



TECHNICAL ASSISTANCE REPORT

SOMALIA

Consumer Price Index Mission
(May 3–14, 2023)

SEPTEMBER 2023

Prepared By

Randi Johannessen

Authoring Departments:

Statistics Department

DISCLAIMER

“The contents of this document constitute technical advice provided by the staff of the International Monetary Fund to the authorities of Somalia Statistical Service (BSS) (the "CD recipient") in response to their request for technical assistance. This document (in whole or in part) or summaries thereof may be disclosed by the IMF to the IMF Executive Director for Somalia, to other IMF Executive Directors and members of their staff, as well as to other agencies or instrumentalities of the CD recipient, and upon their request, to World Bank staff, and other technical assistance providers and donors with legitimate interest, unless the CD recipient specifically objects to such disclosure (see [Operational Guidance for the Dissemination of Capacity Development Information](#)). Publication or Disclosure of this report (in whole or in part) to parties outside the IMF other than agencies or instrumentalities of the CD recipient, World Bank staff, other technical assistance providers and donors with legitimate interest shall require the explicit consent of the CD recipient and the IMF's Statistics department.”

Table of Contents

Acronyms and Abbreviations	2
Summary of Mission Outcomes and Priority Recommendations.....	3
Section I. Detailed Technical Assessment and Recommendations	5
A. The Integrated Household Budget Survey – Deriving New Weights.....	5
B. Expanding Geographical Coverage.....	7
C. New Basket and New Classification	9
D. Officials Met During the Mission	10

Acronyms and Abbreviations

COICOP	Classification of Individual Consumption by Purpose
CPI	Consumer Price index
EA	Elementary Aggregate
IMF	International Monetary Fund
NA	National Accounts
SCB	Statistics Sweden
SHFS	Somalia High Frequency Survey
SIHBS	Somalia Integrated Household Budget Survey
SNBS	Somalia National Bureau of Statistics
TA	Technical Assistance

Summary of Mission Outcomes and Priority Recommendations

- 1. A technical assistance (TA) mission was undertaken to the Somalia National Bureau of Statistics (SNBS) during May 3–14, 2023, in updating the expenditure weights and geographic coverage of its monthly Consumer Price Index (CPI).** The main tasks of the mission were to: (i) assist with updating CPI weights based on the Somalia Integrated Household Budget Survey (SIHBS); (ii) assist with updating consumer basket; (iii) assist with linking the old and new CPI series and introducing new index reference period; (iv) providing practical training and guidance to the SNBS staff in the design and operation of the new compilation system. The mission was held in Nairobi, Kenya due to security reasons.
- 2. A benchmark SIHBS was conducted in July, August, and September 2022. Social, health and demographic indicators based on the results were disseminated in February 2023.** The remaining part, consumption expenditures, were processed and analyzed during the mission in collaboration with the IMF experts. As the current CPI weights are based on the 2016 Short-term High Frequency Survey (SHFS) integrated in the CPI in 2018, deriving new weights was one of the main priority tasks during the mission. New weights were derived during the mission, however further correction of the expenditures may occur after the mission. Lack of expenditures for several groups of goods and services requires further investigation of the SIHBS, thus adjustment of the item weights is still needed.
- 3. The SNBS is aiming to publish a national CPI in August 2023 with July 2023 as the overlap month between the new and the old CPI.** The national CPI will include the capital city Mogadishu, and the following federal member states: Galmudug, Hirshabelle, Jubaland, Puntland, and South West, while inclusion of Somaliland in the CPI coverage may be considered for another update of the CPI for Somalia. Along with new weights, the prices are the most important input in the CPI. Prices are planned to be collected in United States Dollars for the updated CPI. With updating of weights less frequent than yearly, it is recommended that the prices from at least three months are included in the new price reference period. Also, the CPI team needs to be given the necessary time to establish new routines when expanding the CPI. Other tasks to be completed before introducing a new CPI is the adjusting of the calculation system by new weights and items, link old index series to the Classification of Individual Consumption by Purpose (COICOP) 2018, and re-reference the current CPI. Considering all the tasks to be completed for updating the index publication period defined as August 2023 seems too ambitious.
- 4. The SNBS has trained staff members at the state offices to conduct both the price collection and compilation of a state CPI.** If the expenditures are significant to split into states, the aim is to let the state compile their own state CPI by the end of 2023. Even through the states may compile their own CPI in the future, the SNBS will do the calculation of the national CPI.
- 5. A priority of the SNBS is to publish a CPI with national coverage, with updated weights and based on the COICOP 2018.** A new basket of items is proposed from the SNBS and has been discussed during the mission. The proposed new basket includes a corresponding table between the COICOP 2018 and COICOP 1999.
- 6. To support progress in the expanded CPI, the mission recommended a detailed action plan in Table 2 with the following priorities as presented in Table 1.**

TABLE 1. Priority Recommendations

Target Date	Priority Recommendation	Responsible Institutions
May 2023	Complete the new basket and weights.	SNBS
June 2023	Start collecting prices in states for all the new items.	SNBS and state offices
September 2023	Establish the price reference period based on June–August.	SNBS

Further details on the priority recommendations and the related actions/milestones can be found in the action plan under *Detailed Technical Assessment and Recommendations*.

Section I. Detailed Technical Assessment and Recommendations

TABLE 2. Somalia Action Plan

Priority	Action/Milestone	Target Completion Date
<i>Outcome: CPI with new weights and expanded geographical coverage.</i>		
H	Complete the update of the new weights and basket of items based on the SIHBS.	May 2023
H	Start the price collecting of the new items in states.	June 2023
H	Establish routines with the state of when and how monthly prices should be delivered to the SNBS.	July 2023
H	Expand the index calculation system to cover the new basket of items and states.	August 2023
H	Calculate the new price reference period prices.	September 2023
H	Link the COICOP 1999 series to the new COICOP 2018.	September 2023
H	Re-reference the current CPI.	September 2023
H	Compile a test of the new CPI.	September 2023
H	Disseminate the new national CPI.	January 2024

A. THE INTEGRATED HOUSEHOLD BUDGET SURVEY – DERIVING NEW WEIGHTS

7. A benchmark SIHBS was conducted in July, August, and September 2022. The SIHBS has been provided with a one-site contractor (funded by the World Bank) to support the implementation of the survey. A corresponding integrated survey is planned every five years. The SIHBS has been designed to serve multiple purposes and among other social, health and demographic indicators were disseminated in February 2023. Analyses and the adjustments of the expenditures were conducted by the SNBS team during the mission in collaboration with the IMF expert.

8. The SIHBS consumption data needed more processing and validation than expected initially. The SNBS should seek assistance or build own capacity in conducting for the next SIHBS. There should be ongoing contact between the interviewers and the SIHBS staff that will do the processing and validation of the data. Also, if a follow up with the household is necessary to clarify outliers, this needs to be done shortly after the interview.

9. A clear instruction on how to validate possible under or overreporting in the SIHBS is needed for the follow-up work. Secondary data sources may also be useful to evaluate the completeness of the coverage. As the primary source of weights for the CPI, it is important that the expenditure data from the SIHBS is classified according to the COICOP. Creating a correspondence table between COICOP codes and the SIHBS item codes required a huge manual work during the mission. Spreading the collection of expenditures over one year is preferable by using rotating samples of households. In this way the effect of e.g., oil price shock and drought could be more limited. Some expenditures are missing within the COICOP 09 division - recreation, sport and culture, e.g., textbooks. The SNBS should clarify if these expenditures are available but classified within the education module of the questionnaires. Also, lack of expenditures within COICOP divisions 08, 10 and 11 (information and communication, education services, insurance, and financial services) give less room for expanded basket of items and require further investigation of the SIHBS data.

10. Aggregated expenditures on national level were available after validation during the mission. To obtain annual expenditure, a standardization was introduced by adding up seven or 30-day expenditures. The results on main COICOP groups are given in Table 3. Using the COICOP codes from the correspondence table, a system for deriving weights was developed in Excel. Any possible corrections of the expenditures should be handled by the system. No regional expenditure shares were possible to obtain during the mission. Ideally, regional weights should be available, at least at division or group level of COICOP, for the aggregation of indices at the lowest level (elementary aggregate (EA) indices) to obtain national item indices. If not possible to split the national expenditures to significant weights for each state, one solution could be to split into Mogadishu and all the other states as one part.

TABLE 3. Preliminary Results From SIHBS

	COICOP 2018 Division	Expenditures, US dollar	Share of total consumption in %	Share 2016 (SHFS all states) in %
01	Food and Non-Alcoholic Beverages	18,749,601	51.49	61.3
02	Alcoholic Beverages, Tobacco & Narcotics	751,307	2.06	2.2
03	Clothing and Footwear	3,168,422	8.70	7.52
04	Housing, Water, Electricity, Gas, and other Fuels	3,858,754	10.60	12.05
05	Furnishings, Household Equipment and Household Maintenance	1,843,200	5.06	3.32
06	Health	563,800	1.55	0.66
07	Transport	3,119,292	8.57	1.22
08	Information and communication	1,464,078	4.02	1.23
09	Recreation, sport, and culture	198,401	0.54	0.35
10	Education services	536,415	1.47	1.08

COICOP 2018 Division		Expenditures, US dollar	Share of total consumption in %	Share 2016 (SHFS all states) in %
11	Restaurants and accommodation services	342,531	0.94	6.85
12	Insurance and financial services	108,184	0.30	2.22
13*	Personal care, social protection and miscellaneous goods and services	1,712,474	4.70	
Total		36,416,459	100	

* In COICOP 2018, the Division 12 is split in division 12 and 13. In 2016, the figures were aggregated by using COICOP 1999 with 12 Divisions.

Recommended Actions:

- Finalize the validating of the SIHBS and complete the new CPI weights.
- Split the SIHBS consumption expenditures to state level, depending on the robustness of the collected expenditures.
- Decide on state weights to be used to aggregate together EA indices to the national item level.
- Build capacity in necessary methodology for the next SIHBS.

B. EXPANDING GEOGRAPHICAL COVERAGE

11. Since the last mission conducted in 2021, price collection has been expanded to urban areas of all states except for Middle Juba. However, state indices (and state prices) were not available to the mission for further analysis. The SNBS aims to get all prices by the end of reference month from the capital city Mogadishu, and from federal states—Galmudug, Hirshabelle, Jubaland, Puntland, and South West, and to calculate the national CPI in the SNBS, instead of weighting state indices calculated by the state offices. However, the SNBS has trained staff members at the state offices to conduct the price collection, and also to compile the state CPIs. Price collection will be conducted by 35 enumerators overall (Table 4). If the expenditures from the SIHBS are good enough to split into states, the aim is to let the state compile their own state CPI in the future (if possible, by the end of 2023). In addition, the SNBS will take charge of the national CPI compilation.

TABLE 4. Number of Enumerators

Federal States / Capitol City	Number of Enumerators
Mogadishu	10
Puntland State	6
Galmudug State	5
Hirshabelle State	5
South West State	5
Jubaland State	4

12. The SNBS should decide whether the states should report individual prices of varieties or just the average price for each item. By reporting variety prices, the SNBS would have more control to verify the prices if needed. The SNBS should avoid entering all prices into the main entry system manually. Sharing the price entry system with all states to report prices is one way to avoid double work (initially in the state and later in the SNBS). Currently mobile data collection apps are used for collecting prices, which could be connected with the price entry system to simplify the data entry process.

13. National price indices at the very lowest level, EA level, should be calculated by weighting each state separately. If weights for each state are not significant, the SNBS should consider separating Mogadishu from the rest of Somalia and calculate two elementary aggregate indexes—one for Mogadishu, and another for the rest of the states. The indexes should be aggregated to form the item index on national level.

14. The SNBS is aiming to publish a national CPI in August 2023 with July 2023 as the overlap period between the new and the old CPI. Even though price collection field work is now taking place in each state, still some preparatory work is needed to form the price reference period. One challenge is that no prices are collected so far for the items newly added in the consumer basket. Ideally, these new items should also have prices for at least three months to be included in the price reference period of the new CPI. Along with price collection of the new items starting in June at the earliest, recommendation is to postpone the introduction of the new, expanded CPI until September prices are available to give time for price collectors to get familiar with the new basket and collect sufficient prices for the new items. The updated consumer basket should reflect local consumption patterns. Price collection for new services like financial services may require extra training of price collectors, while the CPI team needs additional time to establish new routine when expanding the CPI and adjust the index calculation system. Following the TA mission, the SNBS revised the updated CPI dissemination plan to early 2024.

15. A test calculation of the new CPI should be conducted to ensure that the necessary adjustment of the calculation system is done properly. This can be done as soon as the calculation system is updated by the new weights and the new basket. A preliminary price reference period can be defined when price observations for the new items are obtained. One way of testing the calculation system is to use fictive prices equal to the reference prices by copying reference prices to the calculating month. With all identical prices in the price reference period and the current period, the index should equal to 100, otherwise there is an indication that something does not work properly.

16. The SNBS has developed a comprehensive and easy to follow the index calculation system for analyzing and aggregating the item indices. By implementing some adjustments, this system should work well even with additional states, new weights, and the updated basket. The collected prices for all the items are entered in a separate Excel system where the geometric mean prices are calculated for each item. This price entry system could easily be duplicated and adjusted to be used for the prices reported from each state. While going through the calculation system, a tendency was identified to round the geometric mean price to the nearest 1000 when pasting the mean price into the calculation system. This approach should be changed when the new CPI is introduced based on prices in US dollar. One other thing discovered is that the calculated geometric mean based on the observed prices are replaced by another “mean price” in the production system without any tracing in the price entry system. The geometric mean in the price entry system should correspond with the one in the index calculation system. If the calculated mean is rejected due to a reasonable reason, then this should be traceable in the system by a comment. As understood during the mission, Statistics Sweden (SCB) will assist in modifying the current index calculation system before establishing the national CPI.

17. The SNBS should consider developing the index calculation system to identify outliers before analyzing indexes at macro level. The current production system has built in visualizations (graphs) on macro level. Identifying large price movements at macro level results in checking and verifying prices at micro level. By looking at indices on the item level, some standard items, like “toothpaste,” “toothbrush” and “razor” have identified volatile price movements between two months that one would not expect for such items. Having a small weight, these items does not significantly affect the all-item CPI. However, the SNBS should clarify that such price movements are not caused by unequal number of price observations in the numerator and denominator when the price relatives are calculated.

Recommended Actions:

- Postpone the calculation of the new national CPI until September prices are available and use June–August as price reference period (as the earliest).
- Start price collection of the items in the new CPI basket as soon as possible in all states.
- Instruct and train price collectors when looking for the new items, especially new services.
- Clarify with the states how and when to receive prices.
- Use at least three months of price observations in the price reference period.
- Calculate a fictive version of the new CPI as a test of the adjusted production system.
- Re-reference the current national CPI to the new CPI with the new linking period that equals 100.

C. NEW BASKET AND NEW CLASSIFICATION

18. The SIHBS has proposed a new basket of items with the correspondence between COICOP 2018 and COICOP 1999. The suggested new items are in line with the COICOP 2018, especially by introducing more services within health, information and communication and financial services, but also quite a lot of new items. One important task when updating the weights and the basket of items is removing obsolete items that are no longer representative.

19. When a replacement is necessary, a new variety is chosen, and an implicit quantity/quality adjustment is conducted if the new and the old varieties are not comparable. The current practice is that a quality adjustment is done by asking what the price for the new variety was in the previous month. Along with expanding price collection due to expanded basket of items and geographical coverage, one future step could be to build into the index calculation system an automatic imputation of missing prices based on the price movements of all price observations from the previous month to the current one for the specific new variety.

20. COICOP 2018 is expanded by one new division 13. In addition, some components appear in different divisions, and classes, and among others there are several changes within division 08 and 09 (information and communication; recreation, sport, and culture). For most of the index series at detailed level there is a one-to-one link between the new and the old codes, thus the correspondence table established in the proposed new basket will be used. Where there is a split up and a 5-digit subclass is divided into two new ones, the back series for the old subclass can be used as the back series for both the new subclasses. Totally new indices in the CPI do not have any back series and start by 100 in the linking period between the current and the new CPI. Linking of the series to each other should be done before re-referencing.

Recommended Action:

- Consider removing items from the basket that are outdated or unnecessary to be priced.

D. OFFICIALS MET DURING THE MISSION

Name	Institution	Position
Hashim Sheikh Abdinoor	SNBS	Statistician
Abdulkadir Dahir Ahmed	SNBS	Head of CPI Section
Abdirashid Khalif Mohamed	SNBS	Economist
Ayan Abdullahi Abdi	SNBS	Economist
Mohamed Noor Ahmed	SNBS	CPI Data Analyst
Mohamed Abdinur Mohamed	SNBS	Statistician
Naima Mohamed Ibrahim	SNBS	Economist