



# RWANDA FOOD BALANCE SHEETS

## 2025



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**2025**

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P.O Box : 6139 Kigali, Rwanda

Tel: +250 788 383103

Hotline: 4321

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Email: [info@statistics.gov.rw](mailto:info@statistics.gov.rw)

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## Abbreviations and acronyms

|          |                                                              |
|----------|--------------------------------------------------------------|
| AMDR     | Acceptable Macro-nutrient Distribution Range                 |
| CPC:     | Central Products Classification                              |
| CPI:     | Consumer Price Index                                         |
| DES:     | Dietary Energy Supply                                        |
| DHS:     | Demographic and Health Surveys                               |
| EAC:     | East African Community                                       |
| FAO:     | Food and Agriculture Organization                            |
| FBS:     | Food Balance Sheets                                          |
| FCT:     | Food Composition Table                                       |
| FLI:     | Food Loss Index                                              |
| FLP:     | Food Loss Percentage                                         |
| GDP:     | Gross Domestic Product                                       |
| GSARS:   | Global Strategy to improve Agricultural and Rural Statistics |
| HSPH:    | Harvard School of Public Health                              |
| IDR:     | Import Dependency Ratio                                      |
| KGs:     | Kilograms                                                    |
| Kcal:    | Kilo calorie                                                 |
| MDER:    | Minimum Dietary Energy Requirements                          |
| Mg:      | Milligram                                                    |
| MINAGRI: | Ministry of Agriculture and Animal Resources                 |
| MT:      | Metric Ton                                                   |
| MUHAS:   | Muhimbili University of Health and Allied Sciences           |
| NISR:    | National Institute of Statistics of Rwanda                   |
| PoU:     | Prevalence of Undernourishment                               |
| RE:      | Retinol Equivalent                                           |
| RHPC:    | Rwanda Housing and Population Census                         |
| SAS:     | Seasonal Agricultural Survey                                 |
| SDGs:    | Sustainable Development Goals                                |
| SSR:     | Self-Sufficiency Ratio                                       |
| SUA:     | Supply and Utilization Accounts                              |
| TCF:     | Technical Conversion Factors                                 |
| TFNC:    | Tanzania Food and Nutrition Centre                           |
| µg:      | Micrograms                                                   |

In the framework of producing regular and high-quality food and nutrition security statistics, the National Institute of Statistics of Rwanda (NISR) has released the 2025 Food Balance Sheets (FBS) report. This report provides a comprehensive overview of Rwanda's food supply and utilization patterns and supports the country's efforts in tracking food security and nutritional outcomes.

The report provides a detailed overview of the country's food supply and its utilization, including the amount of food available for human consumption, estimates of per capita Dietary Energy Supply (DES), and the intake of proteins, fats, minerals, and vitamins for the year 2025. Moreover, the FBS serves as a vital tool in monitoring progress toward the Sustainable Development Goals (SDGs), particularly indicators such as the Prevalence of Undernourishment (PoU), which measures the share of the population unable to meet minimum dietary energy requirements, and the Food Loss Index (FLI), which tracks changes in food loss across the supply chain.

The analysis is based on three core components of the Food Balance Sheet (FBS): The domestic food availability derived from production, imports, and stock changes; The domestic utilization, which includes food consumption, feed, seed, processing, exports, and other non-food uses; and

Per capita food supply, measured in kilograms per person per year, along with its caloric, protein, and fat content. In addition, this report presents two further indicators, which are the Food Import Dependency Ratio (IDR) and the Food Self-Sufficiency Ratio (SSR), that directly inform Rwanda's food security status.

This report is designed as a practical resource for researchers, students, policymakers, government institutions, and the general public. All stakeholders are encouraged to make full use of its findings to inform sound, evidence-based decision-making.

Special acknowledgment is extended to the dedicated staff of NISR for their work in data collection, analysis, validation, and report preparation. Their continued efforts are vital to producing quality data that guide national food security policy and planning.

for 

**MURENZI Ivan**

**Director General, NISR**

**MWIZERWA Jean Claude**  
**Deputy Director General**



## 1.1. Overview of Food Balance Sheets (FBS)

The Food Balance Sheet (FBS) is a national statistical framework that gives a comprehensive picture of a country's food supply and its utilization over a given period. For each food item, it systematically accounts for the total quantity available for human consumption by consolidating all sources of supply and all categories of use.

The total supply of a given food product is derived from the sum of domestic production and imports, adjusted for changes in stocks. Specifically, increases in stocks are subtracted, while stock withdrawals are added:

**Total Supply = Production + Imports – Stock Variation**

On the other side of the ledger, total utilization covers everything that happens to that supply: It includes exports, losses occurring along the supply chain, animal feed, seed set aside for future planting, food consumed by tourists, food used in processing or industry, direct household consumption, and residual or other uses:

**Total Utilization = Exports + Feed + Seed + Losses + Processing + Household Food Consumption + Tourist Consumption + Industrial Use + Residual and Other Uses**

By definition, total supply must equal total utilization for each product; this balance is what gives Supply Utilization Accounts (SUAs) their name, and constitutes the foundation upon which the entire FBS is built.

Beyond this accounting function, FBS data play a central role in assessing a country's food security. By comparing Dietary Energy Supply with Dietary Energy Requirements makes it becomes possible to estimate the prevalence of undernourishment within the population, a key input for evidence-based planning and for tracking progress toward SDG Target 2.1. This target calls for ending hunger and ensuring access to safe, nutritious, and sufficient food for all, particularly the poor and vulnerable, by 2030.

Complete and timely FBS data also enable the calculation of key indicators such as the country's Food Self-Sufficiency (the share of domestic demand met by domestic production) and its import dependency (the share met by imports). When calculated at both commodity and aggregate levels, these ratios serve as invaluable tools for policymakers, facilitating informed assessments of the country's food supply and targeting public and private investments where they are most needed.

## 1.2. Data sources

Most of the data required for the compilation of the SUA/FBS are available from NISR and the Ministry of Agriculture and Animal Resources (MINAGRI). The main data sources used in preparing this report are as follows:

- **Surveys and Census:** the Seasonal Agricultural Survey (SAS) provides data on Crop production, as well as seeds and seed rates; the Demographic and Health Surveys (DHS) provides anthropometric data, the Rwanda Housing and Population Census (RHPC) provides data on population; while commodity price data are provided by the Consumer Price Index (CPI).
- **National accounts:** Data on processed commodities, livestock production, stock variations, food ratios, feed and feed ratios, fisheries, and Gross Domestic Product (GDP).
- **Administrative data sources:** Trade data (imports and exports), livestock numbers, loss and loss ratios (from MINAGRI).
- **FAO:** Technical conversion factors, including nutritional values, extraction rates, and loss ratios for some commodities, as well as coefficients of variation.

This report presents the key findings for the year 2025. A comprehensive description of the methodology/ approach and data sources is available in the main report covering the 2017-2021<sup>1</sup> period.

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<https://www.statistics.gov.rw/publication/2018>

### 1.3. KEY FINDINGS

This section presents the results of the Food Balance Sheet, focusing on food supply expressed in kilograms per capita per year, Dietary Energy Supply (DES), and the availability of proteins, fats, minerals, and vitamins. These indicators are estimated by applying the respective nutrient composition of each commodity to its available quantity, thereby determining its contribution to dietary energy and nutrient supply. In addition, domestic food supply is further analyzed by comparing quantities produced locally with quantities imported to assess Rwanda's degree of self-sufficiency in meeting its food requirements. The chapter also discusses the Food Loss Index (FLI), which monitors food losses occurring across the supply chain, and the Prevalence of Undernourishment (PoU).

The 2025 Rwanda Food Balance Sheet highlights important progress across food and nutrition indicators. The average Dietary Energy Supply (DES) increased to 2,366.7 kilocalories per person per day, up from 2,328.9 in 2024, with 98.14 % of this energy coming from plant-based foods such as cereals and starchy roots. Out of the total 2,366.7 kilocalories per person per day, the animal-source foods contributed 44.0 kilocalories per person per day, reflecting limited dietary diversity and a carbohydrate-dominant diet.

Disaggregating the Dietary Energy Supply by macronutrient reveals the following: carbohydrates supplied 1,838.6 kcal per person per day (up from 1,812.5 in 2024), protein supply rose to 59.8 grams per person per day (a 1.2 % increase), and fat supply grew to 32.1 grams per person per day (up 3 %). In proportional terms, carbohydrates now account for 77.8 % of total dietary energy, well above the 45–65 % range generally considered adequate, while fat contributes only 12.0 % of energy, falling below the recommended 22.6–35.4 %. This imbalance underscores the persistent dependence of Rwandan diets on staple crops, with fat and, to a lesser extent, protein remaining undersupplied relative to international dietary guidelines.

On micronutrients, supply exceeds recommended levels for several key vitamins: vitamin A (829.0 µg RE against a requirement of 666.3), vitamin B9/folate (389.7 µg against 334.5), and vitamin C (147.3 mg against 62.3), driven largely by fruits, vegetables, and pulses. In contrast, vitamin B12 and vitamin D remain well below recommended levels (0.2 µg against 2.0, and 0.7 µg against 5.7, respectively), since both are almost exclusively supplied by animal products. This mirrors the low contribution of animal products to overall energy and fat supply, reinforcing that limited consumption of animal-source foods affects not just protein and fat adequacy but micronutrient adequacy as well.

Rwanda maintains a relatively high degree of food self-sufficiency; however, domestic consumption continues to depend heavily on imports, with 56.1 % of both plant- and animal-based food products sourced externally. This marks a broadly stable reliance on imports compared with 56.0 % in 2024.

The Self-Sufficiency Ratio saw a small increase, from 79.4 % in 2024 to 79.7 % in 2025, indicating that local production still does not fully meet national food demand, though the gap is narrowing slightly. In 2025, the Food Loss Index (FLI) showed a positive trend, decreasing to 85.89 from 85.92 in 2024. This is equivalent to a food loss rate of 4.27 %, down from 5 % in 2017, indicating continued improvement in reducing post-harvest losses along the food supply chain. Similarly, the Prevalence of Undernourishment (PoU) decreased to 29.9 % of the population (approximately 4.1 million people), down from 31.3 % in 2024. This continues a steady downward trend and reflects ongoing progress in improving food accessibility and a reduction in chronic undernourishment at the national level.

## 2.1. Food Supply per capita per year (Kg)

The Food Balance Sheet provides data on the quantity of food available for human consumption, expressed as the average quantity in kilograms that each individual has access to per year. This is derived by dividing the total domestic supply of each food commodity and its derived products by the population, allowing consistent comparisons across food groups and over time. Tracking these data on an annual basis facilitates the identification of emerging trends, such as increasing dependence on a particular staple or declining availability of certain food groups. These observations are critical for anticipating future food demand and informing decisions related to production, trade, and food security planning.

### 2.1.1. Vegetal products

Table 1 shows that within vegetal products, per capita per year food availability is mainly driven by three groups: starchy roots (256.5 kg), fruits (99.8 kg), and cereals (90.4 kg), which together account for 43 %, 17 %, and 15 % of all vegetal products, respectively. Within the starchy roots category, sweet potatoes, cassava, and Irish potatoes are the primary components, while bananas dominate the majority of fruit supplies. Among cereals, maize, rice, sorghum, and wheat, along with their derived products, are the most prominent. In comparison with the previous year, supply increased slightly across most major plant-based groups. The only exceptions were starchy roots and pulses, both of which recorded a small decline.

**Table 1: Food supply per capita per year (Kg), per group of vegetal products**

| Vegetal groups          | 2019  | 2020  | 2021  | 2022  | 2023  | 2024  | 2025  | Contribution |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|--------------|
| Starchy roots           | 258.5 | 252.7 | 255.4 | 263.2 | 262.0 | 258.2 | 256.5 | 43%          |
| Fruits (excluding wine) | 80.8  | 87.3  | 90.6  | 93.6  | 96.7  | 99.0  | 99.8  | 17%          |
| Cereals (excl. beer)    | 74.3  | 80.4  | 76.3  | 82.2  | 83.2  | 87.3  | 90.4  | 15%          |
| Vegetables              | 44.2  | 47.6  | 48.0  | 27.6  | 29.9  | 30.9  | 32.2  | 5%           |
| Alcoholic beverages     | 39.4  | 41.9  | 43.5  | 44.5  | 47.8  | 48.8  | 47.4  | 8%           |
| Pulses                  | 31.8  | 29.9  | 32.3  | 28.8  | 31.2  | 30.9  | 30.7  | 5%           |
| Sugar & Sweeteners      | 9.2   | 10.4  | 12.5  | 12.7  | 13.9  | 15.0  | 15.2  | 3%           |
| Stimulants              | 9.0   | 9.4   | 9.8   | 12.2  | 11.3  | 11.3  | 11.9  | 2%           |
| Oil crops               | 6.0   | 6.2   | 6.0   | 6.7   | 6.9   | 6.5   | 7.1   | 1%           |
| Vegetable oils          | 5.5   | 5.2   | 5.2   | 5.7   | 5.6   | 5.7   | 6.0   | 1%           |
| Sugar crops             | 0.9   | 0.9   | 0.9   | 1.5   | 1.3   | 1.4   | 1.5   | 0%           |
| Spices                  | 0.7   | 0.6   | 1.1   | 0.9   | 0.9   | 0.9   | 1.0   | 0%           |

Source: NISR, FBS 2025

## 2.1.2. Animal products

Table 2 shows the annual per capita availability of animal products for human consumption in Rwanda, as well as the contribution of each product to the total. Milk and related products (excluding butter) account the largest share with 11.3 kg representing 66 % of the total, followed by meat by 2.6 kg (15 %), fish and seafood by 2.2 kg (13 %), and animal fats at 0.3 kg (2 %). When compared with the previous year, availability of milk, meat, fish, and seafood increased in 2025. Animal fats were the only category to register a decline over the same period.

**Table 2: Food supply per capita per year (Kg), by group of animal products**

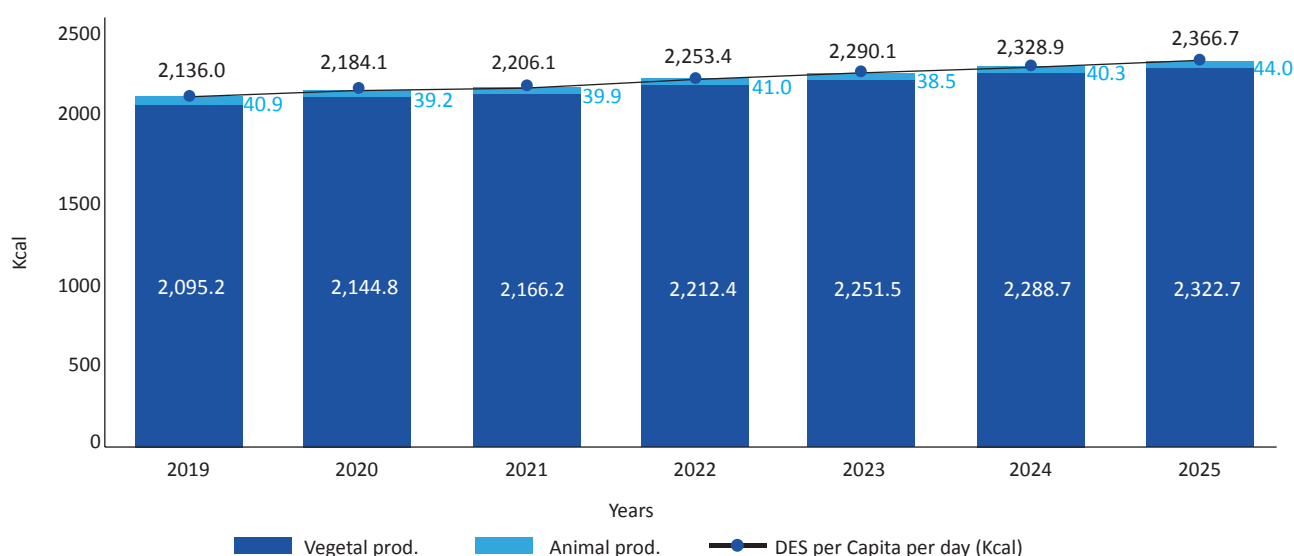
| Main animal groups      | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | Contr |
|-------------------------|------|------|------|------|------|------|------|-------|
| Meat                    | 3.4  | 3.3  | 3.2  | 2.9  | 2.6  | 2.5  | 2.6  | 15%   |
| Offals                  | 0.6  | 0.5  | 0.5  | 0.5  | 0.4  | 0.4  | 0.4  | 2%    |
| Animal fats             | 0.1  | 0.1  | 0.1  | 7.6  | 2.9  | 1.1  | 0.3  | 2%    |
| Milk - Excluding Butter | 7.8  | 8.1  | 7.9  | 8.9  | 8.5  | 10.9 | 11.3 | 66%   |
| Eggs                    | 0.3  | 0.4  | 0.4  | 0.4  | 0.2  | 0.2  | 0.3  | 2%    |
| Fish & seafood          | 1.8  | 1.5  | 1.5  | 1.6  | 2.1  | 2.0  | 2.2  | 13%   |

Source: NISR, FBS 2025

## 2.2. Dietary Energy Supply (DES) per capita per day (Kcal)

The Dietary Energy Supply, measured in Kcal/cap/day, is a national indicator that provides an estimate of the number of calories available for human consumption from food. The findings in Figure 1 show a total estimated supply of 2,366.7 Kcal/cap/day in 2025, representing a slight increase from the 2,328.9 Kcal/cap/day supply recorded in 2024.

**Figure 1: Dietary Energy Supply per Capita per Day (Kcal)**



Source: NISR, FBS 2025

In 2025, the Dietary Energy Supply (DES) per capita per day was predominantly derived from vegetal (plant-based) sources. Of the total DES, 2,322.7 Kcal/cap/day was derived from vegetal products, accounting for 98.1 % of the total calories. Within this category, cereals (excluding beer) and starchy roots make the highest contributions, providing 732.9 kcal/cap/day and 644.1 kcal/cap/day, respectively. On the other side, animal products contributed 44.0 Kcal/cap/day with milk, meat, and fish being the main contributors. Overall, these findings indicate a diet heavily reliant on staple plant-based foods and characterized by limited contributions from animal-source foods, which may have implications for dietary diversity and nutritional quality, as highlighted in Table 3.

**Table 3: Dietary Energy Supply per Capita per Day (Kcal) by commodity group**

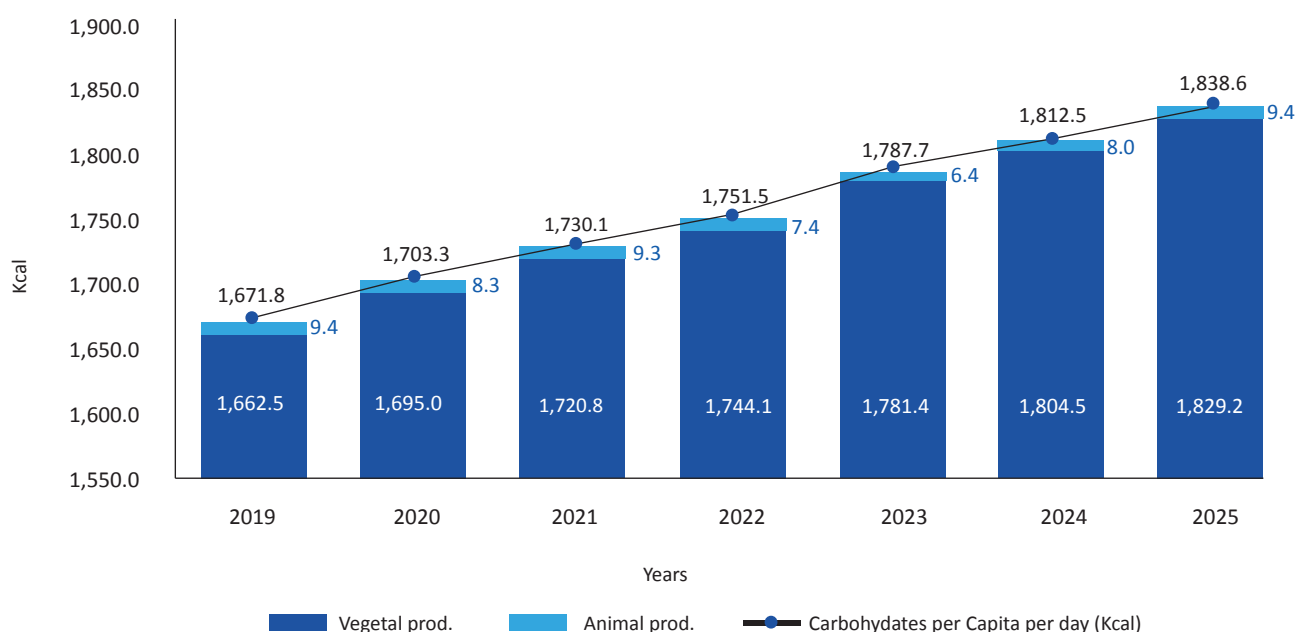
| Main Vegetal commodity groups | 2025  | 2024  | Main Animal products    | 2025 | 2024 |
|-------------------------------|-------|-------|-------------------------|------|------|
| Cereals (excl. beer)          | 732.9 | 707.0 | Milk - Excluding Butter | 19.0 | 18.0 |
| Starchy roots                 | 644.1 | 649.1 | Meat                    | 13.0 | 12.0 |
| Pulses                        | 281.6 | 284.6 | Fish & sea food         | 8.1  | 6.3  |
| Fruits (Excluding Wine)       | 188.7 | 189.7 | Eggs                    | 1.0  | 1.0  |
| Sugar & Sweeteners            | 147.8 | 144.8 |                         |      |      |
| Vegetable oils                | 144.8 | 136.8 |                         |      |      |
| Alcoholic beverages           | 63.9  | 63.9  |                         |      |      |
| Oil crops                     | 64.9  | 60.9  |                         |      |      |
| Vegetables                    | 23.0  | 22.0  |                         |      |      |
| Stimulants                    | 13.0  | 13.0  |                         |      |      |
| Spices                        | 9.0   | 8.0   |                         |      |      |

**Source: NISR, FBS 2025**

## 2.3. Daily per capita supply of calories from carbohydrates (Kcal)

In 2025, the average daily per capita supply of calories from carbohydrates rose to 1,838.6 kcal, up from 1,812.5 kcal in 2024. Plant-based products remained the dominant source, accounting for 99.5 % of total carbohydrate derived calories, while animal products contributed 9.4 kcal per person per day. This pattern reflects Rwanda's continued reliance on plant-based staples as a primary source of dietary energy.

**Figure 2: Per capita daily supply of carbohydrates**



Source: NISR, FBS 2025

**Table 4: Contribution of vegetal and animal groups to supply of carbohydrates (Kcal)**

| Main vegetal products   | 2024  | 2025  | Main animal products    | 2024 | 2025 |
|-------------------------|-------|-------|-------------------------|------|------|
| Starchy roots           | 608.9 | 612.4 | Milk - Excluding Butter | 4.8  | 5.4  |
| Cereals (excl. beer)    | 583.3 | 606.0 | Fish & sea food         | 0.4  | 0.5  |
| Pulses                  | 201.9 | 200.9 | Animal fats             | 2.0  | 2.0  |
| Fruits (Excluding Wine) | 168.8 | 167.3 | Offals                  | 1.0  | 1.0  |
| Sugar & Sweeteners      | 144.8 | 147.8 | Eggs                    | 1.0  | 1.0  |
| Alcoholic beverages     | 63.9  | 63.9  |                         |      |      |
| Oil crops               | 8.3   | 10.8  |                         |      |      |
| Vegetables              | 18.1  | 19.0  |                         |      |      |
| Stimulants              | 1.4   | 1.1   |                         |      |      |
| Spices                  | 8.0   | 9.0   |                         |      |      |
| Sugar crops             | 1.0   | 1.0   |                         |      |      |

Source: NISR, FBS 2025

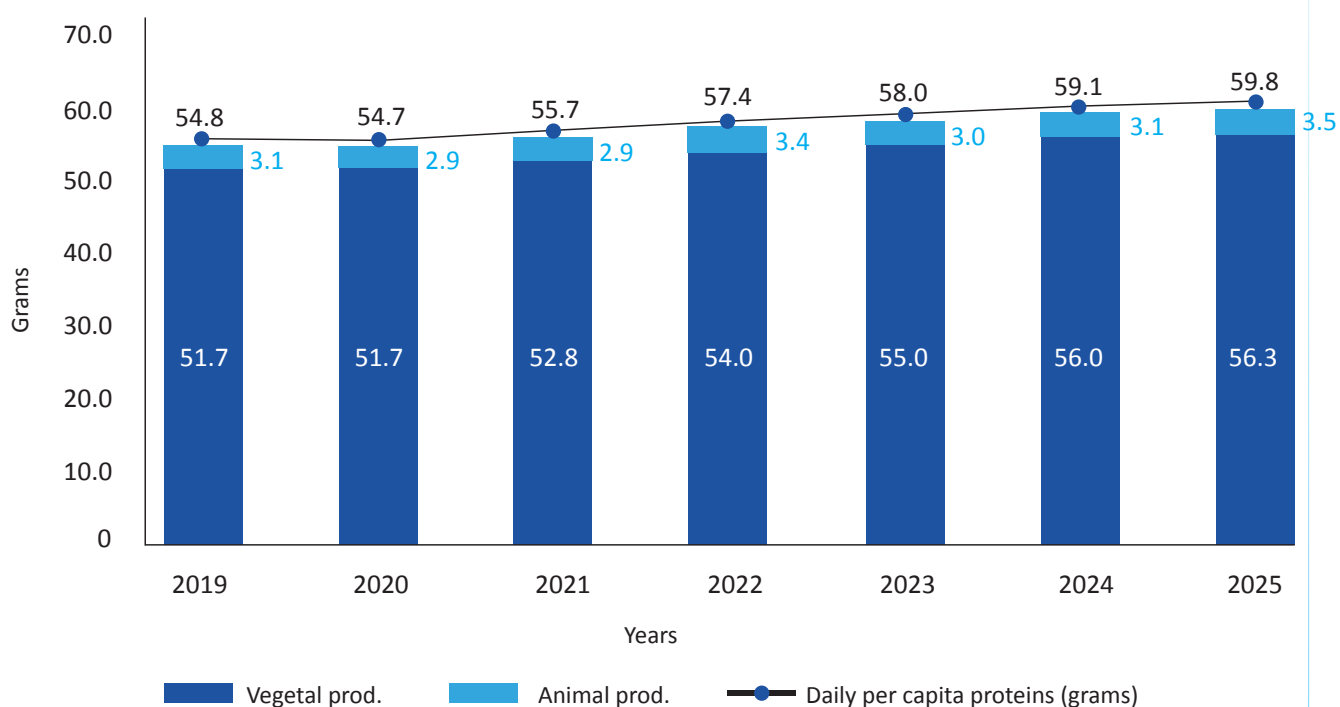
The main contributors to carbohydrate daily per capita supply of calories from vegetal sources are starchy roots and cereals (excluding beer), which provide 612.4 Kcal and 606.0 Kcal per capita per day, respectively. These two food groups form the foundation of carbohydrate intake, reflecting a strong reliance on staple crops, such as cassava, sweet potatoes, and maize or rice for energy needs.

On the animal side, the contribution to carbohydrate supply remains minimal. Milk products (excluding butter) provide only 5.4 Kcal per capita per day.

## 2.4.Daily per capita supply of proteins (grams)

In 2025, Rwanda's average daily per capita protein supply reached 59.8 grams, representing a 1.2 % increase compared with 2024. Plant-based products remained the predominant source, contributing approximately 94.2 % of total protein supply. This figure underscores the continued reliance on crops rather than animal products to meet the population's protein needs.

**Figure 3: Per capita daily supply of proteins**



Source: NISR, FBS 2025

**Table 5: Contribution of vegetal and animal groups to supply of proteins (grams)**

| Main vegetal products   | 2025 | 2024 | Main animal products    | 2025 | 2024 |
|-------------------------|------|------|-------------------------|------|------|
| Cereals (excl. beer)    | 19.8 | 19.3 | Meat                    | 1.0  | 1.0  |
| Starchy roots           | 7.9  | 7.7  | Milk - Excluding Butter | 1.0  | 1.0  |
| Pulses                  | 17.8 | 18.4 | Fish & sea food         | 1.5  | 1.1  |
| Oil crops               | 4.0  | 3.9  |                         |      |      |
| Vegetables              | 1.0  | 1.0  |                         |      |      |
| Fruits (Excluding Wine) | 3.0  | 2.9  |                         |      |      |
| Stimulants              | 3.0  | 2.9  |                         |      |      |

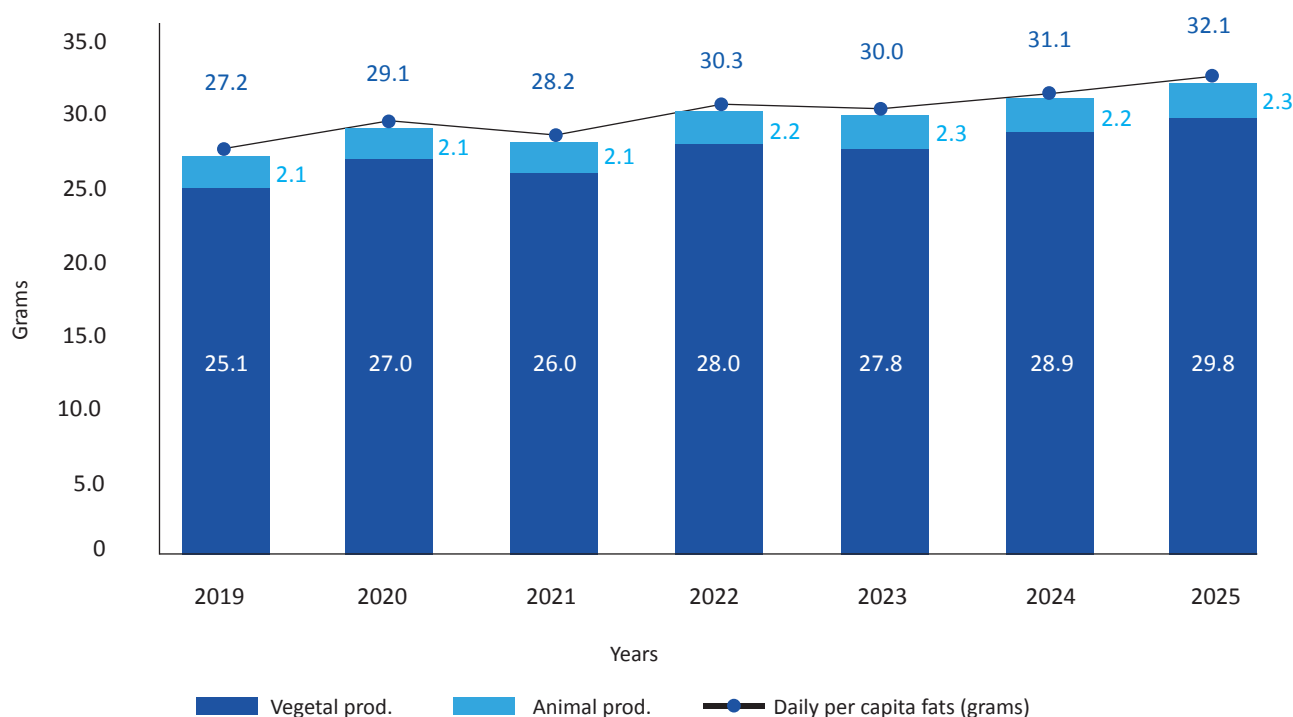
Source: NISR, FBS 2025

In 2025, cereals (19.8 g) and pulses (17.8 g) were the main sources of daily per capita protein among plant-based foods. In contrast, the contribution of animal-based protein remained very low, reflecting its limited availability for consumption within the country.

## 2.5. Daily per capita fats (grams)

In 2025, fat availability in Rwanda edged up, reaching 32.1 grams per person per day, a 3 % rise compared with 2024. Plant-based sources remained the predominant supplier, accounting for 92.8 % of the total. Within this category, vegetable oils (18.1 grams) and cereals (5.3 grams) emerged as the two largest contributors to the country's dietary fat intake.

**Figure 4: Per capita daily supply of fats (grams)**



Source: NISR, FBS 2025

**Table 6: Contribution of vegetal and animal groups to supply of fats (grams)**

| Main vegetal products   | 2025 | 2024 | Main animal products    | 2025 | 2024 |
|-------------------------|------|------|-------------------------|------|------|
| Cereals (excl. beer)    | 5.3  | 5.2  | Meat                    | 1.1  | 1.0  |
| Starchy roots           | 0.0  | 1.0  | Milk - Excluding Butter | 1.1  | 1.0  |
| Pulses                  | 1.1  | 1.0  | Fish & sea food         | 0.2  | 0.2  |
| Oil crops               | 4.3  | 4.1  |                         |      |      |
| Vegetable oils          | 18.1 | 16.5 |                         |      |      |
| Fruits (Excluding Wine) | 1.1  | 1.0  |                         |      |      |

Source: NISR, FBS 2025

Under the Dietary Reference Intakes (DRIs) established by the US Institute of Medicine in 2006<sup>2</sup>, the Acceptable Macronutrient Distribution Range (AMDR) sets out the share of total energy intake that should be derived from carbohydrates, proteins, and fats. These ranges are designed to ensure that individuals receive enough amounts of each essential nutrient while minimizing the risk of chronic disease. For a diet to be considered healthy and balanced, the energy contributed by each macronutrient within the Dietary Energy Supply (DES) should fall within these recommended bounds. It is important to note that these ranges may vary somewhat depending on factors such as age, population size, and other demographic factors.

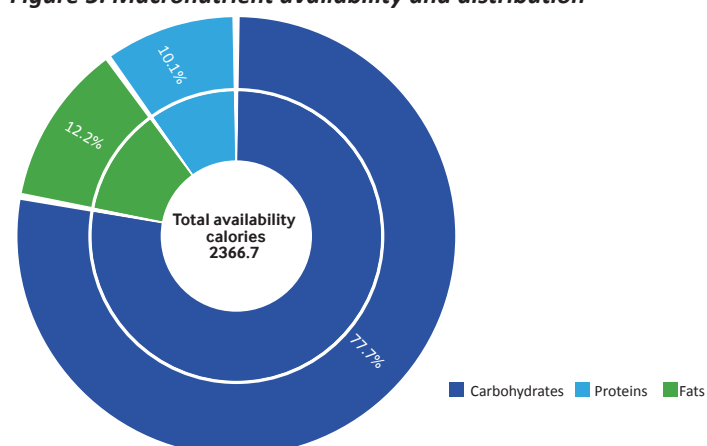
Applying this framework to Rwanda, Table 7 compares the recommended macronutrient ranges with the actual contributions of carbohydrates, proteins, and fats to the country's total DES. Carbohydrates account for 77.8 % of total energy supply, well above the acceptable range of 45–65 %, indicating a diet that relies heavily on carbohydrate-rich staples. Protein performs more favorably, contributing 10.1 % of total energy, which falls comfortably within the recommended 9.6–32 % range and suggests that the population's protein needs are broadly being met. Fat, however, presents a different picture: at just 12.0 % of total energy, it remains below the recommended 22.6–35.4 % range, revealing a notable gap in dietary fat availability that deserves attention in future planning.

**Table 7: Acceptable macronutrient distribution range and their contribution**

| Indicator                      | Carbohydrates |      | Proteins |      | Fats  |      | Total   |
|--------------------------------|---------------|------|----------|------|-------|------|---------|
|                                | min           | Max  | min      | max  | min   | max  |         |
| Accepted average ranges (%)    | 45.0          | 65.0 | 9.6      | 32.1 | 22.6  | 35.4 |         |
| Available Kcal                 | 1838.6        |      | 239.2    |      | 289.0 |      | 2,366.7 |
| Macronutrient contribution (%) | 77.7          |      | 10.1     |      | 12.2  |      | 100     |

Source: NISR, FBS 2025

**Figure 5: Macronutrient availability and distribution**



Source: NISR, FBS 2025

<sup>2</sup> Institute of Medicine. 2006. Dietary Reference Intakes: The Essential Guide to Nutrient Requirements. Washington, DC: The National Academies Press. <https://doi.org/10.17226/11537>.

### 3.1.Daily per capita of minerals and Vitamins

Since Rwanda's Food Composition Table (FCT) is still under development, the 2008 Tanzanian FCT<sup>3</sup> was used as a proxy to estimate the micronutrient content of available foods. This approach was justified for two main reasons: first, Rwanda and Tanzania share a common border and engage in significant trade of numerous food commodities; second, the food consumption patterns in both countries are largely similar.

To assess dietary adequacy, average recommended intake levels were derived from the Dietary Reference Intakes (DRIs) established by the Institute of Medicine of the United States of America in 2006.

Table 8 presents the estimated availability of key minerals and vitamins in the national food supply, highlighting the contributions from both plant-based and animal-derived products. These estimates are also compared against the average daily requirements recommended for the Rwandan population.

The results show that, for several micronutrients including iron, magnesium, phosphorus, vitamin A (RE<sup>4</sup>), vitamin B9 (folate), and vitamin C, the available dietary supply exceeds the average recommended daily intake. For example, estimated iron availability stands at 15.8 milligrams per person per day, compared to a requirement of 11 milligrams, while vitamin B9 is available at 389.7 micrograms per person per day, surpassing the recommended level of 334.5 micrograms per person per day.

However, for other nutrients, particularly calcium, the available supply remains significantly below recommended levels. Current calcium availability is estimated at only 246.2 milligrams per person per day, while the average recommended intake is 1,008.3 milligrams, indicating a substantial dietary gap.

3 Lukmanji Z., Hertzmark E., Mlingi N., Assey V., Ndossi G., Fawzi W., Tanzania food composition Tables. MUHAS- TFNC, HSPH, Dar es Salaam Tanzania-2008

4 Retinol Equivalent (RE) is a measurement used to express the vitamin A activity of different types of compounds, including retinol (vitamin A itself), beta-carotene, and other provitamin A carotenoids. Since different forms of vitamin A have varying potencies, the retinol equivalent provides a standardized way to compare the activity of these compounds in the body.

**Table 8: Minerals and vitamins availability and average recommended level (per capita per day)**

| Category | Element                      | Unit   | Vegetal prod. | Animal prod. | Grand total | Average recommended / adequate level |
|----------|------------------------------|--------|---------------|--------------|-------------|--------------------------------------|
| Minerals | Calcium                      | mg     | 213.0         | 33.2         | 246.2       | 1,008.3                              |
|          | Iron                         | mg     | 15.7          | 0.1          | 15.8        | 11.0                                 |
|          | Magnesium                    | mg     | 316.7         | 8.5          | 325.2       | 291.1                                |
|          | Phosphorus                   | mg     | 891.5         | 42.2         | 933.7       | 784.8                                |
|          | Potassium                    | mg     | 3,508.6       | 69.6         | 3,578.2     | 4,322.7                              |
|          | Zinc                         | mg     | 6.3           | 0.2          | 6.5         | 8.1                                  |
|          | Copper                       | mg     | 2.1           | 0.0          | 2.1         | 0.8                                  |
|          | Sodium                       | mg     | 110.0         | 16.7         | 126.6       | 1.4                                  |
|          | Manganese                    | mg     | 15.0          | 0.0          | 15.0        | 1.8                                  |
| Vitamins | Vitamin A RE                 | µ g RE | 813.6         | 15.4         | 829.0       | 666.3                                |
|          | Vitamin B1/ Thiamine         | mg     | 1.3           | 0.0          | 1.3         | 1.0                                  |
|          | Vitamin B2/ Riboflavin       | mg     | 1.4           | 0.1          | 1.5         | 1.0                                  |
|          | Vitamin B3/ Niacin           | mg     | 13.9          | 0.4          | 14.3        | 12.7                                 |
|          | Vitamin B5/ Pantothenic Acid | mg     | 4.3           | 0.1          | 4.5         | 4.3                                  |
|          | Vitamin B6                   | mg     | 2.8           | 0.0          | 2.8         | 1.1                                  |
|          | Vitamin B9/ Folate           | µ g    | 387.2         | 2.6          | 389.7       | 334.5                                |
|          | Vitamin B12                  | µ g    | 0.0           | 0.2          | 0.2         | 2.0                                  |
|          | Vitamin C                    | mg     | 147.1         | 0.1          | 147.3       | 62.3                                 |
|          | Vitamin D                    | µ g    | -             | 0.7          | 0.7         | 5.7                                  |
|          | Vitamin E                    | µ g    | 12.8          | 0.1          | 12.9        | 12.5                                 |

**Source: NISR, FBS 2025**

Table 9 illustrates the per-person daily intake of essential minerals, disaggregated by food commodity group. Among these, starchy roots emerge as the primary source of calcium, contributing 130.1 milligrams, followed by milk at 29.7 milligrams, and Cereals at 21.0 milligrams. Notably, although milk is widely recognized as a rich source of calcium, its low contribution reflects the limited consumption levels within the diet.

Cereals are the primary contributors to both magnesium and phosphorus, supplying 195.5 mg and 365.5 mg per person per day, respectively, highlighting their central role as a staple food group in the Rwandan diet. Furthermore, starchy roots contribute significantly to phosphorus intake (275.6 mg) and constitute the leading source of potassium, providing 1,730.0 mg per person per day, a value considerably higher than that of any other food group. Fruits, especially bananas and plantains, follow with 942.4 mg of potassium.

With regard to iron, starchy roots again lead, contributing per person per day intake of 6.8 mg, followed by cereals with 5.3 mg, reflecting their importance in meeting iron intake requirements. Conversely, animal products, including meat, milk, and fish, make only minimal contributions to most mineral intakes, underlining the limited role of animal-source foods in the average Rwandan diet.

**Table 9: Contribution of main Commodity group in minerals**

|                         | Calcium | Iron | Magnesium | Phosphorus | Potassium | Zinc | Copper | Sodium | Manganese |
|-------------------------|---------|------|-----------|------------|-----------|------|--------|--------|-----------|
| Commodity group         | mg      | mg   | mg        | mg         | mg        | mg   | mg     | mg     | mg        |
| Cereals (excl. beer)    | 21.0    | 5.3  | 195.5     | 365.5      | 371.3     | 2.7  | 0.4    | 36.9   | 2.5       |
| Starchy roots           | 130.1   | 6.8  | 94.6      | 275.6      | 1,730.0   | 1.6  | 1.0    | 42.9   | 10.9      |
| Sugar crops             | 0.3     | 0.0  | 0.1       | 0.1        | 1.1       | -    | 0.0    | 0.1    | 0.0       |
| Sugar & Sweeteners      | 0.4     | 0.0  | 0.0       | 0.7        | 0.9       | 0.0  | 0.0    | 0.4    | 0.0       |
| Pulses                  | 20.7    | 2.1  | -         | 132.3      | 238.1     | 1.1  | 0.2    | 3.4    | 0.4       |
| Oil crops               | 6.8     | 0.3  | 12.3      | 27.6       | 51.6      | 0.2  | 0.1    | 8.2    | 0.1       |
| Vegetable oils          | 0.8     | -    | -         | 1.0        | -         | -    | -      | -      | -         |
| Vegetables              | 12.5    | 0.3  | 8.0       | 17.7       | 144.7     | 0.1  | 0.0    | 10.2   | 0.1       |
| Fruits (Excluding Wine) | 15.0    | 0.8  | -         | 58.3       | 942.4     | 0.5  | 0.3    | 2.7    | 0.9       |
| Spices                  | 0.4     | 0.0  | 0.2       | 0.7        | 3.3       | 0.0  | 0.0    | 0.1    | 0.0       |
| Alcoholic beverages     | 5.0     | 0.0  | 6.0       | 12.1       | 25.3      | 0.0  | 0.0    | 5.0    | 0.0       |
| Meat                    | 0.2     | 0.0  | 0.4       | 3.1        | 4.5       | 0.1  | 0.0    | 2.5    | 0.0       |
| Milk - Excluding Butter | 29.7    | 0.0  | 2.8       | 23.7       | 36.0      | 0.1  | 0.0    | 14.2   | -         |
| Eggs                    | 0.5     | 0.0  | 0.1       | 1.6        | 1.1       | 0.0  | -      | -      | -         |
| Fish & seafood          | 2.9     | 0.1  | 5.2       | 13.8       | 27.9      | 0.0  | -      | -      | -         |

**Source: NISR, FBS 2025**

Table 10 presents the per capita daily intake of key vitamins from various food commodity groups, in Rwanda. The findings highlight the important role of vegetable oils and starchy roots in the national diet, especially in contributing to vitamin A intake. These two groups contribute 687.6 and 108.0 micrograms of retinol equivalents (RE) per person per day, respectively, thereby constituting the leading sources of this essential nutrient.

With regard to vitamin B9 (folate), pulses emerge as the most significant source, contributing 172.9 micrograms per person per day, followed by starchy roots at 105.2 micrograms. This emphasizes the critical nutritional value of commonly consumed foods, such as beans, sweet potatoes, and cassava in providing folate, a nutrient essential for cell growth and development.

In addition to their contribution to vitamin A and folate, fruits, particularly bananas and plantains, make a meaningful contribution to vitamin C intake, providing 26.7 mg per person per day, while starchy roots add a further 119.1 mg, making both groups as key sources of this antioxidant vitamin. Cereals, while primarily serving as energy providers, also contribute modestly to B- vitamin intake, including folate (B9), niacin (B3), and pantothenic acid (B5).

In contrast, the contribution of animal-source foods such as meat, milk, eggs, and fish to overall vitamin intake remains low across most vitamin categories. This reflects both the limited consumption and availability of these foods in the average Rwandan diet.

**Table 10: Contribution of main products in vitamins**

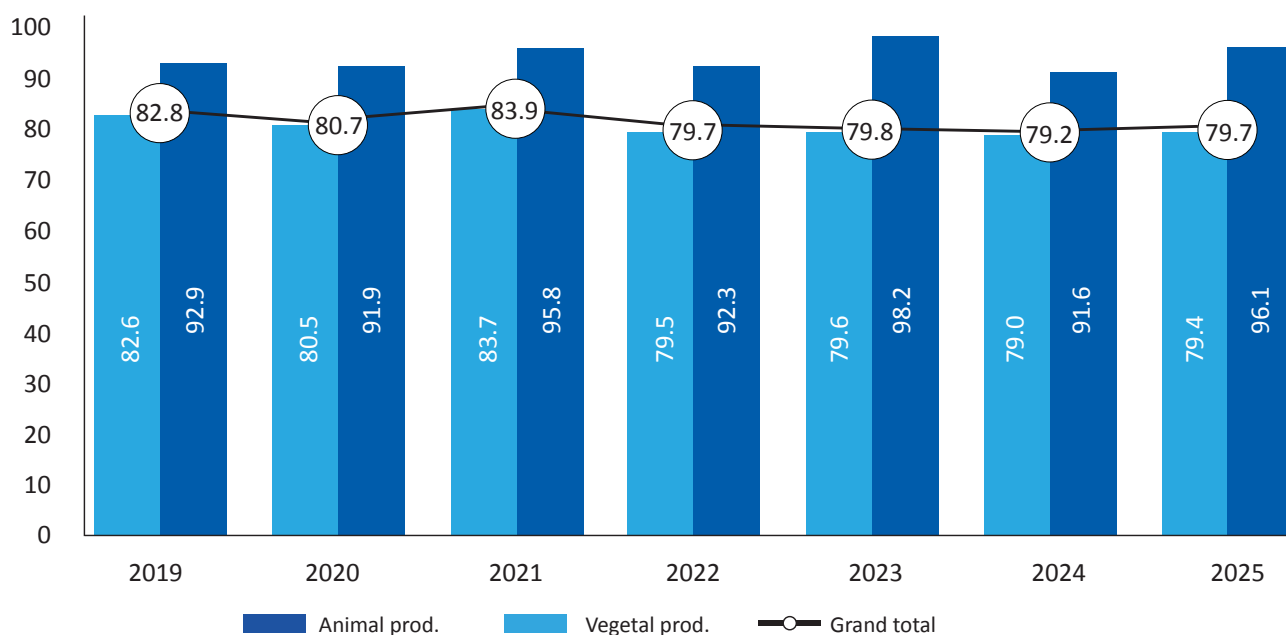
|                         | Vitamin A RE | Vitamin B1/Thiamine | Vitamin B2/Riboflavin | Vitamin B3/Niacin | Vitamin B5/Pantot | Vitamin B6 | Vitamin B9/Folate | Vitamin B12 | Vitamin C | Vitamin D | Vitamin E |
|-------------------------|--------------|---------------------|-----------------------|-------------------|-------------------|------------|-------------------|-------------|-----------|-----------|-----------|
| Commodity groups        | µ g RE       | mg                  | mg                    | mg                | mg                | mg         | µ g               | µ g         | mg        | µ g       | µ g       |
| Cereals (excl. beer)    | 2.6          | 0.6                 | 0.3                   | 6.3               | 1.3               | 0.5        | 38.8              | -           | -         | -         | 1.3       |
| Starchy roots           | 108.0        | 0.4                 | 0.8                   | 3.8               | 1.7               | 1.2        | 105.2             | -           | 119.1     | -         | 10.0      |
| Sugar crops             | -            | -                   | -                     | -                 | 0.0               | -          | -                 | -           | -         | -         | -         |
| Sugar & Sweeteners      | -            | -                   | 0.0                   | 0.0               | 0.0               | 0.0        | 0.0               | -           | 0.0       | -         | -         |
| Pulses                  | 3.9          | 0.2                 | 0.1                   | 0.5               | 0.3               | 0.1        | 172.9             | -           | 0.5       | -         | 0.0       |
| Oil crops               | 0.0          | 0.0                 | 0.0                   | 1.0               | 0.1               | 0.0        | 9.2               | -           | -         | -         | 0.7       |
| Vegetable oils          | 687.6        | 0.0                 | 0.0                   | 0.0               | 0.0               | 0.0        | 0.0               | -           | 0.0       | -         | 0.6       |
| Vegetables              | 3.0          | 0.0                 | 0.0                   | 0.0               | 0.0               | 0.0        | 0.5               | -           | 0.7       | -         | -         |
| Fruits (Excluding Wine) | 8.5          | 0.1                 | 0.2                   | 1.8               | 0.9               | 1.0        | 54.2              | -           | 26.7      | -         | 0.3       |
| Spices                  | -            | 0.0                 | 0.0                   | 0.0               | 0.0               | 0.0        | 0.3               | -           | 0.1       | -         | -         |
| Alcoholic beverages     | -            | 0.0                 | 0.0                   | 0.5               | 0.1               | 0.0        | 6.0               | 0.0         | 0.0       | -         | -         |
| Meat                    | 0.3          | 0.0                 | 0.0                   | 0.1               | 0.0               | 0.0        | 0.1               | 0.0         | 0.0       | 0.0       | -         |
| Milk - Excluding Butter | 11.0         | 0.0                 | 0.0                   | 0.0               | 0.1               | 0.0        | 1.4               | 0.1         | 0.1       | -         | 0.0       |
| Eggs                    | 1.5          | 0.0                 | 0.0                   | 0.0               | 0.0               | 0.0        | 0.4               | 0.0         | -         | 0.0       | 0.0       |
| Fish & sea food         | 2.6          | 0.0                 | 0.0                   | 0.3               | 0.0               | 0.0        | 0.7               | 0.1         | -         | 0.7       | 0.1       |

Source: NISR, FBS 2025

## 4.1. Self-Sufficiency Ratio (SSR)

The Self-Sufficiency Ratio (SSR) reflects the extent to which national food consumption is met through domestic production rather than imports. In 2025, Rwanda's overall SSR stood at 79.7 %, reflecting a modest improvement from 79.2 % in 2024. This slight upward trend suggests that domestic production kept better pace with national food demand than in the previous year. Overall, the ratio confirms that Rwanda continues to cover many of its food needs through local production. Nevertheless, the remaining gap points to a continued, though gradually narrowing, reliance on imports to fully meet the country's food requirements.

**Figure 6: Self-Sufficiency Ratio (SSR) (%)**



Source: NISR, FBS 2025

**Table 11: Self-Sufficiency Ratio (SSR) (%)**

| Products                | 2019        | 2020        | 2021        | 2022        | 2023        | 2024        | 2025        |
|-------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Grand total</b>      | <b>82.8</b> | <b>80.7</b> | <b>83.9</b> | <b>79.6</b> | <b>79.8</b> | <b>79.2</b> | <b>79.7</b> |
| <b>Vegetal prod.</b>    | <b>82.6</b> | <b>80.5</b> | <b>83.7</b> | <b>79.5</b> | <b>79.6</b> | <b>79.0</b> | <b>79.4</b> |
| <b>Animal prod.</b>     | <b>92.9</b> | <b>91.9</b> | <b>95.8</b> | <b>85.7</b> | <b>98.2</b> | <b>91.6</b> | <b>96.1</b> |
| Cereals (excl. beer)    | 70.4        | 65.9        | 72.2        | 65.7        | 65.9        | 70.1        | 64.8        |
| Starchy roots           | 102.1       | 102.9       | 104.0       | 101.1       | 98.1        | 94.7        | 101.3       |
| Sugar crops             | 100.5       | 100.1       | 100.1       | 100.2       | 100.6       | 100.9       | 100.2       |
| Sugar & Sweeteners      | 10.2        | 10.0        | 5.9         | 8.0         | 26.4        | 13.1        | 11.0        |
| Pulses                  | 106.2       | 99.5        | 101.7       | 99.4        | 92.7        | 97.6        | 95.1        |
| Treenuts                | -           | -           | -           | -           | -           | 0.0         | 0.0         |
| Oil crops               | 54.5        | 47.4        | 52.8        | 49.5        | 39.5        | 47.0        | 36.4        |
| Vegetable oils          | -           | -           | -           | -           | 2.4         | 13.6        | 7.0         |
| Vegetables              | 100.8       | 100.0       | 101.9       | 100.7       | 92.1        | 107.6       | 97.0        |
| Fruits (Excluding Wine) | 99.6        | 99.8        | 99.6        | 99.7        | 99.1        | 99.3        | 99.0        |
| Stimulants              | 148.7       | 139.9       | 137.6       | 115.2       | 115.6       | 114.0       | 120.5       |
| Spices                  | 73.5        | 50.6        | 54.8        | 46.8        | 43.5        | 48.5        | 58.0        |
| Alcoholic beverages     | 98.5        | 98.3        | 97.8        | 96.1        | 94.3        | 95.8        | 99.5        |
| Meat                    | 104.6       | 101.4       | 102.5       | 106.0       | 110.0       | 118.4       | 109.0       |
| Offals                  | 100.0       | 101.2       | 101.0       | 103.6       | 103.3       | 103.7       | 102.3       |
| Animal fats             | 100.0       | 100.0       | 101.9       | 1.2         | 3.0         | 8.1         | 22.4        |
| Milk - Excluding Butter | 81.3        | 86.4        | 91.8        | 87.5        | 96.9        | 75.2        | 84.3        |
| Eggs                    | 130.8       | 117.2       | 129.4       | 110.1       | 224.7       | 217.4       | 135.4       |
| Fish & sea food         | 28.3        | 28.1        | 34.4        | 23.3        | 25.8        | 37.6        | 28.6        |

Source: NISR, FBS 2025

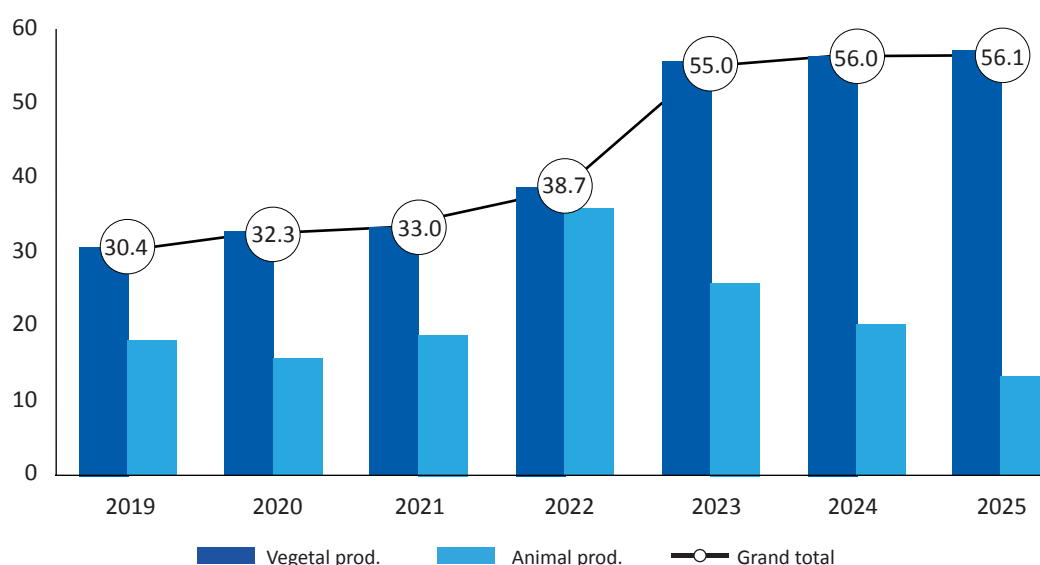
The results show that vegetal products recorded a self-sufficiency ratio of 79.4 % in 2025, up from 79.0 % in 2024, pointing to relatively strong domestic production within this category. Key crops, including starchy roots, sugar crops, and stimulants all maintained notably high self-sufficiency levels, each exceeding 90 %.

Animal-based products performed even better, posting a notably high SSR of 96.1 %, representing a five-percentage-point increase over the previous year. This improvement was largely driven by strong domestic production of meat, eggs, and offal, which recorded ratios of 109.0%, 135.4%, and 102.3 %, respectively. Fish and seafood constituted a clear exception, with a substantially lower ratio of 28.6 %, reflecting a continued heavy reliance on imports to meet demand. Collectively, these figures highlight the central role of domestic agricultural production in sustaining Rwanda's food supply, particularly for staple foods.

## 4.2.Import Dependency Ratio (IDR)

The Import Dependency Ratio (IDR) measures the share of national food consumption that is supplied through imports. In 2025, Rwanda's overall IDR stood at 56.1 %, indicating that more than half of the food consumed nationally was imported. This figure reflects a slight increase from 56.0 % in 2024 and underscores a continued reliance on external markets to meet domestic food demand.

**Figure 7: Import Dependency Ratio (%)**



**Source: NISR, FBS 2025**

**Table 12: Import Dependency Ratio (%)**

| Products                | 2019        | 2020        | 2021        | 2022        | 2023        | 2024        | 2025        |
|-------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Grand total</b>      | <b>30.4</b> | <b>32.3</b> | <b>33.0</b> | <b>38.7</b> | <b>55.0</b> | <b>56.0</b> | <b>56.1</b> |
| <b>Vegetal prod.</b>    | <b>30.6</b> | <b>32.5</b> | <b>33.2</b> | <b>38.7</b> | <b>55.4</b> | <b>56.5</b> | <b>56.9</b> |
| <b>Animal prod.</b>     | <b>18.1</b> | <b>15.6</b> | <b>18.6</b> | <b>35.7</b> | <b>25.7</b> | <b>20.1</b> | <b>13.0</b> |
| Cereals (excl. beer)    | 48.2        | 54.6        | 51.3        | 69.9        | 108.0       | 100.8       | 79.6        |
| Starchy roots           | 2.2         | 2.4         | 1.7         | 2.6         | 6.7         | 11.0        | 8.7         |
| Sugar crops             | -           | -           | -           | -           | -           | 0.0         | 0.0         |
| Sugar & Sweeteners      | 128.7       | 111.0       | 126.4       | 156.2       | 134.9       | 198.2       | 102.2       |
| Pulses                  | 6.0         | 5.8         | 4.7         | 3.8         | 8.7         | 3.6         | 6.1         |
| Treenuts                | -           | 238.1       | 134.6       | 128.5       | 112.9       | 179.0       | 112.5       |
| Oil crops               | 47.2        | 55.0        | 52.2        | 53.1        | 51.5        | 64.9        | 47.0        |
| Vegetable oils          | 174.5       | 183.5       | 191.6       | 176.1       | 260.0       | 216.3       | 210.0       |
| Vegetables              | 1.0         | 0.7         | 1.7         | 7.6         | 17.9        | 26.5        | 22.6        |
| Fruits (Excluding Wine) | 0.7         | 0.5         | 0.9         | 1.2         | 1.9         | 3.3         | 2.0         |
| Stimulants              | 3.1         | 1.2         | 8.6         | 5.1         | 4.6         | 2.3         | 1.8         |
| Spices                  | 32.3        | 60.8        | 53.9        | 65.9        | 66.3        | 62.1        | 54.6        |
| Alcoholic beverages     | 2.7         | 2.7         | 4.0         | 8.1         | 9.6         | 14.1        | 12.0        |
| Meat                    | 2.1         | 1.4         | 5.7         | 11.0        | 8.9         | 9.3         | 8.2         |
| Offals                  | -           | -           | -           | -           | -           | 0.0         | 0.0         |
| Animal fats             | -           | -           | -           | 99.6        | -           | 94.3        | 80.2        |
| Milk - Excluding Butter | 34.3        | 27.3        | 34.1        | 37.3        | 28.9        | 24.0        | 11.4        |
| Eggs                    | -           | -           | -           | -           | -           | 0.0         | 0.0         |
| Fish & seafood          | 71.6        | 77.2        | 66.5        | 139.8       | 106.9       | 89.2        | 81.0        |

**Source: NISR, FBS 2025**

The FBS data further reveal a clear disparity across food categories: plant-based products recorded an IDR of 56.9 % in 2025, considerably higher than the 13.0 % observed for animal-based products. This rising dependency is largely attributable to increased imports of essential commodities, including sugar, vegetable oils, and fish and seafood. Sugar and sweeteners, treenuts, and vegetable oils recorded IDRs of 102.2 percent, 112.5 percent, and 210.0 percent, respectively, in 2025, highlighting Rwanda's high dependence on imports for these products. The high import dependency for sugar and sweeteners and vegetable oils is largely associated with their limited domestic production, which was below 15 percent, as indicated by the corresponding SSR values in the table above. The IDRs above 100 percent for sugar and sweeteners, vegetable oils, and treenuts indicate that imports exceeded domestic utilization. These high ratios may also reflect quantities that were exported or re-exported, added to stocks, or allocated to other uses.

The Self-Sufficiency Ratio (SSR) and the Import Dependency Ratio (IDR) are complementary indicators that, taken together, provide a comprehensive picture of Rwanda's food security landscape. The SSR indicates the proportion of domestic production in relation to domestic utilization, while the IDR shows the share of imports within domestic utilization. However, both domestically produced and imported food may not be entirely retained for domestic use, as part of these quantities may be exported or re-exported, added to stocks, or allocated to other uses. Consequently, SSR and IDR values may exceed or fall below 100 percent, depending on the relative levels of production, imports, exports, and changes in stocks. These overlaps

highlight the complexity of the food system, where domestic production and imports contribute to food availability while exports, re-exports, stock changes, and other uses also influence the quantities ultimately available for domestic utilization.

The Self-Sufficiency Ratio (SSR) compares the magnitude of a country's agricultural production to its domestic utilization. It is calculated by the formula:

$$SSR = \frac{P}{P+I-X-\Delta Stock} \times 100.$$

The Import Dependency Ratio (IDR), compares the magnitude of a country's imports to its domestic utilization. It is calculated by the formula:

$$IDR = \frac{I}{P+I-X-\Delta Stock} \times 100.$$

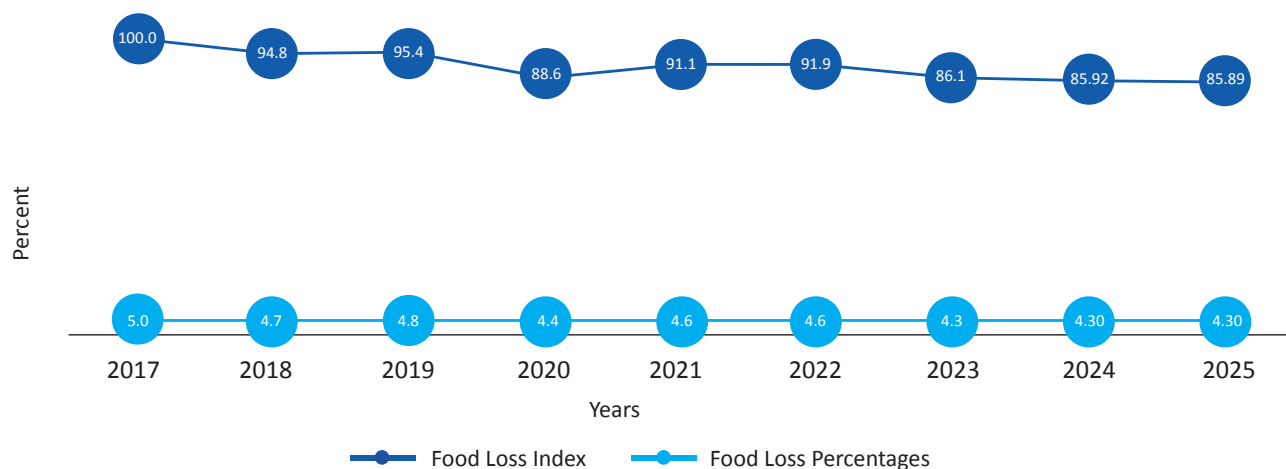
Where P is production, I is imports, X is exports, and  $\Delta$ Stock represents changes in stock levels.

It is important to note that the sum of SSR and IDR may not always equal 100%. This is because part of the production and import might be exported or stored, meaning the country could still need to import more than the remaining amounts to meet domestic utilization.

The Food Loss Index (FLI), corresponding to SDG Indicator 12.3.1, is used to monitor progress toward Sustainable Development Goal (SDG) Target 12.3: "By 2030, halve per capita global food waste at the retail and consumer levels, and reduce food losses along production and supply chains, including post-harvest losses." The FLI tracks changes in food losses over time for a selected basket of key commodities within a country's food system.

The FLI uses a baseline value of 100 for the year 2017 and measures how food losses evolve from this baseline, focusing specifically on losses that occur along the production and supply chain prior to reaching the retail level. The index enables policymakers to identify both positive and negative trends in food losses, thereby helping to improve the efficiency of food systems and reduce waste.

**Figure 6: Food Loss Index**



Source: NISR, FBS 2025

**Table 13: FLP (%) of basket commodities**

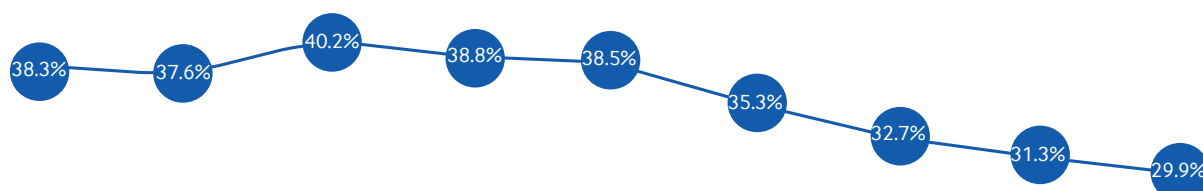
| Commodity                    | group                               | 2024         | 2025         | Percentage change |
|------------------------------|-------------------------------------|--------------|--------------|-------------------|
| Raw milk of cattle           | Animal products                     | 4.99         | 5.00         | 0.1%              |
| Beans, dry                   | Cereals and Pulses                  | 1.50         | 1.50         | 0.0%              |
| Wheat and meslin flour       | Cereals and Pulses                  | 4.02         | 4.00         | -0.4%             |
| Maize (corn)                 | Cereals and Pulses                  | 5.00         | 5.00         | 0.0%              |
| Rice                         | Cereals and Pulses                  | 5.00         | 5.00         | 0.0%              |
| Wheat                        | Cereals and Pulses                  | 2.00         | 2.00         | 0.0%              |
| Plantains and others         | Fruits and Vegetables               | 9.00         | 9.00         | 0.0%              |
| Cassava, fresh               | Roots, tubers and Oil bearing crops | 3.00         | 3.00         | 0.0%              |
| Sweet potatoes               | Roots, tubers and Oil bearing crops | 6.10         | 6.10         | 0.0%              |
| Potatoes                     | Roots, tubers and Oil bearing crops | 4.00         | 4.00         | 0.0%              |
| <b>Food Loss Percentages</b> |                                     | <b>4.30</b>  | <b>4.30</b>  | <b>-0.04%</b>     |
| <b>Food Loss Index</b>       |                                     | <b>85.92</b> | <b>85.89</b> | <b>-0.04%</b>     |

Source: NISR, FBS 2025

In Rwanda, the Food Balance Sheet estimated the Food Loss Percentage (FLP) at an average of 4.30 % in 2025, remaining stable compared to 2024, as shown in Figure 5. This indicates that 4.3 % of key commodities were lost before reaching the retail stage. Correspondingly, the FLI declined from its baseline value of 100% in 2017 to 85.89% in 2025, representing 14.1% of food loss since the base year, and a reduction of 0.1 index points compared to 2024. The decrease was mainly driven by reduced losses in specific commodities, particularly wheat flour.

The Prevalence of Undernourishment (PoU) measures the proportion of the population whose habitual food consumption is insufficient to meet the Minimum Dietary Energy Requirement (MDER) necessary for maintaining a normal, active, and healthy life. Individuals are classified as undernourished when their daily dietary intake consistently falls below this threshold.

**Figure 6: Prevalence of Undernourishment trend**



| 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|------|------|------|------|------|------|------|------|------|
|------|------|------|------|------|------|------|------|------|

Source: NISR, FBS 2025

In 2025, the Minimum Dietary Energy Requirement for Rwanda was estimated at 1,814 kilocalories per person per day. Based on this benchmark, approximately 29.9 % of the population was found to be undernourished, corresponding to about 4.1 million people experiencing insufficient caloric intake to sustain a healthy lifestyle.

Recent trends indicate a gradual decline in the prevalence of undernourishment. As presented in Table 14, the PoU has decreased from 40.2 % in 2019 to 29.9 % in 2025, reflecting progress in improving food access and nutritional outcomes. Similarly, the number of undernourished individuals has steadily declined from 5 million in 2019 to 4.1 million in 2025, signaling modest but meaningful improvements in national food security.

**Table 14: Prevalence of Undernourishment**

|                                   | 2017  | 2018  | 2019  | 2020  | 2021  | 2022  | 2023  | 2024  | 2025  |
|-----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PoU                               | 38.3% | 37.6% | 40.2% | 38.8% | 38.5% | 35.3% | 32.7% | 31.3% | 29.9% |
| Undernourished pop. (in millions) | 4.5   | 4.6   | 5.0   | 4.9   | 5.0   | 4.7   | 4.4   | 4.3   | 4.1   |
| MDER                              | 1,792 | 1,796 | 1,800 | 1,804 | 1,807 | 1,805 | 1,808 | 1,811 | 1,814 |

Source: NISR, FBS 2025

The analysis of Rwanda's Food Balance Sheets highlights the central role of plant-based products in meeting the population's nutritional needs, contributing significantly to daily energy, protein, fat, vitamin, and mineral intakes. Compared to the previous year, the supply of these nutrients has shown modest improvement, while undernourishment continues its gradual decline. Clear signs that Rwanda's food and nutrition security efforts are paying off.

Results point to a food system that remains narrowly balanced and structurally fragile. Although Rwanda demonstrates a relatively strong level of food self-sufficiency, domestic consumption continues to depend considerably on imports, and local production has yet to fully bridge the gap. Furthermore, the diet remains heavily reliant on a limited range of staple crops, while the contribution of animal-source foods remains insufficient to address persistent gaps in fat, protein quality, and certain micronutrients.

Three implications follow from these findings. First, the continued predominance of carbohydrates over fats and animal-source products is not simply a nutritional statistic; it reflects limited dietary diversity that leaves the population more exposed to shocks affecting staple crop supply. This highlights the need to prioritize investments in animal products, oilseeds, and fortified foods as priority

areas for future intervention. Second, the gap between food self-sufficiency and import dependence suggests that gains in domestic production have not yet translated into reduced reliance on external markets, a gap that matters for both food security and resilience to global price and supply shocks. Third, food losses along the supply chain remain an area where accelerated progress is both necessary and achievable, with strong potential to ease pressure on food availability and affordability without requiring additional production.

Taken together, these indicators show a food system that is making tangible, if gradual, progress. However, the next phase of improvement will depend less on increasing the volume of food produced or imported, and more on diversifying what is produced and consumed. Expanding access to animal-source foods, oils, and fortified products, alongside tighter post-harvest loss reduction, will be essential to ensuring that gains in food availability translate into genuine improvements in diet quality.

## **Annex: 2025 FBS detailed results**

## Annex 1: Rwanda FBS2025: Standard table

| Products                        | DOMESTIC SUPPLY (1000 MT) |         |         |                  |               | DOMESTIC UTILIZATION (1000 MT) |      |      |      |               |      | PER CAPUT SUPPLY |         |          |          | SSR   | IDR   |      |
|---------------------------------|---------------------------|---------|---------|------------------|---------------|--------------------------------|------|------|------|---------------|------|------------------|---------|----------|----------|-------|-------|------|
|                                 | Prod.                     | Imports | Exports | Stock<br>changes | Total<br>D.S. | Pro-<br>cessed                 | Loss | Feed | Seed | Other<br>Uses | Food | PER              |         |          |          |       |       |      |
|                                 |                           |         |         |                  |               |                                |      |      |      |               |      | YEAR             | PER DAY |          |          |       |       |      |
|                                 |                           |         |         |                  |               |                                |      |      |      |               |      |                  | FOOD    | Calories | Proteins |       |       | Fats |
|                                 |                           |         |         |                  |               |                                |      |      |      |               |      |                  |         |          |          |       |       |      |
| 1000 Metric Tons                |                           |         |         |                  |               |                                |      |      |      |               |      | Kg.              | units   | grams    | grams    | %     | %     |      |
| Grand total                     |                           |         |         |                  |               |                                |      |      |      |               |      |                  | 2367    | 60       | 32       | 79.7  | 56.1  |      |
| Vegetal prod.                   |                           |         |         |                  |               |                                |      |      |      |               |      |                  | 2323    | 56       | 30       | 79.4  | 56.9  |      |
| Animal prod.                    |                           |         |         |                  |               |                                |      |      |      |               |      |                  | 44      | 3        | 2        | 96.1  | 13.0  |      |
| Cereals (excl. beer)            | 940                       | 1155    | 355     | 289              | 1450          | 57                             | 83   | 17   | 18   | 0             | 1276 | 90               | 733     | 20       | 5        | 64.8  | 79.6  |      |
| Wheat and products              | 15                        | 321     | 122     | 11               | 203           | 0                              | 17   | 4    | 2    | 0             | 180  | 12.8             | 96      | 3        | 0        | 7.3   | 158.3 |      |
| Barley and products             | 0                         | 43      | 0       | 8                | 35            | 2                              | 0    | 0    | 0    | 0             | 33   | 2.3              | 19      | 1        | 0        | 0.0   | 123.9 |      |
| Maize and products              | 599                       | 244     | 85      | 159              | 598           | 1                              | 41   | 8    | 11   | 0             | 537  | 38.1             | 342     | 9        | 4        | 100.2 | 40.7  |      |
| Rye and products                | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0   | -     |      |
| Oats and products               | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0   | 105.6 |      |
| Millet and products             | 1                         | 1       | 0       | 0                | 2             | 1                              | 0    | 0    | 0    | 0             | 1    | 0.1              | 1       | 0        | 0        | 50.7  | 53.4  |      |
| Sorghum and products            | 181                       | 90      | 1       | 0                | 269           | 53                             | 8    | 4    | 4    | 0             | 200  | 14.2             | 127     | 4        | 1        | 67.1  | 33.4  |      |
| Rice & Prod (Milled Equivalent) | 143                       | 456     | 145     | 111              | 342           | 0                              | 18   | 0    | 1    | 0             | 323  | 22.9             | 148     | 3        | 0        | 41.7  | 133.2 |      |
| Cereals, Others & Products      | 2                         | 0       | 0       | 0                | 2             | 0                              | 0    | 0    | 0    | 0             | 2    | 0.1              | 1       | 0        | 0        | 101.8 | 0.0   |      |
| Starchy roots                   | 3990                      | 344     | 350     | 45               | 3938          | 0                              | 183  | 0    | 138  | -2            | 3619 | 256.5            | 644     | 8        | 0        | 101.3 | 8.7   |      |
| Potatoes and products           | 885                       | 46      | 1       | 45               | 885           | 0                              | 37   | 0    | 138  | 0             | 710  | 50.3             | 98      | 2        | 0        | 100.0 | 5.2   |      |
| Cassava and products            | 1395                      | 297     | 187     | 0                | 1505          | 0                              | 44   | 0    | 0    | -1            | 1462 | 103.6            | 281     | 2        | 0        | 92.7  | 19.7  |      |
| Sweet potatoes                  | 1350                      | 1       | 3       | 0                | 1348          | 0                              | 82   | 0    | 0    | -1            | 1266 | 89.8             | 236     | 3        | 0        | 100.2 | 0.0   |      |
| Yams                            | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0   | -     |      |
| Roots & Tubers, Other & Prod.   | 359                       | 0       | 159     | 0                | 201           | 0                              | 20   | 0    | 0    | 0             | 181  | 12.8             | 30      | 1        | 0        | 179.2 | 0.0   |      |
| Sugar crops                     | 116                       | 0       | 0       | 0                | 115           | 94                             | 0    | 0    | 0    | 0             | 22   | 1.5              | 1       | 0        | 0        | 100.2 | 0.0   |      |
| Sugar cane                      | 116                       | 0       | 0       | 0                | 115           | 94                             | 0    | 0    | 0    | 0             | 22   | 1.5              | 1       | 0        | 0        | 100.2 | 0.0   |      |
| Sugar Beets                     | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | -     | -     |      |
| Sugar & Sweeteners              | 24                        | 220     | 68      | -40              | 215           | 0                              | 0    | 0    | 0    | 0             | 215  | 15.2             | 148     | 0        | 0        | 11.0  | 102.2 |      |
| Sugar non-centrifugal           | 9                         | 9       | 6       | 0                | 12            | 0                              | 0    | 0    | 0    | 0             | 12   | 0.8              | 8       | 0        | 0        | 0.0   | 100.0 |      |
| Sugar & Prod. (raw equivalent)  | 14                        | 209     | 62      | -40              | 202           | 0                              | 0    | 0    | 0    | 0             | 202  | 14.3             | 139     | 0        | 0        | 7.0   | 103.9 |      |
| Sweeteners, other & prod.       | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0   | -     |      |

| Products                     | DOMESTIC SUPPLY (1000 MT) |         |         |                  |               | DOMESTIC UTILIZATION (1000 MT) |      |      |      |               |      | PER CAPUT SUPPLY |         |          |          |      |       |      |
|------------------------------|---------------------------|---------|---------|------------------|---------------|--------------------------------|------|------|------|---------------|------|------------------|---------|----------|----------|------|-------|------|
|                              | Prod.                     | Imports | Exports | Stock<br>changes | Total<br>D.S. | Pro-<br>cessed                 | Loss | Feed | Seed | Other<br>Uses | Food | PER              |         |          |          | SSR  | IDR   |      |
|                              |                           |         |         |                  |               |                                |      |      |      |               |      | YEAR             | PER DAY |          |          |      |       |      |
|                              |                           |         |         |                  |               |                                |      |      |      |               |      |                  | FOOD    | Calories | Proteins |      |       | Fats |
|                              |                           |         |         |                  |               |                                |      |      |      |               |      |                  |         |          |          |      |       |      |
| 1000 Metric Tons             |                           |         |         |                  |               |                                |      |      |      |               |      | Kg.              | units   | grams    | grams    | %    | %     |      |
| Honey                        | 0                         | 1       | 0       | 0                | 2             | 0                              | 0    | 0    | 0    | 0             | 2    | 0.1              | 1       | 0        | 0        |      |       |      |
| Pulses                       | 485                       | 31      | 8       | -2               | 510           | 0                              | 8    | 0    | 69   | 0             | 433  | 30.7             | 282     | 18       | 1        | 95.1 | 6.1   |      |
| Beans, Dry & Products        | 474                       | 31      | 8       | -2               | 499           | 0                              | 8    | 0    | 69   | 0             | 422  | 29.9             | 275     | 18       | 1        | 95.1 | 6.2   |      |
| Peas, Dry & Products         | 11                        | 0       | 0       | 0                | 11            | 0                              | 1    | 0    | 0    | 0             | 11   | 0.8              | 7       | 0        | 0        | 99.9 | 0.0   |      |
| Pulses, Other and products   | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0  | 100.0 |      |
| Treenuts                     | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0  | 112.5 |      |
| Nuts and products            | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0  | 112.5 |      |
| Oilcrops                     | 45                        | 58      | 9       | -30              | 124           | 13                             | 2    | 0    | 8    | 0             | 101  | 7.1              | 65      | 4        | 4        | 36.4 | 47.0  |      |
| Soyabeans & Products         | 33                        | 2       | 0       | -20              | 54            | 13                             | 2    | 0    | 6    | 0             | 35   | 2.5              | 20      | 2        | 1        | 59.8 | 4.0   |      |
| Groundnuts (Shelled Eq)      | 12                        | 56      | 9       | -1               | 61            | 0                              | 1    | 0    | 2    | 0             | 58   | 4.1              | 41      | 2        | 3        | 20.4 | 91.4  |      |
| Sunflower seed               | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0  | 100.0 |      |
| Rape and Mustardseed         | 0                         | 0       | 0       | -3               | 3             | 0                              | 0    | 0    | 0    | 0             | 3    | 0.2              | 2       | 0        | 0        | 0.0  | 0.0   |      |
| Coconuts - Incl Copra        | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0  | 100.0 |      |
| Sesame seed                  | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0  | 100.0 |      |
| Palm kernels                 | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0  | 100.0 |      |
| Olives (including preserved) | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0  | 103.5 |      |
| Oil crops, Other             | 0                         | 0       | 0       | -5               | 5             | 0                              | 0    | 0    | 0    | 0             | 4    | 0.3              | 2       | 0        | 0        | 0.0  | 0.0   |      |
| Vegetable oils               | 8                         | 243     | 86      | 50               | 116           | 1                              | 0    | 0    | 0    | 29            | 85   | 6.0              | 145     | 0        | 18       | 7.0  | 210.0 |      |
| Soyabean Oil                 | 2                         | 0       | 0       | 0                | 3             | 0                              | 0    | 0    | 0    | 0             | 3    | 0.2              | 5       | 0        | 1        | 77.6 | 0.0   |      |
| Groundnut Oil                | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | -    | -     |      |
| Sunflower seed Oil           | 0                         | 5       | 1       | 0                | 4             | 0                              | 0    | 0    | 0    | 0             | 4    | 0.3              | 7       | 0        | 1        | 0.0  | 113.1 |      |
| Rape and Mustard Oil         | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | -    | -     |      |
| Cottonseed Oil               | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | -    | -     |      |
| Palm kernel Oil              | 0                         | 1       | 0       | 0                | 1             | 0                              | 0    | 0    | 0    | 0             | 1    | 0.1              | 1       | 0        | 0        | 0.0  | 70.9  |      |
| Palm Oil                     | 0                         | 227     | 77      | 50               | 100           | 0                              | 0    | 0    | 0    | 29            | 71   | 5.0              | 122     | 0        | 15       | 0.0  | 226.8 |      |
| Coconut Oil                  | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0  | 100.0 |      |
| Sesame seed Oil              | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | -    | -     |      |
| Olive & Residue Oil          | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 1       | 0        | 0        | 0.0  | 103.5 |      |

| Products                        | DOMESTIC SUPPLY (1000 MT) |         |         |                  |               | DOMESTIC UTILIZATION (1000 MT) |      |      |      |               |      | PER CAPUT SUPPLY |         |          |          |          |          |      |
|---------------------------------|---------------------------|---------|---------|------------------|---------------|--------------------------------|------|------|------|---------------|------|------------------|---------|----------|----------|----------|----------|------|
|                                 | Prod.                     | Imports | Exports | Stock<br>changes | Total<br>D.S. | Pro-<br>cessed                 | Loss | Feed | Seed | Other<br>Uses | Food | PER              |         |          |          | SSR<br>- | IDR<br>- |      |
|                                 |                           |         |         |                  |               |                                |      |      |      |               |      | YEAR             | PER DAY |          |          |          |          |      |
|                                 |                           |         |         |                  |               |                                |      |      |      |               |      |                  | FOOD    | Calories | Proteins |          |          | Fats |
|                                 |                           |         |         |                  |               |                                |      |      |      |               |      | Kg.              | units   | grams    | grams    | %        | %        |      |
|                                 | 1000 Metric Tons          |         |         |                  |               |                                |      |      |      |               |      |                  |         |          |          |          |          |      |
| Maize Germ Oil                  | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        |          |          |      |
| Oil crops Oil, Other            | 5                         | 10      | 8       | 0                | 7             | 1                              | 0    | 0    | 0    | 0             | 6    | 0.4              | 9       | 0        | 1        | 73.0     | 138.5    |      |
| Vegetables                      | 441                       | 103     | 61      | 28               | 455           | 0                              | 0    | 0    | 0    | 0             | 455  | 32.2             | 23      | 1        | 0        | 97.0     | 22.6     |      |
| Tomatoes and products           | 85                        | 77      | 22      | 28               | 113           | 0                              | 0    | 0    | 0    | 0             | 113  | 8.0              | 4       | 0        | 0        | 75.6     | 68.4     |      |
| Onions, Dry                     | 36                        | 3       | 5       | 0                | 34            | 0                              | 0    | 0    | 0    | 0             | 34   | 2.4              | 3       | 0        | 0        | 105.7    | 10.0     |      |
| Vegetables, Other & Prod.       | 320                       | 22      | 34      | 0                | 308           | 0                              | 0    | 0    | 0    | 0             | 308  | 21.8             | 16      | 1        | 0        | 103.8    | 7.3      |      |
| Fruits (Excluding Wine)         | 2505                      | 52      | 27      | 0                | 2530          | 1021                           | 101  | 0    | 0    | 1             | 1408 | 99.8             | 189     | 3        | 1        | 99.0     | 2.0      |      |
| Oranges, Tang-Mand & Prod.      | 2                         | 26      | 8       | 0                | 20            | 0                              | 0    | 0    | 0    | 1             | 19   | 1.4              | 1       | 0        | 0        | 9.6      | 130.7    |      |
| Lemons, Limes and products      | 0                         | 4       | 1       | 0                | 3             | 0                              | 0    | 0    | 0    | 0             | 2    | 0.2              | 0       | 0        | 0        | 0.0      | 153.4    |      |
| Grapefruit and products         | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0      | 102.8    |      |
| Citrus Fruit nes & prod         | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0      | 100.0    |      |
| Bananas                         | 1327                      | 4       | 6       | 0                | 1325          | 1021                           | 0    | 0    | 0    | 0             | 304  | 21.6             | 35      | 1        | 0        | 100.2    | 0.3      |      |
| Plantains                       | 1117                      | 1       | 0       | 0                | 1119          | 0                              | 101  | 0    | 0    | -1            | 1018 | 72.2             | 148     | 2        | 1        | 99.9     | 0.1      |      |
| Apples and products             | 0                         | 3       | 0       | 0                | 3             | 0                              | 0    | 0    | 0    | 0             | 3    | 0.2              | 0       | 0        | 0        | 0.0      | 109.6    |      |
| Pineapples and products         | 24                        | 2       | 0       | 0                | 25            | 0                              | 0    | 0    | 0    | 0             | 25   | 1.8              | 1       | 0        | 0        | 92.9     | 8.6      |      |
| Dates                           | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0      | 102.8    |      |
| Grapes and products (excl wine) | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0      | 152.4    |      |
| Fruits, Other & Products        | 35                        | 10      | 10      | 0                | 35            | 0                              | 0    | 0    | 0    | 0             | 35   | 2.5              | 4       | 0        | 0        | 100.6    | 29.3     |      |
| Stimulants                      | 202                       | 3       | 37      | 0                | 167           | 0                              | 0    | 0    | 0    | 0             | 168  | 11.9             | 13      | 3        | 0        | 120.5    | 1.8      |      |
| Coffee and products             | 29                        | 3       | 24      | 0                | 8             | 0                              | 0    | 0    | 0    | 0             | 8    | 0.5              | 1       | 0        | 0        | 386.8    | 33.7     |      |
| Cocoa Beans and products        | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0      | 136.8    |      |
| Tea (including mate)            | 173                       | 0       | 13      | 0                | 160           | 0                              | 0    | 0    | 0    | 0             | 160  | 11.3             | 12      | 3        | 0        | 108.1    | 0.0      |      |
| Spices                          | 8                         | 8       | 2       | 0                | 14            | 0                              | 0    | 0    | 0    | 0             | 14   | 1.0              | 9       | 0        | 0        | 58.0     | 54.6     |      |
| Pepper                          | 8                         | 0       | 1       | 0                | 7             | 0                              | 0    | 0    | 0    | 0             | 7    | 0.5              | 4       | 0        | 0        | 115.4    | 0.0      |      |
| Pimento                         | 1                         | 0       | 1       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | -        | -        |      |
| Cloves                          | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0      | 100.0    |      |

| Products                       | DOMESTIC SUPPLY (1000 MT) |         |         |                  |               | DOMESTIC UTILIZATION (1000 MT) |      |      |      |               |      | PER CAPUT SUPPLY |         |          |          |       |       |
|--------------------------------|---------------------------|---------|---------|------------------|---------------|--------------------------------|------|------|------|---------------|------|------------------|---------|----------|----------|-------|-------|
|                                | Prod.                     | Imports | Exports | Stock<br>changes | Total<br>D.S. | Pro-<br>cessed                 | Loss | Feed | Seed | Other<br>Uses | Food | PER              |         |          |          | SSR   | IDR   |
|                                |                           |         |         |                  |               |                                |      |      |      |               |      | YEAR             | PER DAY |          |          |       |       |
|                                |                           |         |         |                  |               |                                |      |      |      |               |      |                  | FOOD    | Calories | Proteins |       |       |
|                                | 1000 Metric Tons          |         |         |                  |               |                                |      |      |      |               |      | Kg.              | units   | grams    | grams    | %     | %     |
| Spices, other                  | 0                         | 8       | 0       | 0                | 8             | 0                              | 0    | 0    | 0    | 0             | 8    | 0.5              | 5       | 0        | 0        |       |       |
| Alcoholic beverages            | 675                       | 82      | 79      | 0                | 678           | 0                              | 0    | 0    | 0    | 10            | 669  | 47.4             | 64      | 0        | 0        | 99.5  | 12.0  |
| Wine                           | 0                         | 4       | 2       | 0                | 2             | 0                              | 0    | 0    | 0    | 0             | 2    | 0.1              | 0       | 0        | 0        | 0.0   | 226.9 |
| Barley Beer                    | 10                        | 8       | 12      | 0                | 5             | 0                              | 0    | 0    | 0    | 0             | 5    | 0.4              | 0       | 0        | 0        | 186.7 | 141.6 |
| Beverages, fermented           | 665                       | 26      | 40      | 0                | 652           | 0                              | 0    | 0    | 0    | 0             | 652  | 46.2             | 58      | 0        | 0        | 102.1 | 4.0   |
| Beverages, alcoholic           | 0                         | 20      | 11      | 0                | 10            | 0                              | 0    | 0    | 0    | 0             | 10   | 0.7              | 6       | 0        | 0        | 0.0   | 209.5 |
| Alcohol, non food              | 0                         | 24      | 14      | 0                | 10            | 0                              | 0    | 0    | 0    | 10            | 0    | 0.0              | 0       | 0        | 0        | 0.0   | 239.7 |
| Meat                           | 40                        | 3       | 6       | 0                | 37            | 0                              | 0    | 0    | 0    | 0             | 37   | 2.6              | 13      | 1        | 1        | 109.0 | 8.2   |
| Meat & Products, Bovine        | 28                        | 0       | 4       | 0                | 25            | 0                              | 0    | 0    | 0    | 0             | 25   | 1.8              | 9       | 1        | 1        | 114.3 | 0.0   |
| Meat & Prod, Sheep & Goat      | 2                         | 0       | 0       | 0                | 2             | 0                              | 0    | 0    | 0    | 0             | 2    | 0.2              | 1       | 0        | 0        | 111.8 | 0.0   |
| Meat & Products, Pig           | 3                         | 0       | 0       | 0                | 3             | 0                              | 0    | 0    | 0    | 0             | 3    | 0.2              | 2       | 0        | 0        | 104.3 | 0.0   |
| Meat & Products, Poultry       | 5                         | 2       | 2       | 0                | 5             | 0                              | 0    | 0    | 0    | 0             | 5    | 0.4              | 1       | 0        | 0        | 95.8  | 44.2  |
| Meat & Products, Other Anim.   | 1                         | 0       | 0       | 0                | 2             | 0                              | 0    | 0    | 0    | 0             | 2    | 0.1              | 0       | 0        | 0        | 74.0  | 0.0   |
| Offals                         | 6                         | 0       | 0       | 0                | 6             | 0                              | 0    | 0    | 0    | 0             | 6    | 0.4              | 1       | 0        | 0        | 102.3 | 0.0   |
| Offals, Edible                 | 6                         | 0       | 0       | 0                | 6             | 0                              | 0    | 0    | 0    | 0             | 6    | 0.4              | 1       | 0        | 0        | 102.3 | 0.0   |
| Animal fats                    | 1                         | 4       | 0       | 0                | 5             | 0                              | 0    | 0    | 0    | 0             | 5    | 0.3              | 2       | 0        | 0        | 22.4  | 80.2  |
| Fats, Animals, Raw             | 1                         | 4       | 0       | 0                | 5             | 0                              | 0    | 0    | 0    | 0             | 5    | 0.3              | 2       | 0        | 0        | 22.5  | 80.2  |
| Cream                          | 0                         | 0       | 0       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 0       | 0        | 0        | 0.0   | 100.0 |
| Milk - Excluding Butter        | 141                       | 19      | 31      | -38              | 168           | 2                              | 7    | 0    | 0    | 0             | 159  | 11.3             | 19      | 1        | 1        | 84.3  | 11.4  |
| Milk & Prod (Excluding Butter) | 141                       | 19      | 31      | -38              | 168           | 2                              | 7    | 0    | 0    | 0             | 159  | 11.3             | 19      | 1        | 1        | 84.3  | 11.4  |
| Eggs                           | 7                         | 0       | 2       | 0                | 5             | 0                              | 0    | 0    | 0    | 0             | 5    | 0.3              | 1       | 0        | 0        | 135.4 | 0.0   |
| Eggs and products              | 7                         | 0       | 2       | 0                | 5             | 0                              | 0    | 0    | 0    | 0             | 5    | 0.3              | 1       | 0        | 0        | 135.4 | 0.0   |
| Fish & sea food                | 9                         | 26      | 3       | 0                | 32            | 0                              | 0    | 0    | 0    | 0             | 31   | 2.2              | 8       | 1        | 0        | 28.6  | 81.0  |
| Miscellaneous                  | 0                         | 24      | 7       | 0                | 17            | 0                              | 0    | 0    | 0    | 0             | 17   | 1.2              | 8       | 0        | 0        | 0.0   | 138.6 |
| Infant food                    | 0                         | 1       | 1       | 0                | 0             | 0                              | 0    | 0    | 0    | 0             | 0    | 0.0              | 4       | 0        | 0        | -     | -     |
| Miscellaneous                  | 0                         | 23      | 6       | 0                | 17            | 0                              | 0    | 0    | 0    | 0             | 17   | 1.2              | 4       | 0        | 0        | 0.0   | 133.9 |

## Annex 2: Per capita and per day Supply minerals

| Rwanda -Per capita and per day Supply of Minerals 2025 |               |            |                 |                  |                 |            |              |              |                 |
|--------------------------------------------------------|---------------|------------|-----------------|------------------|-----------------|------------|--------------|--------------|-----------------|
| Products                                               | Calcium<br>mg | Iron<br>mg | Magnesium<br>mg | Phosphorus<br>mg | Potassium<br>mg | Zinc<br>mg | Copper<br>mg | Sodium<br>mg | Manganese<br>mg |
| Grand total                                            | 246           | 16         | 325             | 934              | 3578            | 7          | 2            | 127          | 15              |
| Vegetable prod.                                        | 213.0         | 15.7       | 316.7           | 891.5            | 3508.6          | 6.3        | 2.1          | 110.0        | 15.0            |
| Animal prod.                                           | 33.2          | 0.1        | 8.5             | 42.2             | 69.6            | 0.2        | 0.0          | 16.7         | 0.0             |
| Cereals (excl. beer)                                   | 21.0          | 5.3        | 195.5           | 365.5            | 371.3           | 2.7        | 0.4          | 36.9         | 2.5             |
| Wheat and products                                     | 3.6           | 0.3        | 5.2             | 25.8             | 25.5            | 0.2        | 0.0          | 0.5          | 0.2             |
| Barley and products                                    | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Maize and products                                     | 5.8           | 3.4        | 122.7           | 232.9            | 277.3           | 1.7        | 0.2          | 33.8         | 1.8             |
| Rye and products                                       | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Oats and products                                      | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Millet and products                                    | 0.8           | 0.0        | 0.1             | 0.8              | 1.2             | 0.0        | 0.0          | 0.0          | 0.0             |
| Sorghum and products                                   | 8.9           | 1.5        | 59.1            | 82.1             | 48.4            | 0.6        | 0.2          | 2.6          | 0.3             |
| Rice & Prod (Milled Equivalent)                        | 1.9           | 0.1        | 8.4             | 23.9             | 18.8            | 0.3        | 0.0          | 0.0          | 0.2             |
| Cereals, Others & Products                             | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Starchy roots                                          | 130.1         | 6.8        | 94.6            | 275.6            | 1730.0          | 1.6        | 1.0          | 42.9         | 10.9            |
| Potatoes and products                                  | 41.3          | 4.4        | 31.7            | 52.4             | 569.2           | 0.5        | 0.6          | 13.8         | 0.8             |
| Cassava and products                                   | 39.5          | 1.4        | 28.5            | 124.9            | 543.6           | 0.6        | 0.1          | 11.9         | 0.2             |
| Sweet potatoes                                         | 49.2          | 1.0        | 34.4            | 98.4             | 617.2           | 0.5        | 0.4          | 17.2         | 9.8             |
| Yams                                                   | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Roots & Tubers, Other & Prod.                          | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Sugar crops                                            | 0.3           | 0.0        | 0.1             | 0.1              | 1.1             | 0.0        | 0.0          | 0.1          | 0.0             |
| Sugar cane                                             | 0.3           | 0.0        | 0.1             | 0.1              | 1.1             | 0.0        | 0.0          | 0.1          | 0.0             |
| Sugar Beets                                            | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Sugar & Sweeteners                                     | 0.4           | 0.0        | 0.0             | 0.7              | 0.9             | 0.0        | 0.0          | 0.4          | 0.0             |

| Products                       | Calcium<br>mg | Iron<br>mg | Magnesium<br>mg | Phosphorus<br>mg | Potassium<br>mg | Zinc<br>mg | Copper<br>mg | Sodium<br>mg | Manganese<br>mg |
|--------------------------------|---------------|------------|-----------------|------------------|-----------------|------------|--------------|--------------|-----------------|
| Sugar non-centrifugal          | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Sugar & Prod. (raw equivalent) | 0.4           | 0.0        | 0.0             | 0.7              | 0.7             | 0.0        | 0.0          | 0.4          | 0.0             |
| Sweeteners, other & prod.      | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Honey                          | 0.0           | 0.0        | 0.0             | 0.0              | 0.2             | 0.0        | 0.0          | 0.0          | 0.0             |
| <b>Pulses</b>                  | <b>20.7</b>   | <b>2.1</b> | <b>0.0</b>      | <b>132.3</b>     | <b>238.1</b>    | <b>1.1</b> | <b>0.2</b>   | <b>3.4</b>   | <b>0.4</b>      |
| Beans, Dry & Products          | 19.7          | 2.0        | 0.0             | 127.9            | 227.9           | 1.1        | 0.2          | 3.3          | 0.4             |
| Peas, Dry & Products           | 1.0           | 0.1        | 0.0             | 4.4              | 10.1            | 0.0        | 0.0          | 0.1          | 0.0             |
| Pulses, Other and products     | 0.0           | 0.0        | 0.0             | 0.0              | 0.1             | 0.0        | 0.0          | 0.0          | 0.0             |
| <b>Treenuts</b>                | <b>0.0</b>    | <b>0.0</b> | <b>0.0</b>      | <b>0.0</b>       | <b>0.0</b>      | <b>0.0</b> | <b>0.0</b>   | <b>0.0</b>   | <b>0.0</b>      |
| Nuts and products              | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| <b>Oil crops</b>               | <b>6.8</b>    | <b>0.3</b> | <b>12.3</b>     | <b>27.6</b>      | <b>51.6</b>     | <b>0.2</b> | <b>0.1</b>   | <b>8.2</b>   | <b>0.1</b>      |
| Soyabeans & Products           | 0.0           | 0.0        | 0.0             | 0.2              | 0.3             | 0.0        | 0.0          | 6.9          | 0.0             |
| Groundnuts (Shelled Eq)        | 6.7           | 0.3        | 12.2            | 27.3             | 51.3            | 0.2        | 0.1          | 1.3          | 0.1             |
| Sunflower seed                 | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Rape and Mustardseed           | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Coconuts - Incl Copra          | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Sesame seed                    | 0.1           | 0.0        | 0.0             | 0.1              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Palm kernels                   | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Olives (including preserved)   | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Oil crops, Other               | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| <b>Vegetable oils</b>          | <b>0.8</b>    | <b>0.0</b> | <b>0.0</b>      | <b>1.0</b>       | <b>0.0</b>      | <b>0.0</b> | <b>0.0</b>   | <b>0.0</b>   | <b>0.0</b>      |
| Soyabean Oil                   | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Groundnut Oil                  | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Sunflower seed Oil             | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Rape and Mustard Oil           | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Cottonseed Oil                 | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Palm kernel Oil                | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |

| Products                        | Calcium<br>mg | Iron<br>mg | Magnesium<br>mg | Phosphorus<br>mg | Potassium<br>mg | Zinc<br>mg | Copper<br>mg | Sodium<br>mg | Manganese<br>mg |
|---------------------------------|---------------|------------|-----------------|------------------|-----------------|------------|--------------|--------------|-----------------|
| Palm Oil                        | 0.8           | 0.0        | 0.0             | 1.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Coconut Oil                     | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Sesame seed Oil                 | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Olive & Residue Oil             | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Maize Germ Oil                  | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Oil crops Oil, Other            | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| <b>Vegetables</b>               | <b>12.5</b>   | <b>0.3</b> | <b>8.0</b>      | <b>17.7</b>      | <b>144.7</b>    | <b>0.1</b> | <b>0.0</b>   | <b>10.2</b>  | <b>0.1</b>      |
| Tomatoes and products           | 1.0           | 0.1        | 2.1             | 4.6              | 42.5            | 0.0        | 0.0          | 1.7          | 0.0             |
| Onions, Dry                     | 1.5           | 0.0        | 0.7             | 1.9              | 9.8             | 0.0        | 0.0          | 0.3          | 0.0             |
| Vegetables, Other & Prod.       | 10.0          | 0.2        | 5.2             | 11.1             | 92.4            | 0.1        | 0.0          | 8.2          | 0.1             |
| <b>Fruits (Excluding Wine)</b>  | <b>15.0</b>   | <b>0.8</b> | <b>0.0</b>      | <b>58.3</b>      | <b>942.4</b>    | <b>0.5</b> | <b>0.3</b>   | <b>2.7</b>   | <b>0.9</b>      |
| Oranges, Tang-Mand & Prod.      | 1.4           | 0.0        | 0.0             | 0.5              | 6.4             | 0.0        | 0.0          | 0.0          | 0.0             |
| Lemons, Limes and products      | 0.1           | 0.0        | 0.0             | 0.1              | 0.7             | 0.0        | 0.0          | 0.0          | 0.0             |
| Grapefruit and products         | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Citrus Fruit nes & prod         | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Bananas                         | 3.0           | 0.2        | 0.0             | 13.0             | 211.5           | 0.1        | 0.1          | 0.6          | 0.2             |
| Plantains                       | 9.9           | 0.6        | 0.0             | 43.5             | 708.0           | 0.4        | 0.2          | 2.0          | 0.6             |
| Apples and products             | 0.0           | 0.0        | 0.0             | 0.0              | 0.4             | 0.0        | 0.0          | 0.0          | 0.0             |
| Pineapples and products         | 0.3           | 0.0        | 0.0             | 0.3              | 5.5             | 0.0        | 0.0          | 0.0          | 0.1             |
| Dates                           | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Grapes and products (excl wine) | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Fruits, Other & Products        | 0.3           | 0.0        | 0.0             | 0.9              | 9.8             | 0.0        | 0.0          | 0.1          | 0.0             |
| <b>Stimulants</b>               | <b>0.0</b>    | <b>0.0</b> | <b>0.0</b>      | <b>0.0</b>       | <b>0.0</b>      | <b>0.0</b> | <b>0.0</b>   | <b>0.0</b>   | <b>0.0</b>      |
| Coffee and products             | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Cocoa Beans and products        | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Tea (including mate)            | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |

| Products                       | Calcium<br>mg | Iron<br>mg | Magnesium<br>mg | Phosphorus<br>mg | Potassium<br>mg | Zinc<br>mg | Copper<br>mg | Sodium<br>mg | Manganese<br>mg |
|--------------------------------|---------------|------------|-----------------|------------------|-----------------|------------|--------------|--------------|-----------------|
| Spices                         | 0.4           | 0.0        | 0.2             | 0.7              | 3.3             | 0.0        | 0.0          | 0.1          | 0.0             |
| Pepper                         | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Pimento                        | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Cloves                         | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Spices, other                  | 0.4           | 0.0        | 0.2             | 0.7              | 3.3             | 0.0        | 0.0          | 0.1          | 0.0             |
| Alcoholic beverages            | 5.0           | 0.0        | 6.0             | 12.1             | 25.3            | 0.0        | 0.0          | 5.0          | 0.0             |
| Wine                           | 0.0           | 0.0        | 0.0             | 0.0              | 0.3             | 0.0        | 0.0          | 0.0          | 0.0             |
| Barley Beer                    | 0.1           | 0.0        | 0.0             | 0.1              | 0.3             | 0.0        | 0.0          | 0.1          | 0.0             |
| Beverages, fermented           | 5.0           | 0.0        | 6.0             | 11.9             | 24.8            | 0.0        | 0.0          | 5.0          | 0.0             |
| Beverages, alcoholic           | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Alcohol, non food              | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Meat                           | 0.2           | 0.0        | 0.4             | 3.1              | 4.5             | 0.1        | 0.0          | 2.5          | 0.0             |
| Meat & Products, Bovine        | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Meat & Prod, Sheep & Goat      | 0.0           | 0.0        | 0.2             | 1.6              | 2.8             | 0.0        | 0.0          | 0.4          | 0.0             |
| Meat & Products, Pig           | 0.0           | 0.0        | 0.0             | 0.2              | 0.4             | 0.0        | 0.0          | 1.6          | 0.0             |
| Meat & Products, Poultry       | 0.1           | 0.0        | 0.1             | 1.2              | 1.2             | 0.0        | 0.0          | 0.5          | 0.0             |
| Meat & Products, Other Anim.   | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Offals                         | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Offals, Edible                 | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Animal fats                    | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Fats, Animals, Raw             | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Butter, Ghee                   | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Cream                          | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Milk - Excluding Butter        | 29.7          | 0.0        | 2.8             | 23.7             | 36.0            | 0.1        | 0.0          | 14.2         | 0.0             |
| Milk & Prod (Excluding Butter) | 29.7          | 0.0        | 2.8             | 23.7             | 36.0            | 0.1        | 0.0          | 14.2         | 0.0             |
| Eggs                           | 0.5           | 0.0        | 0.1             | 1.6              | 1.1             | 0.0        | 0.0          | 0.0          | 0.0             |

| Products          | Calcium<br>mg | Iron<br>mg | Magnesium<br>mg | Phosphorus<br>mg | Potassium<br>mg | Zinc<br>mg | Copper<br>mg | Sodium<br>mg | Manganese<br>mg |
|-------------------|---------------|------------|-----------------|------------------|-----------------|------------|--------------|--------------|-----------------|
| Eggs and products | 0.5           | 0.0        | 0.1             | 1.6              | 1.1             | 0.0        | 0.0          | 0.0          | 0.0             |
| Fish & sea food   | 2.9           | 0.1        | 5.2             | 13.8             | 27.9            | 0.0        | 0.0          | 0.0          | 0.0             |
| Miscellaneous     | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Infant food       | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |
| Miscellaneous     | 0.0           | 0.0        | 0.0             | 0.0              | 0.0             | 0.0        | 0.0          | 0.0          | 0.0             |

## Annex 3: Per capita and per day Supply of vitamins

### Rwanda -Per capita and per day Supply of Vitamins 2025

| Products                        | Vitamin A<br>RE | Vitamin B1 | Vitamin B2 | Vitamin B3 | Vitamin B5 | Vitamin B6 | Vitamin B8 | Vitamin B9 | Vitamin B10 | Vitamin B12 | Vitamin C | Vitamin D | Vitamin E | Vitamin K |
|---------------------------------|-----------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-----------|-----------|-----------|-----------|
|                                 | µ g RE          | mg         | mg         | mg         | mg         | mg         |            | µ g        |             | µ g         | mg        | µ g       | µ g       |           |
| Grand total                     | 829             | 1          | 1          | 14         | 4          | 3          | 0          | 390        | 0           | 0           | 147       | 1         | 13        | 0         |
| Vegetable prod.                 | 813.6           | 1.3        | 1.4        | 13.9       | 4.3        | 2.8        | 0.0        | 387.2      | 0.0         | 0.0         | 147.1     | 0.0       | 12.8      | 0.0       |
| Animal prod.                    | 15.4            | 0.0        | 0.1        | 0.4        | 0.1        | 0.0        | 0.0        | 2.6        | 0.0         | 0.2         | 0.1       | 0.7       | 0.1       | 0.0       |
| Cereals (excl. beer)            | 2.6             | 0.6        | 0.3        | 6.3        | 1.3        | 0.5        | 0.0        | 38.8       | 0.0         | 0.0         | 0.0       | 0.0       | 1.3       | 0.0       |
| Wheat and products              | 0.0             | 0.1        | 0.0        | 1.5        | 0.2        | 0.1        | 0.0        | 8.2        | 0.0         | 0.0         | 0.0       | 0.0       | 0.0       | 0.0       |
| Barley and products             | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0         | 0.0         | 0.0       | 0.0       | 0.0       | 0.0       |
| Maize and products              | 0.0             | 0.4        | 0.2        | 3.5        | 0.4        | 0.3        | 0.0        | 24.2       | 0.0         | 0.0         | 0.0       | 0.0       | 1.0       | 0.0       |
| Rye and products                | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0         | 0.0         | 0.0       | 0.0       | 0.0       | 0.0       |
| Oats and products               | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0         | 0.0         | 0.0       | 0.0       | 0.0       | 0.0       |
| Millet and products             | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0         | 0.0         | 0.0       | 0.0       | 0.0       | 0.0       |
| Sorghum and products            | 2.6             | 0.1        | 0.0        | 1.0        | 0.3        | 0.1        | 0.0        | 5.1        | 0.0         | 0.0         | 0.0       | 0.0       | 0.4       | 0.0       |
| Rice & Prod (Milled Equivalent) | 0.0             | 0.0        | 0.0        | 0.3        | 0.3        | 0.0        | 0.0        | 1.4        | 0.0         | 0.0         | 0.0       | 0.0       | 0.0       | 0.0       |
| Cereals, Others & Products      | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0         | 0.0         | 0.0       | 0.0       | 0.0       | 0.0       |
| Starchy roots                   | 108.0           | 0.4        | 0.8        | 3.8        | 1.7        | 1.2        | 0.0        | 105.2      | 0.0         | 0.0         | 119.1     | 0.0       | 10.0      | 0.0       |
| Potatoes and products           | 0.0             | 0.0        | 0.6        | 1.4        | 0.0        | 0.3        | 0.0        | 23.4       | 0.0         | 0.0         | 15.7      | 0.0       | 0.0       | 0.0       |
| Cassava and products            | 9.6             | 0.3        | 0.1        | 1.4        | 0.5        | 0.5        | 0.0        | 39.9       | 0.0         | 0.0         | 59.1      | 0.0       | 0.1       | 0.0       |
| Sweet potatoes                  | 98.4            | 0.1        | 0.2        | 1.0        | 1.2        | 0.4        | 0.0        | 41.8       | 0.0         | 0.0         | 44.3      | 0.0       | 9.8       | 0.0       |
| Yams                            | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0         | 0.0         | 0.0       | 0.0       | 0.0       | 0.0       |
| Roots & Tubers, Other & Prod.   | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0         | 0.0         | 0.0       | 0.0       | 0.0       | 0.0       |
| Sugar crops                     | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0         | 0.0         | 0.0       | 0.0       | 0.0       | 0.0       |
| Sugar cane                      | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0         | 0.0         | 0.0       | 0.0       | 0.0       | 0.0       |
| Sugar Beets                     | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0         | 0.0         | 0.0       | 0.0       | 0.0       | 0.0       |

| Products                       | Vitamin A<br>RE | Vitamin B1 | Vitamin B2 | Vitamin B3 | Vitamin B5 | Vitamin B6 | Vitamin B8 | Vitamin B9 | Vitamin<br>B10 | Vitamin<br>B12 | Vitamin C | Vitamin D | Vitamin E | Vitamin K |
|--------------------------------|-----------------|------------|------------|------------|------------|------------|------------|------------|----------------|----------------|-----------|-----------|-----------|-----------|
|                                | µ g RE          | mg         | mg         | mg         | mg         | mg         |            | µ g        |                | µ g            | mg        | µ g       | µ g       |           |
| <b>Sugar &amp; Sweeteners</b>  | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Sugar non-centrifugal          | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Sugar & Prod. (raw equivalent) | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Sweeteners, other & prod.      | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Honey                          | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| <b>Pulses</b>                  | 3.9             | 0.2        | 0.1        | 0.5        | 0.3        | 0.1        | 0.0        | 172.9      | 0.0            | 0.0            | 0.5       | 0.0       | 0.0       | 0.0       |
| Beans, Dry & Products          | 1.6             | 0.2        | 0.0        | 0.4        | 0.3        | 0.1        | 0.0        | 170.5      | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Peas, Dry & Products           | 2.2             | 0.0        | 0.0        | 0.1        | 0.0        | 0.0        | 0.0        | 2.4        | 0.0            | 0.0            | 0.5       | 0.0       | 0.0       | 0.0       |
| Pulses, Other and products     | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| <b>Treenuts</b>                | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Nuts and products              | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| <b>Oil crops</b>               | 0.0             | 0.0        | 0.0        | 1.0        | 0.1        | 0.0        | 0.0        | 9.2        | 0.0            | 0.0            | 0.0       | 0.0       | 0.7       | 0.0       |
| Soyabeans & Products           | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Groundnuts (Shelled Eq)        | 0.0             | 0.0        | 0.0        | 1.0        | 0.1        | 0.0        | 0.0        | 9.2        | 0.0            | 0.0            | 0.0       | 0.0       | 0.7       | 0.0       |
| Sunflower seed                 | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Rape and Mustardseed           | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Coconuts - Incl Copra          | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Sesame seed                    | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Palm kernels                   | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Olives (including preserved)   | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Oil crops, Other               | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| <b>Vegetable oils</b>          | 687.6           | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.6       | 0.0       |
| Soyabean Oil                   | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Groundnut Oil                  | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Sunflower seed Oil             | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |

| Products                   | Vitamin A<br>RE | Vitamin B1 | Vitamin B2 | Vitamin B3 | Vitamin B5 | Vitamin B6 | Vitamin B8 | Vitamin B9 | Vitamin<br>B10 | Vitamin<br>B12 | Vitamin C | Vitamin D | Vitamin E | Vitamin K |
|----------------------------|-----------------|------------|------------|------------|------------|------------|------------|------------|----------------|----------------|-----------|-----------|-----------|-----------|
|                            | µ g RE          | mg         | mg         | mg         | mg         | mg         |            | µ g        |                | µ g            | mg        | µ g       | µ g       |           |
| Rape and Mustard Oil       | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Cottonseed Oil             | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Palm kernel Oil            | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Palm Oil                   | 687.6           | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.6       | 0.0       |
| Coconut Oil                | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Sesame seed Oil            | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Olive & Residue Oil        | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Maize Germ Oil             | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Oil crops Oil, Other       | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Vegetables                 | 3.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.5        | 0.0            | 0.0            | 0.7       | 0.0       | 0.0       | 0.0       |
| Tomatoes and products      | 3.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.5        | 0.0            | 0.0            | 0.7       | 0.0       | 0.0       | 0.0       |
| Onions, Dry                | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Vegetables, Other & Prod.  | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Fruits (Excluding Wine)    | 8.5             | 0.1        | 0.2        | 1.8        | 0.9        | 1.0        | 0.0        | 54.2       | 0.0            | 0.0            | 26.7      | 0.0       | 0.3       | 0.0       |
| Oranges, Tang-Mand & Prod. | 0.3             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 1.1        | 0.0            | 0.0            | 1.9       | 0.0       | 0.0       | 0.0       |
| Lemons, Limes and products | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.1        | 0.0            | 0.0            | 0.3       | 0.0       | 0.0       | 0.0       |
| Grapefruit and products    | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Citrus Fruit nes & prod    | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Bananas                    | 1.8             | 0.0        | 0.0        | 0.4        | 0.2        | 0.2        | 0.0        | 11.8       | 0.0            | 0.0            | 5.1       | 0.0       | 0.1       | 0.0       |
| Plantains                  | 5.9             | 0.1        | 0.1        | 1.3        | 0.7        | 0.7        | 0.0        | 39.6       | 0.0            | 0.0            | 17.2      | 0.0       | 0.2       | 0.0       |
| Apples and products        | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Pineapples and products    | 0.1             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.7        | 0.0            | 0.0            | 1.8       | 0.0       | 0.0       | 0.0       |

| Products                        | Vitamin A<br>RE | Vitamin B1 | Vitamin B2 | Vitamin B3 | Vitamin B5 | Vitamin B6 | Vitamin B8 | Vitamin B9 | Vitamin<br>B10 | Vitamin<br>B12 | Vitamin C | Vitamin D | Vitamin E | Vitamin K |
|---------------------------------|-----------------|------------|------------|------------|------------|------------|------------|------------|----------------|----------------|-----------|-----------|-----------|-----------|
|                                 | µ g RE          | mg         | mg         | mg         | mg         | mg         |            | µ g        |                | µ g            | mg        | µ g       | µ g       |           |
| Dates                           | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Grapes and products (excl wine) | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Fruits, Other & Products        | 0.4             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 1.0        | 0.0            | 0.0            | 0.4       | 0.0       | 0.0       | 0.0       |
| Stimulants                      | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Coffee and products             | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Cocoa Beans and products        | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Tea (including mate)            | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Spices                          | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.3        | 0.0            | 0.0            | 0.1       | 0.0       | 0.0       | 0.0       |
| Pepper                          | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Pimento                         | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Cloves                          | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Spices, other                   | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.3        | 0.0            | 0.0            | 0.1       | 0.0       | 0.0       | 0.0       |
| Alcoholic beverages             | 0.0             | 0.0        | 0.0        | 0.5        | 0.1        | 0.0        | 0.0        | 6.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Wine                            | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Barley Beer                     | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.1        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Beverages, fermented            | 0.0             | 0.0        | 0.0        | 0.5        | 0.1        | 0.0        | 0.0        | 6.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Beverages, alcoholic            | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Alcohol, non food               | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Meat                            | 0.3             | 0.0        | 0.0        | 0.1        | 0.0        | 0.0        | 0.0        | 0.1        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Meat & Products, Bovine         | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Meat & Prod, Sheep & Goat       | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.1        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Meat & Products, Pig            | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Meat & Products, Poultry        | 0.3             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Meat & Products, Other Anim.    | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |

| Products                       | Vitamin A<br>RE | Vitamin B1 | Vitamin B2 | Vitamin B3 | Vitamin B5 | Vitamin B6 | Vitamin B8 | Vitamin B9 | Vitamin<br>B10 | Vitamin<br>B12 | Vitamin C | Vitamin D | Vitamin E | Vitamin K |
|--------------------------------|-----------------|------------|------------|------------|------------|------------|------------|------------|----------------|----------------|-----------|-----------|-----------|-----------|
|                                | µ g RE          | mg         | mg         | mg         | mg         | mg         |            | µ g        |                | µ g            | mg        | µ g       | µ g       |           |
| Offals                         | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Offals, Edible                 | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Animal fats                    | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Fats, Animals, Raw             | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Butter, Ghee                   | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Cream                          | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Milk - Excluding Butter        | 11.0            | 0.0        | 0.0        | 0.0        | 0.1        | 0.0        | 0.0        | 1.4        | 0.0            | 0.1            | 0.1       | 0.0       | 0.0       | 0.0       |
| Milk & Prod (Excluding Butter) | 11.0            | 0.0        | 0.0        | 0.0        | 0.1        | 0.0        | 0.0        | 1.4        | 0.0            | 0.1            | 0.1       | 0.0       | 0.0       | 0.0       |
| Eggs                           | 1.5             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.4        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Eggs and products              | 1.5             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.4        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Fish & sea food                | 2.6             | 0.0        | 0.0        | 0.3        | 0.0        | 0.0        | 0.0        | 0.7        | 0.0            | 0.1            | 0.0       | 0.7       | 0.1       | 0.0       |
| Miscellaneous                  | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Infant food                    | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |
| Miscellaneous                  | 0.0             | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0            | 0.0            | 0.0       | 0.0       | 0.0       | 0.0       |

## Annex 4. Methodology for estimating Food Loss Index

This section provides a brief methodological description for the estimation of the Food Loss Index (FLI). The details can be accessed in FAO (2018). The FLI is a composite index for essential products in the production of a country. The aggregate index serves as a tool for national, global, and international monitoring of progress toward the Target 3 of SDG 12.

The computation of the Global Food Loss Index involves the following steps:

- Selection of a base year;
- Selection of the basket of goods and compilation of the weight for each good in the base year;
- Estimation of loss percentages for each product and Food Loss Percentage (FLP) in the country;
- Comparison of FLPs over time and computation the FLI;
- Aggregation of FLIs to derive the GFLI.

### Selection of the basket of goods

The selection of products is done taking into account national targets. Indeed, it is challenging to obtain loss estimates for all products consumed in every country for the purpose of constructing the Global Index and facilitating international comparisons. Given that dietary diversity and the achievement of food security are the key priorities targeted through the calculation of the FLI, the product basket must contain a structured set of product headings covering multiple dimensions of a typical diet. These headings are as follows: (1) Cereals and Pulses, (2) Fruits and Vegetables, (3) Roots and Tubers, and Oil-Bearing crops, (4) Animal Products; and (5) Fish and Fish Products. A total of ten products are recommended for selection across these five headings.

The international standard recommends the establishment of five commodity groups, with two representative products selected from each group. The product selection method, in accordance with internationally accepted practice, involves ranking the products within each group according to their production value and selecting the two products with the highest values. This selection process is based on the international dollar

value of each commodity in the base year.

At the national level, countries may employ their own value or quantity and corresponding prices, or use different criteria based on policies, provided that the main headings are covered. Once the basket of products has been selected, it remains fixed at both the national and global levels in order to facilitate comparisons over time. In addition, FAO explains that:

- The headings correspond to basic food groups and dietary needs. Each country therefore should have at least one priority product under each heading.
- Within countries, loss levels for products under the same heading should be broadly similar, while average losses between categories will be systematically different. For example, the variation of losses in fruits is higher than those in grains, but within grains losses may be similar.

### Estimated percentages of losses of each commodity and FLP

Once the basket of commodities has been chosen, the next step is to calculate loss percentages. The losses are expressed as a percentage of the total of Production + Import. The choice of percentages instead of loss values are justified by the fact that the percentages are relatively stable over time as opposed to values. For each product, the percentage of loss  $L_{jt}$  by country (i), commodity (j) and year (t) is either estimated or observed.

These percentages may be obtained through surveys of farmers by including modules in the survey on post-harvest losses, with loss percentages estimated according to certain methodologies proposed in the relevant International Guidelines. The Food Loss Percentage (FLP) therefore provides an average level of loss and can help countries in assessing the level and extent of their national food losses, both in comparison to other countries and within an international context.

It is calculated using the following formula:

$$FLP_t = \frac{\sum_j L_{jt} * (q_{jto} * p_{jto})}{\sum_j (q_{jto} * p_{jto})}$$

Where:

$L_{jt}$  = loss percentage (estimated or observed) for commodity j in year t;

to = the base year;

$q_{jto}$  = Production plus Imports for commodity j in the base year;

$p_{jto}$  = International dollar price for commodity j in the base year.

### Calculation of the Food Loss Index (FLI)

The country-level indices (FLI) are simply equal to the ratio of the Food Loss Percentage in the current period and the FLP in the base period multiplied by 100.

$$FLI_t = \frac{FLPt}{FLP_{to}} \times 100$$

While the  $FLP_t$  represents the country's food loss percentage in year  $t$ , The related  $FLI_t$  shows the extent to which losses have moved from the baseline value equal to 100 in the base year.

### Compilation of Global Food Loss Index (GFLI)

The Global Food Loss Index (GFLI) is obtained through a weighted average of single indices calculated for all countries in the world (FLI). In order to aggregate the FLI into the GFLI or into Regional FLIs, country-level indices are aggregated using the weighting equal to the total value of agricultural production in the reference year. The GFLI weights reflect importance of the overall value of the commodity basket in international dollar terms with respect to the rest of the World. Regarding the FLI, the weights also constitute the value of commodities in terms of the international dollars, but relative to the country's own production value. The weighting is determined in the reference year.

GFLI is calculated using the following formula:

$$GFLI_t = \frac{\sum_{i=1}^G FLI_{it} * W_i}{\sum_{i=1}^G W_i} \times 100$$

Where:

$W_i$  = total value of agricultural production of country  $i$  at international dollar prices in the base period.  $FLI_{it}$  = is the country's Food Loss Index.

## Application of the FAO methodology-FLI: The case of Rwanda

The computation of the Food Loss Index (FLI) for Rwanda followed the methodology proposed by FAO. The required data include production (Crops and livestock, including fishery) and commodity prices. The production, import, prices, and loss ratios data were collected from NISR and MINAGRI. The quantities of losses are those from the Food Balance Sheets results. The methodology recommends the base year of 2015 because it is the start of measurement and monitoring of the SDGs but in Rwanda case it is 2017.

As recommended by the methodology, a basket of 10 key commodities were to be selected, with top two commodities in each of the five main headings (1. Cereals & Pulses, 2. Fruits & Vegetables, 3. Roots & Tubers and Oil-Bearing crops, 4. Animals Products, 5. Fish and Fish Products. The selection was according to their importance (in terms of value of production) in their respective commodity headings. However, in Rwanda case this selection was also dependent on the availability of data on loss quantities. That is why, in the « Fish and Fish Product” group there is any commodity selected. From reasons above the 10 key commodities selected were: Raw milk of cattle, Beans(dry), Wheat and meslin flour, Maize(corn), Rice, Wheat, Plantains and others, Cassava(fresh), Sweet potatoes and Irish potatoes. Having the production quantity, import quantity, loss quantity and prices for each of the 10 selected commodities, the calculation of the FLI followed the FAO methodology described above.

The computation of the FLI was done using basic Microsoft Excel to produce the results which are analyzed in FLI Section of this report. For each year and commodity, the loss percentages were first calculated as well as their aggregation at national level; and from there, the FLI for each year was computed, with 2017 as the base year.

**NB: The Global Food Loss Index is not appropriate because we are dealing with only one country.**

## Annex 5. Methodology for estimating Prevalence of Undernourishment

### Introduction

The FAO prevalence of undernourishment (PoU) indicator serves to monitor progress toward Millennium Development Goal target 1C of halving, between 1990 and 2015, the proportion of people suffering from hunger. Estimates of the number of undernourished (NoU), calculated by multiplying the PoU by the size of the reference population are used to monitor progress toward the World Food Summit goal of reducing by half the number of people suffering from undernourishment.

The PoU indicator is defined as the probability that a randomly selected individual from the reference population is found to consume less than his/her calorie requirement for an active and healthy life. It is written as:

$$PoU = \int_{x < MDER} f(x) dx$$

Where  $f(x)$  denotes the probability density function of per capita calorie consumption.

The parameters needed for the calculation of the indicator are: the mean level of dietary energy consumption (DEC); a cut-off point defined as the Minimum Dietary Energy Requirement (MDER); the coefficient of variation (CV) as a parameter which accounts for inequality in food consumption; and a skewness (SK), a parameter which accounts for asymmetry in the distribution. Both the DEC and the MDER are updated annually. The former is derived from the FAO Food Balance Sheets. The MDER is calculated as a weighted average of energy requirements according to sex and age class, using UN population ratio data updated each year. The parameters pertaining to inequality in food consumption are derived from National Household Survey data, when such data are available and reliable. However, due to the limited number of household surveys conducted, the inequality parameters in food access are updated considerably less frequently than the DEC and MDER parameters.

To implement this methodology, the following steps are required: (i) selecting a functional form for the distribution of food consumption  $f(x)$ ; (ii) identifying values for the three parameters, namely, mean food consumption (DEC), its variability (CV) and its asymmetry (SK); and (iii) computing the MDER threshold. The probability density function used to infer the habitual levels of dietary energy consumption in a population,  $f(x)$ , refers to the typical daily energy consumption during a year. As such,  $f(x)$  does not reflect the possible implications of insufficient food consumption levels that may prevail over shorter periods. Both the probability distribution  $f(x)$  and the MDER threshold are associated with a representative individual of the population, characterized by average values for age, sex, stature and physical activity level.

### Functional Form

The FAO methodology for the calculation of the prevalence of undernourishment uses a probability framework in which the distribution of per capita calorie consumption of the representative individual is characterized.

The use of such a framework is necessary, as data typically are not available on individual food consumption and requirements, but rather for household acquisition. Starting with the estimates of undernourishment produced for the Sixth World Food Survey in 1996, the distribution was assumed to be lognormal. This model is very convenient for the purposes of analysis, but has limited flexibility, especially in capturing the skewness of the distribution.

As part of the revisions made for the 2012 edition of The State of Food Insecurity in the World Report, the methodology moved away from the exclusive use of the two parameters lognormal distribution to adopt the more flexible three parameter skew-normal and skew- lognormal families [3]. In the case of the lognormal distribution, the skewness can be written as function of the CV as:

$$SK = (CV^2 + 3) * CV \quad (1)$$

This implies that the SK of the lognormal distribution is completely determined by the Coefficient Variation (CV) derived from household survey data. The flexibility gained from the additional parameter allows for independent characterization of the asymmetry of the distribution. The skew-normal distribution can be considered a generalization of the normal distribution that can account for departures from normality to a certain degree, corresponding to skewness values within the approximate range (-0.995, 0.995). The distribution cannot be evaluated at higher levels of asymmetry, and so ways to deal with higher degrees of skewness need to be found. One solution is to consider only the restricted range of the skewed-normal distribution in the calculation of the PoU. Another solution is to add another level of flexibility in which the functional form for the distribution itself is allowed to change, based on the level of asymmetry in the data. The identification of the appropriate combination of functional forms as well as the level of asymmetry at which to change functional forms motivates the investigations below.

The simplest approach to handling skewness values that fall outside the range of the skewed-normal distribution is to place a ceiling on the SK parameter (such as 0.99) and to use this limit for higher degrees of asymmetry. The implementation of this approach, referred to as Function 1, is illustrated in (a) the PoU is shown as a function of the SK parameter, with the other parameters fixed (DEC equal to 2000, MDER equal to 1800, and CV equal to 0.35) and in (b) the density function is shown with the same fixed parameters, but with SK equal to zero (corresponding to the normal distribution), 0.75, and 0.99 (the ceiling). High levels of asymmetry in the data may indicate that the skew-normal distribution is not the appropriate model; alternative criteria for the selection of the functional form are described below.

As a first alternative to the application of the skewed-normal distribution described above, consider replacing the ceiling with a new value  $W$ , and evaluating the log-normal distribution for skewness values higher than  $W$ . If we denote the PoU evaluated using the lognormal distribution as  $PoULN$ , this criterion for the selection of the distribution (Function 2) can be expressed as follows:

$$PoU = PoULN(DEC, CV, SK, MDER), SK \geq W \quad (2a)$$

$$PoU = PoUSN(DEC, CV, SK, MDER), SK < W \quad (2b)$$

Although the two different functional forms for the distribution do allow for a wider range of

levels of asymmetry to be captured, discontinuities in the PoU occur as the functional form transitions from one to the other. An intermediate distribution may help to link such a gap, and this is the motivation behind the criterion below for the choice of the functional form. As a modification of the criterion described above, consider using the log-skewed-normal distribution<sup>2</sup> (denoted by PoULSN) as an intermediate between the transition of the functional form from the skewed-normal to the log-normal, as written below:

$$\text{PoU} = \text{PoU}_{\text{LN}}(\text{DEC}, \text{CV}, \text{SK}, \text{MDER}), \quad \text{SK} \geq (\text{CV}^2 + 3) \text{CV} \quad (3a)$$

$$\text{PoU} = \text{PoU}_{\text{LSN}}(\text{DEC}, \text{CV}, \text{SK}, \text{MDER}), \quad W < \text{SK} < (\text{CV}^2 + 3)\text{CV} \quad (3b)$$

$$\text{PoU} = \text{PoU}_{\text{SN}}(\text{DEC}, \text{CV}, \text{SK}, \text{MDER}), \quad \text{SK} < W \quad (2b) \quad (3b)$$

In the criterion described above (Function 3), the skewness theoretically implied by the lognormal serves both as a floor for the application of the lognormal and as ceiling for the application of the log-skewed-normal model. The fixed switch point  $W$  is used as a floor for the application of the log-skewed-normal and as a ceiling for the application of the skewed-normal.

Estimating and projecting mean food consumption to compute per capita DEC in a country, FAO has traditionally relied on Food Balance Sheets, which are available for more than 180 countries. This approach was adopted mainly to the lack, in most countries, of suitable surveys conducted on regular basis. Using data on production, trade and utilization of food commodities, the total amount of dietary energy available for human consumption in a country over a one-year period is derived using food composition data, allowing for the estimation of per capita dietary energy supply. During the revision for The State of Food Insecurity in the World 2012, a parameter that captures food losses occurring during distribution at the retail level was introduced in order to obtain more accurate values of per capita consumption. Region-specific calorie losses were estimated from data provided in a recent FAO study, with loss rates ranging from 2% of the quantity distributed for dry grains, to 10% for perishable products such as fresh fruits and vegetables.

## Estimating the MDER threshold

To calculate the MDER threshold, the FAO employs normative energy requirement standards from a joint FAO/WHO/United Nations University expert consultation held in 2001. These standards are obtained by first calculating the needs for basic metabolism – that is, the energy consumed by the human body at rest – and then multiplying this value by a factor that takes into account physical activity, referred to as the physical activity level (PAL) index.

Since individual metabolic efficiency and physical activity levels vary within population groups of the same age and sex, energy requirements are expressed as ranges for such groups. To derive the MDER threshold, the minimum value of each range is specified for adults and adolescents, based on the distribution of ideal body weights and the midpoint of the PAL index values associated with a sedentary lifestyle. The lowest body weight for a given height that is compatible with good health is estimated using the fifth percentile of the body mass index distribution observed in healthy populations.

Once the minimum requirement has been established for each sex-age group, the population-level MDER

threshold is obtained as a weighted average, considering the relative frequency of individuals in each group as weights. This threshold is determined with reference to light physical activity, which is normally associated with a sedentary lifestyle. However, this does not imply that the population does not include individuals engaged in moderate and intense physical activity; rather, it serves as a means of avoiding the overestimation of food inadequacy when only food consumption levels are observed and cannot be individually matched to varying requirements.

A frequent misconception in assessing food inadequacy based on observed food consumption data is to refer to the midpoint of the overall range of energy requirements as a threshold for identifying inadequate energy consumption in the population. This approach would lead to significantly biased estimates: even among groups composed exclusively of well-nourished individuals, roughly half of these would fall below the mean requirement, as the group would include individuals engaged in low physical activity. Using the mean requirement as a threshold would certainly lead to substantial overestimation, since all adequately nourished individuals with requirements below the average would be misclassified as undernourished.

The FAO updates the MDER thresholds every two years, based on regular revisions of the population assessments from the United Nations Population Division and data on population heights from various sources, most notably the Monitoring and Evaluation to assess and use results of Demographic and Health Surveys project, coordinated by the United States Agency for International Development (USAID). This edition of *The State of Food Insecurity in the World* uses updated population estimates from the 2012 revision, published by the United Nations Population Division in June 2013. In cases where data on population heights unavailable, reference is made either to heights data from countries with similar ethnic compositions, or to models that estimate heights for various sex and age classes based on partial information.

## Application of FAO methodology-MDER: The case of Rwanda

The Minimum Dietary Energy Requirements (MDER) are determined using standards established by the FAO/WHO expert group on energy needs. There is a computation developed under Microsoft Excel that automatically calculates the MDER, once the input parameters are entered. The input parameters are:

- Population projections by age group and sex, provided by NISR
- The anthropometric data (height and weight of children under 5), as well as those of women of 15-49 years (height, Body Mass Index) are provided by the RDHS (2019/20).
- Body Mass Index (BMI) of men as well as women outside childbearing age group (0-14 years and over 49 years), weight gain for age, energy per kg of weight gained, and level of physical activity for age from 5 years to more than 70 years; this data was obtained from the World Health Organization (WHO).
- A combination of the above input parameters makes it possible to generate estimates for the MDER for male and female separately.
- Also required is to estimate the MDER of pregnant women in population. To do this, two other parameters were integrated into the model:
  - The birth rate, obtained from RDHS (2019/20)
  - The DER of an average pregnant woman is estimated by multiplying the birth rate by 210 kilocalories, assuming an estimated daily requirement of 280 kilocalories during pregnancy over 75 per cent of the year.

**Note:** An adjustment for physical activity has been included using the Physical Activity Level (PAL) index. The minimum acceptable level of activity, often described as “light activity” or a “sedentary lifestyle,” generally corresponds to a PAL of about 1.55; however, some countries, such as the United Kingdom, adopt a lower threshold of 1.4. For the working-age population, physical activity levels have been categorized as light, moderate, or high, depending on the types of occupations reported in the 2024 Labor Force Surveys. The PAL values applied to each group reflect the minimum necessary levels of physical activity rather than ideal standards, which is the appropriate basis for calculating prevalence undernourishment. Based on this classification, an average PAL of 1.64 was estimated.

- The Coefficients of Variation (CV) linked to the consumption of the Rwanda population was obtained from the FAO Food Security indicators as 0.33.
- The average Dietary Energy Consumption (DEC) per capita per year comes from the FBS detailed results. It is the DES per capita generated in the context of developing the Rwanda FBS 2024, which is used as proxy of DEC.

Following the FAO methodology, to estimate the Prevalence of Undernourishment, we assumed the distribution of the DEC within Rwanda population to be log-normal.

Finally, the population undernourished for a given year in the case of Rwanda was estimated by multiplying the Prevalence of Undernourishment for the year by the total population of the same year.

## Annex 6: Team Involved in the Compilation of the 2025 Food Balance Sheets (FBS)

### National Coordinators

- MURENZI Ivan, Director General of NISR
- MWIZERWA Jean Claude, Deputy Director General of NISR

### Technical coordination

- MUHOZA Didier, Economic Statistics Project Manager
- SIBOMANA Oscar, Director, Economic Statistics Department
- DUSINGIZIMANA Emmanuel, Agriculture and Environmental Statistician Team Leader

### Data Collection and Preparation

- MUREBWAYIRE Divine, SAS Specialist
- KAMANZI SHINGIRO Jean Philbert, SAS Specialist
- USABYIMANA Monique, Statistician
- MUKAMAZIMPAKA Francine, Statistician
- BYUKUSENGE Josiane, Statistician
- SINDIKUBWABO Ezechias, Statistician

### FBS Compiler

- USABYIMANA Monique, Statistician
- MUKAMAZIMPAKA Francine, Statistician

### Report Writing and Editing

- DUSINGIZIMANA Emmanuel, Agriculture and Environmental Statistics Team Leader
- USABYIMANA Monique, Statistician

### Proofreading

- ABAYISENGA Aimable, SAS Specialist
- RWAYITARE Jean Bosco, SAS Specialist
- CYUZUZO MUGIRANEZA Yves, Agricultural Survey Specialist
- NEEMA KALISA Grace, Communication Specialist

### Layout, Typesetting & Designing

- UWAMUNGU Thierry, Publication Specialist
- TWIZERIMANA Promesse, Graphic Designer

