MLOG(1)=EXP(MLOG(1));  
end;
```

TITLE3 Listings Of geometric means @ national level for Months &year ; **run**;

```
proc print data = expo label;  
label avprice = GeoMeans_&Month_&year  
      ;  
VAR itemcode avprice ;  
format itemcode $itemfmt.;  
run;
```

```
/*-----*/  
/*      End of program      */  
/*-----*/
```

5.1 First Phase of Data Collection

During the first Phase of Data collection it was noted that completing the paper questionnaires was faster than using the tablet because one has to type item codes which are in COICOP system. A comparison was done in one of the Provinces and it was noted that it took almost two hours to complete data collection in one outlet using the tablet and it only took an hour to complete using the paper questionnaire. It was observed that one could not use the Tablet alone without a list of products with the specifications that is, quantities, brands etc. for him or her to do data collection accurately. In other words, the Tablet is not a proper questionnaire where one could use without reference to the paper questionnaire and even quality control cannot be done without referring to a paper questionnaire both by the Team Leaders and the Provincial Supervisor. It was also observed that the issue of the previous price and item specifications was not fixed. System Developers were tasked to take note of the issues and fix them.

5.1.1 Recommendations made during the first Phase of data collection

It was recommended that all the issues raised above be fixed by System Developers before the second phase of data collection. It was also recommended that the system should be checked first by the Prices Statistics Branch before being tested in the field.

5.1.2 Comparison between Paper Based CPS and Computer Based CPS

Table 1.1: Comparison between Paper Based CPS costs and Computer Based CPS cost

| | Paper Based CPS costs | Computer Based CPS cost |
|--|---|--|
| Data Entry | A budget is needed | No budget is needed |
| Printing of Questionnaires | A budget is needed | No budget is needed |
| Printing of Manuals | A budget is needed | A budget is needed |
| Tablets | No budget is needed | A budget is needed |
| Repairs of broken Tablets and replacement in case of technological advancement | No budget is needed | A budget is needed |
| Desktop Computers | A budget is needed | No budget is needed |
| Courier Services | A budget is needed | No budget is needed |
| Air Time | Less air time is needed | More air time is needed |
| Processing Time | More time is needed since courier always took more time to transport data files | Less time is needed since there is no courier services |

6.1 Second Phase of Data Collection

6.1.1 Issues which were raised by Enumerators

During the second phase of data collection most of the issues raised in the first phase of data collection were fixed by System Developers. Most of the P codes are now working, the system was now accepting decimal places, and all the sections in the CPS questionnaires were now appearing on the Tablet. Typing of the COICOP codes in the system was eliminated so that the system becomes faster and all the item specifications were now appearing on the system. But however some issues which were raised during testing and the first phase of data collection remained unsolved and these are:

- There was need for the Team Leader and the Provincial Supervisor to sign on the system to confirm that he/she has seen the data.
- The P-code 4 system was not functioning as was desired.
- The tablet should be able to collect data on Fruit and Vegetable vendors.
- The tablet should be designed in such a way that the enumerator can be able to see previous price as it is in the hard copy. This will help enumerators to cross check the prices

During the second phase of data collection it was observed that:

- Sending data was very difficult due to poor network. However, all tablets managed to send data at the end.
- It was noticed that it was time consuming to go through all sections when one just wants to collect data from only one section using the tablet. The System Developers should design the system that gives options to select the section that the Enumerator wants to collect data on.

6.2 Lessons Learnt and Recommendations

- The time taken for transporting data from Provinces to Head Office was reduced from a period of one week to just a day. This can be achieved if there is mobile network only and availability of air time.
- This also reduces the cost of sending the data from the Provinces to Head Office if paper questionnaires were to be carried by ZIMSTAT vehicles because there will be no fuel and vehicle maintenance cost. If Swift courier service is to be used in transporting CPS questionnaires it will be cheaper to transport the data by Swift courier service than by sending via the server since air time is needed for each enumerator and the total cost of air time per each province is higher than the cost of sending by Swift courier service.
- In addition, the Consumer Price Survey budget will also be reduced in future since there will be no cost of printing of paper questionnaires and also no transport cost in moving the questionnaires to and from the provinces.

- Collecting data using the tablets saves office space and there would be no need to stock volumes of questionnaires.
- There will be no cost for data entry and the time taken for data entry will be eliminated hence increasing the efficiency in the production of timely statistics.
- It has been learnt that most of ZIMSTAT field staff were able to use the gadgets without difficulties but some need more time. It therefore, means that more time is needed in future for training.
- In addition to the above, it was learnt that quality checks can be performed on the gadgets, that is, both the Team Leaders and the Provincial Supervisors were able to check and make some corrections on the gadgets before the data was sent. This can be done in urban provinces only where both the Team Leaders and enumerators have one office but in provinces with rural districts where the Team Leaders, Provincial Supervisors and enumerators have different offices something has to be done so that the data is sent after the Team Leaders and Provincial Supervisors have seen the data set.
- As a way of bridging the new system and the old paper system in the process of transformation, it was learnt that the format the paper questionnaire should be the same format in the gadget.
- It has been also noticed that during the first phase of data collection there were issues of questionnaire design on the gadget whilst there were no issues of data transmission. However during the second phase of data collection there were minor issues on questionnaire design and there were major challenges on data transmission.
- This means more time is needed and more provinces should be involved in testing the system and it is suggested that the system be tested for a period of one year for all the provinces.
- More air time is needed for enumerators since in some cases there will be network problems.
- The tablets are very fragile and enumerators needed to handle them with extra care and the Agency should provide protective pouches. To prevent breakage of the gadgets, smaller bags are also needed. Out of the 200 tablets procured, 14 have so far broken down due to poor handling.
- In order to have a self-sufficient system, the Provincial Supervisors and Team Leaders need to be taught on the system such that they can teach new staff.
- In case of poor network connectivity, it should be possible to copy the data and send it by email. The districts with Wi-Fi should use it to send data, and the Agency should install Wi-Fi for the districts without Wi-Fi.

7.1 Appendix 1: Bulawayo Province 1st Phase Data Collection Report

Issues which come out of the report

- The data should not be deleted from the tablets after confirming that the server had received the data and the tablets should be locked in a safe place after data collection.
- There was need for the Team Leader and the Provincial Supervisor to sign on the system to confirm that he/she has seen the data.

b) Shortcomings of the system and recommendations

- It was noted that completing the paper questionnaires was faster than using the tablet because one has to type item codes which are in COICOP system.
- The Systems Developers agreed that something has to be done to increase the speed of the system.
- The system could only allow 50 items per outlet.
- It was agreed that the system has to accommodate as many items as possible and the Systems Developers present agreed that they would fix the system.
- The system could not accommodate decimal places.
- It was agreed that the Systems Developers would fix the system to accommodate this.
- On P-codes the system could not accommodate two or more digits.
- It was agreed that the system has to be fixed to accommodate the P codes system by System Developers.
- All questionnaires of different sections within the basket have to be incorporated in the system by Systems Developers.
- It was observed that one could not use the tablet alone without a list of products with the specifications that is, quantities, brands etc. for him or her to do data collection accurately. In other words the tablet is not a proper questionnaire where one could use without reference to the paper questionnaire and even quality control cannot be done without referring to a paper questionnaire both by the Team Leaders and the Provincial Supervisor.
- It was agreed that the system has to be fixed in such a way as to do away with all paper materials otherwise the cost of printing would remain.
- It was agreed that the System Developers will fix the system so that it will accept some geocodes like '9999'.

7.2 Appendix 2: Manicaland and Mashonaland West Provinces 1st Phase Data Collection Report

a) Issues which come out of the two reports

- The P-code which denotes out of stock could not be tested since it was not working on the tablet.
- The space on the comment was very limited.

b) Short comings of the system and recommendations

- It was noted that outlets close to the banks had some difficulties in locating the GPS.
- Some of the challenges were similar to Bulawayo Province.
- It was recommended that the system should recall the previous price.
- It was also recommended that the system should be checked first by the Prices Statistics Branch before being tested in the field.

7.3 Appendix 3: Minutes of the 1st Management meeting for CPS

Preparation for Mobile Device System CPS Data collection (ZIMSTAT', Training Room, 30 September 2015, 10:00 AM)

Members Present:

- Mr. N. Taruvinga (Director of Income Analysis Division)
- Mr. T. Chikadaya (Manager of Prices Statistics Branch)
- Mr. L. Chinosengwa (Manager provincial Operations)
- Mr. W. Chipiro (Chief Systems Developer)
- Mr. J. Chitiyo (Chief Systems Developer)
- Mr. A. Damba (Chief Statistician, Prices Statistics Branch)
- Mr. R. Sango (Manager, Data Processing and Field Operations)
- Mr. T. Majoni (Manager, I.T Branch)
- Mr. L. Katowa (Systems Developer)
- Mr. T. Mutodzaniswa (Accountant)

Issues to be discussed:

1. The Issues raised after field test that were supposed to done by System Developers and Subject Matter Persons.
2. Update on system development.
3. Updates on the preparation for field work.
4. Funds availability.

| Item | Comments |
|---|--|
| 1. The issues raised after field test that were supposed to done by System Developers and Subject Matter Persons. | <p>a) Security of the data:</p> <ul style="list-style-type: none"> • The system of FTP (file transfer protocol) sends data straight to the server. The data will not get lost it is routed straight to the server. • There is a possibility that the data can be hijacked but the hijackers cannot make use of it because they do not have the dictionary. • The system is full proof and data cannot be tempered with. • The use of NetOne and PowerTel makes the data safer. • The System Developers should include issues of security in the technical manual for the Trainers only. <p>b) Inclusion of Previous Price</p> <ul style="list-style-type: none"> • It was not yet incorporated • Two options were proposed: 1 Creating a file with columns for all months so that the enumerators can use the modify mode for data collection. 2. Use the Look up file system • The system can be developed side by side and the one that works better will be used. <p>c) Publicity</p> |

| Item | Comments |
|--|--|
| | <ul style="list-style-type: none"> • Publicity was not yet done but can be done by enumerators. <p>d) Physical Security of Tablets</p> <ul style="list-style-type: none"> • For the testing exercise the Head Office Supervisors will go with tablets and come back with them after data collection. • In future the lockers at the district office can be used to keep the tablets after data collection of every month. • The tracking system can be used if the tablet is stolen. This facility needs to be on tablets. <p>e) Data quality control</p> <ul style="list-style-type: none"> • Is the checking of data by Team Leaders and Provincial Supervisors possible so that they can make some corrections? • 4 options were suggested <ol style="list-style-type: none"> 1. To design a system that can be edited in the field. 2. The enumerator can send the data to the server then the Team Leader can access the data and edit the data and send a second version, then the Supervisor will check the edited file and check and send the third version that can be used by Prices Statistics Branch staff 3. The enumerator will give the tablets to the Team Leader who will check and send the first version that will be accessed by the Supervisor through the server. The Supervisor will check and then send the second version that can be used by the Prices Branch. 4. The enumerator will give the tablet to the Team Leader to check and give the tablet to the Supervisor who will then send the data to the server. |
| 2. Update on system development | <ul style="list-style-type: none"> • Most of the comments have been incorporated except the ones mentioned above. |
| 3. Updates on preparation for field work | <ul style="list-style-type: none"> • Number of tablets available for use for next week field work. • All enumerators, Team Leaders, Provincial Supervisors and National Supervisors should have a tablet each. • The total number of tablets needed is 68. |
| 4. Funds availability | <ul style="list-style-type: none"> • Part of the funds for the first phase is available but the other funds will be released after producing a report. • The deadline for acquittal should be set Mr. Mutodzaniwa was asked to send a proposal for the timeline on acquittal. • The auditor should be identified in time |

| Item | Comments |
|---------|--|
| | <ul style="list-style-type: none"> • A Communication has been done to the effect that the Auditor is to come on 30 November 2015. • People will be paid part of funds in cash on the first day and the other money be deposited in their bank accounts. |
| 5 Other | <ul style="list-style-type: none"> • Teams Manicaland – Mr. Chinosengwa, Mr. Chitiyo, Ms Muroka Mash West- Mr. Damba, Mr. Sango, Mr. Katowa, Mr. Chipiro Bulawayo- Mr. Chikadaya, Mrs. Chibanda, Mr. Majoni • Tablets to be carried to provinces as follows : Manicaland –, Ms Muroka Mash West- Mr. Katowa Bulawayo- Mrs. Chibanda, • It was proposed to test the system by sending data with net-one lines , and all IT experts from each province are to be involved |
| | End 12:48 |

7.4 Appendix 4: Minutes of the 2nd Management meeting for CPS

Feedback on the first Phase for CPS Data collection using Mobile Device System.

Venue: (ZIMSTAT', Board Room, 13 October 2015, 10:00 AM)

Members Present:

Mr. N. Taruvinga (Director - Income Analysis Division)

Mr. T. Chikadaya (Manager - Prices Statistics Branch)

Mr. L. Chinosengwa (Manager- Provincial Operations)

Mr. T. Majoni (Manager- I.T Branch)

Mr. J. Chitiyo (Chief Systems Developer)

Mr. T. Mutodzaniswa (Accountant)

Issues to be discussed:

5. The Issues raised concerning Administration and Accounts
6. Bulawayo Province Report.
7. Manicaland Province and Mashonaland West Province Reports
8. Chinhoyi field Report
9. The Technical Document

| Item | Comments |
|--|--|
| 5. The issues raised concerning Administration and Accounts | a) Payments: <ul style="list-style-type: none">• The initial payments were done in time and also the balances were received by enumerators on time through the bank accounts. b) Bus fares <ul style="list-style-type: none">• It was noted that an omission on the budget was made on enumerator bus fares• It was noted that the total bus fares for the two provinces were US\$72.00, which is US\$ 48.00 for Mash West Province and US\$ 24.00 for Manicaland Province. |

| | |
|---|--|
| | <ul style="list-style-type: none"> • It was agreed that bus fares were to be paid from savings made during the Testing of the System in Goromonzi. <p>c) Payment of second phase</p> <ul style="list-style-type: none"> • Mr.Mutodzaniwa agreed that by Friday the 16th of October, he will notify every member of the Management Committee whether they will be payments for the second phase or not. <p>d) Audit</p> <ul style="list-style-type: none"> • The process of engaging an auditor was not yet started. • It was highlighted that correct procedures should be followed when recruiting the auditor. • It was also highlighted that the procedures should be done as quickly as possible. • It was also noted that recruiting a new auditor might have some challenges and it was recommended that auditors who had audited ZIMSTAT before should be recruited to do the audit following recommended procedures. <p>e) Report Writing</p> <ul style="list-style-type: none"> • It was agreed that the dates for the second phase of data collection should not be changed. • It was agreed that the dates for the report writing should be moved back to 9-13 November 2015. <p>f) Dates for the Audit and Liquidations</p> <ul style="list-style-type: none"> • It was agreed that the audit should be done on the 16 to 20 November 2015. • It was also agreed that all the funds used for the first phase of data collection should be liquidated before the start of the second phase of data collection. |
| <p>6. Bulawayo Province Report</p> | <p>a) Issues which come out of the report</p> <ul style="list-style-type: none"> • The data should be deleted from the Tablets after |

| | |
|--|--|
| | <p>confirming that the server had received the data or the Tablets should be locked in a safe place after data collection.</p> <ul style="list-style-type: none"> • There was need for the Team Leader and the Provincial Supervisor to sign on the system to confirm that he/she has seen the data. <p>b) Short comings of the system and recommendations</p> <ul style="list-style-type: none"> • It was noted that completing the paper questionnaires was faster than using the tablet because one has to type item codes which are in COICOP system. • The System Developers agreed that something has to be done to increase the speed of the system. • The system could only allow 50 items per outlet. • It was agreed that the system has to accommodate as many items as possible and the System Developers present agreed that they would fix the system. • The system could not accommodate decimal places. • It was agreed that the System Developers would fix the system to accommodate this. • On P codes the system could not accommodate two or more digits. • It was agreed that the system has to be fixed to accommodate the P codes system by System Developers. • All questionnaires of different sections within the basket have to be incorporated in the system by System Developers. • It was observed that one could not use the Tablet alone without a list of products with the specifications that is, quantities, brands etc. for him or her to do data collection accurately. In other words the Tablet is not a proper questionnaire where one could use without reference to the paper questionnaire and even quality control cannot be done without referring to a paper questionnaire both by the Team Leaders and the Provincial Supervisor. • It was agreed that the system has to be fixed in such a way as to do away with all paper materials otherwise the cost of printing would remain. • It was agreed that the System Developers will fix the |
|--|--|

| | |
|--|---|
| | <p>system so that it will accept some geo codes like 99.</p> |
| <p>7. Manicaland Province and Mashonaland West Province Reports</p> | <p>a) Issues which come out of the two reports</p> <ul style="list-style-type: none"> • The P code which denotes out of stock could not be tested since it was not working on the Tablet. • The space on the comment was very limited. <p>b) Short comings of the system and recommendations</p> <ul style="list-style-type: none"> • It was noted that outlets close to the banks had some difficulties in locating the GPS. • Some of the challenges were similar to Bulawayo Province. |
| | <ul style="list-style-type: none"> • It was recommended that the system should recall the previous price. • It was also recommended that the system should be checked first by the Prices Statistics Branch before being tested in the field. |
| <p>8. Chinhoyi field Report</p> | <ul style="list-style-type: none"> • It was reported by Mr. Chinosengwa that in Chinhoyi data collection was done using the Tablets only and there was no data which was collected using the paper questionnaires as was done in the other two provinces. • It was recommended that the Chinhoyi Team do the data collection using both the Tablets and paper questionnaires again before the second phase in outlets which were not covered during the first phase. |
| <p>9. The Technical Document</p> | <ul style="list-style-type: none"> • The Management Committee is still waiting for the technical document with configurations as agreed in the last meeting. The document was expected before the first data collection phase. Mr.Chipiro and Mr.Katova are expected to produce the document before the 23rd of October 2015.The document is overdue. • The Systems Developers are expected to iron out all the above issues before the 23rd of October 2015. |
| | <ul style="list-style-type: none"> • Having no other issues the meeting ended at 13.23 |

7.5 Appendix 5: Minutes of the 3rd Management meeting for CPS

Preparation for Mobile Device System CPS Data collection (ZIMSTAT', Training Room, 27 October 2015, 10:00 AM)

Members Present:

Mr. N. Taruvinga (Director of Income Analysis Division)
Mr. T. Chikadaya (Manager of Prices Statistics Branch)
Mr. L. Chinosengwa (Manager provincial Operations)
Mr. T. Majoni (Manager, I.T Branch)
Mr. A. Damba (Chief Statistician, Prices Statistics Branch)
Mr. J. Chitiyo (Chief Systems Developer)
Mr. R. Sango (Manager, Data Processing and Field Operations)
Mr. L. Katowa (Systems Developer)
Mrs. S. Chibanda (Systems Developer)

Apologizes:

Mr. W. Chipiro (Chief Systems Developer)
Mr. T. Mutodzaniwa (Accountant)

Issues to be discussed:

10. The Issues from the previous meeting minutes.
11. Preparation for the next phase data collection.
12. Report writing workshop

| Item | Comments |
|--|---|
| <p>1. The Issues from the previous meeting minutes.</p> | <p>b) Bus fares</p> <ul style="list-style-type: none"> • Bus fares are not yet paid because the amount was too small to do bank transfers • It was proposed that they will be paid together with part of second phase allowances, and Mr Chinosengwa should provide list of name to accounts <p>c) Payment of second phase</p> <ul style="list-style-type: none"> • It was proposed that people should be paid for at least 2 days <p>d) Audit</p> <ul style="list-style-type: none"> • It was highlighted that the audit should be done as soon as possible because it enable the release of the remaining funds from donor. • Everybody who is working on Mobile Devices CPS data collection was requested to liquidate. <p>e) Report Writing</p> <ul style="list-style-type: none"> • The system developers were requested to write a programme that convert the data from the server to match with the format of the data from the data capture. • The system developers were requested to produce a consolidation output which the same as the one used by the Prices section. <p>f) Dates for the Audit and Liquidations</p> <ul style="list-style-type: none"> • Dates were not changed <p>Bulawayo Province Report</p> <ul style="list-style-type: none"> • Data should not be deleted because the data is needed for comparison between current and previous price • Tablets should be locked in at the Provincial office • All other things raised were solved |

| Item | Comments |
|---|--|
| | <p data-bbox="594 268 1404 331">Manicaland Province and Mashonaland West Province Reports</p> <ul data-bbox="594 380 1404 533" style="list-style-type: none"> <li data-bbox="594 380 1268 411">• The recall previous months prices is not yet done <li data-bbox="594 422 1404 499">• The system developers were requested to try options suggested by Mr Sango on the first meeting. <li data-bbox="594 510 610 533">• <p data-bbox="548 552 846 583">Chinhoyi field Report</p> <ul data-bbox="594 625 1404 993" style="list-style-type: none"> <li data-bbox="594 625 1404 699">• The data which was not collected using paper questionnaire was done. <li data-bbox="594 709 1404 783">• One tablet was broken and the Team Leader was requested to write a report <li data-bbox="594 793 1404 867">• There is need to buy screen guards so that it can protect the screens from stretching. <li data-bbox="594 877 1404 993">• It was highlighted that there is need for external memory where data collected can be saved. This will help if the tablet is broken. <p data-bbox="548 1010 889 1041">The Technical Document</p> <ul data-bbox="594 1077 1385 1108" style="list-style-type: none"> <li data-bbox="594 1077 1385 1108">• The draft technical manual is now available for comments |
| <p data-bbox="237 1226 521 1339">2. Preparation for the next phase data collection.</p> | <ul data-bbox="594 1192 1404 1696" style="list-style-type: none"> <li data-bbox="594 1192 1404 1308">• Some members will not be available because they will be joining Ministry of Health in carrying out National Health Accounts <li data-bbox="594 1318 1404 1434">• The remaining staff will have more work so they will be allocated more days which were supposed to be allocated to those who left for NHA <li data-bbox="594 1444 1404 1612">• The server need to be checked every day during data collection, so transport arrangement should be done so that Mr Katowa will checked it every morning before going for NHA. No allowances will be given to Mr Katova <li data-bbox="594 1623 1404 1696">• National Supervisors to check the new system before going to field |
| <p data-bbox="237 1745 521 1818">3. Report writing workshop</p> | <ul data-bbox="594 1745 1404 1860" style="list-style-type: none"> <li data-bbox="594 1745 1404 1860">• The venue for the workshop should be resolved before the end of the week and it was suggested that Dzimbabwe lodge or any place near Harare be selected. |

7.6 Appendix 6: ZIMSTAT Detailed budget - UNECA FUNDED for CPS

ZIMSTAT Detailed budget - UNECA
FUNDED PROJECT
CONSUMER PRICE SURVEY (CPS) - DATA COLLECTION
USING MOBILE TECHNOLOGY

| Budget Items | Unit of Measurement | Unit No. | Unit cost | No./ frequencies | Quantity (e.g. cars) | total |
|---|---------------------|----------|-----------|------------------|----------------------|------------------|
| Customisation of Tools and Testing | | | | | | |
| Systems Developers | | 4 | 20 | 5 | | 400.00 |
| Testing the Tools | person | 13 | 149 | 1 | | 1,937.00 |
| Sub total | | | | | | 2,337.00 |
| Total for Customisation of Tools and Testing | | | | | | 2,337.00 |
| DATA COLLECTION -1ST PHASE | | | | | | |
| BULAWAYO PROVINCE | | | | | | |
| Allowance for enumerators | person | 11 | 18 | 6 | | 1,188.00 |
| Allowance for team leaders | person | 1 | 21 | 6 | | 126.00 |
| Provincial Supervisor | person | 1 | 27 | 6 | | 162.00 |
| Head Office Supervisor | person | 4 | 149 | 6 | | 3,576.00 |
| Paying Officers | person | 2 | 149 | 3 | | 894.00 |
| Drivers | person | 1 | 18 | 6 | | 108.00 |
| Fuel | litre | 40 | 1.4 | 6 | 5 | 1,680.00 |
| sub total | | | | | | 7,734.00 |
| MASHONALAND WEST PROVINCE | | | | | | |
| Allowance for enumerators | person | 18 | 18 | 6 | | 1,944.00 |
| Allowance for team leaders | person | 6 | 21 | 6 | | 756.00 |
| Bus fares | person | 15 | 4 | 2 | | 120.00 |
| Provincial Supervisor | person | 1 | 149 | 6 | | 894.00 |
| Head Office Supervisor | person | 5 | 149 | 6 | | 4,470.00 |
| Paying Officers | person | 2 | 149 | 3 | | 894.00 |
| Drivers | person | 1 | 149 | 6 | | 894.00 |
| Fuel | litre | 40 | 1.4 | 6 | 5 | 1,680.00 |
| Sub total | | | | | | 11,652.00 |
| MANICALAND PROVINCE | | | | | | |
| Allowance for enumerators | person | 9 | 18 | 6 | | 972.00 |
| Allowance for team leaders | person | 3 | 21 | 6 | | 378.00 |
| Bus fares | person | 10 | 4 | 2 | | 80.00 |
| Provincial Supervisor | person | 1 | 149 | 6 | | 894.00 |
| Head Office Supervisor | person | 4 | 149 | 6 | | 3,576.00 |
| Paying Officers | person | 2 | 149 | 3 | | 894.00 |
| Drivers | person | 1 | 149 | 6 | | 894.00 |
| Fuel | litre | 40 | 1.4 | 6 | 5 | 1,680.00 |
| Sub total | | | | | | 9,368.00 |
| Air Time for data Collection | | | | | | |

ZIMSTAT Detailed budget - UNECA
 FUNDED PROJECT
 CONSUMER PRICE SURVEY (CPS) - DATA COLLECTION
 USING MOBILE TECHNOLOGY

| Budget Items | Unit of Measurement | Unit No. | Unit cost | No./ frequencies | Quantity (e.g. cars) | total |
|--|---------------------|----------|-----------|------------------|----------------------|------------------|
| Communication-Air Time for gadgets | estimate | | | | | 999.00 |
| Sub total | | | | | | 999.00 |
| Total for data collection for the three provinces-1ST PHASE | | | | | | 29,753.00 |
| DATA COLLECTION-2ND PHASE | | | | | | |
| BULAWAYO PROVINCE | | | | | | |
| Allowance for enumerators | person | 11 | 18 | 5 | | 990.00 |
| Allowance for team leaders | person | 1 | 21 | 5 | | 105.00 |
| Provincial Supervisor | person | 1 | 27 | 5 | | 135.00 |
| Head Office Supervisor | person | 4 | 149 | 5 | | 2,980.00 |
| Paying Officers | person | 2 | 149 | 3 | | 894.00 |
| Drivers | person | 1 | 18 | 5 | | 90.00 |
| Fuel | litre | 40 | 1.4 | 5 | 5 | 1,400.00 |
| sub total | | | | | | 6,594.00 |
| MASHONALAND WEST PROVINCE | | | | | | |
| Allowance for enumerators | person | 18 | 18 | 5 | | 1,620.00 |
| Allowance for team leaders | person | 6 | 21 | 5 | | 630.00 |
| Provincial Supervisor | person | 1 | 149 | 5 | | 745.00 |
| Head Office Supervisor | person | 5 | 149 | 5 | | 3,725.00 |
| Paying & Admin Officers | person | 3 | 149 | 3 | | 1,341.00 |
| Drivers | person | 1 | 149 | 5 | | 745.00 |
| Fuel | litre | 40 | 1.4 | 5 | 5 | 1,400.00 |
| Sub total | | | | | | 10,206.00 |
| MANICALAND PROVINCE | | | | | | |
| Allowance for enumerators | person | 9 | 18 | 5 | | 810.00 |
| Allowance for team leaders | person | 3 | 21 | 5 | | 315.00 |
| Provincial Supervisor | person | 1 | 149 | 5 | | 745.00 |
| Head Office Supervisor | person | 4 | 149 | 5 | | 2,980.00 |
| Paying Officers | person | 2 | 149 | 3 | | 894.00 |
| Drivers | person | 1 | 149 | 5 | | 745.00 |
| Fuel | litre | 40 | 1.4 | 5 | 5 | 1,400.00 |
| Sub total | | | | | | 7,889.00 |
| Air Time for data Collection | | | | | | |
| Communication-Air Time for gadgets | estimate | | | | | 1,001.00 |
| Sub total | | | | | | 1,001.00 |
| Total for data collection for the three provinces-2ND PHASE | | | | | | 25,690.00 |
| DATA CAPTURE AND CLEANING, EDITING, REPORT AND OTHER ADMIN EXPENSES | | | | | | |
| DATA CAPTURE AND CLEANING | | | | | | |
| Data Entry Clerks | person | 11 | 20 | 3 | | 660.00 |

ZIMSTAT Detailed budget - UNECA
 FUNDED PROJECT
 CONSUMER PRICE SURVEY (CPS) - DATA COLLECTION
 USING MOBILE TECHNOLOGY

| Budget Items | Unit of Measurement | Unit No. | Unit cost | No./ frequencies | Quantity (e.g. cars) | total |
|--|---------------------|----------|-----------|------------------|----------------------|------------------|
| Prov. Officers | person | 3 | 20 | 3 | | 180.00 |
| Systems Developers | person | 6 | 20 | 3 | | 360.00 |
| Supervisors | person | 5 | 20 | 3 | | 300.00 |
| Sub total | | | | | | 1,500.00 |
| DATA COLLECTION REPORT | | | | | | |
| Participants | person | 15 | 149 | 5 | | 11,175.00 |
| Conference facilities | venue | 1 | 200 | 5 | | 1,000.00 |
| Fuel | litre | 74 | 1.4 | 8 | | 828.80 |
| Sub total | | | | | | 13,003.80 |
| OTHER ADMIN EXPENSES | | | | | | |
| Bank Charges (@1% of budget) | estimate | 1 | 1762 | 1 | | 1,762.00 |
| Audit expenses for the project | venue | 1 | 3375.2 | 1 | | 3,375.20 |
| Sub total | | | | | | 5,137.20 |
| Total for data collection report writing & Other Admin Expenses | | | | | | 19,641.00 |
| GRAND TOTAL | | | | | | 77,421.00 |

7.7 Appendix 7: Comparison of Budget Requirements

CONSUMER PRICE SURVEY (CPS) - DATA COLLECTION USING MOBILE TECHNOLOGY

COMPARISON OF BUDGET REQUIREMENTS

| Budget Items | Data Collection System | | Variance (Manual Vs Mobile) | |
|---|------------------------|-------------------|-----------------------------|------------|
| | Old Manual System | Mobile Technology | Amount | Rate |
| A | B | C | D | E |
| | | | (B - C) | (D/B)*100% |
| | | | US\$ | % |
| Customisation of Tools, Testing & Survey Materials | | | | |
| Systems Developers | 400.00 | 400.00 | - | 0% |
| Stationery | 1,530.00 | - | 1,530.00 | 100% |
| Computer Consumables | 4,500.00 | - | 4,500.00 | 100% |
| Testing | 1,937.00 | 1,937.00 | - | 0% |
| Sub total | 8,367.00 | 2,337.00 | 6,030.00 | 72% |
| | | | | |
| Total for Customisation of Tools and Testing | 8,367.00 | 2,337.00 | 6,030.00 | 72% |
| | | | | |
| | | | | |
| DATA COLLECTION -1ST PHASE | | | | |
| | | | | |
| BULAWAYO PROVINCE | | | | |
| Allowance for enumerators | 1,188.00 | 1,188.00 | - | 0% |
| Allowance for team leaders | 126.00 | 126.00 | - | 0% |
| Provincial Supervisor | 162.00 | 162.00 | - | 0% |
| Head Office Supervisor | 3,576.00 | 3,576.00 | - | 0% |
| Paying Officers | 894.00 | 894.00 | - | 0% |
| Drivers | 108.00 | 108.00 | - | 0% |
| Courier Services | 300.00 | - | 300.00 | 100% |
| Fuel | 1,680.00 | 1,680.00 | - | 0% |
| sub total | 8,034.00 | 7,734.00 | 300.00 | 4% |
| | | | | |
| MASHONALAND WEST PROVINCE | | | | |
| Allowance for enumerators | 1,944.00 | 1,944.00 | - | 0% |
| Allowance for team leaders | 756.00 | 756.00 | - | 0% |
| Bus fares | 120.00 | 120.00 | - | 0% |

CONSUMER PRICE SURVEY (CPS) - DATA COLLECTION USING MOBILE TECHNOLOGY

COMPARISON OF BUDGET REQUIREMENTS

| Budget Items | Data Collection System | | Variance (Manual Vs Mobile) | |
|--|------------------------|-------------------|-----------------------------|-----------|
| | Old Manual System | Mobile Technology | Amount | Rate |
| Provincial Supervisor | 894.00 | 894.00 | - | 0% |
| Head Office Supervisor | 4,470.00 | 4,470.00 | - | 0% |
| Paying Officers | 894.00 | 894.00 | - | 0% |
| Drivers | 894.00 | 894.00 | - | 0% |
| Courier Services | 300.00 | - | 300.00 | 100% |
| Fuel | 1,680.00 | 1,680.00 | - | 0% |
| Sub total | 11,952.00 | 11,652.00 | 300.00 | 3% |
| MANICALAND PROVINCE | | | | |
| Allowance for enumerators | 972.00 | 972.00 | - | 0% |
| Allowance for team leaders | 378.00 | 378.00 | - | 0% |
| Bus fares | 80.00 | 80.00 | - | 0% |
| Provincial Supervisor | 894.00 | 894.00 | - | 0% |
| Head Office Supervisor | 3,576.00 | 3,576.00 | - | 0% |
| Paying Officers | 894.00 | 894.00 | - | 0% |
| Drivers | 894.00 | 894.00 | - | 0% |
| Courier Services | 300.00 | - | 300.00 | 100% |
| Fuel | 1,680.00 | 1,680.00 | - | 0% |
| Sub total | 9,668.00 | 9,368.00 | 300.00 | 3% |
| Air Time for data Collection | | | | |
| Air Time | 999.00 | 999.00 | - | 0% |
| Sub total | 999.00 | 999.00 | 0.00 | 0% |
| Total for data collection for the three provinces-1ST PHASE | 30,653.00 | 29,753.00 | 900.00 | 3% |
| DATA COLLECTION-2ND PHASE | | | | |
| BULAWAYO PROVINCE | | | | |
| Allowance for enumerators | 990.00 | 990.00 | - | 0% |
| Allowance for team leaders | 105.00 | 105.00 | - | 0% |
| Provincial Supervisor | 135.00 | 135.00 | - | 0% |
| Head Office Supervisor | 2,980.00 | 2,980.00 | - | 0% |

CONSUMER PRICE SURVEY (CPS) - DATA COLLECTION USING MOBILE TECHNOLOGY

COMPARISON OF BUDGET REQUIREMENTS

| Budget Items | Data Collection System | | Variance (Manual Vs Mobile) | |
|--|------------------------|-------------------|-----------------------------|-----------|
| | Old Manual System | Mobile Technology | Amount | Rate |
| Paying Officers | 894.00 | 894.00 | - | 0% |
| Drivers | 90.00 | 90.00 | - | 0% |
| Courier Services | 300.00 | - | 300.00 | 100% |
| Fuel | 1,400.00 | 1,400.00 | - | 0% |
| sub total | 6,894.00 | 6,594.00 | 300.00 | 4% |
| MASHONALAND WEST PROVINCE | | | | |
| Allowance for enumerators | 1,620.00 | 1,620.00 | - | 0% |
| Allowance for team leaders | 630.00 | 630.00 | - | 0% |
| Provincial Supervisor | 745.00 | 745.00 | - | 0% |
| Head Office Supervisor | 3,725.00 | 3,725.00 | - | 0% |
| Paying & Admin Officers | 1,341.00 | 1,341.00 | - | 0% |
| Drivers | 745.00 | 745.00 | - | 0% |
| Courier Services | 300.00 | - | 300.00 | 100% |
| Fuel | 1,400.00 | 1,400.00 | - | 0% |
| Sub total | 10,506.00 | 10,206.00 | 300.00 | 3% |
| MANICALAND PROVINCE | | | | |
| Allowance for enumerators | 810.00 | 810.00 | - | 0% |
| Allowance for team leaders | 315.00 | 315.00 | - | 0% |
| Provincial Supervisor | 745.00 | 745.00 | - | 0% |
| Head Office Supervisor | 2,980.00 | 2,980.00 | - | 0% |
| Paying Officers | 894.00 | 894.00 | - | 0% |
| Drivers | 745.00 | 745.00 | - | 0% |
| Courier Services | 300.00 | - | 300.00 | 100% |
| Fuel | 1,400.00 | 1,400.00 | - | 0% |
| Sub total | 8,189.00 | 7,889.00 | 300.00 | 4% |
| Air Time for data Collection | | | | |
| Communication-Air Time for gadgets | 1,001.00 | 1,001.00 | - | 0% |
| Sub total | 1,001.00 | 1,001.00 | 0.00 | 0% |
| Total for data collection for the three provinces-2ND PHASE | 26,590.00 | 25,690.00 | 900.00 | 3% |

CONSUMER PRICE SURVEY (CPS) - DATA COLLECTION USING MOBILE TECHNOLOGY

COMPARISON OF BUDGET REQUIREMENTS

| Budget Items | Data Collection System | | Variance (Manual Vs Mobile) | |
|--|------------------------|-------------------|-----------------------------|------------|
| | Old Manual System | Mobile Technology | Amount | Rate |
| DATA CAPTURE AND CLEANING, EDITING, REPORT AND OTHER ADMIN EXPENSES | | | | |
| DATA CAPTURE AND CLEANING | | | | |
| Data Entry Clerks | 660.00 | 660.00 | - | 0% |
| Data Cleaning and Editing | 2,800.00 | - | 2,800.00 | 100% |
| Prov. Officers | 180.00 | 180.00 | - | 0% |
| Systems Developers | 360.00 | 360.00 | - | 0% |
| Supervisors | 300.00 | 300.00 | - | 0% |
| Sub total | 4,300.00 | 1,500.00 | 2,800.00 | 65% |
| DATA COLLECTION REPORT | | | | |
| Participants | 11,175.00 | 11,175.00 | - | 0% |
| Conference facilities | 1,000.00 | 1,000.00 | - | 0% |
| Fuel | 828.80 | 828.80 | - | 0% |
| Sub total | 13,003.80 | 13,003.80 | - | 0% |
| OTHER ADMIN EXPENSES | | | | |
| Bank Charges (@1% of budget) | 1,762.00 | 1,762.00 | - | 0% |
| Audit expenses for the project | 3,375.20 | 3,375.20 | - | 0% |
| Sub total | 5,137.20 | 5,137.20 | - | 0% |
| Total for data collection report writing & Other Admin Expenses | 22,441.00 | 19,641.00 | 2,800.00 | 12% |
| GRAND TOTAL | 88,051.00 | 77,421.00 | 10,630.00 | 12% |

7.8 Appendix 8: Results for the First Phase of Data Collection

| itemcode | Geometric Means Bulawayo | Geometric Means_Ma nicaland | Geometric Means Mash West | Geomeans for 3 Provinces |
|--------------------------------------|--------------------------|-----------------------------|---------------------------|--------------------------|
| 01.1.1.0.01 White bread | 0.76 | 0.79 | 0.73 | 0.76 |
| 01.1.1.0.02 Brown bread | 0.82 | 0.84 | 0.68 | 0.78 |
| 01.1.1.1.01 Bun | 0.12 | 0.2 | 0.1 | 0.13 |
| 01.1.1.1.02 Scone | 0.52 | 0.41 | 0.4 | 0.44 |
| 01.1.1.1.03 Cake | 3.87 | 4.5 | 2.49 | 3.51 |
| 01.1.1.2.01 Biscuits-plain marie | 0.64 | 0.53 | 0.56 | 0.57 |
| 01.1.1.2.02 Biscuits-loose | 1.12 | 1.23 | 1.17 | 1.17 |
| 01.1.1.2.03 Biscuits-lemon creams | 0.66 | 0.63 | 0.65 | 0.65 |
| 01.1.1.2.04 Biscuits-assorted | 1.52 | 1.12 | 1.48 | 1.36 |
| 01.1.1.3.01 Flour-self raising | 1.94 | 2.01 | 1.97 | 1.97 |
| 01.1.1.3.02 Flour-plain | 2.27 | 2.16 | 2.34 | 2.26 |
| 01.1.1.4.01 Maize meal-super refined | 10.93 | 8.04 | 7.64 | 8.76 |
| 01.1.1.4.02 Maize meal-roller meal | 6.11 | 5.62 | 6.19 | 5.97 |
| 01.1.1.5.01 Spaghetti | 1.31 | 0.96 | 1.02 | 1.09 |
| 01.1.1.5.02 Macaroni | 1.32 | 0.99 | 1.09 | 1.13 |
| 01.1.1.5.03 Noodles | 0.53 | 0.6 | 0.46 | 0.53 |
| 01.1.1.5.04 Breakfast cereals | 3 | 3.12 | 3.49 | 3.20 |
| 01.1.1.5.05 Rice-long grain | 2.55 | 2.24 | 2.39 | 2.39 |
| 01.1.1.5.06 Rice-short grain | 1.95 | 1.86 | 1.84 | 1.88 |
| 01.1.2.0.01 Rump steak-beef | 7.38 | 4.55 | 5.61 | 5.73 |
| 01.1.2.0.02 Topside-beef | 6.66 | 4.65 | 5.92 | 5.68 |
| 01.1.2.0.03 Stewing steak-beef | 4.55 | 4.35 | 5.24 | 4.70 |
| 01.1.2.0.04 Ration meat-beef | 4.43 | 3.85 | 4.43 | 4.23 |
| 01.1.2.0.05 Liver-beef | 6.22 | 4.99 | 5.64 | 5.59 |
| 01.1.2.0.06 Goat Meat | 5.49 | 4.64 | 5.89 | 5.31 |
| 01.1.2.0.07 live Goat | 65 | 35 | 40 | 44.98 |
| 01.1.2.0.08 Madora | 2.34 | 1.84 | 1.39 | 1.82 |
| 01.1.2.0.09 Mince beef | 5.29 | 4.13 | 5.89 | 5.05 |
| 01.1.2.0.10 Boerewors-beef | 6.13 | 4.67 | 5.41 | 5.37 |
| 01.1.2.1.01 Offal-beef | 3.18 | 3.13 | 3.4 | 3.23 |
| 01.1.2.1.02 Offal-beef | 1.9 | 2.71 | 2.65 | 2.39 |
| 01.1.2.2.01 Chicken-full | 5.86 | 4.86 | 5.17 | 5.28 |
| 01.1.2.2.02 Chicken-live | 3.25 | 7.29 | 5.85 | 5.18 |
| 01.1.2.3.01 Pork | 5.19 | 4.74 | 5.34 | 5.08 |
| 01.1.2.3.02 Bacon | 4.49 | 3.91 | 4.2 | 4.19 |
| 01.1.2.3.03 Sausages-pork | 5.13 | 4.78 | 4.37 | 4.75 |

| itemcode | Geometric Means Bulawayo | Geometric Means_Ma nicaland | Geometric Means Mash West | Geomeans for 3 Provinces |
|--------------------------------------|---------------------------------|------------------------------------|----------------------------------|---------------------------------|
| 01.1.2.3.04 Tinned meat | 2.68 | 2.17 | 2.07 | 2.29 |
| 01.1.3.0.01 Frozen fish | 3.86 | 2.88 | 3.77 | 3.47 |
| 01.1.3.0.02 Dried fish | 2.38 | 1.83 | 1.52 | 1.88 |
| 01.1.3.0.03 Bream Dried | 5.79 | 4.16 | 6.2 | 5.31 |
| 01.1.3.0.04 Tinned fish | 0.9 | 0.91 | 0.76 | 0.85 |
| 01.1.4.0.01 Sour milk | 0.72 | 0.82 | 0.74 | 0.76 |
| 01.1.4.0.02 Fresh milk | 0.74 | 0.69 | 0.72 | 0.72 |
| 01.1.4.0.03 Milk-sterilised | 0.86 | 0.9 | 0.89 | 0.88 |
| 01.1.4.0.04 Powdered milk-full cream | 4.5 | 3.83 | 4.12 | 4.14 |
| 01.1.4.0.05 Powdered milk-for babies | 7.41 | 7.42 | 6.31 | 7.03 |
| 01.1.4.1.01 Cheese | 7.17 | 7.53 | 8.65 | 7.76 |
| 01.1.4.1.02 Cream | 2.73 | 2.29 | 1.61 | 2.16 |
| 01.1.4.1.03 condensed milk | 3.03 | 2.79 | 2.75 | 2.85 |
| 01.1.4.1.04 Yoghurt | 0.67 | 0.65 | 0.74 | 0.69 |
| 01.1.4.2.01 Eggs | 2.24 | 1.95 | 3.05 | 2.37 |
| 01.1.5.0.01 Peanut butter | 1.7 | 1.74 | 1.37 | 1.59 |
| 01.1.5.0.02 Butter-Milk | 5.23 | 6.15 | 4.76 | 5.35 |
| 01.1.5.1.01 Cooking oil-olivine | 2.46 | 3.36 | 3.21 | 2.98 |
| 01.1.5.1.02 Cooking oil-panol | 2.04 | 3.11 | 3.18 | 2.72 |
| 01.1.5.2.01 Lard | 8.7 | 3.69 | 2.59 | 4.36 |
| 01.1.5.2.02 Margarine-stock | 2.58 | 1.9 | 2.17 | 2.20 |
| 01.1.5.2.03 Soft margarine-helio | 3.29 | 2.29 | 2.16 | 2.53 |
| 01.1.6.0.01 Apples | 2.22 | 1.87 | 1.83 | 1.97 |
| 01.1.6.0.02 Bananas | 1.06 | 0.62 | 1.01 | 0.87 |
| 01.1.6.0.03 Mangoes | 1.74 | 1.1 | 0.95 | 1.22 |
| 01.1.6.0.04 Oranges | 0.73 | 0.7 | 0.73 | 0.72 |
| 01.1.6.0.05 pine apples | 1.79 | 1.36 | 1.4 | 1.50 |
| 01.1.6.0.06 peanuts | 30.86 | 2.82 | 6.19 | 8.14 |
| 01.1.6.0.07 Tinned fruits | 1.89 | 2.24 | 1.9 | 2.00 |
| 01.1.6.0.08 Paw paw | 2.5 | 2.7 | 1.67 | 2.24 |
| 01.1.6.0.09 pear | 1.87 | 3.05 | 2.07 | 2.28 |
| 01.1.6.0.10 grapes | 4.23 | 4.45 | 3.48 | 4.03 |
| 01.1.6.0.11 dried fruits | 4.29 | 2.18 | 2.14 | 2.72 |
| 01.1.6.0.12 plums | 2.62 | 3.46 | 3.76 | 3.24 |
| 01.1.6.0.13 avocado | 1.21 | 0.54 | 1.03 | 0.88 |
| 01.1.7.0.01 Green beans | 1.96 | 1.7 | 2.07 | 1.90 |
| 01.1.7.0.02 Cabbages | 0.91 | 0.46 | 0.39 | 0.55 |
| 01.1.7.0.03 Okra | 1.74 | 1.38 | 2.04 | 1.70 |

| itemcode | Geometric Means Bulawayo | Geometric Means_Ma nicaland | Geometric Means Mash West | Geomeans for 3 Provinces |
|--|---------------------------------|------------------------------------|----------------------------------|---------------------------------|
| 01.1.7.0.04 Carrots | 1.41 | 1.1 | 1.44 | 1.31 |
| 01.1.7.0.05 Onions | 1.39 | 1.31 | 1.19 | 1.29 |
| 01.1.7.0.06 Rape-Covo-Chomoulier | 0.56 | 0.63 | 0.66 | 0.62 |
| 01.1.7.0.07 Tomatoes | 1.32 | 0.77 | 0.89 | 0.97 |
| 01.1.7.0.08 Cucumber | 1.41 | 0.84 | 1.04 | 1.07 |
| 01.1.7.0.09 Potatoes plus sweet potatoes | 2.16 | 1.18 | 1.23 | 1.46 |
| 01.1.7.0.10 lettuce | 0.76 | 0.82 | 0.87 | 0.82 |
| 01.1.7.0.11 spinach | 0.61 | 0.5 | 0.61 | 0.57 |
| 01.1.7.0.12 pumpkins | 1.6 | 1.13 | 0.84 | 1.15 |
| 01.1.7.0.13 squash | 1.44 | 1.68 | 1.42 | 1.51 |
| 01.1.7.0.14 baby marrow | 1.53 | 1.13 | 1.36 | 1.33 |
| 01.1.7.0.15 fresh peas | 1.71 | 1.6 | 1.76 | 1.69 |
| 01.1.7.0.16 garlic | 4.83 | 5.08 | 5.17 | 5.02 |
| 01.1.7.0.17 ginger | 3.34 | 2.57 | 5.75 | 3.67 |
| 01.1.7.0.18 water melon | 1.75 | 1.01 | 0.71 | 1.08 |
| 01.1.7.0.19 chilli | 2.29 | 1.84 | 2.32 | 2.14 |
| 01.1.7.1.01 Baked beans | 1 | 1.01 | 0.99 | 1.00 |
| 01.1.7.1.02 Dried beans | 1.2 | 1.21 | 1.18 | 1.20 |
| 01.1.7.1.03 Tinned peas | 2.13 | 2.38 | 1.88 | 2.12 |
| 01.1.7.1.04 Potato crips | 1.16 | 0.74 | 0.86 | 0.90 |
| 01.1.7.1.05 Tomatoe sauce | 1.14 | 1.2 | 1.08 | 1.14 |
| 01.1.8.0.01 White sugar | 1.97 | 2.04 | 1.86 | 1.96 |
| 01.1.8.0.02 Brown sugar | 1.74 | 1.54 | 1.75 | 1.67 |
| 01.1.8.1.01 Ice cream | 4.62 | 3.76 | 3.44 | 3.91 |
| 01.1.8.1.02 Honey | 4.15 | 3.73 | 3.42 | 3.75 |
| 01.1.8.1.03 Icing sugar-caster sugar | 1.63 | 1.69 | 1.66 | 1.66 |
| 01.1.8.1.04 Glucose | 2.35 | 2.98 | 2.96 | 2.75 |
| 01.1.8.1.05 Chocolate bar | 1.34 | 1.66 | 1.11 | 1.35 |
| 01.1.8.1.06 Chewing gum | 0.3 | 0.06 | 0.07 | 0.11 |
| 01.1.8.1.07 Jam-sun sweet | 2.75 | 2.25 | 2.41 | 2.46 |
| 01.1.8.1.08 Jam-mixed fruit | 2.76 | 2.9 | 2.83 | 2.83 |
| 01.1.8.1.09 Sweets | 1.48 | 0.53 | 0.89 | 0.89 |
| 01.1.9.0.01 Salt | 0.82 | 0.88 | 0.81 | 0.84 |
| 01.1.9.0.02 Pepper | 2.6 | 3.05 | 2.63 | 2.75 |
| 01.1.9.0.03 Curry powder | 1.04 | 0.86 | 1 | 0.96 |
| 01.1.9.0.04 Yeast | 1.22 | 1.04 | 1 | 1.08 |
| 01.1.9.0.05 Soup packet | 0.45 | 0.51 | 0.46 | 0.47 |
| 01.1.9.0.06 Baby cereal | 5.18 | 5.13 | 4.57 | 4.95 |

| itemcode | Geometric Means Bulawayo | Geometric Means_Ma nicaland | Geometric Means Mash West | Geomeans for 3 Provinces |
|--|---------------------------------|------------------------------------|----------------------------------|---------------------------------|
| 01.1.9.0.07 Baking powder | 2.36 | 1.72 | 1.97 | 2.00 |
| 01.1.9.0.08 Gravy powder | 1.17 | 1.19 | 1.06 | 1.14 |
| 01.1.9.0.09 Vinegar | 1.2 | 1.31 | 1.09 | 1.20 |
| 01.1.9.0.10 Chutney | 2.44 | 2.53 | 2.42 | 2.46 |
| 01.1.9.0.11 Bi-carbonate of soda | 1.06 | 0.4 | 0.26 | 0.48 |
| 01.1.9.0.12 Malt-chimera | 1.39 | 1.78 | 1.54 | 1.56 |
| 01.2.1.0.01 Instant coffee | 4.7 | 4.48 | 3.88 | 4.34 |
| 01.2.1.0.02 Coffee-ground | 2.1 | 1.32 | 1.54 | 1.62 |
| 01.2.1.1.01 Tea bags | 2.45 | 2.42 | 2.25 | 2.37 |
| 01.2.1.1.02 Tea leaves | 3.87 | 2.95 | 3.36 | 3.37 |
| 01.2.1.1.03 Drinking chocolate | 2.81 | 2.44 | 2.53 | 2.59 |
| 01.2.1.1.04 Herbal tea (Roiboos) | 2.47 | 2.63 | 2.3 | 2.46 |
| 01.2.1.2.01 Cocoa | 3.99 | 4.68 | 3.74 | 4.12 |
| 01.2.2.0.01 Tonic water | 1.09 | 0.88 | 0.84 | 0.93 |
| 01.2.2.0.02 Mineral water | 0.5 | 0.49 | 0.48 | 0.49 |
| 01.2.2.1.01 Carbonated soft drink-bottled | 0.51 | 0.5 | 0.53 | 0.51 |
| 01.2.2.1.02 Carbonated soft drink-canned | 0.65 | 0.68 | 0.64 | 0.66 |
| 01.2.2.2.01 Pure fruit juice | 2.1 | 1.62 | 1.88 | 1.86 |
| 01.2.2.2.02 RTD e.g Cascade | 0.52 | 0.51 | 0.49 | 0.51 |
| 01.2.2.2.03 Fruit squash | 2.74 | 2.94 | 2.82 | 2.83 |
| 02.1.1.1.01 Whisky | 6.12 | 5.75 | 5.24 | 5.69 |
| 02.1.1.1.02 Gin | 6.86 | 4.36 | 6.16 | 5.69 |
| 02.1.1.1.03 Brandy | 8.26 | 3.92 | 6.83 | 6.05 |
| 02.1.2.2.01 White wine | 6.4 | 9.85 | 4.55 | 6.59 |
| 02.1.2.2.02 Red wine | 7.17 | 5.52 | 6.35 | 6.31 |
| 02.1.2.2.03 Sparkling wine | 7.88 | 7.35 | 7.35 | 7.52 |
| 02.1.3.3.01 Clear beer-castle bottle store | 0.94 | 0.98 | 0.97 | 0.96 |
| 02.1.3.3.02 Clear beer-Bohlingers bottle store | 1.07 | 1 | 1.04 | 1.04 |
| 02.1.3.3.03 Cane-spirit | 5.13 | 3.65 | 3.43 | 4.00 |
| 02.1.3.3.04 Pilsner | 1.03 | 0.99 | 1 | 1.01 |
| 02.1.3.3.05 Clear beer-lion | 0.94 | 0.98 | 0.97 | 0.96 |
| 02.1.3.3.06 Opaque beer-packed | 0.96 | 0.97 | 1.01 | 0.98 |
| 02.1.3.3.07 Clear beer-black label | 0.95 | 0.98 | 0.96 | 0.96 |
| 02.2.1.0.01 Cigarettes-kingsgate | 1.38 | 1.48 | 1.44 | 1.43 |
| 02.2.1.0.02 Cigarettes-Berkerly | 1.77 | 1.59 | 1.69 | 1.68 |
| 02.2.1.0.03 Snuff | 0.41 | 0.47 | 0.56 | 0.48 |
| 02.2.1.0.04 Chimonera | 1 | 1 | 1 | 1.00 |
| 03.1.1.0.01 Dress material-poly cotton | 1.65 | 1.7 | 2.08 | 1.80 |

| itemcode | Geometric Means Bulawayo | Geometric Means_Ma nicaland | Geometric Means Mash West | Geomeans for 3 Provinces |
|---|---------------------------------|------------------------------------|----------------------------------|---------------------------------|
| 03.1.1.0.02 Dress material-mandy | 1.47 | 1.48 | 2.06 | 1.65 |
| 03.1.1.0.03 Java material | 1.55 | 1.47 | 1.51 | 1.51 |
| 03.1.2.0.01 Trousers-formal | 22.48 | 25.36 | 24.58 | 24.11 |
| 03.1.2.0.02 Mens-trousers casual | 24.84 | 18.35 | 19.95 | 20.87 |
| 03.1.2.0.03 Mens-jean trousers | 24.97 | 26.46 | 17.3 | 22.53 |
| 03.1.2.0.04 Mens-suits-double breast | 79.37 | 110.43 | 73.48 | 86.36 |
| 03.1.2.0.05 Mens-suits-single breast | 96.69 | 73.29 | 111.25 | 92.38 |
| 03.1.2.0.06 Mens pyjamas-replaces pullover | 26.57 | 32.79 | 12.03 | 21.88 |
| 03.1.2.0.07 Mens plain shirt long sleeve swallows short sleeve) | 20.89 | 16.24 | 23.63 | 20.01 |
| 03.1.2.0.08 Mens socks | 2.27 | 2 | 2.41 | 2.22 |
| 03.1.2.0.09 Mens briefs | 9.72 | 8.81 | 9.12 | 9.21 |
| 03.1.2.1.01 Costume | 63.66 | 72.74 | 50.23 | 61.50 |
| 03.1.2.1.02 Dress | 39.93 | 19.57 | 28.01 | 27.97 |
| 03.1.2.1.03 Skirt-flared | 21.09 | 19.38 | 20.14 | 20.19 |
| 03.1.2.1.04 Skirt-straight | 19.74 | 16.41 | 18.93 | 18.30 |
| 03.1.2.1.05 Ladies trousers | 20.29 | 25.63 | 27.68 | 24.33 |
| 03.1.2.1.06 Blouse | 17.26 | 15.41 | 18.31 | 16.95 |
| 03.1.2.1.07 Jersey | 19.57 | 17.18 | 25.45 | 20.45 |
| 03.1.2.2.01 Panties | 5.82 | 3.31 | 5.11 | 4.62 |
| 03.1.2.2.02 Brassiere | 10.46 | 5.32 | 10.44 | 8.34 |
| 03.1.2.2.03 Panty-hose | 4.62 | 4.3 | 5.29 | 4.72 |
| 03.1.2.2.04 Tights | 4.89 | 6.34 | 6.9 | 5.98 |
| 03.1.2.2.05 Ladies night dress | 16.8 | 18.31 | 20.46 | 18.46 |
| 03.1.2.3.01 Shorts | 8.13 | 6.48 | 12.57 | 8.72 |
| 03.1.2.3.02 Dress | 11.57 | 13.43 | 22.47 | 15.17 |
| 03.1.2.3.03 T Shirt | 5.63 | 5.61 | 7.71 | 6.24 |
| 03.1.2.3.04 Pampers | 7.18 | 8 | 9.36 | 8.13 |
| 03.1.2.3.05 Napkins | 4.23 | 3.87 | 4.32 | 4.14 |
| 03.1.2.3.06 Babys all in one suit-new item | 10.58 | 5.25 | 11.67 | 8.65 |
| 03.1.2.4.01 Girls uniform | 11.6 | 10.6 | 11.89 | 11.35 |
| 03.1.2.4.02 Boys shorts | 8.12 | 6.2 | 6.99 | 7.06 |
| 03.1.2.4.03 Boys shirts | 9.35 | 6.47 | 6.86 | 7.46 |
| 03.1.2.4.04 Jersey | 16.2 | 18.6 | 21.88 | 18.75 |
| 03.1.2.4.05 Blazer | 36.07 | 32.77 | 36.87 | 35.19 |
| 03.1.2.4.06 Tracksuit | 20.64 | 35.88 | 29.66 | 28.01 |
| 03.1.2.4.07 Boys trousers | 11.22 | 10.16 | 11.19 | 10.85 |
| 03.1.2.4.08 Girls trousers | 10.42 | 9.97 | 9.48 | 9.95 |
| 03.1.3.0.01 Tie | 8.21 | 6.72 | 7.21 | 7.35 |

| itemcode | Geometric Means Bulawayo | Geometric Means_Ma nicaland | Geometric Means Mash West | Geomeans for 3 Provinces |
|--|---------------------------------|------------------------------------|----------------------------------|---------------------------------|
| 03.1.3.0.02 Leather belt | 14.92 | 12.41 | 10.41 | 12.45 |
| 03.1.3.0.03 Sewing thread standard reel | 0.82 | 0.27 | 0.57 | 0.50 |
| 03.1.3.0.04 Zip fastener | 0.15 | 0.12 | 0.28 | 0.17 |
| 03.1.3.0.05 Knitting wool | 0.46 | 1.41 | 1.04 | 0.88 |
| 03.1.3.0.06 Needle | 0.77 | 0.4 | 0.79 | 0.62 |
| 03.1.3.0.07 cap | 6.96 | 8.52 | 6.88 | 7.42 |
| 03.1.3.0.08 doek | 3.74 | 3 | 8.94 | 4.65 |
| 03.1.3.0.09 hat for ladies | 30.86 | 6.45 | 15.87 | 14.67 |
| 03.1.3.0.10 shawl | 19.33 | 11.93 | 8.24 | 12.39 |
| 03.1.3.0.11 Boys suits | 30 | 30 | 30 | 30.00 |
| 03.1.3.0.12 Buttons | 0.07 | 0.06 | 0.32 | 0.11 |
| 03.1.4.0.01 Drying cleaning of a two piece suit-Mens suit from | 7.07 | 5.96 | 5.92 | 6.30 |
| 03.1.4.0.02 Drying of a ladies custume | 8.66 | 5.97 | 5.92 | 6.74 |
| 03.1.5.0.01 Ladies blouse 2nd hand | 4.47 | 2 | 1.9 | 2.57 |
| 03.1.5.0.02 Mens shirt 2nd hand | 13.42 | 2 | 2.99 | 4.31 |
| 03.1.5.0.03 Mens jean 2nd hand | 10 | 5 | 5.75 | 6.60 |
| 03.1.5.0.04 Ladies skirt 2nd hand | 6.6 | 3 | 2.4 | 3.62 |
| 03.1.5.0.05 Childrens T-Shirt hand | 2.52 | 1 | 2.64 | 1.88 |
| 03.1.5.0.06 Golf TShirt 2nd hand | 4.47 | 1 | 2.67 | 2.29 |
| 03.2.1.0.01 Mens formal shoes | 34.03 | 33.04 | 22.47 | 29.34 |
| 03.2.1.0.02 Mens casual shoes (tackies) | 29.88 | 20.15 | 16.36 | 21.44 |
| 03.2.1.1.01 Court shoes | 32.5 | 16.62 | 19.37 | 21.87 |
| 03.2.1.1.02 Womens casual shoes | 29.51 | 20.31 | 15.01 | 20.80 |
| 03.2.1.1.03 Sandals-high heeled shoes | 22.86 | 13.84 | 7.92 | 13.58 |
| 03.2.1.1.04 Canvas shoes | 8.95 | 8.89 | 9.04 | 8.96 |
| 03.2.1.2.01 Girls school shoes | 16.78 | 14.7 | 12.9 | 14.71 |
| 03.2.1.2.02 Girls party shoes | 15.81 | 21.34 | 15.13 | 17.22 |
| 03.2.1.2.03 Boys school shoes | 17.94 | 17.34 | 15.73 | 16.98 |
| 03.2.1.3.01 Sports shoe | 47.34 | 24.5 | 20.58 | 28.79 |
| 03.2.1.3.02 Mens Sports shoes | 50.65 | 25.69 | 23.25 | 31.16 |
| 03.2.2.0.01 Heeling and soling mens shoes | 11.08 | 9.28 | 12.25 | 10.80 |
| 03.2.2.0.02 Heeling and soling womensshoes | 6.21 | 6.8 | 6.69 | 6.56 |
| 04.1.1.1.01 Rent for a house-high density | 47.71 | 42.89 | 36.06 | 41.94 |
| 04.1.1.1.02 Rent for a house-low density | 80.58 | 77.71 | 43.81 | 64.98 |
| 04.1.1.1.03 Rent for a house-medium density | 73.29 | 69.57 | 42.5 | 60.06 |
| 04.3.1.0.01 Asbestos sheet | 29.85 | 28.92 | 29.39 | 29.38 |
| 04.3.1.0.02 Cement | 12 | 11.78 | 12.88 | 12.21 |
| 04.3.1.0.03 Window panes | 7.36 | 1.15 | 2.72 | 2.84 |

| itemcode | Geometric Means Bulawayo | Geometric Means_Ma nicaland | Geometric Means Mash West | Geomeans for 3 Provinces |
|--|---------------------------------|------------------------------------|----------------------------------|---------------------------------|
| 04.3.1.0.04 Door lock | 13.72 | 17.07 | 14 | 14.86 |
| 04.3.1.0.05 Paint | 18.05 | 14.98 | 20.27 | 17.63 |
| 04.4.1.0.01 Water charges-low density | 2.22 | 20.04 | 16.24 | 8.97 |
| 04.4.1.0.02 Water charges-high density | 1.26 | 11.34 | 11.68 | 5.51 |
| 04.4.2.0.01 Dust removing rates-high density | 4.74 | 2.42 | 4.23 | 3.65 |
| 04.4.2.0.02 Dust removing rates-low density | 6.6 | 5.28 | 5.18 | 5.65 |
| 04.4.3.0.01 Sewarages charges-High density | 0.52 | 2.6 | 3.62 | 1.70 |
| 04.4.3.0.02 Sewarages charges-Low density | 1.04 | 4.1 | 6.45 | 3.02 |
| 04.4.4.0.01 Owners rate-for land | 0.04 | 27.11 | 11.29 | 2.30 |
| 04.4.4.0.02 Ownres rate-for improvements | 24.1 | 12.85 | 2.2 | 8.80 |
| 04.5.1.1.01 Electricity charges-metred 600 units | 78.65 | 78.65 | 78.65 | 78.65 |
| 04.5.1.1.02 Electricity charges-monthly charge for 7.5Amps | 10.54 | 16.12 | 16.12 | 13.99 |
| 04.5.2.2.01 Gas | 2.11 | 4 | 2.27 | 2.68 |
| 04.5.3.3.01 Paraffin | 1.13 | 1.26 | 1.18 | 1.19 |
| 04.5.4.4.01 Charcoal | 4.85 | 5.3 | 5.03 | 5.06 |
| 04.5.4.4.02 Fire wood | 1.14 | 2 | 2.09 | 1.68 |
| 05.1.1.0.01 Bedroom suite | 2239.22 | 1217.22 | 1143.95 | 1460.91 |
| 05.1.1.0.02 Bed & Mattress | 374.27 | 316.93 | 336.48 | 341.75 |
| 05.1.1.0.03 Kichen chairs | 238.41 | 251.35 | 238.52 | 242.68 |
| 05.1.1.0.04 Lounge suite-dralon | 1674.16 | 1220.09 | 1125.16 | 1319.68 |
| 05.1.1.0.05 Lounge suite-weave rexin | 1838.54 | 989.45 | 1419.86 | 1372.05 |
| 05.1.1.0.06 Wardrobe | 416.3 | 436.29 | 304.97 | 381.19 |
| 05.1.1.0.07 Dining room suite | 1360.76 | 1427.43 | 1363.41 | 1383.53 |
| 05.1.1.0.08 Wall unit | 756 | 796.47 | 567.09 | 698.95 |
| 05.1.1.0.09 Kitchen dresser | 403.52 | 532.6 | 526.08 | 483.55 |
| 05.1.1.0.10 Coffee table | 279.35 | 185.22 | 209.94 | 221.47 |
| 05.1.2.2.01 floor tiles | 13.81 | 69 | 10.68 | 21.67 |
| 05.1.2.2.02 Carpets | 65.34 | 169 | 188.77 | 127.74 |
| 05.2.1.1.01 Pair of fitted sheets-cotton | 34.72 | 30 | 27.53 | 30.61 |
| 05.2.1.1.02 Blanket(night) | 47.37 | 36.95 | 31.39 | 38.02 |
| 05.2.1.1.03 Bed spread | 29.45 | 30 | 26.49 | 28.60 |
| 05.2.1.1.04 Bath towel-plain | 4.83 | 1.76 | 2.68 | 2.83 |
| 05.2.1.1.05 Curtain material | 15 | 4.9 | 8.1 | 8.41 |
| 05.2.1.1.06 Pillow, one standard-foam inside | 9.39 | 5.24 | 6.56 | 6.86 |
| 05.3.1.1.01 Electric stove | 561.21 | 481.58 | 450.47 | 495.63 |
| 05.3.1.1.02 Refridgerator | 617.64 | 132.16 | 589.85 | 363.80 |
| 05.3.1.1.03 Deep freezer | 446.87 | 339 | 384.15 | 387.52 |
| 05.3.1.1.04 Hot plate stove | 58.22 | 20.14 | 55.62 | 40.25 |

| itemcode | Geometric Means Bulawayo | Geometric Means_Ma nicaland | Geometric Means Mash West | Geomeans for 3 Provinces |
|--|---------------------------------|------------------------------------|----------------------------------|---------------------------------|
| 05.3.1.1.05 Primus stove | 23.4 | 15.49 | 16.65 | 18.21 |
| 05.3.1.1.06 Sewing machine | 180.28 | 89.86 | 100 | 117.45 |
| 05.3.1.1.07 Micro wave | 176.41 | 146.56 | 153.83 | 158.44 |
| 05.3.1.1.08 Gas stove | 194.3 | 140 | 137.27 | 155.14 |
| 05.3.2.2.01 Pressing iron - adjustable | 27.15 | 49 | 14.8 | 27.00 |
| 05.3.2.2.02 Pressing iron - non adjustable | 25.87 | 20 | 17.76 | 20.95 |
| 05.3.2.2.03 Electric fan | 48.56 | 93.87 | 36.29 | 54.89 |
| 05.3.2.2.04 Electric heater | 33.84 | 29 | 21.72 | 27.73 |
| 05.3.2.2.05 Electric kettle/jug | 32.47 | 75 | 22.49 | 37.98 |
| 05.4.1.1.01 Dinner set | 13.71 | 31.23 | 16.75 | 19.28 |
| 05.4.1.1.02 Set of glasses six | 6.17 | 3.66 | 2.73 | 3.95 |
| 05.5.1.1.01 Ordinary knife | 4.01 | 1.76 | 2.62 | 2.64 |
| 05.5.1.1.02 Ordinary coffee mug (enamel and chinaware) | 1.4 | 1.21 | 1.21 | 1.27 |
| 05.5.1.1.03 Plate | 1.87 | 1.69 | 1.39 | 1.64 |
| 05.5.1.1.04 Ordinary spoon | 1.23 | 1.07 | 0.67 | 0.96 |
| 05.5.1.1.05 Teapot | 14.62 | 13.92 | 14.44 | 14.32 |
| 05.5.1.1.06 Non electric iron | 13.61 | 6 | 11 | 9.65 |
| 05.5.1.1.07 Frying pan | 8.56 | 7.12 | 8.93 | 8.16 |
| 05.5.1.1.08 Pot | 17.5 | 14.33 | 18.33 | 16.63 |
| 05.5.1.1.09 Ironing board | 18.25 | 6.14 | 10 | 10.39 |
| 05.5.2.2.01 Claw hammer | 9.86 | 11 | 7.32 | 9.26 |
| 05.5.2.2.02 Wheel barrow | 55.79 | 41.01 | 44.71 | 46.77 |
| 05.5.2.2.03 Spade | 14.66 | 12.01 | 11.85 | 12.78 |
| 05.6.1.1.01 Scouring powder - vim | 1.01 | 0.91 | 1.17 | 1.02 |
| 05.6.1.1.02 Bar of household soap - wrapped | 1.29 | 1.19 | 1.13 | 1.20 |
| 05.6.1.1.03 Laundry soap - mottled | 1.26 | 1.3 | 1.35 | 1.30 |
| 05.6.1.1.04 Washing powder - surf | 2.12 | 1.78 | 1.66 | 1.84 |
| 05.6.1.1.05 Washing powder - cold power | 1.91 | 1.89 | 1.61 | 1.80 |
| 05.6.1.1.06 Desinfenant | 1.85 | 2.09 | 1.97 | 1.97 |
| 05.6.1.1.07 Toilet cleaner | 2.11 | 2.34 | 2.1 | 2.18 |
| 05.6.1.1.08 Broom | 6.81 | 7.3 | 7.48 | 7.19 |
| 05.6.1.1.09 Dish cloth/cloth | 2.27 | 2.2 | 1.86 | 2.10 |
| 05.6.1.2.01 Box of matches | 0.56 | 0.72 | 0.63 | 0.63 |
| 05.6.1.2.02 Candles | 1.89 | 2.06 | 1.7 | 1.88 |
| 05.6.1.2.03 Methylated spirit | 1.63 | 1.17 | 1.25 | 1.34 |
| 05.6.1.2.04 Light bulb | 1.24 | 0.92 | 1.12 | 1.09 |
| 05.6.1.2.05 shoe polish | 0.98 | 0.97 | 0.94 | 0.96 |
| 05.6.1.2.06 Insecticides | 2.86 | 3.18 | 2.66 | 2.89 |

| itemcode | Geometric Means Bulawayo | Geometric Means_Ma nicaland | Geometric Means Mash West | Geomeans for 3 Provinces |
|---|---------------------------------|------------------------------------|----------------------------------|---------------------------------|
| 05.6.1.2.07 Floor polish | 3.65 | 4.05 | 3.15 | 3.60 |
| 05.6.1.2.08 Torch battery | 2.86 | 1.59 | 1.91 | 2.06 |
| 05.6.2.2.01 Domestic wages | 142.77 | 120.28 | 92.73 | 116.78 |
| 06.1.1.1.01 Antiseptic | 6.25 | 5.58 | 5.48 | 5.76 |
| 06.1.1.1.02 Pain killer | 0.71 | 0.44 | 0.69 | 0.60 |
| 06.1.1.1.03 Antibiotics | 2.53 | 2.66 | 1.99 | 2.37 |
| 06.1.1.1.04 Antihypertensive | 10.35 | 11.51 | 8.51 | 10.05 |
| 06.1.1.1.05 Antidiabitics | 2.07 | 3.2 | 3.07 | 2.73 |
| 06.1.1.1.06 Anti asthma | 2.12 | 2.35 | 2 | 2.15 |
| 06.1.1.1.07 Cough-mixture | 4.68 | 4.77 | 4.29 | 4.58 |
| 06.1.1.2.01 First aid kit | 79.66 | 18.33 | 118.99 | 55.80 |
| 06.1.1.2.02 Adhesive bandages | 1.38 | 0.45 | 1.78 | 1.03 |
| 06.1.1.2.03 Thermometers | 3.47 | 2.5 | 2.85 | 2.91 |
| 06.1.1.2.04 Female condom | 0.17 | 0.16 | 0.45 | 0.23 |
| 06.1.1.2.05 Male condom | 0.94 | 0.21 | 1.58 | 0.68 |
| 06.2.1.1.01 Consultation with private medical doctor-per visit | 25.98 | 10.11 | 22.88 | 18.18 |
| 06.2.1.1.02 Government in-patient | 350 | 20 | 21.99 | 53.59 |
| 06.2.1.1.03 Municipality out-patient | 5 | 2 | 3.38 | 3.23 |
| 06.2.1.1.04 Government out-patient | 50 | 10 | 4 | 12.60 |
| 06.2.1.1.05 Private clinic ward fee | 79.42 | 41.09 | 17.47 | 38.49 |
| 06.2.1.1.06 Private hospital maternity fee | 330 | 210 | 51.11 | 152.43 |
| 06.2.1.1.07 Government hospital maternity fee | 132.29 | 50 | 50 | 69.15 |
| 06.2.1.1.08 Scan | 111.3 | 24.66 | 26.32 | 41.65 |
| 06.2.2.1.01 Average cost of tooth extraction by a private dentist | 27.2 | 27.14 | 20 | 24.53 |
| 06.2.2.1.02 Average cost of tooth extraction by a ublic dentist | 22.89 | 20 | 20 | 20.92 |
| 06.2.3.1.01 Chest X-ray | 10 | 33.02 | 18.86 | 18.40 |
| 06.2.3.1.02 Medical examination | 55 | 28.02 | 29.18 | 35.56 |
| 06.2.3.1.03 Ambulance charge | 31.62 | 2.29 | 6.69 | 7.85 |
| 06.3.1.1.01 Rate of stay in private hospital for 24 hours | 106 | 98.59 | 16.82 | 56.02 |
| 06.3.1.1.02 Rate of stay in government hospital for 24 hours | 21.21 | 15 | 15 | 16.84 |
| 07.1.1.1.01 New car - type 1 | 55656.92 | 31551.55 | 28210.85 | 36726.99 |
| 07.1.1.1.02 New car - type 2 | 30514.49 | 35257.74 | 24700 | 29841.40 |
| 07.1.1.1.03 Second hd car | 4935.39 | 5700 | 5260.82 | 5289.52 |
| 07.1.2.2.01 Motor Cycle - 1 | 151 | 2500 | 1800 | 879.15 |
| 07.1.3.3.01 Bicycle - 1 | 114.2 | 95.39 | 78.51 | 94.92 |
| 07.1.3.3.02 Bicycle pump | 3.65 | 3.16 | 2.29 | 2.98 |
| 07.1.4.4.01 Scotch cart | 623.77 | 500 | 283.23 | 445.36 |
| 07.2.1.1.01 Car tyre | 104.11 | 65.19 | 69.82 | 77.96 |

| itemcode | Geometric Means Bulawayo | Geometric Means_Ma nicaland | Geometric Means Mash West | Geomeans for 3 Provinces |
|---|---------------------------------|------------------------------------|----------------------------------|---------------------------------|
| 07.2.1.1.02 Car battery | 81.87 | 86.01 | 82.3 | 83.37 |
| 07.2.1.1.03 Brake pads | 26.83 | 39.11 | 31.36 | 32.05 |
| 07.2.1.1.04 Distributor points | 6.87 | 5.44 | 5.24 | 5.81 |
| 07.2.1.1.05 Fuel injector | 7.91 | 64.81 | 4.42 | 13.13 |
| 07.2.1.1.06 Plugs | 2.51 | 2.89 | 2.94 | 2.77 |
| 07.2.1.1.07 Gasket | 54.83 | 51.06 | 84.66 | 61.89 |
| 07.2.1.1.08 Motor cycle tube | 9.86 | 8.68 | 4.72 | 7.39 |
| 07.2.1.1.09 Bicycle tyre | 7.42 | 5.48 | 3.1 | 5.01 |
| 07.2.1.1.10 Motor cycle spark plug | 4.47 | 6.93 | 6.09 | 5.74 |
| 07.2.2.0.01 Petrol | 1.39 | 1.36 | 1.44 | 1.40 |
| 07.2.2.0.02 E10 fuel blend | 1.43 | 1.5 | 1.41 | 1.45 |
| 07.2.2.0.03 Diesel | 1.25 | 1.18 | 1.22 | 1.22 |
| 07.2.2.1.01 Engine oil | 3.09 | 3.46 | 3.3 | 3.28 |
| 07.2.2.1.02 Brake fluid | 3.4 | 3.83 | 3.57 | 3.60 |
| 07.2.2.2.01 General service (labour plus parts) | 51.24 | 22.29 | 27.36 | 31.50 |
| 07.2.2.2.02 Car Repairs-clutch repair | 174.2 | 19.4 | 62.14 | 59.44 |
| 07.2.2.3.01 Driving lessons-class 4 | 4.69 | 4 | 4.35 | 4.34 |
| 07.2.2.3.02 Car hire | 381 | 534 | 225 | 357.73 |
| 07.2.2.3.03 Parking fees | 5.09 | 0.8 | 1 | 1.60 |
| 07.2.2.3.04 Cost of an ordinary passport | 7.28 | 5.96 | 7.28 | 6.81 |
| 07.2.2.3.05 Toll gate fees-pvt vehicle | 5.48 | 1 | 1.59 | 2.06 |
| 07.3.1.1.01 Rail journey - economy | 8 | 8 | 8 | 8.00 |
| 07.3.1.1.02 Rail journey - standard | 10 | 10 | 10 | 10.00 |
| 07.3.1.1.03 Rail journey - sleeper | 12 | 12 | 12 | 12.00 |
| 07.3.1.2.01 Commuter fares | 0.5 | 0.57 | 0.43 | 0.50 |
| 07.3.1.2.02 Bus fare - convectional long distance bus | 8.84 | 6.52 | 5.86 | 6.96 |
| 07.3.1.2.03 Bus fare - luxury coach long distance | 16.04 | 30 | 22.36 | 22.08 |
| 07.3.1.2.04 Taxi fares | 5 | 5 | 4.51 | 4.83 |
| 07.3.1.3.01 Air fare - domestic flight | 290 | 290 | 290 | 290.00 |
| 07.3.1.3.02 Air fare - regional journey | 531.95 | 531.95 | 531.95 | 531.95 |
| 07.3.1.3.03 Air fare - international journey | 210.95 | 1255.78 | 210.95 | 382.32 |
| 08.1.0.1.01 Postage - local letter -ordinary letter | 0.4 | 0.4 | 0.4 | 0.40 |
| 08.1.0.1.02 Postage - regional letter- SA | 0.75 | 0.75 | 0.75 | 0.75 |
| 08.1.0.1.03 Postage - international letter-UK | 1 | 1 | 1 | 1.00 |
| 08.2.0.1.01 Purchase of a cell phone hand set | 65.14 | 29.5 | 88.74 | 55.45 |
| 08.2.0.1.02 Purchase of a telephone handset for land line | 35.62 | 16.73 | 20 | 22.84 |
| 08.3.0.1.01 Mobile services-econet broadband(internet) | 0.42 | 0.31 | 0.31 | 0.34 |
| 08.3.0.1.02 Mobile services-eco cash | 1.41 | 1.41 | 1.41 | 1.41 |

| itemcode | Geometric Means Bulawayo | Geometric Means_Ma nicaland | Geometric Means Mash West | Geomeans for 3 Provinces |
|---|---------------------------------|------------------------------------|----------------------------------|---------------------------------|
| 08.3.0.1.03 Mobile services-data bundles | 1.31 | 1.31 | 1.31 | 1.31 |
| 08.3.0.1.04 Mobile services -data calls | 0.09 | 0.09 | 0.09 | 0.09 |
| 08.3.0.1.05 Cost of making a call from land line to Mobile (cell) phones per unit | 0.18 | 0.18 | 0.3 | 0.21 |
| 08.3.0.1.06 Cost of making a call from Mobile (cell) phone a land line, per unit | 0.15 | 0.15 | 0.15 | 0.15 |
| 08.3.0.1.07 Cost of making a call from Mobile (cell) phone a cell phone, per unit | 0.15 | 0.15 | 0.15 | 0.15 |
| 08.3.0.1.08 Cell phone - monthly fixed rental | 3.87 | 3.87 | 3.87 | 3.87 |
| 08.3.0.1.09 Telephone charge - monthly rental charge | 5 | 5 | 5 | 5.00 |
| 08.3.0.1.10 Cost of internet services, average per hour | 1.06 | 1.41 | 1.04 | 1.16 |
| 08.3.0.1.11 A unit cost of making a international call from a land line | 0.27 | 0.27 | 0.27 | 0.27 |
| 09.1.1.1.01 Colour TV | 390.39 | 118.05 | 327.17 | 247.05 |
| 09.1.1.1.02 Plasma | 552.1 | 379.43 | 646.3 | 513.49 |
| 09.1.1.1.03 Radio with cassette,DVD player,flash player | 337.16 | 479 | 132.5 | 277.63 |
| 09.1.1.1.04 Radio and cassette player | 101.8 | 89 | 80.41 | 89.98 |
| 09.1.1.1.05 Car radio | 107.69 | 107.15 | 59.79 | 88.36 |
| 09.1.1.1.06 DVD Player | 77.66 | 53.18 | 103.58 | 75.35 |
| 09.1.1.1.07 Modulator | 7.22 | 5.48 | 6.61 | 6.39 |
| 09.1.2.2.01 Digital camera | 130.28 | 145 | 116.19 | 129.96 |
| 09.1.2.2.02 Video camera | 303.41 | 251.83 | 48.27 | 154.50 |
| 09.1.3.3.01 Scientific calculator | 12.65 | 12.29 | 13.55 | 12.82 |
| 09.1.3.3.02 Laptop | 597.42 | 775 | 429.88 | 583.86 |
| 09.1.4.4.01 Video DVD - local | 3.3 | 10 | 1.32 | 3.52 |
| 09.1.4.4.02 Video DVD - international | 3.5 | 20 | 3.16 | 6.05 |
| 09.1.4.4.03 Blank CD | 0.3 | 0.25 | 0.79 | 0.39 |
| 09.1.4.4.04 Audio CD-International | 4.66 | 15 | 4.64 | 6.87 |
| 09.1.4.4.05 Audio CD-local | 2.88 | 10 | 1.32 | 3.36 |
| 09.1.4.4.06 Blank audio cassette | 0.5 | 0.5 | 4.47 | 1.04 |
| 09.1.4.4.07 Memory cards | 5.16 | 3 | 4.61 | 4.15 |
| 09.1.4.4.08 Flash disc | 10.24 | 5.36 | 7.91 | 7.57 |
| 09.3.2.1.01 Tennis raquet | 38.3 | 48.48 | 68 | 50.17 |
| 09.3.2.1.02 Golf ball | 12.45 | 12 | 17.32 | 13.73 |
| 09.3.2.1.03 Tennis balls | 9.37 | 12.25 | 16.43 | 12.35 |
| 09.3.2.1.04 Football - standard | 26.36 | 30 | 29.11 | 28.45 |
| 09.3.3.1.01 Fertiliser | 22.13 | 20.67 | 30.26 | 24.01 |
| 09.3.3.1.02 Bulbs (decorative) | 0.62 | 0.5 | 1.58 | 0.79 |
| 09.3.3.1.03 Flower Seeds | 2.15 | 1.19 | 1.73 | 1.64 |
| 09.3.3.1.04 Hosepipe | 47.74 | 41.88 | 66.86 | 51.13 |
| 09.3.3.1.05 Garden hoe | 11.42 | 7.22 | 7.37 | 8.47 |
| 09.3.3.1.06 Garden fork | 17.19 | 9.78 | 14.2 | 13.36 |

| itemcode | Geometric Means Bulawayo | Geometric Means_Ma nicaland | Geometric Means Mash West | Geomeans for 3 Provinces |
|---|---------------------------------|------------------------------------|----------------------------------|---------------------------------|
| 09.3.4.1.01 Pet food | 8.6 | 10.89 | 6.03 | 8.27 |
| 09.4.1.1.01 Entrance to a top league football game (PSL)-VIP | 6.32 | 20 | 20 | 13.62 |
| 09.4.1.1.02 Entrance to a top league football game (PSL)-Rest | 3 | 3 | 3 | 3.00 |
| 09.4.1.1.03 Golf club fee | 497.69 | 150 | 109.54 | 201.47 |
| 09.4.1.1.04 Gym fee | 31.13 | 40 | 13.1 | 25.36 |
| 09.4.2.1.01 Cost of burning a CD (CD writing) | 1 | 1 | 1 | 1.00 |
| 09.4.2.1.02 Entrance fee to the cinema/theatre | 3 | 3.46 | 3 | 3.15 |
| 09.4.2.1.03 Annual TV licence fee local channels | 50 | 50 | 50 | 50.00 |
| 09.4.2.1.04 Monthly subscription to Cable TV | 81 | 81 | 81 | 81.00 |
| 09.4.2.1.05 Radio listeners licence | 20 | 20 | 20 | 20.00 |
| 09.4.2.1.06 lottery ticket | 1 | 1 | 1 | 1.00 |
| 09.5.1.1.01 English reading Book - primary | 9.54 | 11.8 | 10.06 | 10.42 |
| 09.5.1.1.02 Mathematics text book ordinary level | 16.88 | 19.61 | 19.71 | 18.69 |
| 09.5.1.1.03 Economics Text Book-A level | 45.16 | 54.38 | 35.7 | 44.42 |
| 09.5.2.2.01 Daily newspaper | 1 | 1 | 1 | 1.00 |
| 09.5.2.2.02 Weekly newspaper | 1.13 | 1.07 | 1.07 | 1.09 |
| 09.5.2.2.03 Monthly magazine | 2.45 | 1 | 2 | 1.70 |
| 09.5.2.2.04 International magazine | 2.95 | 5.69 | 2.13 | 3.29 |
| 09.5.4.4.01 Exercise book - soft cover | 0.23 | 0.21 | 0.2 | 0.21 |
| 09.5.4.4.02 Ordinary pen | 0.23 | 0.19 | 0.19 | 0.20 |
| 09.5.4.4.03 Pencil | 0.19 | 0.16 | 0.14 | 0.16 |
| 10.1.1.1.01 Tuition fees - Primary level | 67.35 | 30.27 | 45.7 | 45.33 |
| 10.2.1.1.01 Tuition fees - Secondary level | 40.02 | 32.01 | 27.99 | 32.98 |
| 10.3.1.1.01 Private college fees | 86.07 | 45 | 75.97 | 66.51 |
| 10.4.1.1.01 University fees | 603.38 | 745.88 | 618.52 | 652.94 |
| 10.5.1.1.01 Correspondence fees | 80 | 80 | 80 | 80.00 |
| 11.1.1.1.01 Pie | 1.24 | 1.16 | 1.08 | 1.16 |
| 11.1.1.1.02 Dinner meal | 6.87 | 12.84 | 2.12 | 5.72 |
| 11.1.1.1.03 Sadza and Chicken | 2.31 | 1.25 | 1.35 | 1.57 |
| 11.1.1.1.04 Sadza and beef | 2.25 | 1.19 | 1.41 | 1.56 |
| 11.1.1.1.05 Cold beer at bar | 1.37 | 1.89 | 1.29 | 1.49 |
| 11.1.1.1.06 Bottle of white wine at bar | 9.36 | 11.42 | 5.53 | 8.39 |
| 11.1.1.1.07 Purchase of a soft drink in a restaurant | 0.59 | 0.5 | 0.57 | 0.55 |
| 11.1.1.1.08 Hamburger and chips from take away (eg Big Mac) | 1.93 | 1.1 | 1.4 | 1.44 |
| 11.1.1.1.09 Quarter Chicken | 3.23 | 3.54 | 3 | 3.25 |
| 11.1.1.1.10 Plain Chips | 1.22 | 1.47 | 1.07 | 1.24 |
| 11.1.1.1.11 Chicken and chips | 3.09 | 2.8 | 2.33 | 2.72 |
| 11.1.1.1.12 Fish and chips | 5.23 | 3.1 | 3.48 | 3.84 |

| itemcode | Geometric Means Bulawayo | Geometric Means_Ma nicaland | Geometric Means Mash West | Geomeans for 3 Provinces |
|---|---------------------------------|------------------------------------|----------------------------------|---------------------------------|
| 11.2.0.1.01 Double room, one night, top grade (4 and 5 star) | 154.57 | 200.53 | 175.73 | 175.95 |
| 11.2.0.1.02 Double room rate, one night, medium grade (3 star) hotel | 103.3 | 130.46 | 113.14 | 115.10 |
| 11.2.0.1.03 Double room rate, one night, in a normal hotel (with no star) | 47.38 | 36.06 | 33.19 | 38.42 |
| 11.2.0.1.04 Double room rate, one night, in a guest house | 39.62 | 17.2 | 39.91 | 30.07 |
| 11.2.0.1.05 Boarder fees | 618.76 | 532.86 | 739.92 | 624.85 |
| 12.1.1.1.01 Hair relaxing-dark and lovely | 14.92 | 5.51 | 10.72 | 9.59 |
| 12.1.1.1.02 Hair relaxing-soft and free | 10.85 | 3.7 | 6.72 | 6.46 |
| 12.1.1.1.03 Hair cut-simple | 2.68 | 1.18 | 1.4 | 1.64 |
| 12.1.1.1.04 Hair cut-box cut | 3.19 | 1.74 | 1.99 | 2.23 |
| 12.1.1.1.05 Shaving | 1 | 0.73 | 0.7 | 0.80 |
| 12.1.1.1.06 Hair plaiting-long braids | 25.34 | 11.54 | 12.83 | 15.54 |
| 12.1.1.1.07 Oil treatment and set | 7.88 | 4.98 | 5 | 5.81 |
| 12.1.1.1.08 Hair plaiting-short braids | 11.98 | 7.27 | 7.14 | 8.54 |
| 12.1.2.1.01 Hair drier | 43.99 | 15 | 31.12 | 27.38 |
| 12.1.2.1.02 Electric shaver | 24.91 | 18 | 12.27 | 17.65 |
| 12.1.3.1.01 Toilet soap | 1.03 | 1.11 | 1.11 | 1.08 |
| 12.1.3.1.02 Bath soap | 0.89 | 0.95 | 0.89 | 0.91 |
| 12.1.3.1.03 Toilet paper | 1.26 | 0.91 | 1.13 | 1.09 |
| 12.1.3.1.04 Skim cream | 2.14 | 2.1 | 1.75 | 1.99 |
| 12.1.3.1.05 Vaseline - petroleum jelly | 0.98 | 1.01 | 0.91 | 0.97 |
| 12.1.3.1.06 Toothpaste | 0.91 | 0.89 | 0.94 | 0.91 |
| 12.1.3.1.07 Deodorant spray | 3.08 | 3.14 | 2.81 | 3.01 |
| 12.1.3.1.08 Cotton wool | 3.44 | 1.59 | 1.35 | 1.95 |
| 12.1.3.1.09 Disposable razors | 0.84 | 0.87 | 0.68 | 0.79 |
| 12.1.3.1.10 Roll on | 2.37 | 2.1 | 1.86 | 2.10 |
| 12.1.3.1.11 Sanitary pads | 1.5 | 1.06 | 1.07 | 1.19 |
| 12.3.1.1.01 Wrist watch | 35.09 | 8 | 21.41 | 18.18 |
| 12.3.1.1.02 Clock | 6.84 | 8 | 8.62 | 7.78 |
| 12.3.1.1.03 Jewellery (e.g ring, necklace) | 31.34 | 5 | 20.81 | 14.83 |
| 12.3.2.1.01 Suitcase | 53.54 | 10.58 | 23.87 | 23.82 |
| 12.3.2.1.02 Umbrella | 4.4 | 3 | 5.23 | 4.10 |
| 12.5.3.1.01 Medical aid contribution | 19.96 | 19.96 | 19.96 | 19.96 |
| 12.5.4.1.01 Car insurance | 291.41 | 291.41 | 291.41 | 291.41 |
| 12.6.2.1.01 Cost of money order | 2 | 2 | 2 | 2.00 |
| 12.6.2.1.02 Cost of mantainng a savings account | 4.38 | 4.38 | 4.38 | 4.38 |
| 12.7.0.1.01 Advert in a local weekly paper | 13.84 | 13.84 | 13.84 | 13.84 |
| 12.7.0.1.02 Cost of a single A4 sheet photocopy | 0.07 | 0.1 | 0.32 | 0.13 |
| 12.7.0.1.03 Total charge for undertaking a funeral | 273.9 | 285.95 | 326.04 | 294.48 |

| itemcode | Geometric Means Bulawayo | Geometric Means_Ma nicaland | Geometric Means Mash West | Geomeans for 3 Provinces |
|---|---------------------------------|------------------------------------|----------------------------------|---------------------------------|
| 12.7.0.1.04 Cost of ordinary coffin for an adult | 140.6 | 223.59 | 171.35 | 175.30 |
| 12.7.0.1.05 Private security services for a household-per day 24hrs | 41.42 | 56.7 | 73.15 | 55.59 |
| 12.7.0.1.06 Private security services for a household-per month | 814.98 | 738 | 1621.51 | 991.69 |

7.9 Appendix 9: Results for the Second Phase of Data Collection

| itemcode | Geometric Means_Bulawayo | Geometric Means_Manicaland | Geometric Means_Mash West | Geomeans for 3 Provinces |
|--------------------------------------|--------------------------|----------------------------|---------------------------|--------------------------|
| 01.1.1.0.01 White bread | 0.77 | 0.79 | 0.73 | 0.76 |
| 01.1.1.0.02 Brown bread | 0.82 | 0.84 | 0.69 | 0.78 |
| 01.1.1.1.01 Bun | 0.12 | 0.2 | 0.1 | 0.13 |
| 01.1.1.1.02 Scone | 0.47 | 0.41 | 0.4 | 0.43 |
| 01.1.1.1.03 Cake | 3.87 | 4.5 | 2.51 | 3.52 |
| 01.1.1.2.01 Biscuits-plain marie | 0.64 | 0.56 | 0.59 | 0.60 |
| 01.1.1.2.02 Biscuits-loose | 1.12 | 1.23 | 1.13 | 1.16 |
| 01.1.1.2.03 Biscuits-lemon creams | 0.66 | 0.62 | 0.66 | 0.65 |
| 01.1.1.2.04 Biscuits-assorted | 1.52 | 1.12 | 1.46 | 1.35 |
| 01.1.1.3.01 Flour-self raising | 1.92 | 2.01 | 1.98 | 1.97 |
| 01.1.1.3.02 Flour-plain | 2.26 | 2.16 | 2.29 | 2.24 |
| 01.1.1.4.01 Maize meal-super refined | 10.91 | 8 | 7.62 | 8.73 |
| 01.1.1.4.02 Maize meal-roller meal | 6.1 | 5.5 | 5.85 | 5.81 |
| 01.1.1.5.01 Spaghetti | 1.36 | 0.98 | 0.99 | 1.10 |
| 01.1.1.5.02 Macaroni | 1.31 | 0.98 | 1.06 | 1.11 |
| 01.1.1.5.03 Noodles | 0.56 | 0.6 | 0.47 | 0.54 |
| 01.1.1.5.04 Breakfast cereals | 2.93 | 3.23 | 3.54 | 3.22 |
| 01.1.1.5.05 Rice-long grain | 2.51 | 2.21 | 2.32 | 2.34 |
| 01.1.1.5.06 Rice-short grain | 1.96 | 1.86 | 1.81 | 1.88 |
| 01.1.2.0.01 Rump steak-beef | 7.92 | 4.5 | 5.6 | 5.84 |
| 01.1.2.0.02 Topside-beef | 6.71 | 4.69 | 5.9 | 5.70 |
| 01.1.2.0.03 Stewing steak-beef | 4.52 | 4.37 | 5.25 | 4.70 |
| 01.1.2.0.04 Ration meat-beef | 4.37 | 3.83 | 4.52 | 4.23 |
| 01.1.2.0.05 Liver-beef | 6.03 | 4.99 | 5.6 | 5.52 |
| 01.1.2.0.06 Goat Meat | 5.42 | 4.64 | 5.89 | 5.29 |
| 01.1.2.0.07 live Goat | 65 | 35 | 40 | 44.98 |
| 01.1.2.0.08 Madora | 2.34 | 1.84 | 1.38 | 1.81 |
| 01.1.2.0.09 Mince beef | 5.16 | 4.13 | 5.9 | 5.01 |
| 01.1.2.0.10 Boerewors-beef | 6.13 | 4.66 | 5.27 | 5.32 |
| 01.1.2.1.01 Offal-beef | 3.13 | 3.13 | 3.35 | 3.20 |
| 01.1.2.1.02 Offal-beef | 1.82 | 2.71 | 2.59 | 2.34 |
| 01.1.2.2.01 Chicken-full | 5.62 | 4.84 | 5.22 | 5.22 |
| 01.1.2.2.02 Chicken-live | 3.17 | 7.25 | 5.85 | 5.12 |
| 01.1.2.3.01 Pork | 5.21 | 4.74 | 5.29 | 5.07 |
| 01.1.2.3.02 Bacon | 4.4 | 3.91 | 4.2 | 4.17 |

| itemcode | Geometric Means_Bulawayo | Geometric Means_Manicaland | Geometric Means_Mash West | Geomeans for 3 Provinces |
|--------------------------------------|--------------------------|----------------------------|---------------------------|--------------------------|
| 01.1.2.3.03 Sausages-pork | 5.46 | 4.7 | 4.09 | 4.72 |
| 01.1.2.3.04 Tinned meat | 2.68 | 2.19 | 2.12 | 2.32 |
| 01.1.3.0.01 Frozen fish | 3.84 | 2.86 | 3.79 | 3.47 |
| 01.1.3.0.02 Dried fish | 2.29 | 1.8 | 1.53 | 1.85 |
| 01.1.3.0.03 Bream Dried | 5.72 | 4.16 | 6.2 | 5.28 |
| 01.1.3.0.04 Tinned fish | 0.87 | 0.91 | 0.77 | 0.85 |
| 01.1.4.0.01 Sour milk | 0.73 | 0.83 | 0.77 | 0.78 |
| 01.1.4.0.02 Fresh milk | 0.75 | 0.7 | 0.72 | 0.72 |
| 01.1.4.0.03 Milk-sterilised | 0.87 | 0.91 | 0.88 | 0.89 |
| 01.1.4.0.04 Powdered milk-full cream | 4.5 | 3.73 | 4.09 | 4.09 |
| 01.1.4.0.05 Powdered milk-for babies | 7.37 | 7.42 | 6.41 | 7.05 |
| 01.1.4.1.01 Cheese | 7.17 | 7.23 | 8.4 | 7.58 |
| 01.1.4.1.02 Cream | 2.57 | 2.29 | 1.61 | 2.12 |
| 01.1.4.1.03 condensed milk | 3.07 | 2.92 | 2.74 | 2.91 |
| 01.1.4.1.04 Yoghurt | 0.65 | 0.64 | 0.74 | 0.68 |
| 01.1.4.2.01 Eggs | 2.17 | 1.91 | 2.89 | 2.29 |
| 01.1.5.0.01 Peanut butter | 1.7 | 1.69 | 1.38 | 1.58 |
| 01.1.5.0.02 Butter-Milk | 5.13 | 6.15 | 4.75 | 5.31 |
| 01.1.5.1.01 Cooking oil-olivine | 2.41 | 3.32 | 3.19 | 2.94 |
| 01.1.5.1.02 Cooking oil-panol | 2.02 | 3.15 | 3.19 | 2.73 |
| 01.1.5.2.01 Lard | 8.7 | 3.6 | 1.9 | 3.90 |
| 01.1.5.2.02 Margarine-stock | 2.64 | 1.92 | 2.18 | 2.23 |
| 01.1.5.2.03 Soft margarine-helio | 3.29 | 2.31 | 2.16 | 2.54 |
| 01.1.6.0.01 Apples | 2.19 | 1.88 | 1.78 | 1.94 |
| 01.1.6.0.02 Bananas | 1.05 | 0.63 | 1 | 0.87 |
| 01.1.6.0.03 Mangoes | 1.74 | 1.1 | 0.95 | 1.22 |
| 01.1.6.0.04 Oranges | 0.74 | 0.71 | 0.75 | 0.73 |
| 01.1.6.0.05 pine apples | 1.74 | 1.31 | 1.35 | 1.45 |
| 01.1.6.0.06 peanuts | 29.32 | 2.82 | 6.19 | 8.00 |
| 01.1.6.0.07 Tinned fruits | 1.91 | 2.3 | 1.91 | 2.03 |
| 01.1.6.0.08 Paw paw | 2.56 | 2.65 | 1.76 | 2.29 |
| 01.1.6.0.09 pear | 1.86 | 2.97 | 2.1 | 2.26 |
| 01.1.6.0.10 grapes | 4.2 | 4.38 | 3.66 | 4.07 |
| 01.1.6.0.11 dried fruits | 4.33 | 2.18 | 2.31 | 2.79 |
| 01.1.6.0.12 plums | 2.62 | 3.9 | 3.74 | 3.37 |
| 01.1.6.0.13 avocado | 1.37 | 0.56 | 1.06 | 0.93 |
| 01.1.7.0.01 Green beans | 1.81 | 1.64 | 2.15 | 1.85 |
| 01.1.7.0.02 Cabbages | 0.85 | 0.46 | 0.38 | 0.53 |
| 01.1.7.0.03 Okra | 1.6 | 1.37 | 1.9 | 1.61 |

| itemcode | Geometric Means_Bulawayo | Geometric Means_Manicaland | Geometric Means_Mash West | Geomeans for 3 Provinces |
|--|--------------------------|----------------------------|---------------------------|--------------------------|
| 01.1.7.0.04 Carrots | 1.41 | 1.08 | 1.46 | 1.31 |
| 01.1.7.0.05 Onions | 1.3 | 1.24 | 1.25 | 1.26 |
| 01.1.7.0.06 Rape-Covo-Chomoulier | 0.56 | 0.62 | 0.65 | 0.61 |
| 01.1.7.0.07 Tomatoes | 1.26 | 0.8 | 0.88 | 0.96 |
| 01.1.7.0.08 Cucumber | 1.37 | 0.82 | 1 | 1.04 |
| 01.1.7.0.09 Potatoes plus sweet potatoes | 2.1 | 1.12 | 1.22 | 1.42 |
| 01.1.7.0.10 lettuce | 0.82 | 0.82 | 0.88 | 0.84 |
| 01.1.7.0.11 spinach | 0.61 | 0.5 | 0.61 | 0.57 |
| 01.1.7.0.12 pumpkins | 1.6 | 1.13 | 0.84 | 1.15 |
| 01.1.7.0.13 squash | 1.54 | 1.65 | 1.34 | 1.50 |
| 01.1.7.0.14 baby marrow | 1.47 | 1.3 | 1.29 | 1.35 |
| 01.1.7.0.15 fresh peas | 1.9 | 1.28 | 1.88 | 1.66 |
| 01.1.7.0.16 garlic | 4.56 | 4.73 | 4.57 | 4.62 |
| 01.1.7.0.17 ginger | 3.35 | 2.39 | 4.95 | 3.41 |
| 01.1.7.0.18 water melon | 1.76 | 1.01 | 0.75 | 1.10 |
| 01.1.7.0.19 chilli | 2.35 | 1.61 | 2.32 | 2.06 |
| 01.1.7.1.01 Baked beans | 1 | 1.04 | 0.99 | 1.01 |
| 01.1.7.1.02 Dried beans | 1.2 | 1.21 | 1.18 | 1.20 |
| 01.1.7.1.03 Tinned peas | 2.12 | 2.28 | 1.78 | 2.05 |
| 01.1.7.1.04 Potato crips | 1.14 | 0.74 | 0.71 | 0.84 |
| 01.1.7.1.05 Tomatoe sauce | 1.15 | 1.21 | 1.08 | 1.15 |
| 01.1.8.0.01 White sugar | 1.98 | 2.04 | 1.85 | 1.96 |
| 01.1.8.0.02 Brown sugar | 1.75 | 1.53 | 1.77 | 1.68 |
| 01.1.8.1.01 Ice cream | 4.37 | 3.58 | 3.44 | 3.78 |
| 01.1.8.1.02 Honey | 4.12 | 3.73 | 3.22 | 3.67 |
| 01.1.8.1.03 Icing sugar-caster sugar | 1.63 | 1.69 | 1.66 | 1.66 |
| 01.1.8.1.04 Glucose | 2.35 | 2.98 | 2.96 | 2.75 |
| 01.1.8.1.05 Chocolate bar | 1.28 | 1.74 | 1.22 | 1.40 |
| 01.1.8.1.06 Chewing gum | 0.31 | 0.07 | 0.07 | 0.11 |
| 01.1.8.1.07 Jam-sun sweet | 2.69 | 2.29 | 2.44 | 2.47 |
| 01.1.8.1.08 Jam-mixed fruit | 2.76 | 2.88 | 2.85 | 2.83 |
| 01.1.8.1.09 Sweets | 1.45 | 0.53 | 0.89 | 0.88 |
| 01.1.9.0.01 Salt | 0.82 | 0.88 | 0.82 | 0.84 |
| 01.1.9.0.02 Pepper | 2.48 | 3.27 | 2.38 | 2.68 |
| 01.1.9.0.03 Curry powder | 1.05 | 0.92 | 1.01 | 0.99 |
| 01.1.9.0.04 Yeast | 1.22 | 1.04 | 1.02 | 1.09 |
| 01.1.9.0.05 Soup packet | 0.45 | 0.51 | 0.46 | 0.47 |
| 01.1.9.0.06 Baby cereal | 5.15 | 5.13 | 4.57 | 4.94 |
| 01.1.9.0.07 Baking powder | 2.37 | 1.72 | 1.97 | 2.00 |

| itemcode | Geometric Means_Bulawayo | Geometric Means_Manicaland | Geometric Means_Mash West | Geomeans for 3 Provinces |
|--|--------------------------|----------------------------|---------------------------|--------------------------|
| 01.1.9.0.08 Gravy powder | 1.17 | 1.19 | 1.06 | 1.14 |
| 01.1.9.0.09 Vinegar | 1.2 | 1.31 | 1.1 | 1.20 |
| 01.1.9.0.10 Chutney | 2.49 | 2.56 | 2.42 | 2.49 |
| 01.1.9.0.11 Bi-carbonate of soda | 1.02 | 0.4 | 0.25 | 0.47 |
| 01.1.9.0.12 Malt-chimera | 1.39 | 1.78 | 1.54 | 1.56 |
| 01.2.1.0.01 Instant coffee | 4.21 | 4.84 | 3.86 | 4.28 |
| 01.2.1.0.02 Coffee-ground | 2.1 | 1.32 | 1.56 | 1.63 |
| 01.2.1.1.01 Tea bags | 2.43 | 2.42 | 2.27 | 2.37 |
| 01.2.1.1.02 Tea leaves | 3.87 | 2.94 | 3.41 | 3.39 |
| 01.2.1.1.03 Drinking chocolate | 2.81 | 2.54 | 2.46 | 2.60 |
| 01.2.1.1.04 Herbal tea (Roiboos) | 2.47 | 2.57 | 2.38 | 2.47 |
| 01.2.1.2.01 Cocoa | 3.96 | 4.53 | 3.74 | 4.06 |
| 01.2.2.0.01 Tonic water | 1.09 | 0.88 | 0.84 | 0.93 |
| 01.2.2.0.02 Mineral water | 0.49 | 0.49 | 0.47 | 0.48 |
| 01.2.2.1.01 Carbonated soft drink-bottled | 0.51 | 0.5 | 0.53 | 0.51 |
| 01.2.2.1.02 Carbonated soft drink-canned | 0.65 | 0.68 | 0.66 | 0.66 |
| 01.2.2.2.01 Pure fruit juice | 2.13 | 1.57 | 1.87 | 1.84 |
| 01.2.2.2.02 RTD e.g Cascade | 0.52 | 0.52 | 0.5 | 0.51 |
| 01.2.2.2.03 Fruit squash | 2.74 | 2.93 | 2.82 | 2.83 |
| 02.1.1.1.01 Whisky | 6.13 | 5.71 | 5.34 | 5.72 |
| 02.1.1.1.02 Gin | 6.34 | 4.36 | 5.85 | 5.45 |
| 02.1.1.1.03 Brandy | 8.09 | 3.91 | 6.82 | 6.00 |
| 02.1.2.2.01 White wine | 6.4 | 9.39 | 4.63 | 6.53 |
| 02.1.2.2.02 Red wine | 7.1 | 5.52 | 6.46 | 6.33 |
| 02.1.2.2.03 Sparkling wine | 7.8 | 7.35 | 7.41 | 7.52 |
| 02.1.3.3.01 Clear beer-castle bottle store | 0.92 | 0.97 | 0.94 | 0.94 |
| 02.1.3.3.02 Clear beer-Bohlingers bottle store | 1.06 | 1.01 | 1.03 | 1.03 |
| 02.1.3.3.03 Cane-spirit | 5.13 | 3.65 | 3.42 | 4.00 |
| 02.1.3.3.04 Pilsner | 1.03 | 0.98 | 0.99 | 1.00 |
| 02.1.3.3.05 Clear beer-lion | 0.92 | 0.97 | 0.95 | 0.95 |
| 02.1.3.3.06 Opaque beer-packed | 0.96 | 0.97 | 1.01 | 0.98 |
| 02.1.3.3.07 Clear beer-black label | 0.93 | 0.97 | 0.94 | 0.95 |
| 02.2.1.0.01 Cigarettes-kingsgate | 1.36 | 1.5 | 1.44 | 1.43 |
| 02.2.1.0.02 Cigarettes-Berkerly | 1.75 | 1.61 | 1.7 | 1.69 |
| 02.2.1.0.03 Snuff | 0.41 | 0.47 | 0.56 | 0.48 |
| 02.2.1.0.04 Chimonera | 1 | 1 | 1 | 1.00 |
| 03.1.1.0.01 Dress material-poly cotton | 1.65 | 1.7 | 2.07 | 1.80 |
| 03.1.1.0.02 Dress material-mandy | 1.47 | 1.45 | 2.02 | 1.63 |
| 03.1.1.0.03 Java material | 1.55 | 1.47 | 1.47 | 1.50 |

| itemcode | Geometric Means_Bulawayo | Geometric Means_Manicaland | Geometric Means_Mash West | Geomeans for 3 Provinces |
|--|--------------------------|----------------------------|---------------------------|--------------------------|
| 03.1.2.0.01 Trousers-formal | 21.76 | 25.82 | 24.58 | 23.99 |
| 03.1.2.0.02 Mens-trousers casual | 25.7 | 20.59 | 19.95 | 21.94 |
| 03.1.2.0.03 Mens-jean trousers | 24.59 | 26.86 | 17.3 | 22.52 |
| 03.1.2.0.04 Mens-suits-double breast | 79.37 | 100.81 | 73.48 | 83.77 |
| 03.1.2.0.05 Mens-suits-single breast | 90.71 | 73.29 | 111.25 | 90.43 |
| 03.1.2.0.06 Mens pyjamas-replaces pullover | 26.57 | 32.79 | 12.03 | 21.88 |
| 03.1.2.0.07 Mens plain shirt long sleeve (swallows short sleeve) | 20.85 | 20.48 | 23.63 | 21.61 |
| 03.1.2.0.08 Mens socks | 2.21 | 2 | 2.35 | 2.18 |
| 03.1.2.0.09 Mens briefs | 9.92 | 7.13 | 9.12 | 8.64 |
| 03.1.2.1.01 Costume | 63.66 | 70.99 | 50.08 | 60.94 |
| 03.1.2.1.02 Dress | 39.72 | 19.57 | 28.54 | 28.10 |
| 03.1.2.1.03 Skirt-flared | 21.01 | 19.62 | 20.14 | 20.25 |
| 03.1.2.1.04 Skirt-straight | 19.87 | 16.4 | 18.93 | 18.34 |
| 03.1.2.1.05 Ladies trousers | 18.81 | 25.63 | 27.68 | 23.72 |
| 03.1.2.1.06 Blouse | 16.98 | 17.14 | 18.3 | 17.46 |
| 03.1.2.1.07 Jersey | 19.57 | 17.18 | 25.45 | 20.45 |
| 03.1.2.2.01 Panties | 5.67 | 3.31 | 5.11 | 4.58 |
| 03.1.2.2.02 Brassiere | 10.46 | 5.32 | 10.44 | 8.34 |
| 03.1.2.2.03 Panty-hose | 4.62 | 4.3 | 5.03 | 4.64 |
| 03.1.2.2.04 Tights | 4.89 | 6.13 | 6.9 | 5.91 |
| 03.1.2.2.05 Ladies night dress | 16.8 | 18.31 | 20.46 | 18.46 |
| 03.1.2.3.01 Shorts | 8.34 | 6.48 | 12.57 | 8.79 |
| 03.1.2.3.02 Dress | 11.39 | 13.43 | 21.06 | 14.77 |
| 03.1.2.3.03 T Shirt | 5.07 | 5.61 | 8.05 | 6.12 |
| 03.1.2.3.04 Pampers | 7.18 | 8 | 9.36 | 8.13 |
| 03.1.2.3.05 Napkins | 3.97 | 3.87 | 4.16 | 4.00 |
| 03.1.2.3.06 Babys all in one suit-new item | 10.95 | 7.35 | 11.67 | 9.79 |
| 03.1.2.4.01 Girls uniform | 11.6 | 10.6 | 11.89 | 11.35 |
| 03.1.2.4.02 Boys shorts | 7.81 | 6.2 | 6.99 | 6.97 |
| 03.1.2.4.03 Boys shirts | 9.32 | 6.47 | 6.86 | 7.45 |
| 03.1.2.4.04 Jersey | 16.18 | 18.6 | 21.88 | 18.74 |
| 03.1.2.4.05 Blazer | 35.95 | 32.77 | 36.87 | 35.15 |
| 03.1.2.4.06 Tracksuit | 20.93 | 35.88 | 29.66 | 28.14 |
| 03.1.2.4.07 Boys trousers | 11.09 | 10.16 | 11.31 | 10.84 |
| 03.1.2.4.08 Girls trousers | 10.37 | 9.97 | 9.48 | 9.93 |
| 03.1.3.0.01 Tie | 8.21 | 6.72 | 7.21 | 7.35 |
| 03.1.3.0.02 Leather belt | 14.78 | 12.25 | 10.41 | 12.35 |
| 03.1.3.0.03 Sewing thread standard reel | 0.82 | 0.27 | 0.57 | 0.50 |

| itemcode | Geometric Means_Bulawayo | Geometric Means_Manicaland | Geometric Means_Mash West | Geomeans for 3 Provinces |
|--|--------------------------|----------------------------|---------------------------|--------------------------|
| 03.1.3.0.04 Zip fastener | 0.15 | 0.12 | 0.28 | 0.17 |
| 03.1.3.0.05 Knitting wool | 0.46 | 1.41 | 1.1 | 0.89 |
| 03.1.3.0.06 Needle | 0.77 | 0.4 | 0.81 | 0.63 |
| 03.1.3.0.07 cap | 6.78 | 8.84 | 6.7 | 7.38 |
| 03.1.3.0.08 doek | 3.74 | 3 | 8.94 | 4.65 |
| 03.1.3.0.09 hat for ladies | 30.86 | 6.45 | 16.11 | 14.75 |
| 03.1.3.0.10 shawl | 19.33 | 11.93 | 8.24 | 12.39 |
| 03.1.3.0.11 Boys suits | 30 | 30 | 30 | 30.00 |
| 03.1.3.0.12 Buttons | 0.07 | 0.06 | 0.28 | 0.11 |
| 03.1.4.0.01 Drying cleaning of a two piece suit-Mens suit from | 7.07 | 5.96 | 5.92 | 6.30 |
| 03.1.4.0.02 Drying of a ladies custume | 8.66 | 5.97 | 5.92 | 6.74 |
| 03.1.5.0.01 Ladies blouse 2nd hand | 2.24 | 2 | 1.98 | 2.07 |
| 03.1.5.0.02 Mens shirt 2nd hand | 13.42 | 2 | 2.99 | 4.31 |
| 03.1.5.0.03 Mens jean 2nd hand | 10 | 5 | 5.75 | 6.60 |
| 03.1.5.0.04 Ladies skirt 2nd hand | 6.6 | 3 | 2.57 | 3.71 |
| 03.1.5.0.05 Childrens T-Shirt hand | 2.52 | 1 | 2.64 | 1.88 |
| 03.1.5.0.06 Golf TShirt 2nd hand | 4.47 | 1 | 2.67 | 2.29 |
| 03.2.1.0.01 Mens formal shoes | 33.53 | 33.04 | 22.47 | 29.20 |
| 03.2.1.0.02 Mens casual shoes (tackies) | 26.71 | 20.15 | 14.81 | 19.98 |
| 03.2.1.1.01 Court shoes | 32.36 | 16.62 | 19.37 | 21.84 |
| 03.2.1.1.02 Womens casual shoes | 29.71 | 20.31 | 15.01 | 20.84 |
| 03.2.1.1.03 Sandals-high heeled shoes | 23.07 | 11.82 | 8.04 | 12.99 |
| 03.2.1.1.04 Canvas shoes | 8.79 | 8.89 | 9.04 | 8.91 |
| 03.2.1.2.01 Girls school shoes | 16.81 | 14.92 | 12.9 | 14.79 |
| 03.2.1.2.02 Girls party shoes | 15.81 | 21.34 | 15.13 | 17.22 |
| 03.2.1.2.03 Boys school shoes | 17.82 | 16.61 | 15.61 | 16.66 |
| 03.2.1.3.01 Sports shoe | 45.41 | 24.5 | 19.63 | 27.95 |
| 03.2.1.3.02 Mens Sports shoes | 50.46 | 25.69 | 21.53 | 30.33 |
| 03.2.2.0.01 Heeling and soling mens shoes | 10.98 | 9.28 | 10.95 | 10.37 |
| 03.2.2.0.02 Heeling and soling womensshoes | 6.11 | 6.8 | 5.98 | 6.29 |
| 04.1.1.1.01 Rent for a house-high density | 47.71 | 42.89 | 36.06 | 41.94 |
| 04.1.1.1.02 Rent for a house-low density | 80.58 | 77.71 | 43.81 | 64.98 |
| 04.1.1.1.03 Rent for a house-medium density | 73.29 | 69.57 | 42.5 | 60.06 |
| 04.3.1.0.01 Asbestos sheet | 29.39 | 28.84 | 29.34 | 29.19 |
| 04.3.1.0.02 Cement | 12 | 11.78 | 12.91 | 12.22 |
| 04.3.1.0.03 Window panes | 7.36 | 1.15 | 3.4 | 3.06 |
| 04.3.1.0.04 Door lock | 14.23 | 17.07 | 14.06 | 15.06 |
| 04.3.1.0.05 Paint | 18.11 | 14.98 | 19.56 | 17.44 |

| itemcode | Geometric Means_Bulawayo | Geometric Means_Manicaland | Geometric Means_Mash West | Geomeans for 3 Provinces |
|--|--------------------------|----------------------------|---------------------------|--------------------------|
| 04.4.1.0.01 Water charges-low density | 2.22 | 20.04 | 16.24 | 8.97 |
| 04.4.1.0.02 Water charges-high density | 1.26 | 11.34 | 11.68 | 5.51 |
| 04.4.2.0.01 Dust removing rates-high density | 4.74 | 2.04 | 4.23 | 3.45 |
| 04.4.2.0.02 Dust removing rates-low density | 6.6 | 5.28 | 5.18 | 5.65 |
| 04.4.3.0.01 Sewarages charges-High density | 0.52 | 3.1 | 3.62 | 1.80 |
| 04.4.3.0.02 Sewarages charges-Low density | 1.04 | 4.1 | 6.45 | 3.02 |
| 04.4.4.0.01 Owners rate-for land | 0.04 | 27.11 | 11.29 | 2.30 |
| 04.4.4.0.02 Ownres rate-for improvements | 24.1 | 12.85 | 2.2 | 8.80 |
| 04.5.1.1.01 Electricity charges-metred 600 units | 78.65 | 78.65 | 78.65 | 78.65 |
| 04.5.1.1.02 Electricity charges-monthly charge for 7.5Amps | 10.54 | 16.12 | 16.12 | 13.99 |
| 04.5.2.2.01 Gas | 2.11 | 4 | 2.14 | 2.62 |
| 04.5.3.3.01 Paraffin | 1.08 | 1.26 | 1.16 | 1.16 |
| 04.5.4.4.01 Charcoal | 4.85 | 5.3 | 5.22 | 5.12 |
| 04.5.4.4.02 Fire wood | 1.14 | 2 | 2.09 | 1.68 |
| 05.1.1.0.01 Bedroom suite | 1785.44 | 1217.22 | 844.53 | 1224.36 |
| 05.1.1.0.02 Bed & Mattress | 374.27 | 316.93 | 336.48 | 341.75 |
| 05.1.1.0.03 Kichen chairs | 256.42 | 263.73 | 236.69 | 252.02 |
| 05.1.1.0.04 Lounge suite-dralon | 1674.16 | 1220.09 | 948.52 | 1246.65 |
| 05.1.1.0.05 Lounge suite-weave rexin | 1609.5 | 989.45 | 1411.31 | 1309.89 |
| 05.1.1.0.06 Wardrobe | 457.23 | 436.29 | 308.73 | 394.91 |
| 05.1.1.0.07 Dining room suite | 1427.47 | 1427.43 | 1284.31 | 1378.05 |
| 05.1.1.0.08 Wall unit | 516.38 | 796.47 | 567.09 | 615.55 |
| 05.1.1.0.09 Kitchen dresser | 429.15 | 532.6 | 517.81 | 490.98 |
| 05.1.1.0.10 Coffee table | 274.37 | 185.22 | 206.54 | 218.95 |
| 05.1.2.2.01 floor tiles | 12.92 | 69 | 10.68 | 21.19 |
| 05.1.2.2.02 Carpets | 69.73 | 169 | 188.77 | 130.54 |
| 05.2.1.1.01 Pair of fitted sheets-cotton | 34.72 | 30 | 27.63 | 30.65 |
| 05.2.1.1.02 Blanket(night) | 46.79 | 36.95 | 31.39 | 37.86 |
| 05.2.1.1.03 Bed spread | 28.33 | 30 | 26.49 | 28.24 |
| 05.2.1.1.04 Bath towel-plain | 4.78 | 1.76 | 2.68 | 2.83 |
| 05.2.1.1.05 Curtain material | 15 | 4.9 | 8.1 | 8.41 |
| 05.2.1.1.06 Pillow, one standard-foam inside | 9.39 | 5.24 | 6.56 | 6.86 |
| 05.3.1.1.01 Electric stove | 561.21 | 481.58 | 450.47 | 495.63 |
| 05.3.1.1.02 Refridgerator | 617.64 | 132.16 | 571.46 | 359.98 |
| 05.3.1.1.03 Deep freezer | 451.1 | 299 | 384.15 | 372.80 |
| 05.3.1.1.04 Hot plate stove | 58.22 | 20.14 | 55.62 | 40.25 |
| 05.3.1.1.05 Primus stove | 23.4 | 15.49 | 16.65 | 18.21 |

| itemcode | Geometric Means_Bulawayo | Geometric Means_Manicaland | Geometric Means_Mash West | Geomeans for 3 Provinces |
|--|--------------------------|----------------------------|---------------------------|--------------------------|
| 05.3.1.1.06 Sewing machine | 180.28 | 89.86 | 100 | 117.45 |
| 05.3.1.1.07 Micro wave | 176.41 | 146.56 | 153.83 | 158.44 |
| 05.3.1.1.08 Gas stove | 194.3 | 140 | 137.27 | 155.14 |
| 05.3.2.2.01 Pressing iron - adjustable | 26.9 | 49 | 15.25 | 27.19 |
| 05.3.2.2.02 Pressing iron - non adjustable | 25.87 | 20 | 17.22 | 20.73 |
| 05.3.2.2.03 Electric fan | 49.25 | 93.87 | 34.64 | 54.30 |
| 05.3.2.2.04 Electric heater | 33.7 | 29 | 21.72 | 27.69 |
| 05.3.2.2.05 Electric kettle/jug | 32.47 | 75 | 19.87 | 36.44 |
| 05.4.1.1.01 Dinner set | 13.28 | 31.23 | 16.75 | 19.08 |
| 05.4.1.1.02 Set of glasses six | 6.17 | 3.66 | 2.73 | 3.95 |
| 05.5.1.1.01 Ordinary knife | 4 | 1.76 | 2.62 | 2.64 |
| 05.5.1.1.02 Ordinary coffee mug (enamel and chinaware) | 1.38 | 1.21 | 1.21 | 1.26 |
| 05.5.1.1.03 Plate | 1.8 | 1.69 | 1.39 | 1.62 |
| 05.5.1.1.04 Ordinary spoon | 1.23 | 1.07 | 0.67 | 0.96 |
| 05.5.1.1.05 Teapot | 14.62 | 13.92 | 14.44 | 14.32 |
| 05.5.1.1.06 Non electric iron | 13.61 | 6 | 11 | 9.65 |
| 05.5.1.1.07 Frying pan | 8.56 | 7.12 | 8.58 | 8.06 |
| 05.5.1.1.08 Pot | 17.48 | 14.33 | 18.33 | 16.62 |
| 05.5.1.1.09 Ironing board | 18.25 | 6.14 | 10 | 10.39 |
| 05.5.2.2.01 Claw hammer | 9.58 | 11 | 7.19 | 9.12 |
| 05.5.2.2.02 Wheel barrow | 55.79 | 41.01 | 44.19 | 46.59 |
| 05.5.2.2.03 Spade | 14.45 | 11.63 | 11.95 | 12.62 |
| 05.6.1.1.01 Scouring powder - vim | 1.01 | 0.91 | 1.16 | 1.02 |
| 05.6.1.1.02 Bar of household soap - wrapped | 1.32 | 1.19 | 1.11 | 1.20 |
| 05.6.1.1.03 Laundry soap - mottled | 1.25 | 1.29 | 1.37 | 1.30 |
| 05.6.1.1.04 Washing powder - surf | 2.07 | 1.82 | 1.71 | 1.86 |
| 05.6.1.1.05 Washing powder - cold power | 1.81 | 1.85 | 1.63 | 1.76 |
| 05.6.1.1.06 Desinfentant | 1.89 | 2.13 | 2.01 | 2.01 |
| 05.6.1.1.07 Toilet cleaner | 2.1 | 2.27 | 2.09 | 2.15 |
| 05.6.1.1.08 Broom | 6.37 | 7.27 | 7.39 | 6.99 |
| 05.6.1.1.09 Dish cloth/cloth | 2.27 | 2.2 | 1.88 | 2.11 |
| 05.6.1.2.01 Box of matches | 0.56 | 0.74 | 0.62 | 0.64 |
| 05.6.1.2.02 Candles | 1.9 | 2.01 | 1.66 | 1.85 |
| 05.6.1.2.03 Methylated spirit | 1.63 | 1.16 | 1.27 | 1.34 |
| 05.6.1.2.04 Light bulb | 1.24 | 0.92 | 1.11 | 1.08 |
| 05.6.1.2.05 shoe polish | 0.95 | 0.92 | 0.93 | 0.93 |
| 05.6.1.2.06 Insecticides | 2.84 | 3.21 | 2.56 | 2.86 |
| 05.6.1.2.07 Floor polish | 3.57 | 4.04 | 3.1 | 3.55 |

| itemcode | Geometric Means_Bulawayo | Geometric Means_Manicaland | Geometric Means_Mash West | Geomeans for 3 Provinces |
|---|--------------------------|----------------------------|---------------------------|--------------------------|
| 05.6.1.2.08 Torch battery | 2.86 | 1.74 | 1.91 | 2.12 |
| 05.6.2.2.01 Domestic wages | 142.77 | 120.28 | 92.73 | 116.78 |
| 06.1.1.1.01 Antiseptic | 6.69 | 5.58 | 5.48 | 5.89 |
| 06.1.1.1.02 Pain killer | 0.71 | 0.44 | 0.73 | 0.61 |
| 06.1.1.1.03 Antibiotics | 2.37 | 2.66 | 1.99 | 2.32 |
| 06.1.1.1.04 Antihypertensive | 10.28 | 11.43 | 8.51 | 10.00 |
| 06.1.1.1.05 Antidiabitics | 2.07 | 3.2 | 3.07 | 2.73 |
| 06.1.1.1.06 Anti asthma | 2.11 | 2.35 | 2 | 2.15 |
| 06.1.1.1.07 Cough-mixture | 4.68 | 4.8 | 4.29 | 4.58 |
| 06.1.1.2.01 First aid kit | 79.66 | 18.33 | 118.99 | 55.80 |
| 06.1.1.2.02 Adhesive bandages | 1.38 | 0.5 | 1.78 | 1.07 |
| 06.1.1.2.03 Thermometers | 3.59 | 2.5 | 2.85 | 2.95 |
| 06.1.1.2.04 Female condom | 0.17 | 0.16 | 0.45 | 0.23 |
| 06.1.1.2.05 Male condom | 1.2 | 0.21 | 1.58 | 0.74 |
| 06.2.1.1.01 Consultation with private medical doctor-per visit | 25.98 | 10.11 | 22.88 | 18.18 |
| 06.2.1.1.02 Government in-patient | 350 | 20 | 21.99 | 53.59 |
| 06.2.1.1.03 Municipality out-patient | 5 | 2.94 | 3.8 | 3.82 |
| 06.2.1.1.04 Government out-patient | 50 | 10 | 4 | 12.60 |
| 06.2.1.1.05 Private clinic ward fee | 79.42 | 41.09 | 17.47 | 38.49 |
| 06.2.1.1.06 Private hospital maternity fee | 330 | 210 | 51.11 | 152.43 |
| 06.2.1.1.07 Government hospital maternity fee | 132.29 | 50 | 50 | 69.15 |
| 06.2.1.1.08 Scan | 111.3 | 21.54 | 26.32 | 39.81 |
| 06.2.2.1.01 Average cost of tooth extraction by a private dentist | 25.42 | 27.14 | 20 | 23.98 |
| 06.2.2.1.02 Average cost of tooth extraction by a public dentist | 22.89 | 25.2 | 20 | 22.60 |
| 06.2.3.1.01 Chest X-ray | 10 | 33.02 | 18.86 | 18.40 |
| 06.2.3.1.02 Medical examination | 55 | 28.02 | 29.18 | 35.56 |
| 06.2.3.1.03 Ambulance charge | 31.62 | 2.29 | 6.69 | 7.85 |
| 06.3.1.1.01 Rate of stay in private hospital for 24 hours | 106 | 98.59 | 16.82 | 56.02 |
| 06.3.1.1.02 Rate of stay in government hospital for 24 hours | 21.21 | 15 | 15 | 16.84 |
| 07.1.1.1.01 New car - type 1 | 55656.92 | 31551.55 | 31584.58 | 38136.28 |
| 07.1.1.1.02 New car - type 2 | 31017.29 | 34035.28 | 24700 | 29653.55 |
| 07.1.1.1.03 Second hd car | 4897.48 | 5700 | 5260.82 | 5275.95 |
| 07.1.2.2.01 Motor Cycle - 1 | 151 | 2500 | 1800 | 879.15 |
| 07.1.3.3.01 Bicycle - 1 | 114.2 | 95.39 | 78.51 | 94.92 |
| 07.1.3.3.02 Bicycle pump | 3.65 | 3.16 | 2.29 | 2.98 |
| 07.1.4.4.01 Scotch cart | 661.72 | 500 | 283.23 | 454.21 |
| 07.2.1.1.01 Car tyre | 104.11 | 65.19 | 67.08 | 76.93 |

| itemcode | Geometric Means_Bulawayo | Geometric Means_Manicaland | Geometric Means_Mash West | Geomeans for 3 Provinces |
|---|--------------------------|----------------------------|---------------------------|--------------------------|
| 07.2.1.1.02 Car battery | 82.73 | 86.79 | 82.94 | 84.13 |
| 07.2.1.1.03 Brake pads | 26.76 | 37.21 | 29 | 30.68 |
| 07.2.1.1.04 Distributor points | 6.87 | 5.44 | 5.15 | 5.77 |
| 07.2.1.1.05 Fuel injector | 7.91 | 64.81 | 4.42 | 13.13 |
| 07.2.1.1.06 Plugs | 2.48 | 3.11 | 2.94 | 2.83 |
| 07.2.1.1.07 Gasket | 54.59 | 51.06 | 84.62 | 61.79 |
| 07.2.1.1.08 Motor cycle tube | 9.86 | 8.68 | 4.72 | 7.39 |
| 07.2.1.1.09 Bicycle tyre | 7.42 | 5.48 | 3.1 | 5.01 |
| 07.2.1.1.10 Motor cycle spark plug | 4.47 | 6.93 | 6.09 | 5.74 |
| 07.2.2.0.01 Petrol | 1.37 | 1.34 | 1.41 | 1.37 |
| 07.2.2.0.02 E10 fuel blend | 1.43 | 1.5 | 1.41 | 1.45 |
| 07.2.2.0.03 Diesel | 1.2 | 1.17 | 1.21 | 1.19 |
| 07.2.2.1.01 Engine oil | 3.09 | 3.34 | 3.31 | 3.24 |
| 07.2.2.1.02 Brake fluid | 3.36 | 3.71 | 3.49 | 3.52 |
| 07.2.2.2.01 General service (labour plus parts) | 51.24 | 22.29 | 27.36 | 31.50 |
| 07.2.2.2.02 Car Repairs-clutch repair | 174.2 | 19.4 | 62.14 | 59.44 |
| 07.2.2.3.01 Driving lessons-class 4 | 4.69 | 4 | 4.35 | 4.34 |
| 07.2.2.3.02 Car hire | 381 | 534 | 225 | 357.73 |
| 07.2.2.3.03 Parking fees | 5.09 | 1 | 1 | 1.72 |
| 07.2.2.3.04 Cost of an ordinary passport | 7.28 | 5.96 | 7.28 | 6.81 |
| 07.2.2.3.05 Toll gate fees-pvt vehicle | 5.48 | 1 | 1.59 | 2.06 |
| 07.3.1.1.01 Rail journey - economy | 8 | 8 | 8 | 8.00 |
| 07.3.1.1.02 Rail journey - standard | 10 | 10 | 10 | 10.00 |
| 07.3.1.1.03 Rail journey - sleeper | 12 | 12 | 12 | 12.00 |
| 07.3.1.2.01 Commuter fares | 0.5 | 0.57 | 0.43 | 0.50 |
| 07.3.1.2.02 Bus fare - convectional long distance bus | 8.84 | 6.52 | 6.01 | 7.02 |
| 07.3.1.2.03 Bus fare - luxury coach long distance | 16.27 | 30 | 22.36 | 22.18 |
| 07.3.1.2.04 Taxi fares | 5 | 5 | 4.51 | 4.83 |
| 07.3.1.3.01 Air fare - domestic flight | 290 | 290 | 290 | 290.00 |
| 07.3.1.3.02 Air fare - regional journey | 524.2 | 524.2 | 524.2 | 524.20 |
| 07.3.1.3.03 Air fare - international journey | 207.57 | 1229.04 | 207.57 | 375.52 |
| 08.1.0.1.01 Postage - local letter -ordinary letter | 0.4 | 0.4 | 0.4 | 0.40 |
| 08.1.0.1.02 Postage - regional letter- SA | 0.75 | 0.75 | 0.75 | 0.75 |
| 08.1.0.1.03 Postage - international letter-UK | 1 | 1 | 1 | 1.00 |
| 08.2.0.1.01 Purchase of a cell phone hand set | 65.14 | 29.5 | 88.74 | 55.45 |
| 08.2.0.1.02 Purchase of a telephone handset for land line | 35.62 | 16.73 | 20 | 22.84 |
| 08.3.0.1.01 Mobile services-econet broadband(internet) | 0.42 | 0.31 | 0.31 | 0.34 |

| itemcode | Geometric Means_Bulawayo | Geometric Means_Manicaland | Geometric Means_Mash West | Geomeans for 3 Provinces |
|---|--------------------------|----------------------------|---------------------------|--------------------------|
| 08.3.0.1.02 Mobile services-eco cash | 1.41 | 1.41 | 1.41 | 1.41 |
| 08.3.0.1.03 Mobile services-data bundles | 1.31 | 1.31 | 1.31 | 1.31 |
| 08.3.0.1.04 Mobile services -data calls | 0.09 | 0.09 | 0.09 | 0.09 |
| 08.3.0.1.05 Cost of making a call from land line to Mobile (cell) phones per unit | 0.18 | 0.18 | 0.3 | 0.21 |
| 08.3.0.1.06 Cost of making a call from Mobile (cell) phone a land line, per unit | 0.15 | 0.15 | 0.15 | 0.15 |
| 08.3.0.1.07 Cost of making a call from Mobile (cell) phone a cell phone, per unit | 0.15 | 0.15 | 0.15 | 0.15 |
| 08.3.0.1.08 Cell phone - monthly fixed rental | 3.87 | 3.87 | 3.87 | 3.87 |
| 08.3.0.1.09 Telephone charge - monthly rental charge | 5 | 5 | 5 | 5.00 |
| 08.3.0.1.10 Cost of internet services, average per hour | 1.06 | 1.41 | 1.04 | 1.16 |
| 08.3.0.1.11 A unit cost of making a international call from a land line | 0.27 | 0.27 | 0.27 | 0.27 |
| 09.1.1.1.01 Colour TV | 390.39 | 118.05 | 327.17 | 247.05 |
| 09.1.1.1.02 Plasma | 556.89 | 361.73 | 646.3 | 506.83 |
| 09.1.1.1.03 Radio with cassette,DVD player,flash player | 378.53 | 449 | 132.5 | 282.39 |
| 09.1.1.1.04 Radio and cassette player | 101.8 | 89 | 80.41 | 89.98 |
| 09.1.1.1.05 Car radio | 107.69 | 107.15 | 59.79 | 88.36 |
| 09.1.1.1.06 DVD Player | 77.66 | 37.94 | 103.58 | 67.33 |
| 09.1.1.1.07 Modulator | 7.22 | 5.48 | 7.59 | 6.70 |
| 09.1.2.2.01 Digital camera | 130.28 | 145 | 116.19 | 129.96 |
| 09.1.2.2.02 Video camera | 303.41 | 251.83 | 48.27 | 154.50 |
| 09.1.3.3.01 Scientific calculator | 12.65 | 12.29 | 13.55 | 12.82 |
| 09.1.3.3.02 Laptop | 591.77 | 775 | 440 | 586.55 |
| 09.1.4.4.01 Video DVD - local | 3.3 | 10 | 1.32 | 3.52 |
| 09.1.4.4.02 Video DVD - international | 3.5 | 20 | 3.16 | 6.05 |
| 09.1.4.4.03 Blank CD | 0.3 | 0.25 | 0.79 | 0.39 |
| 09.1.4.4.04 Audio CD-International | 4.66 | 15 | 4.64 | 6.87 |
| 09.1.4.4.05 Audio CD-local | 2.88 | 10 | 1.32 | 3.36 |
| 09.1.4.4.06 Blank audio cassette | 0.5 | 0.5 | 4.47 | 1.04 |
| 09.1.4.4.07 Memory cards | 4.89 | 3 | 4.61 | 4.07 |
| 09.1.4.4.08 Flash disc | 10.55 | 5.36 | 7.27 | 7.44 |
| 09.3.2.1.01 Tennis raquet | 38.3 | 48.48 | 68 | 50.17 |
| 09.3.2.1.02 Golf ball | 12.45 | 12 | 17.32 | 13.73 |
| 09.3.2.1.03 Tennis balls | 9.09 | 12.25 | 16.43 | 12.23 |
| 09.3.2.1.04 Football - standard | 26.36 | 30 | 29.11 | 28.45 |
| 09.3.3.1.01 Fertiliser | 22 | 19.51 | 30.11 | 23.47 |
| 09.3.3.1.02 Bulbs (decorative) | 0.62 | 0.5 | 1.58 | 0.79 |
| 09.3.3.1.03 Flower Seeds | 2.15 | 1.19 | 1.73 | 1.64 |
| 09.3.3.1.04 Hosepipe | 46.05 | 41.88 | 66.86 | 50.52 |

| itemcode | Geometric Means_Bulawayo | Geometric Means_Manicaland | Geometric Means_Mash West | Geomeans for 3 Provinces |
|---|--------------------------|----------------------------|---------------------------|--------------------------|
| 09.3.3.1.05 Garden hoe | 11.42 | 7.22 | 7.37 | 8.47 |
| 09.3.3.1.06 Garden fork | 16.6 | 9.78 | 13.84 | 13.10 |
| 09.3.4.1.01 Pet food | 6.93 | 10.89 | 6.03 | 7.69 |
| 09.4.1.1.01 Entrance to a top league football game (PSL)-VIP | 6.32 | 20 | 20 | 13.62 |
| 09.4.1.1.02 Entrance to a top league football game (PSL)-Rest | 3 | 3 | 3 | 3.00 |
| 09.4.1.1.03 Golf club fee | 497.69 | 150 | 109.54 | 201.47 |
| 09.4.1.1.04 Gym fee | 31.13 | 40 | 13.1 | 25.36 |
| 09.4.2.1.01 Cost of burning a CD (CD writing) | 1 | 1 | 1 | 1.00 |
| 09.4.2.1.02 Entrance fee to the cinema/theatre | 3 | 3.46 | 3 | 3.15 |
| 09.4.2.1.03 Annual TV licence fee local channels | 50 | 50 | 50 | 50.00 |
| 09.4.2.1.04 Monthly subscription to Cable TV | 81 | 81 | 81 | 81.00 |
| 09.4.2.1.05 Radio listeners licence | 20 | 20 | 20 | 20.00 |
| 09.4.2.1.06 lottery ticket | 1 | 1 | 1 | 1.00 |
| 09.5.1.1.01 English reading Book - primary | 9.54 | 11.8 | 10.06 | 10.42 |
| 09.5.1.1.02 Mathematics text book ordinary level | 16.87 | 19.61 | 19.71 | 18.68 |
| 09.5.1.1.03 Economics Text Book-A level | 45.16 | 54.38 | 35.7 | 44.42 |
| 09.5.2.2.01 Daily newspaper | 1 | 1 | 1 | 1.00 |
| 09.5.2.2.02 Weekly newspaper | 1.13 | 1.07 | 1.07 | 1.09 |
| 09.5.2.2.03 Monthly magazine | 2.45 | 1 | 2 | 1.70 |
| 09.5.2.2.04 International magazine | 2.95 | 5.69 | 2.13 | 3.29 |
| 09.5.4.4.01 Exercise book - soft cover | 0.23 | 0.2 | 0.2 | 0.21 |
| 09.5.4.4.02 Ordinary pen | 0.22 | 0.19 | 0.19 | 0.20 |
| 09.5.4.4.03 Pencil | 0.17 | 0.16 | 0.13 | 0.15 |
| 10.1.1.1.01 Tuition fees - Primary level | 67.35 | 30.27 | 45.7 | 45.33 |
| 10.2.1.1.01 Tuition fees - Secondary level | 40.02 | 32.01 | 27.99 | 32.98 |
| 10.3.1.1.01 Private college fees | 82.55 | 45 | 70.06 | 63.85 |
| 10.4.1.1.01 University fees | 581.81 | 745.88 | 618.52 | 645.06 |
| 10.5.1.1.01 Correspondence fees | 80 | 80 | 80 | 80.00 |
| 11.1.1.1.01 Pie | 1.24 | 1.15 | 1.08 | 1.15 |
| 11.1.1.1.02 Dinner meal | 6.81 | 13.1 | 2.59 | 6.14 |
| 11.1.1.1.03 Sadza and Chicken | 2.26 | 1.24 | 1.35 | 1.56 |
| 11.1.1.1.04 Sadza and beef | 2.25 | 1.19 | 1.41 | 1.56 |
| 11.1.1.1.05 Cold beer at bar | 1.33 | 1.82 | 1.29 | 1.46 |
| 11.1.1.1.06 Bottle of white wine at bar | 9.71 | 11.33 | 5.53 | 8.47 |
| 11.1.1.1.07 Purchase of a soft drink in a restaurant | 0.59 | 0.5 | 0.57 | 0.55 |
| 11.1.1.1.08 Hamburger and chips from take away (eg Big Mac) | 1.93 | 1.1 | 1.41 | 1.44 |

| itemcode | Geometric Means_Bulawayo | Geometric Means_Manicaland | Geometric Means_Mash West | Geomeans for 3 Provinces |
|---|--------------------------|----------------------------|---------------------------|--------------------------|
| 11.1.1.1.09 Quarter Chicken | 3.23 | 3.69 | 3 | 3.29 |
| 11.1.1.1.10 Plain Chips | 1.22 | 1.48 | 1.07 | 1.25 |
| 11.1.1.1.11 Chicken and chips | 3.09 | 2.8 | 2.33 | 2.72 |
| 11.1.1.1.12 Fish and chips | 5.23 | 3.1 | 3.48 | 3.84 |
| 11.2.0.1.01 Double room, one night, top grade (4 and 5 star) | 154.57 | 200.53 | 175.73 | 175.95 |
| 11.2.0.1.02 Double room rate, one night, medium grade (3 star) hotel | 103.3 | 131.34 | 125.86 | 119.53 |
| 11.2.0.1.03 Double room rate, one night, in a normal hotel (with no star) | 46.47 | 36.06 | 33.19 | 38.17 |
| 11.2.0.1.04 Double room rate, one night, in a guest house | 39.62 | 17.2 | 40.15 | 30.13 |
| 11.2.0.1.05 Boarder fees | 618.76 | 532.86 | 739.92 | 624.85 |
| 12.1.1.1.01 Hair relaxing-dark and lovely | 14.33 | 5.51 | 10.54 | 9.41 |
| 12.1.1.1.02 Hair relaxing-soft and free | 10.42 | 3.7 | 6.61 | 6.34 |
| 12.1.1.1.03 Hair cut-simple | 2.68 | 1.18 | 1.4 | 1.64 |
| 12.1.1.1.04 Hair cut-box cut | 3.03 | 1.74 | 1.99 | 2.19 |
| 12.1.1.1.05 Shaving | 1 | 0.73 | 0.7 | 0.80 |
| 12.1.1.1.06 Hair plaiting-long braids | 25.81 | 11.54 | 12.83 | 15.63 |
| 12.1.1.1.07 Oil treatment and set | 7.88 | 4.98 | 4.91 | 5.78 |
| 12.1.1.1.08 Hair plaiting-short braids | 11.98 | 7.27 | 6.92 | 8.45 |
| 12.1.2.1.01 Hair drier | 43.99 | 15 | 31.12 | 27.38 |
| 12.1.2.1.02 Electric shaver | 24.91 | 18 | 12.16 | 17.60 |
| 12.1.3.1.01 Toilet soap | 1.25 | 1.12 | 1.13 | 1.17 |
| 12.1.3.1.02 Bath soap | 0.89 | 0.96 | 0.89 | 0.91 |
| 12.1.3.1.03 Toilet paper | 1.26 | 0.87 | 1.13 | 1.07 |
| 12.1.3.1.04 Skim cream | 2.13 | 2.18 | 1.74 | 2.01 |
| 12.1.3.1.05 Vaseline - petroleum jelly | 1.02 | 1.01 | 0.9 | 0.98 |
| 12.1.3.1.06 Toothpaste | 0.93 | 0.92 | 0.97 | 0.94 |
| 12.1.3.1.07 Deodorant spray | 3.09 | 3.13 | 2.68 | 2.96 |
| 12.1.3.1.08 Cotton wool | 3.46 | 1.59 | 1.33 | 1.94 |
| 12.1.3.1.09 Disposable razors | 0.84 | 0.87 | 0.69 | 0.80 |
| 12.1.3.1.10 Roll on | 2.37 | 2.14 | 1.98 | 2.16 |
| 12.1.3.1.11 Sanitary pads | 1.52 | 1.06 | 1.05 | 1.19 |
| 12.3.1.1.01 Wrist watch | 35.09 | 8 | 21.41 | 18.18 |
| 12.3.1.1.02 Clock | 6.84 | 8 | 8.62 | 7.78 |
| 12.3.1.1.03 Jewellery (e.g ring, necklace) | 31.34 | 5 | 20.81 | 14.83 |
| 12.3.2.1.01 Suitcase | 53.54 | 10.58 | 23.87 | 23.82 |
| 12.3.2.1.02 Umbrella | 4.46 | 3.56 | 5.19 | 4.35 |
| 12.5.3.1.01 Medical aid contribution | 19.96 | 19.96 | 19.96 | 19.96 |
| 12.5.4.1.01 Car insurance | 291.41 | 291.41 | 291.41 | 291.41 |
| 12.6.2.1.01 Cost of money order | 2 | 2 | 2 | 2.00 |

| itemcode | Geometric Means_Bulawayo | Geometric Means_Manicaland | Geometric Means_Mash West | Geomeans for 3 Provinces |
|---|--------------------------|----------------------------|---------------------------|--------------------------|
| 12.6.2.1.02 Cost of mantainng a savings account | 4.38 | 4.38 | 4.38 | 4.38 |
| 12.7.0.1.01 Advert in a local weekly paper | 13.84 | 13.84 | 13.84 | 13.84 |
| 12.7.0.1.02 Cost of a single A4 sheet photocopy | 0.09 | 0.1 | 0.35 | 0.15 |
| 12.7.0.1.03 Total charge for undertaking a funeral | 280.51 | 285.95 | 326.04 | 296.83 |
| 12.7.0.1.04 Cost of ordinary coffin for an adult | 141.91 | 223.59 | 171.35 | 175.84 |
| 12.7.0.1.05 Private security services for a household-per day 24hrs | 41.42 | 56.7 | 73.11 | 55.58 |
| 12.7.0.1.06 Private security services for a household-per month | 814.98 | 738 | 1621.44 | 991.67 |

7.10 Appendix 10: Computation of CPI

The computation of the national consumer price index follows a flexible step-wise procedure. The approach starts from individual items, the sections (sub groups), the major groups, and finally the weighted, national consumer price index.

The Laspeyres Price Index Formula ¹

The purpose of this note is to illustrate the three methods of calculating the Laspeyres Price index for those who are not familiar with index number calculations in general. The third method is the **Laspeyres Modified Index**.

Assume the index basket consists of four items (C1, C2, C3 and C4). The price (p) and quantity (q) data are given in Table 1; the subscripts 0, 1, 2 and 3 refer to different periods - months in the case of the CPI. Period 0 is referred to as the base period. Note that quantity data is only available in the base period. If consumers continue to buy the same quantity in subsequent period, then the Laspeyres Price index will give us a measure of the overall price change of this budget.

Table 1 Price and quantity data

| | q ₀ | p ₀ | p ₁ | p ₂ | p ₃ |
|----|----------------|----------------|----------------|----------------|----------------|
| C1 | 100 | 8 | 10 | 10 | 12 |
| C2 | 70 | 10 | 12 | 14 | 16 |
| C3 | 50 | 10 | 8 | 12 | 10 |
| C4 | 25 | 12 | 15 | 18 | 20 |

Method 1: Use of the standard Laspeyres Price Index formula
$$I_t = \frac{\sum_{i=1}^4 p_{it} q_{i0}}{\sum_{i=1}^4 p_{i0} q_{i0}} \times 100 \quad (1)$$

In formula (1), the first subscript indicates the item ($i = 1, 2, 3, 4$) while the second subscript is for the period ($t = 0, 1, 2, 3$). In the literature, the formula given often omits the first subscript since it is assumed that the summation is over the items i .

Table 2 shows the indices in the last column obtained as a ratio (scaled by a factor of 100) of the sum of cross products of the values in the last row; the sum of the base cross products being the denominator.

Table 2 Index Computation using the standard Laspeyres

| | q ₀ | p ₀ | p ₁ | p ₂ | p ₃ | I _t = $\frac{\sum(p_i q_0)}{\sum(p_0 q_0)} \times 100$ |
|-------------------|----------------|----------------|----------------|----------------|----------------|---|
| C1 | 100 | 8 | 10 | 10 | 12 | I ₀ = 100.00000 |
| C2 | 70 | 10 | 12 | 14 | 16 | |
| C3 | 50 | 10 | 8 | 12 | 10 | |
| C4 | 25 | 12 | 15 | 18 | 20 | |
| $\sum p_i q_{it}$ | | 2300 | 2615 | 3030 | 3320 | I ₃ = 131.73913 |

In the case of the CPI, the source for such data is a household budget survey like the ICES. And as quantity data is seldom available from the survey, we have to make do with the expenditure instead i.e. recorded amount e_1 spent on item C1, recorded amount e_2 spent on item C2 and so on. We also need to recast the Laspeyres formula accordingly as shown in Method 2.

Method 2: Use of Expenditure Weights and Price Relatives in the Laspeyres Price Index formula

$$I_p = \frac{1}{W_o} \sum w_o \left(\frac{p_t}{p_o} \right) \times 100 \quad (2)$$

The two formulas are identical since the second one is derived from the standard formula as follows:

$$\frac{\sum p_i q_0}{\sum p_o q_0} = \frac{\sum \frac{p_i}{p_o} p_o q_0}{\sum p_o q_0} = \frac{\sum w_o \frac{p_i}{p_o}}{\sum w_o} \quad (3), \text{ where } pq = w \text{ (expenditure)}$$

Also in practice, instead of using the base period expenditures, the normal procedure is to calculate base period expenditures on each item as a percentage of total base period expenditure and then to use these percentages as weights throughout the calculation. This procedure for calculating the (percentage) weights is illustrated in Table 3.

Table 3 Weights Calculation from Expenditure Data

| | Base Month | | | |
|--------------|----------------|----------------|-------------------------------|----------------|
| | q ₀ | p ₀ | p ₀ q ₀ | w ₀ |
| C1 | 100 | 8 | 800 | 34.78 |
| C2 | 70 | 10 | 700 | 30.43 |
| C3 | 50 | 10 | 500 | 21.74 |
| C4 | 25 | 12 | 300 | 13.04 |
| Total | | | 2300 | 100.00 |

The w_o for C1 is obtained as $(800 / 2300) \times 100$ and so on. In some countries, it is found more convenient for weights to sum to 1 000 or even 10 000 enabling the assignment of very small weights to some items. If this is done, an adjustment (dividing by 10 or 100) will need to be included in the index formula.

The next table sets out the index computation using formula (2)

Table 4 Index Calculation using formula (2)

| | Base Month | | Month 1 | | | Month 2 | | | Month 3 | | |
|--------------|----------------|----------------|----------------|--------------------------------|---|----------------|--------------------------------|---|----------------|--------------------------------|---|
| | P ₀ | w ₀ | P ₁ | P ₁ /P ₀ | w ₀ P ₁ /P ₀ | P ₂ | P ₂ /P ₀ | w ₀ P ₂ /P ₀ | P ₃ | P ₃ /P ₀ | w ₀ P ₃ /P ₀ |
| C1 | 8 | 34.78 | 10 | 1.25000 | 43.4783 | 10 | 1.25000 | 43.4783 | 12 | 1.50000 | 52.1739 |
| C2 | 10 | 30.43 | 12 | 1.20000 | 36.5217 | 14 | 1.40000 | 42.6087 | 16 | 1.60000 | 48.6957 |
| C3 | 10 | 21.74 | 8 | 0.80000 | 17.3913 | 12 | 1.20000 | 26.0870 | 10 | 1.00000 | 21.7391 |
| C4 | 12 | 13.04 | 15 | 1.25000 | 16.3043 | 18 | 1.50000 | 19.5652 | 20 | 1.66667 | 21.7391 |
| Total | | 100.00 | | | 113.6957 | | | 131.7391 | | | 144.3478 |

$$\text{Method 3: Modified Laspeyres Index } I_t = \sum w_{t-1} \frac{P_t}{P_{t-1}} \quad (4)$$

You will observe that in Table 4 above, the last column of each month shows the *point contribution* to the index from each of the 4 commodities. That is, for each commodity, its point contribution is the product of the base weight (w_0) and the price relative with the denominator being the base price. This means that when the specification of a commodity changes, a base price for the substitute has to be found; usually by assumptions and imputation. This situation can be avoided by using the modifying the Laspeyres Price index formula.

The modification requires two changes to the formula in (2). These are:

1. In the current month, take as weights the point contributions of the previous month, and
2. The price relative for the current month uses the previous month's price as the denominator.

We should get the same result since formula (4) is the same as formula (2) as illustrated in the next expression which for simplicity uses contribution of an item in period 3:

$$w_2 \frac{P_3}{P_2} = \left(w_1 \frac{P_2}{P_1} \right) \frac{P_3}{P_2} = \left(w_0 \frac{P_1}{P_0} \frac{P_2}{P_1} \right) \frac{P_3}{P_2} = w_0 \frac{P_3}{P_0} \quad (5)$$

Table 5 Modified Laspeyres Price Index calculation using formula (4)

| | Base Month | | Month 1 | | | Month 2 | | | Month 3 | | |
|--------------|----------------|----------------|----------------|--------------------------------|---|----------------|--------------------------------|---|----------------|--------------------------------|---|
| | w ₀ | P ₀ | P ₁ | P ₁ /P ₀ | w ₁ =w ₀ P ₁ /P ₀ | P ₂ | P ₂ /P ₁ | w ₂ =w ₁ P ₂ /P ₁ | P ₃ | P ₃ /P ₂ | w ₃ =w ₂ P ₃ /P ₂ |
| C1 | 34.78 | 8 | 10 | 1.25000 | 43.4783 | 10 | 1.00000 | 43.4783 | 12 | 1.20000 | 52.1739 |
| C2 | 30.43 | 10 | 12 | 1.20000 | 36.5217 | 14 | 1.16667 | 42.6087 | 16 | 1.14286 | 48.6957 |
| C3 | 21.74 | 10 | 8 | 0.80000 | 17.3913 | 12 | 1.50000 | 26.0870 | 10 | 0.83333 | 21.7391 |
| C4 | 13.04 | 12 | 15 | 1.25000 | 16.3043 | 18 | 1.20000 | 19.5652 | 20 | 1.11111 | 21.7391 |
| Total | 100.00 | | | | 113.6957 | | | 131.7391 | | | 144.3478 |

7.11 Appendix 11: List of Items in the CPI Basket

| Code | Item |
|-------------|---------------------------|
| 01.1.1.0.1 | White bread |
| 01.1.1.0.2 | Brown bread |
| 01.1.1.1.1 | Bun |
| 01.1.1.1.2 | Scone |
| 01.1.1.1.3 | Cake |
| 01.1.1.2.1 | Biscuits-plain marie |
| 01.1.1.2.2 | Biscuits-loose |
| 01.1.1.2.3 | Biscuits-lemon creams |
| 01.1.1.2.4 | Biscuits-assorted |
| 01.1.1.3.1 | Flour-self raising |
| 01.1.1.3.2 | Flour -plain |
| 01.1.1.4.01 | Maize meal -super refined |
| 01.1.1.4.02 | Maize meal-roller meal |
| 01.1.1.5.01 | Spaghetti |
| 01.1.1.5.02 | Macaroni |
| 01.1.1.5.03 | Noodles |
| 01.1.1.5.04 | Breakfast cereals |
| 01.1.1.5.05 | Rice - long grain |
| 01.1.1.5.06 | Rice - short grain |
| 01.1.2.0.01 | Rump steak-beef |
| 01.1.2.0.02 | Topside-beef |
| 01.1.2.0.03 | Stewing steak-beef |
| 01.1.2.0.04 | Ration meat-beef |
| 01.1.2.0.05 | Liver-beef |
| 01.1.2.0.06 | Goat Meat |
| 01.1.2.0.07 | live Goat |
| 01.1.2.0.08 | Madora |
| 01.1.2.0.09 | Mince (beef) |
| 01.1.2.0.10 | Boerewors-beef |
| 01.1.2.1.01 | Offal-beef |
| 01.1.2.1.02 | Offal-beef |
| 01.1.2.2.01 | Chicken-full |
| 01.1.2.2.02 | Chicken-live |
| 01.1.2.3.01 | Pork |
| 01.1.2.3.02 | Bacon |
| 01.1.2.3.03 | Sausages-pork |
| 01.1.2.3.04 | Tinned meat |
| 01.1.3.0.01 | Frozen fish |
| 01.1.3.0.02 | Dried fish |
| 01.1.3.0.03 | Bream Dried |
| 01.1.3.0.04 | Tinned fish |
| 01.1.4.0.01 | Sour milk |
| 01.1.4.0.02 | Fresh milk |

| Code | Item |
|-------------|--------------------------------|
| 01.1.4.0.03 | Milk- sterilised |
| 01.1.4.0.04 | Powdered milk- full cream |
| 01.1.4.0.05 | Powdered milk - for babies |
| 01.1.4.1.01 | Cheese |
| 01.1.4.1.02 | Cream |
| 01.1.4.1.03 | condensed milk |
| 01.1.4.1.04 | Yoghurt |
| 01.1.4.2.01 | Eggs |
| 01.1.5.0.01 | Peanut butter |
| 01.1.5.0.02 | Butter-Milk |
| 01.1.5.1.01 | Cooking oil -olivine |
| 01.1.5.1.02 | Cooking oil -panol |
| 01.1.5.2.01 | Lard |
| 01.1.5.2.02 | Margarine-stock |
| 01.1.5.2.03 | Soft margarine - helio |
| 01.1.6.0.01 | Apples |
| 01.1.6.0.02 | Bananas |
| 01.1.6.0.03 | Mangoes |
| 01.1.6.0.04 | Oranges |
| 01.1.6.0.05 | pine apples |
| 01.1.6.0.06 | peanuts |
| 01.1.6.0.07 | Tinned fruits |
| 01.1.6.0.08 | Paw paw |
| 01.1.6.0.09 | pear |
| 01.1.6.0.10 | grapes |
| 01.1.6.0.11 | dried fruits |
| 01.1.6.0.12 | plums |
| 01.1.6.0.13 | avocado |
| 01.1.7.0.01 | Green beans |
| 01.1.7.0.02 | Cabbages |
| 01.1.7.0.03 | Okra |
| 01.1.7.0.04 | Carrots |
| 01.1.7.0.05 | Onions |
| 01.1.7.0.06 | Rape/Covo/Chomoulier |
| 01.1.7.0.07 | Tomatoes |
| 01.1.7.0.08 | Cucumber |
| 01.1.7.0.09 | Potatoes (plus sweet potatoes) |
| 01.1.7.0.10 | lettuce |
| 01.1.7.0.11 | spinach |
| 01.1.7.0.12 | pumpkins |
| 01.1.7.0.13 | squash |
| 01.1.7.0.14 | baby marrow |
| 01.1.7.0.15 | fresh peas |
| 01.1.7.0.16 | garlic |
| 01.1.7.0.17 | ginger |
| 01.1.7.0.18 | water melon |
| 01.1.7.0.19 | chilli |

| Code | Item |
|-------------|-------------------------------|
| 01.1.7.1.01 | Baked beans |
| 01.1.7.1.02 | Dried beans |
| 01.1.7.1.03 | Tinned peas |
| 01.1.7.1.04 | Potato crisps |
| 01.1.7.1.05 | Tomatoe sauce |
| 01.1.8.0.01 | White sugar |
| 01.1.8.0.02 | Brown sugar |
| 01.1.8.1.01 | Ice cream |
| 01.1.8.1.02 | Honey |
| 01.1.8.1.03 | Icing sugar/caster sugar |
| 01.1.8.1.04 | Glucose |
| 01.1.8.1.05 | Chocolate bar |
| 01.1.8.1.06 | Chewing gum |
| 01.1.8.1.07 | Jam- sun sweet |
| 01.1.8.1.08 | Jam - mixed fruit |
| 01.1.8.1.09 | Sweets |
| 01.1.9.0.01 | Salt |
| 01.1.9.0.02 | Pepper |
| 01.1.9.0.03 | Curry powder |
| 01.1.9.0.04 | Yeast |
| 01.1.9.0.05 | Soup, packet |
| 01.1.9.0.06 | Baby cereal |
| 01.1.9.0.07 | Baking powder |
| 01.1.9.0.08 | Gravy powder |
| 01.1.9.0.09 | Vinegar |
| 01.1.9.0.10 | Chutney |
| 01.1.9.0.11 | Bi-carbonate of soda |
| 01.1.9.0.12 | Malt/chimera |
| 01.2.1.0.01 | Instant coffee |
| 01.2.1.0.02 | Coffee-ground |
| 01.2.1.1.01 | Tea bags |
| 01.2.1.1.02 | Tea leaves |
| 01.2.1.1.03 | Drinking chocolate |
| 01.2.1.1.04 | Herbal tea (Roiboos) |
| 01.2.1.2.01 | Cocoa |
| 01.2.2.0.01 | Tonic water |
| 01.2.2.0.02 | Mineral water |
| 01.2.2.1.01 | Carbonated soft drink-bottled |
| 01.2.2.1.02 | Carbonated soft drink-canned |
| 01.2.2.2.01 | Pure fruit juice |
| 01.2.2.2.02 | RTD e.g Cascade |
| 01.2.2.2.03 | Fruit squash |
| 02.1.1.1.01 | Whisky |
| 02.1.1.1.02 | Gin |
| 02.1.1.1.03 | Brandy |
| 02.1.2.2.01 | White wine |
| 02.1.2.2.02 | Red wine |

| Code | Item |
|-------------|---|
| 02.1.2.2.03 | Sparkling wine |
| 02.1.3.3.01 | Clear beer - castle (bottle store) |
| 02.1.3.3.02 | Clear beer - Bohlingers (bottle store) |
| 02.1.3.3.03 | Cane-spirit |
| 02.1.3.3.04 | Pilsner |
| 02.1.3.3.05 | Clear beer-lion |
| 02.1.3.3.06 | Opaque beer - packed |
| 02.1.3.3.07 | Clear beer-black label |
| 02.2.1.0.01 | Cigarettes - kingsgate |
| 02.2.1.0.02 | Cigarettes - Berkerly |
| 02.2.1.0.03 | Snuff |
| 02.2.1.0.04 | Chimonera |
| 03.1.1.0.01 | Dress material - poly cotton |
| 03.1.1.0.02 | Dress material - mandy |
| 03.1.1.0.03 | Java material |
| 03.1.2.0.01 | Trousers-formal |
| 03.1.2.0.02 | Men's-trousers casual |
| 03.1.2.0.03 | Men's - jean trousers |
| 03.1.2.0.04 | Men's - suits - double breast |
| 03.1.2.0.05 | Men's - suits - single breast |
| 03.1.2.0.06 | Men's pyjamas (replaces pullover) |
| 03.1.2.0.07 | Men's plain shirt long sleeve (swallows short sleeve) |
| 03.1.2.0.08 | Men's socks |
| 03.1.2.0.09 | Men's briefs |
| 03.1.2.1.01 | Costume |
| 03.1.2.1.02 | Dress |
| 03.1.2.1.03 | Skirt - flared |
| 03.1.2.1.04 | Skirt - straight |
| 03.1.2.1.05 | Ladies trousers |
| 03.1.2.1.06 | Blouse |
| 03.1.2.1.07 | Jersey |
| 03.1.2.2.01 | Panties |
| 03.1.2.2.02 | Brassiere |
| 03.1.2.2.03 | Panty-hose |
| 03.1.2.2.04 | Tights |
| 03.1.2.2.05 | Ladies night dress |
| 03.1.2.3.01 | Shorts |
| 03.1.2.3.02 | Dress |
| 03.1.2.3.03 | T Shirt |
| 03.1.2.3.04 | Pampers |
| 03.1.2.3.05 | Napkins |
| 03.1.2.3.06 | Baby's all in one suit (new item) |
| 03.1.2.4.01 | Girls uniform |
| 03.1.2.4.02 | Boys shorts |
| 03.1.2.4.03 | Boys shirts |
| 03.1.2.4.04 | Jersey |
| 03.1.2.4.05 | Blazer |

| Code | Item |
|-------------|---|
| 03.1.2.4.06 | Tracksuit |
| 03.1.2.4.07 | Boy's trousers |
| 03.1.2.4.08 | Girl's trousers |
| 03.1.3.0.01 | Tie |
| 03.1.3.0.02 | Leather belt |
| 03.1.3.0.03 | Sewing thread, standard reel |
| 03.1.3.0.04 | Zip fastener |
| 03.1.3.0.05 | Knitting wool |
| 03.1.3.0.06 | Needle |
| 03.1.3.0.07 | cap |
| 03.1.3.0.08 | doek |
| 03.1.3.0.09 | hat for ladies |
| 03.1.3.0.10 | shawl |
| 03.1.3.0.11 | Boys suits |
| 03.1.3.0.12 | Buttons |
| 03.1.4.0.01 | Drying cleaning of a two piece suit - Men's suit from |
| 03.1.4.0.02 | Drying of a ladies costume |
| 03.1.5.0.01 | Ladies blouse 2nd hand |
| 03.1.5.0.02 | Men's shirt 2nd hand |
| 03.1.5.0.03 | Men's jean 2nd hand |
| 03.1.5.0.04 | Ladies skirt 2nd hand |
| 03.1.5.0.05 | Children's T-Shirt hand |
| 03.1.5.0.06 | Golf T .Shirt 2nd hand |
| 03.2.1.0.01 | Men's formal shoes |
| 03.2.1.0.02 | Men's casual shoes (tackies) |
| 03.2.1.1.01 | Court shoes |
| 03.2.1.1.02 | Women's casual shoes |
| 03.2.1.1.03 | Sandals - high heeled shoes |
| 03.2.1.1.04 | Canvas shoes |
| 03.2.1.2.01 | Girls school shoes |
| 03.2.1.2.02 | Girls party shoes |
| 03.2.1.2.03 | Boys school shoes |
| 03.2.1.3.01 | Sports shoe |
| 03.2.1.3.02 | Men's Sports shoes |
| 03.2.2.0.01 | Heeling and soling men's shoes |
| 03.2.2.0.02 | Heeling and soling women'sshoes |
| 04.1.1.1.01 | Rent for a house - high density |
| 04.1.1.1.02 | Rent for a house - low density |
| 04.1.1.1.03 | Rent for a house -medium density |
| 04.3.1.0.01 | Asbestos sheet |
| 04.3.1.0.02 | Cement |
| 04.3.1.0.03 | Window panes |
| 04.3.1.0.04 | Door lock |
| 04.3.1.0.05 | Paint |
| 04.4.1.0.01 | Water charges - low density |
| 04.4.1.0.02 | Water charges - high density |
| 04.4.2.0.01 | Dust removing rates - high density |

| Code | Item |
|-------------|--|
| 04.4.2.0.02 | Dust removing rates - low density |
| 04.4.3.0.01 | Sewarages charges -High density |
| 04.4.3.0.02 | Sewarages charges-Low density |
| 04.4.4.0.01 | Owners rate - for land |
| 04.4.4.0.02 | Ownres rate - for improvements |
| 04.5.1.1.01 | Electricity charges - metred 600 units |
| 04.5.1.1.02 | Electricity charges - monthly charge for 7.5Amps |
| 04.5.2.2.01 | Gas |
| 04.5.3.3.01 | Paraffin |
| 04.5.4.4.01 | Charcoal |
| 04.5.4.4.02 | Fire wood |
| 05.1.1.0.01 | Bedroom suite |
| 05.1.1.0.02 | Bed & Mattress |
| 05.1.1.0.03 | Kichen chairs |
| 05.1.1.0.04 | Lounge suite - dralon |
| 05.1.1.0.05 | Lounge suite - weave/rexin |
| 05.1.1.0.06 | Wardrobe |
| 05.1.1.0.07 | Dining room suite |
| 05.1.1.0.08 | Wall unit |
| 05.1.1.0.09 | Kitchen dresser |
| 05.1.1.0.10 | Coffee table |
| 05.1.2.2.01 | floor tiles |
| 05.1.2.2.02 | Carpets |
| 05.2.1.1.01 | Pair of fitted sheets-cotton |
| 05.2.1.1.02 | Blanket(night) |
| 05.2.1.1.03 | Bed spread |
| 05.2.1.1.04 | Bath towel-plain |
| 05.2.1.1.05 | Curtain material |
| 05.2.1.1.06 | Pillow, one standard-foam inside |
| 05.3.1.1.01 | Electric stove |
| 05.3.1.1.02 | Refridgerator |
| 05.3.1.1.03 | Deep freezer |
| 05.3.1.1.04 | Hot plate stove |
| 05.3.1.1.05 | Primus stove |
| 05.3.1.1.06 | Sewing machine |
| 05.3.1.1.07 | Micro wave |
| 05.3.1.1.08 | Gas stove |
| 05.3.2.2.01 | Pressing iron - adjustable |
| 05.3.2.2.02 | Pressing iron - non adjustable |
| 05.3.2.2.03 | Electric fan |
| 05.3.2.2.04 | Electric heater |
| 05.3.2.2.05 | Electric kettle/jug |
| 05.4.1.1.01 | Dinner set |
| 05.4.1.1.02 | Set of glasses six |
| 05.5.1.1.01 | Ordinary knife |
| 05.5.1.1.02 | Ordinary coffee mug (enamel and chinaware) |
| 05.5.1.1.03 | Plate |

| Code | Item |
|-------------|--|
| 05.5.1.1.04 | Ordinary spoon |
| 05.5.1.1.05 | Teapot |
| 05.5.1.1.06 | Non electric iron |
| 05.5.1.1.07 | Frying pan |
| 05.5.1.1.08 | Pot |
| 05.5.1.1.09 | Ironing board |
| 05.5.2.2.01 | Claw hammer |
| 05.5.2.2.02 | Wheel barrow |
| 05.5.2.2.03 | Spade |
| 05.6.1.1.01 | Scouring powder - vim |
| 05.6.1.1.02 | Bar of household soap - wrapped |
| 05.6.1.1.03 | Laundry soap - mottled |
| 05.6.1.1.04 | Washing powder - surf |
| 05.6.1.1.05 | Washing powder - cold power |
| 05.6.1.1.06 | Desinfentant |
| 05.6.1.1.07 | Toilet cleaner |
| 05.6.1.1.08 | Broom |
| 05.6.1.1.09 | Dish cloth/cloth |
| 05.6.1.2.01 | Box of matches |
| 05.6.1.2.02 | Candles |
| 05.6.1.2.03 | Methylated spirit |
| 05.6.1.2.04 | Light bulb |
| 05.6.1.2.05 | shoe polish |
| 05.6.1.2.06 | Insecticides |
| 05.6.1.2.07 | Floor polish |
| 05.6.1.2.08 | Torch battery |
| 05.6.2.2.01 | Domestic wages |
| 06.1.1.1.01 | Antiseptic |
| 06.1.1.1.02 | Pain killer |
| 06.1.1.1.03 | Antibiotics |
| 06.1.1.1.04 | Antihypertensive |
| 06.1.1.1.05 | Antidiabitics |
| 06.1.1.1.06 | Anti asthma |
| 06.1.1.1.07 | Cough-mixture |
| 06.1.1.2.01 | First aid kit |
| 06.1.1.2.02 | Adhesive bandages |
| 06.1.1.2.03 | Thermometers |
| 06.1.1.2.04 | Female condom |
| 06.1.1.2.05 | Male condom |
| 06.2.1.1.01 | Consultation with private medical doctor-per visit |
| 06.2.1.1.02 | Government in-patient |
| 06.2.1.1.03 | Municipality out-patient |
| 06.2.1.1.04 | Government out-patient |
| 06.2.1.1.05 | Private clinic ward fee |
| 06.2.1.1.06 | Private hospital maternity fee |
| 06.2.1.1.07 | Government hospital maternity fee |
| 06.2.1.1.08 | Scan |

| Code | Item |
|-------------|---|
| 06.2.2.1.01 | Average cost of tooth extraction by a private dentist |
| 06.2.2.1.02 | Average cost of tooth extraction by a public dentist |
| 06.2.3.1.01 | Chest X-ray |
| 06.2.3.1.02 | Medical examination |
| 06.2.3.1.03 | Ambulance charge |
| 06.3.1.1.01 | Rate of stay in private hospital for 24 hours |
| 06.3.1.1.02 | Rate of stay in government hospital for 24 hours |
| 07.1.1.1.01 | New car - type 1 |
| 07.1.1.1.02 | New car - type 2 |
| 07.1.1.1.03 | Second hand car |
| 07.1.2.2.01 | Motor Cycle - 1 |
| 07.1.3.3.01 | Bicycle - 1 |
| 07.1.3.3.02 | Bicycle pump |
| 07.1.4.4.01 | Scotch cart |
| 07.2.1.1.01 | Car tyre |
| 07.2.1.1.02 | Car battery |
| 07.2.1.1.03 | Brake pads |
| 07.2.1.1.04 | Distributor points |
| 07.2.1.1.05 | Fuel injector |
| 07.2.1.1.06 | Plugs |
| 07.2.1.1.07 | Gasket |
| 07.2.1.1.08 | Motor cycle tube |
| 07.2.1.1.09 | Bicycle tyre |
| 07.2.1.1.10 | Motor cycle spark plug |
| 07.2.2.0.01 | Petrol |
| 07.2.2.0.02 | E10 fuel blend |
| 07.2.2.0.03 | Diesel |
| 07.2.2.1.01 | Engine oil |
| 07.2.2.1.02 | Brake fluid |
| 07.2.2.2.01 | General service (labour plus parts) |
| 07.2.2.2.02 | Car Repairs-clutch repair |
| 07.2.2.3.01 | Driving lessons-class 4 |
| 07.2.2.3.02 | Car hire |
| 07.2.2.3.03 | Parking fees |
| 07.2.2.3.04 | Cost of an ordinary passport |
| 07.2.2.3.05 | Toll gate fees-pvt vehicle |
| 07.3.1.1.01 | Rail journey - economy |
| 07.3.1.1.02 | Rail journey - standard |
| 07.3.1.1.03 | Rail journey - sleeper |
| 07.3.1.2.01 | Commuter fares |
| 07.3.1.2.02 | Bus fare - conventional long distance bus |
| 07.3.1.2.03 | Bus fare - luxury coach long distance |
| 07.3.1.2.04 | Taxi fares |
| 07.3.1.3.01 | Air fare - domestic flight |
| 07.3.1.3.02 | Air fare - regional journey |
| 07.3.1.3.03 | Air fare - international journey |
| 08.1.0.1.01 | Postage - local letter -ordinary letter |

| Code | Item |
|-------------|---|
| 08.1.0.1.02 | Postage - regional letter- SA |
| 08.1.0.1.03 | Postage - international letter-UK |
| 08.2.0.1.01 | Purchase of a cell phone hand set |
| 08.2.0.1.02 | Purchase of a telephone handset for land line |
| 08.3.0.1.01 | Mobile services-econet broadband(internet) |
| 08.3.0.1.02 | Mobile services-eco cash |
| 08.3.0.1.03 | Mobile services-data bundles |
| 08.3.0.1.04 | Mobile services -data calls |
| 08.3.0.1.05 | Cost of making a call from land line to Mobile (cell) phones per unit |
| 08.3.0.1.06 | Cost of making a call from Mobile (cell) phone a land line, per unit |
| 08.3.0.1.07 | Cost of making a call from Mobile (cell) phone a cell phone, per unit |
| 08.3.0.1.08 | Cell phone - monthly fixed rental |
| 08.3.0.1.09 | Telephone charge - monthly rental charge |
| 08.3.0.1.10 | Cost of internet services, average per hour |
| 08.3.0.1.11 | A unit cost of making a international call from a land line |
| 09.1.1.1.01 | Colour TV |
| 09.1.1.1.02 | Plasma |
| 09.1.1.1.03 | Radio with cassette,DVD player,flash player |
| 09.1.1.1.04 | Radio and cassette player |
| 09.1.1.1.05 | Car radio |
| 09.1.1.1.06 | DVD Player |
| 09.1.1.1.07 | Modulator |
| 09.1.2.2.01 | Digital camera |
| 09.1.2.2.02 | Video camera |
| 09.1.3.3.01 | Scientific calculator |
| 09.1.3.3.02 | Laptop |
| 09.1.4.4.01 | Video DVD - local |
| 09.1.4.4.02 | Video DVD - international |
| 09.1.4.4.03 | Blank CD |
| 09.1.4.4.04 | Audio CD-International |
| 09.1.4.4.05 | Audio CD-local |
| 09.1.4.4.06 | Blank audio cassette |
| 09.1.4.4.07 | Memory cards |
| 09.1.4.4.08 | Flash disc |
| 09.3.2.1.01 | Tennis raquet |
| 09.3.2.1.02 | Golf ball |
| 09.3.2.1.03 | Tennis balls |
| 09.3.2.1.04 | Football - standard |
| 09.3.3.1.01 | Fertiliser |
| 09.3.3.1.02 | Bulbs (decorative) |
| 09.3.3.1.03 | Flower Seeds |
| 09.3.3.1.04 | Hosepipe |
| 09.3.3.1.05 | Garden hoe |
| 09.3.3.1.06 | Garden fork |
| 09.3.4.1.01 | Pet food |

| Code | Item |
|-------------|---|
| 09.4.1.1.01 | Entrance to a top league football game (PSL)-VIP |
| 09.4.1.1.02 | Entrance to a top league football game (PSL)-Rest |
| 09.4.1.1.03 | Golf club fee |
| 09.4.1.1.04 | Gym fee |
| 09.4.2.1.01 | Cost of burning a CD (CD writing) |
| 09.4.2.1.02 | Entrance fee to the cinema/theatre |
| 09.4.2.1.03 | Annual TV licence fee local channels |
| 09.4.2.1.04 | Monthly subscription to Cable TV |
| 09.4.2.1.05 | Radio listener's licence |
| 09.4.2.1.06 | lottery ticket |
| 09.5.1.1.01 | English reading Book - primary |
| 09.5.1.1.02 | Mathematics text book ordinary level |
| 09.5.1.1.03 | Economics Text Book-A level |
| 09.5.2.2.01 | Daily newspaper |
| 09.5.2.2.02 | Weekly newspaper |
| 09.5.2.2.03 | Monthly magazine |
| 09.5.2.2.04 | International magazine |
| 09.5.4.4.01 | Exercise book - soft cover |
| 09.5.4.4.02 | Ordinary pen |
| 09.5.4.4.03 | Pencil |
| 10.1.1.1.01 | Tuition fees - Primary level |
| 10.2.1.1.01 | Tuition fees - Secondary level |
| 10.3.1.1.01 | Private collge fees |
| 10.4.1.1.01 | University fees |
| 10.5.1.1.01 | Correspondence fees |
| 11.1.1.1.01 | Pie |
| 11.1.1.1.02 | Dinner meal |
| 11.1.1.1.03 | Sadza and Chicken |
| 11.1.1.1.04 | Sadza and beef |
| 11.1.1.1.05 | Cold beer at bar |
| 11.1.1.1.06 | Bottle of white wine at bar |
| 11.1.1.1.07 | Purchase of a soft drink in a restaurant |
| 11.1.1.1.08 | Hamburger and chips from take away (eg Big Mac) |
| 11.1.1.1.09 | Quarter Chicken |
| 11.1.1.1.10 | Plain Chips |
| 11.1.1.1.11 | Chicken and chips |
| 11.1.1.1.12 | Fish and chips |
| 11.2.0.1.01 | Double room, one night, top grade (4 and 5 star) |
| 11.2.0.1.02 | Double room rate, one night, medium grade (3 star) hotel |
| 11.2.0.1.03 | Double room rate, one night, in a normal hotel (with no star) |
| 11.2.0.1.04 | Double room rate, one night, in a guest house |
| 11.2.0.1.05 | Boarder fees |
| 12.1.1.1.01 | Hair relaxing-dark and lovely |
| 12.1.1.1.02 | Hair relaxing-soft'n free |
| 12.1.1.1.03 | Hair cut-simple |
| 12.1.1.1.04 | Hair cut-box cut |
| 12.1.1.1.05 | Shaving |

| Code | Item |
|-------------|---|
| 12.1.1.1.06 | Hair plaiting-long braids |
| 12.1.1.1.07 | Oil treatment and set |
| 12.1.1.1.08 | Hair plaiting-short braids |
| 12.1.2.1.01 | Hair drier |
| 12.1.2.1.02 | Electric shaver |
| 12.1.3.1.01 | Toilet soap |
| 12.1.3.1.02 | Bath soap |
| 12.1.3.1.03 | Toilet paper |
| 12.1.3.1.04 | Skim cream |
| 12.1.3.1.05 | Vaseline - petroleum jelly |
| 12.1.3.1.06 | Toothpaste |
| 12.1.3.1.07 | Deodorant spray |
| 12.1.3.1.08 | Cotton wool |
| 12.1.3.1.09 | Disposable razors |
| 12.1.3.1.10 | Roll on |
| 12.1.3.1.11 | Sanitary pads |
| 12.3.1.1.01 | Wrist watch |
| 12.3.1.1.02 | Clock |
| 12.3.1.1.03 | Jewellery (e.g ring, necklace) |
| 12.3.2.1.01 | Suitcase |
| 12.3.2.1.02 | Umbrella |
| 12.5.3.1.01 | Medical aid contribution |
| 12.5.4.1.01 | Car insurance |
| 12.6.2.1.01 | Cost of money order |
| 12.6.2.1.02 | Cost of mantainng a savings account |
| 12.7.0.1.01 | Advert in a local weekly paper |
| 12.7.0.1.02 | Cost of a single A4 sheet photocopy |
| 12.7.0.1.03 | Total charge for undertaking a funeral |
| 12.7.0.1.04 | Cost of ordinary coffin for an adult |
| 12.7.0.1.05 | Private security services for a household-per day 24hrs |
| 12.7.0.1.06 | Private security services for a household-per month |

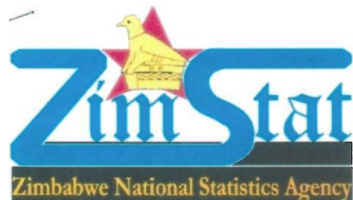
7.12 Appendix 12: Report Writing Workshop Programme

| REPORT WRITING WORKSHOP ON THE USE OF MOBILE TECHNOLOGY FOR CPS DATA COLLECTION PROGRAMME 09/11/15 - 14/11/15 | | | | |
|--|--------------------|--|---------------------------------|--------------------|
| Day | Time | Activity | Presenter | Facilitator |
| Sunday | | | | |
| 8/11/2015 | | Arrival at Venue | | |
| | | | | |
| Monday | 0845 - 0900 | Introductory Remarks | Mr. Taruvinga | Mr. Matsinde |
| 9/11/2015 | 0900 - 0930 | Background to the Survey | Mr. Sango | |
| | 0930 - 1000 | Discussion on achievements & challenges | | |
| | 1000 - 1030 | Tea Break | | |
| | 1030 - 1100 | Reports from Provincial Teams (Bulawayo) | Mr. Chikadaya/Mr. Majoni | |
| | 1100 - 1130 | Manicaland report | Mr. Chinosengwa/Mr. Chitiyo | |
| | 1130 - 1200 | Mashonaland West | Mr. Damba/Mr. Chipiro/Mr. Sango | |
| | 1200 - 1300 | Group Discussion | All | |
| | 1300 - 1430 | Lunch Break | | |
| | 1430 - 1530 | Outline of final reports | Mr. Sango | |
| | 1530 - 1600 | Afternoon Tea | | |
| | 1600 - 1615 | Selection of Teams/assigning topics | Mr. Damba | |
| | | | | |
| Tuesday | | | | |
| 10/11/2015 | 0900 - 1300 | Teams working on assigned topics | All | Mr. Matsinde |
| | 1300 - 1400 | Lunch Break | | |
| | 1400 - 1530 | Teams working on assigned topics | All | |
| | 1530 - 1600 | Afternoon Tea | | |
| | 1600 - 1615 | Teams working on assigned topics | All | |
| | | | | |
| Wednesday | 0900 - 0930 | Report back from teams (Team 1) | Mr. Chikadaya/Majoni | Mr. Taruvinga |
| 11/11/2015 | 0930 - 1000 | Discussion on Team 1 report | All | |
| | 1000 - 1030 | Tea Lunch | | |
| | 1030 - 1115 | Team 2 report | Mr. Chinosengwa/Chitiyo | |
| | 1115 - 1145 | Discussion on report | All | |
| | 1145 - 1230 | Team 3 | Mr. Damba/Chipiro/Sango | |
| | 1230 - 1300 | Discussion on report | All | |

REPORT WRITING WORKSHOP ON THE USE OF MOBILE TECHNOLOGY FOR CPS DATA COLLECTION PROGRAMME 09/11/15 - 14/11/15

| Day | Time | Activity | Presenter | Facilitator |
|-------------------|--------------------|---|------------------|--------------------|
| | | | | |
| | 1300 - 1400 | Lunch Break | | |
| | 1400 - 1530 | Consolidation of draft ECA report | All | |
| | 1530 - 1545 | Afternoon Tea | | |
| | 1545 - 1615 | Draft report (cont'd) | All | |
| | | | | |
| Thursday | 0900 - 1300 | Review of issues raised during field testing | All | Mr. Sango |
| 12/11/2015 | | (Revisit to Goromonzi for re-testing system) | | |
| | 1300 - 1400 | Lunch Break | | |
| | 1400 - 1530 | Discussion on field experiences | All | |
| | 1530 - 1545 | Afternoon Tea | | |
| | 1545 - 1600 | Discussion on Office report | All | |
| | | | | |
| Friday | 0900 - 1300 | Discussion with field staff | All | Mr. Chinosengwa |
| 13/11/15 | | (Revisit to Goromonzi to meet field staff) | | |
| | 1300 - 1400 | Lunch Break | | |
| | 1400 - 1530 | Consolidation of Office report | Mr. Damba | |
| | 1530 - 1545 | Afternoon Tea | | |
| | 1545 - 1615 | Consolidation of Office report | Mr. Damba | Mr. Matsinde |
| | 1615 - 1645 | Concluding remarks and way forward | Mr. Taruvinga | |
| | | | | |
| Saturday | | Departure | | |
| 14/11/15 | | | | |
| | | | | |

7.13 Appendix 13: Report on the baseline survey on current use of mobile technology in data collection



THE CURRENT USE OF MOBILE TECHNOLOGY FOR DATA COLLECTION SITUATIONAL STUDY REPORT AND ANALYSIS

JANUARY 2015

Collaborating partners

MINISTRY OF LOCAL GOVERNMENT PUBLIC WORKS AND NATIONAL HOUSING

ZIMBABWE NATIONAL STATISTICS AGENCY (ZIMSTAT)

RESEARCH AND INFORMATION SERVICES (RIS)

Acknowledgements

We would like to thank the following for making this project a success;

United Nations Economic Commission for Africa (UNECA),

Zimbabwe National Statistical Agency (ZIMSTAT),

Ministry of Local Government, Public Works and National Housing Zimbabwe,

Ministry of Health and Child Care Zimbabwe,

Ministry of Transport and Infrastructural Development Zimbabwe,

Ministry of Primary and Secondary Education Zimbabwe,

International Governmental Organisations,

International Non-Governmental Organisations, Community Based Organisations; and Faith based organisations.

Acronyms

| | |
|----------|---|
| ZIMSTAT | Zimbabwe National Statistics Agency |
| UNECA | United Nations Economic Commission for Africa |
| RIS | Research and Information Services |
| UMTFDC – | Use of Mobile Technology for Data Collection |
| MTFDC | Mobile Technology for Data Collection |
| UNICEF | United Nations Children’s Fund |
| CRS | Catholic Relief Services |
| FACT | Family AIDS Caring Trust |

Introduction

The Zimbabwe National Statistics Agency (ZIMSTAT) in collaboration with the Ministry of Local Government, Public Works and National Housing (MoLGPWNH) and Research and Information Services (RIS) with financial and technical support from the United Nations Economic Commission for Africa (UNECA) is implementing a pilot project in Mudzi District of Mashonaland East Province, Zimbabwe on the use of mobile technology to collect data for development. In line with the pilot project, the partner organisations did a situational analysis study on the current status of the use of mobile technologies for data collection in Zimbabwe. The study prompted the writing of this report as it invites readers to explore the topic, findings, results and conclusions

This situational analysis study aimed at:

identifying the actors (governments, international organisations, NGOs, businesses, etc.) engaged in the use of mobile technology in data collection

documenting lessons learnt from counterpart’s experiences in all facets of the process from hardware and software used to management of the data collection process from enumerator with handheld device to data utilisation and dissemination

mapping and analysing various activities involving the collection of data, constraints and the context in which these activities take place and tools currently in use either on the mobile platform or elsewhere

examine the coverage of mobile network infrastructure in Zimbabwe

Background and Context

Making data available to organisations faster and easier reduces decision time and in turn enhances timely response to problems. Data can only be made available to organisations faster by using mobile technology. Mobile phone based data collection systems typically have several components that communicate for data collection, transmission, storage and retrieval. These include portable computers, notebooks, tablets, mobile phones especially smartphones (Free et al. 2010). There are over 6 billion mobile phone subscribers and 75% of the world has access to a mobile phone (Tomlinson et al. 2013). This creates opportunities to use mobile phones to capture data at the source, thus removing significant sources of data quality problems usually associated with manual transfer of data from paper to computer for processing. Good data on children vaccination coverage, number of people in an area, school enrollment, access to health facilities etc. allows government and development partners to accurately plan, budget, and evaluate their activities (CGD 2014).

The 21st Century has witnessed rapid technological advancement and in line with such developments, mobile phones are being used in data collection. Mobile Data Collection (MDC) is the targeted gathering of structured information using devices such as smartphones, PDAs, or tablets. In the last few years, in addition to continuous improvements of earth-observation and web mapping techniques, the increasing use of new sources of geo-information based on new mobile technologies has emerged. This has created insights and opportunities into the mechanisms of sudden onset crisis related data collection, analysis and mapping. The high mobile phone penetration rates in developing countries are transforming how data collection is conducted. Mobile phones are replacing paper-based surveys offering several benefits including, reduced cost, increased reach, short-turnaround times, and better data accuracy (Akinfaderin-Agarau et al. 2012) . Mobile technology can be used for a variety of applications including:

health; education; agriculture, livelihoods, poverty alleviation, the environment and disasters (Akinfaderin-Agarau et al. 2012, Ganesan et al. 2012)

The speed and magnitude at which connectivity is and mobile technology has spread in the developing world are startling. Globally, the number of mobile phone subscribers has grown from 1 billion in 2000 to over 6 billion in 2012, of which nearly 5 billion are in developing countries (Tomlinson et al. 2013). Even in some of the poorest developing countries, more than 90% of households own a mobile phone and adoption is increasing fast. These developments have coincided with the need for better data which is more urgent in most African countries, where data improvements have been sluggish (CGD 2014).

Zimbabwe has also witnessed a high mobile penetration almost following the global trends. According to the Postal and Telecommunications Regulatory Association of Zimbabwe (POTRAZ) fourth quarter report 2013, the total number of mobile subscriptions increased from 13,518,887 recorded at the end of the third quarter of 2013 to reach 13,663,167 subscribers at the end of December 2013. This implies a net addition of 114,280 subscriptions, representing a marginal growth of 0.9%. This also reflects a year-on-year growth of 8.1% from 12,613,935 subscribers recorded in the 4th quarter of 2012.

The internet penetration rate increased by 2.1% to reach 41.9% from 39.8% recorded in the previous quarter

Data and internet subscribers increased by 5.2% to reach 5.5 million from 5.2 million subscribers recorded in the previous quarter

This evidence buttresses that the use of phones and technology is undoubtedly on the rise in Zimbabwe. In the wake of such positive changes, people are engaging the use of mobile technology for data collection as a way to do away with paperwork and its disadvantages.

Methodology

Purpose of Survey

The purpose of this situational analysis was to document lessons learnt from the counterpart's experiences in the use of mobile technology for data collection. The survey was to get their experiences in all facets of the process from hardware and software used for management of data collection from enumerator with hand held devices to data utilization and dissemination.

The analysis was to serve to establish benchmarks as well as develop effective national partnerships for the implementation of the project. It was also to examine the existence of available skill sets in counterpart organisations and the coverage of mobile network and infrastructure among others.

Sample size

A total of twenty (20) organisations/entities/samples participated in the survey administered by Zimbabwe National Statistics Agency (ZIMSTAT) from the participation base, ZIMSTAT used in this survey report, a total of thirteen (13) responses.

Distribution Dates/Mode of Survey

The study conducted a series of interviews with people and organisations involved in data collection activities using mobile technologies. The semi-structured questionnaires were distributed and collected either after some hours or after a day depending on the physical location of the respondent. Further clarifications were made if the responses were not clear.

The questionnaire was exclusively available in both hard copies and soft copies at Research and Information Services (RIS) offices and later distributed to the selected respondents during the survey period. The questionnaire contained 17 questions (appendix 1).

Return Rate

The Use of Mobile Technology for Data Collection (UMTFDC) analysis overall survey return rate was 72.2%.

Sampling

The study used subjective sampling technique/method. The study identified specific governmental departments and non-governmental organizations. Respondents were drawn out of these specific organisations. The main goal of this sampling method was to focus on particular characteristics of a population that are of interest, which will best enable us to answer the research questions that we had.

The aim was to get a synopsis of the use of mobile technology for data collection from a wide spectrum of organizations including; government departments (Ministry of Health and Child Welfare, Ministry of Primary and Secondary Education, Ministry of Local Government, Public Works and National Housing), International Governmental Organisations, (United Nations Children's Fund (UNICEF), International Non-Governmental organisations (Plan International, Care International, JF Kapneck Trust), community based organisations (Family AIDS Caring

Trust (FACT), Restless Development), Faith based organisations (Catholic Relief Services (CRS).

The major justification being that the above mentioned organisations are found all over the country, have structures all over Zimbabwe and are represented at the lowest levels in the communities. So a picture from these entities is likely to give us the current state of data collection using mobile technology in Zimbabwe.

Results

Our results show that 92.3% of the respondents have used mobile technology for data collection. We also found that 7.6 % have not used any mobile technology for data collection. The results of our analysis are illustrated on fig 1.

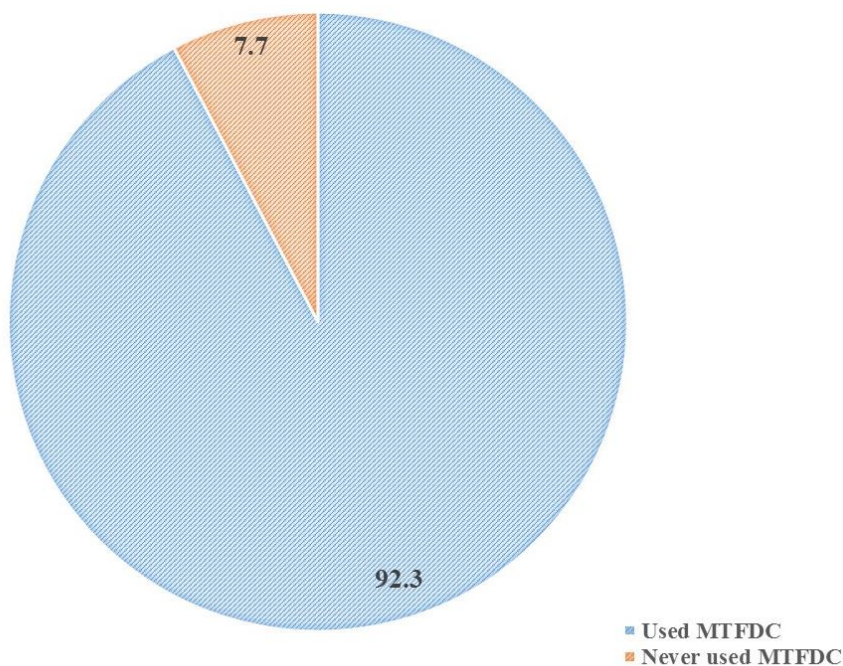


Figure 1: Percentage of participants who have use MTFDC against those who have never used it.

Out of the 92.3% respondents who have used mobile technology for data collection, 41, 6 % of the respondents are still using mobile technology for data collection

Of the 92.3% of the respondents who have used mobile technology for data collection, 41.6 % have used or are using the technology countrywide (including in Mudzi).

At least 53.8% of the respondents who used mobile technology for data collection have been using internal enumerators for the data collection.

Those that have been using external enumerators amounted to 15.3% of the total number of the participants who have used mobile technology for data collection as indicated in Fig 2.

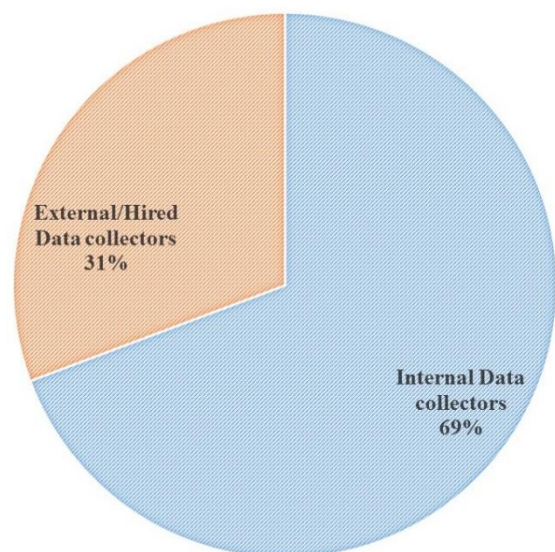


Figure2: Percentage of participants using different data collectors

g) Those that have been using both internal and external enumerators were 30.7 % of the total number of participants who used mobile technology for data collection.

Facts to Note

Zimbabwe is experiencing a growth in the use of mobile technology for data collection. From the study, the use of mobile technology in data collection is growing steadily from the year 2010 to 2014. Fig 3 highlights the growth of use of mobile devices for data collection according to our findings.

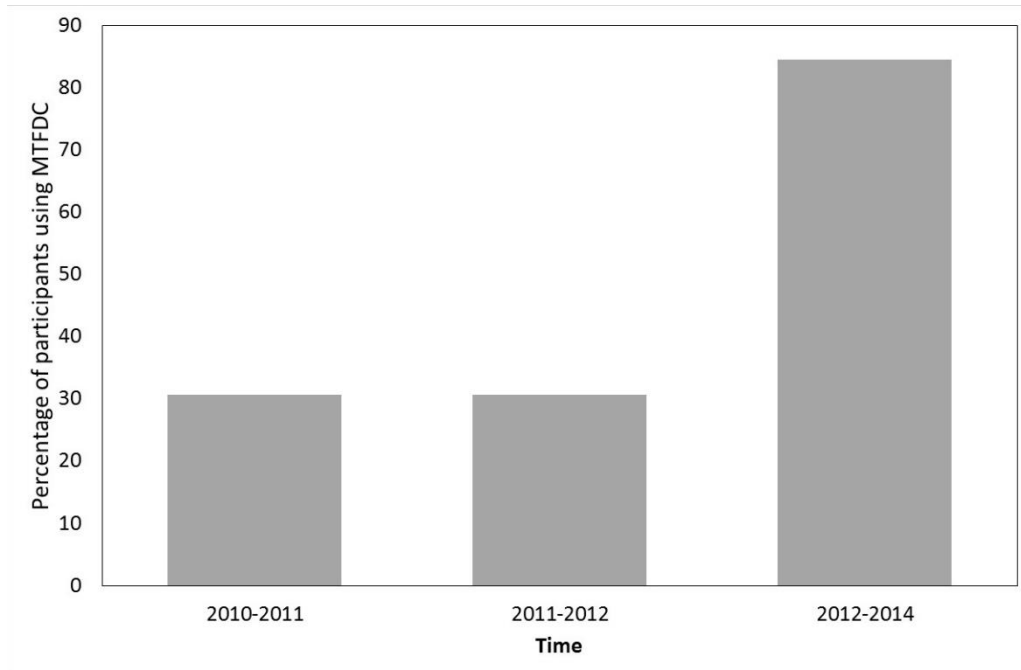


Figure 3: Percentage of participants who have been using MTFDC

As noted in fig 3, from the year 2010-2011, the number of organisations using mobile technology for data collection was 30.7%. The number remained like that for the time of 2011-2012, at 30.7%. From 2012-2014 the total percentage of organisations who have used mobile technology for data collection sharply rose to 84.6 % of our total samples. Therefore, it can be stated that, there was an abrupt rise in the use of mobile technology for data collection in Zimbabwe.

Most respondents have been using mostly open source software for data collection. Open-source Software like Native Development Kit (NDK), Open Data Kit (ODK and Epi Surveyor were used by some organisations for data collection. On the contrary, some organisations like Care International used CSPro, iForm Builder and other own built Applications for data collection.

One major observation is the use of internal enumerators for data collection in communities. Of the 92.3% of respondents who have used mobile technology for data collection, 53.8% have been using their own (internal) enumerators to collect data. This compromises on the sustainability part of their programmes, a reason that could explain why some of their programmes collapsed later as time progressed. As highlighted by some respondents, some people feel insecure when an outsider comes in to record information using mobile devices and this will in some way affect the authenticity of the collected data.

Data transmission was not regular and updated regularly. 75% of the respondents cited that they were using data transmission cabled and flash drives to store and exchange data thus making the data prone to viruses and corruption. This way of data transmission also has problems of those flash drives unable to handle loads of data and this determines how far one can get in collecting the data.

Challenges

The participants cited the following as the challenges they faced during data collection using mobile technologies of their choices,

The main challenge remains to identify the appropriate mobile data collection system to fit the multiplicity of operational contexts humanitarian organizations have to operate in.

The second challenge is to keep track of the evolution of a very dynamic sector and the constant evolution of new technologies flourishing on the data collection market.

While the rich content of information - whether available on the internet or in the data derived from mobile data collection - poses opportunities for application in crisis management, it also poses challenges derived from the analysis of the quality, accuracy, and reliability of the data.

Data connectivity: even if they are designed to work offline, applications need to be connected to the organisation (over the internet, or physically) in order to send back results. It is very important that the agent is, at some point, able to connect. Often, the necessity to travel far to reach such connectivity is a major barrier.

Equipment: even if the price of smart phones is currently decreasing, it remains prohibitive, and is only part of other costs associated with this approach: the logistics of delivering, dispatching and maintaining the devices, as well as the cost of training the agents to use new and complex devices. This makes it very unlikely that one-off data collection exercises (e.g., censuses) can be done successfully using this scenario, and many examples of failure exist.

The cost of communication (messaging or calling) is a burden to the respondents since they normally initiate sending the data. Toll-free numbers or compensation is usually the way to solve this specific issue.

Even if the respondent can read and is familiar with mobile phones, most cases require some training, either learning a specific syntax for SMS responses, or familiarizing oneself with the menu structure of an IVR.

Literacy is also a parameter to take into account, especially in rural areas: sending an SMS, or even dialing a call, can be difficult to some respondent, if possible at all

Some choices of PDAs were not functioning well

Enumerators were not properly trained so there was need for onsite data verification even after the initial data collection exercise.

Due to lack of electricity in some rural areas, charging batteries for the devices was a challenge as indicated by one participant.

To those who were transmitting data using data cables and flash drives, they cited incidences of data becoming corrupt or viral attack as major challenges that affected the whole process.

Recommendations from the participants

There is need for thorough extensive training of personnel and pre testing of gadgets and software before using them. Some respondents highlighted the incidences of PDA's sticking, running out of power and facing some minor technical problems

Use of external enumerators' especially local enumerators will surely ensure openness on the part of the people whose details are being collected. The local people are likely to cooperate and be associated with the programme if one of them is at the helm of data collection. This will in turn at least contribute to accurate data or to near accurate data.

The respondent's perception of the exercise, and the trust they put in it, are also essential to run an accurate data collection exercise. The most notable parameter is the perception of cost, in the cases where the respondent initiates calls or SMS messages. Trust must be established that the operation is not a scam, and that whatever channel they use will be free. The safest technological choices in that respect are USSD, widely considered free, and IVR call-back (triggered by the respondent flashing a number). For normal call-in, or SMS, it can be difficult to convince respondent that they will not have to pay, especially in areas where Phone/SMS scams are common.

There should be simpler applications with other functionalities as most of the applications do not support database capabilities but only text data

It is imperative to provide mobile power banks or some form of mobile battery charging to keep the process of data collection ongoing and get accurate data.

Awareness of available technology does not easily lead to its adoption; hence there is need for organizations to identify their current programmes and pilot the technology to see how it can best work for the organization (step by step approach).

Conclusion

Mobile technology has been termed ‘the single most transformative technology’ for development. Mobile technology especially cell phones have a positive and significant impact on improving the speed and efficiency of data collection and monitoring. From our study, on mobile technology for data collection in Zimbabwe, it is clear that the use of mobile technology offers great opportunities the country to utilise it for development. To successful use mobile technology in data collection there is need to make the technology acceptable by its intended beneficiaries. We further conclude that data collection using mobile technology needs to be done by well-known people in their respective communities for sustainability purposes. These people should therefore be properly trained to do so for data authenticity, enough support should be given to these people for them to continue carrying out data collection exercises. In addition, there is need for continued expansion of network services in rural areas for successful data collection using mobile technologies if that means data should be updated regularly and more effort and support is needed on strengthening the initiative of data collection using mobile devices since most organisations and government departments that formed this study samples indicated their desire to partner with whoever is into data collection using mobile devices.

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Appendix 1.

Situational Analysis on the Current Status of the Use of Mobile Technology for Data Collection in Zimbabwe Questionnaire

Section A

Name of Organisation.....
Name of Respondent.....
Position in the organisation.....
Have you ever used mobile technology to collect data for development: (Yes/No).....
If YES,
Where (Area(s)).....
When (Period).....
For what purpose did you collect the data using this technology.....
.....
Who collected the data (staff members or hired enumerators)
What is the nature of the data that was collected (Quantitative, Qualitative or both).....

Section B – Device

What type of device was used for data collection (portable laptop, tablets, PDA, cell phone, etc?)
.....
What other purpose does the device serve if you are not using it for collecting data?.....
.....
What operating system was used on the device (Windows, Android, iOS etc?).....
.....
What data collection application was on the mobile device? (CSPPro, Frontline SMS, ODK, custom-made)
.....
How was data transmitted from device to central repository (via sms, internet, flash)
.....
What are advantages are derived from using mobile technologies for data collection.....
.....
What challenges are encountered in transferring data from the field via the platform that you were using?.....
.....

Are you willing to share experiences with our team working on the Data Collection using electronic village registers? Yes/No.....

Do you have ongoing data collection using mobile technologies activities? Yes/No.....

SECTION C –RECOMMENDATIONS

What lessons were learnt that could inform utilization of mobile technology in future surveys/researches of similar nature?

.....
.....
.....
.....

Recommendations (*based on your experience in using technology in data collection and management for development*).....

.....
.....
.....
.....

We thank you for completing this questionnaire.