

Research Terms of Reference

Libya Poverty Analysis

LBY2304

Libya

April 2023

REACH Informing
more effective
humanitarian action

1. Executive Summary

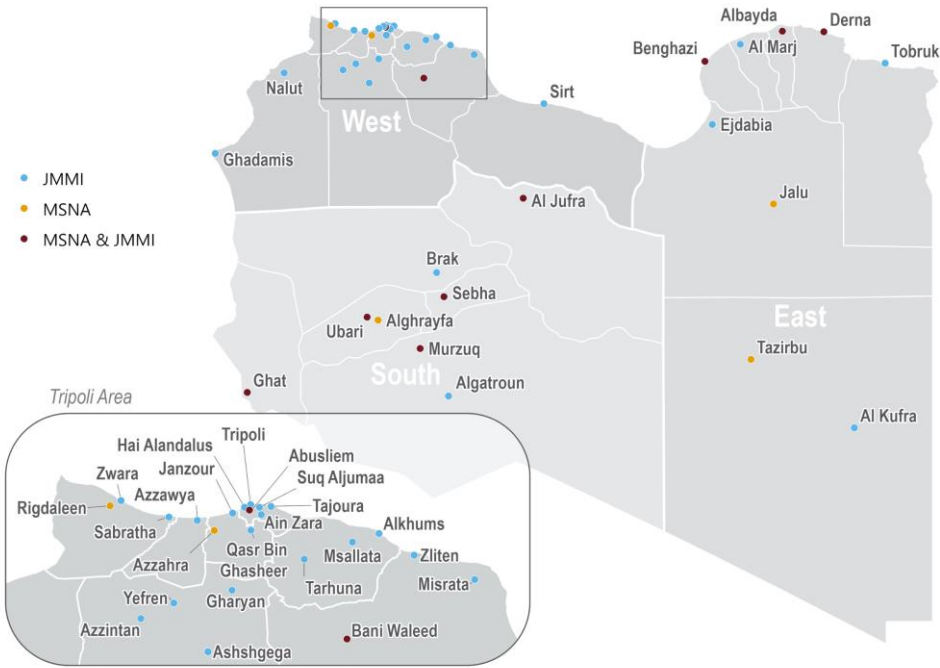
Country of intervention	Libya				
Type of Emergency	☐	Natural disaster	☒	Conflict	☐ Other (specify)
Type of Crisis	☐	Sudden onset	☐	Slow onset	☒ Protracted
Mandating Body/ Agency	European Civil Protection and Humanitarian Aid Operations (ECHO)				
IMPACT Project Code	14AVN				
Overall Research Timeframe (from research design to final outputs / M&E)	30/03/2023 to 30/06/2023				
Research Timeframe Add planned deadlines (for first cycle if more than 1)	1. Start data consolidation and analysis: 30/03/2023				
	2. Analysis sent for validation: 12/05/2023				
	3. Outputs sent for validation: 09/06/2023				
	4. Outputs published: 23/06/2023				
	5. Final presentation sent for validation: 16/06/2023				
Number of assessments	☒	Single assessment (one cycle)			
	☐	Multi assessment (more than one cycle) [Describe here the frequency of the cycle]			
Humanitarian milestones Specify what will the assessment inform and when e.g. The shelter cluster will use this data to draft its Revised Flash Appeal;	Milestone			Deadline	
	☐	Donor plan/strategy			--/__/----
	☐	Inter-cluster plan/strategy			--/__/----
	☐	Cluster plan/strategy			--/__/----
	☐	NGO platform plan/strategy			--/__/----
	☒	Inform Cash and Markets Working Group (CMWG) understanding and programming around cash assistance			Ongoing
	Audience type			Dissemination	

Audience Type & Dissemination <i>Specify who will the assessment inform and how you will disseminate to inform the audience</i>	☐ Strategic ☒ Programmatic ☐ Operational ☐ [Other, Specify]	☐ General Product Mailing (e.g. mail to NGO consortium; HCT participants; Donors) ☒ Cluster Mailing (Education, Shelter and WASH) and presentation of findings at next cluster meeting ☒ Presentation of findings (e.g. at HCT meeting; Cluster meeting) ☒ Website Dissemination (Relief Web & REACH Resource Centre) ☐ [Other, Specify]
Detailed dissemination plan required	☐ Yes	☒ No
General Objective	Inform the understanding of livelihood, income, expenditure and poverty across baladiyas in Libya, focusing on the percentage of assessed households in poverty ¹ in all baladiyas covered by the 2022 Libyan population Multi-Sector Needs Assessment (MSNA) ² . This information is intended to help CMWG actors in their strategic planning and targeting of locations.	
Specific Objective(s)	1) Normalize 2022 MSNA income and expenditure data for household size and map the distribution of both variables. 2) Estimate the percentage of households in poverty using several different indicators and poverty lines (see research questions below for more information on the indicators). 3) Based on the analysis, identify the baladiyas with the highest percentage of households in poverty (if any). 4) Identify key characteristics of households in poverty, such as household size, gender of head of household, employment types, or other potential indicators that may be related to the identified instances of poverty.	
Research Questions	1. What does the income data distribution look like across Libya and in the baladiyas covered by the 2022 Libyan population MSNA? 2. What does expenditure data distribution look like across Libya and in the baladiyas covered by the 2022 Libyan population MSNA? 3. What percentage of households is in poverty, according to the following indicators and poverty lines: a. Indicators: i. Income ii. Expenditure b. Poverty lines: i. The Minimum Expenditure Basket (MEB) according to the Joint Market Monitoring Initiative (JMMI)³ ii. Bottom 30% quantile of both expenditure and income	

¹ Households will be classified as being in 'poverty' as per the methodology outlined in section 3.4 The primary measure of poverty will be income and expenditure below the cost of the Minimum Expenditure Basket (MEB).

² The MSNA is a yearly assessment that aims to inform the overall understanding of humanitarian needs in Libya. The primary component of the assessment is quantitative data collection through household surveys. For the 2022 MSNA, 3758 households were surveyed between July 4th and October 4th. Please see the MSNA ToR [here](#).

³ The JMMI is a monthly assessment that aims to inform the understanding of market developments and prices. The assessment relies on KII data. The MEB reflects the estimated minimum cost of basic goods for a five-person household in a month. Please see the JMMI ToR [here](#).

	iii. Bottom 40% quantile⁴ 4. Where (if anywhere) are there pockets of poverty in Libya? 5. For those households that are identified as living in poverty, in what way (if at all) do households have any characteristics in common? If yes, what are those characteristics?				
Geographic Coverage	The basis for the analysis is the 2022 Libyan population MSNA data. Therefore, the analysis will cover the baladiyas (ADM3) covered by the MSNA. Additionally, the analysis will use data from REACH Libya’s JMMI which covers 34 baladiyas. Regional aggregation will be used for the baladiyas covered by the MSNA but not by the JMMI. The geographic coverage of the data used from both assessments looks as follows: Map 1: Geographic coverage of the two data sources  Legend: - JMMI (Blue dot) - MSNA (Yellow dot) - MSNA & JMMI (Red dot)				
Secondary data sources	The key data sources that will be used for the analysis are: 1. REACH Initiative, 2022 Multi-sector Needs Assessment (Libyan population), data published in October 2022. All data is available on the REACH resource center. 2. REACH Initiative, Libya Joint Market Monitoring Initiative (JMMI), data published monthly. The data for July 2022, August 2022 and September 2022 will be used for the analysis, as that is the period that coincides with data collection for the MSNA. All data is available on the REACH Resource Center.				
Population(s)	<table><tr><td>☐</td><td>IDPs in camp</td><td>☐</td><td>IDPs in informal sites</td></tr></table>	☐	IDPs in camp	☐	IDPs in informal sites
☐	IDPs in camp	☐	IDPs in informal sites		

⁴ The quantile approach is adopted and suggested by the Libya CMWG for their analysis of MSNA data and will be adopted as well to ensure consistency between analysis approaches of income and expenditure data in this context.

Select all that apply	☒	IDPs in host communities	☐	IDPs [Other, Specify]
	☐	Refugees in camp	☐	Refugees in informal sites
	☐	Refugees in host communities	☐	Refugees [Other, Specify]
	☒	Host communities	☒	Returnee
Stratification Select type(s) and enter number of strata	☒	Geographical #: 15 baladiyas Population size per strata is known? X Yes ☐ No	☐	Group #: N/A Population size per strata is known? ☐ Yes ☐ No
			☐	[Other Specify] #: N/A Population size per strata is known? ☐ Yes ☐ No
Data analysis method	☐	Primary	☒	Secondary
Data management platform(s)	☒	IMPACT	☐	UNHCR
	☐	[Other, Specify]		
Expected output type(s)	☐	Situation overview #: __	☐	Report #: __
			☐	Profile #: __
	☐	Presentation (Preliminary findings) #: __	☒	Presentation (Final) #: 1
	☐	Interactive dashboard #: __	☐	Webmap #: __
	☐	[Other, Specify] #: __		
Access	☒	Public (available on REACH resource center and other humanitarian platforms)		
	☐	Restricted (bilateral dissemination only upon agreed dissemination list, no publication on REACH or other platforms)		
Visibility Specify which logos should be on outputs	REACH			
	Donor: ECHO			

2. Rationale

2.1 Background

Based on the MSNA report on the Libyan population in 2022, economic factors are the driving force behind many of the existing needs in Libya. More specifically, 54% of households assessed reported not being able to afford their basic needs in the 30 days leading up to the data collection due to insufficient economic resources. Furthermore, 32% stated that the cost was the main obstacle preventing them from accessing healthcare, while 54% identified access to cash as their top priority.⁵ These findings highlight the significance of economic status for the well-being and ability of Libyans to access services. The prolonged conflict in Libya has had severe macroeconomic consequences, with the United Nations Economic and Social Commission for Western Asia (UNESCWA) predicts a total cost of the conflict of 1411.6 billion Libyan dinars over the period 2011-2025 (equivalent to USD 1046 billion using the official exchange rate of the Libyan dinar/US dollar).⁶

Despite efforts to gather information, there is a lack of data regarding income, spending, and poverty in Libya. This can be attributed to the fragmented governance system, which results in limited income data that does not cover all regions.⁷ Moreover, available income data does not consider the significant price differences across regions, making it challenging to determine the poverty rate among households and the most affected areas. Additionally, the absence of a widely accepted poverty line for Libya adds to the complexity of the issue. Implementing the World Bank's standard international poverty line of \$2.15 per day (or alternative lines of \$3.65 or \$6.85 for lower and upper middle-income countries) has limitations in Libya

⁵ REACH Initiative, [2022 Multi-sector Needs Assessment \(Libyan population\)](#).

⁶ UNESCWA, [The economic cost of the Libyan conflict](#).

⁷ REACH Initiative, [Libya Joint Market Monitoring Initiative \(JMMI\)](#), data published monthly.

because of the presence of two separate exchange rates (one official, one black market).^{8,9} To address these information gaps and help identify households in economic poverty, this document proposes an analysis of 15 baladiyas in Libya.

2.2 Intended impact

The Libya Cash and Markets Working Group (CMWG) has collaborated in the conceptualization of the proposed research. At present, the CMWG relies on the JMMI, particularly the cost of the MEB, to determine the Cash Transfer Value (CTV) for Libya¹⁰ and guide their cash programming. Unfortunately, there is a scarcity of expenditure or income data which could be used to inform decision-making by CMWG or other stakeholders. The objective of the analysis is to provide insights that will aid CMWG partners in deciding on areas or beneficiary profiles for targeting, as well as other factors relating to cash programming. Furthermore, the analysis will enhance the general understanding of income distribution and poverty in Libya, benefiting not only CMWG partners but also other interested stakeholders.

3. Methodology

3.1 Methodology overview

The research project will involve examining the income, expenditure, and coping strategies of the Libyan population through a combination of primary and secondary data analysis. The July, August, and September 2022 rounds of the JMMI, as well as the 2022 Libyan population MSNA, will be used to generate new insights on poverty, expenditure, and income in Libya. The Libyan population MSNA is an annual evaluation that seeks to enhance understanding of humanitarian requirements in Libya. The study comprises large-scale quantitative data collection on basic necessities in six sectors and multiple thematic areas, including cash and markets. In 2022, 3758 quantitative household surveys were completed across 15 baladiyas in Libya as part of this assessment. Outputs for this assessment, including [the questionnaire](#) and [the dataset](#), can be found on the REACH Resource Center [here](#). On a monthly basis, the JMMI conducts an evaluation to monitor price levels in Libya and other market indicators as determined by REACH, the CMWG, and other sectoral partners. These indicators may include liquidity and access to financial service providers when they are deemed relevant. The data is obtained via key informant interviews (KIIs) conducted in 34 baladiyas each month. The KII data is then combined to estimate changes in price for all assessed items and calculate the cost of the MEB. Outputs for this assessment, including the datasets and factsheets, can be found on the REACH Resource Center [here](#).

The research will employ several livelihood indicators to gain a comprehensive understanding of the financial capabilities of households in Libya, and how economic vulnerabilities impact poverty and the needs of the population. The research will concentrate on income and expenditures, employment, social security, and coping strategy indicators.

To create a thorough overview of poverty in Libya, multiple poverty indicators and poverty lines will be utilized to cross-validate and confirm the results. The 2022 MSNA will be the primary source of data, with the cost of the MEB derived from the JMMI. All poverty line comparisons with the listed indicators will be performed at the baladiya-level, with the possibility of combining results at the national level. The following indicators and poverty lines will be analysed against each other:

1. Indicators:
 - a. Income
 - b. Expenditure
2. Poverty lines:
 - a. The cost of the MEB according to the JMMI
 - b. Bottom 30% quantile of income and expenditure
 - c. Bottom 40% quantile of income and expenditure.

⁸ For more information about international poverty lines, see [World Bank](#).

⁹ For more information about the exchange rates, see e.g. the [Libya Observer](#).

¹⁰ The cost of the MEB is a measure of how much an average 5-person household is expected to spend on basic needs on a monthly basis. It is calculated by REACH every month based on collected price data across consumption groups (e.g. food items and hygiene items). The CTV is calculated by the CMWG based in part on the cost of the MEB to estimate the amount of needed cash assistance for targeted households in order for them to meet their needs.

To prepare all indicators and poverty lines for analysis, certain steps need to be taken. For income and expenditure data, this involves removing outliers and adjusting the data for differences in household size. Since the data is collected at the household level, direct comparisons can be biased due to varying household compositions and sizes. To address this issue, the research will employ an equivalence scale to standardize income and expenditure data for all households. The equivalence scale adjusts the available or spent resources to the standardized size of a one-person household, taking into account the number and age of household members. This method is preferred over calculating income or expenditure per capita, as it considers household economies of scale. Household economy of scale recognizes that a household of five does not consume five times the amount of a one-person household. For instance, not all household members consume the same amount of goods, and per capita expenditure does not rise in proportion to the number of additional household members. Instead, sharing resources often results in a lower per capita expenditure. For example, a household can cook a slightly larger meal to feed one additional person by increasing the amount of some ingredients, without increasing the total cost of the meal. Similarly, a household's rent may not change with an additional household member.¹¹ Therefore, the research will utilize an equivalence scale to adjust income and expenditure data for accurate analysis.

There is not one widely accepted equivalence scale that is used across contexts. There are three scales that are most deployed, all developed by the Organisation for Economic Co-operation and Development (OECD). These scales are:

- The 'old OECD scale' or the 'Oxford scale'
- The OECD-modified scale
- The square root scale¹²

Although some countries have their own specific equivalence scales, Libya does not have one yet. However, the analysis is based on comparing income and expenditure with the cost of MEB, and the latter does not take into consideration the household composition therefore the equivalence scale adopted to standardize the income and expenditure data will be the square root scale.

After the income and expenditure data is prepared, the cost of the MEB data must be adjusted for comparison to the MSNA data. Two factors need to be considered: matching the time of data collection and applying the cost of the MEB values for a five-person household to the one-person equivalent household. The cost of the MEB values for July, August, and September 2022 will be averaged for the purpose of this research to match the data collection period for the MSNA. The income and expenditure data covers a 30-day period, so no period corrections are necessary.

As for household size and composition, the cost of the MEB applies to a five-person household without taking into account composition. Therefore, the only equivalence scale that can be used is the square root scale which divides household income by the square root of household size. This implies that, for instance, a household of four persons has needs twice as large as one composed of a single person.

¹¹ International Labour Organization (ILO), "[Household income and expenditure statistics](#)", 2003.

¹² Canberra Group, "[Handbook on Household Income Statistics: Second Edition](#)," 2011.

The CMWG employs the 30% and 40% quantile poverty lines in its investigations of relative poverty in Libya. Essentially, this method focuses solely on households that fall within the bottom quantile of a specific indicator, such as expenditure. For instance, it assumes that households whose expenditure falls within the bottom 30% of the overall distribution are living in (relative) poverty. This research will utilize this method as well, with the main goal of comparing its results to those obtained using the MEB as a poverty line. The key advantage of using the bottom quantiles is that it circumvents the aforementioned challenges associated with comparing MEB and MSNA data. Notably, using MEB data raises issues of household composition and size compared to MSNA data. The quantile approach, on the other hand, solely relies on MSNA data and avoids these challenges. For both income and expenditure, the 30% or 40% bottom quantile will be used to define poverty. It is worth noting that this analysis will be conducted at the baladiya-level only, as will the comparisons with the cost of the MEB. Examining quantiles at the national level would disregard the substantial price variations across Libya. By restricting the analysis at baladiya-level, it is assumed that households encounter the same external market conditions. Consequently, the relative poverty measure will not be influenced by price differences. The quantile approach will serve as a means of cross-checking the MEB poverty line. Moreover, quantile poverty lines will be implemented separately for income and expenditure data to determine whether households with relatively low income also have relatively low expenditures. This will provide insights into the overall validity of both variables.

Once all variables are scrubbed, the poverty lines will be compared to the indicators. This evaluation will only be carried out at the baladiya level and will employ two methods. The first method involves comparing the medians, which entails contrasting the median income and expenditure against the median cost of the MEB, as well as comparing them to the 30% and 40% quantile income and expenditure levels. The primary objective of this approach is to gain insight into the baladiyas where the general income and expenditure levels are comparatively low when compared to the cost of the MEB and relative poverty indicators.

The second method involves calculating the percentage of households assessed below the baladiya-level cost of the MEB. The 30% and 40% quantile approach cannot be applied in this case since the percentage of households living below the quantile mark will inevitably be 30% and 40%. At this point, the quantile approach will be employed as a triangulation method solely to gauge how the results for the MEB poverty line compare to the quantiles. The second method's anticipated outcome is to provide a summary of the percentage of households in poverty per baladiya.

The national-level outcomes for both methods will be obtained by aggregating the baladiya results. This will involve adding up the number of impoverished households per baladiya and using the weights in the MSNA dataset to determine the percentage of households living in poverty across all locations. However, direct application of the methods at the national level may not be appropriate due to potential price differences across locations that could affect the results.

Although the different models are expected to produce similar results, the final classification of households living in poverty will be based on several criteria, as outlined in step 12 under section 3.4. For the subset of households classified as 'poor', further analysis will be conducted to understand their characteristics. This will involve analyzing MSNA indicators such as displacement status, job type, sex of the head of household, household size, and documentation status. Linear regression models will be used to test the strength of the relationships, but causality cannot be established through this analysis.¹³

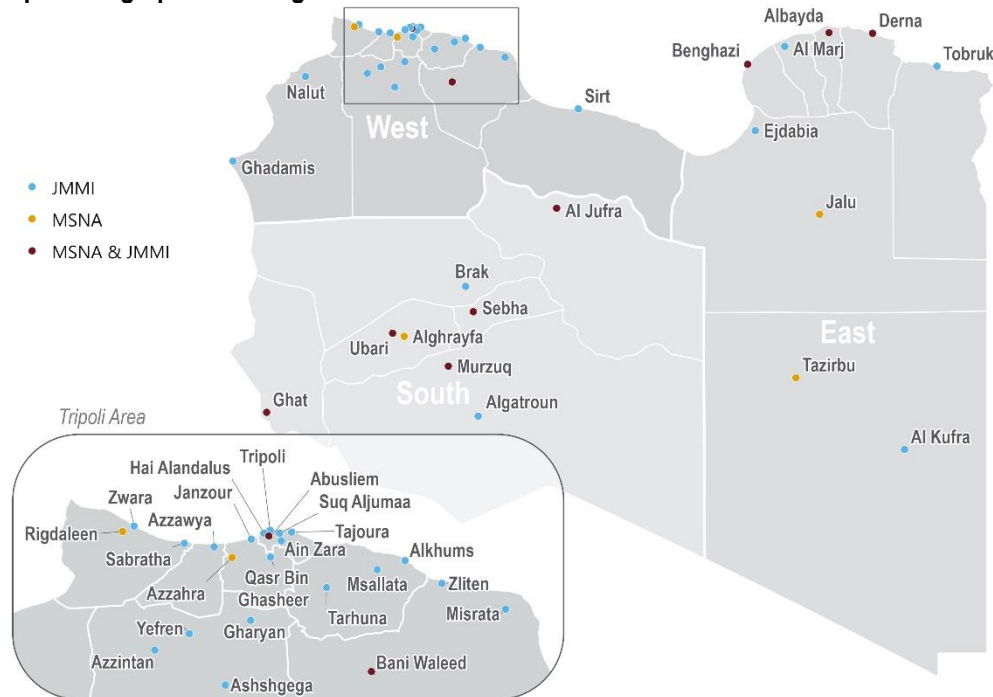
If there are inconsistent results among the different models for estimating poverty, further investigation into the reliability of income and expenditure data collected through the 2022 MSNA will be necessary. This will inform how data is collected in potential future MSNA cycles.

¹³ In order to be able to establish causality, further quantitative and qualitative data collection and analysis would have to be completed to determine the exact nature of the relationship between the variables in question. Simple linear regressions can indicate correlation but never causation.

3.2 Population of interest

No additional data will be collected for this research. As a result, the scope of this assessment is bound to the population groups and areas covered by the MSNA and JMMI. The 2022 MSNA covered 15 baladiyas and the JMMI covered 34 baladiyas. A total of 10 baladiyas are covered by both assessments, see the map below an overview of which baladiyas are covered by which assessment.

Map 1: Geographic coverage of the two data sources



In order to be able to use all MSNA data, the baladiyas that are not covered by the JMMI have been matched to a baladiya that is covered by the JMMI. The cost of the MEB for that baladiya will be used for the analysis. The matching of baladiyas has been done based on proximity and whether they are in the same mantika. In some cases, two baladiyas are similarly close to the baladiya that is not covered, and both are in the same mantika. In this case, the cost of the MEB will be averaged (after the MEB has been averaged for the three months) for these two baladiyas to create the cost of the MEB for the baladiya that is not covered by the JMMI. See the table below for an overview of the baladiyas covered by the MSNA and not by the JMMI, and the baladiya they have been matched with.

Table 1: Baladiyas covered in the MSNA and the JMMI

Baladiya covered in the MSNA and the JMMI
Albayda
Aljufra
Bani Waleed
Benghazi
Derna
Ghat
Murzuq
Sebha
Abusliem
Ubari

Table 2: Baladiyas not covered by the JMMI, matched with the baladiya(s) from which JMMI data will be taken

Baladiya not covered by the JMMI	Baladiya(s) from which JMMI data will be taken
Azzahra	Janzou & Qasr Bin Ghasheer
Rigdaleen	Zwara
Jalu	Ejdabia
Tazirbu	Alkufra
Alghrayfa	Ubari

As for the population groups covered, the MSNA data can be disaggregated for assessed internally displaced person (IDP), returnee, and non-displaced households. However, to avoid working with small sample sizes at baladiya-level, which may produce less reliable results, the analysis for this research will not be disaggregated for these population groups. MSNA Data is already weighted to prevent over-representation of IDP and returnee households. The information regarding displacement status may be used for the final analysis step, when looking at the characteristics of households found to live in poverty.

As the MSNA and JMMI data are both collected at baladiya-level, this will be the primary level of analysis. The MSNA data is at household level. The final analysis outputs will present findings at household-level per baladiya and aggregated to national level. As discussed above, the household income and expenditure data will be equalized for a one-person standardized household.

3.3 Secondary data review

The following data sources will be used for the analysis:

1. REACH Initiative, [2022 Multi-sector Needs Assessment \(Libyan population\)](#), data published in October 2022. All data is available on the REACH resource center.
2. REACH Initiative, [Libya Joint Market Monitoring Initiative \(JMMI\)](#), data published monthly. The data for July 2022, August 2022 and September 2022 will be used for the analysis, as that is the period that coincides with data collection for the MSNA. All data is available on the REACH resource center.

Additionally, secondary sources will be consulted to make sure that the analysis meets the technical standards for doing income and poverty analysis. At minimum, the following sources will be used:

1. International Labour Organization (ILO), [“Household income and expenditure statistics”](#), 2003.
2. Canberra Group, [“Handbook on Household Income Statistics: Second Edition”](#), 2011.
3. Czajka & Denmead. [“Income Data for Policy Analysis: A Comparative Assessment of Eight Surveys”](#), December 2008.
4. Muhammad et al. [“How income and food prices influence global dietary intakes by age and sex: evidence from 164 countries”](#), May 2017.
5. EASYPol/FAO, [“Equivalence Scales: General Aspects”](#), 2005.
6. Jolliffe, Prydz. [“Societal Poverty A Relative and Relevant Measure”](#), 2017.
7. UNDP (United Nations Development Programme), OPHI (Oxford Poverty and Human Development Initiative). [“Global Multidimensional Poverty Index \(MPI\): Unpacking deprivation bundles to reduce multidimensional poverty”](#), 2022

3.4 Data Processing & Analysis

The secondary data analysis for the research will follow several steps. Unless specified differently, the steps will primarily be executed in R. The steps are outlined here in detail:

Step 1: Map the distribution of un-adjusted income and expenditure data

Before diving into the analysis of adjusted income and expenditure, it is important to understand the distribution of the raw data. This will aid the general understanding of the data, as well as the outliers. The income data that will be used is the sum of the income reported per source by households assessed during the MSNA.¹⁴ The expenditure data in the MSNA was gathered per consumption category. The categories that are also included in the MEB will be included in the total expenditure per household calculation. The MEB consists of a food and water component, an NFI component consisting primarily of hygiene items, and a fuel component. Accordingly, total expenditure per household will consist of the food, water, hygiene items, and fuel categories.

Step 2: Remove outliers from income and expenditure data

The removal of outliers from income and expenditure data will occur over the entire dataset. In other words, the outliers at baladiya-level will not be removed separately. This research will adopt the same approach as the CMWG used for their analysis of MSNA data, which is to remove the top and bottom 1% quantiles of the total expenditure and income data. The MSNA cleaning process has naturally involved the removal of outliers as well, but only on the separate income source and expenditure categories, rather than the summed income and expenditure data. In addition to the removal of outliers, 'N/A' values will also be removed at this stage.

Step 3: Calculate the proportion of households under poverty line as defined by the Worlds Bank

In order to inform the UN SDGs¹⁵ and the Common Country Analysis for Libya, it is important to calculate the proportion of the population living below the international poverty line using the World Bank reference of \$2.15 per day (or alternative lines of \$3.65 or \$6.85 for lower and upper middle-income countries). After applying the square root equivalence scale, households' income will be compared to the poverty line defined for upper middle-income countries (6.85\$ per capita per day) which will be multiplied by:

- The average exchange rate (average the formal and informal exchange rate)
- 30 days

The output will be the proportion of households with an income below the calculated poverty line in each baladiya.

Step 4: Calculate median income and expenditure per baladiya

Now it will be possible to compare income and expenditure across assessed households in the MSNA. The first step will be to map the distribution of both variables and compare the levels and distributions to each other. Following these coherence checks, the weighted medians can be calculated at national level and per each baladiya. The weights will be used to correct the over-sampling of IDP and returnee households in the MSNA. The weights are part of the MSNA dataset and will therefore not have to be calculated separately. In the case of large gaps, with expenditure being higher than income, this can be seen as a proxy for use of savings, loans, or other financial coping strategies to meet needs.

¹⁴ The MSNA income question in the tool was structured as follows: households first reported the types of income they relied on, answer options included employment, government subsidies, and humanitarian assistance. After, for each reported income type, households were asked how much they earned/received in the 30 days prior to data collection per source.

¹⁵ Global indicator framework for the [Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development](#)

If the income data and expenditure data show very different distributions that cannot be explained, this will prompt further investigation into both variables to understand whether only one of the variables will be used for further analysis, or whether the data is not strong enough to move forward with the analysis. If the results are coherent, the results of step 4 are expected to inform which baladiyas, if any, see the most significant gap between income and expenditures.

Step 5: Apply the bottom 30% and 40% quantile measure of poverty

For both the income and expenditure variables, the bottom 30% and 40% quantiles will be calculated at baladiya-level. This involves establishing the level of income and expenditure that represents the boundary between the bottom quantile and the rest of the assessed households. Moreover, the households in the bottom quantiles for both variables can be identified. Theoretically, the households in the bottom quantiles should be very similar for both indicators.

This is a key check on the overall coherence of the expenditure and income data. If there are significant differences between the assessed households in the bottom quantiles for the expenditure and income variables, it is likely that the quality of at least one of the variables is inadequate. In this case, with the help of internal and external stakeholders, it will be important to determine which indicator most closely reflects reality. Other indicators in the MSNA tool can aid this process, for example by looking at the job type of households in the bottom quantile according to the two different variables. The second step would be to ensure that this data is accurate enough to continue with the analysis plans, or alternatively use this information to inform future data collection related to income and expenditure.

This step primarily serves as a means to check the coherence and quality of the data. At the end of this step, provided the data is coherent enough according to the checks in this step and step 4, the poverty analysis can start in earnest.

Step 6: Compare results for income and expenditure data

Provided the results of the above steps are sufficiently coherent, the first step of the poverty analysis can commence. At this stage of the analysis, for each baladiya, the median income and the maximum level of income for the bottom quantiles are known. The same information is known for expenditure. The aim of this step is to aggregate all the information and deduce which baladiyas appear most prone to poverty based on: a) the gap between income and expenditure levels and b) the gaps between median income and the bottom quantile income levels, and the median expenditure and the bottom quantile expenditure levels. The gap between income and expenditure will already have been investigated under step 4 but will be key to informing further analysis in this step and beyond. The comparisons between median and quantile levels will be an indicator for overall distribution of income and expenditure respectively. The further the two values are removed, the flatter the distribution. The outcome of this step will be a comprehensive understanding of the difference between income and expenditure, and the distribution of both variables for each baladiya.

Step 7: Average the cost of the MEB for three months

As mentioned in section 3.1, the cost of the MEB is based on data collected on a monthly basis. The MSNA data was collected between July 4th and October 4th, 2022. As a result, to try and reflect the price levels for assessed households in this time as accurately as possible, the cost of the MEBs per location and at the national level will be averaged for July, August, and September 2022.

Step 8: Average the cost of the MEB data for locations not covered where needed

As mentioned in section 3.2, not all baladiyas that were covered by the MSNA are covered by the JMML. In order to still perform the analysis in those baladiyas, they have been matched with nearby baladiyas that are covered by the JMML. The assumption is that prices will not differ too significantly between adjacent baladiyas. In a few cases (see Table 2) there are

multiple close baladiyas in the same mantika. In this case, the cost of the MEB for those two baladiyas will be averaged for the baladiya that was not covered. Although this is a limitation of the research, the differences between prices within mantikas is typically very limited.¹⁶

Step 9: Adjust the cost of the MEB for a one-person household

The final adjustment that needs to be made to the cost of the MEB is the adjustment for household size. All MSNA income and expenditure data will have been equivalized for a one-person household at this point. The MEB needs to match this household size as well. As briefly mentioned in section 3.1, the method for deriving the one-person household cost of the MEB will depend on the square root equivalence scale used for the income and expenditure data. This approach has been selected because the methodology for the MEB does not specify the household composition, and it is ill-advised to use two different equivalence scales when comparing data.¹⁷

Step 10: Compare the median income and expenditure with the cost of the MEB

At this stage all data has been prepared for analysis. The first step of analysis will be to compare the baladiya-level median income and expenditure calculated during step 4 with the baladiya-level cost of the MEB. This step will indicate the extent and direction of gaps between income/expenditure and the cost of the MEB. It will also build on the analysis in step 6 to understand which baladiyas show the greatest discrepancies between economic resources and price levels.

Step 11: Calculate the percentage of households below the cost of the MEB

With the cost of the MEB in place, at baladiya-level, the percentage of assessed households whose income and/or expenditure are below the cost of the MEB can be calculated. In theory, income is the stronger indicator of poverty if it were below the cost of the MEB. Expenditure data will nonetheless be used as well due to the concerns regarding the quality of self-reported income data.¹⁸ If the data passed the coherence tests in step 5, they should provide similar results here as well. The expenditure and income variables may regardless highlight some different households.

Step 12: Compare all model results and assess validity

At this point, the following points have been established through the analysis in steps 1 to 11:

- a) The baladiyas where median expenditure and income are below the cost of the MEB have been established.
- b) The assessed households in the bottom 30% quantile for income
- c) The assessed households in the bottom 40% quantile for income
- d) The assessed households in the bottom 30% quantile for expenditure
- e) The assessed households in the bottom 40% quantile for expenditure
- f) The assessed households with income below the World Bank poverty line
- g) The assessed households with income below the baladiya-level cost of the MEB
- h) The assessed households with expenditure below the baladiya-level cost of the MEB

¹⁶ REACH Initiative, [Libya Joint Market Monitoring Initiative \(JMMI\)](#), data published monthly.

¹⁷ International Labour Organization (ILO), "[Household income and expenditure statistics](#)", 2003.

¹⁸ The primary concern is that income data is especially sensitive and may be misrepresented by respondents. These concerns have been raised by, for example, the CMWG

The next step of the general poverty analysis is to find the assessed households that are consistently flagged as below poverty lines for both income and expenditure. Depending on the preceding analysis steps, the number of criteria (points b to g above) to be met by a household to classify the household as 'poor' may be all indicators of poverty or a decided upon number. The number will have to be decided upon by the analysis team based on the degree of overlap between the models. Ideally, if a reasonable number of assessed households (as validated by field staff and the CMWG) are classified as poor under all criteria, this group alone will be the focus of further analysis. However, if a few households fall under all criteria, it may be necessary to raise the threshold for being considered 'poor' in order to perform the final analysis steps. This analysis calculates the percentage of assessed households classified as poor and should focus especially on those baladiya identified under point a).

Step 13: For poverty subset, identify any common characteristics.

Finally, after the households classified as 'poor' are identified, the common characteristics of these households can be investigated. This will be done using indicators in the MSNA that are expected to be related to poverty, such as displacement status, documentation status, job type, sex of the head of household, reliance on subsidies or loans, etc. The selection of indicators used for this analysis will be conducted in collaboration with the CMWG and will be informed by existing literature on poverty and predictors of poverty. The relation between indicators can be viewed simply in excel using an exported dataset, or be tested using simple linear regression models in R.

The final outputs of this analysis will be 1) an overview of baladiyas that appear to be most poverty-stricken, 2) the percentage of assessed households living in poverty per assessed location, and 3) the general characteristics of relatively poor households. Finally, the goal is to produce an R script and accompanying guidance that will make it easier to replicate this analysis for future MSNA cycles.

4. Key ethical considerations and related risks

The proposed research design meets / does not meet the following criteria:

<i>The proposed research design...</i>	Yes/ No	Details if no (including mitigation)
... Has been coordinated with relevant stakeholders to avoid unnecessary duplication of data collection efforts?	Yes	
... Respects respondents, their rights and dignity (<i>specifically by: seeking informed consent, designing length of survey/ discussion while being considerate of participants' time, ensuring accurate reporting of information provided</i>)?	Yes	
... Does not expose data collectors to any risks as a direct result of participation in data collection?	N/A	No additional data will be collected
... Does not expose respondents / their communities to any risks as a direct result of participation in data collection?	N/A	No additional data will be collected
... Does not involve collecting information on specific topics which may be stressful and/ or re-traumatising for research participants (both respondents and data collectors)?	N/A	No additional data will be collected
... Does not involve data collection with minors i.e. anyone less than 18 years old?	N/A	No additional data will be collected
... Does not involve data collection with other vulnerable groups e.g. persons with disabilities, victims/ survivors of protection incidents, etc.?	N/A	No additional data will be collected
... Follows IMPACT SOPs for management of personally identifiable information ?	N/A	No additional data will be collected, and only cleaned data will be used for the analysis

5. Roles and responsibilities

Table 4: Description of roles and responsibilities

<i>Task Description</i>	<i>Responsible</i>	<i>Accountable</i>	<i>Consulted</i>	<i>Informed</i>
<i>Research design</i>	Assessment Officer	Assessment Officer	Research Manager, Senior Data Officer, JMMI Assessment Officer, IMPACT HQ Research Design and Data Unit, CMWG	
<i>Supervising data collection</i>	N/A	N/A	N/A	N/A
<i>Data processing (checking, cleaning)</i>	Assessment Officer	Assessment Officer	Research Manager, Senior Data Officer, IMPACT HQ Research Design and Data Unit	
<i>Data analysis</i>	Assessment Officer	Assessment Officer	Senior Data Officer, IMPACT HQ Research Design and Data Unit,	CMWG
<i>Output production</i>	Assessment Officer	Assessment Officer	Research Manager, Country focal point, MPACT HQ Research Reporting Unit	CMWG
<i>Dissemination</i>	Assessment Officer	Assessment Officer	Research Manager, Country focal point, MPACT HQ Research Reporting Unit	CMWG
<i>Monitoring & Evaluation</i>	Assessment Officer	Assessment Officer	Research Manager, IMPACT HQ Research Department	
<i>Lessons learned</i>	Assessment Officer	Assessment Officer	Research Manager, Senior Data Officer, JMMI Assessment Officer, IMPACT HQ Research Department	

Responsible: the person(s) who executes the task

Accountable: the person who validates the completion of the task and is accountable of the final output or milestone

Consulted: the person(s) who must be consulted when the task is implemented

Informed: the person(s) who need to be informed when the task is completed

7. Monitoring & Evaluation Plan

IMPACT Objective	External M&E Indicator	Internal M&E Indicator	Focal point	Tool	Will indicator be tracked?
Humanitarian stakeholders are accessing IMPACT products	Number of humanitarian organisations accessing IMPACT services/products Number of individuals accessing IMPACT services/products	# of downloads of x product from Resource Center	Country request to HQ	User_log	X Yes
		# of downloads of x product from Relief Web	Country request to HQ		X Yes
		# of downloads of x product from Country level platforms	Country team		☐ Yes
		# of page clicks on x product from REACH global newsletter	Country request to HQ		☐ Yes
		# of page clicks on x product from country newsletter, sendingBlue, bit.ly	Country team		☐ Yes
		# of visits to x webmap/x dashboard	Country request to HQ Country team Country request to HQ		☐ Yes
IMPACT activities contribute to better program implementation and coordination of the humanitarian response	Number of humanitarian organisations utilizing IMPACT services/products	# references in HPC documents (HNO, SRP, Flash appeals, Cluster/sector strategies)	Country team	Reference_log	<i>None planned</i>
		# references in single agency documents			<i>None planned</i>

Humanitarian stakeholders are using IMPACT products	Humanitarian actors use IMPACT evidence/products as a basis for decision making, aid planning and delivery	Perceived relevance of IMPACT country-programs	Country team	Usage_Feed back and Usage_Survey template	<i>No usage survey will be conducted specifically for this assessment; however it may be included as part of wider usage</i>
		Perceived usefulness and influence of IMPACT outputs			
		Recommendations to strengthen IMPACT programs			
		Perceived capacity of IMPACT staff			
		Perceived quality of outputs/programs			
	Number of humanitarian documents (HNO, HRP, cluster/agency strategic plans, etc.) directly informed by IMPACT products	Recommendations to strengthen IMPACT programs			
Humanitarian stakeholders are engaged in IMPACT programs throughout the research cycle	Number and/or percentage of humanitarian organizations directly contributing to IMPACT programs (<i>providing resources, participating to presentations, etc.</i>)	# of organisations providing resources (i.e.staff, vehicles, meeting space, budget, etc.) for activity implementation	Country team	Engagement_log	☐ Yes
		# of organisations/clusters inputting in research design and joint analysis			X Yes
		# of organisations/clusters attending briefings on findings;			X Yes