

STEP 6

Mapping the market system



Photo credit: Jane Beesley/Oxfam

Carrying a fish to market in Kenya, during the East Africa food crisis.

6.
Mapping
the system

Step 6 brings together the raw quantitative data and qualitative information collected during fieldwork in order to construct a concise and coherent description of the market system. The emphasis is on producing final versions of market maps, seasonal calendars, and household profiles that will inform the ‘analytical’ steps that follow.

Before starting Step 6, you will have...

- o prepared preliminary maps of the baseline and emergency-affected situations;
- o gathered information about how the market system performed before the crisis;
- o explored how the crisis has affected the market system, and how market actors are coping;
- o consulted market actors and key informants on possible market-support actions.

6.1 Overview of Step 6

Objectives

- Produce final versions of market maps, comparing baseline and emergency-affected situations.
- Produce final versions of seasonal calendars and household economic profiles for target groups.
- Write summary explanations of all market-system features that are relevant to the *key analytical questions* defined in Step 3.

Activities

- Sort and bring together information from your quantitative data sheets.
- Compile all the qualitative information in interview records and field notes.
- Re-draw final versions of both baseline and emergency market-system maps.
- Compile final versions of the market system's seasonal calendar.

Key outputs

- A final, seasonally adjusted, *baseline map* (or maps) representing the market system as it was before the onset of the emergency
- Data about numbers of market actors, prices, and volumes of production and trade in the baseline situation (shown either on the market map, or included in separate tables)
- Explanatory text describing the baseline market system's key features that are most relevant to the crisis-affected situation
- A final, seasonally adjusted, *emergency-affected map* (or maps), representing the market system as it is now
- Data about numbers of market actors, prices, stocks, and production and trade volumes in the emergency-affected situation (shown either on the market map, or in separate tables)
- Explanatory text describing the key aspects of the impact of the crisis on the market system, including major constraints, bottlenecks, and coping strategies of market actors
- A seasonal calendar for the market system

6.2 Baseline market-system map

The first main output from Step 6 is your final version of the *baseline market-system map*. Its purpose is to compare the 'normal' and 'crisis-affected' situations: it shows the market system *as it might have been now*, had the crisis not occurred. The final output will be a refined version of the preliminary baseline market map which you started in Step 3 and have been revising and developing during the course of the fieldwork.

The mapping process

To develop a final version of baseline market-system map, you will have to pull together, and represent, information from the many sources used during Steps 1–5, including background research (especially any previous market profiles or reports); interviews with key informants who had good sector knowledge, and with market-system actors, especially larger traders and businesses who were able to provide you with retrospective information.

The basic activities of market-system mapping were explained in Step 3:

- Start by getting a clear picture of the main structure of the market system (actors, pathways, and linkages), with the position or role of EMMA's target groups well defined.
- Add in the key inputs – providers, services, and infrastructure – especially those that have been most affected by the crisis. Indicate which actors or linkages are most dependent on these services.
- Add in the critical 'institutional' issues – again focusing attention on relevance to the crisis, and opportunities for humanitarian agencies to influence the situation.
- Incorporate 'quantitative' data – by adding in key numbers (section 6.4) or by using visual clues in the map (for example, different thicknesses of linkages).

Keep it simple

Market maps and calendars tend to start simple but become more complex during fieldwork, as interviews generate more information and data. By this stage your understanding of what is relevant and what is not should enable EMMA teams to focus only on the most relevant features of the map or calendar. You must refine and re-work complex diagrams, gradually simplifying them until you have a useful output.

In order to be effective as a communication device, the final market-system maps must be visually clear and simple, so that the key features stand out for the report reader and decision maker; and they must be seasonally relevant, showing the market system at the time of year when the emergency response is needed.

Remember, your main objective is to produce diagrams and an analysis that are direct and accessible to time-starved managers. This means being highly selective about the information that you eventually include and present: ruthlessly excluding superfluous information or data that are not relevant to the crisis situation and the humanitarian challenges. To achieve this state of 'optimal ignorance' (see Box 3.6), EMMA teams will inevitably end up having to discard some data that they worked hard to collect.

6.3 Emergency-affected market-system map

The second main output of Step 6 is a final version of the emergency-affected market-system map. The main purpose of the second map is to highlight how the

market system's structure, capacity, and performance have been affected by the crisis. It is the core illustration, and your other descriptive texts and findings will be built around it.

A key aspect of mapping is comparison of the crisis-affected and baseline situations. This makes it easier to understand the current issues, problems, and opportunities. Marks or flags on the map draw attention to the important changes caused by the emergency, or arising from the humanitarian response.

The kinds of feature to highlight (with visual flags) on the emergency-affected map include the following:

- damage to assets or disruption to the livelihood activities of target households;
- partial or complete disruption of businesses (traders, retailers) in the supply / value chain;
- blockage or partial obstruction of particular linkages or relationships in the system;
- break-down or loss of key services or forms of infrastructure;
- emergence of temporary alternative pathways for items, e.g. via humanitarian activities;
- policies, regulations, or social norms that are acting as a constraint on the market system.

It is a good idea – for visual clarity and to focus readers' attention – to limit the number of flags on the map to a maximum of around ten. This means that you must focus on the priority issues: those that are having the greatest impact on the target population.

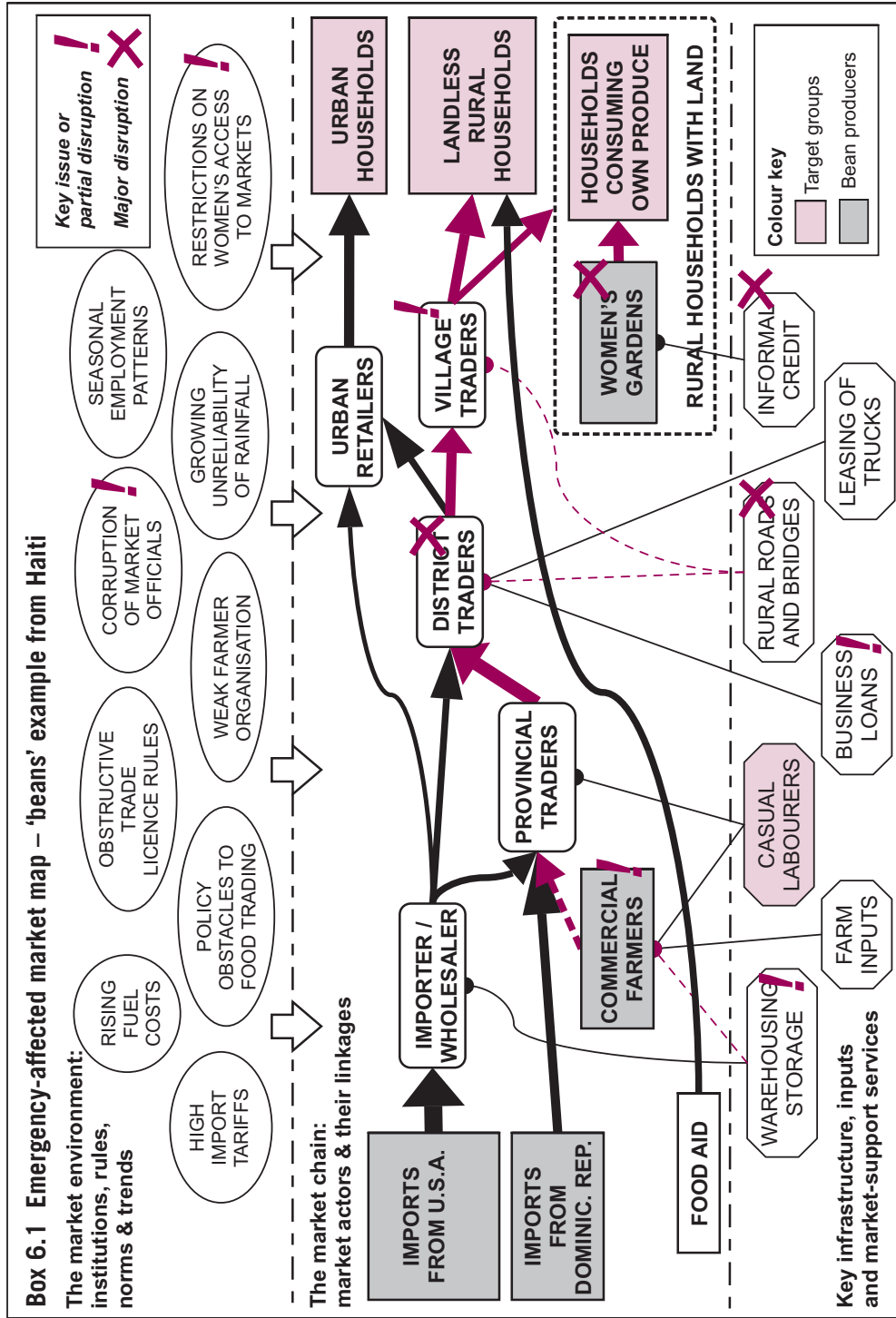
Explanatory text – map features

Maps do not tell the full story on their own. Both the baseline and emergency market-system maps should be backed up by short explanatory texts which draw attention to key features of the system that are *most relevant to the crisis-affected situation*.

This text will explain features of the system, such as the following:

- where (location on the map) and how (what activities and roles) different target groups are involved in the market system;
- which pathways (or chains) in the system are most important in meeting their needs;
- which market actors are the crucial important players in these chains;
- what forms of infrastructure and types of supporting service are especially important;
- any rules, regulations, social norms, or practices (conduct) that are significant factors affecting the performance of the system, or the access of particular target groups. This last point includes socially or culturally determined gender roles.

For every flag on the map, you will need to write a brief narrative text, explaining the nature of the impact or problem in descriptive terms. Keep your audience of busy decision makers in mind. Try to keep the text brief and relevant. See Box 6.1.



6.4 Quantification: putting numbers on the map

EMMA results will be more informative and compelling if you can rally some basic numbers to support your analysis and recommendations. This section explains how to make EMMA a quantitative, as well as descriptive, process.

The data that you compile here will be used later – in Step 8 especially. In particular, they will help you to draw conclusions about the capacity of the market system to play a role in humanitarian response: for example, by responding to local procurement activities, or reacting to increases in demand when cash-based assistance is given to target groups.

Two notes of caution

- It is often difficult and time-consuming to get accurate and reliable data about baseline market systems in a sudden-onset emergency situation. The results of quantitative analysis may not always justify the effort, skills, and time involved.
- Unless you have very solid evidence, assume that your data are imprecise and uncertain (see Box 5.3). If you interviewed only two or three traders, it would be better to give an approximate estimate (e.g. 100–150 tonnes) than to record an apparently accurate but actually very uncertain number (e.g. 137.5 tonnes).

Therefore, in practice, EMMA must compromise by focusing on only a few key pieces of data. Do not let the collection and analysis of quantitative data lead to neglect of more useful qualitative information.

The most useful quantitative data for EMMA to focus on are the following:

- *numbers* of market actors – at each step in the value / supply chain;
- *prices* of items – at key transaction points;
- *volumes* (quantities) – of goods or services produced and traded.

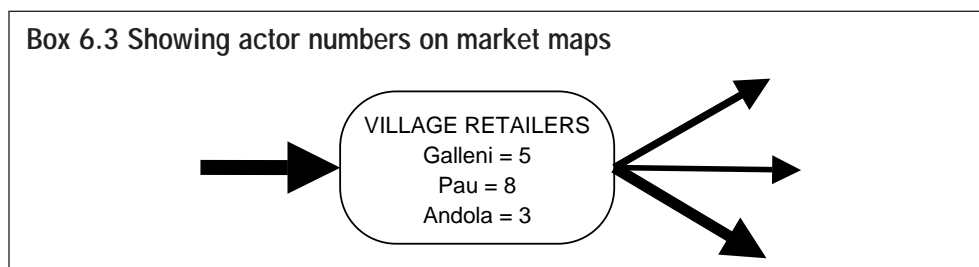
| Box 6.2 Types of useful quantitative data in EMMA | | |
|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <i>Data</i> | <i>Details</i> | <i>Why data are useful or important</i> |
| Actor numbers | Number of target households (differentiating between numbers of women and men if relevant) Number of market actors at key points in the chain | To understand scale of activities. To extrapolate from sample. To flag up risks of poor conduct (e.g. cartels). |
| Price data | Prices for target households, and at key points along supply / value chain | To help to diagnose supply or demand failure. To help to identify bottlenecks. |
| Volumes | Consumption or production by different target groups (differentiating between women and men if appropriate – e.g. for production) Trade volumes in local, provincial, national markets | To assess availability. To evaluate capacity to respond to procurement needs. |

Numbers of market actors

It is important to look out for and take note of any significant changes in the numbers of market actors at key points in the system, especially if these changes point to the possibility of severe problems such as

- lack of physical access to the market system for any target groups;
- excessive concentration of market power in the hands of a few remaining actors (see ‘competition’ issues below);
- situations where there is a risk of cartels forming or monopolistic behaviour (poor conduct).

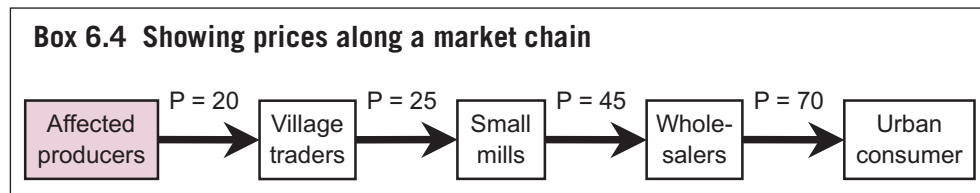
Disruption to the market system may involve the death or displacement of market actors and the destruction of their business assets, stocks, and premises. The number of market actors (including different target-group households), and their locations, can often be shown directly on the market-system map, as in Box 6.3.



Using price data

There is, at least in principle, a typical or average ‘market’ price associated with every transaction link in a supply chain or value chain at any time of year. It is especially useful to record changes in prices following the onset of an emergency. Comparison between baseline and crisis-affected prices – provided that they are seasonally relevant – can be useful for identifying bottlenecks or constraints in the market system caused by the crisis.

Price data can be shown on the map, as in Box 6.4.



It is also useful to consider the direction and pace of price changes – also known as *price dynamics*. When it comes to assessing failures of supply and/or demand (in Step 8), knowing whether prices are generally rising, falling, or remaining stable is as important as knowing their relative level compared with the baseline situation.

Comparisons of prices prevailing at different times (i.e. baseline and current situations) need to take account of any *background inflation* – that is, general rises in prices in the national economy that are not related to the impact of the emergency. If background inflation is a significant factor (greater than 10 per cent p.a.), you should convert historical baseline prices into equivalent current prices. In situations of hyper-inflation or great instability of the local currency, it may be better to convert all prices into US dollars or Euros, using a realistic (informal or black-market) exchange rate.

Volumes of production and trade

Even though they are difficult to collect and analyse, data about the quantities, or volumes, of goods being produced and traded are potentially very valuable, for these reasons:

- In supply market systems, they are a guide to the availability of items, and the capacity of market actors to respond to the local procurement needs of both agencies and/or the target population.
- In income market systems, they can indicate the capacity of the market system to create income for the affected population by purchasing their produce, or their labour.
- Changes in volumes of production and trade are also important indicators of the general nature of the impact of the crisis on the market system (see the section on supply and demand failure in Step 8).

As a minimum, EMMA practitioners need to try to estimate (approximately) the seasonal production and trade volumes in the ‘local economic area’ where the affected population is located; and in the wider provincial or national economy within which the local area is embedded.

How to do it

There are essentially two ways of estimating the total production and trade in a given economic area (see Box 6.5). You can use whichever is easier, or if possible use both as a way to cross-check (triangulate) findings.

Method 1 – based on consumption

- a. Estimate total consumption or usage in the economic area (using data about households).
- b. Add any goods going out (exports) to other economic areas or markets (using data from traders).

Box 6.5 Estimating volumes from consumption data

Example of Method 1: consumption plus exports

Ghazia county has a population of approx 140,000 households.

Normally, in May–July, average household consumption = 2.5 kg lentils per month.

Estimated *baseline consumption* = $140,000 \times 2.5 \text{ kg} = 350 \text{ tonnes / month}$

At this time of year, Ghazia normally exports lentils to the capital city. Three main traders (who control two-thirds of the market) would normally export approximately 40 tonnes per month.

Estimated *baseline trade going out* of Ghazia = $40 \div 2/3 = 60 \text{ tonnes / month}$

Total production and trade (baseline) = $350 + 60 = 410 \text{ tonnes / month}$

Method 2 – based on production

- a. Estimate total production in the economic area (using data from producers, government).
- b. Add any goods coming in (imports) from other economic areas or markets (using data from traders).

It is important not to be intimidated by such calculations, nor to spend too much time on them. In an emergency situation, and especially with baseline data, the best you can realistically hope for is a very rough estimate of quantities: just a ‘feel’ for the scale of economic activity.

Box 6.6 Estimating volumes from production data*Example of Method 2: production plus imports*

Kandarpur district typically harvests approximately 12,000 tonnes of wheat in September /October, for consumption during the winter (six months).

Estimated *production* = $12,000 \div 6 = 2,000$ tonnes / month (spread over winter)

During this season, the district also normally imports wheat from the southern region. The two main wholesalers (who jointly control 80 per cent of this market) typically bring in approximately 60 tonnes each week.

Estimated *trade coming into* the district = $60 \times 4 \div 80\% = 300$ tonnes / month

Total production and trade (baseline) = $2,000 + 300 = 2,300$ tonnes / month

Information about production and trade volumes can be included in the market-system map in two ways. If you only have very rough estimates, the relative importance of different linkages or pathways in the system can be illustrated by using different thicknesses of arrows. Alternatively, numerical estimates at key points in the system can be overlaid on the map, as in Box 6.8.

6.5 Availability (stocks and lead times)

As well as getting a sense of production and trade volumes in supply market systems, it will be very useful (in Step 9) to have information about availability. These data include the following:

- the stocks held by different types of market actor along a supply chain, and
- the lead-times (between order and delivery) expected at each link in the chain.

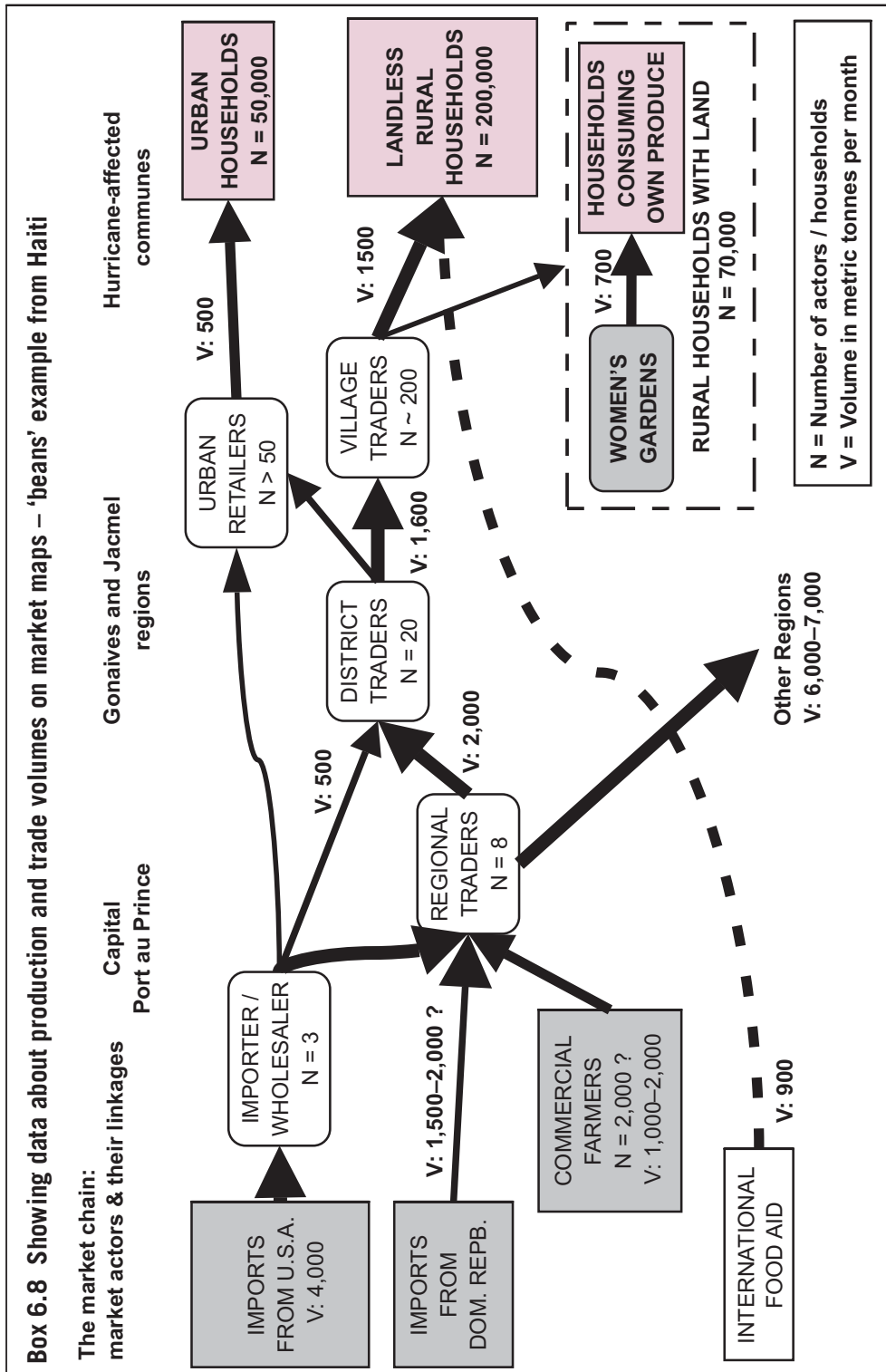
This information will come from the interviews with market actors (traders, retailers etc.). When investigating lead-times, treat people's responses cautiously. Traders may exaggerate how quickly they can obtain supplies, in order to impress you, or because they are unaware of bottlenecks elsewhere. Always check with other market actors in the chain.

Information about 'availability' can be usefully summarized in a table like Box 6.7.

Box 6.7 Analysis of availability along a supply chain

| | <i>Growers</i> N: 70–100 | <i>Traders</i> N: 10–15 | <i>Millers</i> N: 6 | <i>Retailers</i> N: 100–150 | <i>Consumers</i> N: ~ 20,000 |
|-------------------|---------------------------------------|----------------------------|--------------------------------------|-----------------------------------|---------------------------------------|
| Stocks | 1,500 tonnes as crops in fields | 50 tonnes in transit | 150 tonnes in storage at mills | 30 tonnes in stock in shops | 100 tonnes in household larders |
| Lead-times | six weeks (harvest in June) | one week (transport) | two weeks (milling, bagging) | 3 days (home stocks) | |

Box 6.8 Showing data about production and trade volumes on market maps – ‘beans’ example from Haiti



6.6 Seasonal calendar for a market system

Many market systems have strong seasonal variations in the patterns of production, trade, and prices. These patterns may reveal themselves through seasonal price fluctuations for inputs and outputs. Or they may involve major seasonal shifts of activity as people move, for example, between farming and wage employment.

This is most obvious in agricultural market systems – with shifts in demand for labour for ploughing, weeding, harvesting; and a surge in the supply of produce after harvesting. However, seasonal patterns may also feature in shelter-related markets, and in off-farm activities that are affected by weather or road access, for example. There is often a strong gender-related dimension to these patterns, as the roles and responsibilities of women and men differ. These need to be understood, since emergencies typically have different impacts on women’s and men’s time.

It is essential that EMMA users are able to distinguish ‘normal’ seasonal fluctuations in prices and trade volumes from the disruptions created by an emergency situation. Otherwise, your diagnosis of market-system problems and proposed solutions will be flawed. The baseline market map should represent a ‘seasonally relevant’ picture.

It is a good idea, therefore, to construct a simple seasonal calendar for each market system analysed, to capture the ‘normal’ seasonal patterns of price and trade. This can also be used to describe other important features of the system which may be relevant to the humanitarian response.

| Box 6.9 Seasonal calendar for a market system – example | | | | | | | | | | | | |
|----------------------------------------------------------------|--------|-----|---------|---|---|------|--------|---|------|-----|--------|---|
| <i>Market system (e.g. Beans)</i> | S | O | N | D | J | F | M | A | M | J | J | A |
| Volume of trade | | Low | | | | High | | | | Low | High | |
| Prices at market | | | Peak \$ | | | | Low \$ | | | | Low \$ | |
| Input purchases | | \$ | | | | | \$ | | | | | |
| Road conditions | Floods | | | | | | | | | | | |
| Risk of crop pests | | | High | | | | | | High | | | |

Checklist for Step 6

- o Baseline and emergency-affected market maps finalized
- o Appropriate details quantified: actor numbers, prices, and availability
- o Key features of the system flagged up and described
- o Seasonal calendar finalized