



Global Guidance Note: Joint Market Monitoring Initiative (JMMI)

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Global Guidance Note

Joint Market Monitoring Initiative (JMMI)

Those interested in receiving more information on the JMMI, or in launching a JMMI in a response where one does not currently exist, are invited to contact REACH's cash and markets team at impact.geneva.cashandmarkets@impact-initiatives.org for further perspectives. Those distributing or making use of this guidance note in any way are requested to credit REACH and provide the full title of the document, *Global Guidance Note: Joint Market Monitoring Initiative (JMMI)*.

ABOUT REACH

REACH facilitates the development of information tools and products that enhance the capacity of aid actors to make evidence-based decisions in emergency, recovery, and development contexts. The methodologies used by REACH include primary data collection and in-depth analysis, and all activities are conducted through inter-agency aid coordination mechanisms. REACH is a joint initiative of IMPACT Initiatives, ACTED, and the United Nations Institute for Training and Research Operational Satellite Applications Programme (UNITAR-UNOSAT).

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INTRODUCTION



Market monitoring has become an indispensable part of the humanitarian programme cycle. Understanding the functionality and resilience of markets is key not only for targeted market-based programming (MBP), but for any humanitarian or development intervention with the potential to affect market systems, actors, and prices. This includes cash and voucher assistance (CVA), in-kind distributions that risk distorting targeted and connected markets, and any program involving local procurement, among others. Having a common, reliable source of market prices is also essential to any effort to harmonise multi-purpose cash across a response by adopting a robust, evidence-based standard cash transfer value that can be updated as aid recipients' financial burdens change.

Thanks to its utility, market monitoring has become an integral part of monitoring, evaluation, and learning systems in many types of interventions. Humanitarian actors are often required to provide baseline, midline, and/or endline market monitoring data, as well as confirming the functionality of local markets, as a condition of receiving donor funding for CVA or MBP. Unfortunately, this programme-level data may not always be authorised for release to other actors in the response. This can lead to situations in which actors are unknowingly duplicating each other's efforts, investing their scarce resources in collecting the same prices in the same markets from the same traders, with each actor gaining limited perspective and finding it difficult to interpret their localised data without comparable data from other parts of the country.

The **Joint Market Monitoring Initiative**, commonly known as the **JMMI**, was developed by REACH to address these issues among others. The JMMI is a response-wide approach to market monitoring that aims to facilitate collaboration and avoid duplication by enabling many humanitarian and/or development actors to work toward a common goal. The approach is designed to produce data on market prices and functionality that can be used by a wide variety of actors for many purposes, rather than being specific to one programme or one area of intervention. Organisations participating in a JMMI collect market data across an entire response during the same period, using the same data collection tools and methodology, with each location of interest assigned to a participating organisation and each organisation contributing data from its own areas of intervention. Data from all participants is then compiled, cleaned, analysed, and released publicly for the benefit of all aid actors in the form of detailed factsheets and response-wide datasets.

This guidance document is designed to provide a comprehensive overview of the Joint Market Monitoring Initiative approach and methodology for the benefit of external audiences, as well as to help REACH teams and others navigate the rollout of a Joint Market Monitoring Initiative in their countries. It brings together REACH's cumulative experience and expertise in JMMIs dating back to 2014, when the model was first developed and piloted in northern Syria in partnership with the Cash-Based Responses Technical Working Group. The JMMI model has continued to evolve ever since and has been implemented in over 20 humanitarian and early recovery contexts worldwide.

Who is this guidance document for?

This document is designed to be useful for a variety of readers:

- For **practitioners responsible for designing and coordinating a JMMI**, whether as a representative of REACH or another organisation or coordination platform.
- For **practitioners who plan to contribute to a JMMI**, whether by providing data collection capacity or advising on assessment design, to shed light on the JMMI's aims and methodology as well as the nature of the commitment involved.
- For **analysts working with JMMI data** who need detailed explanations of how this data was collected, its caveats and limitations, and the analysis methods REACH recommends.
- For **anyone interested in the JMMI methodology** who wants to gain a comprehensive understanding of the goals of the JMMI and how the assessment is implemented in practice.

The document takes the form of a list of Frequently Asked Questions (FAQs) organised into six chapters, which lead readers through the research cycle in chronological order from research design to data collection to analysis and dissemination. It is not meant as a step-by-step tutorial for how to launch a JMMI—which would be impossible, given that every JMMI needs to be tailored to its local context, partners, and information needs—but rather as a clarification of the major goals, standards, dynamics, and challenges that JMMI coordinators and contributors need to consider at each step of the process.

The JMMI is continually evolving to incorporate new innovations, evolutions, and best practices. While this document aims to comprehensively reflect the state of the JMMI methodology and available tools at the time of writing, it may be missing information on changes finalised after the release of the most recent edition. Furthermore, while this document aims to consolidate as much of REACH's current internal Global JMMI Toolkit as possible, there are additional tools, resources, and guidance that cannot be easily incorporated here. For these reasons, anyone aiming to launch a new JMMI in their context is strongly encouraged to contact REACH's cash and markets team at [impact.geneva.cashandmarkets@impact-initiatives.org](mailto:cashandmarkets@impact-initiatives.org) for further perspectives and guidance.

Key terms

Some definitions in the table below have been adapted from the CALP Network's **Glossary of Terms** and from resources developed by the **Markets in Crises Community of Practice (MiC)**. Most others have been developed by REACH for this document. Where relevant, the corresponding source has been added after the definition.

Term	Definition
Application programming interface (API)	A set of tools and protocols allowing different software systems to communicate, share data, and perform specific functions. REACH's JMMI API provides a way for external users to seamlessly access current and historical data from all REACH JMMIs without compromising the security of the underlying database.
Assessment fatigue	When target populations repeatedly participate in assessment interviews without seeing tangible benefits, leading to frustration, decreased cooperation, and diminished data quality over time.
Baseline assessment	An assessment done with an aid programme's designated participants prior to implementation of the programme to better understand their situation before receiving aid. Compare with <i>midline and endline assessments</i> and with <i>post-distribution monitoring</i> , all of which are conducted after the aid has been distributed and may therefore report findings that are influenced by the receipt of this aid.

Term	Definition
Cash and voucher assistance (CVA)	The direct provision of cash transfers and/or vouchers for goods or services to individuals, households, or group/community recipients. In the context of humanitarian response and development aid, CVA excludes payments to governments or other state actors, remittances, service provider stipends, microfinance and other forms of savings and loans. (CALP)
Cash Working Group (CWG)	The principal body coordinating the provision of multi-purpose cash in most humanitarian responses, and therefore the most common in-country host for the JMMI. Generally led by UN OCHA or UNHCR alongside a co-leading organisation that varies from country to country.
Catchment area	In market analysis, the primary area served by a particular market or marketplace, including both the settlement or neighbourhood in which it is located and any areas of surrounding countryside from which market actors travel to access it.
Collaborative Cash Delivery Network (CCD)	A network of 14 international NGOs that collaborate globally to develop new approaches to humanitarian CVA, as well as harmonising their country-level programming. Can provide an alternative in-country host for a JMMI if the CWG cannot support.
Conversion factor	The number by which the price of one non-standard unit of a given item must be multiplied to obtain the price of one standard unit (1 kilogram, 1 litre, etc).
Deconfliction	In the JMMI, the process of mapping the intended coverage of each participating partner in a given round to ensure that only one partner is collecting data from each monitored area.
Gap analysis	The process of calculating the gap between the amount of money needed to meet an average household's total needs and its ability to meet those needs using its own monetary resources. In the JMMI, the cost of the MEB is usually equated with total needs, and values for household income and own production (if available) are subtracted to obtain the size of the gap. Standard cash transfer values are then calculated based on this gap.
Harmonisation	Coordinated, collective processes to create a single multi-organisational standard for key programme design elements such as transfer values, duration, and targeting criteria. Harmonisation processes may recommend that all agencies use the same transfer values, targeting criteria, etc, or they may provide frameworks to allow a range of transfer values and/or criteria to be used, but in a systematic and coordinated way. (CALP)
Imputation	Replacing a missing value in an index, such as the MEB, with an equivalent value derived from another geographic area or time period to enable the calculation of that index.
Lump sum	In the MEB, a component of household expenditure that cannot be subdivided into individual items that can be monitored by the JMMI, and must instead be reported and incorporated into MEB calculations as a monetary sum. For instance, expenditures that are highly individualised or that do not represent items bought and sold on markets, such as healthcare or transportation expenses, are often better reported as lump sums.
Market	Any formal or informal system or group of market actors (not necessarily a single physical space or virtual platform) in which buyers and sellers exchange goods, labour, currency, or services for cash or other goods. (CALP)
Market actors	The organisations or individuals who are active in a market system, not only as suppliers or consumers of goods, but also as regulators, developers of standards and providers of services, information, etc. (CALP)
Market analysis	The process of analysing and understanding the key features and characteristics of a market system or marketplace based on the data collected during a market assessment or market monitoring. The information can be used to formulate predictions about how prices, availability, and access will develop in future, and to inform decisions about whether or how to intervene.

Term	Definition
Market assessment	Any assessment that aims to answer questions about the structure, functionality, and/or operations of a particular market. Market assessments can take many different forms, including a market monitoring system, depending on the questions that need to be answered.
Market-based programming (MBP)	Any type of humanitarian or development programme that works through or supports local markets, whether using them to deliver emergency relief or proactively strengthening and developing local market systems. CVA is a form of MBP. <i>(MiC)</i>
Market baseline	The 'normal' market dynamics in a particular context, generally in a defined reference year. Studies or syntheses detailing these baseline market dynamics, which can cover topics such as market functionality, supply chain functionality, market actors, prices, infrastructure, and the overall market environment, among others, enable analysts to compare conditions pre- and post-crisis, or pre- and post-intervention, to assess disruptions and inform programming.
Market functionality	The ability of a given market to successfully and consistently facilitate transactions between producers, suppliers, and traders who want to sell certain items and customers who want to buy them.
Market Functionality Score (MFS)	An index developed by REACH to quantify the functionality of markets monitored by the JMMI along five dimensions: accessibility, availability, affordability, resilience, and infrastructure. The MFS and the cost of the MEB are the two composite indicators at the heart of the JMMI.
Market integration	The degree to which prices among different locations or related goods follow a similar pattern over a long period of time. For example, if markets are well integrated, price changes in one location would lead to price changes in other locations, because the markets face similar dynamics and people can freely move between them to compare quality and price. <i>(CALP)</i>
Market monitoring	The regular collection of data from marketplaces and market vendors to better understand the prices of key goods and services, the functionality and accessibility of markets, and any dynamics preventing the market system from working smoothly. Market monitoring is useful to verify whether markets are sufficiently functional to support CVA and whether there are underlying issues that can be addressed through market-based programming, among other uses.
Market system	A network of actors involved in the sale and purchase of a specific good or service, along with the services, infrastructure, policies, rules, and norms that shape their business environment. <i>(MiC)</i>
Marketplace	A defined physical space or virtual platform where people buy and sell a variety of goods. <i>(MiC)</i>
Minimum Expenditure Basket (MEB)	A list of items representing the full multi-sectoral scope of an average socioeconomically vulnerable household's basic needs that can be monetised and accessed in adequate quality through the local market. The cost of the MEB and the MFS are the two composite indicators at the heart of the JMMI. <i>(CALP)</i>
Multi-purpose cash (MPC)	Cash transfers (either periodic or one-off) corresponding to the amount of money required to cover, fully or partially, the set of a household's basic and/or recovery needs that can be monetised and purchased.
Multi-Sector Needs Assessment (MSNA)	A large-scale quantitative assessment, usually at the household level and statistically representative, conducted to inform cross-sectoral humanitarian prioritisation via the Humanitarian Programme Cycle.

Term	Definition
Non-standard unit	A locally used, traditional, or otherwise unstandardised unit by which goods are commonly bought and sold in local marketplaces, in contrast with standard units such as 1 kilogram, 1 litre, etc, which are the same everywhere. In the JMMI, for analysis purposes, prices of non-standard units must be converted into prices of standard units using conversion factors.
Price monitoring	A simplified version of market monitoring that focuses solely on collecting the prices of key goods and services over time.
Primary data	Data collected directly from local populations or key informants to address the specific research questions of a given assessment. In this document, the term refers to data collected directly through the JMMI by field teams.
R	A programming language designed to support statistical analysis and data visualisation. R is the primary tool used by REACH to analyse JMMI data.
Seasonality	The regular, expected fluctuation of market dynamics, including the prices of individual items or categories of items, in connection with the time of year: for instance, due to harvest schedules, weather and climate patterns, etc. Understanding seasonality is critical to be able to disaggregate expected seasonal fluctuations from less expected, potentially problematic changes observed in markets.
Secondary data	Existing data sourced from external datasets, reports, articles, media, etc. that is used to complement or contextualise primary data. In this document, the term refers to any quantitative or qualitative data not derived directly from a questionnaire associated with the JMMI, including market baselines.
Standard transfer value	The harmonised amount of MPC recommended to be delivered by all cash actors in a humanitarian response, generally calculated following a process of gap analysis built on the cost of the MEB in each assessed area.

1

WHAT IS THE JMMI?



In this chapter:

- What overarching questions does the JMMI aim to answer?
- Who is the JMMI for?
- Who are the key stakeholders in a JMMI?

The Joint Market Monitoring Initiative is an assessment methodology designed to collect regular information on **commodity prices, vendor operations, and market functionality**. The aim is to understand the degree to which local markets are functional, integrated, and responsive to the needs of vulnerable households; the degree to which prices for key commodities are stable or volatile in the short and medium terms; and the degree to which markets can supply these key commodities in quantities large enough to meet demand.

The JMMI aims to calculate two main figures across nearly all countries where it operates:

- **The cost of the Minimum Expenditure Basket (MEB)**, a key element of multi-purpose cash responses worldwide. This basket, generally endorsed at the national level, brings together the costs of the basic goods and services that an average socioeconomically vulnerable household needs to support itself on a monthly basis. The JMMI aims to provide updated figures for the full cost of the MEB in every assessed area in every round of data collection, as well as aggregating upward to the regional and national levels.
- **The Market Functionality Score (MFS)**, a module that brings together indicators from all segments of the JMMI to evaluate market functionality based on five dimensions: accessibility, availability, affordability, resilience, and infrastructure. Again, the JMMI aims to calculate this score in every assessed area in every round of data collection, as well as aggregating upward to the regional and national levels.

While these two indicators are nearly always at the core, JMMI questionnaires can also include many other

indicators based on local needs, including monitoring the prices of other priority goods and services that are not part of the MEB.

JMMIs aim to provide highly local, preferably community-level, market data across as broad a coverage area as possible. This is crucial to help aid actors understand whether markets are well-integrated across the country and whether their own cash and voucher assistance (CVA), procurements, or in-kind distributions could have had a positive or negative effect on markets in their areas of operation. JMMIs achieve their extensive coverage, which often stretches across entire countries, by coordinating the efforts of as many interested aid actors as possible, each of which agrees to collect data in a harmonised way from its own areas of operation or interest.

Due to their wide reach and collaborative, inclusive nature, only one JMMI is ideally needed per response. Often, this national-level JMMI is coordinated by REACH alongside and on behalf of a national Cash Working Group, generally in collaboration with other key clusters or working groups within a response. The questionnaire, however, can be adapted for a variety of purposes, including for internal programme monitoring if no interested partners can be found to expand its scope.

What overarching questions does the JMMI aim to answer?

Every JMMI launched by REACH begins with a terms of reference document that identifies the main questions the JMMI seeks to answer and tailors them to the local context. Some of the most common questions targeted by JMMIs are listed below. These can, of course, be modified and refined based on the specific information that response actors need.



What are the prices and availability of basic items and services in the markets assessed by the JMMI, and how do these vary over time?

- What are the geographical price variations and trends for these basic items over time?
- What is the cost to households of purchasing all components of a local or national MEB in each assessed area?
- Are the prices of basic items sufficiently stable to allow market actors, including customers, to plan future expenditures?



What are the main supply routes currently used by traders to move goods throughout the country?

- How resilient are these supply chains to dynamics such as seasonality, inflation, conflict, etc.?
- How have these supply chains been affected by recent shocks?
- How does the functionality of these supply chains affect the availability and price of basic items in local markets?

To what extent can the markets assessed by the JMMI be considered functional based on the five dimensions of the Market Functionality Score (accessibility, availability, affordability, resilience, and infrastructure)?



Do all market actors, including customers, have dependable physical and social access to the marketplaces in their area?

Do all customers have dependable financial access to the marketplaces in their area?

Can vendors reliably provide all of the basic items that local households need to purchase on a regular basis?

Do the supply chains for these basic items function reliably, and are they resilient to likely future shocks?

Is the physical infrastructure in and around markets (trading spaces, secure warehouses, roads, etc.) in sufficiently good condition to support normal livelihood and trading activities?

Who is the JMMI for?

Data from JMMIs is public and can be used freely by anyone with a need for perspectives on market prices and functionality. These may include, among others:



Cash Working Group co-leads and information management officers aiming to understand trends in market functionality and prices, how they may affect CVA operations, and what implications they may have for caseloads and budgets.



Cash Working Group taskforces or sub-working groups that need up-to-date price figures to create MEBs, calculate their costs, or create or revise standard multi-purpose cash transfer values.



Clusters and sectoral actors conducting response analysis to determine whether they should distribute CVA or in-kind assistance.



Humanitarian actors designing and developing budgets for their programmes, including selecting target areas of operation for CVA and market-based programming based on their level of market functionality.



Programme managers monitoring whether their large-scale distributions of in-kind aid or CVA may risk distorting markets or undermining local livelihoods.



Distributors of in-kind aid determining the feasibility of local procurement of key commodities in their areas of operation.



Early recovery and development actors working to diagnose issues with market functionality to inform the design of market-based programming that aims to support and develop local markets.



Local authorities and government actors who need to track market prices and rough inflation figures in contexts where official statistics are out of date or no longer collected.



Economic researchers in search of highly local time-series data on market prices and functionality from hard-to-access, data-poor contexts, particularly where government data is difficult to access or out of date.

Analyses derived from the JMMI can inform several types of key decisions related to humanitarian, early recovery, and development programming:

- *Strategic decisions* related to processes of prioritisation and resource allocation
- *Programmatic decisions* related to the design and contextualisation of new aid programmes
- *Operational decisions* related to the implementation and adaptation of existing aid programmes

The JMMI approach was created by REACH, which, as part of its mandate, is committed to the free release of all of its JMMI data and analysis. All relevant country-level outputs, anonymised datasets (with personally identifying information removed), data collection tools, and terms of reference created by REACH are available through the **IMPACT Resource Centre**. In addition, all historical JMMI data has been consolidated into a master database accessible via an **API**; further information on this can be found in Annex 3, 'Using REACH's global JMMI API'.

Who are the key stakeholders in a JMMI?

The JMMI, as the 'Joint' in its name suggests, is designed to be a response-wide resource benefitting as many humanitarian and/or development actors as possible. As such, all cash actors with an interest in the market data it produces are encouraged to consider themselves stakeholders and to contribute their expertise to the process of contextualising the JMMI for local conditions. Those with data collection capacity are highly encouraged to join their country's JMMI Taskforce, Sub-Working Group, or similar and to consider submitting JMMI data from their own areas of operation, both to help expand the JMMI's coverage and to make it maximally useful for their own planning. For more information on JMMI Taskforces and on the joint model in general, please see Chapter 4, 'How is the JMMI coordinated?'

JMMIs in humanitarian contexts are generally organised through and on behalf of a national Cash Working Group. When conceptualising or designing a JMMI in a humanitarian response, a good first step is to consult with the Cash Working Group co-leads, as well as with either OCHA or UNHCR, depending on the country, in their dual capacities as facilitators of the CWG and coordinators of the humanitarian response as a whole. It is also recommended to bring in the national Assessment Technical Working Group (if present), as well as any cash coordination or collaboration bodies (the CWG, cash consortia, the Collaborative Cash Delivery Network or CCD, etc) that are not already involved, to obtain a broad set of perspectives on what information gaps exist and how they can be most effectively filled. Endorsement from the Inter-Cluster Coordination Group (ICCG) and/or the Humanitarian Country Team (HCT) may be advisable, depending on the dynamics of the response.

Since most JMMIs cover commodities of interest to multiple clusters or sectors, it is highly recommended to consult with each relevant cluster lead to get their perspectives on which items and services should be monitored and what would be the most effective way of doing so.

The complexity of such conversations can vary depending on the nature of the basket being monitored. If the JMMI aims to monitor the cost of a previously endorsed response-wide MEB without additions or deviations, then decisions about what items to monitor should be uncontroversial. But if no such MEB is being used, or if the clusters' information needs are more complex than those of multi-purpose cash actors, discussions with sectoral specialists will be crucial in helping to define item specifications, agree on monitoring methodologies, and finalise the monitoring basket. Monitoring the price of water, for example, is a complex effort that depends on how local residents tend to access water, which water sources incur charges and which do not, how water sources may differ based on socioeconomic status, and many other factors requiring specialised local knowledge, and thus a water price monitoring methodology should only be designed in close collaboration with the WASH Cluster. See Chapter 3, 'How is JMMI data collected?', for further perspectives both on water price monitoring and on how to define item-specific monitoring methodologies in general.

Aside from commodity-specific questions, it can also be valuable to engage with the Logistics Cluster (if present) to gain insight into questions of supply chains, road conditions, access barriers, and other factors central to market analysis. The Logistics Cluster can, in some cases, be an important stakeholder in the JMMI, given the potential uses of JMMI data to inform questions of in-kind and local procurement for which it is responsible.

Finally, if there are other organisations in the response that conduct market monitoring but do not plan to join the JMMI, it is worthwhile to consult with them to learn from their experiences and challenges, as well as to understand whether there may be opportunities to collaborate, to harmonise methodologies, to share data, and in general to ensure that as little effort is duplicated as possible.

2

HOW IS A JMMI DESIGNED?



In this chapter:

- What assessment methodology is used?
- What questions does a JMMI include?
- What are the key figures produced by a JMMI and how are they used?
- For what areas should results be reported?
- How should market baselines be incorporated into JMMI design and analysis?

Since its creation in 2014, the JMMI has evolved from a collection of individual assessments, each launched separately by REACH to respond to local needs, to a consistent methodology that has been tested and refined across diverse humanitarian and early recovery contexts. With each new JMMI, the approach has become gradually more standardised, drawing on best practices learned from each previous iteration while preserving room for innovations that meet the needs of individual responses. The recommended JMMI features in this document reflect the standards and best practices at which REACH has arrived over the years.

What assessment methodology is used?

The JMMI relies largely on collecting data from **vendors** operating in local marketplaces. These vendor interviews are a hybrid between **individual interviews** and **key informant interviews**: vendors mainly provide information as *individuals* on topics such as the prices they charge, their stock levels, and the challenges they face in their operations, but are treated as *key informants* when reporting general information about the markets in which they work, including product availability and access challenges. Data collection tools and sampling plans for these vendor interviews are mainly **quantitative** in nature, and therefore rely on aggregated responses from a sufficient number of vendors per assessed market in order to draw indicative conclusions about what is happening in each market.

It is possible, and often advantageous, to supplement the JMMI with additional types of data collection which can help analysts both triangulate and extend their key findings from the vendor interviews. For example, quantitative individual interviews with customers in the marketplace can provide additional perspective on the availability and accessibility of products, marketplaces, and financial service providers. Qualitative surveys or focus group discussions with local households, meanwhile, can give JMMI teams the opportunity to better understand non-market household expenditures, as well as to dig more deeply into the market-related preferences, priorities, barriers, and concerns of local populations: for instance, market accessibility and exclusion, protection concerns in insecure market environments, preferred aid modalities, and the like.

Supplements such as these can be organised either as *ad hoc* primary data collection exercises, flexibly investigating specific market dynamics on which the JMMI team needs more information, or as integrated, regular components of the JMMI undertaken with additional allocated funds. Standards for these types of data collection are not provided in the current

document, as each will need to be tailored to its context. If pursuing supplemental primary data collection is not possible, teams should try to obtain such perspectives from secondary data, for example through harmonised indicators in household-level post-distribution monitoring.

What indicators does a JMMI include?

A JMMI questionnaire usually includes seven basic sections, summarised below. Of these, five are considered core modules, and the remaining two are optional, to be included in JMMI questionnaires only where relevant. For the full standard JMMI questionnaire, please refer to Annex 1.

While the standard questionnaire offers a strong and globally relevant starting point, those designing JMMIs for new contexts are encouraged to modify the questionnaire to reflect the needs of their local response. Household expenditure patterns can differ greatly even between neighbouring countries or livelihood zones, and markets in one part of the world may face an entirely different set of influences and constraints from markets elsewhere.

1

Vendor metadata

Basic metadata about the vendor and the interview itself, primarily designed to be filled out by the enumerator themselves.

2

Availability

Establishes which items are present in the market and the shop, serving as a set of gateway questions on which further skip logic will depend.

3

Prices and stock loops

The core of any JMMI, including questions on item prices, units, and restocking times. These enable the calculation of median prices for all items and the cost of the MEB; they are also essential for the MFS.

4

Market functionality

Indicators on market accessibility, availability, affordability, resilience, and infrastructure largely drawn from the MFS, the other main index at the core of the JMMI alongside the MEB.

5

Supply chains

Establishes the locations of the main suppliers working with vendors in this location, as well as soliciting further information about why certain items are unavailable or difficult to find. Enables simple supply chain maps to be created for the outputs.

6

Expectations

An optional module collecting the vendor's predictions about how prices are likely to change in the future.

7

Exchange rates

An optional module for directly monitoring parallel-market exchange rates where this is relevant, either through standalone exchange shops or through vendors who offer currency exchange services on the side.

What are the key figures produced by a JMMI and how are they used?

The standard JMMI questionnaire enables the calculation of a wide array of indicators, as detailed below and in Annex 1. Among the most important of these are:

Commodity prices

Collecting the prices of basic commodities is the main purpose of the JMMI. These prices are most often reported as medians and are aggregated on the market level, as well as being aggregated upward to the regional and national levels. Prices in local currency are frequently reported alongside conversions to a reference currency such as the United States dollar (USD).

Tracking trends in the prices of basic commodities, whether individually or in groups, is essential to understand how local markets and supply chains have reacted to past and present pressures, as well as to predict how they might respond to future shocks. It can serve as a red flag for imminent market shortages or absences of certain commodities, as sudden price spikes are often correlated with disruptions to supply—although fully confirming this requires the JMMI analyst to consult supplementary indicators. Trends collected over multiple years, in particular, are key to capture regular seasonal price fluctuations and to help JMMI teams to understand which fluctuations are expected and which are potentially problematic.

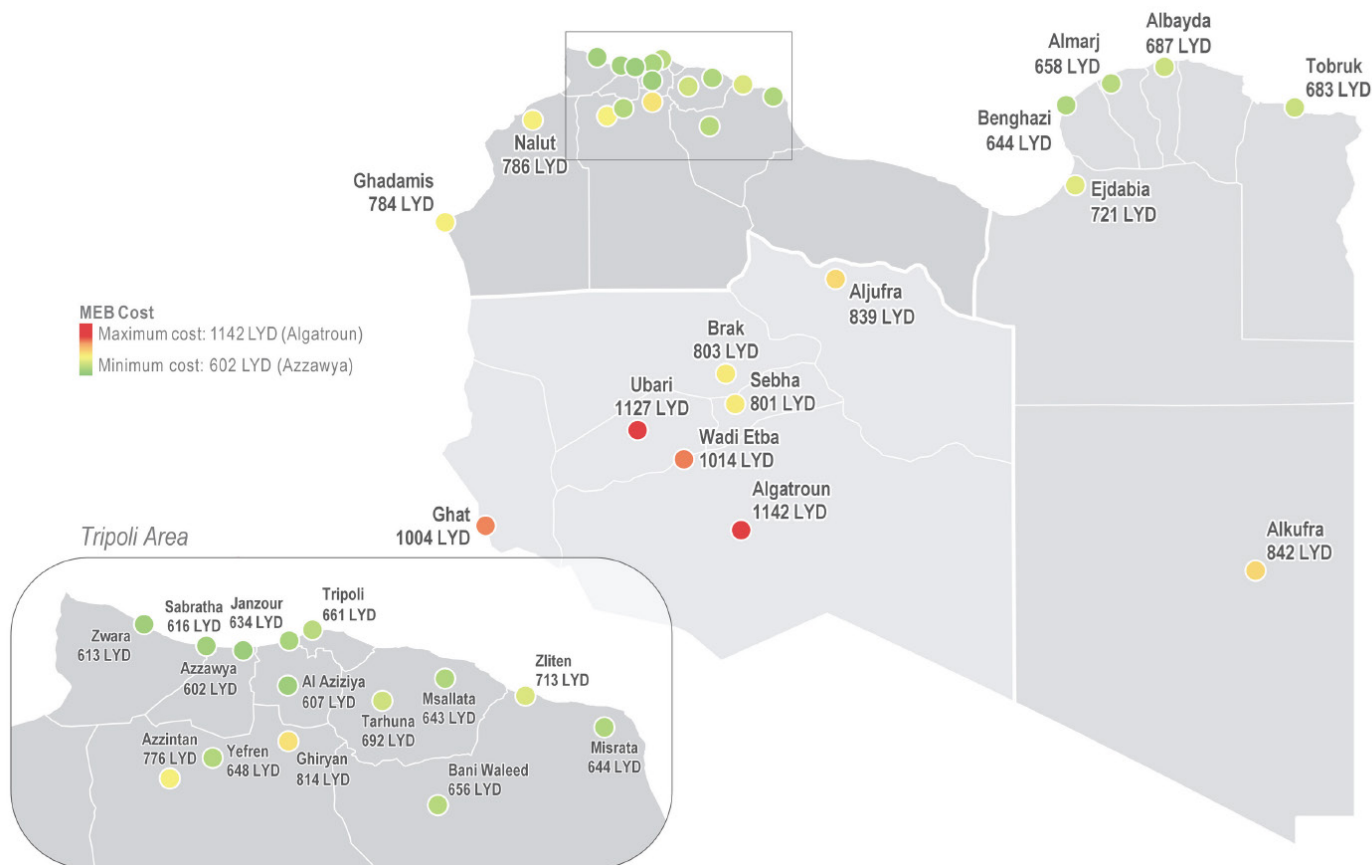
Comparing the trend lines of prices in different currencies can shed light on the causes of observed price changes. For instance, if prices in local currency and prices in USD for a certain item appear to be highly correlated, this might suggest either that the supply chain for this item is highly reliant on imported goods—implying that its local price is controlled by fluctuations in currency exchange rates—or that the price change in question can be attributed more to global than to local dynamics. Again, fully confirming the presence of these dynamics will require the JMMI analyst to consult supplementary indicators.

In addition, tracking the costs of different categories of commodities, particularly those of interest to specific sectors such as standard food baskets or emergency non-food item (NFI) kits, is vital to support sectoral programming. Producing these analyses through the JMMI can help to ensure that both the standard transfer values for sectoral CVA distributions and the budget figures for in-kind distributions remain up to date.

Cost of the Minimum Expenditure Basket (MEB)

The Minimum Expenditure Basket is the group of commodities and services an average socioeconomically vulnerable household must purchase in markets each month to meet all its basic needs. It takes the form of a weighted sum: the market price of each monitored item or service, derived from the JMMI, is multiplied by the unit specified in the MEB, and the total costs of all components are added together. Most MEBs consist of both **monitable items**, or those that are bought and sold in marketplaces for basic goods, and **lump sums**, which represent a household's total estimated expenditure in a category and cannot be separated out by item. The standard JMMI, like nearly all market monitoring systems, is designed to provide the costs of monitable items via market observations; to calculate and update lump sums, an additional source of household-level expenditure data, such as a Multi-Sector Needs Assessment (MSNA), is required.

The MEB serves as a proxy for the financial burdens faced by an average socioeconomically vulnerable household, and as such is a vital tool for setting standard multi-purpose cash (MPC) transfer values via a process of **gap analysis**. In this process, the cost of the MEB is equated with average monthly minimum household expenditure among the target population, which is then compared to average monthly household income and other measures of household assets to calculate the size of the gap between household expenditures and household resources to meet those expenditures. Knowing the size of this gap enables Cash Working Groups to calculate optimal standard transfer values. To support this process, the JMMI aims to provide updated figures for the full cost of the MEB in every assessed area in every round of data collection, as well as aggregating upward to the regional and national levels.



MEBs are geographically limited tools that need to be constructed individually for each humanitarian context based on the crisis-affected population's dietary and consumption patterns. This is generally done on a national level, but sometimes regional or status-based variations are introduced if multiple highly diverse populations are meant to be targeted within the same country. Although the process of MEB construction and revision is a complex affair beyond the scope of this document, JMMI teams should familiarise themselves with it, as they are often called on to contribute their data, findings, and expertise to relevant key decisions.

For a variety of reasons, some JMMIs do not calculate the cost of a full MEB. This may be due to a lack of an agreed MEB on the national level or due to the agreed MEB being impractically large to monitor on a monthly basis. Alternatively, it may be because the CWG itself has agreed to base its CVA response on a different basket, most commonly a Survival Minimum Expenditure Basket (SMEB) which covers only a portion of household needs. For conciseness, throughout this document, these alternative baskets will be grouped together under the

name 'MEB', but JMMI teams should fully understand the implications and drawbacks involved in using one of these alternatives, in particular the difficulty of calculating full standard multi-purpose cash transfer values without monitoring the cost of a full MEB.

For further information on how to calculate the cost of the MEB, see Chapter 5, 'How is JMMI data analysed?' Guidance on how to create an MEB or alternative monitoring basket is outside the scope of this document, but those interested are encouraged to consult the CALP Network's **Calculating the Minimum Expenditure Basket: A Guide to Best Practice**, as well as WFP's **Minimum Expenditure Baskets Guidance Note**.

IMPORTANT:

Understanding the composition and cost of the MEB

It is important to note the distinction between the *composition* of the MEB and its *cost*.

- The **composition** of the MEB refers to *items*: the basket of goods required by target households and the amounts in which they are needed. It is derived from a variety of elements, including local staple crops, traditional diets, consumer preferences, international minimum standards, and the like, and as such it tends to remain relatively stable over time. It needs to be updated only in the case of a significant shift in local consumption preferences and patterns, sparked by an event such as the outbreak of conflict, the exhaustion of key resources such as fuel or drought-stricken crops, etc. Agreeing on an MEB composition is a complex, lengthy, and sometimes political process requiring consultation with a wide variety of stakeholders.
- The **cost** of the MEB refers to *money*: the amount a household needs to spend in its local marketplace to purchase all items and services in the basket in their required quantities. Calculating the cost of the MEB requires data on the price of each item in the MEB, which the JMMI is designed to provide. Once the MEB composition has been defined and a JMMI is in place, regular updates to the cost of the MEB are simple and can be done solely with existing data.

Making this distinction is crucial because it has the potential to affect common discussions about transfer value revision. When Cash Working Groups or other actors need to revise their standard MPC transfer values to account for price changes, they sometimes approach the process as if a full 'MEB revision' were needed, not only updating the cost but reopening negotiations on the composition as well. Perceptions of the great effort involved can, in turn, lead important MPC transfer value revisions to be delayed or approached with reluctance rather than becoming a regular and expected component of the response.

However, revising the *composition* of the MEB is often unnecessary. Unless there have been major shifts in local consumption patterns, for example as a result of displacement or market failures, all that is needed for a MPC transfer value update is to contribute existing JMMI data to a gap analysis, alongside data on income and own production, to understand what proportion of a household's market-related needs are not being met. Whenever necessary, JMMI teams should seek to clarify the distinction between MEB composition and cost, ascertaining with the CWG whether a full 'MEB revision' is genuinely needed or whether a simple update of the cost of the MEB, derived from JMMI data, will suffice.

Market Functionality Score (MFS)

The Market Functionality Score is a method developed by REACH to classify markets based on their level of functionality, enabling comparisons across and among countries. This is a key task to help aid actors understand which markets function well enough to be good targets for cash and voucher assistance or local procurement and which require alternative forms of market-based programming to help them become more self-sufficient. It can also shed light on which markets are the best targets for in-kind distributions and local procurement, as well as highlighting the market dynamics that these programmes need to take into account to avoid negatively impacting local livelihoods. While it was designed to be integrated into the JMMI, the MFS can also be integrated into other vendor-focused assessments or even used, with some modification, as a standalone assessment tool.

The MFS consists of a collection of indicators drawn from throughout the JMMI questionnaire that capture data on five key dimensions of market functionality: **accessibility, availability, affordability, resilience, and infrastructure**. Each of these dimensions is assigned a weight based on how strongly it influences the market's overall ability to meet customer demand, as detailed in the table below.

In addition, each indicator within a dimension is assigned a set of scoring thresholds based on its relative centrality to that dimension and the degree to which certain answer options reflect positive or negative outcomes. These thresholds, and the specific indicators that are included in each dimension, can be adjusted to better tailor the MFS to local dynamics. The overall weights of the dimensions, however, should remain the same across countries to facilitate cross-crisis comparison.

Dimension	Weight	Core questions answered
Accessibility	25%	- Do all market actors, including customers, have <i>physical access</i> to this market (meaning most people are able to reach and enter marketplaces and/or businesses from their shelters without major physical effort or expense, and customers are physically able to bring goods back to their shelters in large enough quantities)? - Do all market actors, including customers, have <i>social access</i> to this market (meaning they are not prevented from accessing marketplaces and/or businesses or obtaining goods due to their gender, ethnicity, affiliation, or other physical or social characteristics)? - Are this marketplace and the roads leading to it <i>safe and secure</i> (meaning customers and other market actors can reach marketplaces and/or businesses without putting themselves at risk)?
Availability	30%	Can vendors in this market reliably provide all core items that local households need to purchase on a regular basis?
Affordability	15%	- Do customers have <i>financial access</i> to this market (meaning core items are consistently sold at prices an average local household can afford)? - Are the prices for core items in this market <i>stable</i> (meaning they change slowly enough to enable vendors and customers to plan future expenditures)?
Resilience	20%	- Do <i>supply chains</i> for core items in this market function reliably? - Are vendors in this market consistently <i>able to restock</i> the core items they carry before they run out? - Do market actors in this market obtain their goods from <i>a variety of cities and/or supply routes</i>, or do most goods reach this market via a single supply route that may be vulnerable to disruption?
Infrastructure	10%	- Is the <i>physical infrastructure</i> in and around this market (buildings, roads, etc.) in good enough condition to support normal livelihood and trading activities? - Do vendors in this market have access to <i>locked, secure storage facilities</i> where they can keep their stock? - Does the <i>financial infrastructure</i> exist in this market to support diverse payment modalities beyond physical cash and informal credit?

Generally, the MFS is calculated on the market level, which should correspond to the assessment's main unit of analysis (e.g. the city, the district, etc.) If enough data is available to support calculating an MFS on the level of individual marketplaces (i.e. the physical locations within communities in which traders gather), this is also an option. The MFS is not designed to assess the functionality of individual businesses or market actors.

For further information on how to calculate the MFS, see Section 5, 'How is JMMI data analysed?' More in-depth guidance on the MFS is available via the IMPACT Cash and Markets Community of Practice's **full guidance document** on the subject.

	Market Functionality Score (MFS)	MFS Dimensions				
		Availability	Affordability	Accessibility	Resilience	Infrastructure
	Weight of dimension in the MFS	30%	15%	25%	20%	10%
National	68/100	92/100	72/100	63/100	39/100	56/100
Niamey	72/100	94/100	51/100	93/100	41/100	50/100
Marché de Katako	70/100	92/100	56/100	85/100	40/100	44/100
Marché de Harobanda	74/100	94/100	55/100	100/100	30/100	63/100
Tillabéri	64/100	92/100	68/100	73/100	24/100	50/100
Tillabéri	71/100	100/100	53/100	100/100	24/100	31/100
Ouallam	75/100	92/100	75/100	100/100	18/100	75/100
Ayerou	59/100	88/100	49/100	54/100	31/100	63/100
Banibangou	47/100	52/100	63/100	63/100	27/100	44/100
Diffa	62/100	60/100	64/100	50/100	53/100	75/100
Diffa	65/100	60/100	64/100	56/100	59/100	94/100
Maine Soroa	67/100	60/100	51/100	63/100	75/100	75/100
N'guigmi	77/100	94/100	65/100	86/100	45/100	69/100

For what areas should results be reported?

All quantitative assessments require a *unit of analysis* to be specified. In market assessments, this usually means the basic geographic area across which results will be aggregated in the initial analysis, as well as the smallest area for which indicative results can be reported.

For the JMIMI, the unit of analysis is most often the **market**. This term is necessarily imprecise, as markets may look quite different from region to region, but in general a market tends to correspond to the city, town, community, or small administrative area in which it is located, encompassing all the traders operating in that area. Larger markets will sometimes include several central and peripheral marketplaces of various sizes, which will usually be tightly integrated, although in very large cities it may make sense to divide the city into smaller administrative areas and assess each area separately.

In some contexts, it may be valuable to adopt a smaller unit of analysis, namely the individual **marketplace**: a physical location in a community where goods are bought and sold. This can be useful where markets are poorly integrated and wide variations in prices and functionality may be observed from marketplace to marketplace, even within the same city. However, in contexts where markets are well-integrated, there is often no need to conduct analysis on individual

marketplaces; doing so can sometimes even produce misleading results, particularly where marketplaces tend to be highly specialised and an absence of key items in one marketplace might just mean that they are adequately supplied by another marketplace nearby.

The geographic unit of analysis should be selected based on the JMIMI coordinators' and participants' understanding of the size of local markets' *catchment areas*, or the area of surrounding countryside that larger markets in the assessed region tend to serve. It is generally reasonable to assume that marketplaces that share a catchment area will also share suppliers, supply routes, and sometimes even customers and traders, and for this reason, assessing the main marketplace in a catchment area will usually give strong insight into other local marketplaces as well.

Further guidance on how to select markets and marketplaces to assess is provided in Chapter 3, 'How is JMIMI data collected?'

How should market baselines be incorporated into JMMI design and analysis?

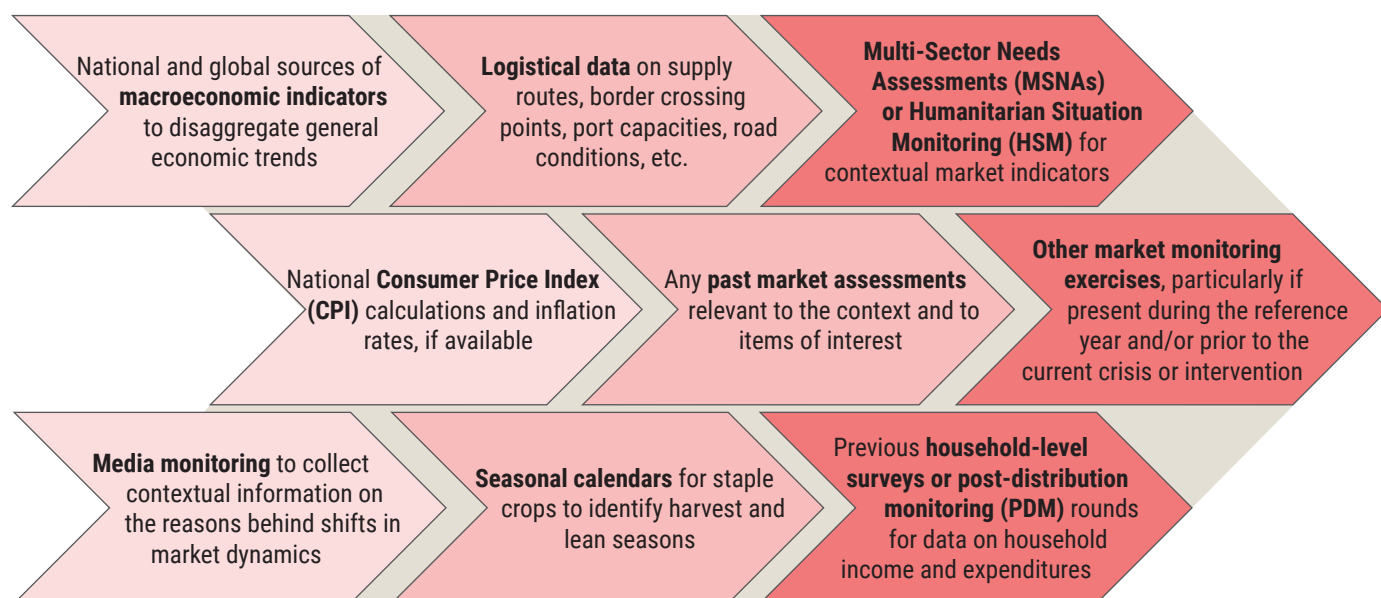
Anyone aiming to design and launch a JMMI must first work to build a strong understanding of the **market baseline**, or the ‘normal’ market dynamics that prevail in their context. Understanding how markets usually work in a given context—their basic characteristics, the seasonal patterns they follow, the major market actors who contribute to and control supply chains, their preexisting inadequacies and market failures, the overall market environment in which they operate, etc—is crucial to understand which of the changes and dynamics observed by the JMMI are expected and which are unexpected. Changes that are *expected* may not be considered problematic and may even naturally resolve themselves within a few months, with local populations easily able to cope, whereas those that are *unexpected*, or represent a departure from ordinary patterns, are usually more of a cause for concern.

Market baseline analysis revolves around studies or syntheses that detail ‘normal’ or ‘expected’ market dynamics, generally in a defined reference year. Potentially covering topics such as market functionality, supply chain functionality, market actors, prices,

infrastructure, and the overall market environment, among others, market baseline analysis enables JMMI analysts to compare conditions pre- and post-crisis, or pre- and post-intervention, to assess market disruptions and disaggregate the effects of expected and unexpected changes in order to better inform CVA actors.

In a crisis setting or other context with a defined starting point, an ideal market baseline analysis would be based on a reference year or month prior to that starting point and would be independent of any specific intervention. However, it is not always possible to find robust, consistent, complete baseline data meeting this description, particularly in countries or market systems that have not been the object of much previous study.

More often, JMMI analysts must assemble an approximation of a market baseline from any secondary data they can find pertaining to their context. Depending on the availability of data, this might potentially incorporate sources such as:



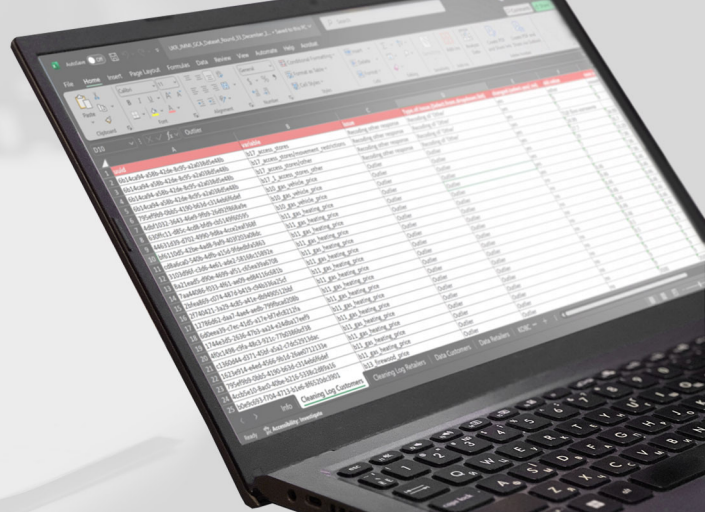
If there are crucial gaps in this secondary data, or if the data is too fragmentary, too outdated, or too irrelevant to the current context to provide a meaningful baseline, consider whether there might be an opportunity to launch supplementary qualitative data collection, employing key informant interviews (KIIs), focus group discussions (FGDs), or both, to fill some of these gaps.

If all else fails, JMMI teams in some contexts may be able to retroactively collect a small amount of baseline data using doubled indicators in the JMMI questionnaire

itself: for example, asking vendors 'What is the current price of 1 kilogram of maize?', followed by 'What price did you charge for 1 kilogram of maize three months ago [prior to the start of the current crisis]?' Using this strategy may be inadvisable under some circumstances, as the accuracy of the data collected will diminish with longer recall periods, and may be altogether impossible in protracted crises where a 'baseline' situation may not have been experienced for several years. Any efforts to employ such a data collection technique must be carefully considered on a case-by-case basis.

3

HOW IS JMMI DATA COLLECTED?



In this chapter:

- Which markets and marketplaces are targeted?
- Which vendors are interviewed and how many?
- What commodities are monitored?
- What procedures are used to collect JMMI data?
- When and how often is data collected?
- What training and guidance should be provided to JMMI data collectors?
- How is JMMI data quality ensured?

Data for the Joint Market Monitoring Initiative is collected jointly by all partners who have agreed to participate in the process, usually on a monthly basis. Retailers in target markets serve as the respondents. In accordance with the JMMI's philosophy of active collaboration and harmonisation, all participating JMMI partners in a country commit to supporting a single joint monitoring process. In practice, this usually means:

- All participating partners use the same data collection tools.
- All participating partners use the same data collection methodology and sampling strategy.
- All participating partners collect data during the same period of time from their areas of operation.
- All participating partners coordinate their coverage to avoid duplication and gaps.
- All participating partners upload their data to the same server for cleaning and analysis.
- All participating partners receive anonymised data and analysis spanning all assessed areas.

Which markets and marketplaces are targeted?

A key aspect of organising a JMMI is coordinating data collectors' contributions to ensure that as many markets and marketplaces are covered as possible. In general, it is most useful to **prioritise market towns** that attract large numbers of vendors and customers from surrounding areas. As many such market towns as possible should be targeted, across as wide a geographic area as possible, to ensure that meaningful comparisons can be made among more and less affected areas. If resources are scarce, the largest markets, as well as those most directly affected by humanitarian crises, should be privileged. However, the

limitations of this approach should be kept in mind, as it is impossible to fully understand what changes have resulted from a crisis if you have no data from non-crisis-affected areas to which you can compare.

Organisations participating in the JMMI should proactively **coordinate their coverage** to ensure that data is obtained from as many target areas as possible, minimising gaps while avoiding duplication. Many JMMI coordinators facilitate this process by working with each organisation to understand which geographic areas they can commit to cover, compiling and mapping the

responses into a single list to identify gaps and areas of overlap, resolving the overlaps while searching for additional capacity to fill critical gaps, and following up prior to each new round to confirm and map any changes to the collective coverage.

JMMI participants should, in general, target each monitored area's **largest marketplace(s) devoted to the retail of basic goods**. Any physical space with a relatively sizable concentration of traders in close proximity can be considered a marketplace. These traders can be located in a devoted market building or square, in a central business district, in a bazaar or medina, along a main street or major highway, or similar; marketplaces may look very different in different countries and in communities of different sizes.

The field teams collecting the data are responsible for identifying the largest marketplaces in each monitored area that meet this flexible definition.

Wholesale marketplaces are generally not targeted, as they are not often patronised by ordinary customers, and the central goal of a JMMI is to better understand the challenges faced by crisis-affected households when they try to access markets and buy the items they need to survive. Specialised marketplaces, or those that focus mainly on items other than basic goods, are also generally excluded unless there are basic items available there that cannot be found anywhere else.

Which vendors are interviewed and how many?

Because most JMMIs focus on calculating MEB costs as a proxy for household financial burdens, data collection should generally focus on **retailers**, rather than wholesalers, producers, or other market actors. This is because retailers control the final cost that most households must pay to receive essential goods. Prices may be collected from wholesalers, producers, and others, but *only* if they also sell their goods directly to consumers in the marketplace, and *only* if the prices collected are those charged to the end consumers.

If this is not the case, then data from each type of market actor should be treated as a separate supplementary data source to shed further light on market dynamics, and non-retailer data should not be integrated with or analysed together with retailer data.

Within monitored markets, locally appropriate sampling criteria should be set to determine which retailers to interview. These can vary by country, but commonly used criteria include:

Field teams should aim to monitor **the same vendors or types of vendors visited by crisis-affected households** in the area. Vendors selling upmarket goods and expensive brands that are not purchased by most households should be avoided.



Vendors with weight scales should be prioritised for food items. However, those without weight scales may be interviewed as well if there are not enough vendors with scales in the marketplace.



Vendors must sell at least one item monitored as part of the JMMI survey; preferably, they will sell as many of these items as possible.



Vendors based in permanent structures should be prioritised to ensure that comparable, locally established vendors are monitored in each round. If monitoring traveling merchants or others outside of permanent structures, interview those whose inventory and prices are similar to those offered by more established vendors.



To the extent possible, traders should be **located in different parts of the marketplace**. There are no restrictions on the size of the surveyed traders, as consumers typically buy from small as well as large traders.

There is no set number of vendors that must be interviewed per round. Rather, field teams should aim to collect **a minimum of four prices per monitored item per assessed location** (i.e. per unit of analysis), or more if feasible. It is not sufficient to collect just one price per item and assume that this represents the local 'market price' in that location, as there is no guarantee that one purposively selected vendor will reflect general conditions in the marketplace; collecting at least four prices enables teams to calculate indicative median prices for each monitored item in each area.

While the vendors monitored each round should be comparable, there is no requirement to collect data from the same vendors every month. Doing so can often be beneficial, enabling field teams to establish trust over time and creating a stronger foundation for remote data collection, should this be needed. However, the opposite can also be true in certain contexts, particularly where frequent rounds of data collection may lead to assessment fatigue; in such cases, it may be wiser to vary the vendors monitored to avoid disproportionately burdening any one vendor.

Field teams should continue interviewing traders until they have collected the minimum number of prices for each monitored item. Therefore, the final number of interviews per round will depend on the size of the assessed vendors and how many targeted items each one carries. If a particular item is fully unavailable in a certain assessed location, whether temporarily, seasonally, or year-round, or if the item is sold by fewer than four vendors in that location, the quota in question can be suspended on a case-by-case basis.

What is assessment fatigue?

Assessment fatigue happens when target populations repeatedly participate in assessment interviews without seeing tangible benefits, leading to frustration, decreased cooperation, and decreased data quality over time. Vendors interviewed as part of the JMML are at particular risk of assessment fatigue due to the assessment's frequently recurring nature and its (usually) indirect relationship to any aid or profit received by the vendors themselves.

Possible strategies to mitigate assessment fatigue include:

- Cultivating a larger pool of comparable vendors within each assessed marketplace and interviewing different vendors each round.
- Fully explaining to vendors the JMML's role in informing CVA and bringing benefit to their community (but without promising that the community or vendor will definitely receive aid).
- Closing the circle by ensuring that vendors benefit meaningfully from the JMML, providing analysis that is useful to them distributed in their native languages.

What commodities are monitored?

Most JMMLs focus on monitoring **basic market commodities** likely to be consumed by populations in need of assistance, such as staple foods, hygiene items, cooking fuel, and the like. The majority of JMMLs achieve this by monitoring as many commodities as possible from a **Minimum Expenditure Basket (MEB)**. Tracking the cost of an MEB over time enables aid actors to understand the gap between these households' financial burdens and the resources they have available to meet their needs, which in turn facilitates the calculation of standard MPC transfer values for the response. More information on MEBs is available in Chapter 2, 'How is a JMML designed?', and more on calculating standard MPC transfer values is available in Chapter 6, 'How is JMML analysis interpreted and communicated to the response?'

The JMML's focus on the MEB can be modified based on what needs and information gaps exist. In volatile contexts that call for frequent data collection (weekly or

biweekly), it may be advisable to monitor just a handful of representative key commodities to speed up data collection. In more stable post-disaster, early recovery, or development contexts, JMML partners may want to supplement the MEB by monitoring a more complex list of items and services to inform their programming, such as construction materials, agricultural inputs, household non-food items, and the like. Generally this list of items includes, at a minimum, all elements of the MEB that are bought and sold in markets.

It is crucial to keep in mind, though, that **more monitored items translate into a longer questionnaire and a greater data collection burden** on both participating partners and the traders themselves. Thus, the basket of monitored items should not be allowed to grow too large. One possible way to mitigate this is to consider whether monitored items that fall outside the MEB need to be assessed in every round; it may be possible to monitor some on

a quarterly, bi-annual, or seasonal basis. Items such as agricultural inputs and winterisation materials, for instance, may only be relevant to assess during certain seasons of the year, and other commodities may have prices sufficiently stable and resilient to shocks that they do not need to be monitored as frequently.

Only items bought and sold in markets can be reliably monitored using the JMMI methodology. This implies that the costs of some MEB components which revolve around services and items that are difficult to standardise or monitor—for instance, healthcare, education, transportation, energy, rent, etc.—may not be appropriate to collect through a JMMI. Those launching a JMMI should therefore identify alternative data sources for household expenditure figures on these MEB categories and should develop a plan for how to update these figures periodically over time.

One commodity that technically fits the above criteria, but requires an atypical monitoring strategy, is foreign currency. In contexts where local populations do not have access to official exchange rates and the majority access foreign currency through parallel-market currency traders operating in marketplaces, monitoring the rates charged by these traders can be highly useful.

Where they exist, parallel-market exchange rates are a useful proxy for the cost of importation and tend to correlate closely with price changes in the cost of imported goods. Currency traders generally offer separate buy and sell rates for widely used currencies, which can both be collected through the JMMI, although the sell rate—the main rate accessible to local businesses and households that need to access foreign currency—tends to be most useful for the JMMI. For more on how to handle the resulting data, see Chapter 5, 'How is JMMI data analysed?'

It is usually advisable to consult the Cash Working Group, relevant clusters or sectoral specialists, and JMMI taskforce members to get their feedback on the draft list of items and services to monitor. This process often produces an extensive list of suggestions that must be weighed against each other and implemented selectively to keep the questionnaire at a manageable length; it is rare that all feedback can be adopted. For more on stakeholder consultations, see Chapter 1, 'What is the JMMI?', and Chapter 4, 'How is a JMMI coordinated?'

Developing specifications for monitored commodities

Many of the items monitored by the JMMI can be found locally in multiple brands or varieties, some of which may be interchangeable and others of which may be too different to unify. To ensure that field teams are monitoring comparable items and collecting comparable data across a country, **monitoring specifications** for all JMMI commodities must therefore be identified, adopted, and integrated into enumerator training modules. Even in contexts where the JMMI is built around a ready-made MEB, creating an optimal set of monitoring specifications can sometimes be a lengthy process that requires input from sectoral specialists.

Monitoring specifications should always, at minimum, contain a *unit* and the *quantity* of that unit for which the price needs to be collected: for example, 1 litre of milk, 500 grams of salt, 12 eggs, etc. Beyond that, they do not always need to be highly detailed; indeed, in the JMMI, specifications often tend to be on the simpler side. That said, JMMI coordinators must seek a balance between providing too many specifications and too few.

- With **too few specifications**, or specifications that do not adequately remove ambiguity between different varieties of the same item, there is no guarantee that all field teams will be monitoring comparable items across all assessed areas, which means that data from different regions may in turn not be comparable.
- **Specifications that are too detailed or too precise** can also be problematic, as they may improperly prevent field teams from monitoring alternative varieties that might also perfectly suit the needs of a crisis-affected household. This can lead to non-existent shortages being flagged, as field teams may be unable to monitor the exact variety required by the JMMI and may mark it as 'unavailable' although a perfectly interchangeable variety is sitting on the shelf in front of them. In addition, some specifications, particularly those that require the enumerator to personally take measurements, assess an item's manufacturing quality, or utilise specialised knowledge, may be impractical to assess in the field.

The table below contains sample specifications for a number of items, presented for illustrative purposes in ways that are too vague for the JMMI, too detailed for the JMMI, and just right. The goal of a JMMI coordinator should be to only include specifications that:

- 1 Reflect distinctions that are significant to socioeconomically vulnerable households;
- 2 Distinguish among items or variants that have markedly different uses or can only be used by different groups of people (f. ex. clothing for adults and children);
- 3 Can be clearly understood and operationalised in the field by data collectors with no equipment or specialised training.

Specifications too vague	Good specifications	Specifications too detailed
Sorghum	Red sorghum, whole grain, 1 kg	<i>Sorghum bicolor</i> var. <i>caffrorum</i> , whole grain, 2.5 mm min diameter, 1 kg
Soap	Body soap, 1 bar (100 g)	Antibacterial body soap, Dettol brand, unscented, 1 bar (100 g)
Blanket	Winter blanket, ~150x200 cm	Winter blanket, synthetic material, neutral colour, reinforced stitching, 150x200 cm, 4 mm min thickness
Cooking fuel	LPG, 12.5 kg refill of a standard cylinder (cost of cylinder excluded)	Commercial-grade LPG (min 50% propane), RON 94-112, 12.5 kg refill of a standard cylinder (cost of cylinder excluded)

Note that the JMMI does not seek to precisely standardise monitored commodities to the same degree that would be needed for other purposes, such as direct procurement or sector-specific guidance. Nor are item brands usually specified in the JMMI, on the grounds that these are only relevant to pre-packaged goods and that socioeconomically vulnerable households are more sensitive to price than to brand. Rather, the JMMI adopts a **minimum-expenditure philosophy** derived from its focus on the MEB. In short, by asking enumerators to monitor the *least expensive brand or variety* sold by the vendor that meets the monitoring specifications, it aims to reflect the real decisions that socioeconomically vulnerable individuals must make to minimise their financial burdens and support their households in a time of scarcity.

Finally, there are minimum standards of quality, safety, and dignity that inherently exclude certain items from consideration in the JMMI. Field teams should never, for example, monitor the prices of spoiled or expired products, nor of inadequately processed items (e.g. rice with stones in it), nor of grain that is meant as animal feed but is not of sufficient quality for human diets. No matter how inexpensive these items are, it is *never* acceptable to log them as 'minimum expenditures'. Quality standards such as these should be explicitly written into specification documents to ensure full clarity.

Developing specifications and monitoring strategies for complex commodities

Most commodities bought and sold in markets can be monitored using the usual sort of JMMI specifications detailed above. There are, however, commodities that are sold via complex mechanisms, or at different prices by multiple non-interchangeable types of vendors, for which a great deal more background knowledge of the local market system is required to create an effective market monitoring strategy.

Water is a prime example. At first glance, water seems to be among the simplest commodities in any JMMI, and indeed it is bought and sold in markets, in the form of bottled water, alongside most other MEB items. However, monitoring bottled water alone often creates a distorted picture of local households' real water consumption patterns.

In practice, households require two types of water, water for direct consumption (drinking and cooking) and water for domestic use (cleaning and hygiene); while the two can be the same, e.g. using potable water to fulfil a household's entire water consumption, this is prohibitively expensive in many contexts, and the minimum-expenditure philosophy would require these to be separated.

The table below is adapted from the Sphere Handbook's standards on minimum water supply, with the caveat that these standards are truly the minimum for long-term support and, in many contexts, far higher quantities might be considered necessary to maintain health and dignity.

Needs	Quantity (L/person/day)	Adapt to context based on
Survival: Water intake (drinking and food)	3	Climate and individual physiology
Hygiene practices (bathing and cleaning)	6	Social and cultural norms
Basic cooking	6	Food type, social and cultural norms
Total minimum water needs	15	

Furthermore, households often have access to multiple water sources which they will use to piece together their full monthly consumption of both drinking water and domestic water: for instance, publicly accessible taps, privately owned wells or boreholes, water trucking services that fill up private water tanks, surface water of varying levels of cleanliness, bottled water, or even water piped directly into their shelters, among others. Water from each of these sources is generally sold by different vendors at different prices using a different cost structure, and some of it may be available for free by default, meaning there is no need to monitor certain sources at all.

While it is very complex and often impossible to account for every accessible water source on a local level through the JMMI, it is much more feasible, with the help of the WASH Cluster, to develop a generic 'household water consumption profile' that can be used to calculate the cost of water in the MEB. Such a profile estimates what proportion of an average socioeconomically vulnerable household's water needs is filled by commonly used water sources, which may vary by region.

After consolidating this information, one can choose which water source(s) to monitor as part of the JMMI by first excluding any sources that do not meet minimum humanitarian standards (see below), then, for the sake of feasibility, reducing the list to a maximum of one commonly used source for drinking water and one for domestic water (unless both needs are fulfilled by the same source). Again, these monitored sources can vary by region if necessary, but can also be defined on a national level where appropriate.

Key questions to ask as part of this scoping process include:

- 1 What is/are the main source(s) of water for most socioeconomically vulnerable households?** Do these sources vary by region, by socioeconomic status, among urban vs rural households, etc.? These sources should be ranked by frequency of use. WASH data from a Multi-Sector Needs Assessment, post-distribution monitoring, or a similar household-level assessment can be valuable here.
- 2 Which of these water sources tend to be reliably potable?** Conversely, which are less likely to be potable and cannot be used for drinking or cooking?
- 3 Which of these water sources tend to be reliably available and accessible?** Conversely, which tend to show seasonal or other patterns of unavailability, and which might not be consistently accessible to the households that need them, whether due to insecurity or other reasons?

- 4 What payment structures are most commonly associated with each water source?** For instance, water may be available from public taps (e.g. at a mosque) for free, but other taps in the city may be owned by private actors who charge for access. Piped water may be available for a flat rate each month, but may be inaccessible to many households due to infrastructure damage; these households may band together with several neighbours to cover the cost of a water trucking service, which may charge different amounts for a delivery based on quantity and distance travelled. If there is doubt about whether a water source is usually paid, it is wise to assume that it is. It is preferable for CVA actors to fund the purchase of higher-quality water than to provide too little money and force households to rely on lower-quality or even contaminated sources.

The most important question:

Which of the available water sources are acceptable for a socioeconomically vulnerable household to use?

Decisions on which water source(s) to monitor in the JMMI should often—but not always—be based on which source(s) are *currently* being used by crisis-affected households. An example to illustrate the complexity: Local residents may currently collect all of their water from a nearby river for free, which would seem to indicate that the cost of water does not need to be monitored in the JMMI.

But if the water from this river is contaminated, or if it dries up seasonally, or if it is far enough away that the trip creates access challenges or protection risks for local residents (particularly women and the mobility-impaired), then aid actors should plan to provide a large enough cash transfer to enable local households to access alternative water sources. It is not acceptable for MPC transfer value calculations to reproduce existing consumption patterns that are known to be substandard and inadequate.

Identifying units to monitor

Whenever possible, JMMI field teams monitor the price of a standard unit of each monitored commodity, defined based on how it is most commonly bought and sold in the local context. Many food items, for example, are monitored by the kilogram or the litre, e.g. 1 kg of rice or 1 L of vegetable oil; other items must be monitored by the piece, e.g. 1 egg or 1 melon.

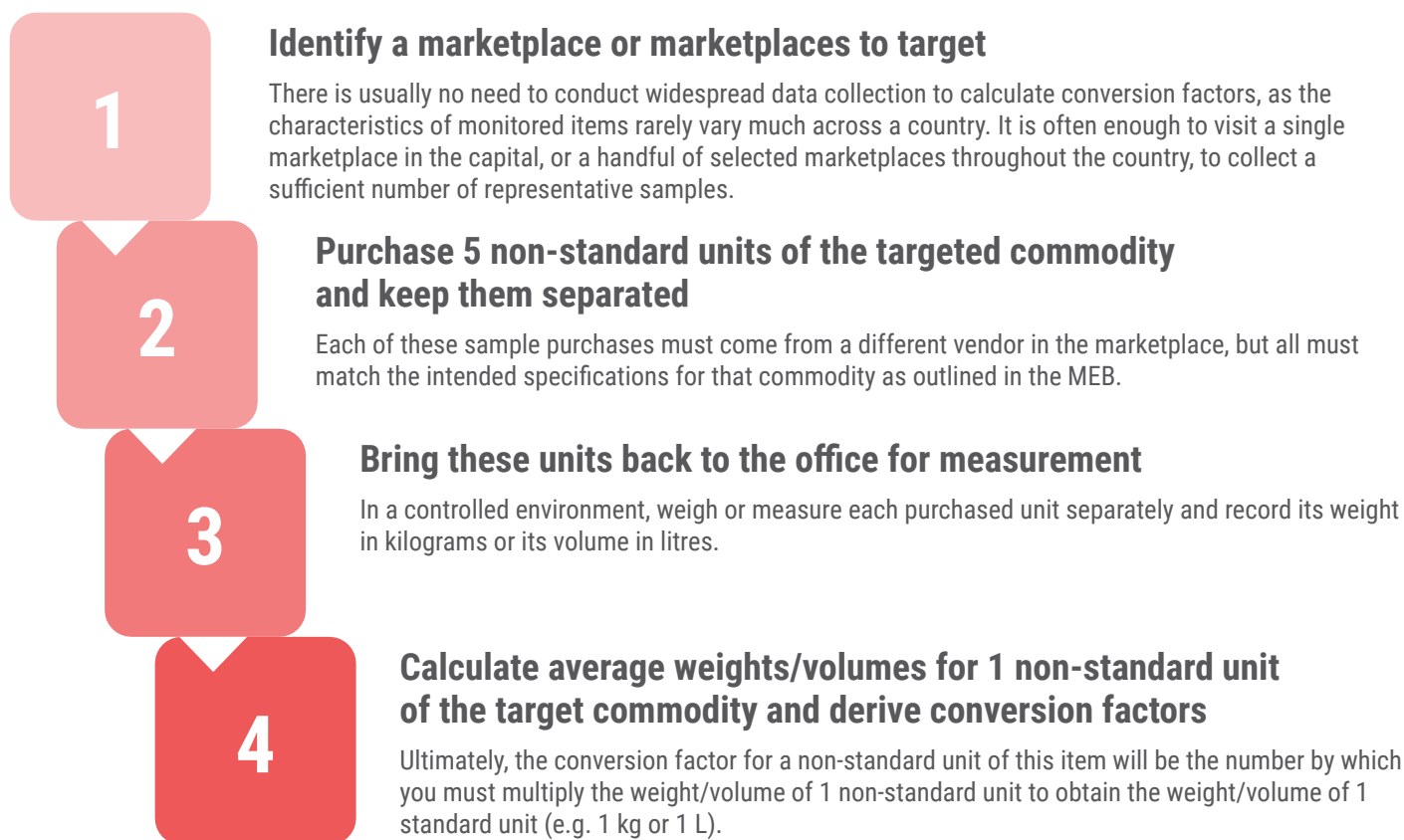
Items that are most often sold in standard packages are monitored based on the weight or volume of the most commonly sold package, e.g. 1 75-g tube of toothpaste or 1 400-g can of chickpeas. The prices of these pre-packaged items can be normalised to derive the price of 1 kg, 1 L, or 1 piece if this is necessary to match that item's definition in the MEB.

Where items are not sold in pre-packaged form (for instance, grains or produce sold out of large bags), field teams usually prioritise interviewing vendors with food scales, or with another means of making precise standard measurements, and to collect the price of one standard unit of each relevant item (1 kg, 1 L, etc.)

Sometimes, however, it is simply impractical to monitor standard units of certain items. In contexts where both food packaging and food scales are uncommon, many basic items are sold according to roughly defined local or traditional units: for example, the *malwa* in South Sudan, the *muḍu* in Nigeria, the *viss* in Myanmar, etc. Other items may, as a general rule, be sold in imprecise, vendor-defined quantities: for example, a 'bundle' of firewood or a 'scoop' of rice.

Although these non-standard units are rarely defined or measured in a regular way, it is possible to calculate **conversion factors** that will allow JMMI teams to normalise the price of a non-standard unit to that of a standard unit that can be used in analysis. These

conversion factors are derived from the average weight or volume of a non-standard unit of the commodity in question, as observed via direct market purchases. A common procedure for collecting the necessary data to calculate conversion factors is as follows:



This process only needs to be undertaken once, prior to the official launch of the JMMI, but it must be undertaken separately for *each* commodity that will be monitored based on non-standard units, even if the same non-standard unit is used for multiple items. This is because each monitored item will have a different composition and a different density, such that one non-standard unit of Commodity A may weigh only half of the same unit of Commodity B. If time and resources allow, it may be advisable to repeat the exercise multiple times in different seasons, as crops tend to have different levels of water content and therefore different densities depending on the time of year (e.g. rainy season vs dry season).

Finally, as an alternative to the above procedure, field teams operating in contexts where both food packaging and food scales are uncommon can sometimes create their own standardised units to monitor. For example, the bottom of an empty 500-mL water bottle can be removed to produce a container of uniform size that can be brought to all monitored vendors to perform measurements on the spot. Prices collected via this method will also need to be normalised based on

Conversions should always be calculated, never estimated

Many items in the JMMI will be sold in units that do not precisely match the standard units needed for MEB analysis. For example, canned goods may be sold in containers of 400 g rather than 1 kg, and staple grains may be sold using non-standard local units. The recorded prices of these items will need to be normalised to obtain the price of one standard unit of each item for MEB calculations.

Such conversions should always be done via automated tools; vendors and field teams should never be asked to calculate these conversions in their heads, which introduces a new source of potential error. Instead, field teams should always record prices provided directly by the vendors for the precise units those vendors sell. Conversions should then be calculated directly in the Kobo or ODK form, using a 'calculate' row, or afterwards in the data analysis stage.

standard units, and therefore conversion factors will still need to be calculated based on the above procedure. Field teams using this method will need to be issued containers of uniform size or trained on how to create uniform containers using readily available materials.

What procedures are used to collect JMMI data?

Key principles of JMMI data collection

As mentioned above, the JMMI relies on a **price-based quota sampling** strategy. Field teams aim to collect a minimum of four prices per monitored item per assessed location and continue to conduct vendor interviews until these quotas are achieved.

For each monitored item, field teams are instructed to collect the **least expensive brand or variety** of that item carried by the monitored vendor that meets the established specifications. More detail on the challenges of identifying an appropriate set of specifications can be found in Section 3, 'How is JMMI data collected?', under 'What monitoring specifications are adopted for these commodities?'

Implementation in the field

Every JMMI makes use of mobile data collection methods, with a focus on the Kobo and ODK platforms*. In REACH's experience, this has proven to be the most efficient way to ensure seamless collaboration among participating partners. JMMI coordinators are responsible for developing a common quantitative data collection tool to be hosted on a centralised Kobo or ODK server; in JMMIs run by REACH, these tools are hosted on an organisational Kobo server managed by IMPACT Initiatives' headquarters and subject to the European Union's data protection regulations. The coordinators upload a revised tool to this server whenever changes are made, generally before each new round of data collection.

Data must be uploaded to the central server using one of two Android apps (KoboCollect or ODKCollect) or, alternatively, using a link that can be filled out in one's internet browser. Enumerators using either Android app will be able to complete surveys from the marketplace without an internet connection and save them for later submission once they return from the field. All participating JMMI partners are asked to submit their data directly to the central server, preferably via these Android apps, unless circumstances wholly prevent them from doing so.

PDF versions of the questionnaire can be provided on an *ad hoc* basis for enumerators that feel more comfortable collecting data on paper in the marketplace, whether due to security concerns, protection risks, or any other reason. The enumerators will be responsible for printing and transporting these questionnaires to the field themselves.

However, filling out a paper form is not a substitute for submitting data to the central server; the volume of data produced by most JMMIs means that their coordinators rarely have the bandwidth to conduct data entry on behalf of partner organisations. For this reason, any data collected on paper must subsequently be uploaded by the field team itself via an Android app or internet browser prior to the end of each day of data collection, or at latest by the end of the data collection window, just as if they were using an Android app in the marketplace. Hard copies and scanned or photographed questionnaires cannot be accepted.

* **Kobo** and **ODK (Open Data Kit)** are fully compatible mobile data collection platforms that, for all intents and purposes, function interchangeably. The mobile data collection tools used on both platforms are based on a common XLSForm standard and can therefore be deployed either on Kobo or ODK, and their two associated Android apps, KoboCollect and ODKCollect, can also be used interchangeably to access the same tools.

When approaching a given vendor for the first time, the enumerator should begin by introducing themselves and their organisation, clearly explaining the purpose and nature of the assessment and the amount of time they expect the survey to take to complete, as well as clarifying that the interview is purely voluntary (i.e. unpaid) and that it does not guarantee the receipt of assistance in the future.

Having done so, the enumerator should confirm whether the vendor is willing to contribute information to the assessment on a regular basis. If the vendor agrees, the enumerator may continue to collect data from that vendor in future rounds, but should continue to confirm at the beginning of every survey that the vendor consents to continue participating.

Remote data collection

In-person data collection is strongly recommended wherever feasible, as visiting a marketplace directly gives a much clearer understanding of the context and local dynamics affecting market prices. However, from time to time, it may be necessary for partners operating in difficult humanitarian contexts to collect JMMI data remotely, whether due to insecurity, destroyed infrastructure, health concerns (e.g. the COVID-19 pandemic), or other factors limiting humanitarian access to areas of interest. Interviews can take place either over the phone or over secure messaging apps offering end-to-end encryption, including WhatsApp, Signal, Viber, Telegram, and others.

Remote data collection can be challenging for both field teams and interviewees. However, it tends to be most successful in areas that the field team has previously assessed in person, where they have already built relationships with networks of vendors in local marketplaces who can be contacted remotely. As a rule of thumb, if a field team is aiming to remotely collect a minimum of 4 prices per location per assessed item, they should aim to identify, contact, and receive consent from a minimum of 6 to 8 retailers per location, using snowball sampling techniques if necessary to expand their existing networks of retailers. This provides a larger buffer to guard against the challenges of remote data collection, including issues of non-response, poor mobile connectivity, and the greater difficulty of asking interviewees to remain on the phone for the full duration of a survey.

However, if a particular vendor is exhibiting signs of assessment fatigue or consistently reporting prices that are far out of step with others in the same marketplace, whether because they are generally expensive or because they are potentially inflating reported prices in the hope of benefitting from CVA programming, this vendor should be avoided in future rounds and replaced with another.

Field teams pursuing remote data collection strategies are encouraged to contact the same vendors in each round of data collection, as well as verifying during their first phone call that the vendor is willing to receive regular follow-up phone calls to go through the same list of questions. They are also encouraged to work out a plan with each vendor to call at a certain scheduled time of day, ensuring that the timing is not overly disruptive to the vendor's work; this may involve splitting the interview into 2 or 3 shorter phone calls to allow the vendor to serve customers in between. At the end of their first conversation, the field team can consider asking the vendor for the names and contact information of 2 additional vendors in their marketplace who might be willing to participate in the JMMI.

When and how often is data collected?

Data collection and analysis for the JMMI most often take place monthly, but the cycle can be adapted to support any data collection cycle. Humanitarian and development actors operating in stable and secure contexts, or those solely monitoring less volatile commodities such as non-food items (NFIs), may only need to collect market data once per quarter, whereas those operating in economically volatile contexts may prefer to collect data biweekly or even weekly.

During each round of data collection, all participating partners are asked to deploy field teams to their assigned markets during the same relatively short window of time. Offering a flexible window, rather than prescribed data collection dates, allows each participating partner to organise its own field teams' activities in the way most convenient for them. However, this must be balanced against the need for partners to collect data at loosely the same time, particularly in economically volatile contexts, to ensure that all data points across the JMMI dataset are internally comparable.

In many contexts, particularly in rural areas, markets may only be fully functional on designated *market days* that tend to fall once per week. Where this is the case, field teams should aim to collect all of their data on these

market days to be assured of encountering the greatest variety of traders. Visiting outside of a market day may, in some areas, produce a misleading portrait of market operations and functionality.

For this reason, the JMMI data collection window usually remains open for about a week, though this can be lengthened in less volatile contexts or compressed to allow for more frequent data collection. Windows of less than a week may have the disadvantage of preventing field teams from organising their market visits to coincide with market days.

While rapid data collection can be very useful, those launching a JMMI must keep in mind that data collection is not the only work that needs to be done. Coordinating the efforts of multiple partners takes time and commitment, and sufficient time must also be budgeted in every round for data compilation, data cleaning, follow-up with partners, analysis, and the production of anonymised datasets and factsheets. Successfully coordinating weekly data collection rounds is likely to require multiple staff members whose jobs are fully devoted to coordinating the JMMI, as well as very rapid follow-up from all participating organisations, and is therefore often difficult to achieve.

What training and guidance should be provided to data collectors?

In the JMMI, it is essential for all partners to consistently follow the same data collection methodologies to ensure that their data is comparable to that of all other partners. With this in mind, all participating field teams and enumerators should be provided with uniform training in the JMMI approach using a common set of training materials, preferably conducted in the primary language of data collection. The JMMI coordinators should be responsible both for developing these training materials and for organising the initial training sessions.

The process usually begins with a half-day or full-day training-of-trainers organised by the coordinators with each participating partner's primary JMMI focal points, as well as with their field team leaders if possible. The attendees of this training-of-trainers will then be responsible for fully training all participating enumerators from their own organisations using the same materials and tools. In all training sessions, it is important to provide full explanations of each indicator in the questionnaire, including its importance to the

JMMI analysis and why it is worded the way it is, to ensure that enumerators do not change these indicators' wording or delivery in a way that undermines their validity. Wherever possible, training sessions, and particularly the indicator review portion, should be conducted in the primary language of data collection.

It is also good practice for the JMMI coordinators to provide written guidance documents that can serve as a reference for common questions on the JMMI methodology and approach. These can vary based on the needs of participating organisations, but potentially valuable guidance might include a basic FAQ (frequently asked questions) for enumerators summarising the JMMI approach; a reference guide to key JMMI indicators explaining what they measure and how the associated questions should be asked in the field; specification sheets to aid enumerators in determining which items to monitor; and the like. These documents should be provided in the primary language of data collection if possible.

Finally, it can be valuable for JMMI coordinators to establish a way of providing group support to participating partners' JMMI focal points and field teams. Some establish WhatsApp groups or other similar platforms to achieve this goal, using them to disseminate information about changes to the common tools, alert data collectors to any safety or security concerns, and aid focal points and field teams with any practical questions that may arise during data collection.

How is JMMI data quality ensured?

As a joint assessment, the JMMI relies on methodologies and data collection practices that must be fully aligned among multiple partners and regions. Coordinating a JMMI therefore requires special attention to ensure that all data submitted is of uniformly high quality across all participating locations, organisations, and field teams. This is complicated by the fact that coordinators generally cannot supervise data collection directly in all areas and will rarely have direct contact with other organisations' field teams.

Where REACH coordinates JMMIs, it aims to ensure data quality in a variety of ways:

- Through **unambiguously constructed questionnaires** and **highly constrained mobile data collection forms** that prevent the entry of contradictory or unlikely responses, which aim to minimise errors at the data collection phase.
- Through **frequent follow-up** with partners submitting data, both *during* the data collection window to ensure that appropriate sample sizes are achieved for all items in all areas in a timely manner, as well as *after* the data collection window to follow up on outliers, typos, and other unclear data points.

- Through the use of **vett ed R scripts** for data cleaning and analysis that are aligned with IMPACT Initiatives' **Data Cleaning Minimum Standards Checklist**, and by employing the same general scripts and frameworks to conduct similar analyses across countries, to minimise the potential for human error or inconsistency in the cleaning and analysis phases.
- Through **in-country partner review**—at minimum a review of the full JMMI methodology and questionnaire, and often also reviews of each monthly JMMI output—to ensure that data is being properly analysed and interpreted and that the assessment as a whole is designed in ways that reflect local market expertise.

Coordinators who aim to build a robust system to ensure JMMI data quality are strongly encouraged to contact REACH's cash and markets team at **impact.geneva.cashandmarkets@impact-initiatives.org** for further perspectives and guidance.

4

HOW IS A JMMI COORDINATED?



In this chapter:

- What is a JMMI Taskforce?
- How do participating partners organise their data collection efforts?
- What human resources are needed to coordinate or participate in a JMMI?
- Do partners participate in the JMMI formally or informally?
- Who owns the data from a JMMI?

The JMMI is designed to be coordinated through and in support of existing coordination and collaboration bodies, particularly those with a strong interest in multi-purpose cash assistance. In humanitarian responses, it is most often run through a national-level Cash Working Group, with participating organisations drawn from among CWG members. National Cash Consortia, the Collaborative Cash Delivery Network (CCD), or clusters or sectors with an interest in market monitoring can also serve as excellent hosts for the assessment. Within these existing bodies, a devoted JMMI Taskforce is often set up to facilitate coordination among participating organisations.

What is a JMMI Taskforce?

The JMMI Taskforce, which can also be called a Task Team, a Sub-Working Group, a Technical Working Group, or similar, usually serves as the decision-making body governing the JMMI. Its objective is to support the design and successful implementation of the JMMI, ensuring that its activities are implemented with full consultation and buy-in and are actively benefitting all in-country cash actors. The taskforce gives participating JMMI partners a venue to jointly discuss and finalise details of the assessment's design and implementation that are not relevant to the larger Cash Working Group.

Some national CWGs will already have a Market Analysis Taskforce in place, or a similar group designed to host conversations about market assessments and analysis. The CWG may sometimes prefer that JMMI discussions be hosted by this existing group, which will then fulfil the same functions. More often, though, creating a devoted JMMI Taskforce is necessary.

The JMMI Taskforce is led by the assessment's coordinators. Ideally, these will consist of a coordinating co-lead and a technical co-lead who will divide responsibilities accordingly.

- **Coordinating co-lead:** Responsible for identifying and recruiting JMMI partners; organising taskforce meetings and trainings; overseeing any collective negotiations to obtain official permission for data collection; and communicating JMMI activities to the broader CWG and beyond. Role usually filled by a co-lead of the CWG.
- **Technical co-lead:** Responsible for developing and uploading common JMMI tools; overseeing data collection rounds; compiling, cleaning, and analysing data from all partners; producing publicly shared factsheets, dashboards, and anonymised datasets; and providing technical guidance to all participating organisations. Role usually filled by REACH, but can be taken on by other parties with strong capacity in research design, data analysis, and report production.

In general, all other organisations participating in the JMMI are invited to join the taskforce as **members**. Members are responsible for actively contributing their expertise to key discussions and requests for review, as well as for overseeing any JMMI data collection efforts for which their organisations are responsible. Every organisation contributing data or analysis capacity to the JMMI should designate at least one staff member as a JMMI focal point who will regularly attend taskforce meetings, thereby ensuring that all partners have a voice in key discussions.

How do participating partners organise their data collection efforts?

Each organisation participating in the JMMI is responsible for organising its own data collection efforts, whether by deploying its own staff or by engaging implementing partners.* All data collection efforts, however, must be fully aligned with the single joint monitoring process developed and endorsed by the JMMI Taskforce. Again, this usually means that:

- All participating partners use the same data collection tools.
- All participating partners use the same data collection methodology.
- All participating partners collect data during the same period of time from their areas of operation.
- All participating partners coordinate their coverage to avoid duplication and gaps.
- All participating partners upload their data to the same server for cleaning and analysis.
- All participating partners receive anonymised data and analysis spanning all assessed areas.

Taskforce members are expected to participate actively in the design and implementation of this joint monitoring process as directed by the taskforce co-leads.

Participating partners volunteer to submit JMMI data from their own areas of operation based on their internal budgets, the numbers and locations of field staff they can deploy, and their desired level of commitment to the initiative. In humanitarian crises, data from both crisis-affected areas *and* less affected areas is very

valuable, as the latter offers a necessary comparison that allows local, national, and global drivers of price changes to be disaggregated. Commitments to submit data on a consistent basis, rather than as irregular or one-off contributions, are preferable.

Is a data-sharing agreement needed?

Data-sharing agreements (DSAs) are typically required whenever personally identifying information (PII) is transferred from one organisation to another. That said, whether a DSA is needed in the context of the JMMI will depend on what data collection and transfer protocols are put in place.

In most currently operating JMMIs, DSAs are not necessary, as data is uploaded directly by partners to a server accessible only by the JMMI coordinators. In other words, the data is already at its final destination at the moment of creation, so no cross-organisational transfer needs to take place.

However, if not all partners are able to adhere to this practice—for example, if a partner is unable or unwilling to use the common Kobo server or data collection tool and wishes to directly share raw data containing PII via email—then a separate DSA will need to be drafted and signed for each partner concerned. Note, however, that PII should as a rule be shared only if absolutely necessary. Before preparing a DSA, verify whether the partner indeed needs to send PII at all, or whether it makes more sense to delete those columns before the data is sent.

* Departments from which data collectors are commonly drawn include Programmes; Logistics; and Monitoring, Evaluation, and Learning (MEAL), though this will depend on each partner's internal structure.

In JMMIs with a large number of participating partners, there will likely be some areas of the country from which multiple partners will volunteer to contribute data (e.g. national capitals). This should be avoided except on rare occasions, as it is exactly the sort of duplication of effort the JMMI is meant to prevent. With this in mind, prior to each round of data collection, participating partners engage in a process of **deconfliction** led by the taskforce co-leads. As part of this process:

- 1 At least one week in advance of the upcoming round, each partner confirms from which areas they are able and willing to commit to collect data, including any changes from the previous round.
- 2 The taskforce co-leads review and map these commitments, noting any areas in which they overlap as well as any key areas of the country that remain uncovered.
- 3 The taskforce co-leads assign each of these overlapping areas to a single participating partner, listing the other partners as potential back-ups for that area.
- 4 If key areas remain uncovered, the taskforce co-leads try to solicit coverage for these areas, either by asking participating partners to expand or reorient their coverage or by recruiting new partners who are able to contribute data from these areas.

What human resources are needed to coordinate or participate in a JMMI?

As a large multi-partner assessment, the JMMI requires centralised coordination to oversee the design of the assessment, the development of common data collection tools, the analysis of each round's data, and the creation and dissemination of outputs, as well as managing the collaboration effort itself and all partners' contributions to it. In nearly all currently operational JMMIs, the national Cash Working Group takes the role of coordinating co-lead, with REACH taking the role of technical co-lead, leading the design and implementation of the assessment in partnership with and on behalf of the CWG. With proper staffing and technical capacity, however, other organisations or coordinating bodies could potentially play the same roles.

Organisations *coordinating* a JMMI will need to assign staff members to perform each of the following functions, which can be done either by a single person with devoted capacity or by a small team working part-time on the project:

- **External engagement:** On-boarding, training, and communicating with focal points from participating organisations; coordinating the JMMI Taskforce; consulting with all relevant stakeholders; developing deconflicted coverage plans to avoid duplication among participants

- **Assessment design:** Developing a questionnaire and monitoring basket in line with global standards but tailored to the local context; defining monitoring specifications and data collection methodologies for each commodity in the basket; drafting training materials and guidance documents for field teams; coding mobile data collection tools
- **Data cleaning and analysis:** Developing tools and frameworks for rapid data analysis and cleaning; compiling primary data from all participants; cleaning the compiled dataset by identifying outliers and following up with participants; consolidating secondary and qualitative data on local market characteristics and the dynamics affecting them; completing analysis for each round
- **Output production:** Interpreting data for each round; identifying key findings and messages; creating data visualisations to display trends; anonymising and disseminating datasets; drafting and disseminating reports, factsheets, and other outputs; presenting results to key stakeholders and coordination bodies

Organisations *participating* in JMMI data collection, meanwhile, will need to assign staff members or contract service providers to perform each of the following functions, generally for a limited amount of time per round:

- **Internal coordination:** Serving as an organisational representative to the JMMI Taskforce or Sub-Working Group; identifying areas from which the organisation can contribute market data; overseeing field teams; monitoring the organisation's data submissions for quantity and quality in real time; responding to follow-up requests from coordinators in a timely manner

- **Data collection:** Identifying marketplaces and traders for data collection based on common selection criteria; obtaining informed consent from traders; collecting data according to the common JMMI methodology and schedule

Do partners participate in the JMMI formally or informally?

In nearly all cases, **partners participate in the JMMI on a volunteer basis**. Their participation is usually motivated by their desire to harmonise its market monitoring activities with others' and to collaborate on a joint initiative within the framework of larger coordination structures. Except on rare occasions, no funding is generally available from the taskforce to cover the cost of data collection. Some participating partners might choose to engage implementing partners to collect data on their behalf, which implies a monetary contract, but payments to these implementing partners are nearly always made on a voluntary and uncompensated basis.

Because partner participation is voluntary, it is also *non-contractual*, meaning that no binding documents are signed to govern the relationship and partners are free to join, withdraw, or suspend their participation at any time. In some contexts, though, it may prove valuable to formalise this participation in non-monetary ways: valuable both to the JMMI coordinators, who can use it to ensure more consistent data submissions from their participating partners, and to the partners themselves, who may find advantage in documenting the work they are carrying out on behalf of the JMMI. Voluntary participation can be formalised in a number of different ways, including:

- *Partnership agreements* documenting the obligations that an organisation voluntarily assumes when they join the JMMI as a data collection partner, as well as outlining procedures to follow when they are unable to fulfil these obligations, whether for planned or unplanned reasons (for example, an inability to collect data due to rapidly evolving security threats).
- *Memoranda of Understanding (MoUs)* between the CWG, or another JMMI hosting organisation acting on its behalf, and the participating partners, detailing the terms of the partnership between them and what each party will offer and receive.
- *Certification of participation* confirming the scope of a partner's involvement in the JMMI, which in many contexts can be important to partners to enable them to document the work completed and the partnerships into which they have entered.

Again, although none of these documents are required or legally binding, they may still be beneficial to prepare in some contexts.

Who owns the data from a JMMI?

Traditionally the **clean and anonymised data** produced by JMMIs is not owned by anyone: neither the assessment coordinators nor the organisations or donors that contributed to the assessment. With rare exceptions, clean and anonymised JMMI datasets and reports are disseminated publicly to the response as a whole, and all interested parties are welcome to use them for their own analysis and planning.

Policies regarding **raw, non-anonymised data** are more restrictive. As mentioned in Chapter 3, 'How is JMMI data collected?', the JMMI makes use of mobile data collection platforms. Due to international data protection protocols, while all participating partners can upload data to the JMMI Taskforce's centralised Kobo or ODK server, only the JMMI coordinators have permission to modify the data collection form and download raw data, in order to guarantee the security of the server, the collected data, the field teams, and the vendors they interview.

While the clean data is disseminated publicly, all records in the raw dataset will be co-owned by the JMMI coordinators and the individual taskforce member that has submitted those records. If requested, the JMMI coordinators can share extracts from the raw, non-anonymised data with the partner that collected the records in question; a data-sharing agreement or Memorandum of Understanding (MoU) should be signed in advance, and the partner will be solely accountable for protecting the data in the extract. Beyond that, no raw, non-anonymised data will be shared with any other partner.

5

HOW IS JMMI DATA CHECKED, CLEANED, AND ANALYSED?

In this chapter:

- How does the JMMI data checking process work?
- How is JMMI data compiled, processed, and cleaned?
- What are the main recommended methods for aggregating JMMI data?
- How are the main JMMI indices calculated?
- What methods are used for the imputation of missing price medians?
- How should exchange rates and currency conversion be handled?
- What data protection measures must be put in place?

Data collected by all organisations participating in the JMMI is compiled into a single dataset, cleaned, anonymised, and analysed by the JMMI coordinators on behalf of all participating partners and the Cash Working Group as a whole. As detailed in Chapter 2, 'How is a JMMI designed?', the most common unit of analysis is the *market*, a term that in practice corresponds to a city, town, community, or other small administrative area. JMMI data can also be analysed on the level of the individual *marketplace* where goods are bought and sold.

Analysed JMMI data is released publicly to all actors in a response, most often through monthly static factsheets or situation overviews, which are supplemented by releases of clean, anonymised datasets to empower response actors to do additional analyses that meet their own programmatic and strategic needs. Other outputs, such as trend analysis reports and interactive online dashboards, can be created when and where they are valuable.

How does the JMMI data checking process work?

The work of the JMMI analyst begins while the data is still being collected. Due to the JMMI's partner-driven model and its sampling based on price quotas, both of which require close follow-up to implement, it is helpful to set up a system to regularly check the data being submitted and verify that each partner is on track to achieve the minimum required sample size of four prices per item per assessed area.

While the participating partners bear primary responsibility for ensuring that their data collection efforts meet the requirements of the JMMI methodology, an additional formalised round of checks is necessary to ensure uniform standards.

In a JMMI data-checking system, the analyst generally downloads the raw dataset from the central data collection server at least once per day throughout the data collection period, determining how many prices have so far been collected per item per assessed area and comparing these numbers to the minimum sample required. They also use either R scripts or Excel formulas to perform basic data quality checks on all submitted data to verify that it has been collected and reported using correct methods. Such data checks should focus on the most critical variable types, particularly text and numeric inputs. Text entries may require further clarification from enumerators to ensure accuracy, while numeric inputs might need clarification if there are consistent outliers.

These checks also serve to identify whether specific organisations or enumerators are consistently making errors when asking specific questions. Misunderstandings can sometimes arise during enumerator training, particularly around how to correctly ask and collect responses for critical questions. If these mistakes arise, it is crucial to correct any deviations from the intended methodology by following up directly with the involved partner organisations, ensuring that any inconsistencies are corrected before the next day of data collection begins.

Once these checks are done, the analyst follows up with the JMMI focal points from any participating partners that appear to be behind schedule, doing so with the aim of helping them overcome operational challenges they might be facing, as well as working with focal points to address any data quality issues and help them to course-correct. Follow-up with partners does not need to take place daily, but data quality problems should be addressed as soon as the analyst becomes aware of them.

During the checking stage, the data analyst must remain mindful of the broader context, ensuring that follow-up focuses on major issues that could disrupt the data collection process: in other words, systematic errors in sampling, data collection methodology, or enumerators' understanding of certain questions that may result in the collected data being inadequate or unusable. Minor concerns, such as typos and follow-up on individual data points, should be addressed during the cleaning phase so as not to overburden partner organisations while data collection is still underway.

How is JMMI data compiled, processed, and cleaned?

Compilation

Assuming that all participating partners have used a common JMMI data collection tool and uploaded their data to the assessment's centralised Kobo or ODK server, compilation should happen automatically. The merged data from all partners can be downloaded as a single file, in a variety of formats, with a common data structure and with all columns consistently formatted. This, in part, is why it is so helpful when all partners fully subscribe to the joint initiative and agree to use a common tool and server: it enables the analyst to automate entire stages of the JMMI cycle and to produce analysis more rapidly on behalf of the group.

If any partner data has been collected outside the joint framework using different data collection tools, the JMMI analyst will first need to obtain the data collection tools and raw data exports from this partner in every round.* They will then match each indicator in the partner's raw data to the corresponding column in the joint JMMI dataset and join the two into a single dataset adopting the joint JMMI structure, whether manually or (preferably) via code or syntax drafted for the purpose. Once this is complete, the bulk of the data processing can begin.

* Any raw data obtained from partners in this way must be handled according to the same standards for PII that are applied to the rest of the dataset. It may not be shared with any other party in its raw form.

Anonymisation

All JMMI data needs to be anonymised before being publicly disseminated or otherwise shared with anyone outside the JMMI coordination team. In other words, all personally identifying information (PII), meaning anything that can potentially enable another person reading the dataset to identify a vendor, a customer, a store, the enumerators collecting the data, or any other person or business referenced, needs to be deleted or masked.

It is best practice to complete this process as early as possible, even before analysis begins, to minimise the number of people who might come into contact with PII. In the context of the JMMI, the following steps generally need to be taken as a minimum prior to sharing the dataset, with variation possible from country to country:



Enumerator names must either be deleted entirely or anonymised, i.e. by replacing enumerator names with random codes that are tracked only by the JMMI analyst. The latter should only be done if there is an internal need to disaggregate the analysis by enumerator, for example to help participating partners diagnose issues with their enumerators' performance.



Interviewee names must be deleted entirely.



In some contexts, it may be prudent to delete data on **interviewee genders**, particularly if a gendered imbalance in market participation may render some vendors uniquely identifiable.



GPS points identifying the locations of assessed vendors must be deleted entirely.



Store names must be deleted entirely; aside from the names often constituting PII themselves, many informal businesses in humanitarian contexts have no official names and are instead identified by the name of their owner.



If **interviewee phone numbers** were collected to enable future follow-up, these must be deleted entirely.



In challenging humanitarian contexts, it may be prudent to delete the **names of the organisations** that collected the data.

Prior to performing any of these deletions, a raw, unchanged version of the compiled dataset must be saved and set aside. This file must not be shared, in whole or in part, with anyone who is not authorised to work with the raw data. The sole exception is for participating partners who want to access the raw, non-anonymised data for the specific vendors visited by their own field teams; following the signing of an MoU, these partners may only be given access to dataset extracts which must not be shared further.

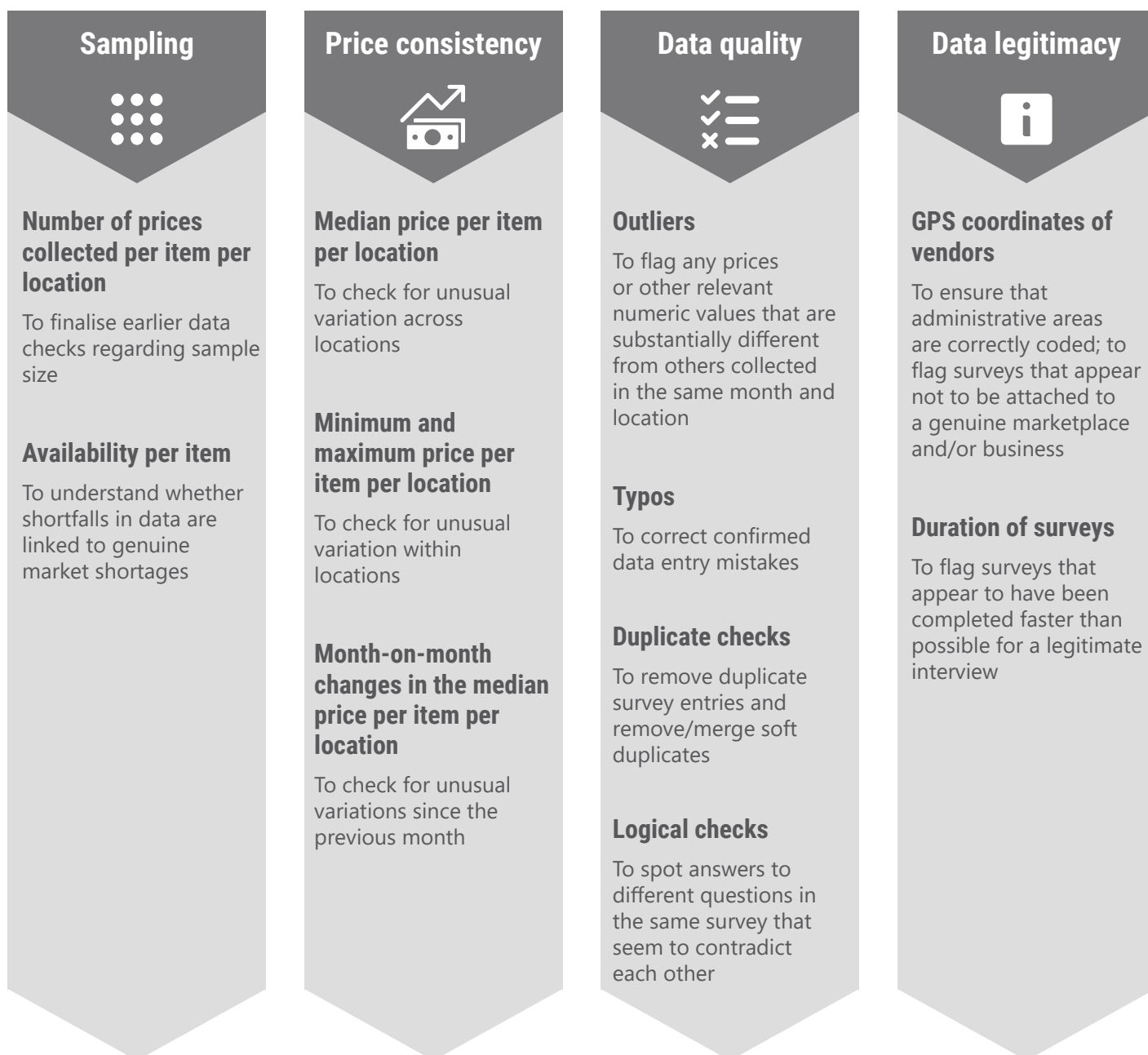
To supplement these anonymisation efforts, enumerators must be trained not to enter any PII in other parts of the questionnaire, for example avoiding references to vendor and store names in free-text fields.

The best way to ensure a fully anonymised dataset, of course, is for the enumerators never to be asked to enter PII at all. Prior to finalising the common JMMI tool, JMMI coordinators must review the questionnaire critically, identify every indicator that may result in the collection of PII, and ask themselves why each of these indicators *must* be collected; if any of these indicators is not necessary to either data analysis or follow-up with enumerators, it should be deleted.

For more guidance on this topic, readers are invited to consult IMPACT Initiatives' standard operating procedures (SOPs) related to PII (*available on request*).

Cleaning

Before the compiled and anonymised JMMI dataset is ready for analysis, it must first be cleaned: in other words, the data must be carefully checked for mistakes, inconsistencies, inadequacies, and other sources of error, all of which must be corrected to ensure that the dataset reflects reality as closely as possible. At minimum, the following aspects of the dataset should be checked:



In REACH-run JMMIs, data checks are conducted in R by the data analyst with the help of a custom package developed by REACH, with documentation [available on GitHub](#). This package, designed to streamline data cleaning operations, provides an initial assessment of the JMMI dataset by flagging potential issues such as duplicate surveys, soft duplicates (i.e. separate surveys that appear to report the same data), overly short surveys, and logical or outlier inconsistencies. Given the importance of numeric variables in JMMIs, outlier checks are central to the cleaning process.

These checks are performed on each price variable, aggregated by administrative level. Prices exceeding or falling below the national mean by more than 2.5 standard deviations are flagged, with the same process applied at administrative level 1 and, when data allows, at administrative level 2. Sometimes, data points that appear to be outliers at the national level may cluster within specific regions, where they may fall within an acceptable range when considering local variability. Therefore, these routine checks merely serve as an initial guide, prompting the data analyst to conduct a more thorough contextual review.

Accordingly, the JMMI analyst may find that certain issues have obvious solutions and that corrections can be made immediately. For instance, when comparing to other relevant data points, it may become clear that a reported price of '20 shillings' is local shorthand for 20,000 shillings, or that a reported price of '250' is almost certainly a typo for 2.50, or that an enumerator has entered '999' as an internal code to signify that the respondent does not know the answer. These can be changed and entered into the cleaning log without further discussion.

Similarly, it might be clear that certain flagged issues require no action and can be excluded from the cleaning process: for instance, a set of extremely high prices in a city known to be under siege by an armed group, or a low number of recorded prices for a crop known to be experiencing shortages. Again, analysts should keep in mind that outlier checks are merely a mathematical test and do not necessarily imply that the outliers are incorrectly reported. Surveys flagged for an overly short or long duration should also be treated with caution, as there may be legitimate reasons for these time stamps. JMMI analysts will develop a more refined sense over time of which prices and market dynamics are to be expected in which locations.

For all flagged issues that cannot be so easily interpreted, follow-up with participating partners is necessary. The JMMI analyst usually separates out the issues by partner, generating one spreadsheet per partner summarising the issues found in their submitted

data, then contacts each organisation's corresponding JMMI focal point to ask them for feedback, explanations, and, if needed, corrections for the flagged data points. Any qualitative local context the focal points can provide is extremely helpful. For their part, the JMMI focal points must be prepared to follow up with their enumerators quickly and offer a rapid response. Usually, a quick deadline of one or two days is imposed to avoid undue delays to the analysis process; if no response is received from a partner by the requested deadline, the questionable data points should be deleted and their removal entered into the cleaning log.

Whenever the cleaning process results in changes to the JMMI dataset, these changes must be documented in a **cleaning log** for transparency. A cleaning log precisely catalogues all differences between the raw and clean datasets and justifies why each change was made. It must contain, at minimum, a Kobo UUID or other unique identifier to specify the record that was changed; the name of the variable that was changed; the old value; the new value; and notes on the issue and why the change was made. This should, of course, be done without reproducing any deleted PII in the cleaning log. Analysts should never identify changes in terms of row, column, or cell numbers in a spreadsheet, as these numbers can easily change whenever a row or column is re-sorted or deleted. An extract of a cleaning log from a REACH-run JMMI can be seen below.

uuid	Enumerator ID	question.name	Issue	Type of issue	feedback	changed	Change type	old.value	new.value
72d91fcb-6c13-47f5-enum054	mfs_in3_accepted_payment_modality_sm	Logical_check	Logical inconsistency	Logical inconsistency	no_comments	Yes	change_response	0	1
50083695-bf86-4c2-enum035	animal_product_availability_market_ctgy	Logical_check	Logical inconsistency	Logical inconsistency	no_comments	Yes	change_response	no_disponible	disponible
2701abd6-f3d4-432-enum051	grain_availability_market_ctgy	Logical_check	Logical inconsistency	Logical inconsistency	no_comments	Yes	change_response	no_disponible	disponible
72d91fcb-6c13-47f5-enum054	mfs_in3_accepted_payment_modality_sm	Logical_check	Recoding of 'Other'	Recoding of 'Other'	no_comments	Yes	change_response	tarjetas	tarjetas efectivo_ves
3e65f61a-0cc4-4fd1-enum054	mfs_in3_accepted_payment_modality_sm	Logical_check	Recoding of 'Other'	Recoding of 'Other'	no_comments	Yes	change_response	tarjetas	tarjetas efectivo_ves
364af3f2-f3a1-4de7-enum016	egg_price_unit_item	Outlier (IQR outlier)	Outlier	Outlier	no_comments	Yes	change_response	1	2.7
b597842c-ccf1-41f5-enum004	exchange_rate_buy_usd_ves	Outlier (IQR outlier)	Outlier	Outlier	no_comments	Yes	change_response	38.89	38.88
0becd086-1146-40-enum029	diaper_other_unit_item	Outlier (IQR outlier)	Outlier	Outlier	no_comments	Yes	change_response	5	12
0becd086-1146-40-enum029	diaper_price_unit_item	Outlier (IQR outlier)	Outlier	Outlier	no_comments	Yes	change_response	5	2.4
0becd086-1146-40-enum029	toothpaste_price_unit_item	Outlier (IQR outlier)	Outlier	Outlier	did not pass valid	Yes	deletion	1.93	NA
3993752f-9113-42c-enum029	sugar_price_unit_item	Outlier (IQR outlier)	Outlier	Outlier	no_comments	Yes	change_response	2.16	1.16
66b57345-79a1-40-enum029	bean_price_unit_item	Outlier (IQR outlier)	Outlier	Outlier	did not pass valid	Yes	deletion	2.5	NA
66b57345-79a1-40-enum029	maize_flour_price_unit_item	Outlier (IQR outlier)	Outlier	Outlier	did not pass valid	Yes	deletion	1.79	NA
66b57345-79a1-40-enum029	powder_milk_price_unit_item	Outlier (IQR outlier)	Outlier	Outlier	no_comments	Yes	change_response	9.26	6.26
66b57345-79a1-40-enum029	rice_price_unit_item	Outlier (IQR outlier)	Outlier	Outlier	did not pass valid	Yes	deletion	1.9	NA
018fbc11-642e-47f5-enum022	mfs_af2_financial_challenges_customers	Other response	Recoding of 'Other'	Recoding of 'Other'	no_comments	Yes	change_response	Dependiendo del status di	
7a4e3844-bda5-47-enum051	mfs_af2_financial_challenges_customers	Other response	Recoding of 'Other'	Recoding of 'Other'	no_comments	Yes	change_response	Expresa que no presentar	
34dc93c0-b5e4-4d-enum003	mfs_in3_accepted_payment_modality_oth	Other response	Recoding of 'Other'	Recoding of 'Other'	no_comments	Yes	reclasification	Biopago	Biopago
d1b8179f-5dc8-451-enum034	mfs_in3_accepted_payment_modality_oth	Other response	Recoding of 'Other'	Recoding of 'Other'	no_comments	Yes	standarization	Euro	Efectivo en euros
47b24c20-6ad2-4f8-enum037	mfs_in3_accepted_payment_modality_oth	Other response	Recoding of 'Other'	Recoding of 'Other'	no_comments	Yes	standarization	Bancos internacionales, p	Criptomonedas
7edc81f4-e547-4f8-enum052	mfs_in3_accepted_payment_modality_oth	Other response	Recoding of 'Other'	Recoding of 'Other'	no_comments	Yes	standarization	Binance	Criptomonedas
4080be53-c07b-42-enum029	admin3_label	Other	Other	Other	change admin3	Yes	change_response	La Guaira	Caraballeda
66b57345-79a1-40-enum029	bean_availability_shop_item	Outlier (IQR outlier)	Outlier	Outlier	changed for dubi	Yes	change_response	si	no
66b57345-79a1-40-enum029	bean_other_unit_item	Outlier (IQR outlier)	Outlier	Outlier	changed for dubi	Yes	change_response	500	
66b57345-79a1-40-enum029	bean_price_unit_item	Outlier (IQR outlier)	Outlier	Outlier	changed for dubi	Yes	change_response	2.5	
66b57345-79a1-40-enum029	bean_intl_usd_price_unit_item	Outlier (IQR outlier)	Outlier	Outlier	changed for dubi	Yes	change_response	5	
66b57345-79a1-40-enum029	bean_brand_item	Outlier (IQR outlier)	Outlier	Outlier	changed for dubi	Yes	change_response	Panteras	
66b57345-79a1-40-enum029	maize_flour_availability_shop_item	Outlier (IQR outlier)	Outlier	Outlier	changed for dubi	Yes	change_response	si	no
66b57345-79a1-40-enum029	maize_flour_other_unit_item	Outlier (IQR outlier)	Outlier	Outlier	changed for dubi	Yes	change_response	1000	
66b57345-79a1-40-enum029	maize_flour_price_unit_item	Outlier (IQR outlier)	Outlier	Outlier	changed for dubi	Yes	change_response	1.79	

In cases where an entire survey does not meet minimum quality standards and must be deleted, it should be listed in the **deletion log**. This table lists and justifies all removed surveys to ensure transparency and accountability throughout the data cleaning process. It should contain, at minimum, a Kobo UUID or other unique identifier to specify the record that was deleted, along with notes on the issue and why it was necessary to delete the record.

Another key transparency measure that is compiled at the cleaning stage is the **enumerator performance check**. This table tracks, per enumerator, the number of surveys deleted and the extent of data cleaning required. This helps to identify recurring issues with specific enumerators, enabling targeted follow-up with JMMI partner focal points or, if necessary, the exclusion of their surveys from the dataset.

In general, cleaning logs and deletion logs should accompany the final JMMI dataset, usually in the form of separate tabs in the Excel workbook containing the data. Enumerator performance checks, meanwhile, are intended solely for the use of the analyst during data cleaning and must be deleted before public dissemination.

Standardisation for the global JMMI database

Since mid-2024, REACH has maintained a global master database of all historical market data collected by the JMMI across all countries since early 2015. All REACH-run JMMIs are required to adopt standardised variable names and reporting protocols to ensure that the data they produce can be seamlessly brought into this global database.

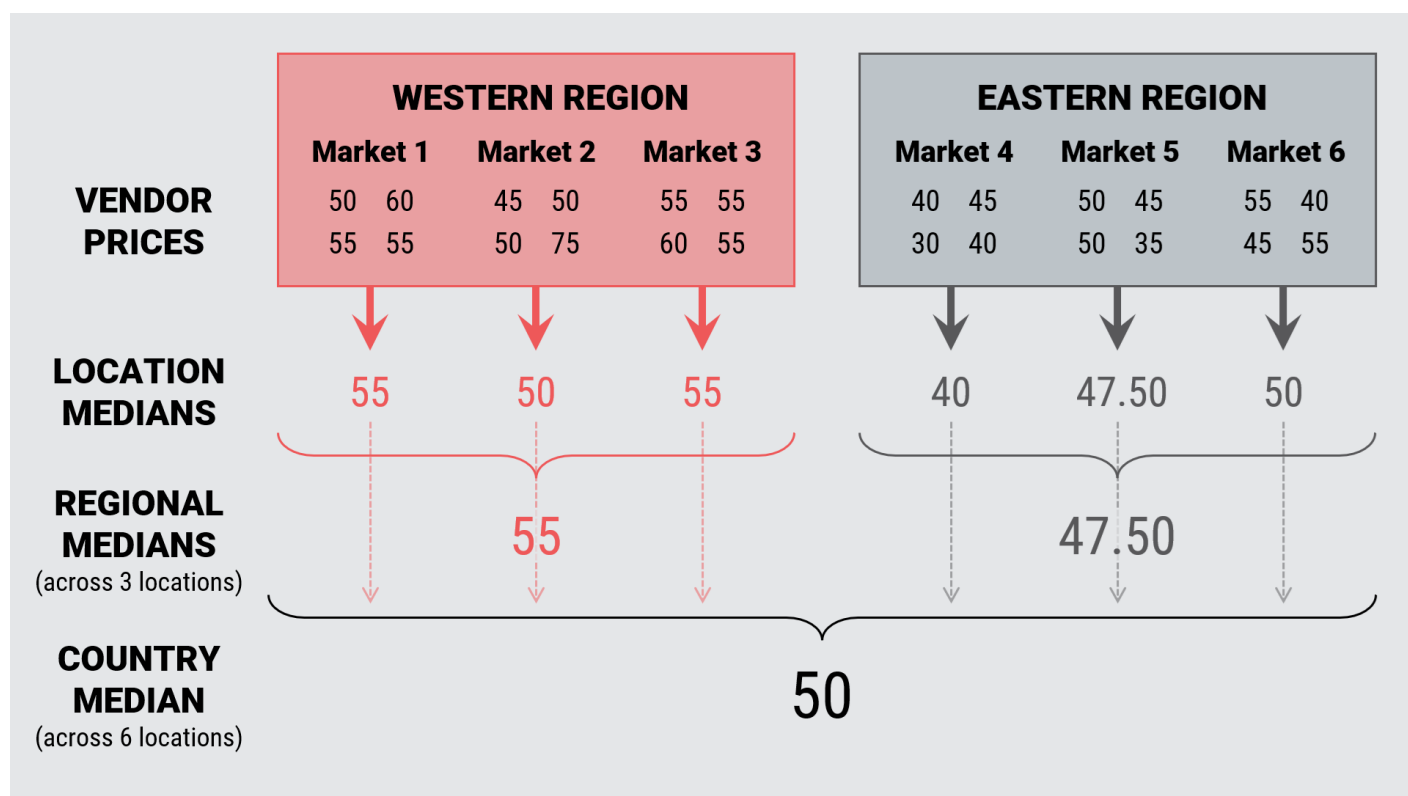
The two primary areas of standardisation across countries focus on question naming and formatting, as well as the presentation of MEB and MFS analyses. To this end, variable names are standardised to codify the names of items, define core JMMI variables, and properly classify country-specific variables, ensuring they are correctly interpreted within the database. Meanwhile, the breakdowns of MEB costs and the dimensions of the MFS are consolidated into a cohesive dataset with consistent formatting, enabling efficient processing.

The easiest way for REACH teams to ensure compliance with these standards is to adopt a JMMI data collection tool that is structured consistently with the global master database's requirements. To enforce this standardisation, REACH, at the time of writing, was developing an interactive JMMI input portal intended to serve as the sole submission method for REACH JMMI teams to incorporate their data into the global master database. It will identify compatibility issues within datasets, flagging errors and recommending necessary adjustments. For example, if 'rice' is incorrectly coded as 'riec' in the dataset, the portal will flag this error and suggest the correct coding.

What are the main recommended methods for aggregating JMMI data?

Nearly all JMMI analysis involves some form of aggregation to convert data from individual vendor surveys into more valuable summaries at various administrative levels. This process is necessary to reduce noise in the dataset and enable stakeholders to extract useful findings. As a first step, the vendor-level JMMI data is **aggregated based on the chosen unit of analysis** (the city, the district, the hromada, the worda, etc.) to produce a single set of indicator values per assessed location. Further levels of aggregation are conducted afterwards for certain indicators.

Different methods of aggregation must be used for different types of variables. The most common methods used in JMMI analysis are:



- Numeric variables**, including prices and restocking times, are calculated using a **median-of-medians approach**: first, the median value for each assessed item is calculated across vendors within each assessed location (i.e. unit of analysis), and then another median is taken across these location medians to obtain medians for larger regions and for the country as a whole. This two-step process helps to correct for situations in which different partners collect different numbers of surveys per assessed market, which would otherwise bias aggregations toward the markets where the most data was collected. **The median is preferred over the average because it is not as strongly affected by outliers** of the type commonly seen in price data. The median-of-medians approach is illustrated below using hypothetical data.
- Categorical (non-numeric) variables**, of the sort used to assess many non-price indicators in the JMMI questionnaire, are often analysed using a **mode-of-modes approach**. Similar to the median-of-medians approach, this entails identifying the most common response (the location mode) within each assessed location, then doing so a second time across all location modes in the area of interest.
 - For some categorical variables, particularly those in which vendors are asked to report on their own policies and operations independent of location (e.g. 'Which of the following types of payment do you accept?'), it may be useful to calculate raw **percentages** of all vendors in the dataset reporting each possible response.

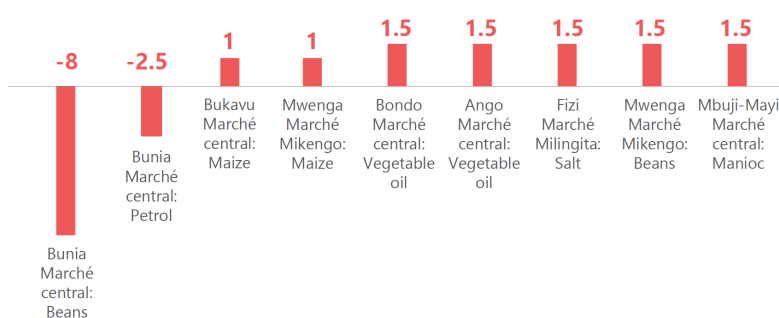
- For a handful of indicators, notably 'Have there been any groups of people that have sometimes avoided coming to this marketplace due to discrimination, exclusion, or feeling unwelcome?', it is recommended to aggregate using a '**priority mode**': in other words, if even one vendor in a location responds with 'yes', indicating a problem, the entire location is assigned an aggregated response of 'yes'. This method recognises that experiences of social exclusion are rarely perceived as such by the majority, and that therefore aggregation based on the responses of the majority risks drowning out the voices of those experiencing the greatest challenges.
- For **availability aggregation**, a method similar to the priority mode is recommended. Specifically, availability is defined categorically (fully available, limited availability, unavailable) for each assessed item within each location based on the following logic:
 - If an item is reported fully available by a majority of surveyed vendors, it is considered *fully available* in the location.
 - *Else*: If an item is not reported fully available by a majority of surveyed vendors, but is available on a limited basis from at least one vendor, it is considered to have *limited availability* in the location.

- *Else*: If an item is not available either on a full or a limited basis from any surveyed vendor, it is considered to be *unavailable* in the location.

This method reflects the fact that individual vendors may not have perfect information about market-wide availability, nor about the supply challenges that other vendors may be facing; hence, a simple mode might not accurately reflect the situation.

- The standard JMMI questionnaire contains two **stock indicators**: 'For how many days do you estimate your stock of Item X will last under current conditions?' and 'How many days would it take you to fully restock Item X if you were to place an order with your supplier today?' These can be asked either per item or per category of item. While these indicators are aggregated individually using the median-of-medians approach for each item or category of item, they are more powerful when combined into a rough **red-flag system**. If the median number of days of remaining stock for any item ever falls below the median number of days needed to restock, this implies that vendors are unable to keep that item consistently in stock, which suggests the market will shortly experience, or is already experiencing, a shortage of the item in question.

Differences between median days of remaining stock and median time to restock for critical products (under 2 days), by market/product pair, in number of days



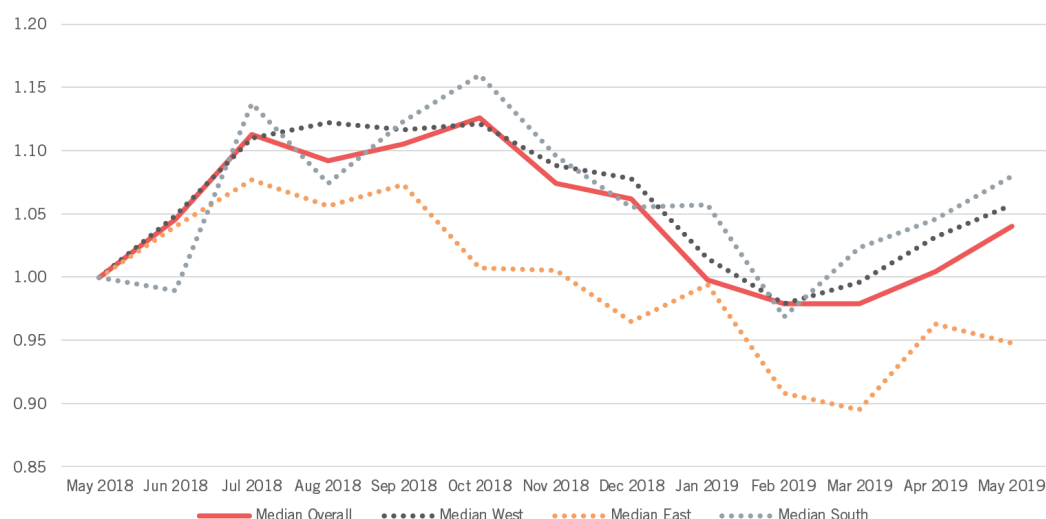
- The costs of **Minimum Expenditure Baskets (MEBs)**, or of local alternatives, are calculated as weighted sums based on the composition of the MEB that has been defined in-country. An MEB cost in any region is calculated based on the median item prices and expenditures for that region; this means, for example, that a country-level MEB is assembled from the country-level median prices calculated for

each item or expenditure, and not as a median-of-medians of the MEB costs in all lower administrative units. If no MEB has been defined at the response level, it is advisable to create an ad hoc basket or price index to enable CVA actors to track general price trends over time. More information about MEB calculations is available below.

- **Trends in MEB costs and item prices** can be tracked over time by directly comparing the median prices for each basket or item over several months. Sometimes, the unmodified trend lines for various items or basket components can be directly compared. However, these trend lines can often be compared more effectively by transforming them into price indices for selected baskets and items: choosing a reference month, setting all prices in that month equal to 100 or 1.00, and reporting all subsequent prices as a percentage of the price in the reference month (for instance, a rise of 15% since the reference month would be reported as '115' or '1.15', a fall of 8% as '92' or '0.92', and so on). A price index can either refer back to a fixed reference month or to a shifting reference month that changes each round (e.g. always 12 months before the present date).
- Understanding **seasonality**, or what variations are expected in the prices of individual items over the course of the year, is crucial to properly interpret trend lines and price indices. Harvest schedules, weather and climate patterns, regular patterns in conflict events, and other such dynamics can have predictable yearly effects on market prices, as can less expected regular events like the month of Ramadan and the start of school terms. It is therefore critical to refer back to prices in the same period in previous years to understand whether the current observed prices are typical or atypical, as well as to better disaggregate typical seasonal patterns from less expected, potentially more problematic changes. If data on seasonal price trends is unavailable through the JMMI (for example, if it has been running for less than a year), it can be derived from other price datasets or inferred from qualitative sources such as crop calendars.

MEB PRICE INDEX

Since May 2018 (normalised, May 2018 = 1.00)⁷



- Indicators from across the JMMI questionnaire are combined into a **Market Functionality Score (MFS)** for each assessed area, integrating aspects of accessibility, availability, affordability, resilience, and infrastructure, that shows the degree to which markets within each assessed location are able to reliably provide basic goods of sufficient quality. The resulting maps can benefit multiple audiences: the markets deemed most functional are theoretically strong targets for CVA programming, whereas the least functional markets are potential targets for in-kind distributions or for practitioners of market-based programming to try to resolve underlying market failures. More information about MFS calculations is available below.
- **Mapping supply chains** can be a complex process, but generally involves collecting data on the locations of all vendors' suppliers and of their suppliers' suppliers for selected commodities or categories of commodities (food items, hygiene items, fuel, etc.), aggregating this data for each monitored location, identifying the most common responses within each location, and tracing the most common routes that each commodity has taken to get to its final destination. These routes are combined into a final map showing the routes used by suppliers to move a given good or category of goods into and throughout the country.

How are the main JMMI indices calculated?

Two main indices are at the heart of the JMMI: the cost of the Minimum Expenditure Basket and the Market Functionality Score. Together, they provide multiple perspectives on the question of whether markets are succeeding at providing crisis-affected households with the goods they need, and in turn, whether CVA is a feasible response modality.

Calculating the cost of the Minimum Expenditure Basket (MEB)

For a basic introduction to the Minimum Expenditure Basket, see Section 2, 'How is a JMMI designed?'

Most Minimum Expenditure Baskets and equivalent alternative baskets are assembled from two types of components:

- **Monitorable items:** Each of these items constitutes a single commodity that is regularly bought and sold by vendors in local markets. Every item is defined via a set of specifications (see Chapter 3, 'How is JMMI data collected?'), a standard unit to monitor, and the estimated quantity of that unit used by an average socioeconomically vulnerable household per month.
- **Lump sums:** Each of these components represents a sector of household expenditure that cannot be easily reduced to a set of monitorable items. In some cases, this might be because the expenditures in question cannot easily be broken down into standardised, monitorable market transactions (for example, medical expenses or transportation); in others, it might be because the monitorable items in question are too dependent on household composition or on a person's individual circumstances to be worth standardising (for example, clothing).

In the sample MEB from Sudan at right, the categories of 'Food items' and 'Household & hygiene NFIs' are the monitorable items around which the JMMI revolves. These are supplemented by 'Top-up items', consisting of reusable fuel and water containers, which are not integrated into the MEB proper but rather represent a top-up to be added to emergency CVA distributions. The 'Fixed costs' category, meanwhile, is composed of lump sums representing the median total monthly expenditure by category of a typical crisis-affected household of average size; each is expressed in Sudanese pounds (SDG) without any other unit.

These lump sums generally cannot be monitored in full using JMMI methodology, nor by any market-centred monitoring system, for reasons given above. Instead, their median values can be calculated using a variety of other sources, which commonly include:

Food items

Product	Unit ¹	Quantity in MEB ²
 Sorghum	1 kilogram (kg)	81 kg
 Onions	1 kilogram (kg)	9 kg
 Veg oil	1 liter (L)	4.5 L
 Milk	1 liter (L)	4.5 L
 Cow meat	1 kilogram (kg)	0.9 kg
 Goat meat	1 kilogram (kg)	0.9 kg
 Tomato paste	1 kilogram (kg)	4.5 kg
 Sugar	1 kilogram (kg)	7.2

Household & hygiene NFIs

Product	Unit ¹	Quantity in MEB ²
 LPG* refill	12.5 KG	12.5 KG**
 Water refill	20 liters (L)	20L
 Body soap	125 grams (g)	12 bars
 Tooth paste	100 milliliters (mL)	1 tube
 Toothbrush	1 piece (pc)	1 piece
 Laundry soap	200 grams (g)	6 bars
 Liquid dish soap	600 milliliters (mL)	1 bottle
 Sanitary pads	8 pieces/package	3 packages
Additional Items		
 Charcoal	1 kilogram (kg)	60 kg
 Firewood	1 kilogram (kg)	60 kg

Top-up items

Product	Unit ¹	Quantity in top-up
 LPG* cylinder	12.5 KG	1
 Water container	20 liters (L)	1

Fixed costs

 Medical expenses	16,489 SDG
 Education	15,503 SDG
 Clothes	6,620 SDG
 Transportation	9,547 SDG
 Communication	3,603 SDG
 Energy for lighting	19,000 SDG

- Expenditure data from household-level assessments such as **Multi-Sector Needs Assessments (MSNAs)**, where these are available; it is best practice to restrict this expenditure analysis to a reference cohort of households that are narrowly meeting all of their basic needs.*
- **Baseline assessments** connected with specific CVA programmes, as long as the sample assessed is relatively representative of the CVA-eligible crisis-affected population and the expenditure data collected is precisely aligned with the structure of the MEB.
- **Midline or endline assessments** connected with specific CVA programmes, with the caveats above.
- **Post-distribution monitoring (PDM)** connected with specific CVA programmes, preferably harmonised across all cash actors active in a Cash Working Group.

None of these solutions is perfect. MSNAs, for instance, are generally only conducted once per year per country, and baseline assessments only on a per-project basis, meaning that their expenditure data cannot be updated with nearly the same frequency as JMMI price data. Meanwhile, using household expenditure data from midline or endline assessments, or from post-distribution monitoring (PDM), can potentially lead to biased results, as by definition these assessments only sample households that have already received assistance.

Final decisions on which source(s) to use to derive lump sum values are complex and depend on how recent the expenditure data is, the quality of the data collection tool and sampling methodology used to collect it, and how closely it aligns with the structure of the existing MEB.

Once the JMMI prices and the lump sum values are obtained, MEB calculations are simple. The costs of all monitorable items are calculated via a weighted sum: the median price for one base unit of each MEB item is multiplied by the quantity of that unit present in the MEB, and all the resulting numbers are added together. This can be done for all administrative units from the unit of analysis upwards, producing local, regional, and national MEB costs using the median prices that have been calculated for that administrative unit. To this weighted sum are added the raw values of all lump sums to obtain the final cost of the MEB.

In some contexts, an extra fixed percentage, called a float, is added to the calculated MEB cost to account for a household's irregular, unpredictable expenses atop what is already captured by the MEB. These floats have become rarer as best practices surrounding MEB creation have changed; although their use can no longer be recommended, they are still sometimes encountered.

Aggregating the cost of the MEB to higher administrative levels is possible using the method outlined above.

* For further perspective on the process of defining and using an appropriate reference cohort, readers are advised to consult WFP's **Minimum Expenditure Baskets Guidance Note**, chapter 5.

Calculating the Market Functionality Score (MFS)

For a basic introduction to the Market Functionality Score, see Chapter 2, 'How is a JMMI designed?', as well as Annex 2, 'Sample Market Functionality Score thresholds'.

The Market Functionality Score is an index constructed on two levels, consisting of five dimensions with standard cross-crisis weights (accessibility, availability, affordability, resilience, and infrastructure), each of which is composed of its own body of indicators. Each indicator is scored based on a set of thresholds defined at the country level based on flexible global standards. The standard weights for each dimension can be found at right, and a standard set of MFS indicators and thresholds used in many JMMIs can be found in Annex 2.

The MFS is calculated for each assessed market by first aggregating each indicator across all assessed vendors in the market using specified methods. For instance, for an indicator such as 'Do all groups of customers have physical access to this marketplace?', a response of 'No'

would indicate a problem with market functionality, so one would calculate the percentage of assessed vendors in the market who have responded 'No'. Then, the resulting figure for each indicator is assigned a number of points based on the severity of the figure obtained; for example, if fewer than 10% of assessed vendors select 'No', the market might receive a full 3 points,

MFS: Standard dimension weights	
Accessibility	25%
Availability	30%
Affordability	15%
Resilience	20%
Infrastructure	10%

whereas a value of 10-25% might receive 2 points, 25-50% might receive 1 point, and more than 50% might receive 0 points. Once this is done for each indicator, the scores for all indicators within each dimension are added and compared to the maximum possible score for that dimension, and each dimension's overall score is weighted according to the percentages in the table above.

Aggregating the MFS to higher administrative levels is possible, as it is with the MEB. To do so, analysts should recalculate the MFS thresholds across all vendors falling within the region of interest, rather than attempting to

use a median-of-medians or mode-of-modes approach across lower administrative units. However, because it is designed to establish the functionality of individual markets, the MFS does become less enlightening when aggregated to higher administrative levels. While regional and national MFS scores might be of indicative interest, they should be cited with caution.

For more guidance on this topic, readers are invited to consult the IMPACT Cash and Markets Community of Practice's full [guidance document on the Market Functionality Score](#).

What methods are used for the imputation of missing price medians?

Despite the best efforts of JMMI coordinators, focal points, and data collectors, field teams might sometimes be unable to collect any price data for a given item in a particular area, whether due to market shortages, humanitarian access constraints, or operational issues. This lack of data can pose problems for any analysis that requires the missing price medians, notably calculating the cost of the MEB and its relevant components.

The MEB is a fundamentally fragile index, in that the absence of even one item price makes the entire MEB impossible to calculate. Therefore, to ensure that the JMMI can continue to provide MEB cost data to inform standard MPC transfer values, missing price medians should be imputed for use in MEB calculations, subject to certain limits.

IMPORTANT:

What limits should be placed on imputation?

Imputation is the creation of an estimated hypothetical price in the absence of genuine price observations of the sort the JMMI is meant to produce. As such, it should only be utilised in a very limited fashion: specifically, **only** to enable the calculation of MEBs for individual locations when a small number of missing price medians makes it otherwise impossible to do so. Imputation should **not** be used for the following purposes:

- *To report imputed figures as if they were the missing price medians themselves.* In other words, an imputed price median should never be reported alongside other price medians that are based on observational data. The missing price medians should continue to be reported as 'N/A' in price tables, and the fact that they are missing should be an important factor in JMMI analysis, indicating possible shortages of key items.
- *To replace large numbers of missing price medians in a single location.* If too many items are missing from a particular MEB, at a certain point it becomes misleading to impute all of their prices rather than acknowledging that the MEB is too incomplete to report. As a rule of thumb, analysts should avoid imputing prices for more than 15% of the items in a single MEB, except in exceptional situations.
- *To enable calculation of the Market Functionality Score (MFS).* Because the MFS is constructed in a more robust and flexible manner than the MEB, there is no need to impute missing price medians to calculate this index. The Affordability dimension can still be calculated using the same methodology no matter how many of these medians are present or missing.
- *To impute non-price indicators.* Unlike with price data and the MEB, missing data for non-price indicators generally does not hinder other forms of JMMI analysis, so imputation is not necessary.

Several imputation methods can be used in the context of the JMMI. The most appropriate method will depend on the nature of the missing price medians and the quality of the data to which the JMMI analyst has access.

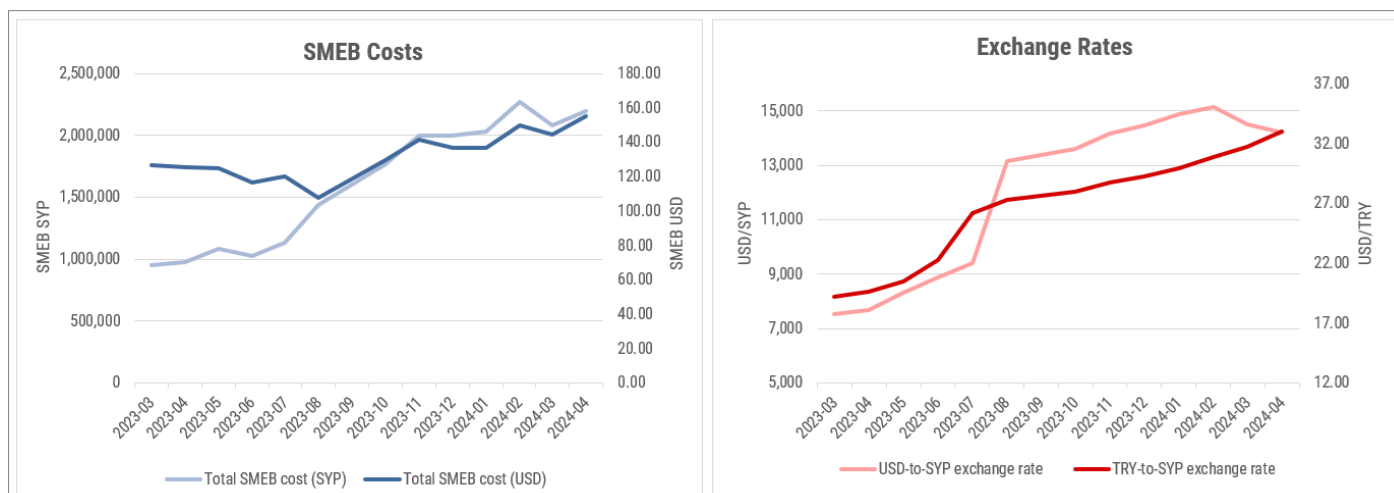
- The simplest method is to replace the missing price median with the equivalent median from a **higher administrative level**: for example, a missing community-level price median for bread can be replaced with the median price of bread calculated across that community's district, its region, or even its entire country, depending on how much data is available at each level. While this is a fairly objective and mathematical solution, it may not be appropriate when the missing price medians come from locations that are atypical within their district or region.
- If reliable time-series data is available, **imputation across rounds** may also be possible: replacing a missing location-level price median with the equivalent median from that location in the previous round of data collection. Often, these earlier medians are adjusted to reflect overall trends in price changes; for example, if the prices of other staple grains in a community have risen by an average of 5% since the previous month, a missing price median for millet in that community can be imputed from the previous month and adjusted upward by 5% to account for likely price rises. This method is mainly appropriate in situations where prices in a location are understood to have evolved in a typical and predictable way; it should not be used in a context of extended shortages where data may need to be imputed for multiple months in a row. It should also not be used when prices for the missing commodity are likely to be behaving atypically, for example for individual crops that are experiencing blight or poor harvests while other crops in the location are doing well.
- A more individualised alternative is **nearest-neighbour imputation**, in which a missing location-level price median is replaced by the equivalent median from the nearest assessed location that shares its characteristics. Both geographical proximity and shared characteristics should factor into this method of imputation. For instance, a price median missing from a small, well-connected coastal city can easily be imputed from a similar nearby city, but this should not be done if that city happens to be on the opposite side of a frontline or if it is under siege by armed groups; an alternative nearby city should be selected in that case. While the nearest-neighbour method provides a strong conceptual justification for imputation, it is subjective and can be time-consuming unless automated via a process of spatial analysis.
- An extension of nearest-neighbour imputation would be to choose the community from which prices are imputed based solely on **shared characteristics**. For example, if the small, well-connected coastal city above happens to be dissimilar from all other nearby assessed communities in the dataset, it may be appropriate to impute missing price medians from a similar city in a different region. This method is even more subjective and individualised and should be used with caution. Both here and with the nearest-neighbour method, imputation should not be attempted among markets that are poorly integrated, i.e. that function largely separately from each other and exhibit differing price trends due to poor connections with other markets in their vicinity.

How should exchange rates and currency conversion be handled?

Exchange rates between widely used local currencies and international reserve currencies, such as the United States dollar or the euro, should always be tracked as part of the JMMI, and an understanding of their trends should be integrated into all JMMI analysis. In many contexts, it will be enough for the analyst to track **official exchange rates** provided by the country's central bank or a reliable external source.*

This should be done on a monthly basis at minimum, tracking relevant exchange rates from days that correspond to the JMMI data collection periods for each round, although it is often more useful to track rate changes on a weekly or even daily basis to capture the effects of sudden market shocks.

* Aside from national central banks, these official rates can be drawn from sources such as the International Monetary Fund (IMF)'s **International Financial Statistics** and **XE.com**. While the United Nations maintains a database of operational exchange rates at <https://treasury.un.org/operationalrates/OperationalRates.php>, it explicitly recommends against using these rates in market analysis: 'The UN Operational Rates are not to be used and quoted as historic or market rates by the general public, as the UN Operational Rates are not bank rates nor databases of the exchange rates. They are for internal use only by the UN and its agencies.'



In other contexts, though, the reported official exchange rates may be unenlightening or even irrelevant to market analysis: for example, where official rates are pegged, falsified, or otherwise unresponsive to underlying market dynamics, or where crisis-affected populations have no access to the official rate through formal financial institutions and universally rely on the parallel or black market to obtain foreign exchange. In cases such as these, tracking **parallel-market exchange rates**, i.e. those offered by currency exchange shops and independent currency traders in the marketplace, can be much more helpful. This is in line with the JMMI's core focus on the household, and by extension on the exchange rates that are most available to that household. For this reason, it is generally recommended to monitor these traders' *sell rate*, the main rate accessible to local businesses and households that need to access foreign currency.

REACH's analysis has shown that where parallel-market exchange rates are collected as part of the JMMI, they tend to be more highly correlated with final retailer prices than any other indicator from the dataset, especially for imported goods. The standard JMMI questionnaire offers a short module designed for this sort of exchange rate tracking via interviews with currency traders in the market (see Annex 1, 'Standard questionnaire for a Joint Market Monitoring Initiative').

While prices and lump sums in the JMMI are usually collected and reported in the most common currency used locally, it is often helpful to convert these figures into other currencies during the analysis phase. Most often, these will be international reserve currencies (particularly the US dollar), but on occasion they will include alternative currencies that are central to the local economy (for example, the Turkish lira in northwest Syria). In REACH-run JMMIs, conversion from local currency to US dollars is a minimum standard. Where conversions are done, it can be useful to systematically report all monetary figures in both relevant currencies, for example '11.90 LYD (1.75 USD)'.

Tracking price trends in multiple currencies can help to inform cash actors who need to plan their programmes using several currencies at once—for instance, distributing cash transfers in local currency while budgeting for the same activities in US dollars. But more than that, it provides insight into the possible causes of observed price changes. If price trends for a given item in local currency seem closely correlated with price trends for that item in USD, it might suggest that supplies of that item are highly reliant on importation and that local prices are therefore more exposed to, and controlled by, currency weakness or global macroeconomic dynamics. Conversely, if price trends in local currency and USD are hardly correlated, it might suggest that observed price changes have their roots in local or national dynamics that do not affect the global economy.

For instance, in the time-series graphs above from northeast Syria, one can see that trends in the cost of the SMEB in Syrian pounds and US dollars were fairly disconnected until July 2023, suggesting a market poorly integrated with the global economy, but afterwards the two were more tightly correlated—a change that corresponded with a dramatic spike in the USD-to-SYP exchange rates offered by parallel-market vendors. Both of these changes were linked to an official July 2023 devaluation of the Syrian pound by the Central Bank of Syria to bring the official and parallel-market exchange rates closer to alignment, a macroeconomic policy that quickly affected item prices at the market level.

What data protection measures must be put in place?

Whenever data is collected from populations affected by humanitarian crises, steps must be taken to ensure that this data collection does no harm to the individuals involved. This includes ensuring that datasets are properly protected and that no personally identifying information (PII) falls into the wrong hands. Although JMMI data, and market data in general, tends to be less sensitive than that collected in other types of assessments—given that observational data on market prices, functionality, and operations is rarely private or controversial—PII has the potential to cause harm regardless of the context.

With this in mind, **JMMI coordinators and analysts** and their organisations should observe the following data protection principles at a minimum:

- **Ensure that the amount of personally identifying information collected is minimised as far as possible.** All indicators in the JMMI questionnaire that would result in PII being collected should be systematically flagged and subjected to a risk analysis. Indicators that do not bring sufficient analytical benefit compared to the potential risk should be deleted altogether; those for which the risk can be successfully mitigated may be collected after mitigation strategies are enacted.
- **Ensure that all tools used for data collection are deployed through a central Kobo or ODK server managed by the JMMI analysis team.** Access permissions to these tools, as well as to any associated data, should be granted on a limited basis only to members of the analysis team. JMMI data collection partners should only be granted permission to view the data collection tools and to submit data; they do not require, and should not be granted, access to the incoming raw data.
- **Ensure that one person is assigned to be accountable for each raw dataset and that as few other people as possible are granted access to the raw data.** Any PII should be removed as part of the anonymisation process prior to the start of analysis, and only the anonymised JMMI data should be shared beyond the analysis team, except under special circumstances. No non-anonymised data should ever be uploaded to unsecured shared drives or cloud services.

- **Ensure the timely deletion of all PII.** There is rarely a pressing need for JMMI analysts to retain any PII after their analysis is concluded, except under special circumstances. As such, after the conclusion of each round, all copies and extracts of the raw, non-anonymised data should be fully deleted from any devices to which it has been downloaded, as well as from the central Kobo or ODK server to which it was initially submitted.

As discussed earlier, **JMMI data collection partners** should receive unrestricted access only to the anonymised and cleaned JMMI datasets. If requested, the JMMI coordinators can share extracts from the raw, non-anonymised data with the partner that collected the records in question; an MoU should be signed in advance, and the partner will be solely accountable for protecting the data in the extract. Beyond that, no non-anonymised data will be shared with any other partner.

In addition, data collection partners may need to internally collect and consolidate additional PII connected with the assessment: for example, databases of contact information for JMMI vendors to enable them to conduct remote data collection if needed. While this data will likely not be hosted on a Kobo or ODK server, partners are strongly advised to adopt secure, robust data protection protocols for these internal datasets and should be cautious about sharing the data with others, even internally within their project teams.

For more guidance on this topic, readers are invited to consult IMPACT Initiatives' standard operating procedures (SOPs) related to PII, from which the principles above have been adapted (*available on request*).

6

HOW IS JMMI ANALYSIS INTERPRETED AND COMMUNICATED TO THE RESPONSE?



In this chapter:

- What sorts of key messages can be drawn from JMMI data?
- What outputs are most useful to aid actors?

Coordinating a JMMI, as an assessment intended to bring together CVA actors from throughout a response, requires that its findings be released publicly to the response at large. It is not sufficient, however, to simply disseminate a compiled dataset and invite stakeholders to extract their own findings. Rather, JMMI teams must ensure that their data is analysed, interpreted, and communicated to all stakeholders in a way that makes it usable for aid actors' planning and programme design.

What sorts of key messages can be drawn from JMMI data?

As with any assessment, the conclusions that can be drawn from the JMMI stem directly from its research questions, or the questions that the data collection tool was designed to answer. A list of typical JMMI research questions can be found in Chapter 1, 'What is the JMMI?' Three types of analytical questions tend to be the most valuable as well as the most sound (meaning that they do not overstep the bounds of what can feasibly be concluded using the JMMI methodology and data). A non-exhaustive list can be found on the next page, coded according to the legend at right.



Informs strategic decisions (related to prioritisation, resource allocation, etc)



Informs programmatic decisions (related to the design and contextualisation of new programmes)



Informs operational decisions (related to the implementation and adaptation of existing programmes)

Price-related conclusions



How have the prices and availability of the basic items required by local households changed over time? Do any of these changes stand out as unusual?



Are these trends in prices and availability constant across the area of interest, or do they differ by geographic area?



If multi-year data is available, do these trends in prices and availability differ consistently by season? If so, what can be concluded about the distinct seasonal patterns that govern different items?



What are some possible reasons behind observed price changes, and how are these related to/what can they tell us about the distinct natures of each item being assessed?



Are there price changes that were expected, whether due to seasonality or other dynamics, but were not observed? If not, what were some possible reasons for this?



How stable or volatile are market prices, and what hypothetical effects might this have on households that depend on markets for their consumption?

MEB-related conclusions



How has the overall cost of the MEB (or equivalent monitoring basket) changed over time?



Do the prices of each of the MEB's components display similar or different trends? Do any of these trends stand out as unusual?



Comparing trends in the prices of individual items to trends in the cost of the MEB, which items' price trends appear most and least correlated with those observed throughout the market as a whole?



Do there appear to be nationwide trends affecting the costs of many items in the basket, and if so, what might be some explanations for these (generalised insecurity, economic downturn, currency weakness or inflation, macroeconomic factors, etc)?



Given that the MEB is designed as a proxy for household financial burdens, what do changes in the cost of the MEB imply for the socioeconomic well-being of local households?

Functionality-related conclusions



Are goods sufficiently available in markets at prices that local households can afford, and if not, how might this affect these households' socioeconomic well-being?



Have any shortages been observed, and if so, how do they affect the prices or availability of other items that depend on them?



Are there physical, financial, or social access barriers preventing local households and vendors from visiting markets or completing their intended transactions?



Is the physical and financial infrastructure in local markets adequate to support trade, and if not, what improvements can be made?



Are supply chains sufficiently functional and resilient to shocks to make the market a reliable venue for everyday trade, and if not, what parts of the supply chains are most vulnerable to bottlenecks and breakdowns?



Ultimately, do the findings of the JMMI suggest that the case for cash feasibility is still intact in all assessed areas, or is there reason to doubt whether markets remain sufficiently functional in some areas to support CVA programming?

Many of these conclusions will require the JMMI analyst to compare and combine indicators from throughout the dataset to develop hypotheses about why certain dynamics have been observed. For example, if the analyst finds evidence of an unusual spike in the price of a particular crop, this suggests many possible directions of inquiry, including but not limited to:

- Comparing this price spike to *trends in the overall cost of the MEB*, and of its food component, to understand whether the issue is confined to a single crop;
- Cross-checking *availability data* for that crop to understand whether shortages have been observed;
- Consulting *historical and seasonal price trends* to understand whether this is an expected seasonal change that should not raise alarms;
- Checking the crop's most commonly reported *areas of origin* to understand whether the good is imported or domestically produced and, as a result, whether local or larger-scale dynamics are the most likely culprit;
- Consolidating *supply chain data* for this category of crops to understand whether transport bottlenecks along a particular route might be causing the issue and whether changes in the price of transport fuel might be having an impact.

Many of the above inquiries can be done via quantitative analysis of the JMMI data alone. However, all can be greatly enriched by the analysis of qualitative data, starting simply with the free-text fields in the main JMMI dataset (for example, enumerators' responses to questions such as 'If you selected "other", please specify' and 'Are there any further observations you wish to share about this marketplace?') Supplementary informal or formal qualitative data collection can also be conducted with vendors and customers to resolve unanswered questions about market dynamics.

Review of secondary data, including market baseline analyses, media monitoring, macroeconomic indicators, and triangulation with other datasets, is also key to fully understand market dynamics and develop hypotheses about why a given price change has been observed. Sources such as these should first be consulted during the JMMI design phase and continually tracked over the lifetime of the project. For more details on developing a market baseline analysis and applying it to the triangulation and interpretation of JMMI data, see Chapter 2, 'How is a JMMI designed?'

Setting standard MPC transfer values

One of the most impactful applications of JMMI data is its integration into efforts to set standard response-level multi-purpose cash transfer values. In short, this is the process of determining how much CVA will ultimately be received by socioeconomically vulnerable populations, as well as harmonising this figure across CVA actors, which lies at the heart of any coordinated cash response. JMMI data will ideally take a particular pathway through this process:



- 1 First, analysis of the collected **JMMI price data** is shared with the CWG and other stakeholders.
- 2 Based on this price data, **the cost of the MEB** is calculated across all assessed markets and at multiple administrative levels. Calculating the MEB cost usually requires JMMI price data to be combined with pre-calculated *lump sums*, or estimates of monthly household expenditures on each component of the MEB that cannot be incorporated into the JMMI. The final cost

of the MEB is treated as a proxy for an typical socioeconomically vulnerable household's minimum total monthly expenditure.

- 3 The cost of the MEB is incorporated into a process of **gap analysis**, or calculating the estimated gap between a typical targeted household's *cost of minimum needs* and its *economic capacity* to meet those needs. In practice, the cost of minimum needs is equated with the cost of the MEB. The household economic capacity can be calculated

in a variety of ways depending on the type and quality of household data that is available, but the simplest methodology is to equate it with *median monthly household monetary income* among a reference cohort of households that are just barely able to meet their basic needs and/or maintain a minimum standard of living. More robust analysis might incorporate the estimated value of a typical household's own production, the median monetary value of liquid household assets, and the value of any assistance received from aid actors and governments; however, the latter two should be incorporated with caution, if at all, to avoid the assumption that these forms of assets and assistance represent a sustainable form of income or are likely to continue into the future.

- 4 Once the size of the gap is calculated, the resulting figures are used to calculate the **recommended standard MPC transfer value** for a household of average size. Although this should in theory equal the calculated size of the gap, it often covers only a percentage of this gap due to funding constraints or other considerations. Standard MPC transfer values are often calculated on the national level with the intent of harmonising cash transfers across a country, but can be calculated separately for any sub-national administrative areas or livelihood zones as agreed by CVA actors.
- 5 Targeted households then receive **harmonised amounts of MPC** from all CWG member organisations based on the calculated standard transfer values.

Calculating and revising standard MPC transfer values generally requires access to data beyond the JMMI alone. Household expenditure data, to calculate MEB lump sum components, and data on household income and own production, to calculate households' existing assets for the purpose of gap analysis, need to be drawn from a representative household-level assessment, preferably a Multi-Sector Needs Assessment (MSNA) or another survey with detailed income and expenditure modules. This data needs to be normalised to match the time period of the MEB, nearly always one month.

Market functionality analysis and implications

The JMMI's Market Functionality Score, as a semi-standardised composite indicator bringing together a variety of market indicators from throughout a single questionnaire, is a valuable summary indicator designed to work alongside the cost of the MEB: an analysis of use not only to those distributing aid, but also to those engaging in more market-focused interventions through either a humanitarian or a development lens.

Once high-quality data sources have been identified, the developing best practice is for the CWG to agree on and implement a *trigger mechanism* to ensure that the standard transfer value is updated as appropriate in response to price changes identified through the JMMI. For instance, CWG members may agree that, if the cost of the MEB changes by more than 10% since the last time the transfer value was set, the standard transfer value will automatically be recalculated and all CWG members delivering MPC will harmonise their own transfer values with the new recommendations. Mechanisms such as these should be based not only on price, but on a thorough analysis of the likely causes of price changes and whether they are likely to be lasting or temporary; making rapid transfer value changes in response to temporary price spikes risks exacerbating them rather than mitigating their effects.

The JMMI is a natural venue for the calculation and dissemination of these recommended standard MPC transfer values according to CWG-endorsed methodologies. Supplementing price data from the latest JMMI round with the most recent household income and expenditure data available, the JMMI analyst can calculate recommended transfer values for the entire country or for relevant sub-national areas as prescribed by the CWG. Consultations with the CWG on these recommendations can then be followed by decisions on which areas, if any, need revisions to their standard transfer values: a process made much simpler if a trigger mechanism has been adopted. Any such system to have the JMMI produce standard transfer value recommendations must first be endorsed by CWG members.

Those interested in learning more about how to set and revise MPC transfer values are invited to consult the Global Food Security Cluster Cash and Market Working Group's **Adjusting CVA Transfer Values for Inflation: Frequently Asked Questions for Food Security Cluster Coordinators**. Those interested in specific methods of performing gap analysis and calculating transfer values can refer to **WFP's collected guidance on the subject**.

By comparing values for the complete MFS throughout a country or region of interest, then breaking these scores down into their component dimensions and indicators to understand the specific market failures that may be driving low scores, aid actors can gain insight into market dynamics that could hinder or prevent the success of their planned CVA programming. In addition, diverse types of aid actors may find the MFS highly useful in scoping target locations for future programmes:

- Actors focusing on the provision of *cash and voucher assistance* can target highly functional markets in which potential aid recipients can easily buy core market items.
- Actors considering *local procurement* can also make their purchases through the most functional markets for distribution in less functional markets, taking advantage of pre-existing supply chains and networks of market actors.
- Actors considering *in-kind distributions* can target less functional markets, following further investigation to understand whether existing market actors in these areas are capable of supplying the distribution's specific items of interest, as well as whether distributions risk undermining existing market actors and livelihoods.
- Actors focusing on *market-based programming or market systems development* can target the least functional markets with the aim of diagnosing and removing bottlenecks to trade, thereby improving local communities' self-sufficiency and their resilience to market shocks.

Using these principles and others, JMMI analysts can make recommendations for which markets might be most profitably targeted by which types of interventions, potentially combining them with data on which modes of payment are accepted by local vendors in order to map where certain types of delivery mechanisms are most feasible to adopt. They should make recommendations with caution, however, avoiding direct advocacy or statements that specific types of programmes should be launched in specific locations. Questions of optimal programme design are complex and cannot be fully addressed by the JMMI alone.

On its own, the MFS cannot provide aid actors with a complete case for cash feasibility in their target areas, nor for the feasibility of any type of market-based programming. This would require additional analysis of available delivery mechanisms, operational conditions, political or legal restrictions, possible protection risks, and the preferences of the aid recipients themselves, among other things, and would require different forms of analysis, often including the consultation of external secondary data. That said, the analysis of MFS results can provide a strong indication of what a full cash feasibility assessment is likely to find, and may indeed be a sufficient replacement for such an assessment in areas where CVA or MBP is well-established and where the fundamental legal, political, and operational questions have long been resolved.

What a JMMI should not say

Usually, a JMMI is a response-wide assessment intended to provide equal value to all users without privileging specific actors. As such, JMMI outputs usually take a cautious approach towards providing *targeted programmatic recommendations*, i.e. those that state conclusively what types of programmes should be launched in certain areas and how those programmes should be constructed.* Informed, specific decisions about how to design and adjust individual programmes to match their contexts require market analysis to be supplemented by a deeper understanding of local operational constraints and risks, which the JMMI is not designed to provide.

That said, the JMMI is well-equipped to provide *general recommendations* on what sorts of programmes, and which elements of programme design, could be feasible in certain areas. These recommendations must relate back to specific indicators and analyses and must be

rooted firmly in the data, making as few assumptions as possible about dynamics not assessed by the JMMI.

There are, of course, many market analyses that cannot be completed using JMMI data alone. Among these, one of the most important considerations is that **it is usually impossible to draw unambiguous causal links between a specific humanitarian intervention and its effect on local markets**. Although the possibility of establishing this sort of causality, and enabling aid actors to ensure that their own programming is not distorting markets, is often touted as a benefit of market monitoring in general, doing so is in fact very difficult in an open system such as a market. At any given time, market prices might be affected by dozens of endogenous and exogenous variables, not to mention by multiple concurrent interventions run by different aid actors.†

* An important exception to this is the calculation of recommended standard MPC transfer values as outlined above. If the methodologies for generating these recommendations have been endorsed by the CWG and/or other response actors, there is no barrier to integrating these methodologies into the JMMI.

† It may be possible to come closer to establishing causal links under very limited circumstances: specifically, in small, isolated, poorly integrated markets where exogenous factors have limited influence and a single CVA programme accounts for a substantial proportion of local expenditure. However, 'pure' circumstances such as this are relatively uncommon in contexts where humanitarian actors are accustomed to work.

That said, while definitively establishing *causation* using market-level JMMI data is impossible, JMMI analysts can search for statistically significant *correlations* between variables to help them develop hypotheses about why price changes have been observed. These correlations can then be coupled with more complete internal risk assessments led by relevant aid actors to determine whether their own programmes risk doing more harm than good.

What outputs are most useful to aid actors?

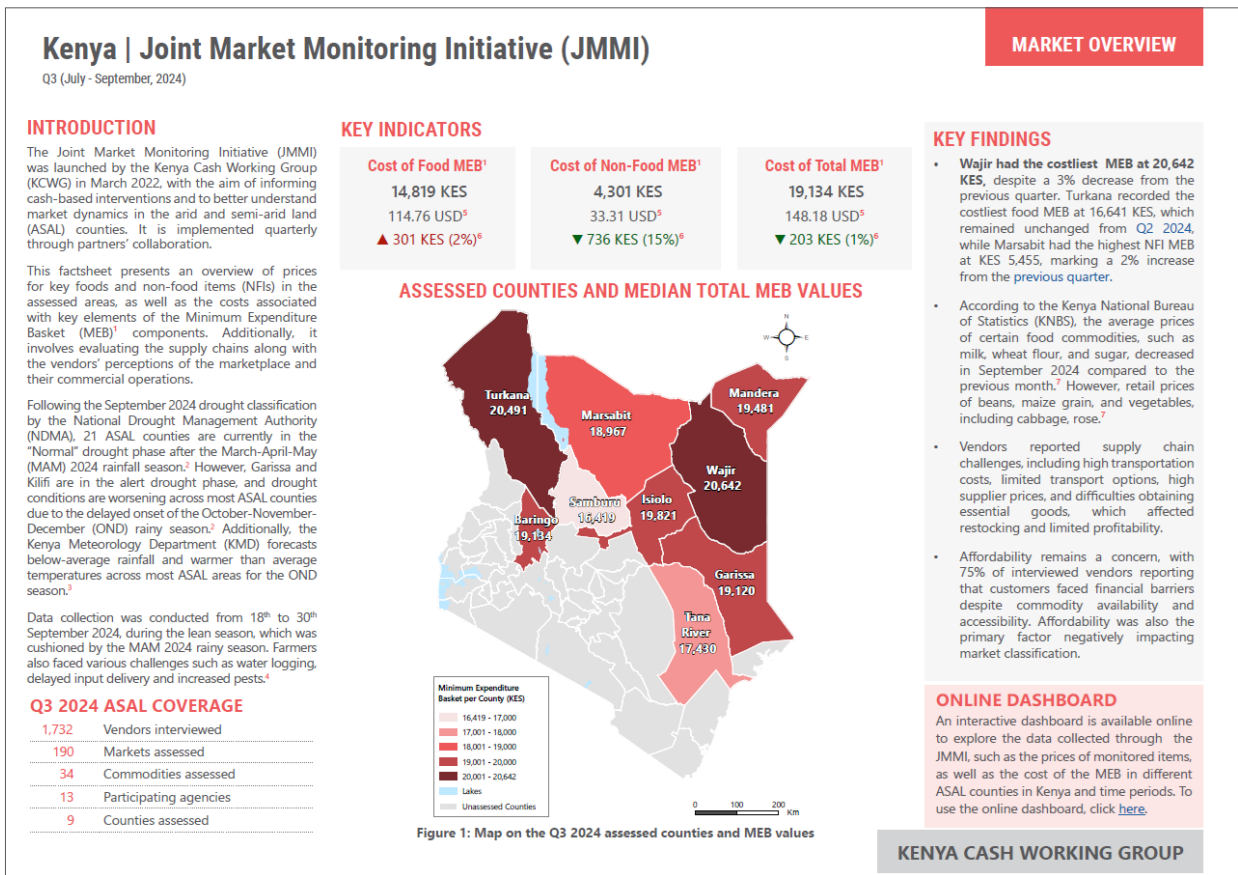
To ensure that JMMI data reaches as many interested users as possible, the analysis should, whenever possible, be released in multiple formats aimed at different audiences who need the data for different purposes. Some of the most valuable dissemination formats are listed below.

Reports

The most common way of disseminating findings among aid actors, a report consolidates and interprets the JMMI analysis and makes it available for operational planning. These reports can take a variety of forms, including:

Examples of key country-level JMMI documents and outputs from REACH

Terms of reference (TOR):	Ethiopia
Monthly market overview:	South Sudan
Monthly dataset:	Syria
Trend analysis:	Central African Republic
Interactive dashboard:	Afghanistan



- Simple *factsheets* that focus on providing numbers and visualising data (via tables, charts, and the like) to help aid actors plan their CVA and MBP operations. Factsheets tend to be the most standardised option and the fastest to produce, but they provide limited opportunity for explaining, contextualising, or making recommendations based on the numbers provided.
- *Market overviews or briefs* that go a step further by both providing the numbers and interpreting them for non-technical actors. These documents, while still highly visual, centre on narrative that explains and contextualises significant dynamics and changes in the current market situation, connecting them to key developments in the economic, political, and/or humanitarian spheres.
- *Trend analysis reports* that consolidate data from multiple rounds of the JMMI, explaining in detail the local, national, and global drivers behind the trends in market prices and functionality observed over that period. For a monthly JMMI, consolidating six months of data is generally the minimum that will allow for insightful trend analysis; conducting analysis over a full year or multiple years can also be productive.

Each of the formats above is aimed at particular audiences. Factsheets tend to be most useful for programme officers who must continually adjust their existing CVA and MBP based on operational dynamics; market overviews and briefs, for programme managers who aim to design new CVA and MBP interventions or redesign existing ones to better meet people's needs; and trend analyses, for donors and decision-makers who need to evaluate broader market dynamics from a strategic perspective to make decisions about resource allocation.

JMMIs run by REACH tend to produce monthly market overviews following a loosely standardised output template. Some also produce periodic trend analyses, though there is no standard template for these. Regardless of what format is adopted for the report, the JMMI analyst must at minimum aim to highlight and interpret key observed market developments for the report's readers, placing the numbers in context.

Datasets

Alongside reports that present the analysed JMMI figures, coordinators should always disseminate the monthly JMMI data itself for the benefit of other analysts and operational partners who may want to dig more deeply into the data from their own areas of operation. These datasets can be disseminated either alongside the main report or in advance in a separate communication, given that they are likely to be ready for use more quickly than the report. A dataset output, which is generally provided as an Excel file for maximum accessibility, should ideally include the following elements, among others:

- A *README tab* that explains the JMMI, the contents of the dataset file, and any methodological or analytical limitations that must be kept in mind during analysis.
- The *JMMI dataset* for the current month, provided only in cleaned and anonymised format. Raw, non-anonymised data should never be disseminated publicly and may only be provided, by special agreement, to the partner that originally collected it.
- A *cleaning log* and *deletion log* detailing any changes that have been made between the raw and clean versions of the dataset.
- The *Kobo or ODK tool* that was used for mobile data collection, which should be updated every month. In the XLSForm language used by both Kobo and ODK, the key elements are spread across two Excel tabs, Survey and Choices; both must be provided.
- (optional) A *codebook* that documents all variables in the dataset, matching them to the text of the questions and answer choices read out by enumerators. Although this information will already be available from the Kobo or ODK tool, a codebook provides it in a more readable format.
- Further tabs containing *analysis*, including median item prices by location, MEB costs, trend analysis for selected figures, and anything else deemed relevant.

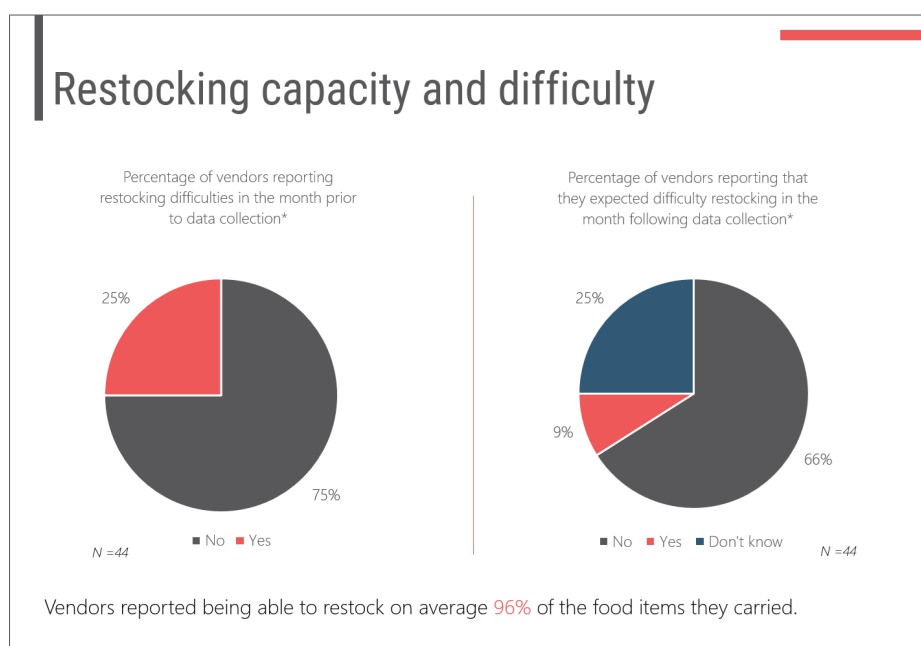
REACH UKRAINE | Joint Market Monitoring Initiative | August 2024 GCA

Primary data collection time period	The twenty-ninth round of data collection took place between 10 AUGUST and 21 AUGUST 2024
Methodology	Data collection is a joint, partner-led exercise carried out by participating JMMI partners across the country using a harmonised questionnaire. The methodology centers on quantitative, structured interviews with purposively sampled market traders who act as key informants (KIs) for their respective markets, with supplementary quantitative individual interviews (IIs) taking place with market customers in affected areas. The market trader component focuses on interviewing retailers, rather than wholesalers or distributors, as these are the market actors most likely to sell to the vulnerable populations that humanitarian actors generally target. In addition to the interviews, REACH conducts online price monitoring across the country. Data is collected in monthly cycles.
Data cleaning process	Data cleaning was done throughout data collection to ensure the final dataset was of highest quality. For a summary of the types of checks done, please refer to our internal Data Cleaning Minimum Standards Checklist available on this link: https://www.reachresourcecentre.info/toolkit/data-collection-processing/
Geographic coverage	Cherkaska, Chernihivska, Chernivetska, Dnipropetrovska, Donetsk, Ivano-Frankivska, Kharkivska, Khersonska, Khmelnytska, Kyiv city, Kyivska oblast, Lvivska, Mykolaivska, Poltavska, Sumska, Ternopils'ka, Vinnytska, Volynska, Zakarpatska, Zaporizka
Creation date	September 11, 2024
Total number of interviews	864 (506 for customers + 358 for retailers)
Sheets	Description
Info	Overall information
Cleaning Log Customers	Data cleaning log for all customer interviews submitted by partners
Cleaning Log Retailers	Data cleaning log for all retailer interviews submitted by partners
Data Customers	Full anonymised dataset containing all customer interviews submitted by partners
Data Retailers	Full anonymised dataset containing all retailer interviews submitted by partners
KOBO Survey Customers	XML-version of the questionnaire for customers in English, Ukrainian and Russian
KOBO Survey Retailers	XML-version of the questionnaire for retailers in English, Ukrainian and Russian
KOBO Answer choice Customers	XML-version of the answers in the questionnaire for customers in English, Ukrainian and Russian
KOBO Answer choice Retailers	XML-version of the answers in the questionnaire for retailers in English, Ukrainian and Russian

Presentations

Many JMMI teams disseminate their findings through regular presentations to key coordination bodies involved in CVA programming. These presentations can be short, taking only 5-10 minutes per month to provide updates from the most recent round of the JMMI, or they can be longer, less frequent explorations of market trends and dynamics. The most common venues tend to be general meetings of the national

Cash Working Group, though national cash consortia, the CCD, interested clusters, and similar coordination bodies may also be interested in placing regular JMMI presentations on their agendas. Such presentations may be particularly useful to reach audiences who may find the JMMI findings useful to their work, but who may not receive written outputs due to not being looped into cash-focused distribution channels.



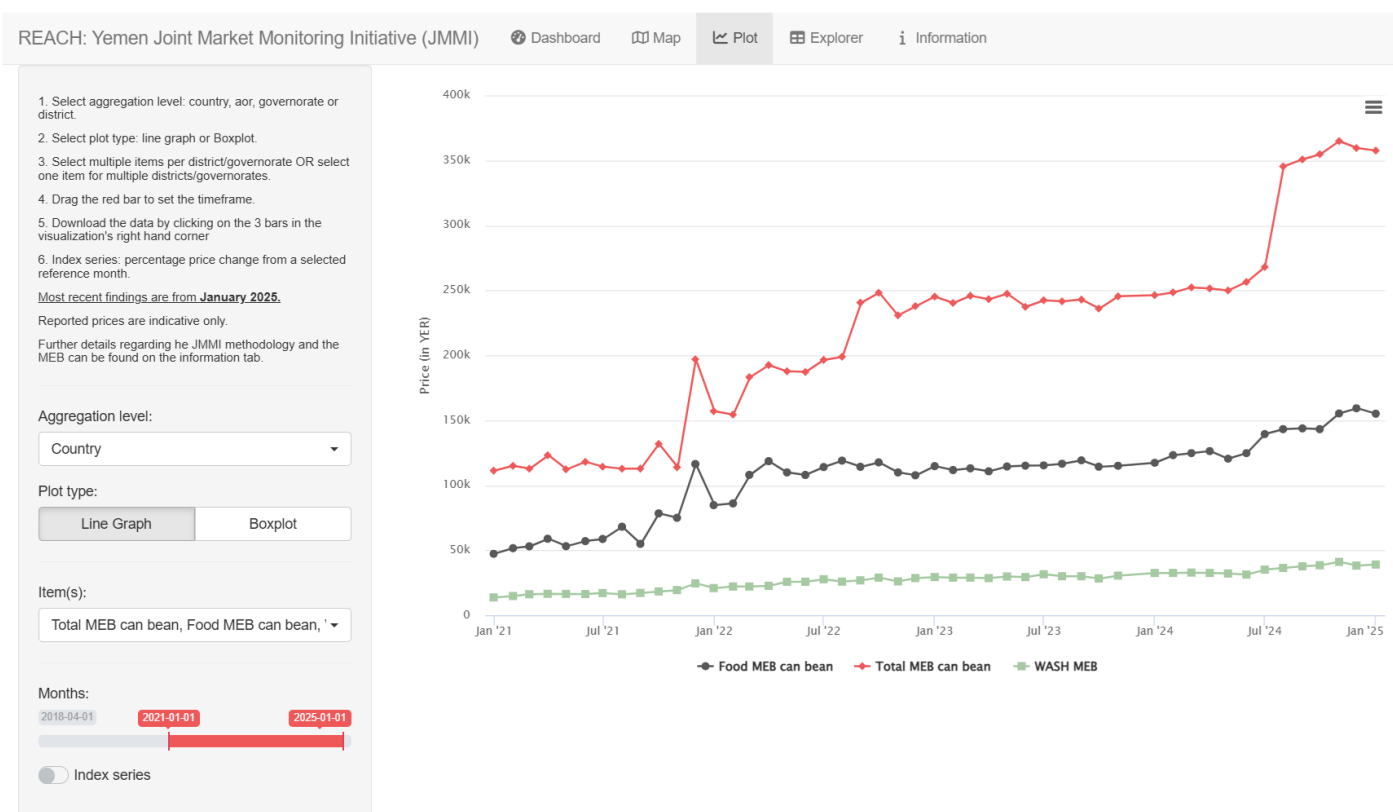
Interactive dashboards

In addition to the usual reports and datasets, some technically adept JMMI teams opt to present their findings via interactive online dashboards, which span the entire country or area of intervention, are updated with the latest data after every round of data collection, and can be accessed at any time. These dashboards focus on interactive data visualisations and often include price tables, trend analysis, and mapping of key indicators, all of which should be as dynamic as possible, allowing users to specify markets, items, and time periods of interest. They should also include, as a best practice, a function allowing users to define and download custom extracts from the full dataset based on these same criteria.

A dashboard can be created using a variety of tools and languages. Among the most commonly used within REACH are the Shiny package of R, as well as the applications Microsoft Power BI and Tableau. JMMI teams interested in deploying an interactive dashboard should note that they require a certain baseline of technical skill to create and maintain (less specialised with Power BI and Tableau, more specialised with Shiny

and other programming languages). Furthermore, this baseline technical capacity must be maintained into the future even in the context of staff turnover, given that the JMMI is usually a recurring assessment without an end date. JMMI teams should not make plans for dashboard creation that centre on the skills of a single technically strong staff member if they are not confident that others on the team would also be able to update and maintain the dashboard as needed.

Interactive dashboards such as these are particularly useful to operational users who want to isolate data only from their areas of interest, as well as donors and decision-makers who require tailored, rapidly available visualisations of key trends over time to help them make key decisions. However, online dashboards in general may not be useful for audiences without dependable internet connectivity, for example managers of remote field offices who may need to incorporate JMMI data into their daily operations. For this reason, an online dashboard should never be a JMMI team's sole means of disseminating their data and analysis to in-country partners.



Centralised global data analysis

Finally, datasets from all REACH-run JMMIs are integrated into its global master database of JMMI data, where it is compiled, restructured, and standardised in a format conducive to cross-crisis analysis and visualisation. Currently, data from this master database is accessible to both internal and external users mainly via an API, or application programming interface, which permits technically inclined users to create queries that will provide them with custom extracts from the dataset for any desired combination of countries, analyses, and time periods.

The JMMI API can be accessed either without credentials, with some restrictions on functionality and quantity of possible API calls, or using institutional credentials that permit many more calls to be made. Documentation is available [here](#), and interested readers should also consult Annex 3, 'Using the global JMMI API'.

At the time of writing, REACH was in the process of building an interactive global JMMI dashboard atop this API, allowing non-technical users to explore, visualise, and download global, national, sub-national, and cross-crisis JMMI data in a manner similar to the country-level dashboards presented above. Once this project is complete, it may potentially serve as a substitute for country-level dashboards in areas where these do not currently exist, and as a tool for donors and decision-makers who require a cross-crisis perspective. Please feel free to contact impact.geneva.cashandmarkets@impact-initiatives.org for further information on this dashboard.

FINAL THOUGHTS



The contents of the Joint Market Monitoring Initiative are simple. The assessment consists mainly of information on market prices, functionality, and operations, collected from the same market vendors whom we, our families, or our colleagues might visit every day. Yet when properly analysed and backed by a robust assessment methodology, these simple indicators can be powerful. Market price observations, combined into a Minimum Expenditure Basket, can directly impact how much CVA is received by socioeconomically vulnerable households to help them meet their needs. And non-price indicators, combined into a Market Functionality Score, can help aid actors diagnose market failures and learn how to address them to help impoverished communities achieve greater self-sufficiency.

In addition, the simple act of bringing together aid actors to collaborate on a joint monitoring exercise is one of the JMMI's strengths. Market monitoring data is necessary for any organisation aiming to design a CVA programme, and coming together to collect this data in a harmonised way helps to avoid duplication of effort and prevents the data environment from becoming fragmented. Furthermore, engaging in a joint project like the JMMI, which requires close cooperation among all participating partners, helps to create a culture of collaboration within a response, whereby partners become accustomed to consulting each other, aligning their practices, and pooling their efforts for greater efficiency. The same collaboration structures that are created for the JMMI can easily be repurposed to host other joint assessment efforts, such as rapid market assessments, harmonised post-distribution monitoring, and larger market studies, and can even serve as a catalyst for operational partnerships.

It is REACH's hope that by providing this guidance document and making it available to an external audience, we can not only provide a model for future JMMI teams to follow, but also help to demystify aspects of the process for coordinating bodies, donors, and participating partners. We hope that increased awareness and understanding of the JMMI methodology will lead to wider uptake of the initiative's key messages and provide a clearer blueprint for how it can be used in response planning. Ultimately, we believe that the JMMI has the potential to contribute to substantive change, not only in the organisation of CVA programming in the humanitarian and development spheres, but more importantly, in standards of living for the socioeconomically vulnerable populations we aim to help.

ANNEXES

Annex 1: Standard questionnaire for a Joint Market Monitoring Initiative

The questionnaire below is meant as a starting point for a basic JMMI survey. While parts of this questionnaire can and should be adapted to each context in which it is rolled out, particularly with regards to adding new questions or answer options to capture locally important dimensions of market operations and functionality, JMMI teams should be cautious when removing questions or answer options, as many of the indicators below are essential to calculating figures central to the JMMI such as the Market Functionality Score and the cost of the Minimum Expenditure Basket. REACH teams designing a JMMI tool must also be sure to adhere to REACH HQ's internal standardisation protocols to

ensure that data produced by their JMMIs can be easily incorporated into the global JMMI master database.

Readers are invited to contact REACH's cash and markets team at impact.geneva.cashandmarkets@impact-initiatives.org for further resources connected to this questionnaire, including standard Kobo tools and guidance on the implementation of each question. A fuller version of this standard questionnaire is also available which contains further details on question types, hints, constraints, skip logic, and other information essential to creating a mobile data collection tool.

Vendor metadata

#	Question	Options	MFS dimension
VM.1	Date of data collection	<i>[date]</i>	NA
VM.2	Name of partner organisation	<i>[full list of JMMI partner organisations + 'Other (please specify)']</i>	NA
VM.3	Enumerator ID	<i>[free text or drop-down list as needed]</i>	NA
VM.4	Type of data collection	Face-to-face Remote Other (please specify)	NA
VM.5	Name of <i>[Admin 1 unit]</i>	<i>[list of local Admin 1 units]</i>	NA
VM.6	Name of <i>[Admin 2 unit]</i>	<i>[list of local Admin 2 units]</i>	NA
VM.7	Name of <i>[Admin 3 unit]</i>	<i>[list of local Admin 3 units]</i>	NA
VM.8	Name of marketplace	<i>[free text]</i>	NA
VM.9	Type of vendor	General store for food and NFIs Specialised store in a commercial building Permanent market stall Open-air vendor Currency exchange shop Other (please specify)	NA

#	Question	Options	MFS dimension
VM.10	Hello, my name is _ _ _ . I am working on behalf of [organisation] and [coordinating body]. I am conducting interviews with traders to better understand how markets in [country/area] are currently functioning. I would like to ask you some questions about the prices and supplies of certain items you sell. Any information you provide will not be used to identify you. Responses are voluntary and you can choose to stop the interview, not answer questions, or ask questions of your own at any time. However, we hope you will participate since your views are important. Do you agree to start the interview?	Yes No	NA
VM.11	Name of shop	<i>[free text]</i>	NA
VM.12	Name of trader	<i>[free text]</i>	NA
VM.13	Do you have any further comments you want to share about your shop or marketplace?	<i>[free text]</i>	NA
VM.14	Please ask the vendor for consent to take a GPS point just outside their shop. Please make sure you have a clear view of the sky before taking the GPS point.	<i>[free text]</i>	NA

Availability

#	Question	Options	MFS dimension
AV.1	How would you describe the current availability of each of the following <i>[category 1, category 2, category 3...]</i> items in this marketplace? <i>[Item 1, Item 2, Item 3, Item 4, Item 5...]</i>	<i>For each monitored item individually:</i> Widely available Limited availability (only sold in small quantities or by a small number of traders) Completely unavailable Don't know Prefer not to answer	Availability
AV.2	Which of the following <i>[category 1, category 2, category 3...]</i> items are you selling this week?	<i>["This trader does not sell any of the listed items" + list of all monitored items]</i>	NA
AV.3	Of the items you are selling this week, are there any that are particularly scarce in your shop?	<i>["No, none" + list of all monitored items]</i>	NA
AV.4	Are you concerned that you may run out of any of the items you currently sell within the next week?	<i>["No, none" + list of all monitored items]</i>	NA

Price and stock loops

#	Question	Options	MFS dimension
PS.1	To be asked separately about each monitored item: Do you sell <i>[this item]</i> in units of <i>[standard unit]</i> ?	Yes No	NA
PS.2	To be asked separately about each monitored item where relevant: If not, what is the standard unit you use to sell <i>[this item]</i> ?	<i>[integer for each item]</i>	NA
PS.3	To be asked separately about each monitored item: What is the price of the above unit of <i>[this item]</i> in <i>[local currency]</i> ?	<i>[integer for each item]</i>	Affordability
PS.4	For how many days, not including today, do you estimate your stock of <i>[item 1, item 2, item 3... OR category 1 items, category 2 items, category 3 items...]</i> will last under current conditions? Please include stock that you may have in storage elsewhere.	<i>[integer for each category]</i>	Resilience
PS.5	How many days, not including today, would it take you to fully restock <i>[item 1, item 2, item 3... OR category 1 items, category 2 items, category 3 items...]</i> if you were to place an order with your supplier today?	<i>[integer for each category]</i>	Resilience

Market functionality

#	Question	Options	MFS dimension
MF.1	Over the last X days/months, have there been problems that prevented any customers or traders from physically travelling to, working at, or shopping at this marketplace?	No issues with physical access to the marketplace Curfew or movement restrictions Ongoing / active fighting in the area Inadequate facilities make it difficult for businesses to operate Hazardous, damaged, or unsafe buildings in the marketplace Hazards or damage on roads leading to the marketplace Limited transportation options / lack of transportation Vendors are difficult to access for people with disabilities or mobility issues Marketplace is too far from the people who need it Marketplace only operates at limited times Customers do not feel safe around some people in the marketplace Other <i>(please specify)</i> Don't know Prefer not to answer	Accessibility Infrastructure

#	Question	Options	MFS dimension
MF.2	Over the last X days/ months, have there been any groups of people that sometimes avoided coming to this marketplace due to discrimination, exclusion, or feeling unwelcome?	Yes <i>(please explain further)</i> No, no groups have difficulty with this Don't know Prefer not to answer	Accessibility
MF.3	Over the last X days/months, have any of the following security factors had a negative impact on your business, your customers, or you personally while doing your work?	No issues with security in or near the marketplace Curfews Fear of violence Fear of harassment Fear of looting Fear of robbery Danger associated with roads to marketplace Danger associated with marketplace buildings Other <i>(please specify)</i> Prefer not to answer	Accessibility
MF.4	Do customers of your business face any financial challenges in travelling to you or in paying for the goods they need?	Most customers have no issues with financial access Many customers cannot afford the items available Many customers cannot pay for their items in a way you can accept (f. ex. no cash, no mobile money account, etc.) Public transportation is too expensive for many customers Fuel is too expensive for many customers Other <i>(please specify)</i> Don't know Prefer not to answer	Affordability
MF.5	Think of the most popular items you sell. If we were to ask you what prices your suppliers will charge you for those items one month from now, do you think you would get it right?	Yes No Don't know	Affordability
MF.6	Are you currently facing any difficulties keeping your business operational and well-stocked?	No difficulties Difficulties with availability of core goods Difficulties with prices charged by suppliers Difficulties accessing money and/or cash to pay suppliers Difficulties fully staffing your store Difficulties related to movement restrictions Difficulties related to physically dangerous conditions in this area Other <i>(please specify)</i> Don't know Prefer not to answer	Resilience

#	Question	Options	MFS dimension
MF.7	Over the last X days/months, have you had access to a locked, secure storage facility within your business facility or marketplace?	Yes, within my own business facilities Yes, elsewhere within the marketplace No, I store goods at another facility outside this marketplace No, I store goods at my home Other (<i>please specify</i>) Prefer not to answer	Infrastructure
MF.8	Over the last X days/months, which of the following types of payment have you accepted from your customers?	<i>Payment modalities to be tailored to each local context. A sample list:</i> Cash (local currency) Cash (foreign currencies) Mobile money Credit/debit cards Money transfers Cheques Vouchers Informal credit (customers can buy now and pay later) Barter (customers can pay for goods with other goods) Other (<i>please specify</i>) Prefer not to answer	Infrastructure
MF.9	Do you charge a markup to customers who choose to use certain types of payment?	Yes No Prefer not to answer	NA

Supply chains

#	Question	Options	MFS dimension
SC.1	Is your main supplier of <i>[item category]</i> items located in <i>[this location]</i> ?	Yes No Other (please specify) Prefer not to answer	NA
SC.2	If so, where does your main supplier of <i>[item category]</i> items get their goods from?	[list of Admin 1 units of this country + "Outside this country"] [list of Admin 2 units in the selected Admin 1 unit] [list of nearby countries + "Other (please specify)," if "Outside this country" was selected]	NA
SC.3	If not, where is your main supplier of <i>[item category]</i> items located?	[list of Admin 1 units of this country + "Outside this country"] [list of Admin 2 units in the selected Admin 1 unit] [list of nearby countries + "Other (please specify)," if "Outside this country" was selected]	NA
SC.4	Does your business mostly rely on a single supplier for <i>[category 1 items, category 2 items, category 3 items...]</i> ?	Yes No Don't know Prefer not to answer	Resilience

#	Question	Options	MFS dimension
SC.5	Over the last month, have you had any difficulty obtaining enough of any items you sell to meet your customers' demand?	Yes No Prefer not to answer	NA
SC.6	Which items have been most difficult to obtain?	[list of all monitored items + "Other (please specify)"]	NA
SC.7	Why have these items been particularly difficult to obtain?	I do not have enough money to purchase these items in the amounts I need My supplier will no longer give me credit to purchase these items in the amounts I need Producers have been producing less of these items Demand for these items has increased The suppliers I usually deal with have been unable to meet my customers' demand Domestic transport restrictions have cut off supply routes for these commodities International border closures have cut off supply routes for these commodities There is a shortage of carriers who can transport the goods I need Other (please specify) Prefer not to answer	NA

Expectations

#	Question	Options	MFS dimension
EX.1	Do you expect prices of [item category] items to change within the next month?	No, prices will stay the same Yes, prices will increase Yes, prices will decrease Don't know Prefer not to answer	NA
EX.2	Why do you expect prices of [item category] items to increase?	Exchange rate is rising Demand will increase - customers will run out of these items Demand will increase - humanitarian distributions will stop Demand will increase - more people will migrate here Supply will decrease - local vendors will not be able to obtain these items Supply will decrease - local vendors will be forced to close Supply will decrease - local vendors will not be able to access markets Supply will decrease - road conditions will worsen Supply will decrease - roads will be less safe or blocked Supply will decrease - borders will close or remain closed Other (please specify) Don't know Prefer not to answer	NA

#	Question	Options	MFS dimension
EX.3	Why do you expect prices of [item category] items to decrease?	Exchange rate is falling Demand will decrease - customers will not be able to access markets Demand will decrease - customers will begin producing these items themselves Demand will decrease - customers will want less of these items Demand will decrease - humanitarian distributions will start or continue Demand will decrease - more people will migrate elsewhere Supply will increase - local vendors will sell more of these items Supply will increase - new vendors will start selling these items Supply will increase - road conditions will improve Supply will increase - roads will be safer or will reopen Supply will increase - borders will reopen or remain open Other (please specify) Don't know Prefer not to answer	NA

Exchange rates

#	Question	Options	MFS dimension
ER.1	Are [type of foreign currency, plural] currently available from this shop?	Yes No	NA
ER.2	What is the buy rate for [type of foreign currency, plural] in [local currency]?	[integer]	NA
ER.3	What is the sell rate for [type of foreign currency, plural] in [local currency]?	[integer]	NA

Annex 2: Sample Market Functionality Score aggregations

The table below provides a sample set of Market Functionality Score indicators, aggregations, and thresholds in use across many REACH JMMIs, showing, in part, how the MFS is calculated. This semi-standardised set of indicators is integrated into the standard JMMI questionnaire in Annex 1. Readers are invited to contact REACH's cash and markets team at impact.geneva.cashandmarkets@impact-initiatives.org for further guidance connected to these indicators and to the MFS as a whole.

Dimension	Question	Options	Aggregation method	Suggested thresholds
Accessibility	Over the last X days/months, have there been problems that prevented any customers or traders from physically travelling to, working at, or shopping at this marketplace?	- No issues with physical access to the marketplace - Curfew or movement restrictions - Ongoing / active fighting in the area - Inadequate facilities make it difficult for businesses to operate - Hazardous, damaged, or unsafe buildings in the marketplace - Hazards or damage on roads leading to the marketplace - Limited transportation options / lack of transportation - Vendors are difficult to access for people with disabilities or mobility issues - Marketplace is too far from the people who need it - Marketplace only operates at limited times - Customers do not feel safe around some people in the marketplace - Other (please specify) - Don't know - Prefer not to answer	% of vendors selecting an option other than 'Hazardous, damaged, or unsafe buildings in the marketplace', 'Hazards or damage on roads leading to the marketplace', 'No issues', 'Don't know', or 'Prefer not to answer'	Max score 8 8: < 5% 6: 5-10% 4: 10-25% 2: 25-50% 0: > 50%
Accessibility	<i>(3 sets of thresholds apply to this question, covering different elements of physical access)</i>		% of vendors selecting 'Hazards or damage on roads leading to the marketplace'	Max score 4 4: < 5% 3: 5-10% 2: 10-25% 1: 25-50% 0: > 50%
Infrastructure			% of vendors selecting 'Hazardous, damaged, or unsafe buildings in the marketplace'	Max score 4 4: < 5% 3: 5-10% 2: 10-25% 1: 25-50% 0: > 50%

Dimension	Question	Options	Aggregation method	Suggested thresholds
Accessibility	Over the last X days/ months, have there been any groups of people that sometimes avoided coming to this marketplace due to discrimination, exclusion, or feeling unwelcome?	- Yes (please explain further) - No, no groups have difficulty with this - Don't know - Prefer not to answer	If any vendor responds 'Yes', the market is coded as 'Yes'	Max score 2 2 points for any other response 0 points for "Yes"
Accessibility	Over the last X days/months, have any of the following security factors had a negative impact on your business, your customers, or you personally while doing your work?	- No issues with security in or near the marketplace - Curfews - Fear of violence - Fear of harassment - Fear of looting - Fear of robbery - Danger associated with roads to marketplace - Danger associated with marketplace buildings - Other (please specify) - Prefer not to answer	% of vendors selecting an option other than 'No issues' or 'Prefer not to answer'	Max score 3 3: < 5% 2: 5-10% 1: 10-20% 0: > 20%
Availability	How would you describe the current availability of each of the following <i>[category 1, category 2, category 3...]</i> items in this marketplace? <i>[Item 1, Item 2, Item 3, Item 4, Item 5...]</i>	<i>For each monitored item:</i> - Widely available - Limited availability (only sold in small quantities or by a small number of traders) - Completely unavailable - Don't know - Prefer not to answer	If an item is reported widely available by a majority of surveyed vendors, it is coded as 'Widely available' If an item is not reported fully available by a majority of surveyed vendors, but is available on a limited basis from at least one vendor, it is coded as 'Limited availability' If an item is not available either on a full or a limited basis from any surveyed vendor, it is coded as 'Completely unavailable'	Max score 3x number of monitored items 3 points for each monitored item reported to have wide availability 2 points for each monitored item reported to have limited availability 0 points for each monitored item reported to be unavailable

Dimension	Question	Options	Aggregation method	Suggested thresholds
Affordability	What is the price of [item 1, item 2, item 3...] in [local currency]?	Integer	Median of vendor responses for each item at left	Max score 12 <pre>(preliminary max score of 2x number of monitored items; then, indicator is rescaled to a max score of 12 and a min score of 0) After calculating scores for all other indicators in the Affordability dimension: Add 2 points for each monitored item with a median price < 50% of the national median Add 1.5 points for each monitored item with a median price 50-75% of the national median Add 1 point for each monitored item with a median price 75-90% of the national median Subtract 1 point for each monitored item with a median price 110-125% of the national median Subtract 1.5 points for each monitored item with a median price 125-150% of the national median Subtract 2 points for each monitored item with a median price > 150% of the national median</pre>
Affordability	Think of the most popular items you sell. If we were to ask you what prices your suppliers will charge you for those items one month from now, do you think you would get it right?	- Yes - No - Don't know	% of vendors selecting 'No'	Max score 6 <pre>6: < 10% 4: 10-25% 2: 25-50% 0: > 50%</pre>

Dimension	Question	Options	Aggregation method	Suggested thresholds
Affordability	Do customers of your business face any financial challenges in travelling to you or in paying for the goods they need?	- Most customers have no issues with financial access - Many customers cannot afford the items available - Many customers cannot pay for their items in a way you can accept (f. ex. not enough cash, no mobile money account, etc.) - Public transportation is too expensive for many customers - Fuel is too expensive for many customers - Other (please specify) - Don't know - Prefer not to answer	% of vendors selecting an option other than 'No issues', 'Don't know', or 'Prefer not to answer'	Max score 9 9: < 10% 6: 10-25% 3: 25-50% 0: > 50%
Resilience	For how many days, not including today, do you estimate your stock of <i>[item 1, item 2, item 3... OR category 1 items, category 2 items, category 3 items...]</i> will last under current conditions? Please include stock that you may have in storage elsewhere.	Integer	For each item or category, subtract # restocking days from # days of remaining stock for each item or category; aggregate by taking the median of these vendor-level calculations	Max score 3x number of monitored items or categories 3 points if # days of remaining stock – # restocking days > 3 2 points if # days of remaining stock – # restocking days > 0 and ≤ 3 1 point if # days of remaining stock – # restocking days = 0 0 points if # days of remaining stock – # restocking days < 0
Resilience	How many days, not including today, would it take you to fully restock <i>[item 1, item 2, item 3... OR category 1 items, category 2 items, category 3 items...]</i> if you were to place an order with your supplier today?	Integer		
Resilience	Does your business mostly rely on a single supplier for <i>[category 1 items, category 2 items, category 3 items...]</i> ?	- Yes - No - Don't know	% of vendors selecting 'Yes'	

Dimension	Question	Options	Aggregation method	Suggested thresholds
Resilience	Are you currently facing any difficulties keeping your business operational and well-stocked?	- No difficulties - Difficulties with availability of core goods - Difficulties with prices charged by suppliers - Difficulties accessing money and/or cash to pay suppliers - Difficulties fully staffing your store - Difficulties related to movement restrictions - Difficulties related to physically dangerous conditions in this area - Other (please specify) - Don't know - Prefer not to answer	% of vendors selecting an option other than 'No difficulties', 'Don't know', or 'Prefer not to answer'	Max score 12 12: < 5% 9: 5-10% 6: 10-25% 3: 25-50% 0: > 50%
Infrastructure	Over the last X days/months, have you had access to a locked, secure storage facility within your business facility or marketplace?	- Yes, within my own business facilities - Yes, elsewhere within the marketplace - No, I store goods at another facility outside this marketplace - No, I store goods at my home - Other (please specify) - Prefer not to answer	% of vendors selecting an option other than 'Yes, within my own business facilities', 'Yes, elsewhere within the marketplace', or 'Prefer not to answer'	Max score 3 3: < 10% 2: 10-25% 1: 25-50% 0: > 50%
Infrastructure	Over the last X days/months, which of the following types of payment have you accepted from your customers?	<i>Payment modalities to be tailored to each local context. A sample list:</i> - Cash (local currency) - Cash (foreign currencies) - Mobile money - Credit/debit cards - Money transfers - Cheques - Vouchers - Informal credit (customers can buy now and pay later) - Barter (customers can pay for goods with other goods) - Other (please specify) - Prefer not to answer	% of vendors selecting an option other than 'Cash (local currency)', 'Cash (foreign currencies)', or 'Prefer not to answer'	Max score 3 3: > 75% 2: 50-75% 1: 25-50% 0: < 25%

Annex 3: Using REACH's global JMMI API

The **JMMI API**, short for Application Programming Interface, is a versatile and robust tool developed by REACH that provides access to comprehensive market data gathered through REACH-run JMMI surveys. It has been developed to serve two primary groups of users, each of which is eligible for a different type of access to the API:

1 Independent researchers: These users, including academic researchers and partner organisations working in humanitarian contexts, can access the Open API, which allows up to 200 calls per IP address per month without the need for a subscription key.

2 Institutional partners and IMPACT/REACH staff: For use by internal staff and staff from partner organisations who expect to make heavier use of the API, the Institutional API allows up to 200,000 calls per organisation per month with a subscription key, offering a much higher level of access for larger-scale analysis and frequent data updates. Partner organisations interested in accessing the Institutional API are invited to contact **impact.geneva.cashandmarkets@impact-initiatives.org** with their request.

The API supports seamless integration with various programming languages, such as Python, R, and JavaScript, making it accessible to users with diverse technical skills. Through simple GET requests, users can retrieve and work with market data for further analysis.

API functions

The JMMI API supports two main types of functions:

- **Metadata functions:** These functions allow users to explore the data structure, retrieve information on available datasets, and review key items and variables. This enables users to get an overview of the data landscape before conducting deeper analysis.

- **Core data access functions:** Users can access both disaggregated and aggregated data. Disaggregated data includes the granular information collected from individual key informant surveys, making it ideal for detailed price analyses across items, markets, and timeframes. Aggregated data, on the other hand, summarizes broader trends of prices, MEB and MFS by administrative level.

Further explanations of each available function can be found in the **REACH JMMI API documentation**.

API integration with the JMMI ecosystem

The API is not to be considered a stand-alone output. The ultimate objective, in progress at the time of writing, is to fully integrate the API into REACH's broader JMMI data ecosystem and pipeline. This integration is intended to streamline internal workflows, improve data accessibility, and enhance the efficiency of market analysis. This will ensure that the JMMI continues to serve as a critical resource for both external users and internal teams.

For more information on the API, please visit the REACH JMMI API documentation at **<https://impact-initiatives.shinyapps.io/JMMI-API-Dashboard>**. Readers are also invited to contact REACH's cash and markets team at **impact.geneva.cashandmarkets@impact-initiatives.org** for further guidance connected to the API.



Global Guidance Note
Joint Market Monitoring Initiative (JMMI)
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