



THE UNITED REPUBLIC OF TANZANIA

## NON-STANDARD UNITS (NSU) SURVEY-2022/23 REPORT ON CONVERSION FACTORS



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#### Preface

We are honoured to present the report on the Non-Standard Unit (NSU) Survey, conducted just before the launch of the Annual Agricultural Sample Survey (AASS) for the 2022/23 agricultural year. The data collection for the 2022/23 AASS began in November 2023, and the NSU Survey played a crucial role in ensuring that the diverse local measurement units used across Tanzania's agricultural sector were standardized based on international standards, leading to more accurate and reliable data collection.

This survey was a collaborative effort between the National Bureau of Statistics (NBS) in Mainland Tanzania, the Office of the Chief Government Statistician (OCGS) in Zanzibar, and the Agriculture Lead Ministries (ASLMs), all working in close partnership with the Food and Agriculture Organization (FAO). The technical expertise provided by FAO was essential in the execution of the survey, and the financial support from the Government of Tanzania and the 50x2030 Initiative ensured the success of this endeavour.

The primary objective of the NSU Survey was to convert locally used agricultural units into standard units, allowing for a more consistent and comparable dataset across the country. The insights gathered from this survey have significantly enhanced the quality of the data produced by the 2022/23 AASS and will provide a solid foundation for evidence-based policy making in the agricultural sector chain.

We deeply thank the Government of Tanzania for their unwavering support and commitment to improving agricultural statistics. Their backing has been instrumental in the successful implementation of this survey and the broader efforts to strengthen Tanzania's statistical systems.

We are also grateful to the farmers, traders, and other stakeholders who contributed their time and knowledge during the survey. Their participation has been invaluable in ensuring that the data collected accurately reflects the realities on the ground of agricultural practices across Mainland Tanzania and Zanzibar.

As we share the results of the NSU Survey, we reaffirm our commitment to producing highquality, relevant statistics that will drive sustainable agricultural development and improve the livelihoods of all citizens in the country.

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#### Introduction

The use of standard units of measurement, such as kilograms and tons, is relatively uncommon in Tanzania, particularly outside of major markets or larger farms that fall within the non-household sector. Instead, like their counterparts in other developing countries, Tanzanian farmers and traders typically rely on local or non-standard units (NSUs) for measuring and conducting their daily activities. Whether they are selling goods or quantifying production, these non-standard units play a central role in the agricultural and trade practices across the country.

In agricultural surveys, farmers often prefer to report their production, sales or inputs use in local units instead of kilograms. Sometimes, the conversion from local to standard units is done during the interview based on the knowledge of the enumerator, supervisor or respondent and hence resulting in measurement errors. For this reason, it is recommended that agricultural surveys allow farmers to respond in familiar local units and then transform these values in kilograms based on predefined kilogram equivalents.

#### Terminology:

*Kilogram equivalents* (also called conversion factors) tell us how much one local unit of measurement weighs in *KG*.

<u>Example</u>: if one 50KG bag of maize grains weighs, on average, 54 KGs and the farmer reported he harvested three 50KG bags of maize in grains, it means he harvested 3\*54KG=162 KGs of maize grains. In this case, 54 is the KG equivalent (or conversion factor) of one 50KG bag of maize.

The use of NSUs in agricultural surveys presents a challenge to data analysts and researchers in their attempt to quantify production, sales or inputs use in standard or kilogram equivalent. With the goal to improve the quality of the Tanzania Annual Agricultural Sample Survey (AASS) data, the Tanzania National Bureau of Statistics (NBS) and the Office of the Chief Government Statistician (OCGS) Zanzibar, and in collaboration with the Food and Agriculture Organization of the United Nations (FAO) conducted a Non-Standard Unit (NSU) Survey in local markets in Tanzania, and also in farm households where it is deemed necessary.

#### 2.0 Objective of the Survey

The survey's objective was to collect and document kilogram equivalents (conversion factors) of local units of measurements for specific priority commodities-units combinations1. The commodity-nonstandard unit combinations included in the market survey were selected through consultations with the Ministry of Agriculture, NBS and OCGS personnel who identified commodities of key importance in the Mainland Tanzania and Zanzibar.

<sup>&</sup>lt;sup>1</sup> The number of commodity-non-standard unit combinations can be large, and the measurement of every commodity unit combination in a survey is not possible. Therefore, it is important to narrow down the list and combinations to commodities with high priority (to quantify) and to keep the survey manageable while decreasing measurement errors.

The conversion factors generated from the market survey were used to transform the quantities of production, sales and input use collected during the AASS 2022/23 survey cycle from local to standard unit, thus improving the quality of estimates. This report is intended for use in future survey cycles and by researchers/ analysts engaged in agricultural and market surveys.

## 3.0 Methodology

## 3.1 Survey scope and design

The focus of the NSU survey was crop commodities, milk and honey. For data collection, a sample of markets in urban and rural areas was selected using a purposive sampling technique. The main factors considered in the selection of markets were:

- i. Degree of regional diversity of items and units and their respective weights;
- ii. The expected availability of the items at the time of the survey;
- iii. Types of markets that were more likely to have the commodities available for sale;

Generally, a NSU market survey is not necessarily conducted in every regions/strata. Rather, more markets are selected where there is greater variation in commodities and the units of measurements commonly used across regions/strata. Thus, to ensure adequate coverage of commodities and units, markets in regions with the widest diversity of units were included in the NSU survey, as well as regions with commodities or units not commonly found in other areas. Although larger markets are preferred to smaller ones due to the variety of commodities available and thus the opportunity to cover more commodity-unit combinations, it was found that the use of standard units, such as kilograms, was prominent in such markets. In such cases, smaller markets were preferred.

Based on these general considerations, markets were selected in each of the seven Agroecological Zones in the Mainland, and the two Islands in Zanzibar. Table 3.1 and table 3.2 below presents the list of the zones and locations that were visited in the Mainland Tanzania and Zanzibar, respectively. In each Agroecological Zone in the Mainland Tanzania, three types of markets were selected. These included a farmers' markets, a weekly market (gulio) and a regional market.



Figure 3. 1: Visited Markets, in August-October 2023, Tanzania

Table 3. 1:	Locations	Visited in	Mainland	Tanzania
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Agroecological zones	Locations
Northern Zone	• Arusha
	Kilimanjaro
	• Manyara
Eastern Zone	Dar es Salaam
	Morogoro
	• Pwani
	• Tanga
Southern Zone	• Lindi
	• Mtwara
Western Zone	• Kigoma
	• Tabora
Northern Southern	• Iringa
Zone	• Katavi
	• Mbeya
	• Njombe
	• Rukwa
	• Ruvuma
	• Songwe
Lake Zone	• Geita
	Kagera
	• Mara
	• Mwanza
	Shinyanga
	• Simiyu
Central Zone	• Dodoma
	Singida

In Zanzibar, experts reported that different NSUs were used across the islands of Pemba and Unguja. As such, two markets were selected in each island.

Islands	Locations
Pemba	Kusini Pemba
	Kaskazini Pemba
Unguja	<ul> <li>Kaskazini Unguja</li> </ul>
	<ul> <li>Mjini Magharibi Unguja</li> </ul>

 Table 3. 2:
 Locations Visited in Zanzibar

In each market, a purposive sampling technique was applied in the selection of vendors, and the unit of observations of the NSU survey were the **vendors** and survey location were the **markets**. The number of vendors selected in each market depended on the availability of a selected commodity and units of measurement and the willingness of a vendor to participate in the survey. For optimal use of time, vendors selling a large variety of commodities and those that specialized in a specific commodity of interest were visited first to ensure that most of the commodity-unit combinations could be weighed and recorded at one point before moving to the next vendor.

Two vendors were selected for each commodity-unit combination, and samples of commodities sold by a vendor were weighed using a calibrated scale. The samples were transferred into a white polyethylene bag for weighing. For samples in containers, the weight of the container was taken and subtracted from the weight of the product. A few measurements/weights were taken for each commodity-unit combination at each vendor until a stable reading was obtained, and then entered in the *Survey Solutions*<sup>2</sup> digital questionnaire in kilograms for the calculation of Conversion Factors<sup>3</sup>.

#### **Box 2:1: How to calibrate the survey scales**

- 1. Place the scale on a stable flat surface. The scale should be as level as possible before weighing items.
- 2. Press [O / I] to turn the scale on. The Scale will run a brief check and once the scale is stable, the display will show "0.000Kg"
- 3. Add items to scale, wait for stable reading and record weight displayed.
- 4. Repeat 2 and 3 for a second vendor

Note: If the display does not show the weighing unit as KG then the scale was not configured correctly for the last item/s weighed. Press [UNITS] to select the correct unit (KG) to be used and reweigh previous item if necessary.

Note: Some items may require the use of a container to hold the item on the scale. When a container is used, place the empty container on the scale and wait for a stable reading. Once a stable reading is displayed press [T] button and the display will read "0.000Kg".

Commodities packaged in bulky units of measurements, such as large bags and bundles, were divided up into smaller quantities that could be weighed separately, and once all quantities were

<sup>&</sup>lt;sup>2</sup> A Computer Assisted Personal Interview (CAPI) data collection software.

<sup>&</sup>lt;sup>3</sup> The term conversion factor and kg equivalents are used as synonyms in this note.

weighed, they were summed together to determine the total weight of the NSU combination. In some instances, larger scales typically used by bulk traders or aggregators who purchase items from farmers for resale to market vendors, bulk commodities weigh were used. Caution was however taken to ensure that market scales were properly calibrated to minimize potential measurement errors.

#### Box 2.2: How to calibrate non-survey scales

- Calibrate by selecting an item that weighs close to the maximum of the survey team scale.
- Weigh this item using both the survey and the market scales, recording both measurements in the questionnaire.
- During post-collection data processing, the calibration measurements from both scales would be used to correct for any discrepancies between the scales

In instances where only a single vendor had the commodity-unit of interest, two measurements were taken from the single vendor in a market. Weights for all the NSU combinations of interest that were available at the market were taken, including any additional combination that had not been pre-listed but found at the market. For commodity-unit combinations that were unavailable in the selected markets, efforts were made to take measurements either at farm households, product collection centers or at roadside stalls.

In addition to capturing weights, a photo of each commodity-unit combination was taken using the tablet and a photo reference library was built within the Survey Solutions digital questionnaire. Further, all markets GPS coordinates were captured at each market or data collection point. The primary purpose of these photos was to compile a reference album that will be used during data collection at farm households to allow farmers to report quantities in local units by comparing what they had in mind with the quantities photographed. This helped to further standardize NSUs reported by respondents during the AASS 2022/23. The protocols followed in taken photos are described in annex 1.

## 3.2 Taking Weights of Commodities

Agricultural survey reports present crops production quantities in their final state (e.g., cereals in grains; pulses out of their shells; etc.). However, farmers might not be able to report crop production quantities in their final state. Thus, kilograms equivalents and fresh-to-dry conversion factors of selected crops with different states and conditions were collected in Tanzania.

#### Terminology:

- <u>State</u>: the state alters the weights of a crop affecting its moisture. Example of states: fresh/dry; unroasted/roasted. Depending on the crop type, the state may or may not significantly affect the weight of a crop.
- <u>Condition</u>: it regards the presence of parts that are normally inedible or unused. E.g., Shells, husks, cobs

In defining the list of commodity specific combinations to be weighted during the NSU survey, some practical considerations were made. These included:

- i. Relevance of the selected commodities in both Zanzibar and Mainland Tanzania. If a commodity was widely used in one area of the country and not in the other, the CAPI questionnaire was designed to automatically disable the crops that were not relevant to that area.
- ii. State and condition of selected commodities. Although the commodity list was short, it had the potential of generating a long list of commodity-state/condition-unit combinations. Thus, NBS, OCGS and stakeholders tried to keep under control the number of commodities under study by selecting only the most relevant items.
- iii. Each combination of commodity, states/condition and units had to appear in the NSU and the AASS survey to ensure the possibility of matching and conversion from local to standard units for each combination.
- iv. As it was virtually impossible to predict all possible commodity-unit combinations, the NSU survey allowed the option of specifying commodity -unit combinations that had not been predicted and specified in the CAPI questionnaire but were found in use during the NSU survey.

Some crops appear in multiple conditions (e.g., legumes shelled and unshelled). In such cases, measured weights of only a few combinations provided enough data to extrapolate conversion factors for all condition combinations. This strategy was helpful in reducing the combination list or filling the gaps in cases where some commodity-unit combinations were not found at the markets. For example, if both a jug and a tin containers of paddy unhusked weighs 5% more than paddy husked, then the conversion factor of 5% between these two conditions (with husks and without husks) could be applied to all units of this commodity.

Also, to obtain the "with shell/husk to without shell/husk" conversion factors, a "with shell/husk" crop in a selected unit of measurement was weighed first, then the shells/husks were removed and the commodity was weighed again. For example, if a large bucket of groundnuts with shell weighs 6Kg and once they are unshelled, they weigh 4.5 Kg, the "with shell/husk to without shell/husk" conversion factor is 0.75 (4.5/6). This conversion factor was extrapolated to other units of measurement (for example if a large bag of groundnuts with shell weighs 100kg, then the unshelled equivalent is 100\*0.75=75Kg).

## 3.3 Timing of the Survey

Reference literature and previous experiences suggested that a NSU market survey should be implemented before the agricultural survey, and a follow up NSU survey conducted post the agricultural survey to fill gaps in conversion factors. The AASS 2022/23 CAPI system was thus designed such that the conversion factors were preloaded to transform quantities of selected

commodities from local to standard units, thus improving the quality checks of the questionnaire and finally generating better data. Advantages of this approach are also described in the 50x2030 technical guidelines on NSUs<sup>4</sup>.

The NSU survey in Tanzania was conducted in <u>August -September 2023</u>, about a month before the data collection of Annual Agricultural Sample Survey which was carried out from November 2023-February 2024. Data analysis commenced soon after the completion of data collection and gaps in conversion factors were identified in a substantial number of commodity-unit combinations. Consequently, a smaller follow-up NSU survey was conducted where a round of call-backs was done in the Mainland Tanzania, and in Zanzibar, visits to the markets to take measurements of missing combinations were done to fill the data gaps.

#### Figure 3. 2: Timing of the NSU Survey



<sup>&</sup>lt;sup>4</sup> <u>https://www.50x2030.org/sites/default/files/resources/documents/2021-09/NoteOnNSU\_FINAL.pdf</u>

## **Commodity-unit Combinations Measured**

Tables 3.3 to 3.13 below presents the conversion of weights and measures used in selected commodities in Tanzania.

Crop Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Cereals	Paddy husked (Mpunga)	Tin Container	17	0.8	13.4		callback
Cereals	Paddy husked (Mpunga)	Bucket	17	0.8	13.4		callback
Cereals	Paddy husked (Mpunga)	Small Bucket	9	0.8	7.1		callback
Cereals	Paddy husked (Mpunga)	Medium Bucket	11	0.8	8.7		callback
Cereals	Paddy husked (Mpunga)	Large Bucket	13.6	0.8	10.8	4	market survey
Cereals	Paddy husked (Mpunga)	Sack	90.7	0.8	71.6	4	market survey
Cereals	Paddy husked (Mpunga)	Small Sack (25 kg)	32	0.8	25.3		callback
Cereals	Paddy husked (Mpunga)	Medium Sack (50 kg)	32.9	0.8	26	2	market survey
Cereals	Paddy husked (Mpunga)	Large Sack (100 kg)	100	0.8	79	2	market survey
Cereals	Paddy husked (Mpunga)	Extra large Sack (120 kg)	150	0.8	118.5	2	market survey
Cereals	Paddy husked (Mpunga)	Extra Large Sack (140 kg)	140	0.8	110.6		callback
Cereals	Paddy husked (Mpunga)	Medium Sack (60 kg)	60	0.8	47.4		callback
Cereals	Paddy husked (Mpunga)	Large Sack (90 kg)	90	0.8	71.1		callback
Cereals	Paddy husked (Mpunga)	Extra large Sack (200 kg)	120	0.8	94.8		callback
Cereals	Paddy husked (Mpunga)	Extra large Sack (160 kg)	160	0.8	126.4		callback
Cereals	Paddy husked (Mpunga)	Medium Sack (70 kg)	70	0.8	55.3		callback
Cereals	Paddy husked (Mpunga)	Extra Large Sack (150 kg)	150	0.8	118.5		callback
Cereals	Paddy husked (Mpunga)	Pishi (in Zanzibar)	1.8	0.8	1.4	2	market survey
Cereals	Paddy husked (Mpunga)	Kibaba (cereals tin 05-1 Kgs)	0.6	0.8	0.5		callback
Cereals	Sorghum grain	Bowl (Bakuli)	1.2	1	1.2	6	market survey
Cereals	Sorghum grain	Cane (Kopo)	1	1	1	4	market survey

 Table 3. 3:
 Conversion of weights (KGs) and measures for cereals

Crop Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Cereals	Sorghum grain	Tin Container	18	1	18		callback
Cereals	Sorghum grain	Bucket	18	1	18		callback
Cereals	Sorghum grain	Small Bucket	9.3	1	9.3	4	market survey
Cereals	Sorghum grain	Medium Bucket	12.2	1	12.2		callback
Cereals	Sorghum grain	Large Bucket	18.1	1	18.1	8	market survey
Cereals	Sorghum grain	Sadoline	4	1	4	12	market survey
Cereals	Sorghum grain	Sack	90	1	90		callback
Cereals	Sorghum grain	Small Sack (25 kg)	32.3	1	32.3		callback
Cereals	Sorghum grain	Medium Sack (50 kg)	56	1	56		callback
Cereals	Sorghum grain	Large Sack (100 kg)	100	1	100		callback
Cereals	Sorghum grain	Extra large Sack (120 kg)	120	1	120		callback
Cereals	Sorghum grain	Extra Large Sack (140 kg)	140	1	140		callback
Cereals	Sorghum grain	Extra large Sack (160 kg)	160	1	160		callback
Cereals	Sorghum grain	Cup (Kikombe)	0.3	1	0.3	2	market survey
Cereals	Sorghum grain	Pishi (in Zanzibar)	2.3	1	2.3		callback
Cereals	Sorghum grain	Kibaba (cereals tin 05-1 Kgs)	0.6	1	0.6		callback
Cereals	Sorghum grain	Bakuli ndogo	0.3	1	0.3	2	market survey
Cereals	Sorghum grain	Bipii	0.6	1	0.6	2	market survey
Cereals	Sorghum grain	Kifuko cha Nylon	1	1	1	2	market survey
Cereals	Sorghum grain	Kikombe kidogo	0.2	1	0.2	2	market survey
Cereals	Sorghum grain	Kikombe kikubwa	0.5	1	0.5	4	market survey
Cereals	Bulrush millet grain	Bowl (Bakuli)	1.2	1	1.2	4	market survey
Cereals	Bulrush millet grain	Cane (Kopo)	0.9	1	0.9	4	market survey
Cereals	Bulrush millet grain	Tin Container	16.4	1	16.4		callback
Cereals	Bulrush millet grain	Bucket	16.4	1	16.4		callback
Cereals	Bulrush millet grain	Medium Bucket	11.2	1	11.2		callback

Crop Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Cereals	Bulrush millet grain	Large Bucket	18.2	1	18.2	4	market survey
Cereals	Bulrush millet grain	Sadoline	4.2	1	4.2	8	market survey
Cereals	Bulrush millet grain	Sack	100	1	100		callback
Cereals	Bulrush millet grain	Small Sack (25 kg)	32.7	1	32.7		callback
Cereals	Bulrush millet grain	Medium Sack (50 kg)	66	1	66		callback
Cereals	Bulrush millet grain	Large Sack (100 kg)	50	1	50		callback
Cereals	Bulrush millet grain	Extra large Sack (120 kg)	120	1	120		callback
Cereals	Bulrush millet grain	Extra Large Sack (140 kg)	140	1	140		callback
Cereals	Bulrush millet grain	Bakuli ndogo	0.3	1	0.3	2	market survey
Cereals	Bulrush millet grain	Bipii	0.8	1	0.8	2	market survey
Cereals	Bulrush millet grain	Kifuko cha Nylon	1	1	1	2	market survey
Cereals	Bulrush millet grain	Kikombe kidogo	0.2	1	0.2	2	market survey
Cereals	Bulrush millet grain	Kikombe kikubwa	0.5	1	0.5	2	market survey
Cereals	Bulrush millet grain	Kifuko Cha nylon kidogo	0.1	1	0.1	2	market survey
Cereals	Bulrush millet grain	Kifuko Cha nylon kikubwa	0.2	1	0.2	2	market survey
Cereals	Finger millet grain	Bowl (Bakuli)	1.2	1	1.2	6	market survey
Cereals	Finger millet grain	Cane (Kopo)	0.9	1	0.9	8	market survey
Cereals	Finger millet grain	Tin Container	17.1	1	17.1		callback
Cereals	Finger millet grain	Small Bucket	8.5	1	8.5	2	market survey
Cereals	Finger millet grain	Large Bucket	15	1	15	4	market survey
Cereals	Finger millet grain	Sadoline	3.8	1	3.8	8	market survey
Cereals	Finger millet grain	Sack	97.3	1	97.3	2	market survey
Cereals	Finger millet grain	Small Sack (25 kg)	25	1	25		callback
Cereals	Finger millet grain	Medium Sack (50 kg)	100	1	100		callback
Cereals	Finger millet grain	Large Sack (100 kg)	110	1	110		callback
Cereals	Finger millet grain	Extra large Sack (120 kg)	120	1	120		callback

Crop Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Cereals	Finger millet grain	Large Sack (110 kg)	110	1	110		callback
Cereals	Finger millet grain	Cup (Kikombe)	0.3	1	0.3	4	market survey
Cereals	Finger millet grain	Bakuli ndogo	0.3	1	0.3	2	market survey
Cereals	Finger millet grain	Bipii	0.6	1	0.6	2	market survey
Cereals	Finger millet grain	Chupa ya (Lita 1)	0.9	1	0.9	2	market survey
Cereals	Finger millet grain	Kifuko cha Nylon	1	1	1	2	market survey
Cereals	Finger millet grain	Nkanada	2	1	2	2	market survey
Cereals	Finger millet grain	Sahani dogo	0.3	1	0.3	2	market survey
Cereals	Finger millet grain	Sahani kubwa	0.7	1	0.7	2	market survey
Cereals	Wheat grain	Bowl (Bakuli)	0.6	1	0.6	2	market survey
Cereals	Wheat grain	Tin Container	18.3	1	18.3		callback
Cereals	Wheat grain	Small Bucket	9.4	1	9.4	2	market survey
Cereals	Wheat grain	Large Bucket	19.2	1	19.2	4	market survey
Cereals	Wheat grain	Sadoline	4.2	1	4.2	6	market survey
Cereals	Wheat grain	Sack	100	1	100		callback
Cereals	Wheat grain	Large Sack (100 kg)	100	1	100		callback
Cereals	Wheat grain	Extra large Sack (120 kg)	120	1	120		callback
Cereals	Wheat grain	Bakuli ndogo	0.5	1	0.5	2	market survey
Cereals	Wheat grain	Bipii	0.7	1	0.7	2	market survey
Cereals	Wheat grain	Kifuko cha Nylon (Kg 1)	1.5	1	1.5	2	market survey
Cereals	Maize grain, dry	Litre	1.2	1	1.2	2	market survey
Cereals	Maize grain, dry	Неар	2.1	1	2.1		callback
Cereals	Maize grain, dry	Small Heap	4.1	1	4.1		callback
Cereals	Maize grain, dry	Medium Heap	10.8	1	10.8		callback
Cereals	Maize grain, dry	Large Heap	18	1	18		callback
Cereals	Maize grain, dry	Bowl (Bakuli)	0.6	1	0.6	2	market survey

Crop Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Cereals	Maize grain, dry	Cane (Kopo)	0.9	1	0.9	4	market survey
Cereals	Maize grain, dry	Tin Container	16.7	1	16.7		callback
Cereals	Maize grain, dry	Small Bucket	10	1	10	14	market survey
Cereals	Maize grain, dry	Medium Bucket	12.1	1	12.1	4	market survey
Cereals	Maize grain, dry	Large Bucket	17.9	1	17.9	20	market survey
Cereals	Maize grain, dry	Sadoline	3.8	1	3.8	24	market survey
Cereals	Maize grain, dry	Sack	93.9	1	93.9	2	market survey
Cereals	Maize grain, dry	Small Sack (25 kg)	25	1	25		callback
Cereals	Maize grain, dry	Medium Sack (50 kg)	50	1	50		callback
Cereals	Maize grain, dry	Large Sack (100 kg)	100.3	1	100.3	6	market survey
Cereals	Maize grain, dry	Extra large Sack (120 kg)	112.8	1	112.8	4	market survey
Cereals	Maize grain, dry	Extra Large Sack (140 kg)	140	1	140		callback
Cereals	Maize grain, dry	Large Sack (90 kg)	90	1	90		callback
Cereals	Maize grain, dry	Large Sack (110 kg)	110	1	110		callback
Cereals	Maize grain, dry	Extra large Sack (200 kg)	200	1	200		callback
Cereals	Maize grain, dry	Glass (Glasi)	0.1	1	0.1		callback
Cereals	Maize grain, dry	Extra large Sack (160 kg)	160	1	160		callback
Cereals	Maize grain, dry	Cup (Kikombe)	0.4	1	0.4	2	market survey
Cereals	Maize grain, dry	Bipii	0.7	1	0.7	2	market survey
Cereals	Maize grain, dry	Kopo dogo	0.5	1	0.5	2	market survey
Cereals	Maize grain, dry	Kopo kubwa	1.8	1	1.8	2	market survey
Cereals	Maize on cob, fresh	Piece	0.4	0.4	0.2	8	market survey
Cereals	Maize on cob, fresh	Small Piece	0.3	0.4	0.1	6	market survey
Cereals	Maize on cob, fresh	Medium Piece	0.3	0.4	0.1	4	market survey
Cereals	Maize on cob, fresh	Large Piece	0.5	0.4	0.2	6	market survey
Cereals	Maize on cob, fresh	Неар	1	0.4	0.4	12	market survey

Crop Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Cereals	Maize on cob, fresh	Small Heap	0.7	0.4	0.3		callback
Cereals	Maize on cob, fresh	Medium Heap	1.4	0.4	0.5		callback
Cereals	Maize on cob, fresh	Large Heap	2.9	0.4	1		callback
Cereals	Maize on cob, fresh	Tenga/Susu straw basket	140.1	0.4	50.4		callback
Cereals	Maize on cob, fresh	Bowl (Bakuli)	1.9	0.4	0.7		callback
Cereals	Maize on cob, fresh	Tin Container	15.4	0.4	5.5		callback
Cereals	Maize on cob, fresh	Small Bucket	7.3	0.4	2.6		callback
Cereals	Maize on cob, fresh	Large Bucket	15.4	0.4	5.5		callback
Cereals	Maize on cob, fresh	Sadoline	4.2	0.4	1.5		callback
Cereals	Maize on cob, fresh	Sack	80	0.4	28.8		callback
Cereals	Maize on cob, fresh	Small Sack (25 kg)	39.4	0.4	14.2	2	market survey
Cereals	Maize on cob, fresh	Medium Sack (50 kg)	53	0.4	19.1	2	market survey
Cereals	Maize on cob, fresh	Large Sack (100 kg)	100	0.4	36		callback
Cereals	Maize on cob, fresh	Extra large Sack (120 kg)	80	0.4	28.8		callback
Cereals	Maize on cob, fresh	Kipolo	38.2	0.4	13.8		callback
Cereals	Paddy unhusked (Mchele)	Kilogram	1	1	1	2	market survey
Cereals	Paddy unhusked (Mchele)	Cane (Kopo)	1	1	1	10	market survey
Cereals	Paddy unhusked (Mchele)	Large Bucket	18.9	1	18.9	4	market survey
Cereals	Paddy unhusked (Mchele)	Sadoline	6.4	1	6.4	4	market survey
Cereals	Paddy unhusked (Mchele)	Small Sack (25 kg)	32.8	1	32.8	4	market survey
Cereals	Paddy unhusked (Mchele)	Medium Sack (50 kg)	50	1	50	4	market survey
Cereals	Paddy unhusked (Mchele)	Cup (Kikombe)	0.4	1	0.4	2	market survey
Cereals	Paddy unhusked (Mchele)	Bakuli ndogo	0.3	1	0.3	2	market survey
Cereals	Paddy unhusked (Mchele)	Chibuku	1	1	1	2	market survey
Cereals	Paddy unhusked (Mchele)	Chupa ya (Lita 1)	0.9	1	0.9	4	market survey
Cereals	Paddy unhusked (Mchele)	Bakuli ya kati	0.6	1	0.6	2	market survey

Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Groundnuts shelled	Medium Heap	0.1	0.7	0.1		callback
Groundnuts shelled	Large Heap	0.2	0.7	0.1		callback
Groundnuts shelled	Bowl (Bakuli)	0.5	0.7	0.4	4	market survey
Groundnuts shelled	Cane (Kopo)	0.5	0.7	0.4	4	market survey
Groundnuts shelled	Tin Container	9.6	0.7	6.7		callback
Groundnuts shelled	Bucket	6.8	0.7	4.8	4	market survey
Groundnuts shelled	Small Bucket	3.7	0.7	2.6	8	market survey
Groundnuts shelled	Medium Bucket	4.1	0.7	2.9	2	market survey
Groundnuts shelled	Large Bucket	6.6	0.7	4.6	12	market survey
Groundnuts shelled	Sadoline	1.5	0.7	1.0	8	market survey
Groundnuts shelled	Sack	47.8	0.7	33.5		callback
Groundnuts shelled	Small Sack (25 kg)	15.0	0.7	10.5		callback
Groundnuts shelled	Medium Sack (50 kg)	50.0	0.7	35.0		callback
Groundnuts shelled	Large Sack (100 kg)	70.4	0.7	49.3	2	market survey
Groundnuts shelled	Extra large Sack (120 kg)	120.0	0.7	84.0		callback
Groundnuts shelled	Extra Large Sack (140 kg)	140.0	0.7	98.0		callback
Groundnuts shelled	Medium Sack (60 kg)	45.0	0.7	31.5		callback
Groundnuts shelled	Extra large Sack (200 kg)	130.0	0.7	91.0		callback
Groundnuts shelled	Cup (Kikombe)	0.3	0.7	0.2	2	market survey
Groundnuts shelled	Pishi (in Zanzibar)	1.1	0.7	0.8	6	market survey
Groundnuts shelled	Kibaba (cereals tin 05-1 Kgs)	0.4	0.7	0.3	6	market survey
Groundnuts shelled	Kipolo	21.0	0.7	14.7		callback
Groundnuts shelled	Bakuli ndogo	0.3	0.7	0.2	2	market survey
Groundnuts shelled	Bipii	0.3	0.7	0.2	2	market survey
Groundnuts shelled	Kopo dogo	0.1	0.7	0.1	2	market survey

Table 3. 4:Conversion of weights and measures for legumes

Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Groundnuts shelled	Kopo kubwa	0.6	0.7	0.5	2	market survey
Groundnuts shelled	Kopo la Lita moja	0.4	0.7	0.3	4	market survey
Groundnuts shelled	Kopo la kati	0.4	0.7	0.3	2	market survey
Beans with pod, fresh	Неар	0.3	0.8	0.2	4	market survey
Beans with pod, fresh	Small Heap	0.2	0.8	0.2		callback
Beans with pod, fresh	Medium Heap	0.6	0.8	0.5		callback
Beans with pod, fresh	Large Heap	1.1	0.8	0.9		callback
Beans with pod, fresh	Bowl (Bakuli)	0.8	0.8	0.6		callback
Beans with pod, fresh	Cane (Kopo)	0.6	0.8	0.5		callback
Beans with pod, fresh	Jug (Jagi)	1.4	0.8	1.1		callback
Beans with pod, fresh	Tin Container	18.0	0.8	14.3		callback
Beans with pod, fresh	Bucket	9.3	0.8	7.4	2	market survey
Beans with pod, fresh	Small Bucket	4.4	0.8	3.5	4	market survey
Beans with pod, fresh	Medium Bucket	10.0	0.8	8.0		callback
Beans with pod, fresh	Large Bucket	15.0	0.8	11.9		callback
Beans with pod, fresh	Sadoline	1.8	0.8	1.4	10	market survey
Beans with pod, fresh	Small Sack (25 kg)	25.0	0.8	19.9		callback
Beans with pod, fresh	Medium Sack (50 kg)	50.0	0.8	39.8		callback
Beans with pod, fresh	Large Sack (100 kg)	119.8	0.8	95.3	2	market survey
Beans with pod, fresh	Extra large Sack (120 kg)	15.0	0.8	11.9		callback
Beans with pod, fresh	Extra Large Sack (140 kg)	140.0	0.8	111.4		callback
Beans without pod, dry	Bowl (Bakuli)	0.5	1.0	0.5	8	market survey
Beans without pod, dry	Cane (Kopo)	1.0	1.0	1.0	10	market survey
Beans without pod, dry	Jug (Jagi)	1.5	1.0	1.5		callback
Beans without pod, dry	Tin Container	17.0	1.0	17.0		callback
Beans without pod, dry	Bucket	18.1	1.0	18.1	2	market survey

Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Beans without pod, dry	Small Bucket	4.2	1.0	4.2		callback
Beans without pod, dry	Medium Bucket	8.3	1.0	8.3		callback
Beans without pod, dry	Large Bucket	19.8	1.0	19.8	4	market survey
Beans without pod, dry	Sadoline	4.3	1.0	4.3	10	market survey
Beans without pod, dry	Sack	100.1	1.0	100.1		callback
Beans without pod, dry	Small Sack (25 kg)	25.0	1.0	25.0		callback
Beans without pod, dry	Medium Sack (50 kg)	50.0	1.0	50.0		callback
Beans without pod, dry	Large Sack (100 kg)	121.3	1.0	121.3	2	market survey
Beans without pod, dry	Extra large Sack (120 kg)	150.0	1.0	150.0		callback
Beans without pod, dry	Glass (Glasi)	1.1	1.0	1.1		callback
Beans without pod, dry	Cup (Kikombe)	0.4	1.0	0.4	12	market survey
Beans without pod, dry	Bakuli ndogo	0.3	1.0	0.3	2	market survey
Beans without pod, dry	Bipii	0.8	1.0	0.8	2	market survey
Beans without pod, dry	Chibuku	0.9	1.0	0.9	2	market survey
Beans without pod, dry	Chupa ya (Lita 1)	1.8	1.0	1.8	2	market survey
Beans without pod, dry	Kopo dogo	0.7	1.0	0.7	2	market survey
Beans without pod, dry	Kopo kubwa	0.9	1.0	0.9	2	market survey
Cowpeas fresh with shell	Kilo	1.0	0.8	0.8		callback
Cowpeas fresh with shell	Неар	0.3	0.8	0.2		callback
Cowpeas fresh with shell	Small Heap	0.1	0.8	0.1		callback
Cowpeas fresh with shell	Medium Heap	0.3	0.8	0.2		callback
Cowpeas fresh with shell	Large Heap	0.5	0.8	0.4		callback
Cowpeas fresh with shell	Bowl (Bakuli)	0.6	0.9	0.6		callback
Cowpeas fresh with shell	Tin Container	0.5	0.8	0.4		callback
Cowpeas fresh with shell	Bucket	20.0	0.8	16.0		callback
Cowpeas fresh with shell	Small Bucket	4.0	0.8	3.2		callback

Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Cowpeas fresh with shell	Medium Bucket	10.0	0.8	8.0		callback
Cowpeas fresh with shell	Large Bucket	20.0	0.8	16.0		callback
Cowpeas fresh with shell	Sadoline	4.0	0.8	3.2		callback
Cowpeas fresh with shell	Sack	15.7	0.9	14.1		callback
Cowpeas fresh with shell	Small Sack (25 kg)	25.0	0.8	20.0		callback
Cowpeas fresh with shell	Medium Sack (50 kg)	23.6	0.8	18.9		callback
Cowpeas fresh with shell	Large Sack (100 kg)	50.0	0.8	40.0		callback
Cowpeas fresh with shell	Extra large Sack (120 kg)	60.0	0.8	48.0		callback
Cowpeas Dried with shell	Kilogram	1.0	1.0	1.0		callback
Cowpeas Dried with shell	Gramu		0.8			callback
Cowpeas Dried with shell	Heap	0.3	1.0	0.3		callback
Cowpeas Dried with shell	Medium Heap	0.1	1.0	0.1		callback
Cowpeas Dried with shell	Large Heap	0.5	1.0	0.5		callback
Cowpeas Dried with shell	Bowl (Bakuli)	0.4	1.0	0.4		callback
Cowpeas Dried with shell	Tin Container	5.0	1.0	5.0		callback
Cowpeas Dried with shell	Large Bucket	20.0	1.0	20.0		callback
Cowpeas Dried with shell	Medium Bucket	10.0	1.0	10.0		callback
Cowpeas Dried with shell	Small Bucket	5.7	0.8	4.4		callback
Cowpeas Dried with shell	Sadoline	4.0	1.0	4.0		callback
Cowpeas Dried with shell	Sack	80.0	1.0	80.0		callback
Cowpeas Dried with shell	Small Sack (25 kg)	8.6	1.0	8.6		callback
Cowpeas Dried with shell	Medium Sack (50 kg)	17.1	0.8	13.1		callback
Cowpeas Dried with shell	Large Sack (100 kg)	45.0	1.0	45.0		callback
Cowpeas Dried with shell	Extra large Sack (120 kg)	85.0	1.0	85.0		callback
Green gram grain fresh with shell	Kilogram	1.0	0.8	0.8		callback
Green gram grain fresh with shell	Bowl (Bakuli)	0.3	0.8	0.2		callback

Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Green gram grain fresh with shell	Small Bucket	3.2	0.8	2.5		callback
Green gram grain fresh with shell	Medium Bucket	4.6	0.8	3.7		callback
Green gram grain fresh with shell	Large Bucket	8.1	0.8	6.4		callback
Green gram grain fresh with shell	Sack	48.3	0.8	38.6		callback
Green gram grain fresh with shell	Small Sack (25 kg)	8.6	1.3	11.4		callback
Green gram grain fresh with shell	Medium Sack (50 kg)	17.2	1.1	19.0		callback
Green gram grain fresh with shell	Large Sack (100 kg)	55.0	0.8	44.0		callback
Green gram grain fresh with shell	Extra large Sack (120 kg)	69.5	0.8	55.6		callback
Green gram grain Dried with shell	Kilogram	1.0	0.8	0.8		callback
Green gram grain Dried with shell	Large Heap	0.3	0.9	0.2		callback
Green gram grain Dried with shell	Bowl (Bakuli)	1.0	0.9	0.9		callback
Green gram grain Dried with shell	Tin Container	5.1	0.9	4.3		callback
Green gram grain Dried with shell	Bucket	5.0	0.9	4.3		callback
Green gram grain Dried with shell	Small Bucket	2.2	0.8	1.7		callback
Green gram grain Dried with shell	Medium Bucket	2.0	0.8	1.6		callback
Green gram grain Dried with shell	Large Bucket	3.4	0.9	2.9		callback
Green gram grain Dried with shell	Sadoline	2.5	0.9	2.1		callback
Green gram grain Dried with shell	Sack	100.0	0.9	85.0		callback
Green gram grain Dried with shell	Small Sack (25 kg)	6.5	1.3	8.6		callback
Green gram grain Dried with shell	Medium Sack (50 kg)	15.6	1.1	17.2		callback
Green gram grain Dried with shell	Large Sack (100 kg)	100.0	0.9	85.0		callback
Green gram grain Dried with shell	Extra large Sack (120 kg)	45.0	0.8	36.0		callback
Pigeon peas without pod, dry	Bowl (Bakuli)	0.6	1.0	0.6	2	market survey
Pigeon peas without pod, dry	Cane (Kopo)	1.1	1.0	1.1	2	market survey
Pigeon peas without pod, dry	Jug (Jagi)	1.5	1.0	1.5		callback
Pigeon peas without pod, dry	Tin Container	20.0	1.0	20.0		callback

Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Pigeon peas without pod, dry	Small Bucket	9.4	1.0	9.4	2	market survey
Pigeon peas without pod, dry	Medium Bucket	10.3	1.0	10.3		callback
Pigeon peas without pod, dry	Large Bucket	18.7	1.0	18.7	4	market survey
Pigeon peas without pod, dry	Sadoline	4.0	1.0	4.0	6	market survey
Pigeon peas without pod, dry	Sack	110.0	1.0	110.0		callback
Pigeon peas without pod, dry	Small Sack (25 kg)	31.2	1.0	31.2		callback
Pigeon peas without pod, dry	Medium Sack (50 kg)	62.2	1.0	62.2		callback
Pigeon peas without pod, dry	Large Sack (100 kg)	100.0	1.0	100.0		callback
Pigeon peas without pod, dry	Extra large Sack (120 kg)	120.0	1.0	120.0		callback
Pigeon peas without pod, dry	Kibaba (cereals tin 05-1 Kgs)	0.6	1.0	0.6		callback
Pigeon peas without pod, dry	Bakuli ndogo	0.3	1.0	0.3	2	market survey
Pigeon peas without pod, fresh	Bowl (Bakuli)	0.2	1.0	0.2	2	market survey
Pigeon peas without pod, fresh	Cane (Kopo)	2.2	1.0	2.2		callback
Pigeon peas without pod, fresh	Jug (Jagi)	2.0	1.0	2.0		callback
Pigeon peas without pod, fresh	Tin Container	18.0	1.0	18.0		callback
Pigeon peas without pod, fresh	Bucket	18.0	1.0	18.0		callback
Pigeon peas without pod, fresh	Small Bucket	12.0	1.0	12.0		callback
Pigeon peas without pod, fresh	Medium Bucket	10.0	1.0	10.0		callback
Pigeon peas without pod, fresh	Large Bucket	11.3	1.0	11.3		callback
Pigeon peas without pod, fresh	Sadoline	3.5	1.0	3.5		callback
Pigeon peas without pod, fresh	Small Sack (25 kg)	34.3	1.0	34.3		callback
Pigeon peas without pod, fresh	Medium Sack (50 kg)	69.5	1.0	69.5		callback
Pigeon peas without pod, fresh	Large Sack (100 kg)	100.0	1.0	100.0		callback
Pigeon peas without pod, fresh	Extra large Sack (120 kg)	120.0	1.0	120.0		callback
Pigeon peas without pod, fresh	Glass (Glasi)	0.2	1.0	0.2	2	market survey
Pigeon peas without pod, fresh	Bakuli ndogo	0.2	1.0	0.2	2	market survey

Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Pigeon peas without pod, fresh	Kifuko cha Nylon	0.3	1.0	0.3	4	market survey
Chick peas fresh with shell	Kilogram	1.0	0.9	0.9		callback
Chick peas fresh with shell	Sack	35.0	0.9	29.8		callback
Chick peas fresh with shell	Extra large Sack (120 kg)	100.0	0.9	95.0		callback
Chick peas Dried with shell	Kilogram	1.0	0.9	0.9		callback
Chick peas Dried with shell	Tin Container	5.3	0.8	4.5		callback
Chick peas Dried with shell	Large Bucket	10.0	1.0	10.0		callback
Chick peas Dried with shell	Medium Sack (50 kg)	45.0	1.0	45.0		callback
Chick peas Dried with shell	Large Sack (100 kg)	100.0	0.9	85.0		callback
Chick peas Dried with shell	Extra large Sack (120 kg)	120.0	0.9	102.0		callback
Chick peas Dried with shell	Large Sack (110 kg)	110.0	0.9	93.5		callback
Chick peas Dried with shell	Extra Large Sack (150 kg)	80.0	1.0	80.0		callback
Field peas fresh with shell	Kilogram	1.0	0.9	0.9		callback
Field peas fresh with shell	Tin Container	7.0	0.9	5.9		callback
Field peas fresh with shell	Large Bucket	20.0	0.8	15.0		callback
Field peas fresh with shell	Sack	15.0	0.8	11.3		callback
Field peas fresh with shell	Large Sack (100 kg)	55.0	0.9	46.8		callback
Field peas fresh with shell	Extra large Sack (120 kg)	120.0	0.9	102.0		callback
Field peas Dried without shell	Kilogram	1.0	0.8	0.8		callback
Field peas Dried without shell	Tin Container	18.0	1.0	18.0		callback
Field peas Dried without shell	Sack	90.0	1.0	90.0		callback
Field peas Dried without shell	Large Sack (100 kg)	100.0	1.0	100.0		callback
Field peas Dried without shell	Extra large Sack (120 kg)	120.0	1.0	120.0		callback
Soyabeans fresh with shells	Sack	15.0	0.8	12.0		callback
Soyabeans fresh with shells	Extra large Sack (120 kg)	15.0	0.8	12.0		callback
Soyabeans dried with shells	Kilo	1.0	0.9	0.9		callback

Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Soyabeans dried with shells	Tonne	1000.0	0.9	850.0		callback
Soyabeans dried with shells	Tin Container	5.0	0.8	4.0		callback
Soyabeans dried with shells	Medium Bucket	10.0	0.9	8.5		callback
Soyabeans dried with shells	Small Bucket	8.0	0.9	6.8		callback
Soyabeans dried with shells	Large Bucket	17.0	0.9	14.4		callback
Soyabeans dried with shells	Sack	60.0	0.9	51.0		callback
Soyabeans dried with shells	Large Sack (100 kg)	100.0	0.9	85.0		callback
Soyabeans dried with shells	Extra large Sack (120 kg)	144.0	0.9	122.4		callback
Fiwi fresh with shell	Kilogram	1.0	1.0	1.0		callback
Fiwi fresh with shell	Bowl (Bakuli)	0.2	1.0	0.2		callback
Fiwi fresh with shell	Small Sack (25 kg)	11.4	1.2	13.5		callback
Fiwi fresh with shell	Medium Sack (50 kg)	23.2	1.2	27.3		callback
Fiwi Dried with shell	Kilogram	1.0	0.8	0.8		callback
Fiwi Dried with shell	Tin Container	22.0	0.8	16.5		callback
Fiwi Dried with shell	Large Bucket	4.4	0.8	3.5		callback
Fiwi Dried with shell	Small Bucket	4.0	0.8	3.0		callback
Fiwi Dried with shell	Sack	100.0	0.8	75.0		callback
Fiwi Dried with shell	Small Sack (25 kg)	9.6	1.2	11.4		callback
Fiwi Dried with shell	Medium Sack (50 kg)	19.7	1.2	23.2		callback
Fiwi Dried with shell	Large Sack (100 kg)	110.0	0.8	82.5		callback
Fiwi Dried with shell	Extra large Sack (120 kg)	110.0	0.8	82.5		callback
Beans without pod, fresh	Bowl (Bakuli)	0.3	1.0	0.3	6	market survey
Beans without pod, fresh	Cane (Kopo)	0.8	1.0	0.8	4	market survey
Beans without pod, fresh	Glass (Glasi)	0.2	1.0	0.2	4	market survey
Beans without pod, fresh	Cup (Kikombe)	0.2	1.0	0.2	4	market survey
Beans without pod, fresh	Bakuli ndogo	0.3	1.0	0.3	2	market survey

Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Groundnuts unshelled	Bowl (Bakuli)	0.8	1.0	0.8	4	market survey
Groundnuts unshelled	Cane (Kopo)	0.6	1.0	0.6	2	market survey
Groundnuts unshelled	Large Bucket	15.8	1.0	15.8	2	market survey
Groundnuts unshelled	Sadoline	3.5	1.0	3.5	4	market survey
Groundnuts unshelled	Small Sack (25 kg)	25.0	1.0	25.0	2	market survey
Groundnuts unshelled	Medium Sack (50 kg)	50.0	1.0	50.0	2	market survey
Groundnuts unshelled	Cup (Kikombe)	0.3	1.0	0.3	10	market survey
Groundnuts unshelled	Bipii	0.6	1.0	0.6	2	market survey
Groundnuts unshelled	Chibuku	0.8	1.0	0.8	2	market survey
Groundnuts unshelled	Kikombe kidogo	0.2	1.0	0.2	2	market survey
Pigeon peas with pod, fresh	Неар	0.6	1.0	0.6	12	market survey
Pigeon peas with pod, fresh	Tin Container	7.9	1.0	7.9	2	market survey
Pigeon peas with pod, fresh	Small Bucket	3.8	1.0	3.8	4	market survey
Pigeon peas with pod, fresh	Sadoline	1.8	1.0	1.8	8	market survey
Pigeon peas with pod, fresh	Large Sack (100 kg)	119.9	1.0	119.9	2	market survey

Crop_Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Processed Cereals and Legumes	Cassava flour	Cane (Kopo)	0.5	1.0	0.5	2	market survey
Processed Cereals and Legumes	Cassava flour	Sadoline	1.8	1.0	1.8	2	market survey
Processed Cereals and Legumes	Cassava flour	Cup (Kikombe)	0.2	1.0	0.2	2	market survey
Processed Cereals and Legumes	Cassava flour	Chupa ya (Lita 1)	0.3	1.0	0.3	2	market survey
Processed Cereals and Legumes	Cassava flour	Chupa ya (Lita 2)	0.7	1.0	0.7	2	market survey
Processed Cereals and Legumes	Cassava flour	Kifuko Kidogo	0.5	1.0	0.5	2	market survey
Processed Cereals and Legumes	Cassava flour	Kifuko Kikubwa	1.1	1.0	1.1	2	market survey
Processed Cereals and Legumes	Cassava flour	Kifuko cha Nylon (Kg 1)	1.0	1.0	1.0	2	market survey
Processed Cereals and Legumes	Cassava flour	Mfuko mkubwa	0.8	1.0	0.8	2	market survey
Processed Cereals and Legumes	Cassava flour	Mfuko wa kati	0.7	1.0	0.7	2	market survey
Processed Cereals and Legumes	Cassava flour	Mfuko mdogo	0.4	1.0	0.4	2	market survey
Processed Cereals and Legumes	Sorghum flour	Kifuko cha Nylon	1.0	1.0	1.0	2	market survey
Processed Cereals and Legumes	Bulrush millet flour (Uwele)	Kifuko cha Nylon	1.0	1.0	1.0	2	market survey
Processed Cereals and Legumes	Wheat flour	Kifuko cha Nylon	1.0	1.0	1.0	4	market survey
Processed Cereals and Legumes	Finger millet flour	Kifuko cha Nylon	0.7	1.0	0.7	4	market survey

 Table 3. 5:
 Conversion of weights and measures for processed cereals and legumes

Crop_Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Roots and Tubers	Cassava fresh	Small Piece	0.9	1.0	0.9	6	market survey
Roots and Tubers	Cassava fresh	Medium Piece	0.7	1.0	0.7	4	market survey
Roots and Tubers	Cassava fresh	Large Piece	1.8	1.0	1.8	6	market survey
Roots and Tubers	Cassava fresh	Неар	2.0	1.0	2.0	8	market survey
Roots and Tubers	Cassava fresh	Small Heap	1.4	1.0	1.4	26	market survey
Roots and Tubers	Cassava fresh	Large Heap	2.5	1.0	2.5	28	market survey
Roots and Tubers	Cassava fresh	Tenga/Susu straw basket	71.8	1.0	71.8		callback
Roots and Tubers	Cassava fresh	Small Bucket	8.2	1.0	8.2		callback
Roots and Tubers	Cassava fresh	Sadoline	4.4	1.0	4.4		callback
Roots and Tubers	Cassava fresh	Medium Bucket	12.8	1.0	12.8		callback
Roots and Tubers	Cassava fresh	Large Bucket	19.2	1.0	19.2		callback
Roots and Tubers	Cassava fresh	Sack	120.0	1.0	120.0		callback
Roots and Tubers	Cassava fresh	Small Sack (25 kg)	35.8	1.0	35.8	6	market survey
Roots and Tubers	Cassava fresh	Medium Sack (50 kg)	80.0	1.0	80.0	4	market survey
Roots and Tubers	Cassava fresh	Large Sack (100 kg)	110.0	1.0	110.0		callback
Roots and Tubers	Cassava fresh	Extra large Sack (120 kg)	120.0	1.0	120.0		callback
Roots and Tubers	Cassava fresh	Large Sack (90 kg)	90.0	1.0	90.0		callback
Roots and Tubers	Cassava fresh	Extra large Sack (200 kg)	200.0	1.0	200.0		callback
Roots and Tubers	Cassava fresh	Medium Sack (70 kg)	70.0	1.0	70.0		callback
Roots and Tubers	Cassava fresh	Extra Large Sack (150 kg)	150.0	1.0	150.0		callback
Roots and Tubers	Cassava fresh	Kipolo	79.0	1.0	79.0		callback
Roots and Tubers	Sweet potatoes, fresh	Неар	1.8	1.0	1.8	4	market survey
Roots and Tubers	Sweet potatoes, fresh	Small Heap	1.2	1.0	1.2	44	market survey
Roots and Tubers	Sweet potatoes, fresh	Medium Heap	1.3	1.0	1.3	16	market survey
Roots and Tubers	Sweet potatoes, fresh	Large Heap	2.9	1.0	2.9	42	market survey

 Table 3. 6:
 Conversion of weights and measures for roots and tubers

Crop_Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Roots and Tubers	Sweet potatoes, fresh	Tenga/Susu straw basket	63.1	1.0	63.1		callback
Roots and Tubers	Sweet potatoes, fresh	Tin Container	14.3	1.0	14.3		callback
Roots and Tubers	Sweet potatoes, fresh	Small Bucket	10.6	1.0	10.6	6	market survey
Roots and Tubers	Sweet potatoes, fresh	Medium Bucket	9.3	1.0	9.3		callback
Roots and Tubers	Sweet potatoes, fresh	Large Bucket	14.3	1.0	14.3		callback
Roots and Tubers	Sweet potatoes, fresh	Sadoline	4.4	1.0	4.4	2	market survey
Roots and Tubers	Sweet potatoes, fresh	Sack	82.9	1.0	82.9	2	market survey
Roots and Tubers	Sweet potatoes, fresh	Medium Sack	95.2	1.0	95.2	6	market survey
Roots and Tubers	Sweet potatoes, fresh	Small Sack	86.8	1.0	86.8	6	market survey
Roots and Tubers	Sweet potatoes, fresh	Large Sack (100 kg)	100.0	1.0	100.0		callback
Roots and Tubers	Sweet potatoes, fresh	Extra large Sack (120 kg)	170.0	1.0	170.0	2	market survey
Roots and Tubers	Sweet potatoes, fresh	Extra Large Sack (150 kg)	150.0	1.0	150.0		callback
Roots and Tubers	Sweet potatoes, fresh	Kipolo	65.0	1.0	65.0		callback
Roots and Tubers	Sweet potatoes, fresh	Beseni	15.1	1.0	15.1	2	market survey
Roots and Tubers	Irish potatoes fresh	Неар	0.9	1.0	0.9	12	market survey
Roots and Tubers	Irish potatoes fresh	Small Heap	0.5	1.0	0.5	4	market survey
Roots and Tubers	Irish potatoes fresh	Medium Heap	1.0	1.0	1.0	4	market survey
Roots and Tubers	Irish potatoes fresh	Large Heap	1.1	1.0	1.1		callback
Roots and Tubers	Irish potatoes fresh	Tin Container	16.1	1.0	16.1	2	market survey
Roots and Tubers	Irish potatoes fresh	Small Bucket	10.8	1.0	10.8	12	market survey
Roots and Tubers	Irish potatoes fresh	Medium Bucket	11.0	1.0	11.0	6	market survey
Roots and Tubers	Irish potatoes fresh	Large Bucket	17.3	1.0	17.3	16	market survey
Roots and Tubers	Irish potatoes fresh	Sadoline	4.1	1.0	4.1	30	market survey
Roots and Tubers	Irish potatoes fresh	Sack	120.0	1.0	120.0		callback
Roots and Tubers	Irish potatoes fresh	Large Sack (100 kg)	106.8	1.0	106.8	2	market survey
Roots and Tubers	Irish potatoes fresh	Medium Sack	95.8	1.0	95.8	6	market survey

Crop_Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Roots and Tubers	Irish potatoes fresh	Small Sack	91.9	1.0	91.9	2	market survey
Roots and Tubers	Irish potatoes fresh	Extra large Sack (120 kg)	184.1	1.0	184.1	2	market survey
Roots and Tubers	Irish potatoes fresh	Extra Large Sack (140 kg)	140.0	1.0	140.0		callback
Roots and Tubers	Irish potatoes fresh	Medium Sack (70 kg)	80.0	1.0	80.0		callback
Roots and Tubers	Irish potatoes fresh	Kopo (Lita 1)	1.2	1.0	1.2	2	market survey
Roots and Tubers	Irish potatoes fresh	Kopo (Lita 2)	2.4	1.0	2.4	2	market survey
Roots and Tubers	Irish potatoes fresh	Kopo dogo	0.8	1.0	0.8	2	market survey
Roots and Tubers	Irish potatoes fresh	Kopo kubwa	2.0	1.0	2.0	2	market survey
Roots and Tubers	Yams fresh	Неар	1.4	1.0	1.4	2	market survey
Roots and Tubers	Yams fresh	Small Heap	3.8	1.0	3.8		callback
Roots and Tubers	Yams fresh	Medium Heap	7.5	1.0	7.5		callback
Roots and Tubers	Yams fresh	Large Heap	1.8	1.0	1.8		callback
Roots and Tubers	Yams fresh	Tenga/Susu straw basket	45.0	1.0	45.0		callback
Roots and Tubers	Yams fresh	Large Bucket	11.0	1.0	11.0		callback
Roots and Tubers	Yams fresh	Sack	120.0	1.0	120.0		callback
Roots and Tubers	Yams fresh	Small Sack (25 kg)	30.0	1.0	30.0		callback
Roots and Tubers	Yams fresh	Medium Sack (50 kg)	63.3	1.0	63.3		callback
Roots and Tubers	Yams fresh	Large Sack (100 kg)	126.6	1.0	126.6		callback
Roots and Tubers	Yams fresh	Kipolo	30.0	1.0	30.0		callback
Roots and Tubers	Cocoyams fresh	Piece	0.9	1.0	0.9	4	market survey
Roots and Tubers	Cocoyams fresh	Medium Piece	0.8	1.0	0.8		callback
Roots and Tubers	Cocoyams fresh	Large Piece	2.3	1.0	2.3		callback
Roots and Tubers	Cocoyams fresh	Неар	1.2	1.0	1.2	8	market survey
Roots and Tubers	Cocoyams fresh	Small Heap	0.9	1.0	0.9	18	market survey
Roots and Tubers	Cocoyams fresh	Medium Heap	1.5	1.0	1.5	4	market survey
Roots and Tubers	Cocoyams fresh	Large Heap	1.8	1.0	1.8	18	market survey

Crop_Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Roots and Tubers	Cocoyams fresh	Tenga/Susu straw basket	58.4	1.0	58.4	2	market survey
Roots and Tubers	Cocoyams fresh	Tin Container	18.4	1.0	18.4		callback
Roots and Tubers	Cocoyams fresh	Small Bucket	10.4	1.0	10.4		callback
Roots and Tubers	Cocoyams fresh	Large Bucket	18.4	1.0	18.4		callback
Roots and Tubers	Cocoyams fresh	Sack	87.8	1.0	87.8	2	market survey
Roots and Tubers	Cocoyams fresh	Small Sack (25 kg)	55.0	1.0	55.0		callback
Roots and Tubers	Cocoyams fresh	Medium Sack (50 kg)	38.3	1.0	38.3	2	market survey
Roots and Tubers	Cocoyams fresh	Large Sack (100 kg)	100.0	1.0	100.0		callback
Roots and Tubers	Cocoyams fresh	Extra large Sack (120 kg)	120.0	1.0	120.0		callback
Roots and Tubers	Cassava, dry	Неар	0.7	1.0	0.7	6	market survey
Roots and Tubers	Cassava, dry	Small Heap	0.1	1.0	0.1	2	market survey
Roots and Tubers	Cassava, dry	Medium Heap	0.2	1.0	0.2	2	market survey
Roots and Tubers	Cassava, dry	Bucket	12.0	1.0	12.0	4	market survey
Roots and Tubers	Cassava, dry	Small Bucket	5.3	1.0	5.3	4	market survey
Roots and Tubers	Cassava, dry	Large Bucket	9.7	1.0	9.7	4	market survey
Roots and Tubers	Cassava, dry	Sadoline	2.8	1.0	2.8	16	market survey
Roots and Tubers	Cassava, dry	Bakuli ndogo	0.3	1.0	0.3	2	market survey
Roots and Tubers	Cassava, dry	Bakuli ya kati	0.5	1.0	0.5	2	market survey
Roots and Tubers	Sweet potatoes, dry	Неар	0.3	1.0	0.3	2	market survey
Roots and Tubers	Sweet potatoes, dry	Large Bucket	9.4	1.0	9.4	2	market survey

			Medium_		Conversion		
Crop_Group	Commodity	Unit	Weight	Density	Factor	Observations	Source
Banana	Banana fresh, green	Medium Piece	0.3	1.0	0.3	2	market survey
Banana	Banana fresh, green	Large Piece	8.3	1.0	8.3		callback
Banana	Banana fresh, green	Small Piece	0.2	1.0	0.2		callback
Banana	Banana fresh, green	Неар	1.1	1.0	1.1	14	market survey
Banana	Banana fresh, green	Small Heap	1.2	1.0	1.2	8	market survey
Banana	Banana fresh, green	Medium Heap	1.6	1.0	1.6	4	market survey
Banana	Banana fresh, green	Large Heap	2.1	1.0	2.1	10	market survey
Banana	Banana fresh, green	Tenga/Susu straw basket	46.1	1.0	46.1		callback
Banana	Banana fresh, green	Bunch	20.8	1.0	20.8	12	market survey
Banana	Banana fresh, green	Small bunch	8.9	1.0	8.9	22	market survey
Banana	Banana fresh, green	Medium bunch (mkungu)	15.2	1.0	15.2	18	market survey
Banana	Banana fresh, green	Large bunch (mkungu)	26.9	1.0	26.9	24	market survey
Banana	Banana fresh, green	Splinter (kichane/chana)	1.9	1.0	1.9	6	market survey
Banana	Banana fresh, green	Sack	80.0	1.0	80.0		callback
Banana	Banana fresh, green	Small Sack (25 kg)	13.0	1.0	13.0		callback
Banana	Banana fresh, green	Medium Sack (50 kg)	26.0	1.0	26.0		callback
Banana	Banana fresh, green	Extra large Sack (120 kg)	120.0	1.0	120.0		callback
Banana	Banana fresh, riped	Small Piece	0.1	1.0	0.1	6	market survey
Banana	Banana fresh, riped	Medium Piece	0.2	1.0	0.2	6	market survey
Banana	Banana fresh, riped	Неар	0.6	1.0	0.6	14	market survey
Banana	Banana fresh, riped	Tenga/Susu straw basket	31.9	1.0	31.9	6	market survey
Banana	Banana fresh, riped	Bunch	0.9	1.0	0.9		callback
Banana	Banana fresh, riped	Small bunch	4.1	1.0	4.1	4	market survey
Banana	Banana fresh, riped	Medium bunch (mkungu)	7.4	1.0	7.4	2	market survey
Banana	Banana fresh, riped	Large bunch (mkungu)	8.1	1.0	8.1	4	market survey
Banana	Banana fresh, riped	Splinter (kichane/chana)	1.9	1.0	1.9	26	market survey
Banana	Banana fresh, riped	Crate (Sanduku)	30.3	1.0	30.3	4	market survey

## Table 3. 7: Conversion of weights and measures for bananas

Crop_Group	Commodity	Unit	Medium_ Weight	Density	<b>Conversion Factor</b>	Observations	Source
Vegetables and Herbs	Garlic fresh	Tin Container	18.6	1.0	18.6		callback
Vegetables and Herbs	Garlic fresh	Extra large Sack (120 kg)	120.0	1.0	120.0		callback
Vegetables and Herbs	Cardamon fresh	Tin Container	10.0	1.0	10.0		callback
Vegetables and Herbs	Cardamon fresh	Bucket	20.0	1.0	20.0		callback
Vegetables and Herbs	Cardamon fresh	Small Bucket	5.0	1.0	5.0		callback
Vegetables and Herbs	Cardamon fresh	Large Bucket	10.0	1.0	10.0		callback
Vegetables and Herbs	Cardamon fresh	Sack	45.0	1.0	45.0		callback
Vegetables and Herbs	Cardamon fresh	Large Sack (100 kg)	100.0	1.0	100.0		callback
Vegetables and Herbs	Clove fresh	Medium Sack (50 kg)	47.5	1.0	47.5		callback
Vegetables and Herbs	Clove fresh	Large Sack (100 kg)	95.0	1.0	95.0		callback
Vegetables and Herbs	Clove fresh	Pishi (in Zanzibar)	2.5	1.0	2.5		callback
Vegetables and Herbs	Cabbage fresh	Piece	1.0	1.0	1.0		callback
Vegetables and Herbs	Cabbage fresh	Medium Piece	1.5	1.0	1.5		callback
Vegetables and Herbs	Cabbage fresh	Large Piece	4.3	1.0	4.3		callback
Vegetables and Herbs	Cabbage fresh	Tenga/Susu straw basket	36.4	1.0	36.4		callback
Vegetables and Herbs	Cabbage fresh	Sack	73.1	1.0	73.1		callback
Vegetables and Herbs	Cabbage fresh	Medium Sack (50 kg)	50.0	0.6	30.0		callback
Vegetables and Herbs	Cabbage fresh	Large Sack (100 kg)	83.1	1.0	83.1		callback
Vegetables and Herbs	Spinach fresh	Small Heap	0.2	1.0	0.2		callback
Vegetables and Herbs	Spinach fresh	Medium Heap	0.3	1.0	0.3		callback
Vegetables and Herbs	Spinach fresh	Large Heap	0.4	1.0	0.4		callback
Vegetables and Herbs	Spinach fresh	Tenga/Susu straw basket	49.5	1.0	49.5		callback
Vegetables and Herbs	Spinach fresh	Sack	54.0	1.0	54.0		callback
Vegetables and Herbs	Spinach fresh	Extra large Sack (200 kg)	200.0	1.0	200.0		callback
Vegetables and Herbs	Carrot fresh	Medium Heap	0.3	1.0	0.3		callback

 Table 3. 8:
 Conversion of weights and measures for vegetables and herbs

Crop_Group	Commodity	Unit	Medium_ Weight	Density	<b>Conversion Factor</b>	Observations	Source
Vegetables and Herbs	Carrot fresh	Tin Container	12.9	1.0	12.9		callback
Vegetables and Herbs	Carrot fresh	Large Bucket	12.9	1.0	12.9		callback
Vegetables and Herbs	Carrot fresh	Sack	127.2	1.0	127.2		callback
Vegetables and Herbs	Carrot fresh	Small Sack (25 kg)	25.0	1.0	25.0		callback
Vegetables and Herbs	Carrot fresh	Medium Sack (50 kg)	50.0	1.0	50.0		callback
Vegetables and Herbs	Carrot fresh	Large Sack (100 kg)	75.5	1.0	75.5		callback
Vegetables and Herbs	Carrot fresh	Extra large Sack (120 kg)	120.0	1.0	120.0		callback
Vegetables and Herbs	Amaranthus (mchicha) fresh	Small Heap	0.3	1.0	0.3	18	market survey
Vegetables and Herbs	Amaranthus (mchicha) fresh	Medium Heap	0.4	1.0	0.4	2	market survey
Vegetables and Herbs	Amaranthus (mchicha) fresh	Large Heap	0.8	1.0	0.8	16	market survey
Vegetables and Herbs	Amaranthus (mchicha) fresh	Tenga/Susu straw basket	56.4	1.0	56.4		callback
Vegetables and Herbs	Amaranthus (mchicha) fresh	Bunch	0.9	1.0	0.9		callback
Vegetables and Herbs	Amaranthus (mchicha) fresh	Tin Container	4.5	1.0	4.5		callback
Vegetables and Herbs	Amaranthus (mchicha) fresh	Small Bucket	0.4	1.0	0.4		callback
Vegetables and Herbs	Amaranthus (mchicha) fresh	Medium Bucket	2.2	1.0	2.2		callback
Vegetables and Herbs	Amaranthus (mchicha) fresh	Large Bucket	4.5	1.0	4.5		callback
Vegetables and Herbs	Amaranthus (mchicha) fresh	Sack	58.0	1.0	58.0		callback
Vegetables and Herbs	Amaranthus (mchicha) fresh	Small Sack	25.0	1.0	25.0		callback
Vegetables and Herbs	Amaranthus (mchicha) fresh	Medium Sack	50.0	1.0	50.0		callback
Vegetables and Herbs	Amaranthus (mchicha) fresh	Large Sack	52.7	1.0	52.7		callback
Vegetables and Herbs	Amaranthus (mchicha) fresh	Extra large Sack	61.0	1.0	61.0		callback
Vegetables and Herbs	Amaranthus (mchicha) fresh	Kicha	1.1	1.0	1.1	2	market survey
Vegetables and Herbs	Pumpkins fresh	Piece	5.2	1.0	5.2		callback
Vegetables and Herbs	Pumpkins fresh	Small Piece	1.6	1.0	1.6	10	market survey
Vegetables and Herbs	Pumpkins fresh	Medium Piece	2.9	1.0	2.9	16	market survey
Vegetables and Herbs	Pumpkins fresh	Large Piece	4.4	1.0	4.4	26	market survey

Crop_Group	Commodity	Unit	Medium_ Weight	Density	<b>Conversion Factor</b>	Observations	Source
Vegetables and Herbs	Pumpkins fresh	Large Heap	13.1	1.0	13.1		callback
Vegetables and Herbs	Pumpkins fresh	Tenga/Susu straw basket	10.0	1.0	10.0		callback
Vegetables and Herbs	Pumpkins fresh	Medium Bucket	9.9	1.0	9.9		callback
Vegetables and Herbs	Pumpkins fresh	Medium Sack (50 kg)	17.9	1.0	17.9		callback
Vegetables and Herbs	Pumpkins fresh	Kipolo	17.9	1.0	17.9		callback
Vegetables and Herbs	Cucumber fresh	Small Piece	0.2	1.0	0.2	8	market survey
Vegetables and Herbs	Cucumber fresh	Medium Piece	0.3	1.0	0.3	2	market survey
Vegetables and Herbs	Cucumber fresh	Large Piece	0.4	1.0	0.4	8	market survey
Vegetables and Herbs	Cucumber fresh	Heap	1.0	1.0	1.0	18	market survey
Vegetables and Herbs	Cucumber fresh	Small Heap	0.8	1.0	0.8	14	market survey
Vegetables and Herbs	Cucumber fresh	Medium Heap	0.9	1.0	0.9	8	market survey
Vegetables and Herbs	Cucumber fresh	Large Heap	1.6	1.0	1.6	16	market survey
Vegetables and Herbs	Cucumber fresh	Tenga/Susu straw basket	17.5	1.0	17.5		callback
Vegetables and Herbs	Cucumber fresh	Bucket	7.1	1.0	7.1	2	market survey
Vegetables and Herbs	Cucumber fresh	Small Bucket	6.8	1.0	6.8		callback
Vegetables and Herbs	Cucumber fresh	Sack	133.0	1.0	133.0	2	market survey
Vegetables and Herbs	Cucumber fresh	Small Sack (25 kg)	17.5	1.0	17.5		callback
Vegetables and Herbs	Cucumber fresh	Medium Sack (50 kg)	45.3	1.0	45.3	2	market survey
Vegetables and Herbs	Cucumber fresh	Large Sack (100 kg)	100.0	1.0	100.0		callback
Vegetables and Herbs	Cucumber fresh	Extra large Sack (120 kg)	120.0	1.0	120.0		callback
Vegetables and Herbs	Egg Plant fresh	Small Piece	0.2	1.0	0.2	6	market survey
Vegetables and Herbs	Egg Plant fresh	Medium Piece	0.3	1.0	0.3	4	market survey
Vegetables and Herbs	Egg Plant fresh	Large Piece	0.6	1.0	0.6	6	market survey
Vegetables and Herbs	Egg Plant fresh	Неар	0.8	1.0	0.8	16	market survey
Vegetables and Herbs	Egg Plant fresh	Small Heap	0.6	1.0	0.6	14	market survey
Vegetables and Herbs	Egg Plant fresh	Large Heap	1.6	1.0	1.6	14	market survey

Crop_Group	Commodity	Unit	Medium_ Weight	Density	<b>Conversion Factor</b>	Observations	Source
Vegetables and Herbs	Egg Plant fresh	Tenga/Susu straw basket	52.2	1.0	52.2		callback
Vegetables and Herbs	Egg Plant fresh	Small Bucket	5.1	1.0	5.1	2	market survey
Vegetables and Herbs	Egg Plant fresh	Large Bucket	10.4	1.0	10.4		callback
Vegetables and Herbs	Egg Plant fresh	Sadoline	1.2	1.0	1.2	2	market survey
Vegetables and Herbs	Egg Plant fresh	Sack	80.3	1.0	80.3	2	market survey
Vegetables and Herbs	Egg Plant fresh	Small Sack (25 kg)	24.6	1.0	24.6	2	market survey
Vegetables and Herbs	Egg Plant fresh	Medium Sack (50 kg)	40.1	1.0	40.1	2	market survey
Vegetables and Herbs	Egg Plant fresh	Large Sack (100 kg)	100.0	1.0	100.0		callback
Vegetables and Herbs	Egg Plant fresh	Extra large Sack (120 kg)	120.0	1.0	120.0		callback
Vegetables and Herbs	Egg Plant fresh	Polo (Kg 50)	46.1	1.0	46.1	2	market survey
Vegetables and Herbs	Rambutan fresh	Small Sack (25 kg)	15.3	1.0	15.3		callback
Vegetables and Herbs	Rambutan fresh	Medium Sack (50 kg)	30.5	1.0	30.5		callback
Vegetables and Herbs	Okra fresh	Heap	0.2	1.0	0.2	36	market survey
Vegetables and Herbs	Okra fresh	Small Heap	0.3	1.0	0.3	10	market survey
Vegetables and Herbs	Okra fresh	Large Heap	0.6	1.0	0.6	8	market survey
Vegetables and Herbs	Okra fresh	Tenga/Susu straw basket	26.4	1.0	26.4		callback
Vegetables and Herbs	Okra fresh	Bowl (Bakuli)	0.3	1.0	0.3	2	market survey
Vegetables and Herbs	Okra fresh	Tin Container	9.4	1.0	9.4		callback
Vegetables and Herbs	Okra fresh	Bucket	4.4	1.0	4.4	2	market survey
Vegetables and Herbs	Okra fresh	Small Bucket	4.5	1.0	4.5	8	market survey
Vegetables and Herbs	Okra fresh	Large Bucket	8.8	1.0	8.8	4	market survey
Vegetables and Herbs	Okra fresh	Sadoline	1.9	1.0	1.9	22	market survey
Vegetables and Herbs	Okra fresh	Sack	52.8	1.0	52.8		callback
Vegetables and Herbs	Okra fresh	Small Sack (25 kg)	27.6	1.0	27.6	4	market survey
Vegetables and Herbs	Okra fresh	Medium Sack (50 kg)	37.1	1.0	37.1	2	market survey
Vegetables and Herbs	Okra fresh	Large Sack (100 kg)	100.0	1.0	100.0		callback

Crop_Group	Commodity	Unit	Medium_ Weight	Density	<b>Conversion Factor</b>	Observations	Source
Vegetables and Herbs	Okra fresh	Extra large Sack (160 kg)	160.0	1.0	160.0		callback
Vegetables and Herbs	Okra fresh	Crate (Sanduku)	23.1	1.0	23.1		callback
Vegetables and Herbs	Okra fresh	Kipolo	15.2	1.0	15.2		callback
Vegetables and Herbs	Okra fresh	Kopo (Lita 1)	0.4	1.0	0.4	2	market survey
Vegetables and Herbs	Okra fresh	Kopo (Lita 2)	0.9	1.0	0.9	2	market survey
Vegetables and Herbs	Okra fresh	Polo (Kg 25)	18.4	1.0	18.4	2	market survey
Vegetables and Herbs	Okra fresh	Sado ndogo	1.2	1.0	1.2	2	market survey
Vegetables and Herbs	Coriander grain	Large Sack (100 kg)	100.0	1.0	100.0		callback
Vegetables and Herbs	Soursop fresh	Piece	0.3	1.0	0.3		callback
Vegetables and Herbs	Soursop fresh	Small Sack (25 kg)	30.3	1.0	30.3		callback
Vegetables and Herbs	Soursop fresh	Large Sack (100 kg)	100.0	1.0	100.0		callback
Vegetables and Herbs	Onion fresh	Small Piece	0.1	1.0	0.1		callback
Vegetables and Herbs	Onion fresh	Heap	0.3	1.0	0.3	26	market survey
Vegetables and Herbs	Onion fresh	Small Heap	0.3	1.0	0.3	12	market survey
Vegetables and Herbs	Onion fresh	Medium Heap	0.4	1.0	0.4	6	market survey
Vegetables and Herbs	Onion fresh	Large Heap	0.5	1.0	0.5	6	market survey
Vegetables and Herbs	Onion fresh	Tenga/Susu straw basket	60.3	1.0	60.3		callback
Vegetables and Herbs	Onion fresh	Cane (Kopo)	1.6	1.0	1.6	2	market survey
Vegetables and Herbs	Onion fresh	Bucket	14.1	1.0	14.1	2	market survey
Vegetables and Herbs	Onion fresh	Small Bucket	7.9	1.0	7.9	12	market survey
Vegetables and Herbs	Onion fresh	Medium Bucket	8.4	1.0	8.4		callback
Vegetables and Herbs	Onion fresh	Large Bucket	15.9	1.0	15.9	6	market survey
Vegetables and Herbs	Onion fresh	Sadoline	3.4	1.0	3.4	30	market survey
Vegetables and Herbs	Onion fresh	Sack	139.5	1.0	139.5	2	market survey
Vegetables and Herbs	Onion fresh	Medium Sack (50 kg)	50.0	1.0	50.0		callback
Vegetables and Herbs	Onion fresh	Large Sack (100 kg)	105.9	1.0	105.9	8	market survey

Crop_Group	Commodity	Unit	Medium_ Weight	Density	<b>Conversion Factor</b>	Observations	Source
Vegetables and Herbs	Onion fresh	Extra large Sack (120 kg)	108.1	1.0	108.1	2	market survey
Vegetables and Herbs	Onion fresh	Kopo (Lita 1)	0.6	1.0	0.6	4	market survey
Vegetables and Herbs	Onion fresh	Kopo (Lita 2)	1.5	1.0	1.5	2	market survey
Vegetables and Herbs	Onion fresh	Net	104.5	1.0	104.5	2	market survey
Vegetables and Herbs	Onion fresh	Sado ndogo	0.7	1.0	0.7	2	market survey
Vegetables and Herbs	Onion fresh	Sado ya kati	1.5	1.0	1.5	2	market survey
Vegetables and Herbs	Onion fresh	Kimbo kubwa	1.5	1.0	1.5	2	market survey
Vegetables and Herbs	Onion fresh	Kimbo ndogo	0.9	1.0	0.9	2	market survey
Vegetables and Herbs	Onion fresh with stem (leaf) matured	Sack	100.0	1.0	100.0		callback
Vegetables and Herbs	Onion fresh with stem (leaf) matured	Large Sack (100 kg)	100.0	1.0	100.0		callback
Vegetables and Herbs	Tomatoes fresh	Small Heap	0.4	1.0	0.4	22	market survey
Vegetables and Herbs	Tomatoes fresh	Medium Heap	0.6	1.0	0.6	18	market survey
Vegetables and Herbs	Tomatoes fresh	Large Heap	0.8	1.0	0.8	18	market survey
Vegetables and Herbs	Tomatoes fresh	Tenga/Susu straw basket	50.1	1.0	50.1	18	market survey
Vegetables and Herbs	Tomatoes fresh	Bowl (Bakuli)	1.8	1.0	1.8	4	market survey
Vegetables and Herbs	Tomatoes fresh	Tin Container	17.4	1.0	17.4		callback
Vegetables and Herbs	Tomatoes fresh	Bucket	13.1	1.0	13.1	8	market survey
Vegetables and Herbs	Tomatoes fresh	Small Bucket	9.0	1.0	9.0	22	market survey
Vegetables and Herbs	Tomatoes fresh	Medium Bucket	8.4	1.0	8.4		callback
Vegetables and Herbs	Tomatoes fresh	Large Bucket	16.1	1.0	16.1	12	market survey
Vegetables and Herbs	Tomatoes fresh	Sadoline	3.7	1.0	3.7	42	market survey
Vegetables and Herbs	Tomatoes fresh	Crate (Sanduku)	50.9	1.0	50.9	8	market survey
Vegetables and Herbs	Tomatoes fresh	Bakuli ndogo	0.5	1.0	0.5	2	market survey
Vegetables and Herbs	Tomatoes fresh	Beseni kubwa	13.2	1.0	13.2	2	market survey
Vegetables and Herbs	Tomatoes fresh	Beseni la kati	13.1	1.0	13.1	2	market survey
Vegetables and Herbs	Tomatoes fresh	Beseni ndogo	8.4	1.0	8.4	2	market survey

Crop_Group	Commodity	Unit	Medium_ Weight	Density	<b>Conversion Factor</b>	Observations	Source
Vegetables and Herbs	Tomatoes fresh	Boksi	47.5	1.0	47.5	2	market survey
Vegetables and Herbs	Tomatoes fresh	Kopo (Lita 1)	0.9	1.0	0.9	2	market survey
Vegetables and Herbs	Tomatoes fresh	Kopo (Lita 2)	1.9	1.0	1.9	2	market survey
Vegetables and Herbs	Tomatoes fresh	Kopo dogo	0.9	1.0	0.9	2	market survey
Vegetables and Herbs	Tomatoes fresh	Kopo kubwa	2.2	1.0	2.2	4	market survey
Vegetables and Herbs	Tomatoes fresh	Tenga dogo	9.8	1.0	9.8	2	market survey
Vegetables and Herbs	Tomatoes fresh	Tenga kubwa	37.7	1.0	37.7	2	market survey
Vegetables and Herbs	Tomatoes fresh	Bafu	19.3	1.0	19.3	2	market survey
Vegetables and Herbs	Tomatoes fresh	Dumu	12.0	1.0	12.0	2	market survey
Vegetables and Herbs	Tomatoes fresh	Kimbo	1.9	1.0	1.9	2	market survey
Vegetables and Herbs	Tomatoes fresh	Kopo la Lita mbili	3.2	1.0	3.2	2	market survey
Vegetables and Herbs	Tomatoes fresh	Kopo la Lita moja	1.5	1.0	1.5	4	market survey
Vegetables and Herbs	Tomatoes fresh	Kopo dogo	1.2	1.0	1.2	2	market survey
Vegetables and Herbs	Tomatoes fresh	Kopo kubwa	2.2	1.0	2.2	2	market survey
Vegetables and Herbs	Tomatoes fresh	Kopo la kati	1.6	1.0	1.6	2	market survey
Vegetables and Herbs	Bitter tomato fresh	Heap	0.6	1.0	0.6	38	market survey
Vegetables and Herbs	Bitter tomato fresh	Small Heap	0.2	1.0	0.2	4	market survey
Vegetables and Herbs	Bitter tomato fresh	Medium Heap	0.5	1.0	0.5	2	market survey
Vegetables and Herbs	Bitter tomato fresh	Large Heap	0.7	1.0	0.7	4	market survey
Vegetables and Herbs	Bitter tomato fresh	Bowl (Bakuli)	0.5	1.0	0.5	2	market survey
Vegetables and Herbs	Bitter tomato fresh	Tin Container	3.2	1.0	3.2		callback
Vegetables and Herbs	Bitter tomato fresh	Small Bucket	6.7	1.0	6.7	14	market survey
Vegetables and Herbs	Bitter tomato fresh	Large Bucket	12.6	1.0	12.6	6	market survey
Vegetables and Herbs	Bitter tomato fresh	Sadoline	2.7	1.0	2.7	30	market survey
Vegetables and Herbs	Bitter tomato fresh	Sack	16.2	1.0	16.2		callback
Vegetables and Herbs	Bitter tomato fresh	Small Sack (25 kg)	25.5	1.0	25.5	4	market survey

Crop_Group	Commodity	Unit	Medium_ Weight	Density	<b>Conversion Factor</b>	Observations	Source
Vegetables and Herbs	Bitter tomato fresh	Large Sack (100 kg)	100.0	1.0	100.0		callback
Vegetables and Herbs	Bitter tomato fresh	Extra large Sack (120 kg)	120.0	1.0	120.0		callback
Vegetables and Herbs	Bitter tomato fresh	Kipolo	26.0	1.0	26.0		callback
Vegetables and Herbs	Bitter tomato fresh	Beseni	8.6	1.0	8.6	2	market survey
Vegetables and Herbs	Bitter tomato fresh	Polo (Kg 25)	20.8	1.0	20.8	2	market survey
Vegetables and Herbs	Bitter tomato fresh	Sado ndogo	1.5	1.0	1.5	2	market survey
Vegetables and Herbs	Sweet/bell pepper fresh	Heap	0.9	1.0	0.9		callback
Vegetables and Herbs	Sweet/bell pepper fresh	Small Heap	15.3	1.0	15.3		callback
Vegetables and Herbs	Sweet/bell pepper fresh	Medium Heap	0.3	1.0	0.3		callback
Vegetables and Herbs	Sweet/bell pepper fresh	Large Heap	0.6	1.0	0.6		callback
Vegetables and Herbs	Sweet/bell pepper fresh	Tenga/Susu straw basket	20.0	1.0	20.0		callback
Vegetables and Herbs	Sweet/bell pepper fresh	Bucket	5.1	1.0	5.1		callback
Vegetables and Herbs	Sweet/bell pepper fresh	Small Bucket	2.5	1.0	2.5		callback
Vegetables and Herbs	Sweet/bell pepper fresh	Medium Bucket	4.4	1.0	4.4		callback
Vegetables and Herbs	Sweet/bell pepper fresh	Large Bucket	5.1	1.0	5.1		callback
Vegetables and Herbs	Sweet/bell pepper fresh	Sadoline	1.4	1.0	1.4		callback
Vegetables and Herbs	Sweet/bell pepper fresh	Sack	90.0	1.0	90.0		callback
Vegetables and Herbs	Sweet/bell pepper fresh	Medium Sack (50 kg)	25.0	1.0	25.0		callback
Vegetables and Herbs	Sweet/bell pepper fresh	Large Sack (100 kg)	100.0	1.0	100.0		callback
Vegetables and Herbs	Sweet/bell pepper fresh	Kipolo	15.3	1.0	15.3		callback
Vegetables and Herbs	Sweet potato leaves fresh	Piece	0.4	1.0	0.4		callback
Vegetables and Herbs	Sweet potato leaves fresh	Small Heap	0.4	1.0	0.4		callback
Vegetables and Herbs	Sweet potato leaves fresh	Large Heap	1.1	1.0	1.1		callback
Vegetables and Herbs	Sweet potato leaves fresh	medium Heap	0.9	1.0	0.9		callback
Vegetables and Herbs	Sweet potato leaves fresh	Tenga/Susu straw basket	126.3	1.0	126.3		callback
Vegetables and Herbs	Sweet potato leaves fresh	Sack	200.1	1.0	200.1		callback

Crop_Group	Commodity	Unit	Medium_ Weight	Density	<b>Conversion Factor</b>	Observations	Source
Vegetables and Herbs	Figiri, sukuma wiki fresh	Small Heap	0.2	1.0	0.2		callback
Vegetables and Herbs	Figiri, sukuma wiki fresh	Medium Heap	0.3	1.0	0.3		callback
Vegetables and Herbs	Figiri, sukuma wiki fresh	Large Heap	0.6	1.0	0.6		callback
Vegetables and Herbs	Figiri, sukuma wiki fresh	Tenga/Susu straw basket	52.1	1.0	52.1		callback
Vegetables and Herbs	Figiri, sukuma wiki fresh	Bunch	0.4	1.0	0.4		callback
Vegetables and Herbs	Figiri, sukuma wiki fresh	Tin Container	7.0	1.0	7.0		callback
Vegetables and Herbs	Figiri, sukuma wiki fresh	Sack	48.0	1.0	48.0		callback
Vegetables and Herbs	Figiri, sukuma wiki fresh	Large Sack (100 kg)	89.6	1.0	89.6		callback
Vegetables and Herbs	Chili (pilipili) fresh	Small Heap	0.1	1.0	0.1	12	market survey
Vegetables and Herbs	Chili (pilipili) fresh	Large Heap	0.2	1.0	0.2	10	market survey
Vegetables and Herbs	Chili (pilipili) fresh	Tin Container	0.3	1.0	0.3		callback
Vegetables and Herbs	Chili (pilipili) fresh	Small Bucket	3.3	1.0	3.3	8	market survey
Vegetables and Herbs	Chili (pilipili) fresh	Large Bucket	5.7	1.0	5.7	6	market survey
Vegetables and Herbs	Chili (pilipili) fresh	Sadoline	1.4	1.0	1.4	16	market survey
Vegetables and Herbs	Chili (pilipili) fresh	Sack	71.5	1.0	71.5	2	market survey
Vegetables and Herbs	Chili (pilipili) fresh	Small Sack (25 kg)	37.6	1.0	37.6	2	market survey
Vegetables and Herbs	Chili (pilipili) fresh	Extra large Sack (120 kg)	68.3	1.0	68.3	2	market survey
Vegetables and Herbs	Chili (pilipili) fresh	Kopo (Lita 1)	0.4	1.0	0.4	2	market survey
Vegetables and Herbs	Chili (pilipili) fresh	Kimbo	0.5	1.0	0.5	2	market survey
Vegetables and Herbs	Chili (pilipili) dried	Large Bucket	2.2	1.0	2.2		callback
Vegetables and Herbs	Pumpkin leave flower	Piece	0.4	1.0	0.4		callback
Vegetables and Herbs	Pumpkin leave flower	Small Heap	0.1	1.0	0.1		callback
Vegetables and Herbs	Pumpkin leave flower	Large Heap	0.3	1.0	0.3		callback
Vegetables and Herbs	Pumpkin leave flower	Medium Bucket	10.0	1.0	10.0		callback
Vegetables and Herbs	Pumpkin leave flower	Medium Sack (50 kg)	24.0	1.0	24.0		callback
Vegetables and Herbs	Pumpkin leave	Piece	0.4	1.0	0.4		callback

Crop_Group	Commodity	Unit	Medium_ Weight	Density	<b>Conversion Factor</b>	Observations	Source
Vegetables and Herbs	Pumpkin leave	Heap	0.3	1.0	0.3		callback
Vegetables and Herbs	Pumpkin leave	Small Heap	0.1	1.0	0.1		callback
Vegetables and Herbs	Pumpkin leave	Medium Heap	0.2	1.0	0.2		callback
Vegetables and Herbs	Pumpkin leave	Large Heap	0.3	1.0	0.3		callback
Vegetables and Herbs	Pumpkin leave	Tenga/Susu straw basket	8.9	1.0	8.9		callback
Vegetables and Herbs	Pumpkin leave	Tin Container	3.5	1.0	3.5		callback
Vegetables and Herbs	Pumpkin leave	Large Bucket	3.5	1.0	3.5		callback
Vegetables and Herbs	Pumpkin leave	Sack	15.1	1.0	15.1		callback
Vegetables and Herbs	Pumpkin leave	Kipolo	12.0	1.0	12.0		callback

Crop_Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Fruits	Malay apple fresh	Piece	0.2	1.0	0.2		callback
Fruits	Malay apple fresh	Small Sack (25 kg)	19.5	1.0	19.5		callback
Fruits	Jack fruit fresh	Piece	3.9	1.0	3.9		callback
Fruits	Jack fruit fresh	Medium Piece	11.9	1.0	11.9		callback
Fruits	Jack fruit fresh	Large Piece	7.8	1.0	7.8		callback
Fruits	Jack fruit fresh	Medium Sack (50 kg)	30.4	1.0	30.4		callback
Fruits	Jack fruit fresh	Large Sack (100 kg)	100.0	1.0	100.0		callback
Fruits	Passion Fruit fresh	Piece	0.1	1.0	0.1		callback
Fruits	Passion Fruit fresh	Bucket	5.8	1.0	5.8		callback
Fruits	Passion Fruit fresh	Small Bucket	6.0	1.0	6.0		callback
Fruits	Passion Fruit fresh	Large Bucket	12.0	1.0	12.0		callback
Fruits	Passion Fruit fresh	Small Sack (25 kg)	15.0	1.0	15.0		callback
Fruits	Passion Fruit fresh	Medium Sack (50 kg)	50.0	1.0	50.0		callback
Fruits	Passion Fruit fresh	Kipolo	88.4	1.0	88.4		callback
Fruits	Avocado fresh	Medium Piece	0.4	1.0	0.4	10	market survey
Fruits	Avocado fresh	Small Piece	0.3	1.0	0.3	14	market survey
Fruits	Avocado fresh	Large Piece	0.6	1.0	0.6	14	market survey
Fruits	Avocado fresh	Heap	0.9	1.0	0.9	12	market survey
Fruits	Avocado fresh	MediumHeap	1.2	1.0	1.2	4	market survey
Fruits	Avocado fresh	Small Heap	1.1	1.0	1.1	2	market survey
Fruits	Avocado fresh	Large Heap	2.2	1.0	2.2	4	market survey
Fruits	Avocado fresh	Tenga/Susu straw basket	7.0	1.0	7.0		callback
Fruits	Avocado fresh	Bucket	16.8	1.0	16.8	2	market survey
Fruits	Avocado fresh	Small Bucket	8.5	1.0	8.5	2	market survey
Fruits	Avocado fresh	Large Bucket	15.8	1.0	15.8	2	market survey

## Table 3. 9:Conversion of weights and measures for fruits

Crop_Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Fruits	Avocado fresh	Sack	100.0	1.0	100.0		callback
Fruits	Avocado fresh	Small Sack (25 kg)	115.1	1.0	115.1	2	market survey
Fruits	Avocado fresh	Medium Sack (50 kg)	50.0	1.0	50.0		callback
Fruits	Avocado fresh	Large Sack (100 kg)	100.0	1.0	100.0		callback
Fruits	Avocado fresh	Extra large Sack (120 kg)	172.4	1.0	172.4	2	market survey
Fruits	Avocado fresh	Galon (20L)	12.0	1.0	12.0		callback
Fruits	Pawpaw fresh	Small Piece	1.0	1.0	1.0	34	market survey
Fruits	Pawpaw fresh	Medium Piece	1.4	1.0	1.4	20	market survey
Fruits	Pawpaw fresh	Large Piece	2.1	1.0	2.1	34	market survey
Fruits	Pawpaw fresh	Heap	2.9	1.0	2.9	2	market survey
Fruits	Pawpaw fresh	Tenga/Susu straw basket	54.3	1.0	54.3	2	market survey
Fruits	Pawpaw fresh	Bucket	18.0	1.0	18.0		callback
Fruits	Pawpaw fresh	Large Bucket	15.9	1.0	15.9	2	market survey
Fruits	Pawpaw fresh	Small Sack (25 kg)	26.9	1.0	26.9		callback
Fruits	Pawpaw fresh	Large Sack (100 kg)	100.0	1.0	100.0		callback
Fruits	Pawpaw fresh	Crate (Sanduku)	59.4	1.0	59.4	2	market survey
Fruits	Pineapple fresh	Piece	1.2	1.0	1.2	12	market survey
Fruits	Pineapple fresh	Small Piece	1.3	1.0	1.3	16	market survey
Fruits	Pineapple fresh	Medium Piece	2.0	1.0	2.0	10	market survey
Fruits	Pineapple fresh	Large Piece	2.4	1.0	2.4	16	market survey
Fruits	Pineapple fresh	Heap	2.8	1.0	2.8	2	market survey
Fruits	Pineapple fresh	Tenga/Susu straw basket	46.0	1.0	46.0		callback
Fruits	Pineapple fresh	Medium Sack (50 kg)	65.8	1.0	65.8		callback
Fruits	Orange fresh	Piece	0.2	1.0	0.2	12	market survey
Fruits	Orange fresh	Small Piece	0.1	1.0	0.1	6	market survey
Fruits	Orange fresh	Medium Piece	0.2	1.0	0.2		callback

Crop_Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Fruits	Orange fresh	Large Piece	0.2	1.0	0.2	6	market survey
Fruits	Orange fresh	Small Heap	0.9	1.0	0.9	12	market survey
Fruits	Orange fresh	Medium Heap	1.5	1.0	1.5	6	market survey
Fruits	Orange fresh	Large Heap	1.7	1.0	1.7	14	market survey
Fruits	Orange fresh	Tenga/Susu straw basket	32.7	1.0	32.7	2	market survey
Fruits	Orange fresh	Small Bucket	9.3	1.0	9.3		callback
Fruits	Orange fresh	Large Bucket	18.0	1.0	18.0		callback
Fruits	Orange fresh	Small Sack (25 kg)	25.5	1.0	25.5	2	market survey
Fruits	Orange fresh	Medium Sack (50 kg)	42.6	1.0	42.6		callback
Fruits	Orange fresh	Large Sack (100 kg)	100.0	1.0	100.0		callback
Fruits	Orange fresh	Extra large Sack (120 kg)	171.5	1.0	171.5	2	market survey
Fruits	Orange fresh	Galon (20L)	14.6	1.0	14.6		callback
Fruits	Orange fresh	Crate (Sanduku)	52.6	1.0	52.6	2	market survey
Fruits	Orange fresh	Kipolo	42.6	1.0	42.6		callback
Fruits	Mandarin fresh	Piece	0.2	1.0	0.2		callback
Fruits	Mandarin fresh	Tenga/Susu straw basket	32.0	1.0	32.0		callback
Fruits	Mandarin fresh	Small Bucket	17.0	1.0	17.0		callback
Fruits	Mandarin fresh	Large Bucket	12.3	1.0	12.3		callback
Fruits	Mandarin fresh	Medium Sack (50 kg)	37.0	1.0	37.0		callback
Fruits	Mandarin fresh	Large Sack (100 kg)	100.0	1.0	100.0		callback
Fruits	Guava fresh	Piece	0.1	1.0	0.1		callback
Fruits	Guava fresh	Tenga/Susu straw basket	68.0	1.0	68.0		callback
Fruits	Guava fresh	Bowl (Bakuli)	0.6	1.0	0.6		callback
Fruits	Guava fresh	Bucket	14.0	1.0	14.0		callback
Fruits	Guava fresh	Small Bucket	11.3	1.0	11.3		callback
Fruits	Guava fresh	Large Bucket	17.0	1.0	17.0		callback

Crop_Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Fruits	Guava fresh	Galon (20L)	15.0	1.0	15.0		callback
Fruits	Plums fresh	Large Bucket	22.0	1.0	22.0		callback
Fruits	Plums fresh	Sadoline	5.5	1.0	5.5		callback
Fruits	Apples fresh	Bucket	9.7	1.0	9.7		callback
Fruits	Apples fresh	Large Bucket	17.7	1.0	17.7		callback
Fruits	Pears fresh	Piece	0.2	1.0	0.2		callback
Fruits	Pears fresh	Large Bucket	14.3	1.0	14.3		callback
Fruits	Peaches fresh	Tenga/Susu straw basket	35.0	1.0	35.0		callback
Fruits	Peaches fresh	Large Bucket	20.0	1.0	20.0		callback
Fruits	Water mellon fresh	Piece	4.8	1.0	4.8	12	market survey
Fruits	Water mellon fresh	Small Piece	2.4	1.0	2.4	19	market survey
Fruits	Water mellon fresh	Medium Piece	3.9	1.0	3.9	18	market survey
Fruits	Water mellon fresh	Large Piece	6.0	1.0	6.0	36	market survey
Fruits	Water mellon fresh	Tenga/Susu straw basket	50.3	1.0	50.3		callback
Fruits	Pomegranate fresh	Piece	0.1	1.0	0.1		callback
Fruits	Pomegranate fresh	Medium Bucket	7.7	1.0	7.7		callback
Fruits	Mango fresh ripes	Piece	0.2	1.0	0.2		callback
Fruits	Mango fresh ripes	Small Piece	0.3	1.0	0.3		callback
Fruits	Mango fresh ripes	Large Piece	0.4	1.0	0.4		callback
Fruits	Mango fresh ripes	Tenga/Susu straw basket	51.6	1.0	51.6		callback
Fruits	Mango fresh ripes	Bunch	12.1	1.0	12.1		callback
Fruits	Mango fresh ripes	Bucket	15.2	1.0	15.2		callback
Fruits	Mango fresh ripes	Small Bucket	9.3	1.0	9.3		callback
Fruits	Mango fresh ripes	Large Bucket	15.2	1.0	15.2		callback
Fruits	Mango fresh ripes	Sadoline	3.9	1.0	3.9		callback
Fruits	Mango fresh ripes	Medium Sack (50 kg)	62.0	1.0	62.0		callback

Crop_Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Fruits	Mango fresh ripes	Large Sack (100 kg)	100.0	1.0	100.0		callback
Fruits	Mango fresh ripes	Galon (20L)	17.0	1.0	17.0		callback
Fruits	Mango fresh ripes	Small Sack (25 kg)	24.3	1.0	24.3		callback
Fruits	Mango fresh not ripes	Piece	0.8	1.0	0.8		callback
Fruits	Mango fresh not ripes	Tenga/Susu straw basket	48.9	1.0	48.9		callback
Fruits	Mango fresh not ripes	Bucket	14.5	1.0	14.5		callback
Fruits	Mango fresh not ripes	Small Bucket	8.4	1.0	8.4		callback
Fruits	Mango fresh not ripes	Large Bucket	15.6	1.0	15.6		callback
Fruits	Mango fresh not ripes	Large Sack (100 kg)	100.0	1.0	100.0		callback
Fruits	Mango fresh not ripes	Galon (20L)	16.5	1.0	16.5		callback
Fruits	Grapes fruits (fresh) (Black)	Small Heap	0.2	1.0	0.2	8	market survey
Fruits	Grapes fruits (fresh) (Black)	Large Heap	0.3	1.0	0.3	4	market survey
Fruits	Grapes fruits (fresh) (Black)	Shuke (bunch of palm seeds)	0.4	1.0	0.4	4	market survey
Fruits	Grapes fruits (fresh) (Black)	Boksi	24.5	1.0	24.5	2	market survey

Crop_Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Nuts and Oil Seeds	Bambaranuts fresh	Tin Container	20.0	1.0	20.0		callback
Nuts and Oil Seeds	Bambaranuts fresh	Bucket	20.0	0.9	18.0		callback
Nuts and Oil Seeds	Bambaranuts fresh	Small Bucket	10.1	1.0	10.1		callback
Nuts and Oil Seeds	Bambaranuts fresh	Large Bucket	20.3	1.0	20.3		callback
Nuts and Oil Seeds	Bambaranuts fresh	Sack	120.4	1.0	120.4		callback
Nuts and Oil Seeds	Bambaranuts fresh	Small Sack (25 kg)	25.0	1.0	25.0		callback
Nuts and Oil Seeds	Bambaranuts fresh	Medium Sack (50 kg)	50.0	1.0	50.0		callback
Nuts and Oil Seeds	Bambaranuts fresh	Large Sack (100 kg)	100.0	1.0	100.0		callback
Nuts and Oil Seeds	Bambaranuts fresh	Extra large Sack (120 kg)	120.0	0.9	114.0		callback
Nuts and Oil Seeds	Sunflower fresh	Bowl (Bakuli)	0.3	1.0	0.3	2	market survey
Nuts and Oil Seeds	Sunflower fresh	Tin Container	17.0	1.0	17.0		callback
Nuts and Oil Seeds	Sunflower fresh	Bucket	9.3	1.0	9.3	6	market survey
Nuts and Oil Seeds	Sunflower fresh	Small Bucket	5.7	1.0	5.7		callback
Nuts and Oil Seeds	Sunflower fresh	Medium Bucket	12.1	1.0	12.1		callback
Nuts and Oil Seeds	Sunflower fresh	Large Bucket	9.1	1.0	9.1	6	market survey
Nuts and Oil Seeds	Sunflower fresh	Sadoline	2.1	1.0	2.1	2	market survey
Nuts and Oil Seeds	Sunflower fresh	Sack	84.2	1.0	84.2		callback
Nuts and Oil Seeds	Sunflower fresh	Medium Sack (50 kg)	50.0	1.0	50.0		callback
Nuts and Oil Seeds	Sunflower fresh	Large Sack (100 kg)	66.7	1.0	66.7	10	market survey
Nuts and Oil Seeds	Sunflower fresh	Extra large Sack (120 kg)	110.0	1.0	110.0		callback
Nuts and Oil Seeds	Sunflower fresh	Extra Large Sack (140 kg)	130.0	1.0	130.0		callback
Nuts and Oil Seeds	Sunflower fresh	Medium Sack (60 kg)	60.0	1.0	60.0		callback
Nuts and Oil Seeds	Sunflower fresh	Large Sack (110 kg)	95.0	1.0	95.0		callback
Nuts and Oil Seeds	Sunflower fresh	Extra large Sack (160 kg)	150.0	1.0	150.0		callback
Nuts and Oil Seeds	Sunflower fresh	Medium Sack (70 kg)	70.0	1.0	70.0		callback

 Table 3. 10:
 Conversion of weights and measures for nuts and oil seeds

Crop_Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations Source
Nuts and Oil Seeds	Sesame grain	Tin Container	14.3	1.0	14.3	callback
Nuts and Oil Seeds	Sesame grain	Bucket	14.3	1.0	14.3	callback
Nuts and Oil Seeds	Sesame grain	Small Bucket	4.1	1.0	4.1	callback
Nuts and Oil Seeds	Sesame grain	Medium Bucket	6.8	1.0	6.8	callback
Nuts and Oil Seeds	Sesame grain	Large Bucket	14.0	1.0	14.0	callback
Nuts and Oil Seeds	Sesame grain	Sadoline	4.0	1.0	4.0	callback
Nuts and Oil Seeds	Sesame grain	Sack	84.0	1.0	84.0	callback
Nuts and Oil Seeds	Sesame grain	Medium Sack (50 kg)	50.0	1.0	50.0	callback
Nuts and Oil Seeds	Sesame grain	Large Sack (100 kg)	100.0	1.0	100.0	callback
Nuts and Oil Seeds	Sesame grain	Extra large Sack (120 kg)	120.0	1.0	120.0	callback
Nuts and Oil Seeds	Sesame grain	Large Sack (90 kg)	90.0	1.0	90.0	callback
Nuts and Oil Seeds	Coconut fresh	Piece	0.5	1.0	0.5	callback
Nuts and Oil Seeds	Coconut fresh	Small Piece	1.2	1.0	1.2	callback
Nuts and Oil Seeds	Coconut fresh	Medium Piece	1.3	1.0	1.3	callback
Nuts and Oil Seeds	Coconut fresh	Large Piece	1.5	1.0	1.5	callback
Nuts and Oil Seeds	Coconut fresh	Sack	100.0	1.0	100.0	callback
Nuts and Oil Seeds	Coconut fresh	Small Sack (25 kg)	23.3	1.0	23.3	callback
Nuts and Oil Seeds	Coconut fresh	Medium Sack (50 kg)	46.6	1.0	46.6	callback
Nuts and Oil Seeds	Coconut fresh	Large Sack (100 kg)	94.3	1.0	94.3	callback
Nuts and Oil Seeds	Coconut fresh	Extra large Sack (120 kg)	120.0	1.0	120.0	callback
Nuts and Oil Seeds	Cashewnuts shelled	Kilogram	1.0	0.6	0.6	callback
Nuts and Oil Seeds	Cashewnuts shelled	Bowl (Bakuli)	1.5	0.2	0.3	2 market survey
Nuts and Oil Seeds	Cashewnuts shelled	Tin Container	12.0	0.6	7.8	callback
Nuts and Oil Seeds	Cashewnuts shelled	Bucket	12.5	0.6	8.1	callback
Nuts and Oil Seeds	Cashewnuts shelled	Large Bucket	14.0	1.0	14.0	callback
Nuts and Oil Seeds	Cashewnuts shelled	Sadoline	2.5	0.6	1.6	callback

Crop_Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Nuts and Oil Seeds	Cashewnuts shelled	Sack	95.0	0.6	61.8		callback
Nuts and Oil Seeds	Cashewnuts shelled	Small Sack (25 kg)	25.0	0.6	16.3		callback
Nuts and Oil Seeds	Cashewnuts shelled	Medium Sack (50 kg)	50.0	0.6	32.5		callback
Nuts and Oil Seeds	Cashewnuts shelled	Large Sack (100 kg)	100.0	0.6	65.0		callback
Nuts and Oil Seeds	Cashewnuts shelled	Extra large Sack (120 kg)	120.0	0.6	78.0		callback
Nuts and Oil Seeds	Palm oil seeds	Kilogram	1.0	0.8	0.8		callback
Nuts and Oil Seeds	Palm oil seeds	Litre	0.9	0.8	0.7		callback
Nuts and Oil Seeds	Palm oil seeds	Medium Sack (50 kg)	35.0	0.9	31.1		callback
Nuts and Oil Seeds	Palm oil seeds	Large Sack (100 kg)	45.0	0.9	40.0		callback
Nuts and Oil Seeds	Palm oil seeds	Galon (20L)	19.0	0.9	16.9		callback
Nuts and Oil Seeds	Palm kernel	Piece	7.0	0.8	5.6		callback
Nuts and Oil Seeds	Palm kernel	Shuke (bunch of palm seeds)	25.0	0.7	16.5		callback
Nuts and Oil Seeds	Cashewnuts unshelled	Small Bucket	7.1	1.0	7.1	2	market survey
Nuts and Oil Seeds	Cashewnuts unshelled	Large Bucket	13.2	1.0	13.2	2	market survey
Nuts and Oil Seeds	Cashewnuts unshelled	Kifuko cha Nylon (Kg 1)	1.0	1.0	1.0	2	market survey
Nuts and Oil Seeds	Cashewnuts unshelled	Pakti ndogo	0.2	1.0	0.2	4	market survey
Nuts and Oil Seeds	Cashewnuts unshelled	Mfuko	1.6	1.0	1.6	2	market survey
Nuts and Oil Seeds	Cashewnuts unshelled	Pakti kubwa	0.5	1.0	0.5	4	market survey
Nuts and Oil Seeds	Cashewnuts unshelled	Pakti ya kati	0.2	1.0	0.2	2	market survey

Crop_Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Industrial Crops	Cotton fresh	Tin Container	15.0	1.0	15.0		callback
Industrial Crops	Cotton fresh	Sack	90.0	1.0	90.0		callback
Industrial Crops	Cotton fresh	Extra large Sack (120 kg)	120.0	1.0	120.0		callback
Industrial Crops	Cotton fresh	Robota (bale)	181.0	1.0	181.0		callback
Industrial Crops	Tobacco fresh	Sack	100.0	1.0	100.0		callback
Industrial Crops	Tobacco fresh	Robota (bale)	60.0	1.0	60.0		callback
Industrial Crops	Rubber sap (utomvu)	Tonne	1,000.0	1.0	980.0		callback
Industrial Crops	Sugar cane fresh	Piece	1.8	1.0	1.8	12	market survey
Industrial Crops	Sugar cane fresh	Small Piece	1.3	1.0	1.3	14	market survey
Industrial Crops	Sugar cane fresh	Medium Piece	1.5	1.0	1.5	4	market survey
Industrial Crops	Sugar cane fresh	Large Piece	2.4	1.0	2.4	16	market survey
Industrial Crops	Sugar cane fresh	Неар	14.4	1.0	14.4	4	market survey
Industrial Crops	Sugar cane fresh	Small Heap	81.8	1.0	43.5		callback
Industrial Crops	Sugar cane fresh	Medium Heap	25.0	1.0	25.0		callback
Industrial Crops	Sugar cane fresh	Large Heap	215.7	1.0	215.7		callback
Industrial Crops	Sugar cane fresh	Bunch	25.0	1.0	25.0		callback
Industrial Crops	Pyrethrum flowers dried	Tin Container	4.5	1.0	4.5		callback
Industrial Crops	Coffee beans dry husked	Bowl (Bakuli)	0.4	1.0	0.4	2	market survey
Industrial Crops	Coffee beans dry husked	Cane (Kopo)	10.0	1.0	10.0		callback
Industrial Crops	Coffee beans dry husked	Tin Container	15.0	1.0	15.0		callback
Industrial Crops	Coffee beans dry husked	Bucket	18.0	1.0	18.0		callback
Industrial Crops	Coffee beans dry husked	Small Bucket	9.5	1.0	9.5		callback
Industrial Crops	Coffee beans dry husked	Large Bucket	14.0	1.0	14.0		callback
Industrial Crops	Coffee beans dry husked	Sadoline	2.6	1.0	2.6	2	market survey
Industrial Crops	Coffee beans dry husked	Sack	75.0	1.0	75.0		callback

 Table 3. 11:
 Conversion of weights and measures for industrial crops

Crop_Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Industrial Crops	Coffee beans dry husked	Small Sack (25 kg)	25.0	1.0	25.0		callback
Industrial Crops	Coffee beans dry husked	Medium Sack (50 kg)	55.0	1.0	55.0		callback
Industrial Crops	Coffee beans dry husked	Large Sack (100 kg)	100.0	1.0	100.0		callback
Industrial Crops	Coffee beans dry husked	Extra large Sack (120 kg)	108.5	1.0	108.5	2	market survey
Industrial Crops	Coffee beans dry husked	Beseni	10.8	1.0	10.8	2	market survey
Industrial Crops	Coffee fresh beans husked	Kilogram	1.0	0.6	0.6		callback
Industrial Crops	Coffee fresh beans husked	Tonne	1,000.0	0.7	740.0		callback
Industrial Crops	Coffee fresh beans husked	Bowl (Bakuli)	1.0	0.6	0.6		callback
Industrial Crops	Coffee fresh beans husked	Tin Container	20.0	0.6	13.0		callback
Industrial Crops	Coffee fresh beans husked	Bucket	20.0	0.6	13.0		callback
Industrial Crops	Coffee fresh beans husked	Small Bucket	10.0	0.6	6.5		callback
Industrial Crops	Coffee fresh beans husked	Large Bucket	20.0	0.6	13.0		callback
Industrial Crops	Coffee fresh beans husked	Sadoline	2.0	0.8	1.5		callback
Industrial Crops	Coffee fresh beans husked	Sack	120.0	0.6	78.0		callback
Industrial Crops	Coffee fresh beans husked	Small Sack (25 kg)	25.0	0.6	16.3		callback
Industrial Crops	Coffee fresh beans husked	Medium Sack (50 kg)	60.0	0.8	45.0		callback
Industrial Crops	Coffee fresh beans husked	Large Sack (100 kg)	120.0	0.8	90.0		callback
Industrial Crops	Coffee fresh beans husked	Extra large Sack (120 kg)	140.0	0.8	105.0		callback
Industrial Crops	Cocoa fruit	Cane (Kopo)	3.0	1.0	3.0		callback

Crop_Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Industrial Crops	Cocoa fruit	Bucket	20.0	1.0	20.0		callback
Industrial Crops	Cocoa fruit	Large Bucket	50.0	1.0	50.0		callback
Industrial Crops	Cocoa fruit	Large Sack (100 kg)	100.0	1.0	100.0		callback
Industrial Crops	Cocoa fruit	Extra large Sack (120 kg)	120.0	1.0	120.0		callback
Industrial Crops	Cocoa fruit	Galon (20L)	15.0	1.0	15.0		callback
Industrial Crops	Cocoa fresh seeds	Bucket	14.0	1.0	14.0		callback
Industrial Crops	Cocoa fresh seeds	Small Bucket	10.0	1.0	10.0		callback
Industrial Crops	Cocoa fresh seeds	Large Bucket	20.0	1.0	20.0		callback
Industrial Crops	Cocoa fresh seeds	Small Sack (25 kg)	16.0	1.0	16.0		callback
Industrial Crops	Cocoa fresh seeds	Large Sack (100 kg)	100.0	1.0	100.0		callback
Industrial Crops	Cocoa Dried seeds	Bucket	17.0	1.0	17.0		callback
Industrial Crops	Cocoa Dried seeds	Large Bucket	15.0	1.0	15.0		callback
Industrial Crops	Coffee beans dry dehusked	Kifuko cha Nylon (Robo kilo)	0.3	1.0	0.3	2	market survey

Crop_Group	Commodity	Unit	Medium_ Weight	Density	Conversion Factor	Observations	Source
Milk and Honey	Fresh Milk	Jug (Jagi)	1.0	1.0	1.0	2	market survey
Milk and Honey	Fresh Milk	Galon (5L)	5.0	1.0	5.0	4	market survey
Milk and Honey	Fresh Milk	Galon (10L)	10.0	1.0	10.0	2	market survey
Milk and Honey	Fresh Milk	Cup (Kikombe)	0.5	1.0	0.5	2	market survey
Milk and Honey	Fresh Milk	Chupa ya (Lita 1)	1.0	1.0	1.0	2	market survey
Milk and Honey	Fresh Milk	Chupa ya (Lita 1.5)	1.5	1.0	1.5	2	market survey
Milk and Honey	Fresh Milk	Dumu Kubwa (Lita 30)	30.0	1.0	30.0	2	market survey
Milk and Honey	Fresh Milk	Small Cup	0.4	1.0	0.4	2	market survey
Milk and Honey	Fresh Milk	Big Cup	0.5	1.0	0.5	2	market survey
Milk and Honey	Honey	Galon (1L)	1.4	1.0	1.4	6	market survey
Milk and Honey	Honey	Galon (5L)	6.8	1.0	6.8	4	market survey
Milk and Honey	Honey	Chupa ndogo	0.4	1.0	0.4	4	market survey
Milk and Honey	Honey	Chupa ndogo ya konyagi (mls 250)	0.3	1.0	0.3	6	market survey
Milk and Honey	Honey	Chupa ya (Lita 1)	1.3	1.0	1.3	4	market survey
Milk and Honey	Honey	Chupa ya (mls 500)	0.7	1.0	0.7	2	market survey
Milk and Honey	Honey	Kopo kubwa	0.4	1.0	0.4	2	market survey
Milk and Honey	Honey	Chupa kubwa	0.9	1.0	0.9	2	market survey
Milk and Honey	Honey	Chupa ya kati	0.6	1.0	0.6	2	market survey
Milk and Honey	Honey	Kopo la kati	0.3	1.0	0.3	2	market survey

 Table 3. 12:
 Conversion of weights and measures for milk and honey

Crop_Group	Commodity	Unit	Conversion_Factor
Cereals	Finger millet grain	Vifungashio	5
Cereals	Maize grain, dry	Etra Large sack 200 Kg	100
Cereals	Maize grain, dry	Extra large sack 140Kg	140
Cereals	Maize grain, dry	Mkokoteni wa Ng'ombe	600
Cereals	Maize grain, dry	Trekta	1,200
Cereals	Maize grain, dry	Trela	590
Cereals	Maize grain, dry	Vipeto/Viroba	50
Legumes	Beans without pod, dry	Kimbo	1
Legumes	Beans without pod, dry	Lita	1
Roots and Tubers	Cassava fresh	Bero	18
Roots and Tubers	Cassava fresh	Canter/Kenta	4,000
Roots and Tubers	Cassava fresh	Gari Aina ya Carry 1	1,500
Roots and Tubers	Cassava fresh	Mafungu	2
Roots and Tubers	Cassava fresh	Mashina	4
Roots and Tubers	Cassava fresh	Vipeto	58
Roots and Tubers	Sweet potatoes, fresh	Mkokoteni wa Ng'ombe	112
Roots and Tubers	Sweet potatoes, fresh	Polo(KG75)	79
Roots and Tubers	Sweet potatoes, fresh	Tela za Power Tila	72
Roots and Tubers	Irish potatoes fresh	Debe laNdoo Saba	126
Roots and Tubers	Irish potatoes fresh	Gunia la Kilo 50	50
Roots and Tubers	Irish potatoes fresh	Kiloba cha Kilo 100	100
Roots and Tubers	Irish potatoes fresh	Kipeto/Kiroba	96
Roots and Tubers	Irish potatoes fresh	Magari Matatu ya Kirikuu	1,735
Roots and Tubers	Irish potatoes fresh	Mifuko ya 40 KG	40
Roots and Tubers	Irish potatoes fresh	Ndoo- Kubwa	18
Roots and Tubers	Irish potatoes fresh	Peto/Kiroba	96

 Table 3. 13:
 Conversion of weights and measures for various other specified commodity-unit combinations

Crop_Group	Commodity	Unit	Conversion_Factor
Roots and Tubers	Irish potatoes fresh	Vipeto/Viroba	60
Roots and Tubers	Cocoyams fresh	Beseni	12
Vegetables and Herbs	Clove fresh	Sack Kilo 25	24
Vegetables and Herbs	Spinach fresh	Madishi	4
Vegetables and Herbs	Amaranthus (mchicha) fresh	Madishi	4
Vegetables and Herbs	Amaranthus (mchicha) fresh	Fungu	1
Vegetables and Herbs	Egg Plant fresh	Beseni	10
Vegetables and Herbs	Rambutan fresh	Shada	12
Vegetables and Herbs	Soursop fresh	Peace	0.3
Vegetables and Herbs	Tomatoes fresh	Boksi	55
Vegetables and Herbs	Tomatoes fresh	Kreti	15
Vegetables and Herbs	Tomatoes fresh	Ndoo Kubwa Lita 20	8
Vegetables and Herbs	Tomatoes fresh	Sanduku La Mbao	55
Vegetables and Herbs	Sweet potato leaves fresh	Kicha(Fungu)	0.4
Vegetables and Herbs	Figiri, sukuma wiki fresh	Mifuko ya 40 KG	34
Vegetables and Herbs	Pumpkin leave flower	Maboga 10 Madogo	0.5
Vegetables and Herbs	Pumpkin leave flower	Maboga 30 Large	3
Fruits	Malay apple fresh	Ndoo Ndogo	7
Fruits	Jack fruit fresh	Oxcart	152
Fruits	Avocado fresh	Dishi	26
Fruits	Avocado fresh	Tray/Sanduku	31
Fruits	Pawpaw fresh	Box	27
Fruits	Pawpaw fresh	Polo La Kilo 25	27
Fruits	Pineapple fresh	Неар	2
Fruits	Orange fresh	Sacks 100KG	110
Fruits	Orange fresh	Truck	10,000
Fruits	Water mellon fresh	Canter	2,300
Fruits	Water mellon fresh	Gari Dyner	2,470

Crop_Group	Commodity	Unit	Conversion_Factor
Fruits	Water mellon fresh	Kokoteni ya Ng'ombe/Punda	600
Fruits	Water mellon fresh	Lorry la Tani 10	10,000
Fruits	Water mellon fresh	Тоуо	595
Nuts and Oil Seeds	Sunflower fresh	Gunia la KG 70	70
Nuts and Oil Seeds	Sesame grain	Gunia la KG 100	84
Nuts and Oil Seeds	Palm oil seeds	Pipa	120
Industrial Crops	Cotton fresh	Furushi	180
Industrial Crops	Cotton fresh	Mkokoteni wa Ng'ombe	150
Industrial Crops	Tobacco fresh	Belo/Mabelo	65
Industrial Crops	Tobacco fresh	Vibanda	1,810
Industrial Crops	Sugar cane fresh	Matuta	320
Industrial Crops	Sugar cane fresh	Oxcart	150
Industrial Crops	Sugar cane fresh	Vipigili	2
Industrial Crops	Cocoa fruit	15 (Assumming 150 Grams)	0.2
Industrial Crops	Cocoa fruit	Sack (70KG)	80

#### Annexes

#### **Annex 1: Taking Pictures**

The NSU survey captured several pictures of each commodity-unit combination to provide options to choose from when compiling the reference book. Prior to the NSU survey, ample time was allocated for enumerator training (and practice) and review of the required photography protocols. The pictures adhered to the following guidelines:

- i. **Well-lit photos** to allow respondents to better differentiate between the item and its shadow or background.
- ii. **Plain background.** Enumerators carried a white sheet of paper/or gunny bag to create a background to better highlight the item, especially when it is a color that contrasted with the item.
- iii. **Staging area.** A staging area was created for taking photos especially for larger units or when photographing units that come in multiple sizes. In compact or crowded markets, there was limited space at the vendor stalls to position the camera sufficiently far away to capture all elements in the photo. Taking the photos at stalls could also block passageways in the market, causing disruption and creating animosity from vendors or patrons. Thus, a staging area provided a suitable space for taking photos without much difficulty or disturbance, and also a place to take as many measurements of the commodity as necessary.
- iv. One item per photo. Each photo only contained one commodity-unit combination.
- v. A reference item. This is a well-known item included in a photo to illustrate the relative size/scale of the main item being pictured. The reference item is something that generally comes in one standard size, is easily identifiable to respondents, and could be brought to interviews by enumerators during the AASS. Examples included a water or soda bottle, a writing pen, a box of matches, etc. This was a critical component of the photo. Without it, respondents could have had difficulties in accurately judging the size of the photographed quantities.
- vi. For combinations that come in multiple sizes, it was a must to have **all sizes of the commodityunit combination present in the same photo.** This was necessary to help respondents differentiate between sizes. For all pictures, the sizes were always in the same order (e.g., left to right, small to large). If the size variations were too many – or too varied – to make sense in a single photo, special care was taken to ensure that the images were directly comparable: photos taken from the same angle and same distance and including the exact same reference item (positioned at the same position/angle relative to each item-unit).
- vii. **Three-dimensional volume of the item was conveyed** in the two-dimensional photo. To ensure that the dimensions/volume of the item-unit were clear, pictures were taken from a side angle, either directly horizontal to the item, or slightly above horizontal. For some non-container units such as pieces, aerial photos (taken from directly above) were sometimes acceptable or preferred.
- viii. Each photo captured only **one commodity in one unit**, though multiple sizes of the same unit were captured in the same photo (to facilitate visual comparison of the sizes). For example, maize grain and maize on cob were not captured in the same photo. Rather, focus was on one combination of commodity, state/condition-unit.

The examples below show photos taken correctly and incorrectly (Source: 50x2030 technical guideline on non-standard units of measurement).



#### Figure a: Correctly captured photo – example 1

Figure b: Correctly captured photo – example 2



Figure c: Correctly captured photo – example 3



Figure d: Incorrectly captured photo – example 1



Figure e: Incorrectly captured photo – example 2



Figure f: Incorrectly captured photo – example 3



Figure g: Incorrectly captured photo – example 4



