



## *Basic Information Document*

### *Malawi Market Survey 2019/20*

*Version 1 (Updated on August 31, 2023)*

## ACRONYMS

CAADP	Comprehensive Africa Agriculture Development Programme
CAPI	Computer Assisted Personal Interviewing
CPI	Consumption Price Index
EA	Enumeration Area
ICP	International Consumption Price
IHS5	Fifth Integrated Household Survey 2019-2020
IHPS	Integrated Household Panel Survey
LSMS	Living Standards Measurement Study
LSMS-ISA	LSMS-Integrated Surveys on Agriculture
MAFF	Ministry of Agriculture, Forestry and Fisheries
MK	Malawi Kwacha
MofAG	Ministry of Agriculture of Malawi
NSO	National Statistical Office of Malawi
TA	Traditional Authority

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## **1.0: Introduction**

Agriculture is the main source of livelihood and income for most of Africa's population. Additionally, it will be the main source of employment for the millions of youth entering African labor markets every year. Because of this, the development of sustainable food value chains offers important pathways out of poverty and hunger for the millions of poor rural households in Africa. To that end, it is important to use evidence-based policy for market-oriented agriculture, and monitoring and evaluation of them to implement the programs efficiently and effectively.

A market survey was implemented by the Government of Malawi through the National Statistical Office in the period between April 2019 and April 2020 with funding from the Ministry of Agriculture, Forestry and Fisheries (MAFF) – Japan and technical assistance from the LSMS. The main objectives of this survey were to; Enhance the scope of local food price data collection as part of the IHS5 2019/20 and IHPS 2019, for use in measurement of consumption and income and improve the existing conversion factor database for quantification of food consumption and agricultural production reported in non-standard units.

The Market Survey was implemented alongside the Fifth Integrated Household Survey (IHS5) which is the fifth full survey in the IHS series and was fielded from April 2019 to March 2020 also under the World Bank LSMS-ISA umbrella. The IHS5 is a nationally representative sample survey designed to provide information on the various aspects of household welfare in Malawi.

For the Market Survey; selection protocol of markets to be visited each month sought to maximize the number of markets that were associated with the sampled IHS5 enumeration area locations and that they were visited in sync with the IHS5 field teams' visits to these enumeration areas starting in April 2019.

The purpose of this document is to provide a basic overview of the latest round of market data collection implemented alongside the Fifth Integrated Household Survey 2019/20 (IHS5) and the CPI in the period between April 2019 and April 2020.

The Market Survey 2019/20 was implemented on Android tablets, using the computer-assisted personal interviewing (CAPI) platform that was built using the open-access World Bank Survey Solutions software <https://mysurvey.solutions/>.

Throughout the design and implementation of the market survey, the NSO received technical assistance from the World Bank LSMS-ISA initiative.

## 2.0 Survey Design

The Market Survey was designed to piggyback on the CPI data collection and as such, some markets were tagged for both the CPI and market survey data collection.

The NSO maintains an updated list of active markets across the entire country; of which 35 are visited monthly as part of the CPI data collection effort. The CPI Survey collects data on food prices and weights in standard units of measurement and the main objective of this survey is to collect timely data on prices of food and non-food items for inflation measurement in Malawi.

Malawi is divided into 3 regions; and within those, 32 districts which are also the geographic domains of estimation for the IHS. All districts were visited during the Market Survey and the selection of markets was guided by the IHS5 EA locations and timing of visits to these Enumeration Areas.

1071 visits were made to 377 markets over the survey period. 47% of the selected markets were visited once during the survey period; 40% were visited between 2 and 5 times and 13% were visited more than 5 times majorly because they are the main markets in the different regions or districts.

**Table 1. Distribution of Markets by Month and Region**

Month	Northern Region	Central Region	Southern Region
April 2019	9	14	19
May 2019	19	30	47
June 2019	10	33	37
July 2019	8	26	45
August 2019	18	47	52
September 2019	13	35	38
October 2019	14	30	41
November 2019	20	38	46
December 2019	5	20	28
January 2020	23	41	55
February 2020	13	24	40

March 2020	15	37	46
April 2020	7	19	9
<b>Total</b>	<b>174</b>	<b>394</b>	<b>503</b>

Prices for 138 food consumption items were collected in 377 markets in Malawi from Apr 2019 to Apr 2020 i.e. Price data are collected over time and across space. the market survey covered all items that are included in the IHS5 food consumption module, inclusive of 18 items that were further broken down into a set of 51 to better capture quality and varietal differences and associated price changes.

For every item-unit combination for the **crops and food items**, up to 3 samples were solicited from **different vendors** and weights and prices were recorded for each of these individual samples.

**Table 2. Distribution of Number of Samples Collected by Month**

<b>Month</b>	<b>Samples</b>
April 2019	19,878
May 2019	39,377
June 2019	31,232
July 2019	32,756
August 2019	52,835
September 2019	35,083
October 2019	35,913
November 2019	43,542
December 2019	20,863
January 2020	48,790
February 2020	30,290
March 2020	34,591
April 2020	10,806
<b>Total</b>	<b>435,956</b>

### **3.0 The Survey Instrument**

The Market Survey consisted of one questionnaire which is composed of four modules.

#### **3.1 Module A: Market Identification**

The first module; Module A on Market Identification, includes information on district (01), stratum/town (02), place/village (03), name of the market (04), GPS coordination (05), name of the field supervisor (06) and his/her code (07), and the date of the market survey (08).

#### **3.2 Module B: Seasonal Main Crops**

The second module; Module B on Main Crops, collects information on the most popular crops in Malawi whose selection was done in line with the item's list by the CPI, the ICP and the

MofAG. For each crop available in the market, the questionnaire captures three different samples in standard and/or non-standard measurement units and their corresponding prices. This type of information can be only obtained by approaching vendors themselves at the markets.

### **3.3 Module C: Permanent Crops**

The third module; Module C on Permanent Crops, collects information on the annual available crops in the Malawian markets whose selection was done in line with the item's list by the CPI, the ICP and the MofAG. As Module B, the questionnaire captures three different samples of each permanent crop available in the market in standard and/or non-standard measurement units and their corresponding prices.

### **3.4 Module D: Food Consumption**

The fourth module; Module D on Food, collects information on a detailed range of food items whose selection was done in line with the item's list of the CPI, the ICP and the MofAG. In this module, several items were broken down by food quality in order to better capture price fluctuations when the items' quality changes. For instance, BEEF was disaggregated into "Beef with bones", "Beef without bones", "Ham beef", "Liver beef", "Minced beef", "Rump steak beef", and "Fillet beef" because these categories are expected to have wide differences in prices that would have been lost by only capturing the unique item "Beef". This ensures high precision in defining inflation cycles and poverty conditions at national and regional level.

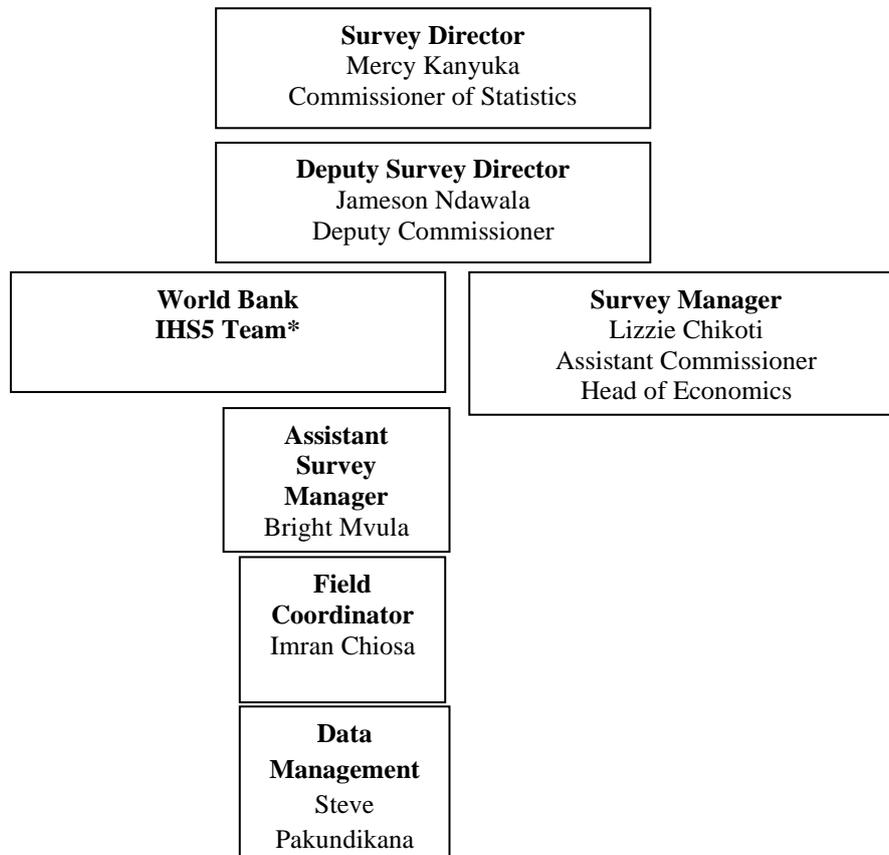
## **4.0 Organization of The Survey**

### **4.1 Survey Management**

The Market Survey was executed by the National Statistical Office, under the direction of the Commissioner of Statistics and the IHS5/Market Survey Management Team. The management team was responsible for questionnaire design, recruitment of personnel, training of personnel, and implementation of the survey.

**Figure 1** outlines the composition of the Market Survey Management Team.

Figure 1: Market Survey Management Team



Note: \* Composed of Talip Kilic (Senior Economist), Heather Moylan (Survey Specialist) and Wilbert Vundru Drazi (IHS5/Market Survey Resident Advisor).

#### 4.2 Training of Field Staff

Field staff for the Market Survey were selected from the pool of staff that conduct the monthly CPI data collection; in cases where the number of staff was insufficient, temporary staff that have excelled in previous surveys conducted by the NSO were recruited to fill these gaps.

Training instruction was given to the field staff by the Market Survey Management Team with help from World Bank LSMS-ISA team members. The training consisted of classroom instruction on the contents of the questionnaire, concepts and definitions, interview techniques and methods, and field practices in the market to ensure that Enumerators fully understood the questionnaire and protocols to be followed to successfully conduct this exercises.

### **4.3 Field Work Implementation**

The Market Survey fieldwork began in April 2019 and was administered monthly throughout the country until March 2020. 6 field-based mobile teams consisting of 1 supervisor, 4 enumerators and 1 driver were assigned to cover specific districts.

During the fieldwork, all teams used to meet at their respective NSO regional offices every morning to synchronize the assignments on their tablets, receive the pocket money from their supervisors (to be used to purchase items in the market) and collect the fieldwork tools (scale, heaps, etc.) before travelling to the market. For Markets that were far away from the regional offices, the teams travelled a day in advance to these locations and camped there until data collection was completed.

Once at the market; an officer would introduce the purpose of their visit and the NSO team to the market authorities before proceeding to different vendors to collect data.

Each field team was equipped with two tablets, one for the CPI Survey and the other one for the Market Survey. One member was designated to do the data entry on tablet while the other members were responsible for carrying the scale and the heaps to weigh the items.

The market data collection consisted of buying three samples of each crop in the unit of measurement reported in the questionnaire from three different market vendors. The procedure varied based on teams, crops and markets. In most of the cases, the team moved together going vendor by vendor and item by item: an officer would buy the item in the required unit of measurement and records the price on CAPI; while some others of the team help in carrying the scale or the heaps during the market visit, weighting the item and reporting the weights to the officer in charge of recording them on CAPI.

In some instances, the teams used an empty market stand to gather items and record on CAPI, weights and prices of all the items.

The team carried its own units of measurement (small, medium and large pails or tinas) during the market visit in instances where they needed to create the units of measurement which were not already available in the market.

Instances where certain products were not available within the boundaries of a given market, the teams made efforts to look for these items in the vicinity of the markets that they were working in.

#### **4.31 Field Supervisors**

The Market Survey field-based supervisors were responsible for managing the daily operations of their respective field based mobile team. Each team supervisor received enumeration assignment schedules throughout the fieldwork.

Primary responsibilities included: (1) liaising with management on schedules, field operation status, equipment status and needs, and special issues, (2) planning daily field operation schedules including coverage and transportation, (3) liaising with local market authorities before commencing data collection, (3) making Survey Solutions questionnaire assignments on CAPI and syncing completed interviews with their Supervisor account (4) reviewing incoming questionnaires for completion and accuracy, (5) syncing reviewed questionnaires with the Headquarters account, (6) reviewing error reports from Headquarters generated through Stata checking system and assigning questionnaire reviews, and authorizing review/call back based on these reports.

#### **4.32 Enumerators**

An enumerator's major areas of responsibility were to administer the market survey questionnaires accurately and completely. The enumerators were responsible for: (1) locating assigned vendors, (2) relaying the purpose of the survey and obtaining respondent permission to implement the interview, (3) implementing all pertinent questionnaire modules, (4) using GPS technology to mark and record market locations and (5) participating in the review and correction of questionnaires.

Because of the nature of the survey, often, enumerators worked as a team to collect data from the vendors.

#### **3.40 Field Work Monitoring and Evaluation**

The Market Survey field operations were regularly monitored through visits to the field based teams by the NSO Managers, the World Bank IHS5/Market Survey Resident Advisor, and the technical missions from the World Bank LSMS-ISA team. In addition, data transmitted from the field was regularly reviewed for completeness and quality by the NSO Managers with the assistance of the World Bank IHS5 Resident Advisor. The incoming data was organized and regularly checked for completeness and quality at the national-, district-, team-, and enumerator-level. The issues that were found in instrument implementation, general quality, or other technical issues were reviewed, and the appropriate corrective action taken by the NSO IHS5 Managers and technical support staff either through revised field notes, additional

field visits, remote communication directly with the field supervisors and/or general Whatsapp/SMS messages relayed to all teams.

After every quarter of fieldwork, all teams were recalled back to the NSO headquarters in Zomba to discuss observations and concerns by field supervisors and to address observed concerns in the data. In general, field-based teams demonstrated extremely high commitment to collecting high quality data and the successful completion of the Market Survey with the assistance of the NSO Management team. In a few cases, however, failure to alleviate quality concerns through the above-mentioned methods and individual coaching efforts led to the restructuring of select field teams and or the replacement of field-based staff.

## **5.0 Data Entry And Data Management**

### **5.1 Data Entry Platform**

To ensure data quality and timely availability of data, the Market Survey was implemented using the World Bank's *Survey Solutions* CAPI software.<sup>1</sup> To carry out the Market Survey, 1 laptop computer and a wireless internet router were assigned to each team supervisor, and each enumerator had an 8-inch GPS-enabled Lenovo tablet computer that the NSO provided. The use of *Survey Solutions* allowed for the real-time availability of data as the completed data was completed, approved by the Supervisor and synced to the Headquarters server as frequently as possible. While administering the first module of the questionnaire the enumerator(s) also used their tablets to record the GPS coordinates of the markets.

### **5.2 Data Management**

The Market Survey *Survey Solutions* CAPI based data entry application was designed to stream-line the data collection process from the field. The range and consistency checks built into the application was informed by the LSMS-ISA experience with the two pilot phases prior to the main survey.

Headquarters (the NSO management) assigned work to the supervisors based on their regions of coverage. The supervisors then made assignments to the enumerators linked to their supervisor account. The work assignments and syncing of completed interviews took

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<sup>1</sup> For background and documentation on *Survey Solutions*, please visit <https://mysurvey.solutions/>. The software platform is available free of charge and is being developed by the World Bank Development Data Group - Data Analytics and Tools Unit (DECAT). To access Survey Solutions Designer, please visit and sign up as a user at <https://designer.mysurvey.solutions/>.

place through a Wi-Fi connection to the Market Survey server. Because the data was available in real time it was monitored closely throughout the entire data collection period and upon receipt of the data at headquarters, data was exported to Stata for other consistency checks, data cleaning, and analysis.

### **5.3 Data Cleaning**

The data cleaning process was done in several stages over the course of the fieldwork and through preliminary analyses. The first stage was during the interview itself. Because CAPI software was used, as enumerators asked the questions and recorded information, error messages were provided immediately when the information recorded did not match previously defined rules for that variable. For example, if the price for 1 kilogramme of sugar was reported as 12000 MWK. The second stage occurred during the review of the questionnaire by the Field Supervisor. The Survey Solutions software allows errors to remain in the data if the enumerator does not make a correction. The enumerator can write a comment to explain why the data appears to be incorrect. The next stage occurred when the data were transferred to headquarters where the NSO staff would again review the data for errors and verify the comments from the enumerators and supervisors regarding anomalies that remain.

Additional cleaning was performed after interviews were “Approved” where appropriate to resolve systematic errors and organize data modules for consistency and efficient use. Case by case cleaning was also performed during the preliminary analysis specifically pertaining to out of range and outlier variables.

All cleaning activities were conducted led by the NSO, and the World Bank LSMS-ISA team provided technical assistance.

