MARKit

MARKET MONITORING, ANALYSIS AND RESPONSE KIT

2nd Edition

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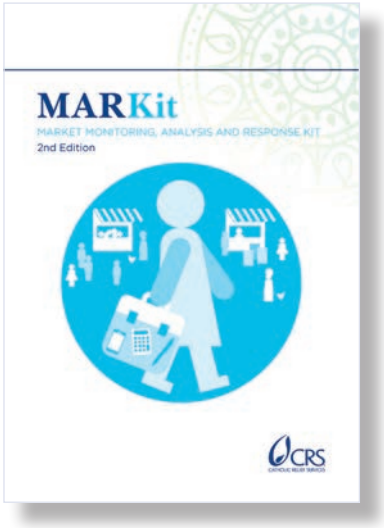

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MARKit is the product of consultation with several agencies and individuals across sectors and governance levels. It has benefited from the extensive experience shared by the members of the reference group who provided insights on specific technical areas: Amy Ostrander, Project Concern International; David de Wild, Food Economy Group; Emily Sloane, International Rescue Committee; Erin Lentz, University of Texas at Austin; Lyubomyr Kokoskyy, World Food Programme; Ruco Van Der Merwe, USAID; and Sonja Perakis, Famine Early Warning Systems Network.

This revision process also benefitted from key insights shared during a workshop from September 10 to 14, 2018, in Lome, Togo. Participants included CRS staff members from our offices in Benin, Central African Republic, Chad, Democratic Republic of the Congo, Guatemala, Haiti and Niger.

Contents

Acronyms

CARI	Consolidated Approach for Reporting Indicators of Food Security
CGI	corrugated galvanized iron
CPI	Consumer Price Index
CRS	Catholic Relief Services
CVA	cash and voucher assistance
DIP	Detailed Implementation Plan
ELAN	Electronic Cash Transfer Learning Action Network
EMMA	Emergency Market Mapping and Analysis
FEWS NET	Famine Early Warning Systems Network
HH	household
ICT	information and communication technologies
ICT4D	information and communication technologies for development
IPP	Import parity price
IRC	International Rescue Committee
IT	information technology
LRP	local regional procurement
MARKit	Market Monitoring, Analysis and Response Kit
MDC	mobile data collection
MEAL	monitoring, evaluation, accountability and learning
MEB	minimum expenditure basket
MIS	market information system
MPCA	multipurpose cash assistance
NFI	nonfood item
NPI	non-price indicator
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
PCMA	Pre-Crisis Market Analysis
SMT	senior management team
USAID	United States Agency for International Development
VAM	Vulnerability Analysis and Mapping
WFP	World Food Programme

Introduction

Why monitor markets?

Markets play a key role in the response to and recovery from a crisis. Understanding how local, national and international markets function and interact is therefore a critical step in designing effective emergency or development programs and making critical adaptations to them. Monitoring market conditions over the life of a program can help managers identify whether changes in the supply of, or demand for, key commodities risks further escalating market anomalies, and can help identify strategies to mitigate the impact of such changes. Specifically, monitoring markets can help practitioners to:[1]

- Assess how well the market is functioning and identify existing and/or potential bottlenecks.
- Track whether existing responses positively or negatively distort local markets (e.g., surpassing the available supply, increasing prices for non-participants, creating or strengthening monopolies, or causing inflation).
- Assess the continued appropriateness of the chosen delivery modality and design options/components.
- Determine whether the value and level of assistance remain adequate.
- Inform corrective actions regarding the intervention strategy.
- Monitor market-related program outcomes.

Programs need to be agile enough to collect and act upon market information so that participant needs are appropriately met and no harm is done to local markets.

MARKit purpose and scope

The aim of the Market Monitoring, Analysis and Response Kit (MARKit) is to improve program quality by enabling managers to adapt their programs to changes in the local market environment. MARKit provides a framework for market monitoring, analysis and response decision-making, using prices as the main indicator. Prices are highly sensitive to changes in market function, supply and demand and can therefore signal changes that need to be investigated further.

By focusing on prices, MARKit addresses the first five market monitoring objectives listed above. However, monitoring prices alone may not be sufficient for monitoring broader market-related program outcomes, such as assessing the multiplier effect of your program or profit margins along the supply chain. This last objective lies outside of MARKit's scope.

Through the introduction of a standardized methodology for price collection, management and analysis, MARKit is designed to support evidence-based decision-making. In many programs, staff collect price information but may lack the time and/or skills to analyze it. Streamlining the market monitoring process will help teams be more efficient and effective with their time, enabling them to focus on analysis to inform decision-making.

1. Juillard 2018.

Moreover, the use of commonly accepted data collection methods and reporting can facilitate data sharing across organizations, thus encouraging collaboration.

Lastly, MARKit aims to help programs maintain the principle of "Do No Harm" and reduce or resolve unintended impacts on market systems, including those caused by the intervention and those induced by market forces external to the program. MARKit guides practitioners on how they can adjust their program to adapt to changes in market conditions and to justify adjustments to relevant stakeholders.

MARKit was initially designed to support food assistance programs, but its general principles are applicable to programs with recurring distributions of cash, vouchers or in-kind commodities, across sectors. MARKit can be used across crisis settings to inform both emergency and development programming. Whatever the context, it is assumed that the design of the program intervention is based on assessments and response analysis to determine the most appropriate activities and modalities.

Target audience

MARKit is designed to support managers and staff considering and/or implementing market-based programming[2] or resource-transfer programs.

Specifically, MARKit is useful for the following actors:

- **Program managers** responsible for overall implementation of and decision-making in relevant programs.
- **Managers, country directors and other leaders** who oversee these programs and staff. As they may not read the full MARKit toolkit, a brief overview and checklist have been developed to introduce them to the key points.
- **Field and partner staff** who interact with participants and market actors in the program area.
- **Monitoring and evaluation departments** that will incorporate market monitoring into other regular monitoring frameworks and activities.
- **Markets/cash advisors at regional or global levels** who support these programs and may use MARKit for training and implementation.

When to use MARKit

MARKit can be used across sectors, by one or multiple organizations, in both crisis and non-crisis settings for:

- **Programs of any duration**. However, the longer the program, the greater the amount of data needed to inform decision-making:
  - Trends from longer data series (i.e. programs of more than six months) will be more insightful than those with fewer data points.
  - The tool can, and should, also be used for short programs (i.e. less than six months), particularly in areas with reoccurring programming, as lessons learned can be applied to future responses.
  - For shorter programs, users will need to depend more on secondary/historical data, where available, and/or qualitative methods to compensate for limited price data. Qualitative methods of analysis are included throughout the manual.

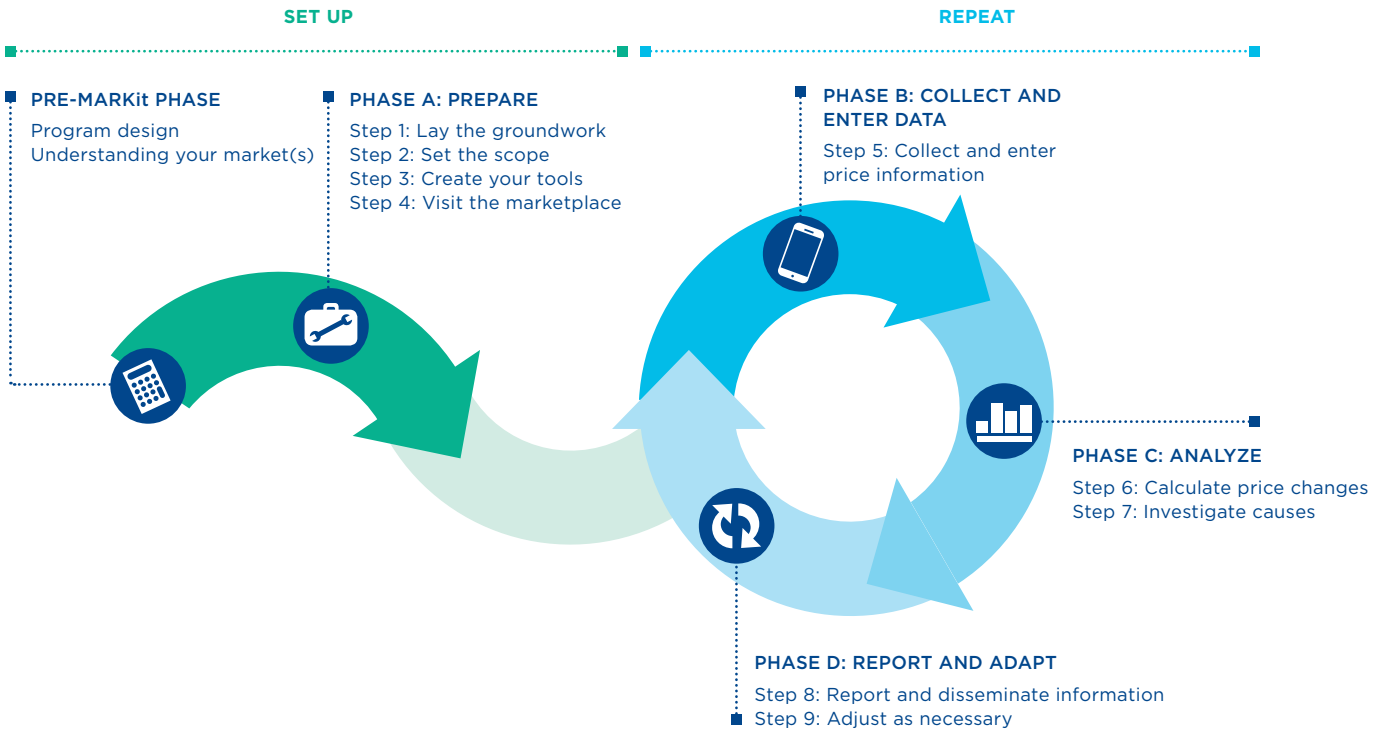
2. Market-based programming or market-based interventions are understood to be programs that work through or support local markets. The terms cover all types of engagement with market systems, ranging from actions that deliver immediate relief to those that proactively strengthen and catalyze local market systems or market hubs (CaLP glossary).

- **Interventions that transfer resources to participants through cash, vouchers and/or in-kind distributions** (purchased locally, regionally and/or internationally). For all modalities, the use of MARKit monitors the continued appropriateness of the chosen modality. For cash and voucher assistance (CVA), MARKit also serves to ensure the transfer value remains adequate.
- **MARKit is intended for all programs irrespective of the price volatility or risks of a program causing market distortions**. The assessed risks will determine the frequency and scope of the market monitoring system. Programs with very low levels of risk—such as those that account for small changes in supply or demand relative to the size of the market—may require only limited market monitoring; yet the MARKit sequence and key steps remain the same.

How to use MARKit

This manual provides step-by-step instructions for implementing the various phases and steps of MARKit. As demonstrated in the figure below, the steps included in the first two phases describe the system's set-up and typically occur once. The remaining steps are repeated with each round of market monitoring. Complementary tools and worksheets ("the toolkit") are described in the *What's new in the revised MARKit?* section.

Figure 1: Overview of MARKit



The manual identifies the best practices for each phase and step:

- **Pre-MARKit phase** This recaps the information that should have been fed into the program design, e.g., market assessment. It is recommended that gaps in this information be collected before MARKit is started, as possible.
- **Phase A: Prepare** consists of Steps 1 to 4. This phase provides guidance on laying the groundwork of your monitoring system (e.g., identifying market monitoring objectives, commodities and markets); setting the scope of the market monitoring system (e.g., determining risks and modality considerations); creating the tools (e.g., setting up the database) and visiting the marketplace (selecting vendors and understanding local units of measurement).
- **Phase B: Collect and enter data** consists of Step 5. It offers practical guidance on identifying available secondary data and gathering primary price data, as well as reviewing and cleaning data in preparation for analysis. MARKit strongly encourages the use of secondary data wherever possible.
- **Phase C: Analyze** consists of Steps 6 and 7. This phase presents practical guidance on calculating and characterizing price changes and identifying their potential causes. Understanding these causes is critical to adapting to and potentially mitigating the effects of price changes caused by or affecting the program.
- **Phase D: Report and adapt** consists of Steps 8 and 9, which provide guidance on when and how to adjust programs in response to price changes. A variety of scenarios is presented along with recommended actions and the requirements needed to implement the changes.

The manual is designed to be a stand-alone reference. Practitioners are encouraged to use it in its entirety or refer only to the steps for which they need the most guidance. Previous experience indicates that technical assistance, particularly in the preparation phase, leads to better set-up and analysis. It is therefore recommended that country offices seek training and/or mentoring, as needed, to optimize the use and value of MARKit.

What's new in the revised MARKit?

The revised MARKit toolkit encompasses:

- This manual
- Worksheets providing further technical details on specific analytical methods
- An Excel database with sample price data and instructions
- A sample monthly MARKit report
- Sample training and training of trainer materials

CRS has updated all five elements of the toolkit, which should be used in combination to more fully analyze and communicate price changes.

The revised MARKit toolkit still focuses on prices but has been expanded to include basic information on complementary and relevant non-price indicators (NPI) that may be added to a price monitoring system. In addition, while MARKit retains its focus on monitoring food items, the guidance provided in this manual and the accompanying tools include references to and advice for adapting it to other sectors. The major revisions include:

- A clearer delineation between set-up and ongoing activities. It also recognizes the iterative nature of defining and setting up the monitoring parameters, rather than presenting these steps in a simple sequence.
- Defining risk not as the binary "high" or "low" but as a spectrum along which the degree of risk influences the scope and depth of market monitoring (number of commodities and markets, frequency of monitoring). "Automatic" high-risk factors have been removed. The level of risk only influences the scope of the monitoring system and not the type and depth of analysis conducted.
- The expanded use of qualitative inquiry and analysis when there is insufficient historical price data for quantitative analysis (e.g., seasonal index). Qualitative analysis is also suggested outside of the seasonal index (e.g., surveying vendors about why prices have changed).
- An increased emphasis and guidance on securing leadership buy-in; upward and downward accountability; and reporting.

What MARKit is not

MARKit has been designed to be used in conjunction with other existing market assessment and analysis tools.[3] It is not a substitute for basic market knowledge or assessments that are critical to good program design and monitoring. This manual does not provide detailed descriptions of market concepts, as this information is available in other resources (see *Annex 1: Resources for market assessment*). While it is possible to use MARKit without having an in-depth market baseline, a minimum understanding of local, targeted supply chains is required to properly set up the data collection system and interpret price changes.

The use of MARKit assumes that interventions have already been designed based on solid response analysis, as MARKit is not a tool for deciding which interventions or modalities to use (although an existing MARKit system may be an input into future program designs). It should be used during a program's response to help track what is happening to markets during an intervention and to adjust the intervention if needed. It is not designed as an evaluation tool to be used after an intervention has ended.

MARKit is not a comprehensive market monitoring tool. While prices are useful to signal key changes in the market equilibrium, they do not capture all factors that influence the health and resilience of markets (e.g., changes in the number of market actors or quality of goods may or may not impact prices). Program managers may choose to build into their market monitoring plans additional, more holistic, market indicators. A brief overview of potentially relevant non-price indicators can be found in *Step 2.3 Choose relevant non-price-related indicators*.

3. *The Minimum Economic Recovery Standards: Third Edition* provides a comprehensive list of market assessment tools.

Should you use MARKit?

Market-neutral programs are rare. Humanitarian organizations are market actors and through their actions will influence markets. Whatever modality is used in whatever sector, any program that transfers resources or intends to use, support or change market systems should include market monitoring as part of its regular monitoring.

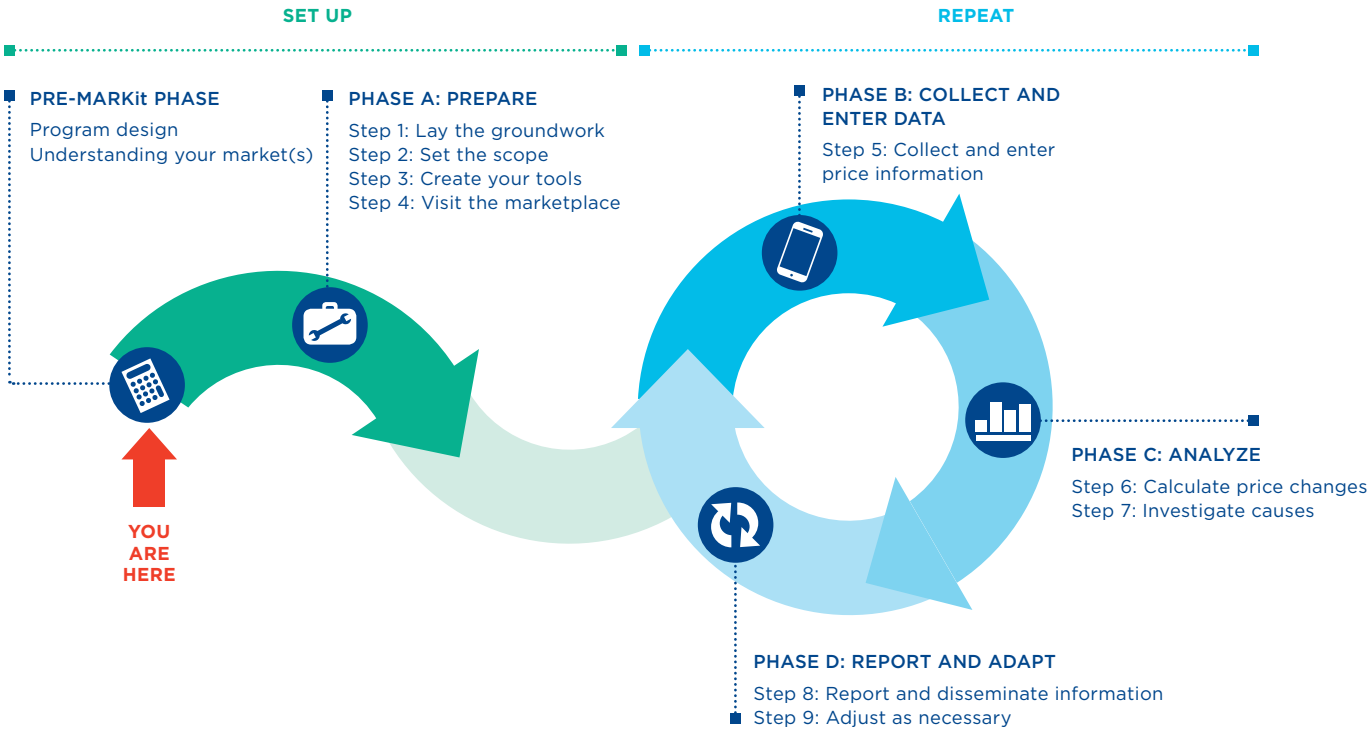
Factors that will influence the breadth and depth of market monitoring, but not its relevance, include the size of a program compared to the size of a local market, the volatility of prices, and the presence of a market baseline or historical data.

To determine whether you should use MARKit or other methodologies for market monitoring, reflect on your own capacity and what technical assistance may be available to you and your team (e.g., training, remote support). If you don't have that capacity and/or assistance, don't rule out using MARKit; you can "learn by doing" through MARKit's step-by-step guidance.

Ideally, MARKit is used to identify and justify real-time adjustments to program design. It is relevant even if the flexibility of a program is limited due to donor restrictions, program length or other circumstances. Most program adaptations are relatively minor and do not require major changes in program strategy. Furthermore, lessons learned can influence future programs.

Pre-MARKit Phase

Figure 2: Overview of MARKit showing pre-MARKit phase



These activities are required inputs to MARKit's set-up and should take place during the program design phase. They are quickly recapped here to make sure that you are ready to start using MARKit.

Conduct a market assessment

Once the program is underway, it can be difficult to implement comprehensive changes to its design. Constraints include limited time and resources, and a lack of donor or organizational flexibility. Therefore, it is important to get the market analysis and program response right in the design phase prior to implementation. Appropriate program design remains the most effective means to implement market-responsive programs and to meet Do No Harm standards.

Understanding markets: Establishing an effective price monitoring system is predicated on a firm understanding of market flows and functionality. There are many resources available for self-directed learning if you or your team members need to brush up on market theory or become familiar with this subject for the first time (see *Annex 2: Available market theory resources*).

Do you have a market baseline? You will need local market information to set up the MARKit process. If your program is still in its design phase and there is no market baseline available for your target area, now is a good time to conduct a market assessment.[4]

4. FEWS NET *Markets Guidance, No 4. Commodity Market Maps and Price Bulletins: Tools for Food Security Analysis and Reporting* provides more information on constructing a market baseline.

Most market baselines will typically include an analysis of the following key factors that determine the relative functioning of a given market as well as the suitability of different response options or transfer modalities (i.e. cash, vouchers, in-kind distribution or a combination thereof):

- **Supply and demand**: The market's capacity to deliver goods or services, and households' ability and willingness to purchase them, respectively.
- **Market integration**: The degree to which markets in different geographical areas are connected to each other, impacting the market system's capacity to adjust for supply and demand imbalances, based on price signals. See Worksheet 1 for more detail on market integration.
- **Market power**: The degree to which one or a few actors can dictate or strongly influence prices in their favor.
- **Market environment**: The institutions, systems, infrastructure and norms that facilitate or hinder market performance.
- **Market access**: A target groups' physical, social and financial access to markets.
- **Seasonality**: The systematic movement of prices that repeats itself at regular intervals.

Q: Can I use MARKit if I haven't done a market assessment?

A: Ideally, to inform response design, you will have conducted a market assessment or have access to recent and relevant secondary market information. However, freqently, this may not be the case. The lack of a market assessment does not prevent you from using MARKit, but may lead you to increase the frequency of monitoring at the beginning of your program to capture price patterns and seasonality (See *Set the market monitoring plan* in Step 2). As market understanding improves, revisit your market monitoring system design and adjust accordingly, for example, by decreasing monitoring frequency.

This manual revisits these concepts in Steps 1 to 4, so understanding your context for each of these factors is the first step in laying the groundwork for MARKit. You will also need information on integration, competition and seasonality to assess your program's risk of causing price disturbances (see *Step 2.1. Assess the likelihood of market distortion*). Tools in *Annex 1: Resources for market assessment*, such as *Minimum Standards for Market Analysis* (MiSMA) (Juillard 2018), include checklists for the key actions to be undertaken for market assessment and analysis.

Use response analysis to inform design

As with any program, it is important to conduct response analysis to inform program design. Response analysis is defined by the FAO (2011) as "the link between situational analysis (broadly speaking, needs assessment and other contextual information) and program design; it involves the selection of program response options, modalities and target groups; and should be informed by considerations of appropriateness and feasibility, and should simultaneously address needs while analyzing and minimizing potential harmful side-effects."

When it comes to modality choice, response analysis is often driven, in large part, by market conditions. However, other factors—such as participant preferences and habits, intra-household dynamics, available delivery mechanisms, operational environment and security, timeliness and cost—also influence appropriate modality choice and program design. Several decision trees exist to support the modality selection; see, for example, the Food for Peace Modality Decision Tool (USAID 2018) and the ECHO decision tree (ECHO 2013).

It is important to ensure that all parties who will be involved in market monitoring are aware of the market and non-market conditions that led to selected response option(s) and program design.

Foster leadership buy-in

The early involvement and buy-in of senior leadership are critical in order to **secure the necessary resources**—financial, logistical and human—to conduct market monitoring. Leadership buy-in will also be necessary to **implement recommended program changes** resulting from the MARKit process. Leaders will play an essential role in ensuring the program design is flexible enough to allow for such adaptations, as detailed in the section below.

If your program is not accustomed to monitoring markets, this may require advocacy to ensure the proper resources are allocated (see *Annex 9: Sample MARKit budget content*). This may also include ensuring sufficient funds for training on MARKit and/or other technical assistance.

Methods for involving leadership include:

- Share the MARKit toolkit and/or checklist with leadership and other key stakeholders, including state institutions and implementing partners.
- Hold a meeting with relevant leaders (both within your teams and externally) to discuss why and how you are doing market monitoring.
- Involve leadership in the MARKit rollout trainings to increase their knowledge of markets, as needed, and to demonstrate their support and commitment to field staff.
- Include short market monitoring updates or results in regular senior management team (SMT) and other interdepartmental team meetings.
- Circulate regular, concise monitoring bulletins (see *Step 8: Report*). Ensure that monitoring data is accompanied by clear and relevant analysis, and any recommendations to adapt programs are supported by evidence. This will facilitate the leadership's timely decision-making and advocacy to donors (if necessary).
- Include MARKit-related activities in performance plans and job descriptions.

Ensure flexibility in the program's design

The primary objective of the MARKit process is to improve program implementation and enable managers to adapt to changes in the local market context. Adaptations are more feasible when flexibility is incorporated into the the initial design.

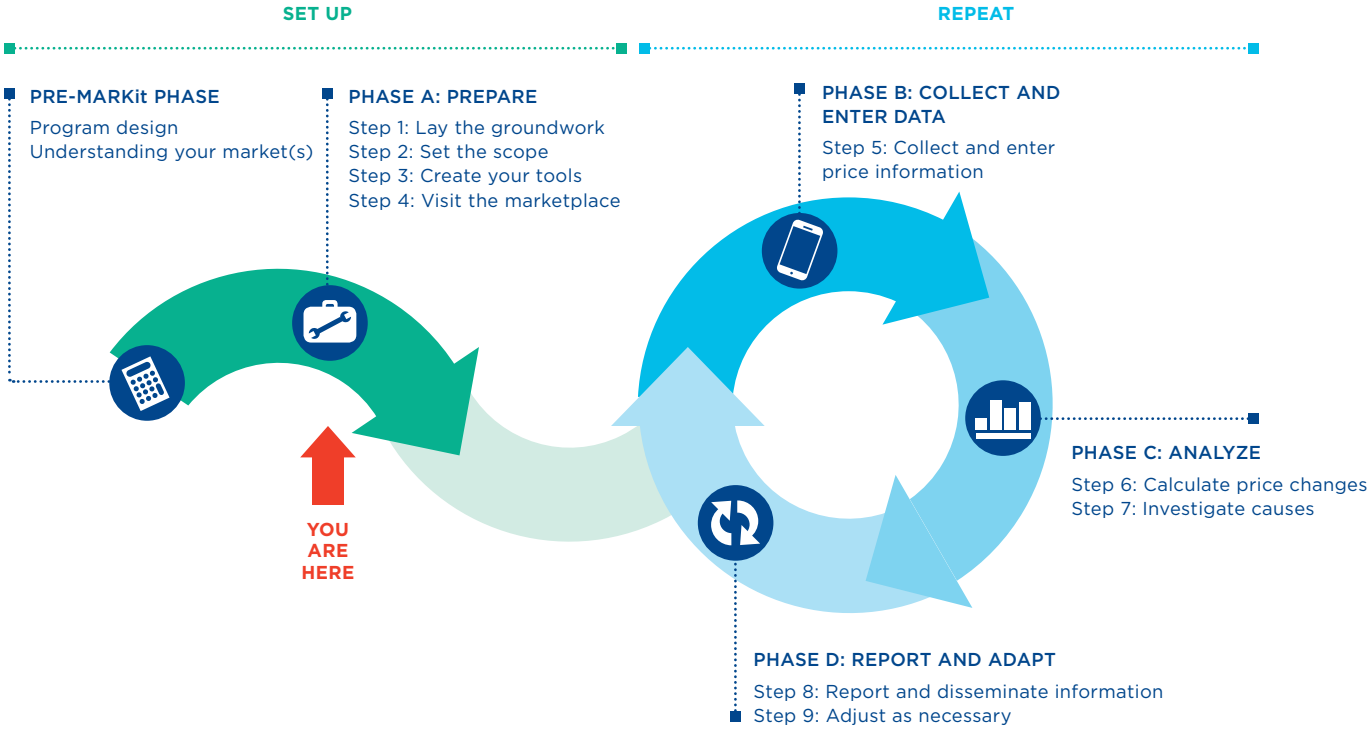
This could be achieved through the use of design strategies such as:

- Contingency funds / crisis modifiers.
- Integrating seasonality into the design of transfer systems (e.g., seasonal changes in cash transfer values, avoiding food distributions during harvest periods).
- Combining in-kind assistance and cash transfers in order to enable rapid changes to the transfer modality (e.g., scaling up cash and scaling down food post-harvest, and scaling up food and scaling down cash in the hungry season).
- For multi-year programs, budgeting for midterm evaluations and/or a second round of response analysis to ensure the continued appropriateness of the program design.
- Ensuring that program and operations staff have competencies across different modalities.

The more flexible the program's strategy, the easier it will be to modify its design and implementation strategy based on the collected evidence and analysis. Yet, even when such flexible mechanisms are built into a program design, communication is critical for ensuring that decision-makers can approve proposed adaptions in a timely manner. A lack of design flexibility is not an excuse to skip market monitoring. MARKit can still be relevant to inform minor adaptations and to incorporate learning into future programs (see Table 1 below).

Phase A: Prepare

Figure 3: Overview of MARKit showing Phase A



Steps 1 to 4 of this phase will enable program managers to establish their monitoring framework using MARKit. In practice, Steps 1 to 3 are iterative. However, they are presented sequentially for clarity.

Step 1: Lay the groundwork

This step is intended to help you think about what resources you will need to successfully carry out price monitoring and analysis of your program.

For programs that have not used MARKit previously, a three- to five-day MARKit training is recommended for the implementation team. This should include mentorship and guidance on all preparedness steps (Steps 1 to 4) and at least one day of pilot testing the tool by visiting a marketplace and collecting some primary data. Ideally, programs will already begin collecting secondary data during the response analysis and program design (see *Step 1.3 Identify existing data sources and contacts*) so that it can be used during the training. A sample training agenda, training materials and training of trainers materials are part of the complete MARKit toolkit.

1.1 Communicate your monitoring objectives to program stakeholders

It is important to be clear about why you are monitoring markets, in order to effectively and efficiently design your approach (including the scope of your monitoring, resources and frequency of data collection). The monitoring objectives should be clearly communicated to program stakeholders—including field staff, senior management and market actors—so they know which program-related decisions are informed by the market monitoring exercise.

Table 1: MARKit objectives and programming decisions

MARKit objective	Program-related decision it can inform
Track whether existing responses influence local markets (positively or negatively).	Adapt programming, e.g., modality, frequency of transfers, transfer value. Design of market support interventions.
Assess the continued appropriateness of the chosen delivery modality, transfer value and design options/components.	Adapt programming, e.g., modality, frequency of transfers, transfer value.
Monitor market-related program outcomes.	In the case of market support interventions, monitor whether the program is meeting its stated outcomes.
Verify vendor prices in voucher or local regional procurement (LRP) programming.	Adapt programming, e.g., modality, frequency, transfer value. Enforce and/or renegotiate contracts with traders.

Depending on the objectives, you may want to expand MARKit to include certain non-price indicators, as further detailed in *Choose relevant non-price indicators* in Step 2. For a full list of the types of market information you can collect per set objective, refer to the International Rescue Committee's Market Information Framework (2018).

In all cases, it is important to be realistic and align the objectives with your organization's country strategy, programmatic intentions, experience and resources.

1.2 Identify commodities to be monitored

Ideally the number of monitored commodities should not exceed five. Monitoring more should be carefully considered by project management. It is better to have complete data for fewer commodities than sporadic data for more. Select the commodities for monitoring based on the intervention (i.e., distributed commodities and/or those expected to be purchased with CVA); the program's objectives; and anticipated impacts on the market. When using multipurpose cash assistance (MPCA), include in your monitoring the key items that determined the transfer value, such as the key contents of the minimum expenditure basket (MEB) as well as those items the target population buys most frequently and that represent the bulk of expenses. Also consider what other actors in the area are distributing and monitoring in order to coordinate data collection and prevent duplication. Finally, make sure you consult with local stakeholders throughout the identification process.

Questions to help determine what staple food commodities to monitor

- What are the main commodities in the staple food basket?
- What commodities are prioritized by the intervention, through direct distribution, vouchers, procurement or education/messaging?
- On which commodities are participants likely to spend most of their cash or vouchers?
- What prioritized or preferred commodities have precarious availability in the market?
- What commodities may be substituted or complemented by the intervention?
- If distributed commodities are not found in the local market, what are the closest substitutes?

Key points to keep in mind include:

- It is not necessary to monitor multiple products with similar supply chains (e.g., vegetables with similar seasonality and production zones/systems and sold by the same wholesalers and retailers) as price changes for one may be indicative of price changes for the others.
- Low-cost items, such as salt, do not need to be monitored since even large price changes will have minimal impact on the food budget and food security.
- Avoid high-cost items that comprise a small portion of total food expenses (e.g., spices).
- If participants frequently shift their priority commodities in response to price differences, consider monitoring important substitutes for targeted staple food commodities. Consult with participant households and traders about the level of differentiation among products, preferences and customary practices to identify appropriate substitutes. For example, consumers may buy sorghum when prices of maize are too high.
- For in-kind distribution of goods that are not found in the local markets, identify suitable alternatives. For example, if the program is distributing a type of bean that is not found locally, monitor the most similar local bean (based on a pre-set list of characteristics) and/or the food item the distributed food replaces in the household diet.

The number of commodities to monitor depends on: 1) the scope of the intervention (expected outcomes, geographical coverage); 2) the likelihood that market conditions will change; and 3) the staff's capacity to collect, manage and analyze the data.

What should I do if the same varieties are not present in all markets or all seasons?

In one example from the Middle East, the team collected prices for the cheapest variety/brand in each market for that day. While not ideal, it was more practical in a context where the types of goods available were highly variable. Note wherever adaptations like these are made so that they can be considered in the analysis/interpretation.

Once selected, create a simple **commodity reference sheet** (see Figure 4) for each commodity included in the price monitoring system. This can include a picture and guidance on how to differentiate between varieties to ensure the price information collected is for the same commodity/variety in each monitored market and on every visit. These standard reference sheets can be laminated and kept together in a loose-leaf notebook for field use.

The reference sheets should describe the basic characteristics of the commodity and any differentiation that may be important. How commodities are differentiated can vary depending on the commodity and market.

The following is a general list of how commodities are differentiated. Not all differences may be relevant for each commodity.

- ***Color.*** Prices may vary by color; ensure consistency. Depending on the product, color may be a key factor in commodity differentiation, so be sure to research preferences and substitutability before selecting.
- ***Size***. Commodities may be sorted—or differentiated—by size, with different prices depending on size.
- ***Local retail measure***. Note what kind of container is typically used to measure the commodity during retail sales. The exact measurement for each local unit may need to be recorded within each marketplace for accurate calculations of prices per the standard measure (e.g., kilogram).
- ***Condition/treatment***. Whether the commodity is ripe/unripe, early harvest or late harvest. This may also include the amount of foreign matter or broken commodity, mold and moisture content, aflatoxin levels, as well as packaging or processing.
- ***Local versus imported***. Locally produced and imported commodities may vary in condition, quality or variety. Collect prices for the local variety unless the imported ones are more commonly consumed.
- ***Brand***. Consumers may prefer a particular brand of a packaged and/or processed commodity. Manufacturers may also shift their prices independently, so it is important to collect price data for one specific brand (the most common or preferred by participants) so that data is comparable over time, as feasible.

Figure 4: Sample commodity reference sheets

Commodity: Cow peas

Variety to monitor: Togo bean, small

Name in local languages: *[insert local name]*

Local retail measure: "American tin"

Typical weight of local measure: 2.6 kg per American tin (may vary by marketplace)

Size: Smaller beans preferred, approximately 1.2 cm

Price differentiation: Prices differentiated by relative size and source country. Imported from Niger, Nigeria, Togo, Burkina Faso and northern Ghana (Tamale market). Although a staple, prices are less consistent than other commodities – with more than an 80% range from the cheapest to the most expensive bean at the time of the survey.

Available varieties and preferences: Several varieties are available in Ghanaian markets. Traders frequently differentiate by country of origin and size. While cowpeas are produced in Ghana, the most commonly preferred beans are the slightly smaller ones from Togo, with the Nigerian beans coming a close second. Consumers prefer the smaller beans over the larger varieties for the speed and ease of cooking.

Commodity: Corrugated galvanized iron (CGI) sheet

Specification of the CGI sheet to monitor:

Minimum thickness: 0.457mm/.018”

Standard Wire Gauge: 26 minimum

Hardness: 85 HRB minimum

Coating: Hot-dip zinc galvanized

Coating thickness: 20 micrometers

Tensile strength: 300N/mm minimum

Depending on your program and modality (e.g., using MPCA), you may want to map price changes of individual commodities and/or of a given basket (e.g., the **food basket** or **minimum expenditure basket**, or MEB). When using cash grants, participants may spend their money on a broad range of items, including some that are not part of the primary program objective. It may be tempting to monitor all of the items from the MEB to ensure the continued appropriateness of the transfer value. But even when MPCA is used, you will still want to monitor a maximum of five commodities. A drastic change in the prices of these sentinel commodities can trigger a “snapshot” of prices for the entire basket, with the objective of recalculating cash/voucher transfer values.

It may be necessary to revise which items to include in your monitoring system over time, to match participants’ priorities and evolving market conditions. However, this should be done sparingly to allow for collection and analysis of time series data. This underscores the importance of early and accurate commodity selection.

1.3 Identify existing data sources and contacts

MARKit has been designed to support improvements in agencies’ own price monitoring and analysis, but this should not lead agencies to focus exclusively on their own data. Only collect your own data (*primary data*) if existing price monitoring systems are not available in the selected markets for targeted commodities; they are of poor quality or unreliable; and/or they do not meet your needs. You can save time and money by using existing price monitoring data (*secondary data*) whenever possible. A list of potential sources of secondary and historical data (e.g., countries’ finance ministries, World Food Programme, Famine Early Warning Systems Network, etc.) can be found in *Annex 3: Secondary sources of price data*.

The use of secondary historical data will be particularly important for comparing any price changes with normal price fluctuations (see *Step 3.1 Create a seasonal reference*). Using secondary and historical data can also help to avoid a “data trap,” where so much time is spent collecting and entering data that there is not enough time to analyze it and make timely decisions.

Secondary data sources can fall into two broad categories:

- **Locally accessible**: Secondary sources of data are increasingly available and accessible in many contexts, but may not be immediately accessible outside the given location. The key is coordination. Often this will mean working closely with local or regional government, but also coordinating with other humanitarian, academic or private sector organizations that may monitor prices in your areas of intervention.
- **Globally accessible**: Larger markets may have price data that are readily accessible to anyone with an internet connection. This can be particularly useful for remote monitoring of wholesale and comparison markets outside of the program's immediate area of operations.

It may be helpful to identify sources of market and price analysis, such as Famine Early Warning Systems Network (FEWS NET) price bulletins and World Food Programme (WFP) VAM reports. These reports can be used to triangulate your data and aid its interpretation. Additionally, it is recommended that you compile a list of contacts who can assist you to access secondary data and analyze or troubleshoot results, as needed. These may include government workers in the agriculture and statistics ministries, the local FEWS representative, VAM analyst and Cash Working Group coordinator. Getting in touch with others who collect price data, to learn where, when and for which commodities they are collecting information can help you avoid duplication of effort and make use of available secondary data. There may also be valuable lessons they have learned through their experiences that can be applied in establishing your monitoring system.

Lastly, consider price data that may regularly be collected to inform purchases by other programs or departments within your organization—such as the supply chain or procurement departments.

It is important to review the data to ensure that it is accurate, timely and can be accessed on a regular basis before making the decision to use secondary data. If secondary data is not released until months after being collected, it will not be possible to conduct timely analysis and formulate needed responses. Review the data to ensure the price information provided is reliable and complete, and that the data collection methodology is compatible with the program's. Where possible, cross-check the secondary price data with primary data from the field, or other sources, and consider the following:

- ✓ Whether the varieties of commodities monitored are the same as those identified by the program.
- ✓ The frequency at which the data is collected, as well as the day and time per week or month.
- ✓ The time lag between when the data is collected and when it is shared publicly.
- ✓ The data collection methodology, including the number of data points collected per market visit and per commodity as well as the way in which prices are reported, e.g., whether they are averaged over time or for a particular day, and within a day, and whether the reported price is a mean or mode.
- ✓ The weights and measures used, including whether enumerators weigh the local units and how frequently.
- ✓ Whether the secondary data is collected from retailers, wholesalers or both (this manual recommends only working with ***retail data***).

It is often possible to supplement (e.g., to collect data on additional commodities) or strengthen existing price monitoring systems. Using existing price monitoring systems can itself help to strengthen them: if people know that their data is in demand and being used, they are more likely to collect timely and accurate data. In some situations, it may be appropriate to subcontract the institution that is collecting the secondary data to collect additional primary price data for the program.

1.4 Identify your market monitoring team

MARKit is designed to be led by program managers who have program experience but are not necessarily experts in price analysis. It has been designed to help assess interventions in a straightforward manner. There may be instances, however, when a program manager may come across an anomaly that cannot be explained easily using the steps laid out in this manual; in these cases, it is recommended that they seek out technical assistance from within their organization or from local external sources, such as experts in peer organizations, the Cash Working Group or sectoral coordination groups.

Build a solid market monitoring team. This primarily includes ensuring the team has a strong understanding of the program and of the objectives of market monitoring. Make sure that your market team is gender balanced to ensure access to both male and female traders and customers, when appropriate.

To effectively collect, analyze and apply price monitoring data, the team will need—individually or collectively—the following skill set:

- Familiarity with market concepts and relevant market assessment tools and products, such as the Emergency Market Mapping and Analysis (EMMA) Toolkit, and FEWS NET production and trade flow maps.
- An understanding of local market dynamics and potential bottlenecks along the supply chain.
- Proficiency in Microsoft Excel or other spreadsheet software, including basic database management skills, in order to review and analyze the data. The ability to use interactive data visualization tools (such as in PowerBI and/or other programs) is not a requirement, but is useful.
- The capacity to conduct key informant interviews and to work with local leaders and market actors.
- A good understanding of the infrastructure and logistics of the region, as well as the security dynamics.
- Proficiency in the local language.

Typically, your market monitoring team will be composed of:

- Market monitoring team leader, who can be the program manager
- MEAL coordinator
- Data analyst
- Data collection agents (who can be regular MEAL field agents)
- ICT4D manager, if any

To determine the number of monitors, consider the following:

- The coverage/number of markets being monitored
- The frequency of your monitoring
- The distance between marketplaces
- The method of data collection (remote or in person)
- The number of traders to survey, see *Step 4.1 Select vendors*

To avoid hiring too many additional staff, you may consider identifying focal points in each marketplace: individuals such as market committee members or local leaders who can do the price data collection and send the information to the MARKit team for entry into the price database spreadsheet.

Allocate roles and responsibilities. Make sure you clearly identify who is responsible for each activity (e.g., data collection, entry, analysis, reporting and communication).[5] This may include identifying which activities are done by peer organizations or sub-recipients (e.g., data collection). To make sure that MARKit responsibilities are not considered to be extra work, they should be included in a person's job description or performance plan. A simple table[6] such as the one below can also help.

Table 2: Roles and responsibilities

Activity	Frequency	Person responsible (to make sure it happens)	Participants
Data collection	Monthly	MEAL manager	Market monitors
Data cleaning	Monthly	MEAL manager	Data analyst
Data analysis	Monthly	MEAL manager	Data analyst
Reporting	Monthly	Program manager	MEAL manager
Meeting to discuss the results and recommendations	Quarterly	Program manager	MEAL manager Program officer Market monitors Senior management team

1.5 Make a resource plan

As with any ongoing monitoring and evaluation of programs, there are additional resources required to monitor and analyze prices using MARKit. Those costs can include transportation of staff to markets, costs related to data collection tools, and phone costs.

Put "MARKit/market monitoring" in your Detailed Implementation Plan (DIP). A good way to ensure those resources are considered from the start is to add MARKit-related activities into your DIP and program budget.

5. A RACI matrix can be developed to identify the person(s) responsible, accountable, consulted and informed for each activity. See CaLP's Clarification of roles and responsibilities.

6. In addition to naming the responsible person, the full RACI matrix will also identify the person(s) accountable, consulted and informed for each action.

Consider costs related to the market monitoring team. Depending on the scope and frequency of your market monitoring (more detail in *Step 2.4 Set the market monitoring plan)*, you may need a dedicated team of staff members for market monitoring. This has budget implications in terms of salaries, transportation, communication, etc. Once data collection is well underway and a relationship has been established with a pool of individual traders, it may be possible to collect price information remotely, using mobile phones, directly from traders or with dedicated focal points at each marketplace. These individuals may need incentives to participate, such as a small amount of mobile phone credit to cover their transaction costs.

Plan time for data entry, data cleaning and data analysis. Entering, cleaning and analyzing the price data collected will likely require two to three days per data collection period. For paper-based data collection, you will need a clerk for data entry. If you are using mobile data collection (MDC),[7] the data entry step is skipped but you will still need to factor in ICT technical support for the development or set-up of the system and ongoing support. Do not underestimate the time you will need to develop and/or customize the data collection system or platform. For a long-term intervention, such an upfront investment may prove to be worthwhile over time (See *Step 4.3. Select data collection approach*).

Step 2: Set the scope

The scope of your market monitoring system refers to the:

- Indicators to monitor (i.e. price only or price plus non-price indicators)
- Number of commodities
- Type and number of marketplaces
- Frequency of data collection and analysis

To determine your program's monitoring scope, consider the likelihood of price volatility or market distortion, taking into account the modality or modalities being used. Scope-related decisions should, however, always be context-specific and made using professional judgment.

2.1 Assess the likelihood of market distortion

It is important to understand the probability that an intervention and/or other shocks to the market system will result in price volatility or market distortions that can have a large negative impact on people's lives and livelihoods. Table 3 lists characteristics that indicate a greater or lesser likelihood that a program will result in such market distortion, and Annex 10 discusses each of these risk factors in more detail. While most programs and markets will exhibit characteristics from both columns, it is up to the user to determine the relative importance of each factor, and the aggregate impact on the markets. **In general, programs that are characterized by an overall lower likelihood of negative market impact will need less market monitoring (e.g., fewer commodities, fewer markets, less frequent data collection), while programs with a higher likelihood of market impact will conduct more intensive monitoring.** More specific guidance on how individual risk factors influence the monitoring plan is given below in *Formalize your market monitoring plan*.

7. See, for example, mobile data collection and visualization platforms iFormBuilder, CommCare and magpi, as well as Open Data Kit, a free set of tools that can be customized to your program's needs.

Where it is difficult to determine the likelihood of market impact, due to low familiarity with and experience in market-based programming and/or poor market information, it is recommended that the program consider a higher level of monitoring, at least until market conditions are better understood.

Table 3. Factors indicating the likelihood of market impact

Low likelihood of market impact, requiring narrow market monitoring scope (less monitoring needed)	**High likelihood** of market impact, requiring a broad market monitoring scope (more intensive monitoring recommended)
Small size of the intervention relative to the size of the market (see box below)	Large size of the intervention relative to the size of the market (see box below)
Few interventions in the same geographical area	Multiple interventions in the same geographical area
Stable security situation	Volatile security situation that risks hampering physical access to markets for customers, vendors and/or supply chains
Demand induced by the program is for commodities with low seasonal variations	Demand induced by the program is for commodities with high seasonal variations
Well-integrated marketplaces	Poorly integrated marketplaces
Visible abundance of supply in marketplaces	Uncertain supply in marketplaces
Large number of traders selling commodities for which the program is likely to create an increased demand and/or competitive market dynamics	Small number of traders selling commodities for which the program is likely to create an increased demand and/or concentrated market power by a few traders
For a food security program, target households spend less than 50% of their income on food, in a context where prices are stable	For a food security program, target households spend more than 50%[8] of their income on food, in a context where prices are volatile
Existing market assessment/baseline	No existing market assessment/baseline
Historical price data is available	Historical price data is not available

The relative size of the intervention compared to the size of the market

The larger a potential program (relative to the size of the market), or the more programs planned by various agencies in an area, the greater the likelihood it will cause or be affected by price volatility and market distortion. Issues to consider include the capacity of the market system to meet the volume and diversity of needs, the supply of goods in the market, and trader capacity. **As a rule of thumb, a program would be considered large if:**

- **Participants (*from your program and other agencies combined*) represent more than 20% of the total population using the targeted market(s).** When assessing this factor, be aware of how the "market shed" is defined. For example, if your organization is considering implementing a voucher program in an informal settlement of Nairobi, the 20% rule should be applied to the estimated population of the informal settlement, NOT the entire population of Nairobi. If these same participants would spend cash transfers in supermarkets outside of the informal settlement, the entire population of Nairobi should be considered.
- **The induced demand (*additional demand generated from your program and other agencies combined*) represents more than 10% of normal trade flows in a rural area or 25% in an urban area** (Austen and Chessex 2013). Be sure to consider only the additional demand generated by the program. If the transfers are replacing what an agency previously procured locally for in-kind distributions and/or what participants would otherwise buy with their own resources, the program will not generate additional demand.

8. The World Food Programme has generated a Consolidated Approach for Reporting Indicators of Food Security (CARI), which recommends that if a household's share of expenditure on food is above 50%, it should be classified as food insecure (WFP 2014a). This manual adopts this 50% threshold as its recommendation. Keep in mind, however, that this is only a recommendation.

Modality considerations

Different modalities or combinations of modalities will be appropriate under different circumstances. This is determined during the response analysis stage. Both cash and voucher transfers and in-kind distribution programs can have a significant impact on supply-and-demand levels and prices in the market. You want to avoid having undue impact on market prices (either depressing them through supply of in-kind food aid or elevating them through increased demand brought about through cash or voucher distribution that cannot be met by increased supply).

The modality does not automatically make a program more or less likely to distort markets. Potential price impacts for each modality are presented in the table below.

Table 4: Considerations per modality

	Cash and voucher assistance	In-kind distribution (direct food aid)	Local/regional purchase[9]
Potential impact on price	Price increases if there is not enough supply	Price decreases	Price increases in source market; price decreases in distribution market
Consequences of price impacts	**Short-term** • "Eroded" cash transfer value for direct participants • Reduced access for non-participants	**Short-term** • Improved access for consumers • After harvest, decreased income for producers trying to sell their products **Long-term** • Potential disincentive to local production and undermining of longer-term livelihoods	**Short-term** • Reduced access for people in source market

Cash and vouchers increase demand, and there is a potential risk that supply will not sufficiently increase to meet this. When using cash transfers, households have the choice of buying a variety of commodities and services[10] as well as buying from all traders in different markets. In a voucher program, a household's choice of commodities is restricted, which may result in greater pressure on specific value chains especially if competition in the market is limited. Vouchers often limit the number of potential traders that households can buy from, which reduces the potential supply capacity and market competition. In some cases, vouchers can effectively be used to induce supply of commodities, if vendors know there will be increased demand.

In-kind distribution (direct food aid, whether by transoceanic shipment or local/regional procurement) presents different risks to cash and vouchers. By increasing supply, and often decreasing demand, in-kind aid has the potential to reduce prices in the market. In an immediate crisis, this may be beneficial for households that are reliant on the market for the purchase of key goods. However, the reduced prices can have a negative impact on households that earn their income by producing or selling those commodities, particularly if prices drop below the costs of production and marketing. Lower prices can therefore have a long-term disincentive effect on local production, which may in turn contribute to longer-term food insecurity or difficulty meeting basic needs.

9. Risks of direct distribution using local or regional procurement will be the same in intervention areas as those listed in the direct food aid column.

10. E.g., milling grain into flour, renting agricultural equipment, etc.

2.2 Identify context-specific risk factors

Based on available market information—from market assessments and baselines, past experience and your team's discussion of the likelihood of market distortion as outlined above—brainstorm context-specific risk factors that may affect the prices and availability of your targeted commodities (refer to the list of non-price indicators in Table 6 to facilitate this discussion). For each risk factor you identify, determine whether the risk is widespread or specific to certain markets or commodities; is likely to affect prices frequently, infrequently or seasonally; and whether data to monitor these risks is readily available. Refer to Worksheet 2 for further guidance on how to identify context-specific risk factors. Example risk factors are presented in Table 5.

Table 5: Example analysis of context-specific risk factors

Risk factor	Impact on prices	Severity	Likelihood	Scope
Devaluation of the local currency	Nominal prices will increase	High	Frequent	All commodities in all locations
Fuel prices	Increased transportation costs will increase retail prices	Medium	Infrequent	All commodities in all locations
Poor road conditions	Delayed restocking times, increased transportation costs will increase retail prices	Medium	Seasonal	Imported commodities in some locations
Long lead times (restocking)	Shortages/ruptures in supply can lead to increased costs	High	Frequent	Nonfood items in remote markets

Consider incorporating risk factors that are likely to occur and/or have a high impact on prices into your regular monitoring system to facilitate analysis.

2.3 Choose relevant non-price indicators (optional)

An effective and sustainable monitoring system will focus on the minimum data needed to meet its objectives. Yet, in some instances, price monitoring may need to be complemented by broader market monitoring. In addition to the prices of your selected commodities, you may want to include non-price indicators (NPI). The decision to regularly collect non-price indicators should be driven by two factors:

1. The program has identified risks that are likely to impact prices beyond normal price fluctuations (see section above). In these cases, it may be beneficial to regularly monitor these indicators in order to understand and explain abnormal price changes calculated in Step 6. Examples might include availability/stocks, exchange rates, fuel and transportation prices, access, and government policy.
   and/or
2. Your program seeks to understand market outcomes that may not be captured by changes in prices (e.g., number of traders in the market, trader incomes).

Table 6 provides examples. A rationale of why each of these indicators can prove useful is available in *Annex 6: Table of selected non-price indicators*.

Table 6: Example non-price indicators

NPI monitoring rationale	Risks linked to:	Potential NPIs to consider
Risks materialized	Supply	• Volumes traded/produced per unit of time • Vendors' stock value • Lead time needed to replenish or double the stocks • Number of large, medium or small-size vendors in a particular market • Physical, financial and social access to the market by vendors
	Demand	• Volumes procured per unit of time • Number of consumers per vendor • Amount in average purchase • Physical, financial and social access to the market by customers
	Market integration or segmentation	• Volume of supply received by vendors from the source market • Access to the supply routes
	Market power	• Number of actors • Volume traded per actor • Margins (per trader category)
	Environment	• Investment capacity • Vendors' access to credit (formal or informal) • Storage capacity at vendor and marketplace levels • Number of transporters, price of transportation services and fuel • Regulations (market restrictions – prices fixed) • Tax (import tariffs) • Insurance • Exchange rate (between international currencies and local currency)
Program outcomes are linked to market	N/A	• Income of the vendors targeted by the program • Stock turnover of the vendors targeted by the program • Number of targeted vendors registered with the Chamber of Commerce • Number of targeted vendors selling commodities of a certain quality

Because MARKit focuses on prices, further guidance on how to collect and analyze these indicators is not included here but can be accessed from the CaLP Cash Based Assistance - Programme Quality Toolbox and the Pre-Crisis Market Analysis (PCMA) section on market monitoring.

2.4 Set the market monitoring plan

Setting the market monitoring plan involves determining monitoring frequency, identifying the markets to cover, identifying the acceptable threshold for price changes and, in some cases, planning to monitor non-price indicators. The plan should use as a starting point the commodities you will monitor, as discussed in *Step 1.2 Identify commodities to be monitored*.

While developing your monitoring plan, make sure your market monitoring system is sensitive to gender and other inclusion considerations. For instance, when selecting vendors and key market actors from whom you will collect price data, consider selecting people of different ethnicities and genders. If you are monitoring market access, capture how physical, social and financial access to markets may differ by gender, ethnic group, age or disability status.

Identify markets to monitor

Choosing which markets to monitor requires you to understand a) which marketplaces are accessed by program participants; and b) how the commodities you are tracking move spatially from surplus to deficit markets. Why is the latter important? Markets that are integrated can be analyzed together, because prices in integrated market systems move in the same patterns. A price change that is not reflected across all integrated markets could indicate that something is wrong in that particular market.

Drawing market flow maps can help identify which markets are linked to your intervention markets, and the degree of market integration can be confirmed by doing more in-depth analysis (see Worksheet 1 on market integration), but qualitative maps can suffice in the absence of such information. FEWS NET provides market flow maps in many areas (see Figure 5).[11] You can also create simple market flow maps through consultation with local experts and program stakeholders (see Figure 6). The idea is to understand how commodities flow across markets and which markets are closely connected. Worksheet 3 provides information on creating such market shed maps.

Figure 5. FEWS NET market flow map of rice in Mali

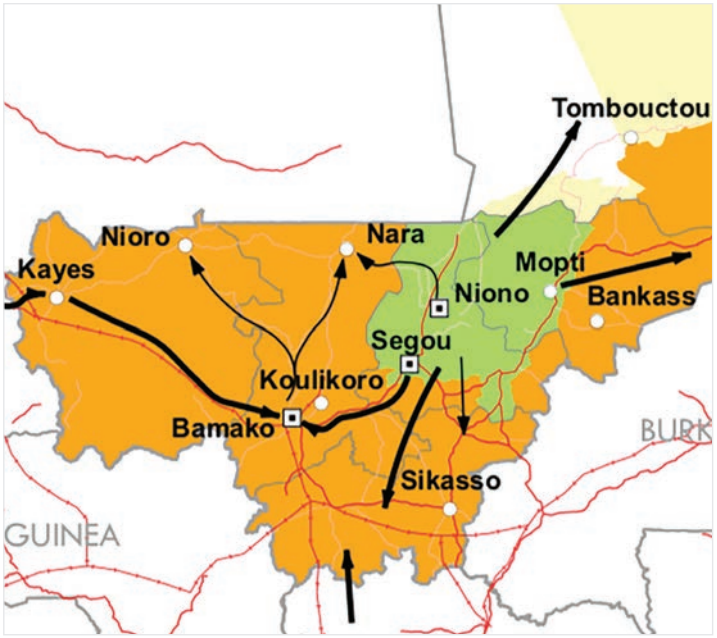
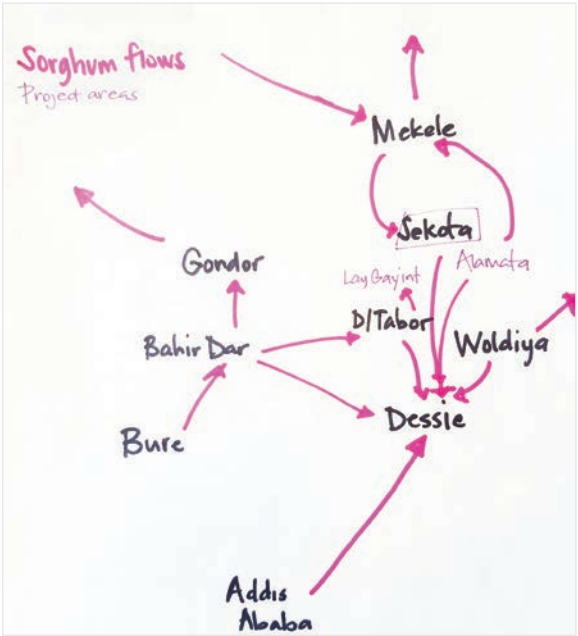


Figure 6. Hand-drawn map of sorghum flows in Ethiopia



Ideally, select groups of markets that are integrated with your intervention markets and can thus be useful for analysis. Potential marketplaces to monitor are detailed below.

11. Information on using FEWS NET Production and Trade Flow Maps for food security analysis and price monitoring is provided in *FEWS NET Markets Guidance, No. 4. Commodity Market Maps and Price Bulletins: Tools for Food Security Analysis and Reporting* (2009). Alternatively, you can refer to the EMMA Toolkit for guidance on how to draw the market maps, and use the IRC market system mapping tool to pull the map together.

Table 7: Overview of potential markets to monitor

Marketplace type	Number of marketplaces to monitor
Intervention markets: These are markets where participants buy their goods and/or access services, or where your procurement department buys goods locally. They are the markets that are most likely to be impacted by the intervention, through direct distribution of commodities, distribution of cash or vouchers, or local procurement. In smaller programs, it may be possible to monitor all intervention markets. In larger programs, identify sentinel markets that are representative of the entire set of intervention markets (e.g., purposively select markets that are urban and rural, remote and well-integrated). To ensure that data is consistently available throughout the duration of the program, prioritize markets with secondary price data or those that are easily accessible.	3–10
Local supply markets: These will be the largest wholesale markets within a district, county, commune or prefecture. This type of market is usually found in the district capital or at a border with another country, and is the primary source of supply for traders in the intervention market. These markets are relevant to setting food prices for the target population. Include in your list of monitored markets the largest/most integrated market to each intervention market that you will monitor. These may be procurement (source) markets for non-competitive procurement.	2–5
Central markets: These are large trade markets through which large volumes of food and/or other commodities pass into the country. In many countries, secondary data will be available for key commodities in these markets. Competitive local and regional procurement will likely take place in these markets. They typically include: • Central consumer market in the capital city • Other central consumer markets in urban centers • Major import/export markets, on the border with or in neighboring countries Central markets are the largest, most significant markets to your program location, and set the trend for food prices in the area. Traditionally, they are also where you find the highest concentration of wholesalers. An obvious central market is the capital city of your program's country, but if your program is near a border, there may be a central market in the neighboring country. Price changes in central markets may be transmitted to markets in the program area depending on how integrated they are (as identified in the market baseline). Secondary data should be readily accessible and remote monitoring feasible. Refer to your market flow maps to see which markets are important in supplying or receiving commodities from your program's intervention markets. *Where secondary data is quickly available for identified commodities and it is possible to replicate the data collection approach elsewhere, use this to save time and resources instead of collecting primary data.*	1–3
Total number of markets to monitor	6–18
The types of markets below are optional, and should be considered based on program design, potential risks and/or monitoring objectives:	
Comparison markets: These should only be considered where it is important to attribute and/or quantify price changes to the intervention. Comparison markets (i.e. control markets) enable practitioners to assess whether a price change in the intervention markets is related to the intervention or is part of a more general market shift. Poorly selected comparison markets may lead to misleading figures that impact the interpretation of price changes. More on comparison markets can be found in *Annex 7: Using comparison markets*.	Up to 3
Downstream markets: These are markets that rely on supplies from intervention markets. These may be impacted if a procurement or distribution of cash or vouchers prevents surplus supplies from leaving the intervention market toward the smaller markets. These should only be monitored in large-scale programs where it is expected that a large intervention could affect the movement of food toward these markets, and there are few or no other source markets.	Up to 2

Check: Is your program likely to be affected by price volatility and market distortion per *Step 2: Set the scope*? Adjust the number of markets accordingly. The box below and *Annex 10: Risk factors* provide additional insight on this.

Example from the field: Determining the number of markets

Through its cash transfer program, CRS in Sierra Leone was initially monitoring 18 intervention markets, and no other markets. Following a MARKit training, the team assessed the program's likelihood of experiencing price volatility or market distortion (Step 2), and they concluded that they did not need as much monitoring. They opted to monitor five intervention markets, one supply market, and one central market.

On the other hand, a program in Cameroon was operating in the volatile and insecure Far North Region. The Cameroon team determined that they needed more intensive monitoring, since risks were very high of supply ruptures and market distortion, and there was no historical price data available. They decided to collect price data in eight intervention markets, three supply markets, two downstream markets, and a central market.

Additional factors to consider when deciding which marketplaces to monitor include the following:

- **The marketplaces your target groups access**. Different marketplaces may be used by different segments of the population. Select marketplaces that your target participants use.
- **The commodities to be monitored**: What is considered a central market or a local supply market may vary depending on the commodities you are monitoring. For example, in Niger, Niamey is a central market for nonfood items but is more of a local supply market for food. Similarly, in Burkina Faso, Pouytenga is a local supply market for nonfood items but can be considered a central market for local cereals.
- **Least-integrated markets:** When selecting the marketplaces from which to collect data, it is important to prioritize those that have been identified as least well-integrated in the market baseline. These marketplaces are likely to experience price changes that differ from those in others. If market integration information is not available, remoteness can be used as a proxy. Marketplaces that are more remote can be assumed to be less well-integrated than those closer to major trading centers and should be prioritized for monitoring. Programs will also need to balance remoteness with feasibility (e.g., longer travel times and/or limited network for remote data collection).
- **Neighboring country**: In border areas, the nearest or most important source market may be in a neighboring country.
- **Safety and security of your team**: The security of your program's staff should be the number one priority in a conflict situation. If visiting markets to monitor prices places staff members at risk, you must first consider their safety and assess whether the prices can be collected by alternative means, such as phone interviews with traders instead of physical visits to the market.

Remember that the number and location of marketplaces selected for monitoring will affect the size and composition of your market monitoring team as well as resources required (see *Step 1.5 Make a resource plan*).

Set the monitoring frequency

Once the locations for price monitoring have been identified, determine the frequency of data collection. For instance, FEWS NET's best practice is to monitor weekly, on the main market day. In most national Market Information Systems (MIS), price data is collected once a week at a minimum even if reported on a monthly basis.

General suggestions: If your program is unlikely to face price volatility or market distortion, per your analysis in *Step: 2 Set the scope*, then monthly data collection might be sufficient. However, if your program *is* likely to face price volatility or market distortion, you might want to monitor weekly or twice a month. If you plan to combine primary and secondary data, collect data at the same frequency as the secondary data so that it is comparable.

Additional monitoring before and after interventions

Where in-kind and/or cash-based interventions have a high risk of distorting markets, consider collecting additional prices in the days before and after the distribution(s). For essential goods such as staple foods, monitor how long it takes for prices to normalize after the intervention. Sustained price hikes can have serious implications on food access for beneficiary and non-beneficiary households.

Additional factors that can affect monitoring frequency are linked to:

- **Distribution frequency:** Short-term or frequent distribution programs may benefit from collecting prices more often. Some programs may also decide to collect price information on the dates leading up to and following procurement or distribution to identify any price fluctuations directly corresponding with the distribution.
- **Program stage:** You may want to conduct more frequent monitoring at the beginning of a program.
- **Frequency of other internal monitoring activities:** It may be useful to align market monitoring with other monitoring, evaluation, accountability and learning (MEAL) activities to reduce the burden on the staff responsible for conducting the market monitoring.
- **Frequency of other organizations' market monitoring:** If using secondary data, aim to replicate the methodologies—including frequency of collection, trader sampling, unit measurement, etc.—of the data source you are using. Not only will it enable you to compare your data with secondary sources, but it will also mean your data is more useful to external partners.
- **Program or organizational capacity:** The objective of price monitoring is to ultimately make recommendations on how the program can adapt to changes in market conditions. Thus, it is better to err on the side of complete, consistent data analysis that can lead to corrective measures, even if that means less frequent data collection due to limited staff capacity.

Create a schedule for regular market monitoring. Determine on which days the data will be collected; ideally it should be done at the same time and on the same day of each week or month. If the main market is a weekly open-air market, the data should be collected on the main market day.

If there is concern that a distribution will affect prices, you may want to collect additional price data before, during and after the distribution (e.g., collect prices daily until they return to the pre-distribution levels). Note that you may not see an immediate change in prices due to the intervention. Be careful to ensure that this additional data does not skew your regular monthly or weekly price data (e.g., do not aggregate data from multiple days into your average monthly price).

Determine the number of price data points

It is recommended that three to five prices are collected per commodity per market.

- If using secondary data, align the number of data points that you collect with the methodology for the secondary data.
- If you are not using secondary data, collect three data points per commodity per market. Consider increasing the number of data points to five if prices are variable within markets and/or your data frequently includes outliers. See *Step 3.3 Set up your database* to review the number of data points required to calculate the unique data point per market using different statistical methods.

Determine the thresholds

Given the complexity of market systems and normal variation in prices, practitioners need a standard (e.g., the seasonal reference) against which to compare "normal" price fluctuations and to identify anomalies. The program should therefore set a threshold for price changes. Thresholds can be different for different commodities (e.g., locally produced crops may have more seasonal variability than imports).

When prices increase or decrease beyond this set figure, the change must be flagged and the causes investigated (see *Step 6: Calculate price changes*). Similarly, it is important to identify and investigate when prices should change (e.g., due to seasonal variation) but do not.

Thresholds can be set using:

- **Historical data:** Look at the variability in the data and how much prices typically vary from one data point to another.
- **Market actors' wisdom:** If there is no historical price data, you can speak to traders, consumers or key informants about normal price variation from month to month or between high and low seasons.

If neither of these are possible, use the following generic thresholds per monitoring frequency. In this case, thresholds should be periodically reviewed, particularly in long-term programs.

- **Monthly**: 30% change from month to month
- **Once every two weeks**: 15% change biweekly
- **Weekly**: 7.5% change from week to week

Formalize your market monitoring plan

Ideally, your market monitoring plan will be incorporated into your regular MEAL plan. Similarly, market indicators should be integrated into your program's overall MEAL framework.

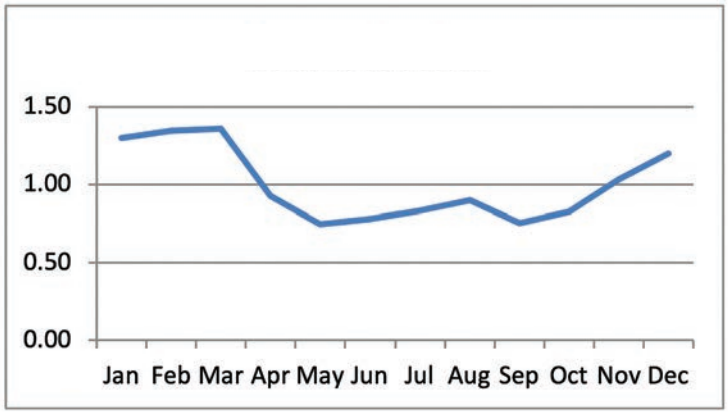
Step 3: Create your tools

3.1 Create a seasonal reference

When conducting price monitoring, it is important to be aware of price fluctuations that are "normal." Seasonality, the systematic movement of prices that repeats itself every 12 months, is a good example. Seasonality can be caused by annual production patterns, weather patterns, celebrations and where food items are grown. Traditionally, food prices increase before a harvest as stocks run low, and then decrease after the harvest when food becomes more readily available in markets. This type of seasonal variation is expected to occur annually and should be accounted for in your program.

Price monitoring can be measured against predicted seasonal changes using a seasonal reference. Different types of seasonal references include the seasonal index and seasonal calendar. Both of these tools enable you to identify, to different degrees, at what time of the year prices are expected to rise or fall, and by how much on average. Keep in mind that different regions of the country may have different seasonal price patterns.

Figure 7. Seasonal index



A seasonal index is the ratio of the average price in a given month, to the overall average annual price. Graphing the seasonal index for each month will show the seasonal pattern of prices for a given commodity. Creating a seasonal index requires a minimum of three years of historical data, and preferably five years (see Worksheet 4). This historical data will be used to compare current prices to historical averages and possibly to a reference year, e.g., a non-crisis time. Understanding how prices are expected to change over the course of a year will help you set the appropriate thresholds in your database, as discussed in the *Determine the thresholds* in Step 2.4. Locally produced food commodities will obviously have seasonal variations that are vital to capture. However, keep in mind that nonfood products may also experience seasonal changes due to supply (e.g., road conditions) and demand (e.g., festivals).

If historical data is not available for your targeted markets and/or commodities, a qualitative seasonal calendar can be used to infer expected price patterns. Seasonal calendars for key food commodities are often available from secondary data, including FEWS NET[12] and FAO. If a seasonal calendar is not available for your commodity and/or geographic location, one should be developed before MARKit implementation. This can be done by talking to market actors, community members and other relevant stakeholders to identify key activities and events (e.g., weather, festivals) that influence the production, movement and consumption of a good or service, as well as general price trends over the course of the year. The EMMA Toolkit (EMMA 2010) provides a useful seasonal calendar template and accompanying instructions.

Using your seasonal calendar and information collected from key stakeholders, plot the expected direction of price change for each month. This step will likely be required for seasonal calendars sourced from the secondary data and those drawn up by program participants.

- Use an up arrow (⇧) to indicate an expected price increase
- Use a down arrow (⇩) to indicate an expected price decrease
- Use a two-directional arrow (⇔) to indicate relatively stable prices from one month to the next

This information will be required to complete the price change analysis presented in Step 6.

Figure 8 is an example of a qualitative commodity-based seasonal calendar, with expected annual price pattern.

Figure 8: Seasonal calendar with qualitative price patterns

Event	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Input purchases												
Main harvest												
Agricultural day labor available												
Flood season												
High prices												
HH consumes own production												
Trade volumes	High	High			Low	Low	Low	Low		High	High	High
Expected price pattern	⇔	⇧	⇔	⇩	⇩	⇩	⇔	⇔	⇔	⇧	⇧	⇧

See Worksheet 4 for more guidance.

12. E.g., FEWS NET seasonal calendars, price bulletins, market fundamentals reports, livelihoods reports (baselines, profiles, descriptions, etc.), and FEWS NET supply and market outlook reports.

3.2 Prepare your data collection tools

It is important to prepare your data collection tools at the start of your program, to ensure consistent data across markets and time. At a minimum, your primary price data collection tool should be set up to record a minimum of three prices per commodity per market (refer to *Determine the number of price data points* in Step 2.4). Each data point should be defined by the following information:

- Date
- Market/location
- Commodity
- Variety or brand, as relevant
- Unit of measurement
- Vendor name (optional)
- Vendor characteristics, e.g., size, sex, shop-based/street vendor (optional)
- For voucher programs: Type of vendor (participating versus non-participating)

A sample collection form is in *Annex 4: MARKit price data collection template.* In this example, prices are recorded against anonymous vendors (i.e. Vendor 1, Vendor 2, Vendor 3). It is also possible to record prices against specific vendors to track these vendors' prices over time.

If you identified additional non-price indicators in Step 2, include in your data collection tool those sourced from vendors (e.g., availability, stock levels, restocking times, etc.). Indicate on the form if this data is collected every time price data is collected or at another frequency (e.g., quarterly).

You may want to include additional questions that will only be asked of the vendor if the price reported differs from the previous price beyond the threshold value. This may prevent the need to return to the market when you are investigating the causes of price changes in Step 7. In this case, market monitors will need to know the previous price in each market and the values that exceed the threshold for change. Example follow-up questions are provided below. Note that these are qualitative and open-ended. Provide space for the enumerator to record vendor responses.

- When did the price rise/fall to this level?
- Is this price change/level normal for this time of year?
- What are the reasons for this price change?
- Is this price consistent with other traders' prices in this market? With nearby markets?
- Do you expect this price level to remain stable in the near future? When do you expect it to go back up/down?

Set up digital data collection, where appropriate

Digital data collection offers the potential to simplify price monitoring by eliminating the need to manually enter prices, and can help increase the speed and quality of data collection. It enables real-time review of the data being collected—even when there is low connectivity[13]—which can also help improve data quality. As seen in *Annex 4: MARKit price data collection template*, market monitors may want to ask vendors questions about price anomalies on the spot to prevent the need to return to the market to check data. With digital data collection, these questions can automatically be prompted on enumerators' tablets when price changes exceed their thresholds.

13. Most data collection software has offline functionality. It only needs an internet connection to sync the data to the database.

On the other hand, digital systems can take longer to set up (from design to testing, and then training enumerators on the technology). It may also be more difficult to capture qualitative information or open-ended questions. Digital data collection may be especially helpful when dealing with a large volume of quantitative data and a long data collection period (Akbari 2016). The MARKit toolkit includes downloadable electronic data collection forms that can be customized to your program.

3.3 Set up your database

One of the most critical steps before data collection begins is to set up the price database in which you will record raw data and conduct the price analyses. Setting up your database well in advance of implementation will make things easier in the future. The MARKit toolkit includes guidance on how to set up and use Excel and PowerBI to manage and display data. However, users may choose to use other software for their MARKit database.

The database should align with the data recorded on your data collection tool, with each row in the database representing a unique data point (defined by columns with the date, market, commodity, vendor, unit of measurement, currency, etc.). Figure 9 shows a screenshot of raw data as viewed in a basic relational database.

Figure 9: Relational database

Date	Source	Commodity	Unit	City	Price per Unit	Currency	Price Per Unit USD
15-Feb-17	Vendor 2	Niebe	Bushel	Simba	W$104.09	WSH	$3.14
15-Feb-17	Vendor 5	Niebe	Bushel	Simba	W$104.09	WSH	$3.14
15-Feb-17	Vendor 1	Niebe	Bushel	Simba	W$105.09	WSH	$3.17
15-Feb-17	Vendor 3	Niebe	Bushel	Simba	W$105.09	WSH	$3.17
15-Feb-17	Vendor 2	Niebe	Bushel	Tembo	W$109.60	WSH	$3.31
15-Feb-17	Vendor 3	Niebe	Bushel	Tembo	W$109.60	WSH	$3.31
15-Feb-17	Vendor 5	Niebe	Bushel	Tembo	W$109.60	WSH	$3.31
15-Feb-17	Vendor 1	Niebe	Bushel	Tembo	W$109.73	WSH	$3.32
15-Feb-17	Vendor 1	Maize	Bushel	Cheetah	W$113.25	WSH	$3.42
15-Feb-17	Vendor 2	Maize	Bushel	Cheetah	W$113.25	WSH	$3.42
15-Feb-17	Vendor 4	Maize	Bushel	Cheetah	W$113.25	WSH	$3.42
15-Feb-17	Vendor 5	Maize	Bushel	Cheetah	W$113.25	WSH	$3.42
15-Feb-17	Vendor 1	Niebe	Bushel	Cheetah	W$113.57	WSH	$3.43
15-Feb-17	Vendor 3	Maize	Bushel	Cheetah	W$113.58	WSH	$3.43
15-Feb-17	Vendor 3	Niebe	Bushel	Cheetah	W$113.74	WSH	$3.44
15-Feb-17	Vendor 5	Niebe	Bushel	Cheetah	W$113.74	WSH	$3.44
15-Feb-17	Vendor 2	Niebe	Bushel	Cheetah	W$114.13	WSH	$3.45
15-Feb-17	Vendor 4	Niebe	Bushel	Cheetah	W$114.24	WSH	$3.45
15-Feb-17	Vendor 2	Niebe	Bushel	Wakanda City	W$115.58	WSH	$3.49

All data should be entered into the database in the form it was collected.[14] Any data conversions (e.g., local unit to U.S. dollars) or aggregation (e.g., calculating a single price from multiple prices per market) should be done in the database, preserving the raw data. The below box outlines the different statistics used to present a single price per commodity per market. Your database should be configured to automatically calculate one or more of these statistics.

14. For price monitoring that uses digital data collection, the collected data should automatically upload to the database.

How to calculate the single price per market

To analyze prices, you first need to decide how you are going to calculate the single price of each commodity in each market. Are you going to use the average, the mode or the median price?

The decision ideally needs to be taken when you set up the database so that you can adjust formulas accordingly. It can be changed during the first round of your market monitoring to better reflect the range of prices.

The different options are listed below, but, as a rule of thumb, follow the way the secondary data is presented. If there is no secondary data to use as a guidance for decision-making, opt for the mode.

Mean price: Calculate the average price of a given commodity in a given marketplace at a certain point in time by adding up the prices of the commodity across vendors in the same market and then dividing by the number of vendors (e.g., if in a marketplace, the collected prices for 1 kg of rice are $1, $1.50, $2, $2, $4 and $10, the average price of 1kg of rice in that marketplace is $3.41).

- Pros: Simple to calculate and explain; it considers every price collected from traders.
- Cons: It is sensitive to outliers, which may give a skewed value.

Median price: Indicates the price in the very middle of a data set (e.g., if in a marketplace the collected prices for 1 kg of rice are $1, $1.50, $3, $4 and $10, the median price of 1kg of rice in that marketplace is $3).

- Pros: Median price is not affected by outliers.
- Cons: The median requires a larger number of data points to converge toward the mean.

Trimmed mean price: Indicates the mean price after removing a small designated percentage of the lower and higher prices for a given market before calculating the mean (e.g., if in a marketplace the collected prices for 1 kg of rice are $1, $1.50, $2, $2, $4 and $10, you remove $1 and $10 and calculate the mean of the remaining prices. Thus the trimmed mean is $2.37).

- Pros: Automatically excludes outliers.
- Cons: Requires a minimum of five data points per marketplace.

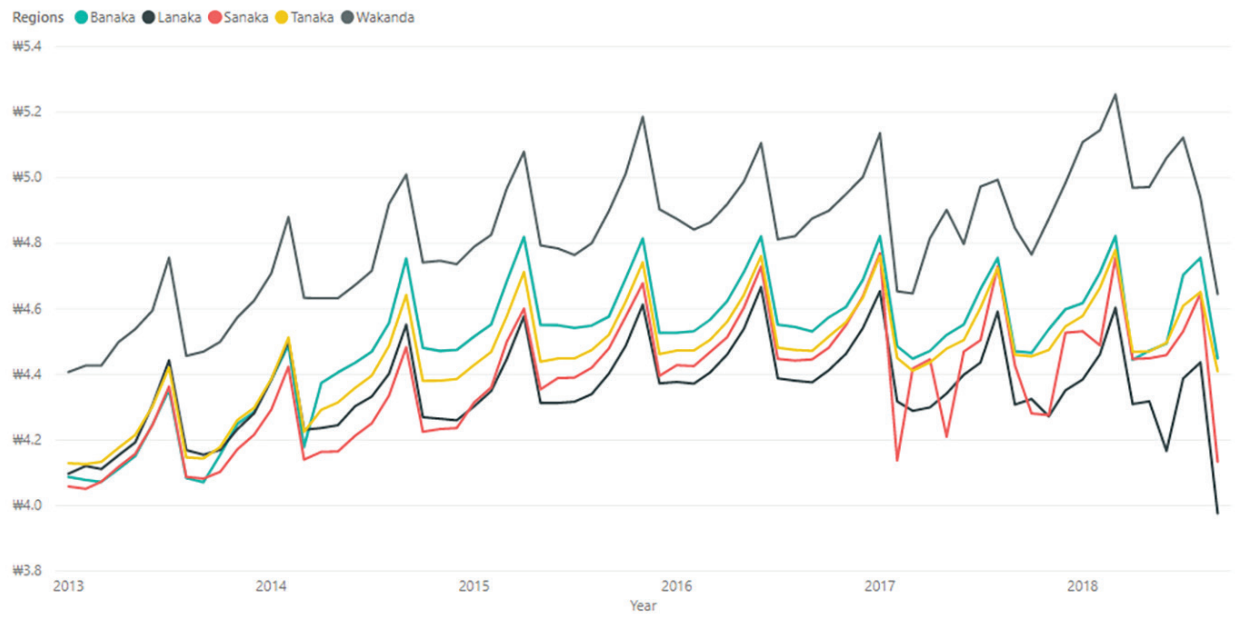
Mode price: In a series of prices, the price that has the highest occurrence is the mode (e.g., if in a marketplace the collected prices for 1 kg of rice are $1, $1.50, $2, $2, $4 and $10, the mode price for that market is $2).

- Pros: It reflects the common practice and automatically excludes outliers.
- Cons: There will not always be a mode in the dataset; it is possible to have more than one mode; if there is a lot of variance, you may need to collect more data points to arrive at a mode.

To conduct the analyses recommended in Step 6, your database or software should be configured to calculate the weekly or monthly percentage change in price by market and commodity, and flag any price rise or fall that exceeds a set threshold level. The data should also be presented in graph form, to show the evolution of a price over time, and comparisons of prices between markets and within markets compared to historical trends.

Figure 10: Sample database table and graph using PowerBI

Commodity	Beans							
City	Cheetah		Pantera		Simba		Tembo	
Year	Median of Price per Unit MoM%	Median Price	Median of Price per Unit MoM%	Median Price	Median of Price per Unit MoM%	Median Price	Median of Price per Unit MoM%	
May	1.10%	₩4.520	0.95%	₩4.478	-5.30%	₩4.210	0.99%	
June	0.71%	₩4.552	0.59%	₩4.505	6.16%	₩4.469	1.32%	
July	2.36%	₩4.660	2.18%	₩4.603	0.78%	₩4.504	0.84%	
August	2.04%	₩4.755	2.65%	₩4.725	4.99%	₩4.729	3.50%	
September	-5.99%	₩4.470	-5.61%	₩4.460	-6.36%	₩4.428	-6.17%	
October	-0.10%	₩4.466	-0.10%	₩4.455	-3.32%	₩4.281	0.40%	
November	1.61%	₩4.538	0.44%	₩4.474	-0.12%	₩4.275	-1.22%	
December	1.34%	₩4.598	1.61%	₩4.546	5.88%	₩4.527	1.86%	
2018								
January	0.41%	₩4.617	0.70%	₩4.578	0.10%	₩4.531	0.76%	
February	2.02%	₩4.710	1.87%	₩4.664	-0.95%	₩4.488	1.75%	
March	2.37%	₩4.822	2.48%	₩4.779	5.95%	₩4.756	3.19%	
April	-7.82%	₩4.444	-6.50%	₩4.469	-6.49%	₩4.447	-6.38%	
May	0.62%	₩4.472	0.04%	₩4.470	0.05%	₩4.449	0.19%	



Depending on your choice of database platforms; experience and skills; and/or access to IT assistance, you can set parameters within database cells to increase data quality. This is not a required step but may reduce errors and time spent cleaning data throughout the program. Examples include:

- Pull-down menus for markets and commodities to ensure consistent spelling
- Acceptable ranges for price data (e.g., values greater than and equal to 0, values between 0 and 100, etc.)
- Required data (i.e. cells must be filled in)

See *Annex 5* for guidance on setting up data quality measures. It is important to pretest your data collection forms, data entry and database/dashboard before you roll out your market monitoring system.

Enter historical data

The database should have the capacity to combine data from primary and secondary data sources. Before starting your data collection, enter historical data and other comparable information, such as the Consumer Price Index[15] (see *Step 1.3 Identify existing data sources and contacts*). Enter historical data that dates back a maximum of five years.

15. The Consumer Price Index (CPI) measures changes in the price level of a market basket of consumer goods and services purchased by households.

Step 4: Visit the marketplace

When it is necessary to collect primary data, this step provides guidance to practitioners on how to select vendors, familiarize themselves with local units of measurement and set up data collection methods, so that data can be collected, entered and analyzed in the next steps.

Collecting primary retail price data requires establishing a relationship with the marketplace authorities and multiple traders within each marketplace. Laying the groundwork by explaining your purpose and building a relationship with your selected traders will make it easier to quickly collect prices throughout the life of the intervention.

If the enumerator is visiting a new marketplace for the first time, it is important to speak to the marketplace authorities and learn the layout of the marketplace before beginning price collection.

- ***Meet with the marketplace authorities***. Explain the objectives of the food assistance intervention and why price collection is important to meet food security objectives and to ensure markets are not adversely affected by the intervention.
- ***Learn the marketplace layout***. Walk the perimeter and main sections of the market to understand its layout, and where each commodity is sold and in what quantities. Ask a local informant, a vendor, market administrator or local staff member who frequents the market for information on where the targeted commodities are most frequently purchased by local buyers.

4.1 Select vendors

If traders are dispersed throughout the marketplace, collect prices from each section. If certain commodities are primarily sold in one section, collect prices from traders in that location. Some marketplaces—especially in rural areas—may be so small that they feature only three or four retailers in total. In those marketplaces, all retailers should be sampled.

When vouchers are used, collect prices from both participating and non-participating vendors.

- Using your preferred sampling methodology,[16] select **three to five traders** (retailers)[17] from the market for each commodity. For voucher programs, select at least three participating and two non-participating vendors, if available. In smaller markets, it is possible that all vendors are included in the voucher program.
- Record whether the trader is a retailer, wholesaler or both. If the trader is only a wholesaler, move on to find one that sells retail since you are only interested in collecting retail prices.
- Contact the same traders every time, if possible, as this will ensure consistency in the prices collected, but watch for trader fatigue. When collecting and recording traders' personal data, it is important to ensure the appropriate data security measures. When collecting sensitive data, make sure that you have received informed consent.

16. For instance, start in the middle of the market, spin a pen, follow direction of the pen, and interview every third retailer.

17. The number of traders (retailers) needed will depend on the number of commodities sold by each. If you are monitoring three commodities, and all of your traders sell all of those commodities, you will only need 3 to 5 traders in total. However, if each trader sells only one commodity, you will need 9 to 15 total traders (3 to 5 for each commodity).

4.2 Identify and measure local units

Retail units of measure may be weight-based (e.g., kilogram) or volume-based (e.g., can or bowl). Identify the retail unit(s) most commonly purchased by the target population for each commodity, keeping in mind that different units may be used for the same commodities across markets. Where relevant, select the unit(s) of measure that align with secondary data. Note the local name(s) of each unit.

To ensure consistency in the data, convert volume-based units into a standard weight (e.g., kilograms), particularly if the local unit's weight changes over time and/or the units of measure vary across markets. The units should be weighed at the beginning of the program. If weights change seasonally (e.g., due to decreased moisture content), reweigh the local units every six months. Always use your own scale to measure commodities, not the trader's scale. If possible, weigh the units at the market and in front of the trader, to help explain the purpose of the activity and increase transparency. However, where this can damage or inhibit relationships with vendors, purchase the units and then weigh them outside of the market. Establishing good relationships with traders may enable you to weigh units without purchasing them in the future.

For each commodity, weigh three local units from different vendors in each marketplace. Be sure to first tare (weigh the empty container), subtract the weight from the total, and zero the scale between each measurement. Record the average weight for each unit, per marketplace, in your database to convert raw prices to the standard weights. If vendors change their unit(s) of sale, weigh the new unit(s). Be sure that prices collected for commodities using new measures are converted to the correct standard weights.

4.3 Select data collection approach

There are two broad techniques for primary data collection; choose the method that is most appropriate considering feasibility, timeliness, data quality and appropriateness.

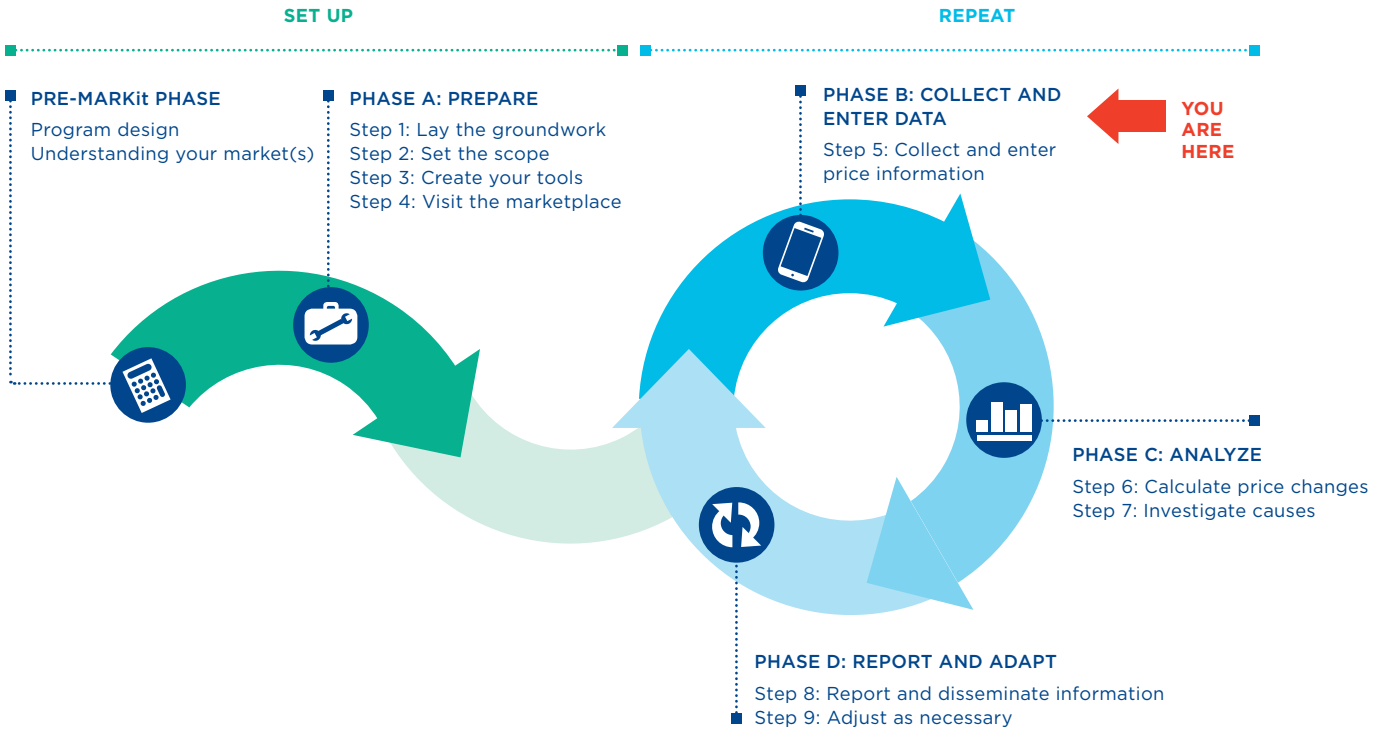
i. **Field-based data collection**: Enumerators can be project staff whose full-time job is to collect monitoring data, or they may combine data collection with other responsibilities. Enumerators may also be subcontracted individuals, companies or partner organizations. Field-based data may be recorded on paper or electronically using mobile data collection.

ii. **Remote data collection**: With increasing mobile phone coverage in many countries, it is feasible to use remote data collection techniques. This can be as simple as a telephone interview to collect price data from pre-identified traders, or using a network of volunteers or committee members, rather than sending project staff out to collect the data in person. Another option is to identify a focal-point person at each market who can remotely send in the price data using a mobile phone once the local units have been weighed and the vendors selected. In that instance, the SMS system should be in a language that is well understood by all participants. The focal point should be a trusted individual (a market committee member or a local leader) who can be relied upon to regularly and accurately report the prices needed. They may need to be compensated with a small amount of mobile phone credit as an incentive to do the work. Requirements in terms of why, where, when and from whom to collect prices should be clear for the focal point.

    This can reduce the need to visit the market in person, but you should still do regular ad hoc spot checks in the field to ensure the validity of the data. Another way to ensure the rigor of the data collected remotely is to have more than one person per marketplace sending in data independently.

Phase B: Collect and Enter Data

Figure 11: Overview of MARKit showing Phase B



Step 5: Collect and enter price information

5.1 Enter secondary data for each commodity

Enter into your database comparable historical data for the commodities you will monitor, as available (see *Step 1.3 Identify existing data sources and contacts*).

Secondary data that is not directly comparable to your primary data (e.g., different methodologies, varieties) can often still be used qualitatively to inform your understanding of market functionality and price patterns over time.

Collating secondary and primary data for analysis

Being able to use secondary data for some of your analysis can save time, but be careful to combine your secondary and primary data in the correct way. Common pitfalls when collating and comparing secondary and primary data include:

- Comparing retail prices in one market and wholesale prices in another
- Comparing raw commodity prices with prices of processed products
- Failing to convert prices into a common currency and common units of measure so that they are expressed identically (e.g., US$/metric ton)
- Using different frequency data (e.g., monthly from one market and weekly from another) without matching up the periods correctly
- Failing to clarify whether prices are day-specific observations or period averages

Always check your secondary and primary data to be sure you are combining them correctly.

Also make sure you have well-defined sample commodity reference sheets to be consistent in how your program collects data over time.

Source: Lentz 2011

5.2 Collect primary price data as needed

Where secondary data does not exist, collect primary price data for each commodity.

- If a trader sells several of the targeted commodities, collect prices for each of these. Ask the trader specifically for prices for the predetermined standard retail unit. Record the price data for the retail unit. If relevant, convert prices to the standardized unit of measurement, such as kilograms, only when you are back in the office rather than in the field.
- It may be necessary to interview more than three traders in each market if traders do not sell the full set of monitored commodities. Do not collect prices for goods that are not currently in stock. When collecting prices remotely, first ask the trader if they have the commodity in stock. If they do, record the price. If they don't, do not record the price; instead identify an alternative vendor.
- If using the mode to analyze prices, you may need to collect more than three prices to achieve it.

If a trader from whom you have been collecting data no longer has a targeted commodity in stock, ask them why to understand potential bottlenecks in the supply chain. If the stock rupture is temporary, continue collecting prices from this trader after stocks are restored. If the trader stops selling this commodity or the rupture persists, identify a replacement trader.

For primary data collection, the enumerator should bring the following materials:

- The commodity reference sheet or a clear understanding of the quantity and quality of data required for each commodity.
- Data collection sheets or mobile collection devices.
- Some cash for buying commodities (*traders may not allow an enumerator to weigh products without purchase*).
- A produce scale for weighing commodities (if relevant, see *Step 4.2. Identify and measure local units*).

5.3 Review the quality of the primary data

The best place to review price information is in the market itself, while it is still possible to verify outliers and relatively easy to correct mistakes. When using digital data collection, this can be done automatically when enumerators are still in the marketplace. Before leaving the market:

- Ensure there are no missing values.
- Check to see whether commodity prices are relatively consistent for a specific trader type and market.
- Investigate when a single per-unit price (within each trader type and commodity) is two or three times larger or smaller than other prices.
- Record each indicated price and not the average price. The range of prices for a given commodity is going to be more informative than the average. Record prices in the local currency for the local unit. Converting to a common currency and unit should be done back in the office.

Keep in mind the difference between the true price and the indicated price. Price monitoring usually collects the indicated price (i.e. the one buyers pay without negotiation). The true price is the one buyers pay after negotiation. It may be useful to triangulate price data collected at the retailer level with prices a household reports to have paid for a given commodity, to know the difference between true and indicated prices; this will help you make a more refined conclusion on the transfer value, for example.

5.4 Enter primary data (for paper-based systems only)

Note: This step is only relevant to paper-based data collection, as it occurs automatically when using a digital system.

Enter all raw data into the database. Take special care to enter data correctly and avoid mistakes. Have someone else spot-check the data entry. After raw data has been entered, convert the data into a standard currency and unit (e.g., franc per kilogram). These conversions should be calculated automatically in the database and should not displace the raw data.

Initial data cleaning should start to take place during data entry:

- Check for missing values.
- Enter prices into the appropriate spreadsheet or database.
- Verify outliers. Having one entry that is significantly lower or higher than the others can signal that there has been an error.
  - If this happens, make sure that the price was correctly converted from local units into the standard unit of measurement.
  - If that does not resolve the issue, speak with market actors to check the price was recorded correctly. You may need to talk with traders to understand the reason for the price anomaly.
  - Remove any outliers that cannot be verified.

Ensure the data you collected is safely stored and only shared or transferred in an anonymized fashion. For more information on data security measures, visit the Electronic Cash Transfer Learning Action Network (ELAN).[18] If you consistently collect data from the same traders, informed consent needs to be collected only once.

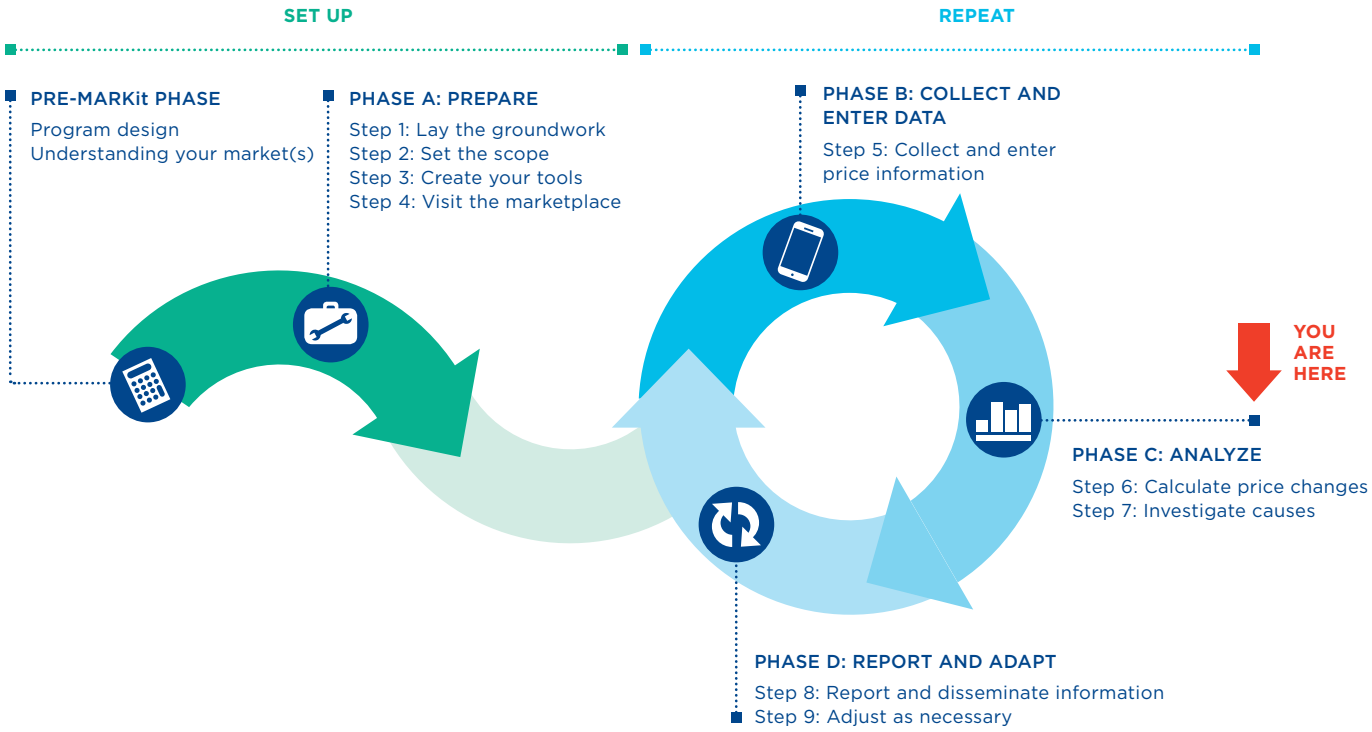
5.5 Review data and conduct final clean

Data should be reviewed a second time by the program manager after it has been entered into the central database. This is the final opportunity to verify unusual numbers (outliers) with enumerators and try to fill in missing data. Common errors occur when transcribing data into the spreadsheet and during conversion from local units into standard units. Any outliers that are not explained by entry error should be investigated by calling an informant at the associated marketplace to verify the information and probe for possible reasons behind the anomaly. If this is not possible, then the data should be removed from the database. Try to arrange for any missing data to be collected if possible (e.g., remotely by calling vendors) or leave the fields blank.

18. Although specifically for cash-related data, the data security principles are also applicable to sensitive market monitoring data.

Phase C: Analyze

Figure 12: Overview of MARKit showing Phase C



Monitoring market prices and then **acting** on the analysis of collected data helps to ensure that target participants can access the commodities they need, and that market conditions are not negatively affected by the intervention.

This phase of MARKit provides guidance on how to conduct an initial analysis of price data to calculate and characterize price changes (Step 6), before determining the factors driving the change and their relative importance (Step 7).

Step 6: Calculate price changes

6.1 Identify abnormal price variation

To identify price variation, several analyses of the database should be done. Analyses are done by commodity for each market.

Analysis 1: In the database, highlight price changes exceeding the set threshold

When is this analysis recommended? Regularly. This is to be done each time a row of price data is added to the database.

Why this analysis? This analysis indicates whether the most recently entered prices—per commodity per market—have increased or decreased beyond the predetermined threshold level(s). A percentage price change beyond the threshold level does not necessarily indicate a problem with the market. However, it does prompt an investigation into the price change, as described in Step 7. If an expected price change (e.g., due to seasonality) did not happen, this analysis would not be sensitive to it (see Analysis 2).

How do I do this analysis? This analysis consists of two basic steps:

1. As described in *Step 3.3 Set up your database*, configure your database to automatically flag price changes that exceed your predetermined threshold level(s). If you are not using a preconfigured database, use the following equation to determine the percentage change of each price relative to the previous data point:

   $$\% \text{ price change} = (\text{Price}_{new} - \text{Price}_{old}) / \text{Price}_{old} \times 100$$

2. Take note of any price changes that exceed the threshold relative to the previous point. Refer to your market flow maps in *Identify markets to monitor* in Step 2.4 to understand which of the markets experiencing price changes are integrated with each other, for each commodity. Are all affected markets integrated with each other, or do they represent disparate market systems?

See Figure 13 below for an example of Analysis 1, which highlights prices that exceed the set threshold relative to previous prices. In this example, the price of wheat exceeds the threshold in two of the markets in the most recent time period.

Figure 13: Snapshot of a price database with above-threshold monthly price changes highlighted

Commodity	Wheat							
City	Cheetah		Pantera		Simba		Tembo	
Year	Percent price change	Median Price	Percent price change	Median Price	Percent price change	Median Price	Percent price change	
May	1.10%	₩4.520	0.95%	₩4.478	-5.30%	₩4.210	0.99%	
June	0.71%	₩4.552	0.59%	₩4.505	6.16%	₩4.469	1.32%	
July	2.36%	₩4.660	2.18%	₩4.603	0.78%	₩4.504	0.84%	
August	2.04%	₩4.755	2.65%	₩4.725	4.99%	₩4.729	3.50%	
September	-5.99%	₩4.470	-5.61%	₩4.460	-6.36%	₩4.428	-6.17%	
October	-0.10%	₩4.466	-0.10%	₩4.455	-3.32%	₩4.281	0.40%	
November	1.61%	₩4.538	0.44%	₩4.474	-0.12%	₩4.275	-1.22%	
December	1.34%	₩4.598	1.61%	₩4.546	5.88%	₩4.527	1.86%	
2018								
January	0.41%	₩4.617	0.70%	₩4.578	0.10%	₩4.531	0.76%	
February	2.02%	₩4.710	1.87%	₩4.664	-0.95%	₩4.488	1.75%	
March	2.37%	₩4.822	2.48%	₩4.779	5.95%	₩4.756	3.19%	
April	-7.82%	₩4.444	-6.50%	₩4.469	-6.49%	₩4.447	-6.38%	
May	0.62%	₩4.472	0.04%	₩4.470	0.05%	₩4.449	0.19%	
June	0.50%	₩4.494	0.58%	₩4.496	0.22%	₩4.459	-3.50%	

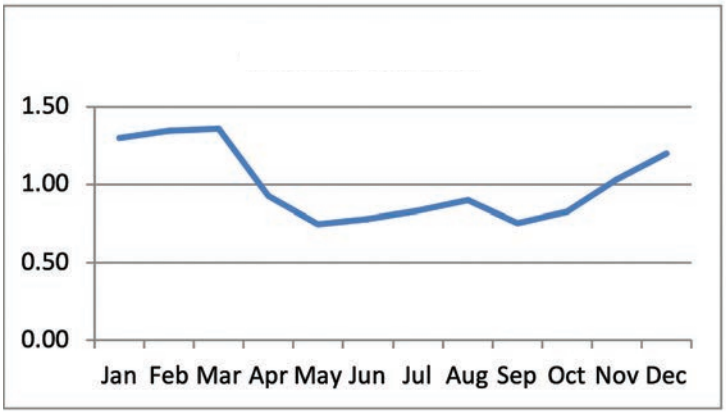
Analysis 2: Compare recent price changes against seasonal price index and/or calendar

When is this analysis recommended? Regularly. This analysis is recommended each time prices are collected and entered into the system, during each analysis cycle.

Why this analysis? This analysis indicates whether a normal (expected) seasonal price change per commodity per market did not occur, e.g., maize prices did not decrease at the start of the harvest, in June, as anticipated. This may happen, for example, due to a lower-than-normal harvest, supply chain disruptions between surplus and deficit regions, and/or increased demand due to the program.

How do I do this analysis? If you have historical data, refer to the seasonal index that was calculated under Step 3 and Worksheet 4. It may be possible to use a seasonal index calculated for a nearby source market, for a rough indication of seasonal trends.

Figure 14: Seasonal index



In this example, prices decreased relatively sharply between March and May, reflecting the harvest. When analyzing prices in May, check whether the prices in your database show a corresponding drop. Take note of any markets in which commodity prices did not change as expected due to seasonality

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Index	1.30	1.34	1.36	0.93	0.74	0.78	0.83	0.90	0.75	0.83	1.03	1.20

Where historical data and a seasonal index do not exist, consult the seasonal calendar created in Step 3.

Figure 15: Seasonal calendar

Event	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Input purchases												
Main harvest												
Agricultural day labor available												
Flood season												
High prices												
HH consumes own production												
Trade volumes	High	High			Low	Low	Low	Low		High	High	High
Expected price pattern	⇔	⇧	⇔	⇩	⇩	⇩	⇔	⇔	⇔	⇧	⇧	⇧

Look at the column for the month in which you are doing your analysis. If the price pattern is expected to decrease (due to harvest, decreased demand, etc.), confirm that this is reflected in your price data. If not, highlight the commodity by market combination(s) that did not change as expected compared to your seasonal calendar.

As you did for Analysis 1, refer to your commodity flow maps in *Identify markets to monitor* in Step 2.4 to understand which of the markets that did not experience an expected price change are integrated with each other, for each commodity. Are all affected markets integrated with each other, or do they represent disparate market systems?

Analysis 3: Compare the current nominal monthly prices[19] of a commodity or basket to its monthly price during the last three to five years

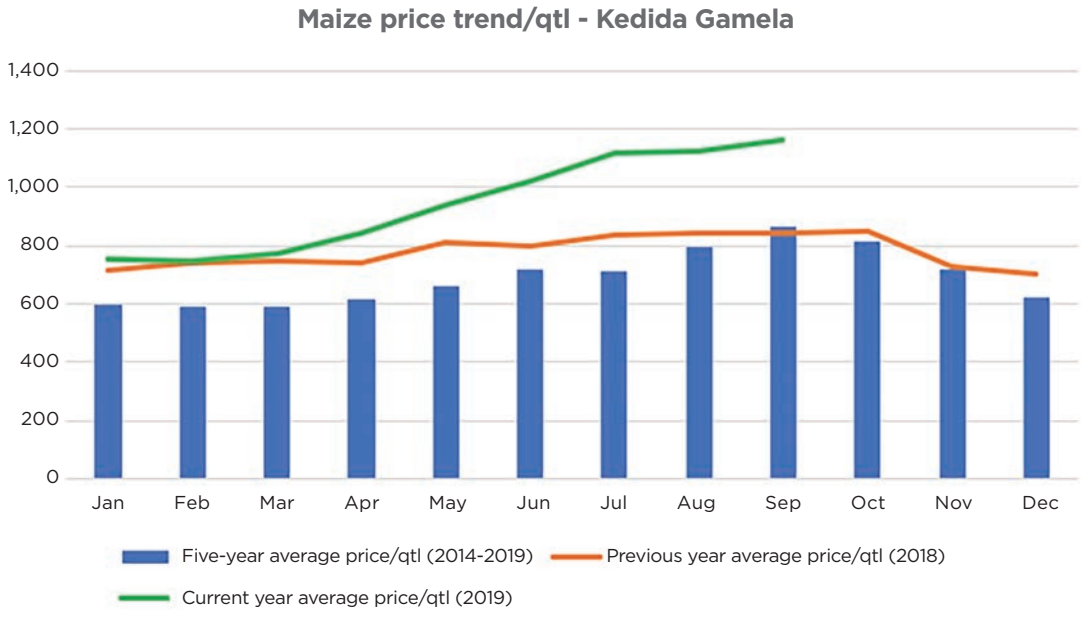
When is this analysis recommended? Regularly, as a quick graphical check. Do this analysis if you have multiple years of historical price data (preferably a minimum of three years), and if you suspect that incremental price changes (over several weeks/months) have led to a current price significantly higher or lower than the historical average for the same period.

If historical data is not available for your intervention markets, it is possible to compare price trends in your markets against those for a nearby source market with which they are closely integrated (see Analysis 4).

Why this analysis? The set thresholds may never be breached but prices may increase (or decrease) steadily just below the threshold, still having significant implications for the target population. Simple price graphs showing a commodity's price evolution relative to historical averages can reveal such incremental, but significant, changes.

How do I do this analysis? Using historical data, average the monthly or weekly prices over the last three to five years for a single commodity in a given market. Graph the current price trends against the historical average. Compare the prices of the recent several weeks or months against the average historical price trend. See if the current price has exceeded the price change threshold over the average price for this period. Highlight the graph(s) in which the current data point differs from the average price by more than the threshold value.

Figure 16: Example of current prices compared to historical average and previous year



Interpretation: While following the normal seasonal trend, prices in the current year increased at a steeper rate starting in May. By September, they were significantly higher than the five-year average and the previous year's prices for that month, even though the monthly price changes never exceeded the threshold level. In this case, the cumulative impact of price increases over several months should trigger an investigation.

19. Nominal price is one that has not been adjusted for inflation.

Commodity or basket prices within the intervention markets can also be **compared to a reference year with similar conditions**, such as a major drought. This can provide valuable insights on the scale of food security impacts, future price trends, and the relative scale of the crisis and its impact on markets. Chart the current prices of a key commodity alongside the prices for the same commodity in a year with similar conditions. Reviewing reference year prices can help to explain current price trends, to program price trends into the future, and to predict likely food security outcomes (FEWS NET 2009b).

Given the difficulty of obtaining historical data for small marketplaces, it may be sufficient to understand how price trends in nearby sentinel markets have changed from their historical monthly averages. Historical averages for sentinel markets can be calculated using Excel or automatically using the WFP food price tool, where prices are available.

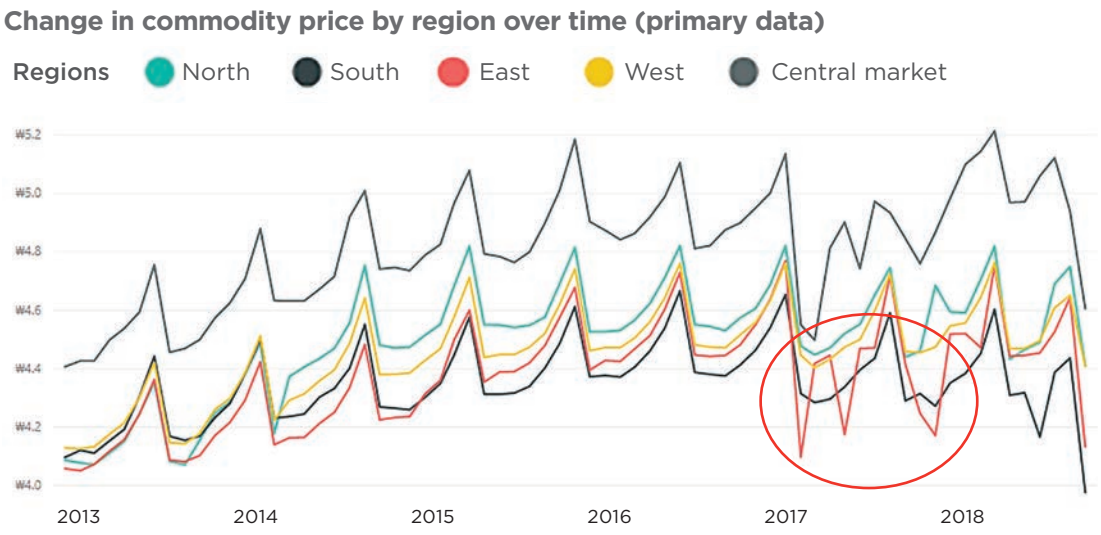
Analysis 4: Compare monthly commodity prices in each intervention market with those in the regional source market

When should I do this analysis? As needed. Do this analysis when the results of Analyses 1 and 2 differ substantially from price patterns you expected to observe, and if you don't have sufficient historical data for Analysis 3. Do this analysis only for the commodities or markets that appear abnormal.

Why this analysis? This analysis will ultimately help you identify which markets and supply chains are facing anomalies. Is the problem in all markets or just a few? How widespread is the price anomaly? Are all affected markets integrated with each other or do they represent disparate market systems? This information will help you determine the cause(s) of the anomaly in Step 7. A graph can also show anomalies that are below the threshold level.

How do I do this analysis? Filter the data to show only intervention markets and the source markets with which they are integrated. Compare prices of each commodity across all integrated intervention and source markets. For each commodity, note if the price in one or more of the markets differs substantially from what is expected, relative to the other markets. See an example below.

Figure 17: Graph of bean prices across (normally) integrated markets



Interpretation: The five markets presented in this graph (four intervention markets and one source market) are normally well-integrated, with prices moving in similar directions. In 2017, prices in one of the intervention markets (represented by the red line) diverged from the normal trend in several months. These unexpected prices should be investigated in real time. Normal price patterns resumed in 2018.

Keep in mind that integrated markets do not necessarily exhibit the same or similar absolute prices. Rather, the difference between prices in two integrated markets will remain constant over time, i.e., the prices move in a similar pattern.

Teams that want to expand their analysis can also use graphs to compare prices between intervention and comparison markets, using a similar methodology as outlined above. More information can be found in *Annex 7: Using comparison markets.*

Analysis 5: If you are using vouchers, compare monthly prices between participating and non-participating vendors

When is this analysis recommended? Only as needed. Do this analysis if you are using vouchers, and if not all vendors selling the targeted commodities are participating in the program. The analysis should be conducted as frequently as the data is collected.

Why this analysis? Voucher programs can distort prices by limiting the vendors with whom participants can exchange their vouchers, thereby reducing market competition. This may create opportunities for participating vendors to charge voucher participants more than they charge customers paying cash. In some cases, these price increases may reflect legitimate costs to the vendor of participating in the program (e.g., increased transportation costs for fairs), while in other cases, the vendor is taking advantage of their increased market power created by the program. In both cases, price differences between participating and non-participating vendors should be investigated and measures taken to protect participants' purchasing power, as appropriate. Additionally, collecting prices from non-participating vendors creates opportunities for staff or enumerators to dialogue with this group and understand how they may be affected positively or negatively by the intervention.

How do I do this analysis? In your database, you can calculate the average prices of a given commodity as sold by participating and non-participating vendors. For example, if participating vendors are selling maize for $8/kg, and non-participating vendors are selling maize for $5/kg, participating vendors are charging 60% more for the same product. Table 8 provides a more detailed example.

Table 8: Comparison of participating vendors and open market prices

Commodity	Participating vendors			Non-participating vendors			Vendors' price variation
	Min.	Max.	Mean	Min.	Max.	Mean	
Rice	30	35	32	25	25	25	28%
Maize	20	30	23	20	25	23	0%
Beans	50	60	53	50	50	50	6%
Wheat	23	28	25	20	20	20	25%

Interpretation: Prices of maize and beans sold by both participating and non-participating vendors are within normal ranges, but prices for rice and wheat among participating vendors are 28% and 25% higher than non-participating vendors, respectively. These higher prices warrant investigation to find out the underlying cause(s) and take appropriate actions.

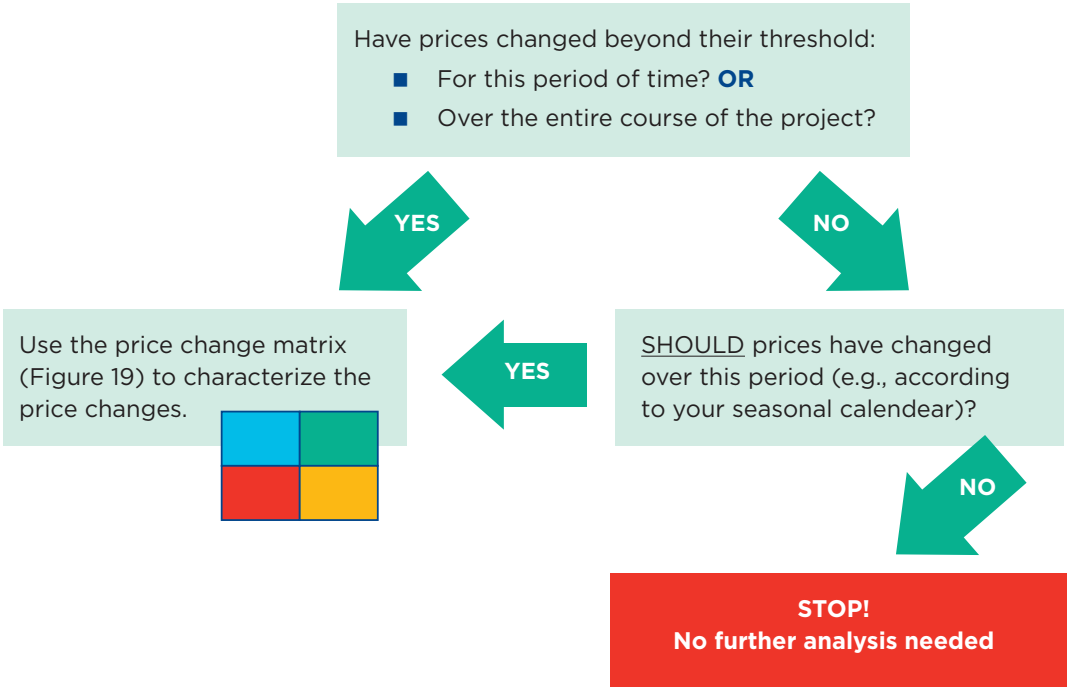
Determine abnormal price changes

How can you know if a price change you are seeing needs further analysis? To determine whether an abnormal price change occurred, consider the following:

- Whether prices changed beyond the threshold for this period of time (determined by looking at the database, Analysis 1).
- Whether prices did not change but should have, according to the seasonal calendar (Analysis 2) and historical average/reference year graph (Analysis 3).
- Whether prices changed beyond the threshold over the course of multiple months/periods (Analysis 3).
- Whether a price changed differently than expected relative to prices in markets it is typically integrated with (Analysis 4).

These steps are captured in the decision tree below.

Figure 18: Decision tree demonstrating whether further analysis is needed



If there are no abnormal price changes, no further analysis is needed. Jump to *Step 8: Report and disseminate information.*

When prices have increased beyond the threshold level or have not changed when you expected them to (from your seasonal index), further analysis to characterize the price change will be necessary.

6.2 Characterize price changes

Based on this initial analysis, it is possible to characterize price changes. Looking at your price monitoring dataset and graphs, note whether abnormal price changes are occurring for one or a few commodities or many or all commodities. Also note whether the changes are in just one or a few markets or in many or all markets.

Select the quadrant in the matrix below that best characterizes your price changes. For example, if there are unexpected price changes in just one commodity and one marketplace, this would be the blue quadrant. If all commodities are exhibiting changes across all or most marketplaces, this would be the orange quadrant.

Figure 19: Price-change characterization matrix

	One/few commodities	Many/all commodities
One/few markets	• Seasonality • Local supply shocks • Local demand shocks • Trader capacity/actions • Intervention	• Seasonality • Local supply shocks • Local demand shocks • Trader capacity/actions • Intervention
Many/all markets	• Seasonality • Widespread supply shocks • Widespread demand shocks • Global food prices • Policies	• Seasonality • Inflation • Exchange rates • Fuel prices • Widespread supply shocks • Widespread demand shocks • Policies

Once you have determined what quadrant you are in, you can limit the investigation to the factors associated with that quadrant. In *Step 7: Investigate causes*, you will be guided through investigating each of the potential drivers to seek out the root causes and to consider the implications for your program.

Step 7: Investigate causes

7.1 Investigate potential influences

The characterization of price changes done in the previous step will help to narrow down the potential contributing factors. It is possible that multiple factors affect prices at a time, making it difficult to determine the degree of price change that can be attributed to each. This is OK. The key is to understand why abnormal prices occur, how long they might be sustained, and when and how to implement appropriate adaptations. Prices alone may not be sufficient to identify the contributing factors. Do not hesitate to complement your quantitative analysis with key informant interviews with traders, trade unions or chambers of commerce, that can help determine the reasons for any price discrepancies. In addition, local newspapers and other sources of secondary data like OCHA can provide information on what is happening in markets.

Potential causes of price fluctuations are:

1. Intervention
2. Seasonality
3. Supply shocks (local or widespread)
4. Demand shocks
5. Lack of trader capacity/competition
6. Global food prices
7. Policies
8. Inflation
9. Exchange rates
10. Fuel prices

Note: *The intervention is only one of many factors that might be causing price changes. It is important to look at* ***all*** *possible causes and assess whether they will last before deciding whether changes to the program are needed.*

Assessing whether the price change is a 'blip' and prices will return to normal quickly or whether the change is likely to last is just as important, if not more so, than determining the cause of the change. When examining each of the possible causes of your observed price change, also estimate how long it is expected to last. If the problem will correct itself in a short period of time without requiring any changes to your intervention, it would be a waste of resources to try to alter your program. Whether and how your program needs to change will be addressed in *Step 9: Adjust as necessary*.

In this step, you will investigate what is causing any irregular price changes observed. The factors you will need to focus on have been listed in the matrix above.

Intervention

The program intervention may cause price changes in a few or all commodities, but this will usually be limited to changes in just one or a few markets.

What is it? Your intervention may take a variety of forms. It may involve in-kind distribution, cash transfers and/or vouchers. You may also be doing local or regional procurement.

Why is it a factor? The intervention can affect food prices differently depending on the type of assistance.

- **In-kind distributions**: Risk of decreased prices in intervention markets if supplies increase relative to demand.
- **Cash and vouchers**: Risk of price spikes in distribution markets if demand increases relative to supply. However, the risk of price impacts with cash is less than with vouchers since purchases are likely to be distributed across more items/services, markets and vendors, etc.
- **Vouchers**: In some cases, higher prices for goods and services purchased with vouchers may be due to additional costs incurred by vendors participating in the voucher program compared to their usual market transactions (e.g., in dedicated fairs). More often, relatively higher prices for vouchers are due to decreased competition because of restrictions on where vouchers can be used and/or collusion fueled by insufficient information and bargaining power on the part of the implementing organization and/or participants.
- **Local procurement**: Risk of price spikes in the procurement market(s) if supplies are insufficient to meet demand, or the purchase diverts surpluses that would otherwise go to markets in need of supplies.

Analysis needed:

Type of analysis	Analysis	Data requirements
Quantitative?	• Compare price changes against intervention calendar • Compare prices in intervention markets to comparison markets, if available	• Price series in intervention or procurement and comparison markets • Marketplace monitoring schedule
Qualitative	• Key informant interviews with traders, participants and/or local partners/staff[20] (see Worksheet 5)	• Local informants

How do you know this factor is contributing to the price change(s) you have observed? If the price changes occur in step with the intervention (e.g., prices go up immediately after vouchers are distributed or fall after in-kind distributions) and/or are specific to intervention markets and markets closely integrated with intervention markets, it appears likely that the intervention is affecting prices. Differences in price movements between intervention and comparison markets may indicate an intervention effect. Key informants may also describe ways in which they believe the intervention has impacted prices. It is important to still rule out other external market factors that may be occurring at the same time as your intervention.

Seasonality

What is it? Seasonality is defined as the systematic movement of prices that repeats itself every year, due to annual production or weather patterns. Some crops may have similar seasonal price patterns, while others differ based on where they are grown, the time of year they are grown and the length of the planting season. Nonfood commodities can also have seasonal price patterns depending on the demand (e.g., festivals causing prices hikes) or on the supply (e.g., rainy or winter season cutting off supply routes).

Why is it a factor? Prices tend to increase before a harvest, as stocks run low, and to decrease after the harvest, when food is readily available in the market. In integrated markets, food will move from surplus to deficit markets. In poorly integrated markets, high yields may flood the market with locally produced food, reducing prices and the real incomes of local producers if they are unable to hold off selling until after the harvest.

Some seasonal variation is normal, and historical data can be used to calculate a seasonal index (Step 3) against which to measure current prices. Using the seasonal index, it is possible to see whether current price increases or decreases are within normal ranges. If prices are changing beyond what is expected, additional factors may be contributing to the increase or decrease.

20. Conducting interviews with local partners and staff can enable you to capitalize on local knowledge that already exists within your team.

Analysis needed:

Type of analysis	Analysis	Data needed
Quantitative	• Compare to graph of historical prices (see Figure 7 for an example)	• Historical price series • Current prices • Seasonal indices
Qualitative	• Compare prices to seasonal calendar (see Worksheet 4)	• Current prices • Seasonal calendar

How do you know this is influencing the price change(s) you have observed?
Using the seasonal indices and/or seasonal calendars that were created in *Step 3.1 Create a seasonal reference*, you can compare the current prices. If the price changes are following the same pattern as in previous years, then the changes are likely to be attributable to seasonality. Seasonal effects may be compounded by other factors, including the intervention, supply shocks, etc. Other factors from the relevant quadrant should be investigated, however, to rule out other causes.

Supply shocks

What are they? Supply shocks result from changes in production levels (due to weather, access to inputs, etc.) and/or disruption to the movement of goods along the supply chain (due to conflict, changes in supply routes, infrastructure damage, lack of access to transportation, changes in the number of market actors, low/decreased capacity of traders, etc.). Distributing in-kind goods from outside can lead to a supply shock, flooding the market with additional goods. Cash, vouchers and local procurement tend to lead more to demand shocks, as discussed below. Supply shocks can be local, regional or national, and they can affect a particular commodity or many commodities. *Note: Supply shocks caused by policy changes will be addressed separately.*

Why are they a factor? Whenever the amount of supply in a market changes disproportionately to demand, prices can be affected. In well-integrated markets, imbalances in supply and demand are quickly corrected, as the resulting price changes send a signal for goods to move from surplus to deficit areas. In poorly integrated markets, price changes do not immediately result in the movement of goods, resulting in prolonged supply and price effects.

Analysis needed:[21]

Type of analysis	Analysis	Data requirements
Qualitative	• Refer to baseline market system map for possible interruptions • Conduct key informant interviews (see Worksheet 5 for guidance) with traders, and local partners/staff to inform the creation of a market map to look at supply flows and possible interruptions	• Baseline market information • Local informants • Secondary reports • News reports

How do you know this is influencing the price change(s) you have observed?
If there have been obvious interruptions to supply flows or clear responses from key informants identifying supply shocks as the reason behind your identified prices changes, then it will be fairly clear that supply shocks are a causal factor. This should not be the end of your analysis, however. In order to recommend appropriate actions, it is important to understand the specific causes of the supply shocks (e.g., production failures). Keep in mind that supply shocks may not be the only factor affecting prices, so it is important to also look at the other possible factors in the quadrant you have identified.

Demand shocks

What are they? Demand shocks are sudden increases or decreases in the demand for goods, which can be caused by a variety of events. They can be caused by increased regional or global demand; decreased access to markets; conflict; decreased demand due to lost income/livelihoods or large-scale in-kind distributions; increased demand due to localized crop failure, increased prices of substitute commodities, or holidays; and changes in population size due to displacement and/or migration. It might even be possible that demand shocks are caused by irrationality in pricing, for example, due to rumors of impending shortages or hoarding. Cash and vouchers can also create demand shocks, for example, due to the increased purchasing power of participants. Local procurement can also lead to a shock as it will increase the demand for certain items. Demand shocks can be local, regional or national, and can affect a particular commodity or many commodities. *Note: Demand shocks caused by policy changes will be addressed separately.*

Why are they a factor? Changes in demand can affect prices just as changes in supply do. Increased demand (e.g., as a result of migration into an area) can cause prices to rise because traders may not be able to meet the demand immediately. Similarly, decreased demand can cause prices to fall. Demand shocks affect households' abilities to access food and can have harmful impacts on food security in an area.

21. It is possible to use historical data to look for changes in price transmission between surplus and deficit markets following an identified supply shock. However, further guidance on this is beyond the feasible scope of this manual.

Analysis needed: Same as supply shocks (see *Supply shocks* above). Focus group discussions with participants can also be a good information source, e.g., to determine household-level changes in demand (to triangulate with information from traders).

How do you know this is influencing the price change(s) you have observed?
As with supply shocks, it is important to understand the specific cause(s) of the demand shock to determine appropriate actions. Identifying any demand shocks should enable you to attribute observed price changes to such shocks. Key informant interviews are important to verify such assumptions. Keep in mind that there may be other causes contributing to the price changes, and it is probably not possible to know exactly how much of the change is caused by any one factor.

Lack of trader capacity/competition

Market structure and/or traders influence price changes in one or many commodities, but the price changes will usually be limited to one or a few markets (not many or all markets).

What is it? This category includes actions by traders and market actors that arise from poor competition or low/decreased capacity of traders.

- **Lack of competition** Competition is part of market structure and can be defined as rivalry in the marketplace. In competitive markets, buyers and sellers have a real choice between alternative market actors. In noncompetitive markets, traders may independently or collusively increase prices to capture high profit margins. Lack of competition can result from voucher schemes.
- **Lack of trader capacity** Capacity may be affected by a natural or human-made crisis, lack of access to credit and/or capital, lack of access to market information, etc.

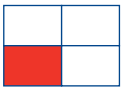
Why is it a factor? If competition is low in a market (i.e., there is a limited number of traders and high barriers to entry), there is an opportunity for traders with greater market power to fix prices or control the supply of products, affecting households' ability to buy food. If traders are operating at a low capacity, they may not be able to supply the amounts needed by the consumers, and prices may also rise.

Analysis needed:

Type of analysis	Analysis	Data requirements
Qualitative	• Construct an EMMA-like market system map (see Step 6 of the EMMA Toolkit* for guidance)	• Market assessment / baseline information • Secondary reports • News reports
Qualitative	• Speak to key informants (e.g., traders, and local partners/staff) about the impact of global prices on local commodities (see Worksheet 5 for guidance)	• Local informants

* The map needed for MARKit does not have to be as detailed as described in EMMA, but the general principles should be followed.

How do you know this is an influence on price change(s) you have observed? Market system maps highlight bottlenecks in the supply chain, including those associated with the types and numbers of market actors and their relative capacities. In-depth discussions with key informants are critical for determining whether lack of trader capacity and/or actions have affected the prices in your intervention area. As cautioned above, there may be additional factors at play, so looking at other possible factors is very important.



Global commodity prices

Price changes may result from changes in global commodity prices and will typically only be seen in one or a few commodities but will likely be present in many or all markets.

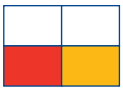
What are they? Global commodity prices (or world prices) are the sale prices of different commodities from major exporting countries. They are often reported as "FOB Origin," or the price to purchase at the port of origin, exclusive of freight charges (e.g., FOB US Gulf).

Why are they a factor? Few countries are entirely food self-sufficient, and many rely heavily on food imports. If the prices of commodities increase or decrease globally—due to droughts or other weather phenomena in major producing countries—then local prices may be affected.

Analysis needed:

Type of analysis	Analysis	Data requirements
Quantitative	• Plot a graph and compare global and local commodity prices (see Worksheet 6 for guidance) • Evaluate changes in the FAO food price indices	• Global historical price series • Local price series • FAO food price indices
Qualitative	• Speak to key informants about the impact of global prices on local commodities (see Worksheet 5 for guidance)	• Local price series

How do you know this is an influence on the price change(s) you have observed? If your program is observing price changes in commodities that are experiencing global price changes, at least a portion of these can be attributed to the global market. Be sure to investigate other factors to see whether other causes may also be contributing to the price change.



Policies

Policies may be behind price changes in one or a few commodities, in many or all markets.

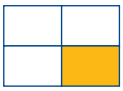
What are they? Food policies affect commodities in different ways, and may be either formal or informal. Relevant policies to consider are those that affect the behaviors of food market actors, including consumers, producers and traders. Formal policies include import restrictions; price ceilings; price floors; grain reserves; export bans; export bans in neighboring countries; import bans in neighboring countries; subsidies; and taxes along the market chain. Examples of informal policies are informal or black market taxes, or restrictions imposed by an armed group.

Why are they a factor? Policies may affect food market actors locally, regionally or nationally and may affect a particular commodity or many commodities. Policy outcomes are dependent on their implementation and enforcement, transparency and consistency. Policies may affect prices directly (e.g., price ceilings) or indirectly, through changes to supply and/or demand (e.g., export bans). All policies have the potential to affect household food access and market functioning, in both positive and negative ways.

Analysis needed:

Type of analysis	Analysis	Data requirements
Qualitative	• Key Informant interviews with government representatives, review of the policy documents themselves, news articles • Key informant interviews with chambers of commerce, trade unions and large traders to understand the impacts of the policy on trade	• Local informants • Secondary reports

How do you know this is an influence on the price change(s) you have observed?
This factor is hard to measure in specific terms, but key informants and news reports should give an idea of whether policies are having an effect on prices. Be sure to also investigate other factors, to rule out any other possible causes.



Inflation

Inflation will typically affect many or all commodities across many or all markets within a country.

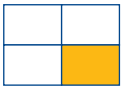
What is it? Inflation is an overall rise in the prices of goods and services in an economy, due to a decrease in the buying power of money. It is rare for inflation to occur in one region without a localized shock. Inflation may be specific to food prices or more general, and inflation rates may vary by commodity.

Why is it a factor? If inflation is rising in the country, the prices of food commodities will increase. Higher prices reduce the buying power of participants and non-participants, making them less food secure. By calculating real prices, you will be able to determine whether the price changes in your monitoring data can be attributed to inflation.

Analysis needed:

Type of analysis	Analysis	Data requirements
Quantitative	• Calculate real prices (see Worksheet 7 for guidance)	• Historical price data (ideally multiple years' worth) • Corresponding CPI at national level
Qualitative	• Speak to key informants (market committees, large wholesalers, chambers of commerce, university economic staff) about inflation rates. See Worksheet 5 for guidance.	• Local informants

How do you know this is an influence on the price change(s) you have observed?
The Consumer Price Index (CPI) measures changes in the price level of a market basket of consumer goods and services purchased by households. A rise in the CPI indicates the country is experiencing inflation. Worksheet 7 is about inflation.



Exchange rates

If you are observing price changes in all commodities and in all markets, the cause might be currency exchange rates, although imported goods may be more affected by exchange rates than local products.

What are they? Exchange rates are the value of one country's currency in relation to another currency.

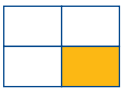
Why is it a factor? If the value of the national currency falls, it becomes more expensive to buy imported goods.

Analysis needed:

Type of analysis	Analysis	Data requirements
Quantitative	• Convert local prices to U.S. dollars or euros (see Worksheet 8 for guidance)	• Exchange rates for an international currency (U.S. dollars, euros)
Qualitative	• Speak to key informants (local vendors, market committees) about changes in exchange rates. See Worksheet 5 for guidance.	• Local informants

How do you know this is an influence on the price change(s) you have observed?

If, after converting to a more stable currency such as U.S dollars or euros, the price graph appears more stable, it is likely that currency exchange rates have been affecting local prices. Other factors should also be investigated in case they are further causing price changes. See *Worksheet 8*.



Fuel prices

Transportation costs and/or fuel prices may be a factor if price changes are seen in many or all commodities and many or all markets.

What are they? The cost of goods in a marketplace includes the cost of transportation to get those goods from the producer to the consumer. Fuel prices, therefore, play a part in determining the price of commodities.

Why are they a factor? Increased fuel prices or changes in fuel subsidy policies can cause food prices to rise due to the higher cost of transporting commodities. Fuel prices will typically affect all markets within a country, although local price hikes are possible. Locally produced commodities may be less affected than commodities with longer supply chains.

Analysis needed:

Type of analysis	Analysis	Data requirements
Quantitative	• Plot a graph of fuel prices along with commodity prices (see Worksheet 9 for guidance) • Plot the ratio of food to fuel prices	• Fuel price time series • Historical price data
Qualitative	• Speak to key informants (market actors, NGO staff, others) about changes in fuel prices. See Worksheet 5 for guidance.	• Local informants

How do you know this is an influence on the price change(s) you have observed? Following Worksheet 9, if you plot a graph showing both fuel prices and the prices of the commodity(ies) that you are investigating and see that the lines follow similar trends, this is an indicator that fuel prices are at least partially responsible for the price changes you observed. As always, other influences should also be investigated.

7.2 Determine applicable influences

Based on the outcomes of the relevant analyses, you should be able to determine which factors likely contribute to the irregular price changes. It will likely not be possible to say with great certainty that the price change is attributable to a single factor. It will also be very difficult to quantify how much of the price change was caused by Factor A and how much by Factor B. The goal is to know which factors are contributing, even if you cannot quantify the exact contribution. To do so in a systematic manner, you can use the below table.

Table 9: Potential influence checklist

Factors	Relevant Y/N	Why?
Intervention		
Seasonality		
Supply shocks		
Demand shocks		
Lack of trader capacity/competition		
Global commodity prices		
Policies		
Inflation		
Exchange rates		
Fuel prices		

This will be important for deciding how to move forward and whether you need to look at non-price indicators and potentially adapt your program. That process is further described in *Step 9: Adjust as necessary.*

Phase D: Report and Adapt

Figure 20: Overview of MARKit showing Phase D

This phase provides guidance on communicating key findings to relevant stakeholders (Step 8), and devising appropriate actions in response to irregular price changes (Step 9).

Step 8: Report and disseminate information

Whether or not your price monitoring has identified abnormal price changes, it is important to ensure that key findings can be communicated in a clear, simple and accessible way. This can help to bridge the gap between programs, partners, operations, humanitarian clusters, donors and country leadership, and ensure that findings are used to inform programming.

Sharing key information in a short report (of less than five pages) on a monthly basis helps to increase the likelihood that stakeholders will review it. This report can also be a useful tool when advocating for program adjustments to senior management and donors. An example report outline is in *Annex 8: Sample price monitoring report.*

Monthly checklist

- ✓ Analyze price data
- ✓ Write a short report (can also be twice a month)
- ✓ Hold a meeting to present the results to leadership and discuss potential adjustment (quarterly; can be every six months for long-term programs)
- ✓ Share lessons and findings with external actors

It is also important to communicate issues to peer organizations and other stakeholders as soon as they are identified. These organizations may want to adjust their own programs and/or can offer input into your mitigation strategies/adjustments. Between organizations, findings and lessons learned can be disseminated through learning groups such as in-country clusters, cash working groups, FEWS NET, other NGOs, the United Nations or government forums. These groups can help to facilitate the sharing of raw price data, analyses and reports across organizations and other stakeholders to avoid the duplication of efforts.

As further discussed in *Step 9.4 Ensure accountability*, reporting/sharing should happen again after any adjustments have been implemented for continued learning.

Step 9: Adjust as necessary

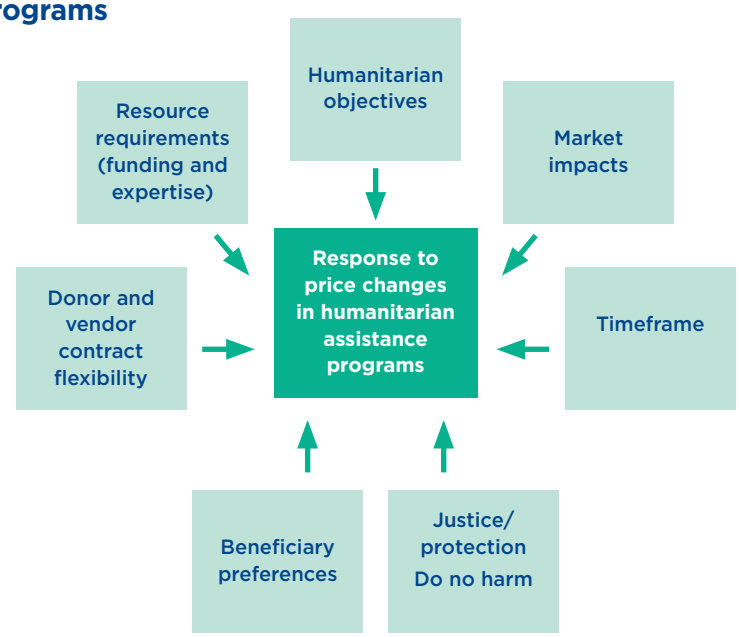
9.1 Hold cross-divisional meetings

After completing *Step 7: Investigate causes*, you should have a better understanding of the market dynamics causing the price fluctuation. You are now better positioned to decide whether you need to make any adjustments to your program, to respond to changing market conditions. Hold cross-divisional meetings to determine necessary program adjustments by exploring:

- The severity and duration of the price change.
- The impact of the price change on participants and non-participants.
- The risk that continuing the intervention will further exacerbate the price change.
- What other organizations in the same area are doing or planning to do.

Market concerns are not the only factor influencing program response and adaptations. You must also consider the program's objectives, donor and vendor flexibility, resource availability to implement the recommended change, and the program timeframe. Peace, justice and protection issues may also be factors to consider. When determining your response, all of these must be taken into account.

Figure 21: Factors influencing response to unintended impacts in humanitarian assistance programs



9.2 Determine the necessary response

As mentioned at the beginning of *Step 7: Investigate causes*, your analysis should try to determine whether the price changes you have observed are expected to be lasting and have negative consequences for your participants (and others), or whether they are temporary and will quickly return to normal.

Review the severity and expected future impacts of the price changes. If they are significant and sustained, you may need to adjust your program to mitigate the impact on local markets and participants. Levels of adjustment can be classified as:

- **No adjustments to the current program, but gather lessons learned for follow-on programs**
  - New information is discovered during implementation, but does not warrant immediate change,
  - Programmatic flexibility is limited, and/or
  - Findings are identified after program implementation.

  Regardless of the timing and programmatic flexibility, learning from systematic price monitoring and analysis can be disseminated and included in manuals and best practice documents to inform the design of future interventions. These findings and recommendations should also be shared with the broader development and/or humanitarian communities.

- **Minor adjustments to the program**
  - Intervention is causing minor market distortion, and/or
  - Conditions have changed in minor ways.

  This case requires adjustments to the current intervention, such as increasing the number of distributions/transfers for a specific period (e.g., two voucher distributions per month instead of one); increasing the number of vendors in a voucher program; changing the number of participants served per distribution/transfer (e.g., reducing the number of participants reached by each cash transfer); or removing or replacing some commodities in the program.

- **Drastic adjustments needed**
  - Intervention is directly causing changes in market prices, and/or
  - Conditions have drastically changed.

  In this case it may be necessary to change the transfer modality (i.e. switch from vouchers to cash, or from cash to in-kind distributions), or to make drastic adjustments to the numbers of participants reached, geographic locations, or quantity or type of commodities distributed. This kind of change is likely to require permission from the donor and renegotiation of contracts.

Taking into account the many factors that must be considered to adapt programs once implementation has started, it is often easiest to start with the lowest impact adjustments, requiring few additional resources and causing limited disruption to the implementation plan.

Adjustments to avoid price changes or to respond to factors other than price changes

Keep in mind that price changes are not the only reason that transfer programs will need to be adjusted. Many other scenarios may play out that require programs to be adaptable and flexible.

In an LRP program, for example, a shortage of one commodity may require the program to opt for a substitute to **avoid** causing price increases. This might require recalling one tender and issuing a revised one or shifting to new procurement markets. In a voucher program, for example, you may find that you are **not affecting prices**, but small traders that do not participate in the program are negatively affected. Registering more vendors and/or switching to cash may increase benefits for market actors and beneficiaries.

This toolkit has focused on how to monitor and adapt to price changes, but a broad view of the programmatic context should be maintained. *Annex 6: Table of selected non-price indicators* includes brief guidance on non-price factors that may necessitate a program adjustment.

Table 10 below outlines a range of scenarios that may require a programmatic response. For each, possible program adjustments, associated requirements to make the adjustment(s) and the desired outcomes are outlined.

A few notes for reading the table:

- The table is organized in line with the contributing factors discussed in *Step 7: Investigate causes.*
- Rows highlighted in orange may be linked to your intervention. Rows without highlighting are scenarios in which external factors are affecting prices.

Table 10: Possible price change scenarios and corresponding adjustments for food assistance programs

Current modality	Scenario	Possible response	Implementation requirements	Desired outcome and expected results of continued monitoring
1. Intervention				
Your program's intervention may be linked to, or exacerbate, certain scenarios listed below (highlighted in orange) as a result of other contributing factors (trader capacity, for example). This is not an exhaustive list of the possible ways in which your intervention may affect prices.				
2. Seasonality				
Cash or vouchers	**Price spikes** linked to seasonal/ lean season food shortages are identified.	• Switch from cash or vouchers to local or regional purchase or in-kind distribution. • Increase the frequency of your cash or voucher distribution to spread the demand over time.	Donor flexibility, rapid access to prepositioned food supplies or food in less affected markets.	Distributing food purchased in unaffected areas of the country or region, or transoceanic food assistance for the affected commodity should help bring prices back down to pre-shortage levels. Continue monitoring to know whether price levels have returned to normal or near normal.
Local/ regional purchase or in-kind (transoceanic purchase) distribution	**Prices of key staples have declined** due to a bumper harvest, and food security outcomes have temporarily improved for many participants, including the most vulnerable.	• Postpone the distribution. • Consider shifting to cash or vouchers.	Donor flexibility and production/market understanding.	The decision to postpone LRP/in-kind distribution should be made when inserting more food into a market could cause prices to drop further, thereby affecting agricultural producers. Continue monitoring prices to assess whether participants are able to meet minimum consumption requirements and to assess if/when to resume distribution.
3. Local supply shock				
Vouchers	Conflict/roadblocks in a neighboring country lead to **price spikes** of a single imported commodity; a substitute is available in the local market.	• Adjust commodity specifications on vouchers to allow participants to access the local substitute. • Shift to cash to enable people more flexibility in purchasing.	Appropriate substitute, communication with vendors, funding to reprint vouchers, adding substitute to data collection plan.	Expanding the range of commodities included in the voucher should help regulate prices. If the substitute was not included in your original monitoring plan, include it now. Monitor to make sure prices of the commodity in shortage normalize.
Cash or vouchers	Conflict/roadblocks in a neighboring country lead to **price spikes** of a single imported commodity; a substitute is NOT available in the local market.	• Consider procuring and directly distributing the key commodity, while continuing to provide vouchers/ cash (at a reduced amount) for other products.	Supply chain / procurement of the rare commodity, communication with vendors, funding to reprint vouchers.	Direct distribution should help normalize prices. Monitor to make sure prices of the commodity in shortage normalize.

Current modality	Scenario	Possible response	Implementation requirements	Desired outcome and expected results of continued monitoring
Cash or vouchers	Conflict/roadblocks in the main market town lead to **price spikes** for all commodities.	• Discuss with traders what the best options are; possible support to traders to source products from a different market. • Consider procuring and directly distributing items temporarily. • Advocate for security along roads.	Additional funding may be needed; supply chain/ procurement of commodities; communication with vendors; funding to reprint vouchers.	Working with traders to identify a solution to the bottleneck should help bring prices of the affected commodity back to previous levels. Continued monitoring should confirm the return to previous price levels.
4. Local demand shock				
Cash or vouchers	An emergency in one area has caused people to migrate to the intervention area, and **food prices are rising** due to increased demand.	• Work with traders to help increase their capacity to supply adequate trade volumes. • Increase the number of traders involved (voucher program). • If prices continue to rise steeply, consider an in-kind top-up.	Support to traders, understanding of trade flows, additional funding and donor flexibility (if grants to traders are necessary). Supply chain pipeline (if procurement and distribution are necessary).	Assisting traders to bring in additional volumes should help meet the increased demand. Continue price monitoring to ensure that prices come down to near pre-crisis levels. Mixed modality (in-kind plus cash/ vouchers) may help mitigate prices. Continue price monitoring to ensure that prices come down to near pre-crisis levels.
5. Lack of trader capacity/competition				
Cash or vouchers	Traders were not aware of or didn't trust the volume of demand that a first distribution would create, and do not hold enough stock; thus **price spikes** resulted from the intervention.	• Communicate with traders to help them prepare adequately for the next distribution. • Choose traders that have sufficient capital and credit to increase their demand, for initial distributions. • Consider supporting traders with cash grants so they can increase their stocks. • Increase the frequency of your cash or voucher distribution to spread the demand over time.	Time, access to traders, donor flexibility if grants will be made to traders.	Building the capacity of traders should help them prepare for expected increases in demand brought by cash/voucher distributions. Continued monitoring should show smaller or no increases in prices following distributions.

Current modality	Scenario	Possible response	Implementation requirements	Desired outcome and expected results of continued monitoring
Vouchers	**Price spikes** coincide with voucher distributions, since participating traders collude and raise prices.	• Remove colluding traders from the program, or ensure collusion is addressed in trader contracts. • Advertise for additional traders to provide participants with more options of where to redeem vouchers. • Consider introducing price ceilings. • Consider inviting traders from other markets or areas (fairs only).	Time to establish contracts with additional traders. Knowledge of contracting language to prohibit collusion.	An increased number of traders should help distribute increased demand caused by voucher distribution more evenly among traders. Continued monitoring should show smaller or no increases in prices following distributions.
Cash or vouchers	**Price spikes** coincide with distribution due to bottleneck in the supply chain caused by a slow reduction in vendor numbers or capacity due to security.	• Discuss with traders what the cause of their reduced capacity is, and what the best options are, considering the security risks. This may involve grants or loans to traders; transport subsidies; advocacy for improved security conditions. • In extreme security cases, consider staggering distributions to enable vendors to stock up (yet beware not to transfer the risks to participants); lengthening the redemption period for vouchers. • Depending on where the risks lie: choose in consultation with participants a more discrete delivery mechanism, or shift to in-kind distributions from a site that is close by.	Additional funding may be needed; market expertise to design response.	Working with traders and communities to identify a solution to the bottleneck should help bring prices of the affected commodity back to previous levels. Continued monitoring should confirm the return to previous price levels.
6. Global food prices				
Cash or vouchers	Food **prices of key staples are increasing** due to an increase in global food prices, and more cash is required for participants to meet their food needs.	• Increase allocation so participant households are able to meet minimum needs.	Additional funding, market assessment to mitigate risk to non-participants.	Increasing the allocation will help participants to continue buying an adequate amount of food. Continue monitoring prices to adjust allocation again if prices continue to rise, or to decrease the allocation if prices come back down. If prices continue to rise, consider the impact on non-participants and whether increasing the size of the participant population is necessary. Reassess program impact, especially related to trade flows) if increasing number of participants.

Current modality	Scenario	Possible response	Implementation requirements	Desired outcome and expected results of continued monitoring
7. Policies				
Cash or vouchers	A national-level import ban has caused **prices of a staple food to rise** because traders can no longer import that commodity.	• Consider widening the range of commodities available in a voucher program to include substitutes for the commodity affected by the ban. In a cash program, ensure that substitute commodities are available in the marketplaces.	Communication with participating vendors; reprinting of vouchers. Add substitute. commodities to price monitoring database if not yet included.	Ensure that participants are able to meet basic food needs with the cash or voucher amount being distributed. Continue monitoring prices (including those of substitute commodities being consumed) to decide whether further adjustments are needed.
In-kind (transoceanic or regional purchase) distribution	A national export ban on the staple commodity being distributed is causing **prices to fall**.	• Postpone the distribution; consider switching to LRP, cash or vouchers.	Donor flexibility; alternate plans if commodity is already in transit or in country.	Injecting more of the commodity into the market will cause prices to fall even further, negatively affecting producers. Continue monitoring prices and consider national-level advocacy with policymakers to lift export ban.
8. Inflation and 9. Exchange rates				
Cash or vouchers	Country is experiencing hyperinflation, causing **prices of all commodities to rise**. Intervention is not causing any changes in prices.	• Tie amount of voucher/cash allocation to a steady currency (such as US dollar or euro) (if hyperinflation is continuing). • Shift to commodity voucher so the costs of inflation are carried by the organizations, not the participants. • Consider increasing allocation so participant households are able to meet minimum needs (if inflation has stabilized).	Donor flexibility and market understanding. Additional funding, market assessment to mitigate risk to non-participants.	Linking the allocation to the exchange rate will help participants continue to meet minimum needs. Increasing the allocation will help participants to continue buying an adequate amount of food. Continue monitoring prices to adjust allocation again if prices continue to rise or to decrease the allocation if prices come back down. If prices continue to rise, consider the impact on non-participants and whether increasing the size of the participant population is necessary. Reassess program impact, especially related to trade flows, if increasing number of participants.
10. Fuel prices				
Cash or vouchers	**Prices of key staples have increased** due to a global or national increase in fuel prices.	• Consider transport subsidies for traders. • Temporarily increase the value of the cash/voucher transfer.	Communication with vendors and transporters. Donor flexibility.	Providing transport subsidies can ensure that vendors do not pass the fuel price increases on to consumers. Increasing the value of the cash/ voucher transfer amount will enable participants to continue to access the same quantities of food. Continue monitoring prices to assess participants' access to food, and vendors' ability to supply with minimal market distortion.

9.3 Plan and implement the adjustment

Planning to respond to price changes should be a collaboration among the whole program team, including technical staff, monitoring and evaluation personnel, and marketplace monitors, with buy-in or approval from the donor, as necessary. Minor adjustments, such as the number of vendors included in a voucher program, may be relatively easy to enact and require a short amount of time. More drastic changes, like changing from one modality to another, will require more time to plan. A thorough assessment of potential impacts should be conducted before major changes are made to a program.

Changing implementation plans midway through a program may be difficult once implementation has begun, but if a program is having severe negative impacts then altering the implementation is vital. Proposing major changes to interventions needs to be handled with care, and multiple stakeholders should be consulted. Messaging may include the following:

Donors

- ✓ Provide evidence of changing market conditions, and details of your analysis. You may choose to share your MARKit report.
- ✓ Request permission for a change, according to your agreed grant or contract terms.
- ✓ If the grant or contract terms are stringent, be prepared to offer multiple options.

Participants

- ✓ Inform participants of price monitoring results and changed conditions.
- ✓ Propose and discuss change solutions, including details of timeline and responsibilities.
- ✓ Ensure that changes will not disrupt participants' resource management strategies or introduce protection or security concerns.

Traders

- ✓ Inform traders of price monitoring results, and confirm changed conditions.
- ✓ Propose and discuss change solutions, including details of timeline and responsibilities.
- ✓ Ensure that changes will not undermine traders' business plans or introduce additional volatility into the market system.
- ✓ If the change requires a modification of trader contracts, explain this clearly and be prepared to discuss it openly.

Local authorities and other practitioners

- ✓ Inform Clusters, local government officials, other NGOs, or other relevant implementing bodies.
- ✓ Share price monitoring information and your proposed solutions, so that all interventions in an area can be coordinated. You may choose to share or make a presentation on your MARKit analysis and report (see *Step 8: Report and disseminate information*).

Attention should be paid to whether midterm programmatic adjustments may cause unintended harm if the expectations of various actors are not met. Adjustments may be difficult or expensive to implement. Where major adjustments are not feasible, minor adaptations or even the documentation and dissemination of lessons learned may be the most appropriate response.

9.4 Ensure accountability

It is key at this point to communicate the results of the program adjustments and the lessons learned. This includes not only to donors and leadership, but also to all relevant stakeholders. Program managers should also communicate the results of the monitoring and any subsequent adjustments to enumerators and partners (and traders and participants, as appropriate) so they see the value in collecting the information, how the program is being responsive to the context and their inputs, etc.

9.5 Continue monitoring to observe the effects of the adjustments

Once an adjustment to your program has been made, it is important to continue collecting and analyzing the price data to ensure that the adjustment has had its desired effect. Small adjustments may need to be made continuously throughout the life of a program, and the monitoring-analyzing-adjusting-monitoring cycle should continue throughout the life of the intervention.

If the adjustment is not having the intended effect, it is critical to find out why. Was the adjustment made in response to the correct contributing factors? Have other factors since confounded the response? Did the adjustment not go far enough in attempting to respond to the observed price changes? Speaking with key informants can help investigate these questions and reformulate the response to be more effective.

Throughout the process, it is important to document the price changes observed and the adjustments made in response to them to capture lessons learned and help design new programs. Sharing of such documentation among agencies can help improve overall development and humanitarian response and should be widely encouraged.

9.6 Make adjustments to monitoring scope and plan

Whether or not you observed prices changes, you will likely want to adjust your monitoring scope and plan:

- If you detect significant and frequent abnormal price changes, you may want to consider increasing the range of indicators you monitor, and/or the monitoring frequency. To do so and help set the scope of this revised market monitoring, refer to *Step 2: Set the scope.*
- If you do not detect any price change, you may want to consider decreasing the number of indicators you are following, and/or reduce the monitoring frequency.

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Glossary of Key Terms

Availability The amount of food or commodities on sale in a given market, closely linked to supply.

Buying power *See* Purchasing power.

Cash and voucher assistance (CVA) All programs where cash transfers or vouchers for goods or services are directly provided to recipients. In the context of humanitarian assistance, the term is used to refer to the provision of cash transfers or vouchers given to individuals, household or community recipients; not to governments or other state actors. This excludes remittances and microfinance in humanitarian interventions (although microfinance and money transfer institutions may be used for the actual delivery of cash). (CaLP glossary)

Central market A large trade market in which large volumes of food and/or commodities pass in a country. They typically include a central consumer market in the capital city or urban centers or major import/export markets on the border or in neighboring countries. Central markets are the largest, most significant markets to your program location, and set the trend for prices in the area. They are also traditionally those where you find the highest concentration of wholesalers.

Commodity-based vouchers. Vouchers provided directly to targeted individuals to buy a fixed quantity of items from selected vendors.

Comparison market Markets that enable practitioners to assess whether a price change in the intervention markets is related to the intervention or is part of a more general market shift. Comparison markets should have similar characteristics to the intervention market.

Consumer price index A measure of the change in the purchasing power of a currency. The CPI expresses current prices of a typical consumer basket of goods and services in terms of the prices during the same period in a previous year (reference or base year), to show the effect of inflation on purchasing power. (FEWS NET 2009a)

Demand How much (quantity) of a product or service is desired by buyers. The quantity demanded is the amount of a product people are willing to buy at a certain price; the relationship between price and quantity demanded is known as the demand relationship. (Investopedia)

Demand elasticity The responsiveness of the quantity demanded of a good relative to the change in the income of the people demanding that good (income elasticity of demand) or in its price (price elasticity of demand). Income elasticity of demand is calculated as the ratio of the percentage change in quantity demand to the percentage change in income. (CaLP glossary)

Direct intervention Interventions that directly assist affected people. For the purposes of this toolkit, these are cash, voucher and in-kind distributions. (EMMA Toolkit)

Direct purchase A non-competitive procurement approach in which a participant purchases a commodity directly from one or more suppliers without a competitive bidding process. This approach may be used for commodities that are only available from one vendor, or where one vendor can meet the necessary quality and tonnage requirements. It may also be used to support farmer organizations through direct purchase in order to achieve development objectives. (MSI 2012)

Effective demand The quantity of a particular economic good, item, or service that a group of buyers will want to purchase at a given price. Buyers' needs and desires must be accompanied by purchasing power to be considered effective in the analysis of demand. Where lack of money is a significant constraint for the target population, the immediate result of cash and voucher assistance is usually to increase effective demand. (EMMA Toolkit)

Farm gate prices The monetary value at which a farmer sells their produce on or within the vicinity of their farm or home premises. (CaLP glossary)

Food basket *See* minimum expenditure basket.

Food-insecure populations Populations lacking adequate and stable access to food for immediate consumption at the level and quality that is necessary to lead healthy and productive lives. (MSI 2012)

Food security When all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for a healthy life. (CaLP glossary). A condition when all people at all times have physical and economic access to sufficient food to meet their nutritional needs for healthy and productive lives. (MSI 2012)

Forward purchase or forward contract The quantity and price of a commodity with delivery taking place at a specified future date. Food buyers may use forward contracts for hedging, to lock in a price to reduce risk. Forward contracts may also include options to adjust prices if they rise between contract and delivery.

Import parity price (IPP) The cost of importing a specific commodity from the world market. The IPP serves as a benchmark price for locally or regionally procured food aid commodities. This can be used to inform decisions between local procurement and transoceanic food assistance.

Inflation An expression of the increase in prices in the overall economy. In particular, inflation is measured based on those goods and services that represent typical items in the average households' consumer food basket such as grain and flour, other food items, drinks, fuel and power, clothing, household goods, school fees, etc. (FEWS NET 2009a)

In-kind distribution The provision of transoceanic or locally/regionally procured food directly to participants. (MSI 2012)

Intervention market Market your target groups access to cover their needs or the ones your supply department purchases from locally. These are markets that are most likely to be impacted by the intervention, through direct distribution of commodities, cash or vouchers, or local procurement.

Local or regional purchase The purchase of food aid by donors and food aid organizations from the country or region where it is distributed. (MSI 2012)

Local supply markets Largest wholesale markets within a district, county, commune or prefecture. This type of market is normally found in the district capital or at a border with another country, and is the primary source of supply for traders in the intervention market.

Market A system of exchange between two or more actors or players. The exchange can be for goods or services, or for money, and can take place in a physical space or through virtual media such as the internet. Markets are sometimes defined by forces of supply and demand, rather than geographical location e.g., 'imported cereals make up 40% of the market'. (CaLP glossary)

Market access Social, physical and financial ability to reach a given marketplace (either physical or not) and to procure/sell what is needed there.

Market environment Includes market services such as roads, transport facilities, storage, access to credit, regulations, taxes, insurance, etc.

Market functionality To determine whether a market is functioning requires an assessment of supply and demand; market integration; market power; market environment; whether target groups have physical, social and financial access to the market; and seasonality.

Market integration A market system is integrated when linkages between local, regional and national market actors are working well. In an integrated market system, any imbalance of supply and demand in one area is compensated for by the relatively easy movement of goods from other nearby and regional markets. Within integrated markets, prices for comparable goods do not behave independently. If markets are well integrated, price changes in one location are consistently related to price changes in other locations and market agents are able to interact between different markets. (CaLP glossary)

Market power The ability of an enterprise, trader or other market actor to influence the price or supply of a good or service, or the way in which the market works (without losing their customers, suppliers, or employees to their competitors). In an ideal, perfectly competitive market, market actors would have equal market power. However, in the real world, barriers to entry, entrenched gender and social relations, collusion, and other anti-competitive forms of conduct often enable some market actors to influence or dominate the way that the market works, for instance by negotiating favorable prices for themselves.

Market support interventions Activities with traders, officials, policymakers and others to benefit affected people, such as rehabilitation of key infrastructure, transportation links or grants and loans for businesses to restore stocks or repair shops or vehicles. (EMMA Toolkit)

Market system A network of market actors, many buyers and sellers—not only one supply chain—supported by infrastructure and services, interacting within a context of institutions or rules that shape the actors' trading environment. (Oxfam GB, 2012)

Marketplace A physical place where different wares or goods (and sometimes services) are sold – such as a village or livestock market. Marketplaces are a common starting point for assessing the potential to fulfil demand for many consumables, from food items to soap and clothing. (CaLP glossary)

Minimum expenditure basket (MEB) What a household needs—on a regular or seasonal basis—and its average cost over time. The MEB can be a critical component in the design of interventions including multipurpose cash assistance (MPCA), with transfer amounts calculated to contribute to meeting the MEB. (CaLP glossary)

Multiplier effect The additional benefits that result from stimulating markets (through cash transfer programming). For example, for every additional $1 distributed to participants, traders might earn an additional 20 cents, processers 20 cents and producers 40 cents. (CaLP glossary)

Nominal prices Prices that have not been adjusted for inflation. The nominal price is equal to the money that is paid for a unit of a food or service in the market, at the shop, etc. These are the prices observed in the market. (FEWS NET 2009a)

Participant A person who is intended to benefit directly from programs or interventions.

Price The cost or value of a good or service expressed in monetary terms. Price indicates the value that has been added to a particular commodity. Price signals carry information about the cost of production, transportation, storage, perceptions and desires as well as, in some instances, distortions. (FEWS NET 2009a)

Price volatility In a given context, prices are deemed volatile when they follow erratic patterns. Price volatility may be due to contextual factors (e.g., insecurity) or programmatic ones (e.g., a large-scale cash intervention surpassing local markets' supply capacity)

Purchasing power The ability of a household to acquire goods and services based on the amount of money or other forms of wealth it possesses. Consumer prices of food determine how much food a household can buy given its level of income or wealth. (FEWS NET 2009a)

Real price Price adjusted for inflation. Real prices hold the value of currency constant, and allow you to compare the exchange value of a good or service in different time periods. Unlike nominal prices, real prices are not observable in the market, but must be calculated using inflation rates. (FEWS NET 2009a)

Retail price The monetary value at which goods and services are exchanged at the end of the retail chain i.e. between the seller and the final consumer.

Semi-competitive purchase or soft tendering A tender that limits participation to invited vendors, generally smallholder farmer organizations, or small-scale traders, and allows flexibility in contract negotiations and trader terms.

Supply How much of a good or service the market can offer. The quantity supplied refers to the amount of a certain good producers are willing to supply when receiving a certain price. The correlation between price and how much of a good or service is supplied to the market is known as the supply relationship. (Investopedia)

Target group The group of emergency-affected women, men and children who should ultimately benefit from an intervention. Usually the target group refers to the most vulnerable or severely affected individuals and households in an area. The target population may be disaggregated into smaller groups with different situations and needs. (EMMA Toolkit)

Value-based vouchers Vouchers representing cash to buy food or other commodities up to a fixed monetary value from selected vendors. (MSI 2012)

Wholesale price The monetary value at which a retailer buys goods in bulk for onward selling to consumers, usually in smaller quantities and at an increased price. (CaLP glossary)

Annex 1: Resources for Market Assessment

A selection of the available tools.

Tool	Decision focus	Description
EMMA (Emergency Market Mapping and Analysis Toolkit)	Market interventions Impact of disaster on markets	A toolkit that consists of gap analysis, market analysis, and response analysis methods. Evaluates feasibility, outcomes, benefits and risks. Often used to justify cash interventions.
Emergency Food Security and Livelihoods (EFSL) 48-hour Assessment Tool (Oxfam)	Market support, in-kind distributions, cash or voucher responses	Rapid assessment tool for food security rapid-onset crisis combining needs and market analysis into a response framework.
Rapid Assessment for Markets (RAM): Guidelines for an Initial Emergency Market Assessment (International Red Cross and Red Crescent Movement)	Rapid assessment for market interventions in acute emergencies	A ready-to-use toolbox for non-specialists to collect and interpret information on markets in order to make rapid response decisions in the first days after an emergency.
Market Analysis Guidance (MAG) (the International Red Cross and Red Crescent Movement)	In-depth assessment of market interventions in early recovery context	A ready-to-use toolbox for non-specialists to collect and interpret information on markets in order to inform early recovery responses
Multi-sector Market Assessment (UNHCR 2017)	Feasibility of multi-purpose cash grant	Toolkit to assess market functionality for CVA and, more specifically, MPCA. Specific focus on protection and refugees
Minimum Standard for Market Analysis (MiSMA) (Juillard 2018)	Market interventions	Companion to Sphere Handbook that provides minimum standards, key actions and indicators for conducting market analysis.
Pre-Crisis Market Analysis (PCMA) (IRC)	Market interventions	Approach to use any of the existing market assessment toolkits to analyze market functionality before a crisis occurs.

Annex 2: Available Market Theory Resources

Cash Learning Partnership (CaLP) library of resources and tools is a searchable database that houses guidance on market assessments from several aid organizations. It has a number of resources, tools and trainings.

CaLP and IRC have Introduction to Market Analysis and A Practical Guide to Market Analysis e-learning courses. The first is a 30-minute online course that provides an introduction to the analysis of markets in emergency contexts; the second is a longer, more in-depth guide.

FAO E-learning Centre has a course on *Markets Assessment and Analysis*. "The course illustrates how markets operate and how they relate to, and affect, food security and vulnerable households. It describes market components and how they function, and introduces some of the methods and indicators used to assess markets for improving food security analysis."

FEWS NET has produced several guidance documents on markets available at the bottom of this page. Examples include the price projection guidance document that provides a theoretical background on the core concepts.

International Food Policy Research Institute has made available many resources through the Food Security Portal. They are housed under the Capacity Strengthening section of the Policy Analysis Tools page.

International Federation of Red Cross and Red Crescent Societies has two market-related e-learning courses on its learning platform.

USAID Development Experience Clearinghouse has many reports that can be searched for under the "advanced" search setting. Suggestions include: FEWS NET Market Fundamentals Reports, Enhanced Market Analysis Reports, Supply and Market Outlook Reports, BEST Bellmon Estimation Studies, and FAO CFSAM reports.

World Food Programme has published a technical guidance sheet, The Basics of Market Analysis for Food Security, that covers the main concepts without going into too much technical depth.

World Food Programme Vulnerability Analysis & Mapping (VAM) Portal provides up-to-date price and food security information on a number of countries, as well as useful analytical tools.

Annex 3: Secondary Sources of Price Data

A selection of available secondary data sources. Country-level price data may also be available through government monitoring systems, agricultural extension services or other sources.

FAO Global Information and Early Warning System The GIEWS Food Price Tool provides searchable retail and/or wholesale commodity prices for larger markets (capital and regional hubs). It enables the user to generate graphs to compare commodity prices over time and across markets, and to download data to Excel. The Price Tool includes references for all price information, so the user can look up national price data through the GIEWS system and access data for smaller markets. GIEWS publishes country briefs and a global food price monitor, providing analysis of food prices and food security.

FAO Food Price Index The FAO Food Price Index is a measure of the monthly change in international prices for a basket of food commodities. It consists of the average of five commodity group price indices (representing 55 quotations), weighted with the average export shares of each of the groups. The site also provides information on the cereal, meat, dairy and oil price indices, and a brief on changing production patterns and prices.

World Food Programme The WFP VAM Data Visualization Platform provides retail and wholesale price information in the countries where WFP operates at sub-national levels, with strong representation of sentinel markets. The platform enables the user to generate graphs to compare commodity prices over time and across markets (see "Economic Explorer" and "Prices" in the lefthand tab), and to download price data to Excel for additional analysis. WFP also provides real-time food security information for select countries using mobile technology. WFP's food price database can be found via OCHA here. The WFP Market Monitor bulletin "provides information regarding the latest price changes for commonly consumed staple foods around the world, as well as the potential impacts of those changes on the cost of the basic food basket."

USAID Famine Early Warning Systems Network FEWS NET monitors trends in staple food prices in countries at risk of food insecurity and publishes food security forecasts and market price bulletins, as well as staple food price data. The Price Watch provides an update on trends in selected urban centers. Trends for key reference markets and commodities are made available in the Price Watch Annexes. FEWS NET synthesizes price information collected by partner organizations, ministries of agriculture, national commodity exchanges, FAO and WFP. FEWS NET provides highly sophisticated analysis and reports, including detailed supply chain maps for key commodities. FEWS NET's raw food price data can be found here.

South African Grain Information Service SAGIS provides market and price information to the agricultural industry for staple commodities such as maize, oilseeds, winter cereals and sorghum, as well as information on import parity prices, tariffs, and import and export trading volumes. Price information is gathered from market participants (traders, millers, transporters, etc.).

South African Futures Exchange SAFEX Provides the daily prices of select commodities.

Annex 4: MARKit Price Data Collection Template

Name of market:	Name of enumerator:
Location of market:	Date of price collection:

Note to enumerators: *Record retail prices from three traders per commodity. If the first three prices do not reveal the mode (most commonly observed price), increase the sample size until the same price is given by at least two different vendors. Enter all prices in the unit in which they are given, and in the local currency. Do not convert prices while in the field. Darker shaded boxes must be filled in.*

Commodity	Variety/Brand	Local unit	Local unit (if different)	Retail prices per unit					Availability 0= None 1= Low 2= Average 3= High	Comments
				Trader 1 price	Trader 2 price	Trader 3 price	Trader 4 price	Trader 5 price		

Follow-up questions to ask vendors if price changes exceed thresholds include:

- When did the price increase/decrease to this level?
- Is this price change/level normal for this time of year?
- What are the reasons for this price change?
- Is this price consistent with other traders' prices in this market? With nearby markets?
- Do you expect this price level to remain steady in the near future? When do you expect it to go back up/down?

Annex 5: Data Quality and Secondary Data Risks and Mitigation Measures

	Risks	Mitigation strategies
Historical and secondary data	• May not exist for markets of intervention (e.g., usually only available for larger/central markets) • Data may only cover certain commodities • May be gaps in the data collected • Limited access to raw data (only available as a report/analyzed) • May not be available in a timely manner • Incompatible methodology, different types of indicators	• Complement existing data with qualitative primary data collection to fill in gaps • Work through coordination groups and coordinate with other agencies to access more existing data • Contact/build relationships with local government or institutions that may be collecting price data • Identify commonalities (use other datasets in nearby markets) • Triangulate among sources
Data quality	• Data reliability – missing data, data inconsistencies • Capacity of enumerators, interest to manipulate the data/not follow methodology • Vendors' reluctance to share information • Errors in data cleaning and analysis (inconsistent methodology, unit of analysis, etc.)	• Have clear and enforced policies and protocols for data collection, cleaning and analysis • Train enumerators on methodology and reason for collecting data to increase ownership • Prompt investigation of anomalies, spot checks in the field • Ensure clear communication with vendors to build a rapport and keep surveys short to prevent survey fatigue

Annex 6: Table of Selected Non-Price Indicators

This table presents a selection of non-price indicators that could be integrated into a market monitoring framework. It is important to select the non-price indicators carefully and with a clear understanding of why it makes sense to track them in your particular context.

Type of NPI	Indicator	Why to select it
Potential cause of price change	Exchange rates	• Major influences on price change, can see differences over borders • Reason to change CTP, can contribute to establishing value of cash, voucher or even in-kind kit/food • Impact on imported items, affects purchasing power of participants and non-participants
	Fuel and/or transportation costs	• Important especially in remote areas
	Number and types of traders	• Competition is important for good market function and influences modality choice
	Availability	• Can indicate market functionality and current demand
	Household consumption	• Understand ongoing participant preferences, financial capacity, and the availability of the food basket in the markets
	Stock and/or sales levels	• Indicates whether and how quickly markets can scale up supply to meet an increase in demand
	Number of trucks entering the market per day	• Indication of availability and accessibility of markets, security levels, and volumes of products entering and leaving markets
Unlikely to impact prices	Diversity of products in shops	• An indicator of market health: do people still have choice of goods, in sufficient quantities?
	Access to markets	• Helps ensure the feasibility of a market-based intervention and can indicate need to add special program design features to ensure all members of the program's target population have access
	Quality	• Can vary across the same product, which can impact price differences • Indicates whether target population's preferences and humanitarian standards are being met • Can be used to compare across modalities (e.g., what would have been procured for in-kind)
	Vendor revenues	• To determine whether the intervention has affected vendors (including both those participating and those not participating in a voucher scheme)

Source: Adapted from IRC 2018.

For more information on NPIs to select for market monitoring, see Juillard 2018.

In addition to the selected indicators presented above, a review of local media sources can provide useful information on cross-market price changes.

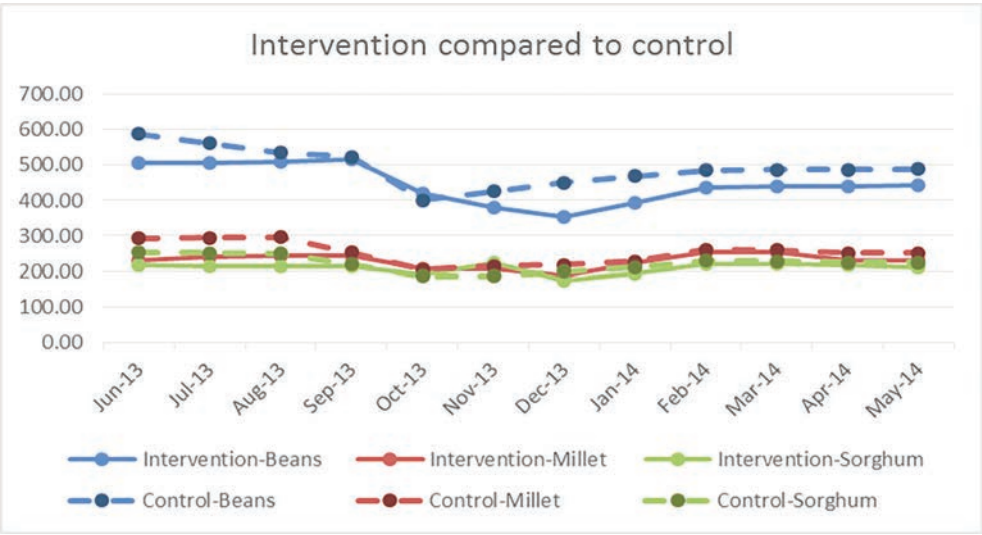
Annex 7: Using Comparison Markets

Comparison markets should have similar characteristics to the intervention's distribution/source markets:

- Similar in size and number of traders
- Located a similar distance along similar types of roads from the wholesale market
- Similar level of integration with the market hub
- Similar in terms of whether it is a supply market (net exporting) or deficit market (net importing)
- Subject to the same external market forces
- Similar agro-ecological zone
- Approximately similar in size of population
- No other intervention in the same sector

Comparing prices in intervention marketplaces to comparison marketplaces can help demonstrate whether price changes in the intervention marketplaces are being experienced elsewhere or are unique to the intervention area. Analyzing intervention marketplaces against comparison marketplaces will also flag a situation in which prices **should** be changing but are not. For example, if prices are supposed to come down as part of the typical seasonal trend but instead remain steady in one or more of your intervention marketplaces, this would not be flagged as a problem by only seeking price changes. If prices should be coming down but are not, your intervention may be having an effect on prices and this should be investigated through key informant interviews.

Graph of intervention market compared to control market



Interpretation: Prices for all three commodities follow the same trends in both the intervention and comparison markets. Bean prices fall from September to December and then start to rise again in both markets, which is likely due to seasonality and not the intervention. Seasonality should also be investigated to confirm this hypothesis.

Annex 8: Sample Price Monitoring Report

Organization: _____

Program: _____

Markets monitored: _____

Date: _____

Key findings (max five sentences):

_____

_____

_____

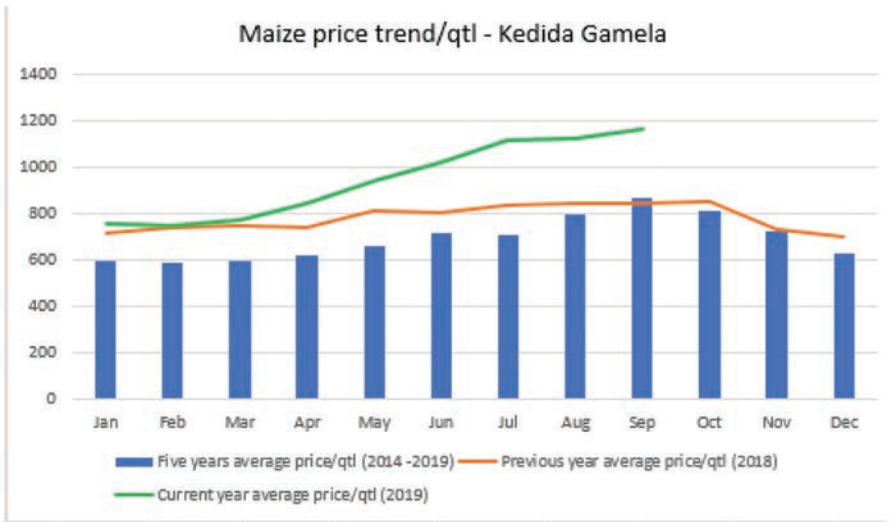
_____

_____

Screenshot of table of market prices

		Gotheye		Mangaize		Ouallam		Tera		Tillaberi		Niamey-Katako	
Year	Month	P. levels	% change	P. levels	% change	P. levels	% change	P. levels	% change	P. levels	% change	P. levels	% change
2010	1	206.75		259.00		252.50		201.33		214.00		239.00	
2010	2	224.00	8%	264.00	2%	255.75	1%	212.00	5%	226.00	6%	241.00	1%
2010	3	203.00	-9%	269.00	2%	259.00	1%	209.50	-1%	250.00	11%	239.00	-1%
2010	4	227.38	12%	269.23	0%	259.43	0%	214.46	2%	244.29	-2%	241.17	1%
2010	5	251.76	11%	263.04	-2%	270.00	4%	227.27	6%	257.58	5%	243.42	1%
2010	6	238.59	-5%	256.84	-2%	275.00	2%	220.59	-3%	250.00	-3%	241.94	-1%
2010	7	240.00	1%	258.17	1%	285.72	4%	214.29	-3%	250.00	0%	241.94	0%
2010	8	240.00	0%	292.63	13%	289.16	1%	213.31	0%	251.00	0%	234.74	-3%
2010	9	275.72	15%	287.12	-2%	288.50	0%	210.43	-1%	216.21	-14%	232.46	-1%
2010	10	195.85	-29%	259.00	-10%	228.17	-21%	169.14	-20%	145.66	-33%	198.41	-15%
2010	11	162.34	-17%	214.29	-17%	200.00	-12%	153.00	-10%	164.01	13%	200.00	1%
2010	12	178.39	10%	224.00	5%	244.50	22%	139.00	-9%	139.00	-15%	199.37	0%
2011	1	194.43	9%	223.88	0%	237.00	-3%	174.00	25%	159.38	15%	196.06	-2%
2011	2	228.72	18%	218.94	-2%	231.48	-2%	172.62	-1%	183.19	15%	196.08	0%
2011	3	263.00	15%	214.00	-2%	234.00	1%	171.23	-1%	207.00	13%	202.00	3%
2011	4	263.00	0%	221.00	3%	235.00	0%	179.00	5%	207.50	0%	206.00	2%
2011	5	259.50	-1%	222.50	1%	222.50	-5%	175.00	-2%	208.00	0%	220.50	7%
2011	6	256.00	-1%	224.00	1%	217.25	-2%	177.00	1%	205.00	-1%	218.00	-1%

Graph of price trends (optional)



Explanation of price change (if applicable)

Relevance of the results for the program

Recommendations

1.

2.

3.

4.

5.

Date of the next report:

For more market monitoring report samples, search the REACH Resource Centre.

Annex 9: Sample MARKit Budget Content

Many factors influence the budget content: number of markets to monitor, number of products to monitor, geographic distribution of markets, number of field agents involved, electronic versus paper-based price data collection, etc. The following points are intended to guide program managers in developing budgets that include MARKit activities.

1. Salaries

Salaries of staff working on MARKit are based on the time spent on MARKit activities. For reference, the MARKit team can be composed of:

- MARKit team leader
- MEAL coordinator
- Data analyst
- Data entry clerks
- Field agents

In most cases, the MARKit team leader will be a program manager and the other MARKit staff will be existing MEAL staff. In some cases, the MEAL coordinator will be the data analyst.

The data entry clerks will not be necessary in the case of electronic price data collection.

The field agents can be the MEAL field agents; based on the percentage of time spent on MARKit activities.

2. Fringe benefits

The fringe benefits should be budgeted considering:

- National staff
- International staff

The fringe benefits of national staff depend on the organization's policy and country labor law.

The fringe benefits of international staff depend mostly on the organization.

3. In-country technical assistance

In most cases, the purpose of in-country technical assistance will be to train the team on MARKit, help them define their price monitoring plan (markets to monitor, commodities to monitor, frequency of key activities, responsibilities, etc.) and to assist them in setting up the price database.

Budget elements can include:

- Air ticket
- Salary and fringe benefits
- Accommodation
- Per diem
- Visa fees
- Airport taxi or pick-up

Some staff may not need a visa depending on the agreements between their country of citizenship and the destination country.

4. Equipment and other field-related costs

The list below includes equipment and other costs related to price data collection in the field.

- Scales
- Motorbikes
- Electronic data collection devices
- Transport costs
- Communication fees (SIM cards, phones if needed)

It is not necessary to buy many scales; two or three should be enough. The main reason for taking the weights of local units is to convert local units into the standard measure (e.g., kilograms), for example, so that the analysis can be done using a standard unit. Weigh the local units at the beginning of the price monitoring and reweigh on a regular basis, at critical periods, such as the harvest period when grains retain moisture.

In some countries, motorbikes will not be needed. Also, there is no need to budget for electronic devices if paper-based price data collection will be used, and no need to budget for transportation costs if data is collected remotely. Transportation costs will vary considerably, depending on the frequency of monitoring; number of markets; distance to markets; transportation mode (fuel for motorbikes, taxis, etc.).

In some contexts, the field agents may need communication fees. It may also be relevant to budget for communication fees in a context of remote price data collection to be provided as incentives to focal points or traders who regularly communicate prices to the MARKit team.

5. Office supplies

Below is a list of office supplies to consider when working on a MARKit budget.

- Computer
- Video projector
- Flip chart stand
- Flip chart paper

In most cases, the country program will already have computers, video projectors, flip charts, etc.

6. MARKit training

At least three days are recommended for initial MARKit training. Four days will allow time for participants to practice data analysis and interpretation. Five days are necessary if a field visit is expected (for primary price data collection). Two days should be enough for a refreshing MARKit training unless it is expected to review past results and discuss recommendations. The training budget includes:

- Conference room
- Accommodation
- Lunch
- Coffee breaks
- Per diem
- Transport
- Printing of the manual and handouts
- Office supplies for training (folders, tape, sticky notes, notepads, pens, etc)

In some cases, some participants (partners or organization staff in regional offices) will have to travel to the training location, in which case transport fees should be included in the budget. In some countries, some participants will need to take a flight.

7. Meetings to discuss results and findings

It is recommended that regular meetings are held (quarterly, for example) to discuss the price monitoring results, findings, recommendations from the technical staff and eventual adjustments to the program based on the findings. These meetings can take half a day but may take one or two days depending of the agenda. The budget for such meetings can include the following:

- Lunch
- Coffee breaks
- Per diem
- Transport

Per diem and transport are relevant in case of partners and/or organization staff traveling to the meeting location.

Annex 10: Risk Factors

The below characteristics indicate a greater or lesser likelihood that a program ***will*** result in market distortion:

The relative size of the intervention compared to the size of the market

The larger a potential program (relative to the size of the market), or the more programs planned by various agencies in an area, the larger the potential risks associated with it. Issues to consider include the capacity of the market system to cover the volume and diversity of needs, the supply/volume of goods in the market, and trader capacity. ***As a rule of thumb, a program would be considered large if:***

- Participants (*from your program and other agencies' combined*) represent more than 20% of the total population in the program area. When assessing this factor, be aware that how the "target area" is defined may lead to different calculations. If your organization is considering implementing a program in an informal settlement of Nairobi, the 20% rule should be applied using the estimated population of the informal settlement, NOT the entire population of Nairobi.
- The induced demand (*from your program and other agencies' combined*) represents more than 10% of normal trade flows in a rural area or 25% in an urban area. Be sure here to consider only the additional demand generated by the program. If the transfer is simply substituting for other purchases done locally by CRS for in-kind interventions, then this does not impact the induced demand.

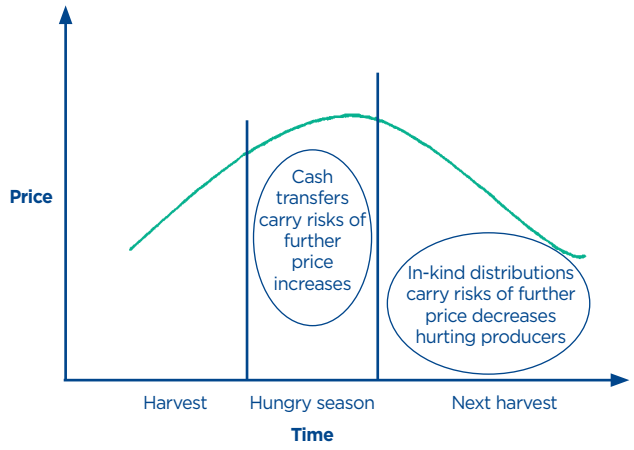
Contextual factors: Security and seasonality

It is important to take into account the context of the area/country when assessing the risk of price fluctuations. If there is a possibility of bottlenecks arising in the supply chain, there is a greater threat of price changes for both participants and non-participants. For example, civil unrest in a source or intervention market may make it difficult for traders to meet demand, or damage to infrastructure through weather or human-related actions could delay restocking by retailers. External risks can also affect the population's ability to access the market. Being aware of these risks and having alternative plans in place can help avoid price changes being made worse by your intervention.

Market prices of staple food commodities will normally follow seasonal patterns (e.g., lower prices after harvest and higher prices during the hunger period).[22] The risks associated with a program are therefore influenced by the seasonality of resource transfers. Cash/voucher transfers during the hunger season when prices are already increasing may increase your risk level. Conversely, in-kind food distribution during the harvest period when prices are already low may also increase your risk (see figure below).

22. This pattern might not always hold true in the event of widespread crop failure (due to civil war, for example) and rapid-onset emergencies. Always be sure to take context into account.

Typical seasonal price movement (staple foods) and risks of modalities



Source: Adapted from Bonnard 2008

Lack of market information

Market baselines provide vital information on the functioning of local markets and therefore enable an informed assessment of risk (as discussed in *Conduct a market assessment* in the initial pre-MARKit phase). The baseline can be an existing document that was produced for another program or by another agency; it does not have to be freshly conducted for every intervention. If you are using an existing baseline, it should have been completed within the past five years, with no major changes to the market situation in that time. Before conducting a new baseline of your own, check with other agencies, especially the World Food Programme and FEWS NET, to see if there is an existing baseline you can use.

If no historical market information can be obtained, this can pose a risk to your program as you will be unable to compare current prices to historical averages or a reference year. It will also negatively impact your understanding of information flows in the market system. Extra vigilance will be required throughout the life of your intervention to assess any prices changes, investigate the causes, and adapt quickly if needed. *Annex 5: Data quality and secondary data risks and mitigation measures* provides an overview of common secondary data issues and potential mitigation strategies.

If your program is being implemented in response to a sudden-onset crisis, it is important to understand how the crisis has affected the market baseline. The Emergency Market Mapping and Analysis (EMMA) tool provides helpful guidance on this. If a program does not have a market baseline this would increase your risk level.

Market functionality

In poorly integrated markets, supply will respond less to changes in demand, potentially impacting availability and prices. Well-integrated markets respond to supply-and-demand signals and are thus more likely to be able to absorb changes in supply and demand.

Knowing whether your intervention markets are well-integrated with their source market(s) requires historical price data and/or a market assessment. Ideally, market integration should have been assessed during the response analysis phase to help determine the modality of response.

If historical prices are available for some of the marketplaces being considered, you can do some rough market integration calculations using the guidance provided in Worksheet 2. ***Working in markets that are not well-integrated increases the risk that your program will impact market prices and availability.***

If you are implementing a cash or voucher program, it is important that traders in the market and other actors along the entire value chain behave in a competitive manner. If there are actors along the market value chain that are in a situation of power, they may be able to raise prices beyond any cost increases they experience. This can lead to unfairly increased prices being passed on to food-insecure households. A market baseline should include information on market competition, but if you are beginning a program without one, try to examine the competitiveness of the intervention and source markets by looking into the behavior of the largest traders during the last demand shock. You can also inquire whether any new traders entered the market, and whether their pricing was aggressively competitive or followed the larger, existing traders' price leadership.

Monitoring competition within the intervention and source markets will be important during the program to track whether any price changes recorded may be a result of non-competitive behavior. Beyond just monitoring prices in the key markets, keep track of the types and numbers of traders operating, their size or market share, and so on. This type of monitoring is not covered in MARKit, but can be included in key informant interviews[23] during market visits (see *Annex 6: Table of selected non-price indicators*). ***Low competition in your source and/or intervention markets will contribute to increasing your program's risk.***

Households' reliance on markets for purchases in contexts of high price volatility

Part of the information that should be available from a livelihoods baseline is how much the local households rely on markets for their food consumption and basic needs coverage. Even in rural areas where agriculture is the main livelihood, households depend heavily on markets for their food during certain times of the year. They may also sell their harvests in the market at one time of the year and buy staple commodities from the same markets at other times of the year. In urban areas, households will likely be more dependent on markets. Furthermore, the poorer the household, the higher the reliance on markets tends to be. The more households rely on markets for their purchases, the greater the risk that an intervention will affect access to basic necessities.

Similarly, if households are spending most of their income on food, they will be less able to absorb any price increases caused by an intervention. Following the Do No Harm principle, it is critical that no undue burden is placed on participant and non-participant households, particularly those that are vulnerable to shocks such as price rises.

If target households spend more than 50% (WFP 2014a) of their income on food, in a context where prices are volatile and hence likely to change, this will increase your program's risk.

23. Markit *Worksheet 3: Key informant interview questions* suggests a few questions that go beyond price monitoring. Alternatively, the CaLP Programme Quality Toolbox suggests a set of guidance and tools on the topic.

Annex 11: List of Worksheets

Worksheet 1: Market integration

Worksheet 2: Identifying context-specific risk factors

Worksheet 3: Market shed maps

Worksheet 4: Seasonal index

Worksheet 5: Key informant interview questions

Worksheet 6: Compare local and global prices

Worksheet 7: Inflation

Worksheet 8: Exchange rates

Worksheet 9: Fuel prices

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