FAO/WFP

# Joint Guidelines

# for Crop and Food Security Assessment Missions (CFSAMs)

WFP

*January 2009*

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*FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS*

*WORLD FOOD PROGRAMME*

WFP

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*FAO/WFP Joint Guidelines for Crop and Food Security Assessment Missions (CFSAMs)*

*This handbook has been prepared by the United Nations Food and Agriculture Organization (FAO) and the World Food Programme (WFP) for use by staff and their partners.*

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# Foreword

There have been FAO/WFP CFSAMs since the late 1970s. As they took place over the years, ranging from a dozen to nearly thirty annually, they have come to be recognized as critical parts of the information countries, UN, and donor agencies, as a need to plan for and respond to food crises.

The previous version of the CFSAM Guidelines appeared in 1996 and was, at the time, a major step forward in formalizing the methodological issues addressed by such missions. Since the basic outline of Assessment Mission reports has not fundamentally changed, much of the 1996 material is still relevant and appears in an updated form. However, after ten years, both FAO and WFP felt it was necessary to update the Guidelines; there were several reasons for this:

- The experience of the last ten years clearly shows that CFSAMs are taking place in a greater variety of situations and increasingly complex crises. Some were undertaken in response to "classic" situations of disaster-induced food shortfalls, while others have taken place in quick onset disaster situations (e.g. Aceh Province after the Tsunami, Bolivia in early 2007), in the context of complex emergencies (e.g. Kosovo, Iraq, Timor Leste) or in transition/reconstruction periods (e.g. Angola, Côte d'Ivoire, 2004);
- It was recognized that some areas of investigation needed to be given greater emphasis. These include the role of markets, policy and political economy issues, and domestic effective demand as a determinant of commercial imports. Methodological advances have made it possible to address these issues even within the limits of time and resources available to a CFSAM;
- Advances in certain technologies and methods (for instance remote sensing and analysis of earth observation data, geo-spatial analysis) needed to be incorporated;
- A large part of what makes a CFSAM successful is related to process issues and enhanced arrangements needed to be formalized for institutional collaboration in planning and implementing missions and working with observers and a variety of partners while retaining full independence of view and expression.

The new Guidelines have been extensively discussed between FAO/GIEWS and WFP/Food Security Analysis Service and have been reviewed by some of our major partners. We trust that they will be useful for planning future CFSAMs and training CFSAM teams and, by providing practical guidance, help generate ever more accurate and timely assessments and thus contribute to saving human lives and scarce resources.

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# Acknowledgements

The revised Guidelines have been prepared by a core team led by Henri Josserand, at FAO, and Wolfgang Herbinger, at WFP. On the FAO side, the team also included Shukri Ahmed, Liliana Balbi, Kisan Gunjal, Paul Racionzer and Mario Zappacosta, with assistance from Maria D'Alessandro and Laura Cerquitella. At WFP, the team included Geert Beekhuis, Thomas Beuter, Lisa Biederlack, Henk-Jan Brinkman, Agnes Dhur, Getachew Diriba, Simon Dradri, Sylvie Montembault and Simon Renk. In addition, a number of individual consultants or technical experts contributed their insights and experiences to early discussions, produced commissioned papers on critical CFSAM-related issues, and participated in workshops and assessment missions. They included, *inter alia*, Thierry Aube, Paul Dorosh, Neville Edirisinghe, Dieter Hannusch, Hector Maletta, Raffaello Marsili, Curt Reynolds, Ian Robinson and George Zanias.

The process was conducted under the general guidance of Alexander Sarris, Director of the FAO Trade and Markets Division, and John Aylieff, Director of the Assessment, Analysis and Preparedness Branch of WFP. Within both organizations, many people from various units and divisions have contributed to this work. At FAO, valuable input was received from the Trade and Markets and Emergency Operations Divisions (EST,TCE), from the Agricultural Development Economics Division (ESA), the Nutrition and Consumer Protection Division (AGN), the Environmental Assessment and Management Unit (NRCE), and from the Food Insecurity and Vulnerability Information and Mapping System (FIVIMS). Within WFP, several technical units contributed, in particular the Vulnerability and Mapping Service (ODAV) and the Economic Analysis Service (PDPE). Several WFP Country Offices and Regional Bureaux added the essential "field perspective".

Important contributions were received from the EC Joint Research Centre, especially the MARS-Food Unit, while the underpinning of the revised Guidelines also benefited from the work of WFP's donor-supported Strengthening Emergency Needs Assessment Capacity (SENAC) Project and the active participation of observers from donor agencies in Crop and Food Security Assessment Missions (CFSAMs). A number of interested donor agencies including the European Commission, USAID, DFID and similar institutions in Canada, Denmark, France, Germany, Italy, the Netherlands and Switzerland also actively participated in technical workshops as early as 2004.

FAO and WFP are particularly grateful to the European Commission, which has supported the work of both organizations in addressing the complex set of methodologies and process issues surrounding CFSAMs.

The Guidelines also benefited from the experience of other groups engaged in food security assessment, vulnerability or early warning at the national and regional levels, and from the staff of the Famine Early Warning Systems Network (FEWSNet), both at headquarters and in the field.

Finally, both FAO and WFP give special thanks to principal consultant, Ron Ockwell, for his thoroughness, patience and good humour throughout the long drafting process.

While all these contributions are gratefully acknowledged, any errors or omissions remain the responsibility of FAO/ESTG and WFP/Food Security Analaysis Service.

Rome, November 2008

# About these guidelines

## Purpose

These guidelines provide basic information and practical guidance for anyone who participates in a FAO/WFP Crop and Food Security Assessment Mission (CFSAM) - whether as a FAO/WFP core team member, a government or other agency participant, or a donor observer. They can also be of use to organizations and individuals who provide information for such a mission or need to use the findings of a CFSAM report.

## Structure

The guidelines comprise six parts. Parts III to VI follow the basic structure of the report that a CFSAM team is expected to produce.

***Part I*** describes the general objectives of CFSAMs, when they are conducted, who should normally be involved, the guiding principles, the basic concepts and methodologies, and the standard outline for a CFSAM report. These are elements that everyone contributing to a CFSAM must be familiar with.

***Part II*** provides guidance on how to plan and undertake a CFSAM. It specifies what needs to be done in advance as well as what should be done during the period (usually 3 to 4 weeks) in which the mission is undertaken in the country concerned. It describes the process according to which the report is prepared and finalized.

***Part III*** provides guidance on analysing the socio-economic context, agricultural production and market conditions. Chapter 6 suggests what needs to be done at the outset in terms of analysing and summarizing the *background* to the crisis and the *context*. This is essential for defining the focus of the mission's activities, interpreting data, and formulating recommendations. Chapter 7 explains what a CFSAM mission is expected to do in relation to assessing domestic *agricultural production*. The principal focus is on the current (or forthcoming) main, staple-crop harvest but the analysis must also include secondary harvests, cash crops and livestock. Chapter 8 outlines how the team should analyse the characteristics and functioning of *markets,* and market *flows and prices*, the implications for food security in different areas and for different population groups and the possibilities for local purchase by the government, WFP or other agencies. Some of this analysis can - and should - be done prior to the start of the mission itself, in most cases.

***Part IV*** describes how a CFSAM team should analyse the overall food supply situation in the country. Chapter 9 describes how to prepare a national *staple food balance sheet*. Chapters 10 to 12 provide guidance on estimating and forecasting stocks, estimating requirements for food consumption and other uses, preparing projections for external trade, which are essential for preparing a balance sheet.

***Part V*** provides guidance on analysing information on the *food security situation at household level* including identifying at-risk population groups, the nature and severity of their food insecurity, their prospects for the coming months, and their expected food

access shortfalls - hence the type, scale and timing of the assistance (food and/or non-food) they will need in order to have safe access to adequate food in the coming year.

***Part VI*** provides guidance on bringing the various analyses and perspectives together - notably the (macro-level) *conclusions* in relation to the food supply situation and the (micro-level) conclusions concerning the emergency assistance needs of crisis-affected households. It suggests how the team may identify the most appropriate and feasible *response options* (food and/or non-food) and preparing *recommendations* for an assistance strategy (including targeting arrangements) and the indicators that need to be monitored during the coming months to detect changes in the situation and needs.

The ***annexes*** (at the back of the printed version of these guidelines) provide some tools and additional guidance on specific topics that may be useful to many CFSAM mission members while planning, conducting, and writing CFSAM surveys and reports.

The ***technical notes*** on the accompanying CD-ROM provide more detailed guidance and tools that may be of use to topic specialists within the overall CFSAM team. Also included is an annotated *report template* in electronic form (MS-WORD), which may be used to help write a CFSAM report.

The guidance in parts I and II is intended for anyone involved in preparing for or helping to organize a CFSAM, or participating in or reading the report of a CFSAM.

The guidance in parts III to VI is addressed to members of CFSAM missions - the "core team" of FAO and WFP staff members or consultants and also other national and international personnel who contribute to the work of the mission and participate in field visits. The "you" in those parts refers to all those individuals.

## Background

In 1985 FAO produced *Guidelines for Use by FAO Crop Assessment Missions to Africa*, to provide: "a methodological framework for FAO missions making pre-harvest forecasts of production of main crops in African countries". This was followed in 1987 by FAO/GIEWS *Methodology for the Assessment of Food Supply Situation and Requirements for Exceptional Assistance Arising from Crop Failure or Unusual Crop Surpluses*.

From the early 1990s, *Crop and Food Supply Assessment Missions* (CFSAMs) have been increasingly called on to assess situations in countries where food supplies and people's access to food had been affected by conflict, social strife, poor governance, inappropriate policies or economic mismanagement as well as in countries facing food crises due to natural phenomena (droughts, floods, cyclones, etc.). In many cases, human-induced crises were combined with adverse weather conditions, external economic shocks or public health problems such as HIV-AIDS and malaria. At the same time, trade has been liberalized in many countries, increasing the importance of private commercial imports in national food supplies, and there were considerable advances in methodologies for both early warning of food crises and food needs assessments. Accordingly, the guidelines underwent a major revision in 1996 with increased attention to household food access in parallel with the analysis of the overall food supply situation, and the increasing involvement of WFP in what became joint FAO-WFP missions.

Since then, the job of assessing the impact of a shock, forecasting food supply conditions and defining short-term measures to be taken to address resulting problems, has become even more demanding. Meanwhile, national capacities for assessments have increased considerably in a number of countries.

In the last few years and especially since early 2004:

- FAO and WFP have jointly taken steps to further improve the process and methodology of CFSAMs through a joint critical review, technical discussions, consultancies, and technical workshops or expert consultations with interested partners.
- The understanding of the role and importance of markets and of the complex interactions between public and private sectors has increased and CFSAMs now seek to understand and take account of the factors that determine domestic effective demand and influence commercial imports.
- CFSAMs have routinely included "observers" from donor agencies and this has greatly contributed to the transparency of the process and to better understanding between all parties. FAO, WFP and key donor agencies have jointly developed guidelines for observers (which are presented in **Annex 5**).
- CFSAMs have undertaken more extensive analysis of crop-related remote sensing data at both national and regional levels through collaboration between FAO and space agencies and research organizations in Europe and the USA.
- CFSAMs have been undertaken without any *a priori* assumption that substantial amounts of food aid would be an appropriate response.
- A few CFSAM exercises have included a 2 to 3 month preparatory phase with initial consultations, compilation of data and other preliminary work at country level prior to the arrival of the mission.

The present guidelines represent an up-dating and refinement of the 1996 guidelines taking account of the above developments and challenges, the need for a flexible approach that can be applied to different agricultural systems, food markets and food insecurity problems, and the importance of considering a range of potential response options including non-food as well as food aid interventions. The broadening of the objectives is reflected in the new title: *Crop and Food* Security *Assessment Missions*.

# Glossary (key terms)

***Agro-ecological zone***: a land resource mapping unit defined in terms of climate, land and soils, and/or land cover, and having a specific range of potentials and constraints for land use. (See *Agro-ecological Zoning Guidelines*, FAO 1996)

***Apparent per capita (staple) food consumption***: the figure for estimated average per capita consumption derived as the residual from (staple) food balance sheets for the last few years.

***Coping strategies***: activities that people resort to temporarily in order to obtain food, income and/or services when their normal means of livelihood have been disrupted.

***Core team***: the CFSAM core team is composed of a small number of FAO and WFP staff members or consultants from outside the country who are responsible for the final report and recommendations.

(A large number of other in-country personnel also participate in and contribute to the CFSAM process both during the preparatory phase and during the mission itself.)

***Effective demand***: the actual economic demand for particular goods or services that is supported by a capacity to purchase. It is a combination of the felt needs of consumers and their purchasing power.

***Elasticity of demand***: the price (or income) elasticity of demand - the percentage change in quantity demanded in response to a given percentage change in price (or income). Basic foods typically have a low price elasticity of demand, meaning that an increase in price would induce a proportionally much smaller decrease in quantity demanded.

***Food access***: the households' ability to regularly acquire adequate amounts of food through a combination of their own stock and home production, purchases, barter, gifts, borrowing or food aid.

***Food availability***: the amount of food that is physically present in a country or area through all forms of domestic production, stocks, commercial imports and food aid.

In the specific context of a food balance sheet, *projected food availability* is the total amount of staple food that is expected to be available in the country (or area) during the coming marketing year including opening (carry-over) stocks, domestic production, public- and private-sector commercial imports, and food aid.

***Food consumption***: is the food that households and individuals actually consume. It is a function of food access and the intra-household use of that food, and is influenced by social norms within the community.

***Food insecurity***: a situation in which people lack secure access to sufficient amounts of safe and nutritious food for normal growth and development and an active and healthy life.

People (households) who do not have assured safe access to sufficient food throughout the year are said to be "food-insecure".

Food insecurity may be caused by the unavailability of food, insufficient purchasing power, inappropriate distribution, or inadequate use of food at the household level. Food insecurity may be chronic, seasonal or transitory.

***Food security*** exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food for a healthy and active life (World Food Summit Plan of Action, paragraph 1, 1996).

*Household food security* is the application of this concept at the household level. People (households) who have assured access to sufficient food throughout the year are said to be "food-secure".

***Food utilization*** refers to the use that is made of food.

According to general food security literature and analyses, food utilization refers to: (a) households' use of the food to which they have access, and (b) individuals' ability to absorb nutrients - the conversion efficiency of food by the body.

In the specific context of a food balance sheet, *projected food utilization* refers to the forecast *requirements* for staple foods during the coming marketing year including food for human consumption ("food use"), for use as seed, fodder and industrial purposes, plus post-harvest losses and exports.

***Import parity price*** (IPP) is the price at the border of a good that is imported.

***Livelihoods*** comprise the capabilities, assets (including both material and social resources) and activities required for a means of living linked to survival and (future) well-being. *Livelihood strategies* are the practical means or activities through which people have access to food and other necessaries, or have an income to buy them.

***Livelihood zone***: an area that is reasonably homogeneous and distinct from neighbouring areas in terms of main food production and income activities, cultural practices and hazards affecting food security.

***Malnutrition***: a pathological state resulting from too little (or too much) consumption of essential nutrients.

***Marketing year***: a 12 month period immediately following the harvest of the main cropping season. For example, in much of southern Africa the main season harvest starts in March and goes on until May, consequently April to March is used as a marketing year. (See FAO/GIEWS website for a complete list of marketing years for various countries.)

***Observers*** are representatives of donors or other entities who are invited (with the host government agreement) to accompany the team through all stages of the CFSAM. They may observe and comment on all aspects but have no direct input into, or control over, the final report. Guidelines for observers are presented in **Annex 5**.

***Status-quo estimate*** (SQE) is the figure used for average per capita (staple) food consumption for the forthcoming marketing year assuming that consumption should be maintained at recent historic levels.

***Vulnerability*** (for food security purposes) refers to the susceptibility of a household/ community to factors that place them at risk of becoming food insecure or malnourished. It is a combination of the degree of households' exposure to risk and of their ability to cope with shocks.

***Yield*** (for CFSAM purposes) refers to the actual whole grain yield obtained at harvest time - a figure that accounts for losses incurred during harvesting and threshing excluding post-harvest losses.

In this handbook the terms ***"shock"*** or ***"crisis"*** are used to describe the event(s) that caused the current or impending food security crisis. This includes both sudden "shocks" (e.g. due to a flood or conflict) and "crises" that develop progressively (e.g. due to drought or economic collapse).

# Acronyms & abbreviations

| | |
|---|---|
| R&CD (WFP) | WFP Representative and Country Director |
| CFSAM | Crop and Food Security Assessment Mission |
| CFSVA | Comprehensive Food Security and Vulnerability Assessment (WFP) |
| CPI | Consumer Price Index |
| CSO | Central Statistics Office |
| EFSA | Emergency Food Security Assessment |
| ESTG (FAO) | FAO Global Information and Early Warning Service |
| FAO | Food and Agriculture Organization of the United Nations |
| FAOR | FAO Representative |
| FBS | Food Balance Sheet |
| FEWS-net | Famine Early Warning System (supported by USAID) |
| FSIS | Food Security Information System |
| FSM | Food Security Monitoring |
| FSR | Food Security Review (by FAO/GIEWS) |
| GDP | Gross Domestic Product |
| GIEWS | Global Information and Early Warning System on Food and Agriculture |
| GIS | Geographic Information System |
| IPC | Integrated (humanitarian) Phase Classification |
| IPP | Import-Parity Price |
| MoA | Ministry of Agriculture |
| NDVI | Normalized Difference Vegetation Index |
| PET | Pictorial Evaluation Tool |
| PRSP | Poverty Reduction Strategy Paper |
| RB (WFP) | Regional Bureau |
| RS | Remote Sensing |
| SQE | Status Quo Estimate (for food consumption) |
| TOR | Terms of Reference |
| VAM (WFP) | Vulnerability Analysis and Mapping Service, WFP |
| WFP | World Food Programme |

 indicates a reference, or link, to another document that is not included in the printed version of these guidelines - the handbook - but is available on the associated CD-ROM.

# Part I
## CFSAM Essentials

# 1 Why and when a CFSAM

Everyone involved in preparing for or participating in a CFSAM needs to understand the purpose of a CFSAM and how it relates to other assessment and monitoring activities.

## 1.1 Purpose and nature of a CFSAM

### Purpose

The primary purpose of a Crop and Food Security Assessment Mission (CFSAM) is to provide an accurate picture of the extent and severity of crisis-induced food insecurity, existing or expected, in the country (or in specific areas) so that timely and appropriate actions can be taken by the government and the international community to minimize the impact of the crisis on affected populations.

### Combination of macro- and micro-level analyses

CFSAMs analyse the food security situation at two different levels: macro and micro.

- At the macro-level, the mission analyses the overall economic situation, agricultural production and market conditions, and the aggregate supply and demand situation for staple foods (mainly cereals), to produce a national cereal/staple food balance sheet (NFBS) and an estimate of any uncovered staple food import requirement for the coming marketing year.
- At the micro level, the mission analyses the access that households in the crisis-affected areas and population groups will have to food in the coming year from their own production, market purchases and other sources. Furthermore, it produces estimates of household food access shortfalls and the assistance that will be required by different groups, during specific periods, to assure their access to adequate food.

The two levels of analyses are then combined to make recommendations on how any national-level deficit should be made up and the assistance needed by different groups should be provided - options could include, for example, imported food aid, distributions of locally-purchased food, cash or other non-food transfers, subsidized sales, or a combination of such responses. Amongst other things, the type of assistance will be determined by the overall food supply situation, market conditions, and nutritional and operational considerations.

Note that the uncovered staple food import requirement estimated from the national balance sheet and the aggregate of the assistance needs of crisis-affected population groups measure different things and, in most cases, will *not* coincide. Some of the assistance needs in the crisis-affected areas, for instance, may be able to be met by transfers of food from other, surplus areas, and not need to be imported. In addition, the bases for calculation of "requirements" and "needs" are different. The estimate of aggregate needs for human consumption used in the balance sheet is based on estimates of actual per capita staple food consumption in recent "normal" years (the *status quo estimate* or SQE) while assistance needs are based on the international humanitarian norm of 2100 kcal/person/day for total nutritional intake.

It is therefore necessary to compare - and explain the difference between - the uncovered food import requirement derived from the NFBS and the aggregate household assistance needs derived from the household assessment when presenting the jointly agreed recommendations - see sections 9.3 and 14.2.

### Scope of work

A scope of work is drawn up for each CFSAM taking account of the particular characteristics and needs of the situation. However, a standard set of tasks needs to be accomplished in most CFSAMs as shown in Panel 1-1. This provides the basis for developing specific objectives and scopes of work in each case.

A CFSAM is normally a ***rapid verification (audit-type) assessment*** exercise in which the team:

- critically examines available data and analyses, including the findings of assessments already undertaken;
- interviews a range of key informants;
- undertakes field visits to check and, if necessary, adjust existing estimates of crop production for the forthcoming harvest, stocks, and current and expected levels of household food insecurity in the affected areas;
- synthesizes and triangulates data from a wide range of data sources, including its own observations and findings in a concise and rigorous way;
- makes its own judgements on the food security situation and likely scenarios for the coming year; *and*
- formulates its own recommendations on food security assistance and specific responses, endorsing or modifying existing proposals and recommendations as appropriate.

The ultimate goal is to protect lives, livelihoods and nutritional status by ensuring that crisis-affected food insecure people have access to adequate food throughout the coming marketing year while promoting recovery of food production, livelihoods and the market systems on which they depend.

**Panel 1-1**

**Typical main tasks of a CFSAM**

Specific tasks to be accomplished by a CFSAM include:

- To verify/refine/make (as appropriate) estimates - forecasts - for ***food production*** in the forthcoming marketing year - at national and, where appropriate and possible, at sub-national levels - based on assessment of the status of, and prospects for, major staple food crops and, where appropriate, livestock and fisheries;
- To verify/refine/make (as appropriate) estimates of food ***stocks, losses and utilization requirements*** (for human consumption, animal feed, industrial uses) in the coming year;

- To verify/refine/make (as appropriate) estimates for ***exports*** and ***imports*** in the coming year including the public and private sectors' capacity to import food based on an assessment of the overall macro-economic situation, an analysis of prices, effective demand and traders' expected behaviour and already-planned food aid;
- To prepare a national ***staple food balance sheet*** - and balance sheets at sub-national level where appropriate and possible - and estimate any uncovered food import requirement;
- To identify possibilities for ***local purchases*** in surplus areas (if any) to help cover deficits in the crisis-affected areas including the quantities that could be purchased, where and when, without unduly disturbing markets and prices;
- To verify/refine information available on the ***food security situation*** and vulnerabilities at ***household level*** among populations affected (or expected to be affected) by the crisis, and identify the population groups that are (or will be) unable to meet their basic food needs - that are (or will be) acutely food insecure - as a result of the crisis, differentiating those who were chronically food insecure before the current crisis from those who were not;
- To verify/refine/make (as appropriate) estimates of the ***numbers of people*** in need of emergency food security assistance, their expected ***food access shortfalls*** (gaps) in the coming year, and the periods when they will need assistance.
- To recommend a food security assistance strategy and specific actions to be taken to address the ***uncovered import requirement*** (if any) and food insecurity at household level including the type and quantity of ***targeted assistance*** (food and/or non-food) required, when and for how long it is needed in order to ensure that the target population groups will have access to adequate food during the coming year. These recommendations must be based on the analysis of market conditions and institutional and logistic capacities and constraints for the delivery and distribution of food or other food-security related assistance.
- To recommend any follow-up, more detailed assessments or other actions that may be required.
- If, in the process of the above, the CFSAM team identifies avoidable constraints on food production and marketing operations, it may make practical suggestions/ recommendations (or propose further studies) to overcome those constraints and expedite the recovery of food production and market operations in order to ensure - or at least maximize their contribution to - food availability and access in the affected areas. In some cases this may require additional input from other Technical Units from FAO, for example, TCE, AGS, etc.
- The team may also draw attention to any public health or other action needed? to address nutritional problems and improve food utilization at the household level.

The standard outline for a CFSAM report is shown in Panel 1-2. This may be adapted to the specific situation and the emphasis/scope of work of the mission but in general most of the headings and sub-headings shown should be used. A more detailed, annotated outline is provided in **Annex 1**.

A CFSAM is a focused exercise to prepare and present as clearly as possible estimates for crop production, the overall food supply situation, and the food security situation

at household level. The team should take account of the phase of the emergency (for example whether it is an acute crisis or a transition towards development,) and relevant longer-term issues, but a CFSAM is *not* a policy review or an exercise to produce proposals for projects or guidelines for future agricultural or other practices.

**Panel 1-2**

**Standard outline for a CFSAM report**

Contents, acronyms

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Market conditions

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Estimated household food access shortfalls

**7. Conclusions and response options**

Conclusions
Response options

**8. Recommendations**

Assistance strategy, follow-up studies, ongoing monitoring, improvements

## 1.2 When and where a CFSAM?

When may a CFSAM be undertaken:

- there are signs of an imminent food security crisis or there is an ongoing crisis; *and*
- there are doubts or debates about the adequacy of the food security data available and/or the analysis and interpretation of those data; *and*
- the government requests a CFSAM in view of the current or imminent crisis situation.

In short, a CFSAM may be undertaken when there is value in an independent, external perspective from a team of international experts undertaking a rapid, integrated analysis of the food security situation at both macro- and household- levels in order to inform response decisions.

Conversely, a CFSAM is *not* needed when existing national/in-country systems generate sufficient, credible information accepted by all parties as a sound basis for appropriate responses.

### Situations in which CFSAMs are undertaken

In practice, CFSAMs are undertaken in three types of crisis situation:

*(i)* countries facing substantial and sudden reductions in food production (e.g. as a result of drought or pests);

*(ii)* countries with widespread, sudden increases in the numbers of people lacking access to food (e.g. as a result of collapse of incomes, exceptionally high food prices or inability to circulate within the country) although supplies may be available; *and*

*(iii)* countries with severe localized food insecurity (e.g. as a result of conflict or a combination of crop failure and deep poverty).

These categories correspond to the typology of countries in crisis, as reported by FAO/GIEWS.

Crises that may give rise to a CFSAM are ***exceptional*** situations where substantial numbers of people have become ***more food insecure than usual***, or are likely to become so in the near future.

### Situations in which other types of assessment may be more appropriate than a CFSAM

In the early stages of a major crisis, when few data are available - in the early stages of a complex emergency, for example - a rapid ***emergency food security assessment*** (EFSA) with the full participation of a range of interested national and international entities is more appropriate than a CFSAM. In such cases (and when WFP is not previously present in the country), FAO and WFP would normally participate in a broad-based EFSA. Where necessary, WFP would take the lead in organizing such an assessment following the guidance provided in the WFP EFSA Handbook.

For early warning purposes, a sub-national assessment in the form of a FAO/GIEWS ***Food Security Review*** at mid-term during the crop year may be more appropriate than the full scale CFSAM. Such reviews are led by an FAO/GIEWS officer and are less formal and costly than a CFSAM but can provide information for early mitigation actions.

### Timing of a CFSAM

Missions are usually planned to be in country towards the ***end of the main cropping season***, when quantitative production estimates can be made with reasonable reliability. However, mission timing may be adapted to fit into the schedule of local assessment activities, especially those of the sub-national, national and regional early warning and food information systems (EWFISs).

A mission may be undertaken ***prior to crop maturity*** (for harvest) in a country where local information sources are weak and the time lag between main crop maturity and the onset of the lean season is less than the lead-times for the delivery of aid.

## 1.3 Relations between a CFSAM and other assessment and monitoring activities

A CFSAM is undertaken at a particular point in time in an ongoing process of assessment and planning. It complements and draws on a range of other monitoring and assessment activities at country level and within FAO and WFP headquarters while feeding into decision-making on responses to crisis-induced food insecurity by national governments and WFP:

- In the context of ***early warning***, a CFSAM is partly based on the findings of one or more of the following: a national early warning system; the FAO global information and early warning system (GIEWS); WFP monitoring linked to its vulnerability analysis and mapping (VAM) and related food security monitoring (FSM) activities; monitoring by USAID FEWS-Net or the European Commission's Joint Research Centre, etc.
- In the context of an ***ongoing crisis***, a CFSAM reviews and cross-checks the data and information available from other recent assessments and relevant monitoring activities (by national authorities, WFP, NGOs and other entities), makes its own observations and provides its analysis, conclusions and recommendations. This includes recommendations for ongoing monitoring. It may also include recommendations for further, more in-depth assessments of particular aspects.

### Relations with other FAO and WFP assessment-related activities

In relation to other ***FAO activities***, CFSAMs draw on the information, guidance materials and other resources available from GIEWS and other FAO divisions and services, especially the Emergency Operations and Sustainable Development Divisions, or the groups working on locusts and other migratory pests/diseases.

In relation to other ***WFP activities***, CFSAMs draw on the comprehensive food security and vulnerability analyses (CFVSAs) and other VAM reports, the findings of recent EFSAs and other assessments that WFP may have participated in, and FSM. CFSAM teams may also refer to the WFP EFSA Handbook for detailed guidance on particular topics. Whenever possible, the EFSA or other in-country assessments of the food se-

curity situation at household level should be completed - and the findings available at least in draft - in advance of the CFSAM mission. The CFSAM team would then be able to include those findings in its evaluation and its integrated analysis of macro- and household-level information.

### Inter-actions with other in-country assessments

In general, detailed in-country assessments should have been completed, or be in an advanced stage, before the CFSAM mission starts and the mission then examine and supplement, if necessary their findings.

In some cases, however, a CFSAM may be undertaken more-or-less at the same time as another food-security-related assessment (e.g. assessments conducted by the national Vulnerability Assessment Committees, VACs, in Southern Africa, or the government-led Meher or Belg season assessments in Ethiopia). In such instances, the FAO and WFP country offices and the government entities and other organizations involved must discuss the relationship between the two assessment processes and clearly define in advance the purpose and scope of work for the CFSAM.

Exceptionally, consideration may be given to scheduling the CFSAM in separate phases linked to an in-country assessment process. In Ethiopia, for example, three phases are proposed for the 2007/08 CFSAM: phase-1: crop assessment (mainly FAO); phase-2: food security & needs assessment (mainly Gov't & WFP); phase-3: joint FAO-WFP synthesis and report writing. This approach should work well if there are no major or pressing emergency humanitarian needs.

Where an in-country food security information system (***FSIS***) exists, the CFSAM team will use the FSIS data, amongst other, and work in a way that helps to strengthen the capacity of the system to eventually produce data of sufficient credibility that CFSAMs will no longer be required.

Where an integrated phase classification (***IPC***) system is being used (see Panel 1-3), the CFSAM team may use recent IPC analyses in drawing their conclusions. Similarly, information generated by CFSAMs (e.g. production estimates, market analysis) may be used as secondary data by others including any country/regional food security groups that may undertake IPC meta-analyses.

**Panel 1-3**

**Integrated Phase Classification (IPC)**

The IPC is a classification system for food security and humanitarian crisis situations based on a number of selected outcome indicators of human welfare (mortality rates, nutritional status, food availability/access, water availability and quality, security, etc.). It is a tool for meta-analysis of information from different sectors. This type of analysis has the potential to render assessment findings more consistent, comparable, transparent and easier to communicate.

Based on a "convergence of evidence" approach, geographic areas and social groups are categorized into one of five phases: generally food secure, chronically food insecure, acute food and livelihood crisis, humanitarian emergency, and famine/humanitarian

catastrophe. Additional process indicators are used to determine the likelihood of future changes and identify areas where there are low, moderate or high risks that the situation might deteriorate. Analysis templates are used to present both supporting evidence and counter-evidence, and each piece of evidence is ranked according to its perceived reliability or representativeness. The IPC also includes a Strategic Response Framework of measures to mitigate negative outcomes, protect livelihoods, and address structural causes of food insecurity.

Some key principles of IPC are also applicable to CFSAMs:

- analysis of food security indicators from different sources based on a "convergence of evidence" approach;
- documentation of data sources, including ranking of the analysts' confidence in these data (where appropriate).

However, CFSAMs do *not* follow the IPC approach of "consensus" building but instead provide an independent expert assessment.

For details of the IPC tool,

see ◔ The IPC Technical Manual, FAO Policy Brief Issue 3, June 2006

and the IPC website at: http://www.ipcinfo.org

## 2 Main CFSAM principles

Everyone involved in preparing for or participating in a CFSAM needs to understand and abide by the principles outlined.

### 2.1 Who's involved in a CFSAM

The CFSAM core team is composed of a small number of FAO and WFP staff members or consultants from outside the country but a large number of other in-country personnel also participate in and contribute to the CFSAM process both during the preparatory phase and during the mission itself. Missions are jointly led by FAO and WFP.

That core team is responsible for planning and managing the work of the mission - including finalizing the selection of sites to be visited - and for preparing the final report and recommendations. Observers and other personnel participate in and contribute to the preparations, the field visits and discussions during the mission and may comment on the mission's findings, but have no role in the finalization of the report and recommendations (see the *Guidelines for observers* in **Annex 5**).

Once the scope of work for a CFSAM and the dates of the mission have been agreed (see 4.2):

- FAO/GIEWS and the WFP regional bureau (RB), in consultation with WFP/FOOD SECURITY ANALYSIS SERVICE, agree on the composition of the core team (see Panel 2-1), designate the team leaders and staff or recruit consultants.
- The FAO and WFP country offices in collaboration with the government and other concerned agencies and institutions in the country undertake preparatory work and mobilize relevant in-country personnel to participate in that work and in the field visits to be undertaken during the mission (see 4.3).
- Donor governments are invited to assign observers to accompany the mission.

The mission duration is typically 4 weeks. All members of the core team should remain together for the entire period and compile at least a rough, complete first draft of the joint report before separating.

**Panel 2-1**

**Core Team Composition**

Team composition is adapted to the needs of the particular situation and the objectives and TOR defined for the CFSAM. However, the core team typically comprises:

- an agricultural economist and an agronomist provided by FAO/GIEWS; and
- a food security specialist and a markets specialist provided by WFP.

Other experts are included as needed:

- Where agricultural rehabilitation is clearly a priority, representatives from FAO's Emergency Operations Division (TCE) may join the team;
- Where livestock is an important sector or the assessment is to help determine requirements for agricultural or livestock rehabilitation activities, representatives of FAO's agriculture division (AGA) may join the team;

- In other instances, teams have included locally-recruited consultants on livestock or pastoral systems, markets or nutrition.
- When existing assistance programmes have been challenged or it is likely that major scaling-up of activities is required, programme management experts may be included.

## 2.2 Guiding principles

CFSAMs are undertaken on the basis of the principles outlined in Panel 2-2. They are broadly similar to those of WFP EFSAs, the Sphere standards and the Integrated Phase Classification (IPC) system outlines.

Maintaining *independence,* while also ensuring *participation* and *transparency*, is critical. The real value added by a CFSAM, compared with other types of project-based or national or donor-institution assessments, is the audit function it plays with respect to existing data and analyses and the fact that the conclusions and recommendations are not influenced by any political or institutional considerations. This independence of analysis and expression is an essential condition that must be accepted by any government requesting a CFSAM.

A CFSAM is a ***joint*** exercise between FAO and WFP and the core team is a joint team that should work together as a ***team***, not as separate FAO and WFP teams (as was often the case up to 2006). **Annex 2** provides a summary of the respective contributions FAO and WFP team members can make by working together in relation to the main topics of the report.

**Panel 2-2**

**Guiding Principles for CFSAMs**

- **Government request:** CFSAMs (like other UN assessments) can only be undertaken in member States in response to a formal request from the government concerned.
- **FAO and WFP agreement:** Both partners agree that the assessment is necessary, and agree on the general nature and extent of the crisis.
- **Participation and transparency:** The preparatory phase and all visits and discussions during the mission are undertaken in a participatory and transparent fashion. The requesting government is responsible for facilitating the process by making information available to the team and experts to work with the team in the capital and in the field. Other interested parties including invited observers provide information, opinions and analysis, and react to the debriefing given by the core team upon return from the field visits and completion of their preliminary analysis. The core team documents its findings and recommendations, identifying the sources and limitations of the data available and the team's conclusions.
- **Independence:** Responsibility for the conclusions and recommendations of the mission, and the presentation of the same, rests with the core team members assigned or contracted by FAO and WFP and remains free from any political or institutional influence. The core team members alone prepare the draft report that is

then jointly reviewed, cleared and approved by FAO and WFP, at headquarters and regional levels, respectively.

- **Timeliness:** CFSAMs respect reasonable agronomic, completion and publication schedules. Assessment of domestic production is central to most CFSAMs, especially when local crops supply most of the country's food or income needs in normal times, so most missions take place at shortly before the main harvest when a reasonable assessment can be made of cultivated area, crop and pest conditions, and expected yields. Analyses must then be completed and the report issued quickly - in principle within 15 days of the end of the mission - in order to inform decision-making on response actions by national authorities, donors and aid agencies (including but not limited to FAO and WFP).
- **Credibility and rigour:** All secondary information provided by national institutions or NGOs and that from other recent assessments (including those in which FAO or WFP may have been involved) is critically reviewed for consistency, coverage, any calculation errors, and the soundness of the methods used for the data collection and analysis. Information is used and quoted in a CFSAM report only if the team finds it to be reliable and likely to be reasonably accurate. The team is rigorous and transparent in its own analyses and judgements. The data used are documented in a usable format and available for scrutiny. The report identifies sources and comments on the relative accuracy of the various data and on possible implications of inaccuracies.
- **Appropriate skills and instruments:** The combination of skills within the core team is tailored to the needs of each situation, and in-country skills are mobilized to complement those of the core team and ensure that the sub-teams constituted to undertake field visits also include appropriate combinations of skills. The data collection instruments used by field teams are adapted to the local context and focus on the objective of cross-checking and/or supplement already available data. Appropriate sampling methods are used to select the sites to be visited. All team members collecting data on particular topics use the same methods and data collection instruments.

***Teamwork*** is essential. A CFSAM covers a range of topics related to food security and is charged to produce an integrated analysis. While individual members of the core team and sub-teams constituted for fieldwork have their own expertise and specializations and, at times, must fulfil very specific technical functions (such as cutting and weighing crop samples for yield estimates, for example), all must work together as members of a single, integrated team throughout the duration of the mission.

This means recognizing the importance of each member's contribution and actively seeking ways to facilitate - and in some cases support - each other's investigations/data collection as well as holding joint interviews with certain key informants or community groups, exchanging information, discussing findings and their implications, and together resolving any practical problems that arise. At the very least, all mission members should meet together at the end of each day to exchange information and discuss implications for continuing data collection and the various elements of the overall analysis and report.

## 3 CFSAM concepts, methods and processes

Everyone participating in a CFSAM, including national personnel and observers, should be familiar with the concepts and approaches outlined.

### 3.1 Food availability, access and markets

The principal components of food security are food ***availability***, food ***access*** and food ***utilization***. CFSAMs focus on availability and utilization at the national level (and sometimes at sub-national levels) and access (and to a lesser extent utilization) at the household level. The focus for a CFSAM is particularly on ***changes*** compared with what would be "normal", the implications of those changes, and what should be done in the short term to restore an acceptable level of food security.

#### Food availability - aggregate supplies

***Aggregate food availability*** - the quantity of food available for human consumption - is determined by domestic food production (including all small farmers and commercial farms), trade (the balance of food imports and exports), stocks, food aid imports (if any), the quantities used for other purposes (including seed, animal feed and industrial uses), and losses.

- Changes in domestic production are influenced, amongst other things, by climatic conditions, the availability of seeds and other inputs, security conditions and government agricultural policies.
- Trade (both internal among surplus and deficit areas and external with neighbouring countries and world markets) is influenced by prices, demand, transport and storage capacities, transaction costs, the availability of foreign exchange, logistics and security conditions, and government trade and foreign exchange policies.
- Changes in the quantities used for "other", non-food purposes are influenced, amongst other things, by general macro-economic and security conditions.
- Losses are particularly influenced by climatic conditions, security, and storage conditions, which may in turn depend on the quantities to be stored.

#### Household food security

***Households access food*** through a combination of: their own production (of crops, livestock or fish farms); hunting, fishing or gathering wild foods; barter exchange or purchases from the market; foods received through social networks and, when necessary, aid received from government and humanitarian agencies.

- Own production depends on, amongst other things, the availability of seeds and other inputs, climatic and security conditions, and household assets (land, tools, able-bodied family members, and cash to buy inputs).
- Food purchases depend on prices, cash income (or reserves) and other competing, essential expenditures (for shelter, health care, education, other non-food needs, debt repayments and other social obligations).

- Cash income may come from one or more of: sale of crops (food or cash crops); sale of livestock or livestock products; paid employment; casual labour; petty trading; the sale of collected products (e.g. fish, wild foods, firewood); sale of artisan or other non-agricultural household products; cash received from social networks, including remittances from abroad; and, in some cases, receipts from government or NGO cash transfer programmes or cash-for-work projects. With the exception of any remittances or other cash transfers received, cash income depends on employment and other income-generating opportunities available, household assets (human resources within the household, tools, cash to buy inputs) and access to community assets (such as water and forests) and functioning markets.

Household food access is closely linked to ***livelihood strategies***. Households react - adapt - to crises by drawing on reserves, if they have any, expanding those livelihood activities that can be expanded at least temporarily, and adopting other ***coping strategies*** that are available to them. The livelihood and coping strategies available to a household depend on the physical, legal, economic and social environment, and the household's own assets.

An assessment needs to understand what has changed in the various elements of households' livelihood activities and food access systems and the various factors that influence them. The analysis must describe and, to the extent possible, quantify the impacts on households' food access and the extent to which they have been able to adapt and "cope" including the short- and long-term sustainability of the coping strategies adopted. It must also identify and understand the underlying causes of the vulnerability of the affected population groups. This requires an understanding of ***seasonal calendar***(s) for the areas and livelihoods concerned and, especially for a slow-onset or protracted crisis, the ***historical timeline*** of events that have influenced the food security situation.

An assessment must also: (i) consider any ***protection*** and ***environmental*** concerns - any risks to the safety and security of the population and the environment - that may constrain households' food access and/or affect the appropriateness and feasibility of particular household coping strategies and assistance response options, and (ii) try to distinguish between chronic and transitory food insecurity (see section 3.6 below) when formulating recommendations for an assistance strategy.

***Agricultural production*** is critical to both aggregate food availability and the food security of many rural households.

## Markets

***Markets*** - and market prices - determine the incomes of farming households with a saleable surplus, the quantities of food that food-deficit households can purchase with given resources, and whether food is moved from surplus to deficit areas within the country. At the same time, external trade substantially influences availability in many countries through food imports and exports. Some examples of the importance of markets are given in Panel 3-1.

***Prices*** are determined by the inter-action of effective demand and market supply but are also influenced at sub-national levels by the level of integration and competitive-

ness of markets, transaction costs of trading (buying, transport, storage, selling), profit margins and, possibly, policies. Transaction costs may also be influenced by any administrative, logistical, security or financial constraints on trade.

"Factor" markets also determine the availability and price of agricultural inputs in local markets. A CFSAM focuses primarily on food markets but must also consider labour and other markets that are critical for food security.

**Panel 3-1**

**Why Markets Matter**

Markets can smooth the differences in availability and prices between deficit regions and nearby surplus areas. Whether and to what extent they contribute to resolving food shortages in a deficit area depends on the ***effective demand*** in the deficit area, the ***structure, integration and performance*** of the markets chains involved, and transaction costs:

- When transaction costs are too high, the flows from surplus to deficit areas are limited. High transaction costs also push up prices in the receiving, deficit areas so that few consumers can take advantage of the food brought in.
- Scarce food may actually flow out of a globally deficit country when food prices are higher in a neighbouring country where effective demand is stronger. In such cases, good market integration may work against the interest of net-consuming households in the poorer country.

Markets enable ***commercial imports*** (registered as well as unregistered) to bring food into a food-deficit country to partly off-set a shortfall in domestic production, provided trade policies do not prevent or interfere with such movements.

Food ***prices and incomes*** are the main determinants of most households' access while also influencing trade flows. Understanding how the structure, integration and efficiency of local and national markets influence prices across space and time helps gauge how trends and changes in food availability and trade flows (will) impact on households.

Where food or non-food transfers or subsidized sales are ongoing, markets often provide indications of the ***impact*** of those ***food security interventions***. To the extent that such operations subtract from demand or add to aggregate supply and find their way onto markets, they influence prices, the food budgets of targeted and non-targeted households alike, and the actions of traders. Even quick local market surveys can help identify such (unintended) impacts.

A proper market analysis is thus necessary to derive a sound assessment of the food security situation and recommend appropriate response options.

## 3.2 Components of an analysis of crop production and food security

Building on the elements outlined above, a CFSAM examines:

- agricultural production (including staple food crops, cash crops and livestock);
- market conditions including prices;
- the aggregate food supply-demand balance at national (and sometimes at sub-national) level; *and*
- household food (and livelihood) security for each of the distinct crisis-affected population groups.

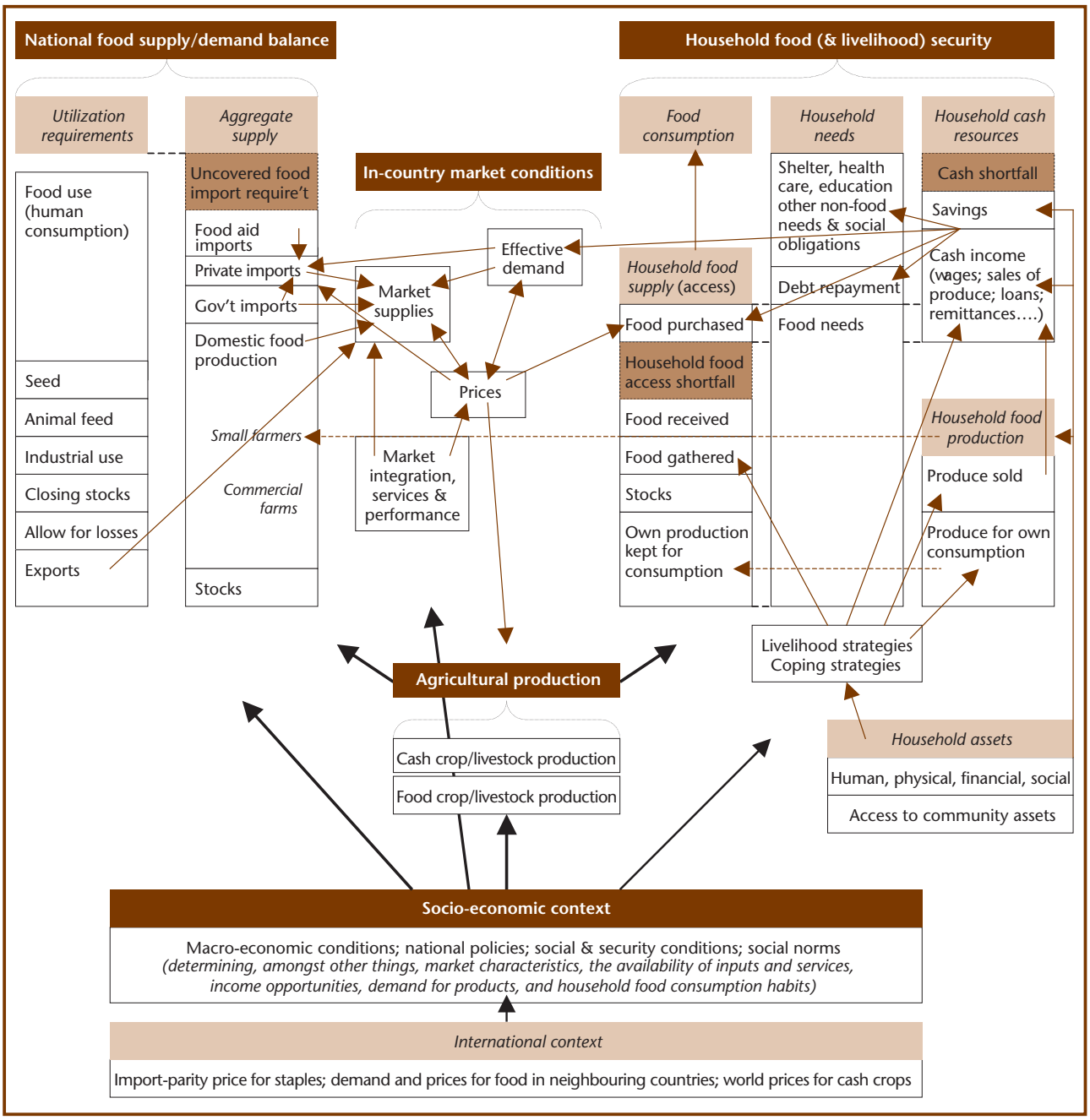
Figure 3a shows the main (but not all) elements of each of the four components, or "themes", listed above plus the socio-economic context as an underlying determinant of all of them. The arrows indicate some of the more important inter-relationships and influences among the various elements:

- The components relating to the national food supply-demand balance [top left] and household food (and livelihood) security [top right], show requirements, the supplies or resources actually available, and the differences between supply and requirements that represent shortfalls.
- Agricultural production is a critical contributor to both national and household food supplies, and markets are the link - serve as the mediator - between the aggregate and household levels with prices in the centre influencing both aggregate supplies and household food purchases.
- Household assets and livelihood strategies are underlying determinants of household food security. Note that there can be a trade-off at the household level between food access shortfalls and shortfalls of cash for other essential needs, which are two components of a general household resource shortfall.

The diagram does not show all the possible elements and linkages but serves as an overall analytical framework for analysing the consequences of the crisis, identifying underlying problems, and forecasting changes during the coming year. Note that the relationships are ***dynamic***, not static. For example: a reduction in production may lead to reduced market supplies, higher prices, therefore more imports which increase supplies and push prices down, etc..

It is the task of the CFSAM team, on the basis of available information and its own observations and enquiries, to: (i) determine the nature of the crisis and how the shock has affected production, markets, imports, prices, and livelihoods - hence food availability and household food security/access - both directly and indirectly; (ii) ***look forward*** and make projections for the coming marketing year; and (iii) determine what responses would be most appropriate and feasible to ensure both adequate availability and access throughout the coming year.

Figure 3a **Components of - and framework for - a crop and food security analysis**




## 3.3 The impact of "shocks" on food supply, demand and prices

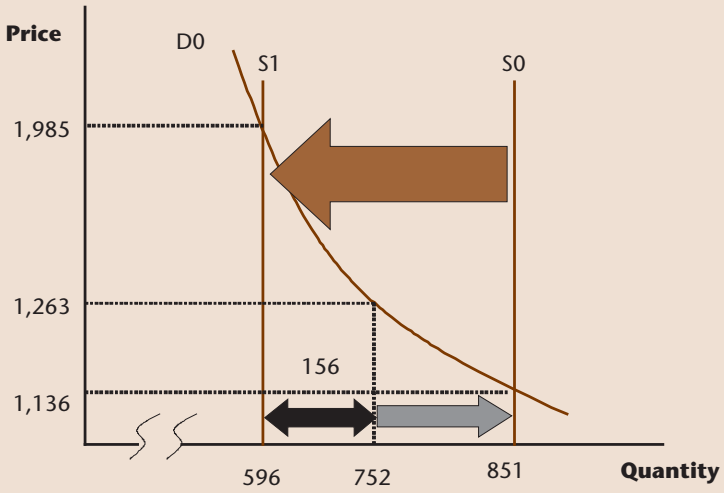
Changes, either sudden or slow/progressive, in any of the elements in Figure 3a can affect food availability and/or household food security and access.

For example, a ***supply shock*** in the form of local production failure (due to drought, pests or insecurity) typically leads to the following sequence of events that is illustrated in Panel 3-2:

- a marked increase in food *prices* and, simultaneously, a decrease in agricultural and rural *incomes*;
- increased private commercial *inflows* as traders seek to profit from the difference between the high local prices and lower prices in other, surplus areas, in neighbouring countries or on the world market;

- a reduction in food *prices* (to the extent that commercial imports increase supplies) but prices remain higher and incomes lower than in a "normal" year, and aggregate availability is also lower than usual … and many consumers may still be unable to maintain their consumption at pre-crisis levels due to decreases in their purchasing power.

## Panel 3-2
### Supply/demand changes following a production shortfall




In this simple example, a production shock reduces aggregate grain supply from S0 (= 851, its level in a "normal" or reference year) to S1 (= 596). The aggregate demand curve (D0) remains unchanged,[1] however, so that, in the short term, the price increases to 1,985 after allowing for a partial substitution of demand away from maize into a substitute such as cassava. The new price is substantially higher than the import parity price (the cost to bring the commodity from the world market or a nearby surplus country) so traders take advantage of the potential profit to be made and organize commercial imports. These increase domestic supply from 596 to 752 which brings the price down to 1,263. The difference between the import parity price and the new equilibrium price of 1,263 is due to transport and marketing costs, taxes, and traders' profit margins.

To bring total supplies and the equilibrium price to what they would be in a "normal" year, the domestic supply would need to be further increased from 752 to 851. This could be done by releases from government emergency stocks, additional public sector imports which are sold at subsidized prices, or food aid imports (assuming that food aid is not entirely restricted to people who are both chronically food insecure and extremely destitute).

However, if such releases or imports exceed - or are expected by traders to exceed - a certain level, they may significantly reduce the level of private commercial imports and lead to a reduction in overall supplies. The same holds if traders expect that public sector imports will be put on the market at heavily subsidized prices. In fact, any uncertainty about the amount of food aid imports or government releases would lower private commercial imports.

[1] This is assumed for the sake of simplicity. In reality, a shortfall in production would also induce an income effect lowering aggregate demand.

An ***economic shock*** provoked, for example, by a sharp decrease in the world price for a critical export cash crop, implies a commensurate (or even greater) decrease in the incomes for households producing the crop, and lower export earnings and foreign exchange revenues for the country. With reduced incomes, affected households usually switch to less-expensive, alternative basic foods and may even have to lower their food consumption. The lower effective demand exerts downward pressure on prices and leads to reduced potential for private commercial imports. Lower national export earnings would also imply lower public sector food imports, hence a further reduction in aggregate food supply.

Households that have ***limited opportunities and capacities*** to adapt livelihood strategies and depend on their own production for food consumption are very vulnerable to production losses. Similarly, a price increase in the major staple will particularly affect those households that are very dependent on purchasing this food crop for consumption. Households that depend on income from the sales of a cash crop to buy food are vulnerable to a shock that affects the cash crop price.

However, vulnerability to market shocks cannot be captured through one single food security indicator as the same household can be positively or negatively affected by different market shocks. For example, an increase in food prices will hurt many households, but an increase in cash crops prices might benefit some of the same households. ***Cross-tabulations*** are therefore an important way to describe vulnerability to market-related shocks for households with different food security profiles.

## 3.4 Effective demand

Effective demand is the actual economic demand for particular goods or services that is supported by a capacity to purchase. It is a combination of the felt needs of consumers and their purchasing power.

Effective demand exerted by buyers/consumers interacts with available supplies to determine prices, as shown in Panel 3-2. Prices then influence supplies in two ways:

- Traders' perceptions of effective demand and future price levels influence their trading decisions and therefore the level of private commercial imports during the coming year.
- Farmers' perceptions of effective demand and their expectations of farm-gate prices influence their decisions on what crops to plant and what areas to plant, and therefore the level of domestic food production in the coming year (as farmers adjust planted areas and/or switch crops).

For CFSAM purposes, the level of effective demand determines the proportion of total import requirement ($Q - Q_1$) that can be expected to be covered by commercial imports ($Q_2$) and the residual ($Q_3$) that remains uncovered, as illustrated in the Figure in Panel 3-2; $Q_1$=596, $Q_2$=156, $Q_3$=99:

**Relation between effective demand, commercial imports and the uncovered import requirement (from Figure in Panel 3-2)**

<table>
<tr><td colspan="3">Total requirement for human consumption (Q)</td></tr>
<tr><td rowspan="2">Domestic production and stocks (net of closing stock requirements) available for human consumption ($Q_1$)</td><td colspan="2">Total import requirement</td></tr>
<tr><td>Commercial imports for human consumption ($Q_{2'}$)</td><td>Uncovered import requirement ($Q_{3'}$)</td></tr>
<tr><td colspan="2">Effective demand (quantity)</td><td>⬅ ➡</td></tr>
</table>

In some situations it may be possible to increase purchasing power - effective demand - through cash transfers, or other non-food transfers that enable households to reduce other essential expenditures, thus reducing the need for food transfers and food aid imports, see the example in Panel 3-4. In other instances, some of the "imported food aid requirement" ($Q_3$) might be met through budget support to enable the government to import commercially.

Guidance on estimating effective demand is included in section 8.3.

Note that ***debt repayments*** can absorb much of the income of poor farmers (and other households) thereby reducing effective demand. Furthermore, farmers who have to sell a part of their harvest to meet other obligations and then purchase from the market later in the year can be faced with higher prices at that time (see Panels 3-3 and 3-4).

**Panel 3-3**

**Effective demand in Ethiopia, 2006/2007**

Ethiopia enjoyed three consecutive years of above-average grain production from 2004 to 2006 due to favourable rainfall, increased use of fertilizer and improved seeds, and an expansion in cultivated area. Normally, above average harvests are followed by a drastic decline in grain prices, which can adversely affect smallholder farmers who are compelled to sell early-on to repay debts and buy essential goods and services. During the period 2004 to 2006, however, there was an unusual increase in grain prices, well above their previous average levels. By the end of 2006 real monthly wholesale prices for most cereals reached record levels with an increase of 20 to 30 percent in comparison to the previous year, which was already above average.

Several factors are thought to explain this unusual behaviour, in terms of both effective demand and supply:

- Increased liquidity in the economy due to the partially-cash-based assistance provided through safety net programmes involving more than 5 million people, and enhanced budgetary support at district (woreda) level.
- Increased income from strong and broad-based economic growth since 2004.
- Higher pro-poor expenditures, especially in education, agriculture and road construction.

- Enhanced exports, particularly to Somalia and Djibouti, as well as to more distant foreign markets.
- High livestock prices resulting in greater purchasing power for pastoralists and agro-pastoralists.
- Local purchases by various institutions - government agencies, agricultural cooperatives and major relief agencies - although relatively limited compared to the total marketable surplus of grains.
- Finally, farmers staggered sales of produce after the harvest following relaxation of credit repayment requirements.

The result was sustained and relatively high grain prices that, although beneficial to surplus crop producing households, negatively affected the poorer, net-grain-buying households that had not participated in the economic expansion.

**Panel 3-4**

**Effective demand in Niger, 2005/2006**

Niger suffered a combination of drought and desert locusts in 2004. The fall in domestic supply coincided with several factors pushing up cereal prices through most of west Africa and resulted in record high prices. Even with sharply reduced food consumption levels, many Nigerien families had to borrow extensively in order to survive.

The following year was one of very good production and prices fell back to their historical levels but most households had to give up a major part of their new production to repay their 2004 debts. As a result, although aggregate supply in 2005 was plentiful and prices were relatively low, many households lacked purchasing power and had to sell-off assets plunging them into even deeper chronic poverty and food insecurity. The need in 2005 was to enable those households to earn enough money to buy back the food they had produced but used to repay their debts.

## 3.5 Market integration and performance

Whether and to what extent markets contribute to resolving food shortages in a deficit area by bringing food in from surplus areas depends on the effective demand in the deficit area (see above) and the levels of integration and performance of the markets themselves.

Market ***integration*** is a measure of the extent to which markets in different areas are linked:

- When markets are *integrated*, commodities flow between them if the price differential is greater than the transaction costs that would be involved and there is, in addition, a reasonable profit margin. In integrated markets, price differentials are closely related to the transaction costs and price movements follow similar patterns - there is "co-movement".

- Markets are *not* integrated if they are effectively isolated from each other, there is no flow of commodities between them and prices move independently of the differences in transaction costs.

Understanding whether markets are well integrated within the country, or with markets across a border in neighbouring countries, is critical to understanding and forecasting food prices and the flows of commodities within the country and across its borders, and therefore to projecting both food availability and access. The degree of market integration affects the estimates for the required amount of food aid because traders might be able to meet part of the food needs of the disaster-affected people. This also helps determine where local purchases, if appropriate, might be undertaken - see chapter 8.

Market ***performance*** is a measure of the extent to which the market makes food available to meet demand. When markets perform well, households that have cash are able to find and buy what they need, at prices that reflect the traders' costs plus a reasonable trading margin (profit). When markets are not performing well, such households are either unable to find sufficient food on local markets or can find it only at excessively high prices that include unreasonably high trading margins.

In addition to market integration, the following aspects are critical to determining market performance, prices and commodity flows:

- ***market structure*** - the different actors in the supply chain and their roles, the linkage between markets by transport, storage and communication infrastructure;
- the level of ***competition*** - the number of traders and the extent to which markets are competitive and permit entry by new actors, or are controlled by a few actors who exercise monopoly, oligopoly or monopsony power; *and*
- the availability of ***market services*** - especially banking and credit - that influence traders' ability to operate.

## 3.6 Interactions between private and public imports and food assistance requirements

In most (liberalized) economies today, traders' perceptions of effective demand, potential profits and commercial risks are the main determinants of external and internal trade flows in staple foods. But these perceptions are heavily influenced by:

- the nature and consistency of government policies affecting food production and trade, and the extent of enforcement of related regulations, which affect the possibilities and costs (and therefore the profits) of trading; *and*
- the extent and predictability of government food supply interventions and food aid provisions, which affect overall supply-demand conditions and, therefore, prices and potential profits (or losses) for traders; *in addition to*
- overall macro-economic conditions and government fiscal policies and priorities, which affect the level and stability of effective demand as well as the condition of the infrastructure on which trade flows depend.

There are, therefore, important interactions between private-sector commercial imports, government (public-sector) policies and imports, and food aid imports. The CFSAM team must understand and describe these inter-relationships in order to be able to make reasonable estimates and appropriate recommendations.

It is also important to understand government ***trade policies*** and the ***motivations*** behind them, and government ***budget allocations*** and the ***motivations*** behind them. Exports that increase the food deficit might be allowed (even encouraged) as a means of procuring foreign exchange in order to purchase non-farm goods from abroad. The government of a poor country with few budgetary resources - or which allocates its scarce budgetary resources to non-food priorities - may also reduce allocations for commercial food imports as much as possible in an attempt to secure a maximum of international food aid for the coming year. Meanwhile, private traders will be in a state of uncertainty and act very cautiously.

These complex interactions make forecasting of commercial imports extremely difficult. It is also very sensitive and CFSAM teams ***bear a heavy responsibility*** as their analysis and report may influence the actions of the government and private traders as well as WFP and other providers of international food aid!

An open, transparent dialogue with the government, donors, international institutions and representatives of private sector stakeholders is necessary to ensure the best possible information, reduce uncertainties as much as possible, maximize coordination, and minimize the risks of negative repercussions.

## 3.7 Chronic and transitory food insecurity at the household level

Food insecurity (at the household level) may be "chronic" or "transitory". It is the length of *time* during which households have been food insecure and their *capacity to recover* that determine whether their food insecurity is transitory or chronic:

- ***Chronic food insecurity*** is a long-term or persistent inability to meet minimum food consumption requirements.
- ***Transitory food insecurity*** is a short-term or temporary inability to meet minimum food requirements (indicating a capacity to recover). As far as a CFSAM is concerned, it is *crisis-induced* food insecurity.

In general, a shock makes chronically-food-insecure households even more food-insecure while making some households that were previously food-secure temporarily (transitorily) food-insecure. In many crisis situations, many of the chronically food-insecure can be expected to suffer worst with a serious deepening of their food insecurity. Sometimes the situation of some chronically-food-insecure households may not be greatly affected, while some households that were previously food-secure may be left without any means to recover and their new food-insecurity status may not be temporary.

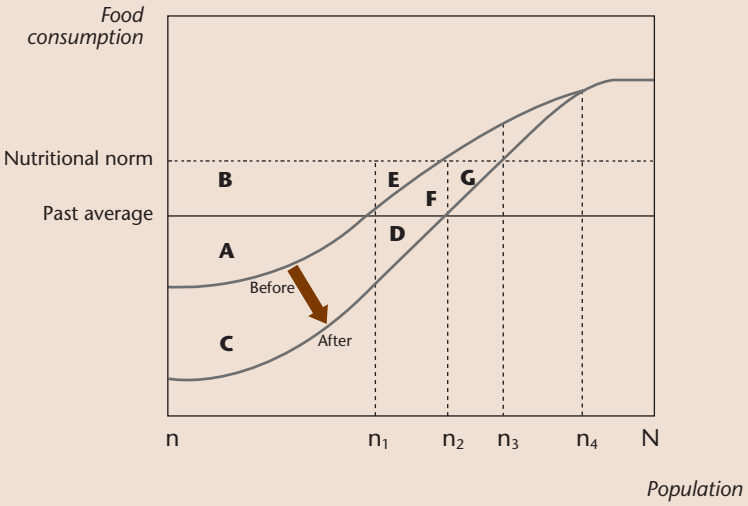
The challenge for a CFSAM is to assess both: (i) the change in degree of severity of food insecurity due to the crisis among those who were already food-insecure before the crisis; and (ii) the extent and expected duration of crisis-induced food insecurity among those who were previously food-secure.

Panel 3-5 illustrates and describes a typical consumption distribution curve for a poor country where there are many chronically-food-insecure people, and how the curve - the food security conditions of different groups - may change during a crisis. Note that the shape of the curve changes: the food consumption of people with a higher normal consumption (the wealthier) is less affected than that of people whose consumption is normally low (the poor). It is therefore important to consider the different impacts on various wealth classes and livelihood groups when analysing food insecurity at the household level and developing recommendations for targeting. For a more detailed analysis of changes in the distribution of consumption including the different effects of reduced per capita supply and changes in inequality of access, see **Technical Note F9**.

## Panel 3-5

### Effects of a food security shock on chronically-food-insecure and other population groups

**Potential effects of a food security shock on population groups**




A = Chronic food consumption gap relative to country past average for population n-$n_1$

B = Additional chronic food consumption gap relative to nutritional norm for population n-$n_1$

C = New, additional, "transitory" food consumption gap for population n-$n_1$ (deepening of their pre-existing level of chronic food insecurity)

D = New food gap for population $n_1$-$n_2$ who were food-secure relative to the past average. Note that area "D" could be much larger than depicted: the curve segment after shock might be much lower.

E = Chronic food gap relative to nutritional norm for population $n_1$-$n_2$

F = New food gap relative to nutritional norm for population $n_1$-$n_2$

G = New food gap relative to nutritional norm for population $n_2$-$n_3$ (previously food-secure relative to that norm)

Implications for assistance:

- Population segment n-$n_1$ was chronically food insecure in relation to both the past average and the nutritional norm. Assistance equivalent to area C would need to be targeted to them to restore them to their previous (low) level of consumption, A+C to bring them up to the past national average, and B+A+C to bring them up to the nutritional norm.
- Population segment $n_1$-$n_2$ was food secure in relation to the past average but chronically food insecure in relation to the nutritional norm. Assistance equivalent to area D would need to be targeted to them to bring them up to the past average,

F+D to bring them back to their previous level of consumption, and E+F+D to bring them up to the nutritional norm.

- Population segment $n_2$-$n_3$ previously consumed above the nutritional norm but would now need assistance equivalent to area G to bring them back to that norm.
- Assistance equivalent to areas A+C+D, targeted to segments n-$n_2$, would therefore be required to bring those groups up to the past average. Additional assistance equivalent to areas B+E+F+G would be needed to bring segments n-$n_3$ up to the nutritional norm. (Being above their previous consumption levels, this might enable them to improve their nutritional status or build up some assets/reserves).

Population segment $n_3$-$n_4$ remains above the nutritional norm and does not need assistance. (However, they would be entitled to assistance if it was to be targeted to "affected" populations rather than criteria based on consumption.)

Population segment, $n_4$-N has sufficient income or reserves to maintain consumption in spite of increased prices. They do not need assistance. (However, they might still benefit - to the detriment of others - if the planning or implementation of targeting arrangements is inadequate.)

For further details concerning the analysis of chronic and transitory food insecurity, see ◔ WFP/FOOD SECURITY ANALYSIS SERVICE Technical Guidance Sheet No.5, *Chronic, Transitory, and Vulnerability to, Food Insecurity*.

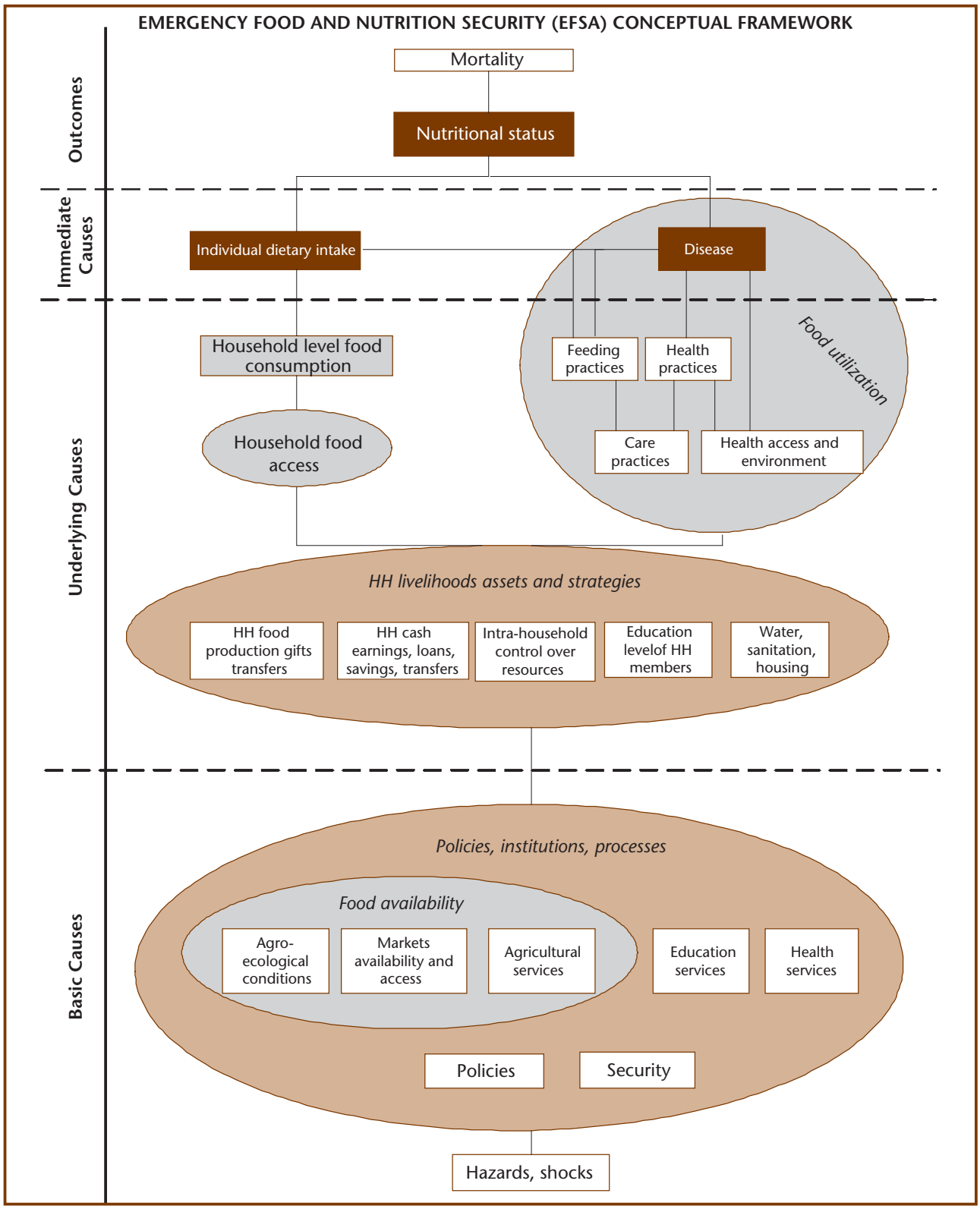
In principle, emergency assistance is intended to compensate for the negative impact of a shock. However, it is often difficult to isolate this effect of shock from chronic food insecurity, which needs to be addressed through long-term developmental assistance. This distinction is important and a CFSAM team must endeavour to differentiate as much as possible the chronic and transitory elements in currently-observed levels of food insecurity. In practice, however, it may not be possible, or socially acceptable, to exclude the chronically-food-insecure from the emergency relief response. In practice, it may be impossible to design and target emergency assistance to compensate *only* for reductions in food access which are direct results of the shock.

## 3.8 Nutrition and food security

Household food security is one of the principal determinants of nutritional status, the others being socio-cultural norms with regard to food, care practices (feeding practices and health-related practices), access to health care, and the health environment (water, sanitation, etc.). This is shown in Figure 3b which also shows, at the bottom, the contextual factors that influence many of the factors listed.

CFSAM teams are *not* expected to assess or make judgements on nutritional status. They *are* expected to review available nutritional status data and trends and, based on information from key informants and existing reports, to take account of the presence and distribution of malnutrition when formulating recommendations for action to address problems of food insecurity among households in particular population groups.

Figure 3b **WFP EFSA nutrition and food security conceptual framework**

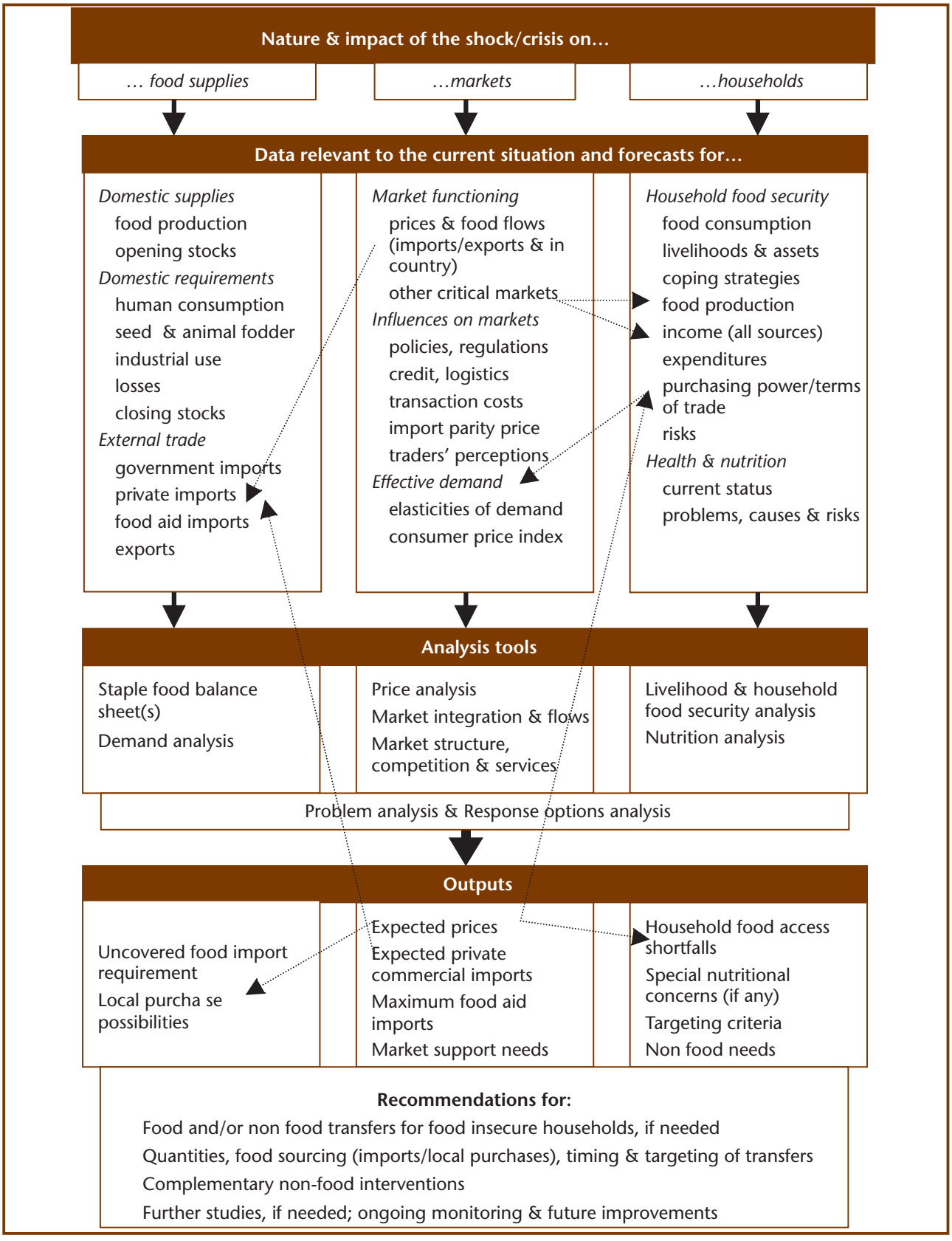



## 3.9 CFSAM approach and methods

Figure 3c outlines the ***overall approach*** to gathering data on and analysing the situation in relation to the 3 main elements discussed in section 3.1 and illustrated in Figure 3a - aggregate food supplies (including agricultural production and the supply/demand balance), markets and trade, and livelihoods and household food access.

It shows the process of bringing the separate analyses together through an overall problem and response options analysis to formulate an integrated set of recommendations. The arrows show the progression of the process within each "vertical" element and the cross-links between them.

Figure 3c **Overall CFSAM approach to analysing the crop & food security situation**



## Methods for collecting data

As noted in section 1.1, the focus of a CFSAM is on cross-checking and verifying data from all possible sources in order to arrive at the best possible analysis and recommendations. The overall approach for collecting data during a CFSAM comprises:

- ***Review of secondary data*** (including analyses and forecasts, and remote-sensing data for crops), checking their coverage and identifying any gaps, looking for any possible errors in calculation or interpretation, checking for consistency between data from different sources;
- ***Key informant interviews in the capital*** to discuss current production prospects and recent policy developments, gather documents/studies and data/statistics on trade, prices, meteorology, the general economic situation, household food security and vulnerability, rural credit, agricultural inputs, etc.;
- ***Field visits*** to observe conditions, estimate crop yields, examine stocks, and interview a wide range of key informants, extension workers, traders and households.

Visits are made not only to areas where the direct effects of the shock/crisis have been most severe but also to some areas that are less affected and ones where production and market capacities may exist that can help to respond to needs in the affected areas. In general:

- ***Multidisciplinary*** teams with skills and experience in all of the 3 main CFSAM themes visit a broad sample - as many as possible - of the distinct agro-ecological zones within the affected area(s) and, within each, a sample of sub-zones that have been severely-affected, moderately-affected, and less-affected by the shock/crisis. Particular attention is given to any areas not covered by existing assessments but considered to be important on the basis of information from key informants or other sources. Team members work together as teams - not as individual experts - and use common, agreed checklists and data recording formats while giving particular attention to their own topics, see Panel 3-6.
- ***Agricultural*** sub-teams/agronomists *also* visit a broad sample of areas in other, unaffected parts of the country that are normally surplus producing areas - ideally all such zones.
- ***Market*** specialists *also* visit a broad sample of the main market centres in the areas surrounding the affected areas, and entry points for external trade - ideally all such locations.

A CFSAM generally does not have the resources and does not attempt to gather statistically-representative agricultural or household data. It does ***check crops*** and conduct ***semi-structured interviews*** with a number of randomly-selected farmers and households - typically 100 to 200 - in ***purposively-selected sites/communities***. The findings, together with information from key-informant interviews in both the capital and the field, enable the team to make expert judgements concerning the reliability of existing assessments and other secondary data available, the expected level of production, the likely behaviour of markets, and the numbers and needs of food-insecure households.

**Annex 17** provides an example of a standard ***interview guide/recording format*** that may be used by all members of multi-disciplinary teams after adaptation to local needs. The use of such a common checklist and structured recording format enables team members to back-stop each other in data collection and facilitates the analysis of the data collected including the identification of cross-linkages among the themes. Additional, more detailed information may be collected by individual specialists, especially market specialists.

***Scenario building*** is used at the outset to help identify the key aspects that the CFSAM should focus on when defining the objectives and scope of work, early in the mission to help define the data that field teams should collect, and towards the end when the team projects forward to develop the food balance sheets, estimate household food access shortfalls, analyse response options and formulate recommendations.

**Panel 3-6**

**Organization of work within multi-disciplinary field teams visiting crisis-affected areas**

All team members ***travel and work together*** conducting joint meetings and interviews as much as possible. However, to save time, they may split up at times during the day to meet simultaneously with different key informants and, when together at field sites (villages, IDP camps, etc.), hold discussions with different farmers, households or traders, or inspect stocks, crops and livestock. They should meet together every evening to exchange information and discuss the implications of the day's findings for each others' area of focus and issues that need to be followed up in visits during the coming days. Within that "team" framework:

***Agronomists*** and other ***agricultural-production-focused*** team members concentrate on:

- *interviewing key informants* (agricultural officers, extension workers, NGOs working in agriculture and rural development) concerning the status of and prospects for crops and livestock;
- *observing* the condition of standing crops, and taking random samples to estimate yields;
- *observing* the condition of livestock;
- *discussing* conditions and prospects with farmers and livestock owners individually and in groups, collecting both agricultural and household data; *and*
- *observing* conditions in markets and getting data on prices for grain and livestock in local markets.

***Food-security-specialists*** and other ***household-food-security-focused*** team members concentrate on:

- *interviewing key informants* (local government officials, community leaders, community development and health extension workers, NGOs, etc.) concerning food supply, household food security and nutritional conditions;
- *observing* food supply and nutritional conditions at household level;

- *interviewing* community groups and a small sample of households from each of the main population groups of interest in both rural and urban areas concerning their present food security and prospects, collecting both household and (in rural areas) agricultural data; *and*
- *observing* conditions in markets and *interviewing* a sample (purposively selected) of traders in local markets.

***Economists*** and other ***market-focused*** team members concentrate on:

- *observing* food stock levels and conditions in government and private commercial warehouses and grain mills, checking stock records and interviewing managers;
- *observing* conditions in markets and *interviewing* a sample (purposively selected) of wholesale and retail traders at district and local levels.
- *interviewing key informants* (district-level officers of ministries of food and commerce, local representatives of major grain importers, clearing and forwarding agents, transport companies) concerning current stocks, current and expected flows to and from other parts of the country or neighbouring countries, in-country logistics and the functioning of wholesale markets; *and*
- *visiting* ports and locations where cross-border trade takes place to *observe* stocks and flows and *interview* officials and traders concerning current stocks, planned imports and exports, current and expected unregistered flows to and from neighbouring countries.

Food security specialists and economists also look at the appropriateness and effectiveness of ongoing food-security assistance activities, the extent to which those activities could be expanded, if needed, and the capacities of other organizations and systems that might be mobilized if larger quantities of assistance, or different types of assistance, might be found to be necessary.

## Methods for analysing data

A variety of methods is used for analysing data relating to specific aspects as shown in Panel 3-7. In all cases, the analysis starts by ***triangulating*** data from all sources - as illustrated in Figure 3d and explained in Panel 3-8.

Details of the analyses of agricultural production, market conditions, and the preparation of staple food balance sheets are given in chapters 7 to 12.

There is no single, internationally-accepted method for assessing the ***household food security*** situation among crisis-affected population groups and estimating their food access shortfalls and hence their needs for food-security-related assistance. Some of the principal methods currently used by WFP or other agencies are outlined in **Annex 16**. There are three main types: assessments based on proxy indicators of food consumption (diet diversity, food frequency, or a coping strategies index); household economy rapid appraisals,and "food poverty" (purchasing power) approaches.

As described in chapter 13, a CFSAM team:

- reviews the methods, findings and conclusions of recent household food security assessments and other secondary data (including pre-crisis baseline data, recent nu-

tritional surveys, and programme monitoring and evaluation reports), interviews key informants at all levels, and gathers data on a few, selected indicators from communities and households in each zone, *and*

- provides its own analysis of all the data available, develops its own conclusions concerning the nature, severity and distribution of food insecurity among the affected population groups, and makes its own recommendations for response.

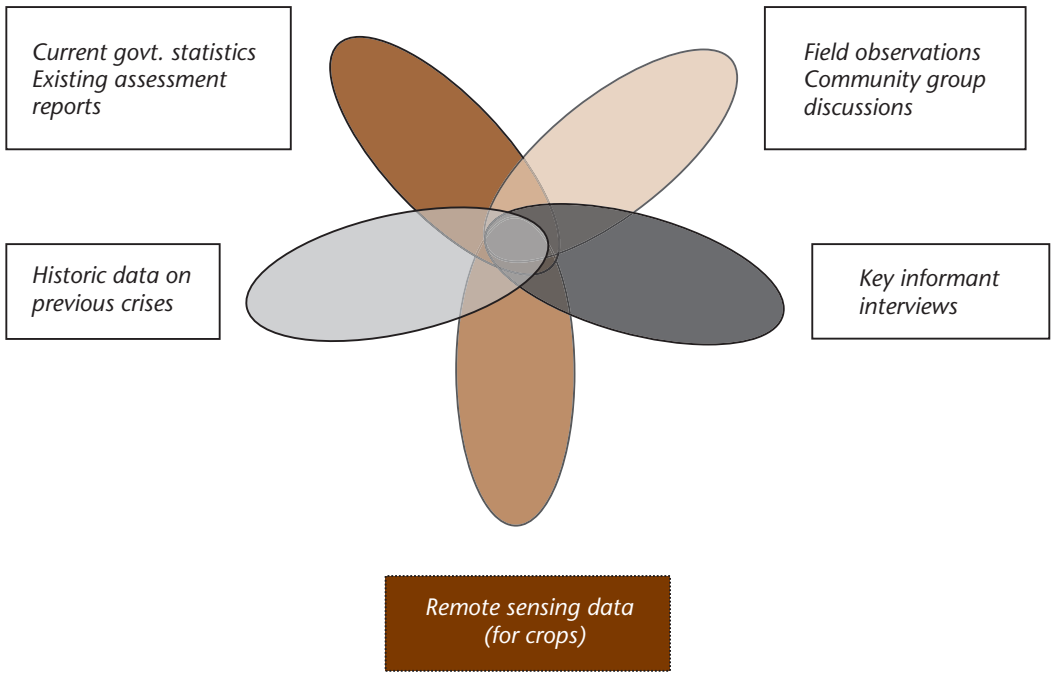
A CFSAM team is not expected - and does not have the time - to conduct a household food security assessment as such. When drawing conclusions in relation to food security, the team takes account of information on nutritional status, the causes of malnutrition and, in particular, any evidence that malnutrition may be due to inadequate household food access.

**Panel 3-7**
**Methods for analysing data**

| Type of Analysis | In ALL cases | When required |
|---|---|---|
| **Agricultural production** (see chapter 7) | | |
| Agro-climatologic modelling and ***satellite imagery*** are combined to obtain a pre-CFSAM understanding of production levels.<br>This information is used as an aid to select areas to be visited and, once collected, the field data may be used to verify the model or calibrate the satellite data in order to derive an independent estimate of yields, planted areas and hence food production. | ☑ | Especially in cases of crop failure. |
| **Prices and market conditions** (see chapter 8) | | |
| A ***price analysis*** to identify trends, seasonality and price differences among areas. | ☑ | |
| A ***demand*** analysis to identify changes and trends in effective demand that will influence traders' decisions on imports and in-country trade.<br>Where data are available, a partial equilibrium supply/demand and trade spreadsheet (such as the one described in **Technical Note F7**) may be used to simulate (forecast) price movements for the main staple foods, potential levels of private commercial food imports, and the maximum quantity of food aid that could be imported without undesirable effects on markets. | ☑ | |
| A ***market flows analysis*** to identify the directions and quantities of food movements within the country and across borders with neighbouring countries and, more particularly, changes in such movements compared with what would be normal for the season. | ☑ | |

| | | |
|---|---|---|
| A ***market structure, integration and performance analysis*** may be undertaken to understand, together with the flows analysis, how markets are functioning, how they have been affected by and have responded to the crisis, and the extent to which markets could meet current needs if purchasing power were available. | | If relevant information is not already available or if prices for the main staple foods are found to vary considerably among different areas. |
| **Household food (& livelihood) security …and nutrition** (see chapter 13) | | |
| A ***household food (& livelihood) security analysis*** to determine the impact on and the current and foreseeable needs of different population groups, and to identify vulnerabilities to possible future risks. | ☑ | |
| A ***nutrition*** analysis to identify distribution of malnutrition among the affected populations and the possible causes of observed malnutrition. | | If relevant information is not already available and the CFSAM team includes the necessary expertise. |
| **Response options** (see chapter 15) | | |
| A ***response options analysis*** to determine the type, scale and timing of responses, and targeting arrangements that would be most appropriate and feasible to address the observed priority food insecurity problems. | ☑ | |

Figure 3d **Triangulation of data from different sources**




## Panel 3-8

## "Triangulation"

**Triangulation** is the process through which information from different sources is compared to determine whether or not **evidence converges**.

*As a rule of thumb,* if at least three diverse sources provide consistent information, and if there are not significant numbers of sources providing ***in***consistent information, then the information can be used with confidence. The higher the ratio of "consistent" to "inconsistent", the greater will be the level of confidence. For example:

- ***With 4 sources of information*:** If 3 sources provide consistent information, this can be treated with *guarded* confidence; the reasons for which the 4th source disagrees should be carefully investigated.
- ***With 10 sources of information***: If 9 sources provide consistent information, this can be treated with a higher level of confidence than in the previous example.

However, when considering convergence of evidence, it is usually necessary to apply judgment. In the second example given above, it is possible that the ninth (dissenting) source might be much more reliable than the others.

Triangulation is a cornerstone of the analysis of both ***qualitative*** and ***quantitative*** data. For example: for qualitative data, information from different focus groups and key informants is compared; for quantitative data, conclusions drawn from different cross-tabulations are compared. Triangulation can also be used to check consistency between qualitative and quantitative data.

[Adapted from WFP *EFSA Handbook*, second edition, draft July 2007]

## Use of geo-spatial data

Two sources of satellite, ***remote-sensing*** data, are regularly received and processed by FAO/GIEWS and made available to CFSAM teams: interpolated estimated rainfall (IER) images for Africa and global normalized difference vegetation index (NDVI) images. Based on these data, GIEWS derive the following products by country: estimated rainfall (ER), monthly cumulated rainfall (CR), deviation of CR from the long-term average, standardized precipitation index (SPI), and differences of NDVI compared with the previous dekad, previous year and long-term average. For details, see . These data are used when selecting areas and itineraries for field visit and also inform estimates of planted areas and crop yields for countries where relevant, proven crop forecasting models are available.

For countries where sub-national geographically-referenced data sets are available before the mission, a laptop-based copy of the GIEWS Workstation is provided any team member who wishes to use it. This provides statistical and geo-referenced historical data and the possibility to enter additional information and carry out basic spatial analysis during the mission. In some instances, this information can be combined with WFP VAM data, also geo-referenced.

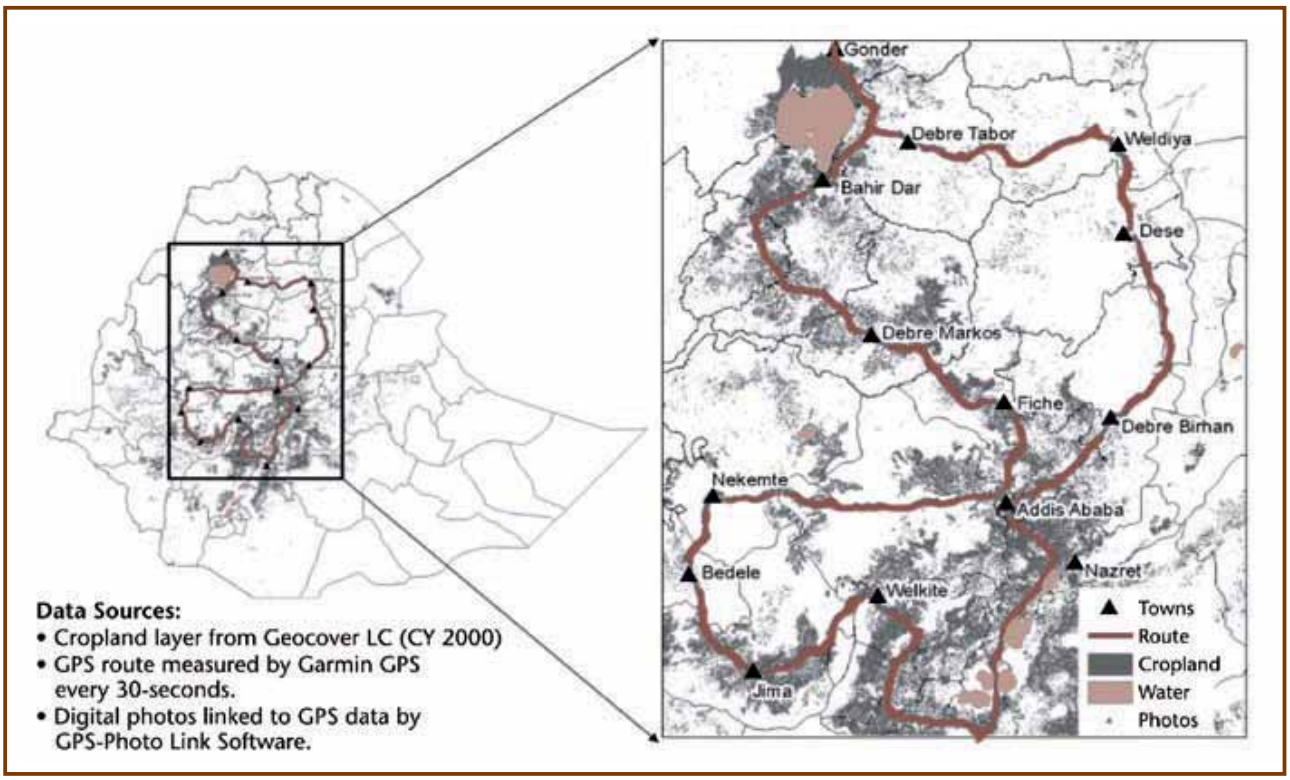
**Use of global positioning system (GPS)** equipment

GPS equipment and digital cameras are increasingly being provided for CFSAM teams. The GPS is used to:

- Keep record of the visited sites during the CFSAM and accurately position on a map those locations that have been described by the surveyors.
- Trace segments of routes that are described and documented.
- Identify locations to be visited that look particularly critical (e.g. from the satellite image analysis). Sites to be visited could be pre-loaded in the GPS handset and retrieved in the field.
- Identify locations to be re-visited in a subsequent CFSAM in order to monitor a number of pre-determined sites and evaluate changes over time.
- Link digital photos to GPS data so that the digital photos are geo-referenced and spatially archived for later use within various GPIS software,
- Create outputs maps that display the area covered during the survey that can be used as part of the CFSAM documentation as well as basis for planning future CFSAMs.

Figure 3e shows an example of a crop assessment route in Ethiopia that used a GPS to record the crop assessment route and geo-referenced all digital photos by linking the GPS data to the time stamp on the digital photos.

Figure 3e **Ethiopia crop assessment tour, 14 July - 02 August 2006**



# Part II

## Planning and organizing a CFSAM

# 4 Preparatory steps and pre-mission planning

The success of a CFSAM and the value of the report are heavily dependent on the preparatory work done before the mission itself. This includes work in-country (undertaken or coordinated by the FAO and WFP country and regional offices), work at the regional and headquarters levels (GIEWS & Food Security Analysis Service), and close collaboration among the country and regional offices and headquarters throughout the preparatory phase.

## 4.1 The CFSAM process and timeline

Following a decision that a CFSAM is needed, there are three main stages - preparatory phase, mission, post-mission - as shown in Figure 4a and in more detail in the timeline in Figure 4b. The sequencing of activities within each phase is only indicative: in most cases, several activities are undertaken concurrently to save time. The time required for each phase depends on the size and diversity of the area concerned and the availability and quality of existing data.

The ***preparatory phase*** is crucial. Preliminary consultations and the work done prior to the mission, especially at country level, are crucial to the success of the mission and the final output. Some of the preparations may proceed in anticipation of a formal request. Where needed, national consultants may be engaged (by FAO) to assist in the compilation and initial review of available secondary data.

***Once in country***, the CFSAM team starts its work reviewing *secondary data* including: (i) basic statistical and other information on food production, overall food supplies and markets, including rainfall, satellite and price data, from national institutions, FAO and WFP databases, and other stakeholders; (ii) baseline information on livelihood systems and household food security provided by national institutions and WFP-VAM databases; and (iii) information on the current situation contained in the reports of recent WFP EFSAs and other assessments. All these data are thoroughly and critically evaluated in relation to their sources and methodologies and the consistency of their conclusions, see section 4.4.

The objective of the *field visits* is to gather enough information from visual inspection, sampling and interviews, to validate, update or amend existing conclusions - including government estimates of production and trade during the coming marketing year, and assessments of assistance needs and targeting criteria, to the extent possible. In almost all cases, *sub-teams* will be constituted to undertake field visits simultaneously in different areas. See panel 5-6 (in section 5.2).

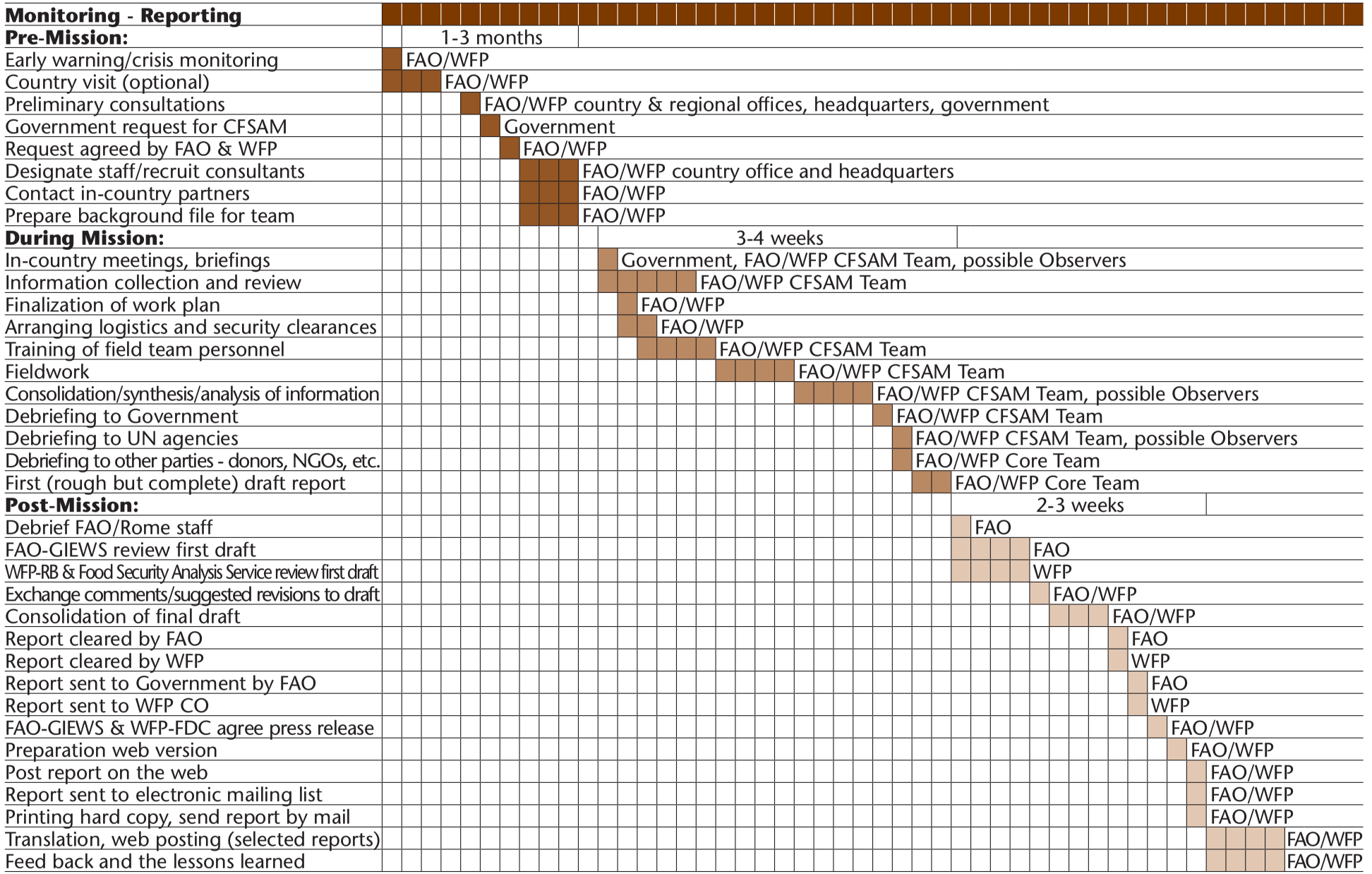
Once back in the capital city and after preliminary internal discussion of its main findings, the team goes through a *debriefing* process with the government, UN agencies, donor agencies, NGOs and other interested parties, see section 5.4.

All members of the core team remain together - in the country or at a convenient regional location - to prepare a first (rough but complete) draft of the ***report***, which is then finalized in Rome through detailed consultations among the team leader, team members, and relevant experts in FAO headquarters, WFP headquarters and the WFP regional bureau.

Figure 4a **Principal Steps in Organizing and Undertaking a CFSAM**

| | | |
|---|---|---|
| **(1) Initial decision** | | Formal or informal government request, or recognition by FAO and WFP that a CFSAM is likely to be needed and a government request forthcoming |
| **(2) Preparatory phase** 1-3 months | | Early teleconference among country and regional offices and both headquarters (or a regional FAO-WFP planning meeting)<br>➧ common understanding of the food security crisis; provisional objectives, scope of work and dates; relationship to other assessments<br>Formal government request<br>In-country preparations led by FAO & WFP country offices:<br>• preliminary compilation and review of secondary data<br>• possible additional data collection/studies<br>• identification of in-country personnel for fieldwork<br>• suggestions and preliminary logistics planning for field visits<br>• preliminary information to key persons in areas to be visited<br>Preparations by FAO/GIEWS and WFP-RB & Food Security Analysis Service:<br>• designation of staff and/or recruitment of consultants for core team<br>• preparation of briefing pack (including rainfall and remote-sensing data and GIEWS workstation laptops, when appropriate)<br>• briefing of staff and consultants before travel to the country<br>Second teleconference 1-2 weeks prior to the mission including the team leaders and other team members, when possible:<br>➧ a provisional work plan for the mission. |
| **(3) Mission (core team in country)** 3-4 weeks | 5-6 days | Analysis of secondary data<br>Initial meetings with gov't and others in the capital<br>Finalization of mission objectives and work plan including fieldwork itinerary, schedule and logistics<br>Preparation of interview guides, other data collection instruments and analysis sheets<br>Assembly and orientation/training of teams for fieldwork |
| | 10-14 days | Field visits |
| | 6-8 days | Collection of additional secondary data<br>Preliminary analysis and conclusions<br>De-briefings with government and others<br>Compilation of a rough but complete first draft report |
| **(4) Post-mission** 2-3 weeks | 1-2 weeks | Finalization of the draft report by the core team<br>Review & clearance of the report by FAO/GIEWS & WFP regional director |
| | 3-5 days | Release of the report |

## Figure 4b FAO-WFP Crop and Food Security Assessment (CFSAM) Timeline



## 4.2 Preliminary consultations

Preliminary consultations will be organized 1 to 3 months before the planned CFSAM involving:

- FAO/GIEWS; other FAO units as required and interested;
- WFP/Food Security Analysis Service; WFP regional bureau;
- FAO and WFP country offices;
- Observers from important donor countries.

Normally, this will take the form of a ***teleconference*** between FAO & WFP headquarters (Rome), the WFP regional office, and the country offices (FAO & WFP). When a number of CFSAMs are to be organized in the same region, a joint ***preparatory meeting*** may be organized at ***regional level*** (in the relevant WFP regional office). Panel 4-1 indicates what needs to be discussed and agreed upon during those consultations.

**Panel 4-1**
**Aspects to be discussed/decided during a preparatory meeting/teleconference**

The regional meeting (or teleconference) will:

- Discuss the nature of the situation and the availability and reliability of data, and agree on:
  - the scope of work for the CFSAM including the approach and methodologies likely to be required and issues requiring particular attention (see 5.2);
  - the mission composition (and of field survey teams likely to be required);
  - the main elements of the TORs for mission members;
  - which experts would be mobilized by FAO and which by WFP.
- Agree on dates and duration for the CFSAM (subject to confirmation with the government).
- Discuss preliminary ideas (names) for the team leader and mission members.
- Review the list of information/reports already available in Rome and at country level and any that are expected to become available in the period before the CFSAM; identify additional data and reports that are believed to exist and agree who (which HQ or country office) will seek them out.
- Identify any major information gaps and determine whether it will be possible to collect additional data prior to the CFSAM, by whom, how, at what cost and with what funding.
- In advance of the CFSAM, specify what information is to be compiled and other preliminary work to be done, and by whom. (The *Checklist for FAO and WFP country offices* in **Annex 3** includes a list of the preparatory actions that are typically required at country level: this may be reviewed and adapted.)
- *(In case of a large, segmented country)* Suggest whether it would be appropriate to prepare balance sheets at sub-national level.

If there had been a CFSAM the ***previous year***, the preliminary consultation should include a review of the conclusions and recommendations of that report, the actions that were actually taken, and the outcomes, in order to identify any issues that need to be taken into account in the planning for the forthcoming mission or followed up during the mission.

N.B. The initial identification of a crisis must be verified through quick cross-checking of information from a variety of sources. This is necessary because a government may over-emphasize or under-emphasize a food crisis for various political reasons, and local or anecdotal information may not be representative of the situation. Checking may include meteorological ground data and satellite imagery, and discussions with local officers of FAO, WFP, other UN organizations, bilateral aid agencies and NGOs.

As soon as the timing of the proposed CFSAM is agreed, FAO and WFP jointly inform ***donor representatives*** and remind them that they can propose observers, subject to government approval.

## 4.3 Defining objectives, scope of work and team composition

During the preliminary consultations the objectives and scope of work of the CFSAM will be agreed upon among FAO, WFP and the government, and provide a basis for defining the composition of the core team (see Panel 2-1 in section 2.1), preparing TOR for each team member, and developing a work plan for the preparatory phase specifying who will do what and when.

The ***objectives*** and ***TOR*** must be well-thought-out, clear, concise and understood by all concerned.

The ***scope of work*** and the individual TOR must specify the outputs required and the methods to be used as well as the deadlines:

- Sample TORs for individual team members are provided in **Annex 4** and electronically on the CD/ROM; they should be adapted as appropriate.

As a basis for drawing up the scope of work, FAO/GIEWS and WFP (RB or Food Security Analysis Service) compile background information available at the international level and suggest ***priorities*** for the team's attention, distinguishing aspects that appear essential from those of lesser importance. The emphasis to be given to different topics will depend on the nature of the situation - see Panel 4-2.

A ***work plan*** for the preparatory phase should be drawn up as quickly as possible. Shortly before the mission, a preliminary draft work plan should be prepared for the mission itself and discussed during the pre-mission teleconference. The generic timeline in Figure 4b may provide a starting point for both work plans.

- The FAO and WFP country offices must ensure that the country-level preparatory actions agreed upon during the preliminary consultations are completed in good time in collaboration with relevant government entities, other national institutions, and interested donors and NGOs, under the guidance of FAO (GIEWS) and WFP (RB and Food Security Analysis Service).

**Panel 4-2**

**Typical focus of CFSAMs in different types of food crisis**

| Type of food crisis | Probable focus of the CFSAM scope of work |
|---|---|
| (i) country facing substantial and sudden reductions in food production (e.g. as a result of drought or pests) | • Agricultural production, crop damage and aggregate balance<br>• Impact on household incomes (food production, income from cash crops)<br>• Ability to offset the shortage through imports |
| (ii) country with widespread, sudden increases in the numbers of people lacking access to food (e.g. as a result of collapse of incomes, exceptionally high food prices or inability to circulate within the country) although supplies may be available | • Overall food supply/demand balance, and disparities between regions, with main determinants<br>• Household access to food, given prices and incomes<br>• Markets as mechanisms to even out surpluses and deficits within the country: are they working at normal costs?<br>• Overall assessment of effective demand; local or imported food may be beyond financial reach of many |
| (iii) country with severe localized food insecurity (e.g. as a result of conflict or a combination of crop failure and deep poverty) | • Sub-national food supply/demand balances, within the overall national balance context<br>• Understanding determinants of disparities between regions in the country (insecurity, transport constraints, marginalized areas or population groups) and their consequences on availability of and access to food, in various areas. |

## 4.4 Compiling and reviewing secondary data

Compilation and initial review of secondary data is a critical need in all cases. **Annex 6** provides a list of the important types of secondary data and information that should be compiled, including both pre-crisis data and data on the current situation. It also suggests international sources that can be useful in such a search. FAO and WFP country offices are encouraged to compile data from as many sources as possible in consultation with FAO/GIEWS and, if possible, to prepare a summary listing of all secondary data/information sources and their findings. Much of this information may already be available in the FAO and WFP country offices, especially with the WFP VAM unit, but if needed FAO/GIEWS may be able to provide funds to recruit a local consultant to assist in the review and summarization of data.

This compilation and initial review in advance of the mission is absolutely essential to enable the CFSAM team to fulfil its tasks in the short period of the mission. It needs to be done early in the preparatory phase in order to identify any major gaps in data and information so that additional data can be collected prior to the mission, if required. If,

for example, data on household food security are inadequate, it may be necessary for WFP to organize a rapid EFSA in advance of the mission, if possible.

### Preliminary analysis of remote-sensing data

Rainfall and NDVI data from satellite images may be analysed by FAO/GIEWS and in-country FAO or WFP staff or consultants to identify areas where rainfall patterns or vegetation growth during the current season have varied significantly from previous years. These data from remote sensing should be compared with those from in-country meteorological and other ground observations to establish preliminary proposals for areas and itineraries for field visits by the CFSAM team - see Panel 4-3.

**Panel 4-3**

**Data available from remote sensing**

**a) Early in the growing season**

On the basis of dekadal rainfall data, verify whether the theoretical start-of-season (the point in time when cumulative rainfall could be considered sufficient by most farmers to carry out their first sowings) is consistent with past practice. Detailed rainfall data can help establish whether the season was early, on time, or delayed, and compared with early agricultural season reports from local authorities.

**b) Mid-way and in later stages of the growing season**

Rainfall data is by then available for a longer stretch of the growing season, and can give an idea of the regularity and amount of rainfall, compared to crop requirements. At this point, NDVI imagery should be used to check the extent to which vegetation growth and "quality" (in terms of amount of sunlight reflected) is consistent with the first conclusions drawn from rainfall data. Obviously, when no rainfall data is available, remotely sensed vegetation indices can substitute for it. In addition to NDVI, other weather related indicators based on remotely sensed information can be used. These rely on a combination of meteorological and satellite based sensor data to estimate ground temperature, moisture and evapo-transpiration. Again, these types of indicators are most useful if used in comparison with similar ones for previous years. Most of them are actually produced as "difference maps" showing the extent to which each data point, or pixel is "better" or "worse" than the value for the same pixel during the same ten-day period in a specific previous year, or compared to the average of the values for a number of past years.

Both rainfall and remotely sensed data of this type only provide low, or at best, medium resolution, so that they can only provide a general assessment of the situation, but this is usually quite sufficient at the CFSAM preparation stage.

**c) Combining remotely sensed data and mid-season crop forecasts**

Since CFSAMs almost always take place shortly before harvest time, quite a few dekadal periods of rainfall or remotely sensed data may be available during mission preparation. In some cases, a mid-season preliminary estimate of area cultivated and/or yields may also have been carried out, either by national authorities or by independent assessors. In some rare cases, national authorities even rely partly on remotely sensed data to plan or validate their mid-season forecasts. If such information is avail-

able to the CFSAM team, the preparatory phase should include an analysis of the correlation between ground survey and remotely sensed data. If done or presented in-country, this can constitute a very important part of the joint planning process between national authorities and the CFSAM team -especially for the team members focusing on agricultural and livestock production estimates. Comparing rainfall data, remotely sensed indicators of vegetation quality and mid-season survey results can be an excellent way to start the collaborative process with national authorities participating in the CFSAM. Again, preliminary ground survey results will be subjective and lack geographical detail, but the same goes for rainfall and remotely sensed data. However, putting the three types of information together should provide a good first sense of which parts of the country have fared better or worse than others, and help decide on areas to be visited and what to expect.

When dekadal rainfall data is available at a reasonable level of geographic specificity (e.g. District averages or better), the GIEWS office provides the outgoing CFSAM team with the data, or sends them electronically once the team is in-country. Remotely sensed data can be presented on maps produced by the GIEWS office, usually with an overlay showing administrative boundaries, or road infrastructure, main cities, rivers, etc. Rainfall data, such as estimated cumulative precipitation, can be presented in the form of charts, by dekad and by administrative geographic unit (e.g. province or district).

### Compilation and preliminary analysis of economic, agricultural and market data

Prior to the arrival of the mission - and preferably prior to the pre-mission teleconference - data on key macro-economic indicators, agricultural production, market prices and imports over the last 5 years, if possible, should be ***plotted*** in order to identify (i) ***trends*** and (ii) changes that may have occurred during ***previous crises*** during that period. For example, market price data should be examined using graphs such as the one in Figure 8d (in section 8.3) to identify:

- seasonal and any other intra- or inter-annual patterns in the movement of prices;
- the ranges within which prices normally move;
- how prices changed in response to previous crises.

Shortly before the mission, FAO/GIEWS and WFP (RB or Food Security Analysis Service) prepare ***briefing material*** that is made available in both print and electronic formats to all members of the core team before they travel to the country, see section 4.5. Copies are also available for observers.

## 4.5 Advance planning and preparation for field visits

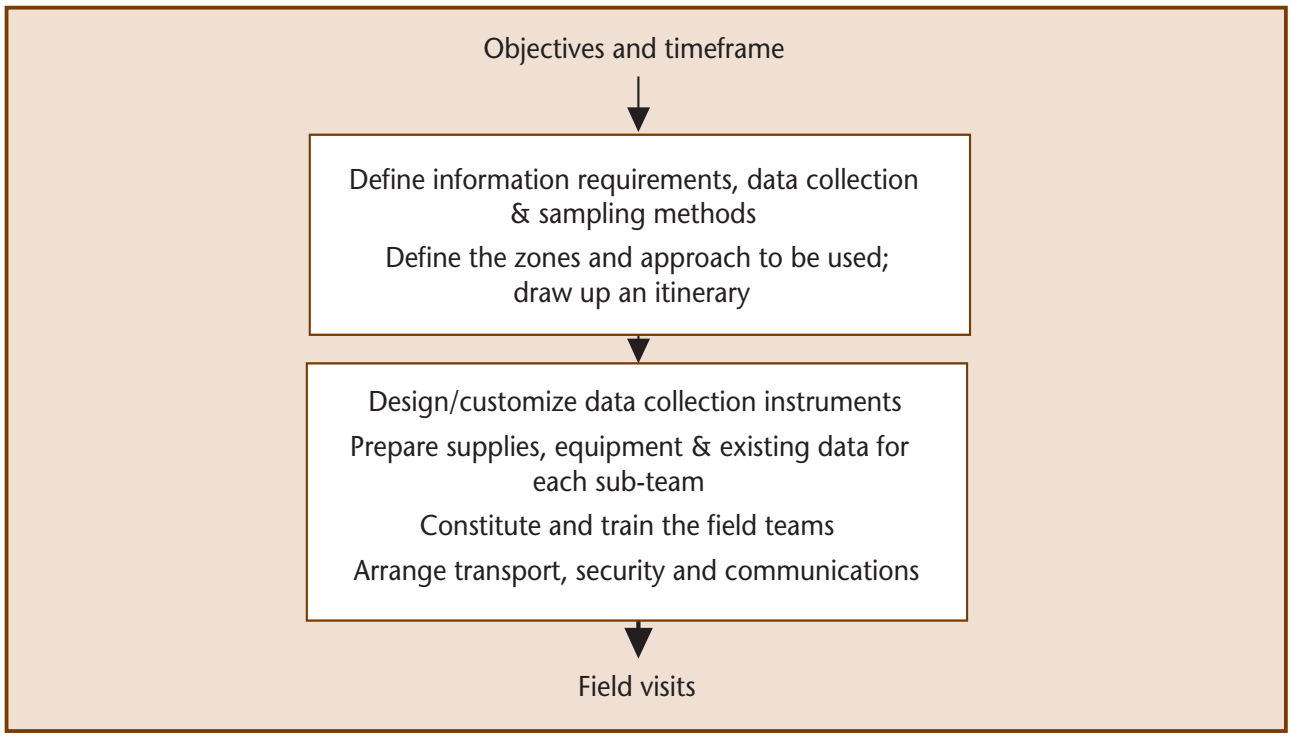
The FAO and WFP country offices must draw up proposals for field visits including the areas to be visited, the number of field teams, their itineraries, and logistic arrangements. These proposals will provide a basis for establishing the budget for the mission and mobilizing the required resources (human, financial, transport, etc.) They will be discussed

during the second teleconference 1 to 2 weeks before the mission and then be reviewed and finalized by the team leaders during the first few days of the mission.

The steps involved in planning for field visits are shown in Figure 4c. The objectives and timeframe will have been defined during the preliminary consultations. The initial review of secondary data should have identified any information gaps that need to be filled and information that needs specific verification. The following paragraphs provide guidance on some of the other preparatory actions that the FAO and WFP country offices should undertake prior to the second teleconference (normally 1 to 2 weeks before the mission). Preparations will then be reviewed and outstanding issues discussed during that teleconference.

Sections 7, 8 and 13 provide additional guidance specific to planning for interviews and data collection in relation to each of the 3 themes - agricultural production, markets and household food security. The general approach to field visits is outlined in previous sections and in figure 4c below.

Figure 4c **Activities in designing and planning field visits**




## Proposing the zones and approach and developing the itinerary

Remember that the teams should visit as many ***representative areas/zones*** as possible - not only areas where the direct effects of the shock/crisis have been most severe but also some areas that are less affected in order to get an overview of the situation. Agricultural and markets specialists will also need to visit other parts of the country where surplus production or market capacities might exist that could help respond to needs in the affected areas.

The choice of zones is critical. Proposals for the zones and other locations to be visited must take account of the time available for the field visits (typically 10 to 15 days), logistic constraints, and the need to maximize area coverage. Proceed as follows:

- List the distinct ***agro-ecological zones*** within the affected area(s) and within each the ***sub-zones*** that are believed to have been severely-affected, moderately-affected and less-affected by the shock/crisis. Take account of:
  - information concerning both agricultural production and humanitarian conditions (including numbers of persons displaced, for example);
  - any distinct livelihood zones that have been defined; and
  - ethnic variations that could affect vulnerability in the present crisis.

  Panel 4-4 suggests some criteria that may be used to define agro-ecological zones. Panel 4-5 provides a format that may be useful to distinguish sub-zones and serves as a worksheet for selecting those to be visited. These are the zones and administrative centres that should be covered by *multi-disciplinary teams*. Highlight any sub-zones not covered by existing assessments but considered to be important on the basis of available information.
- For each zone, identify the ***administrative centre*** where relevant government officials can be met and data found (see Panel 4-4):
- List the normally ***surplus producing zones*** (and corresponding administrative centres) in other, unaffected parts of the country. These are additional zones and centres that should be covered by *agricultural sub-teams/agronomists*.
- List the important ***market centres*** and ***logistic hubs*** serving the affected areas and the entry points for external trade, distinguishing those that coincide with the administrative centres already listed in step 1 and those that do not. The latter are additional locations that should be visited by *market specialists*.
- Consider the possible ***approaches*** available for gathering data concerning the affected areas - see Panel 4-6;
- Examine the various feasible combinations of ***teams***, approaches and ***itineraries*** and identify the one that allows the maximum coverage of the identified zones, administrative and market centres in the time and with the resources (personnel, funds and transport) likely to be available.

In general, envisage a small number of multi-disciplinary teams (perhaps 2 or 3) that follow itineraries bisecting a range of different zones while one or two production- and market-focused experts/sub-teams follow other itineraries to areas and locations that are important for those themes only.

When planning the overall schedule, allow time - typically 1 to 2 days - for the orientation/training of all in-country personnel mobilized for the field visits (including observers) in advance of the field visits, and for travel between areas/locations.

If, exceptionally, the CFSAM takes place in parallel with another "country-based" food-security-related assessment, try to coordinate the itineraries and schedules for the CFSAM field visits with those of the other assessment.

**Panel 4-4**

**Defining zones and related administrative centres**

***Zones*** may be classified according to one or more of the following agro-ecological characteristics:

- main agricultural activity (arable, pastoral, mixed)
- main crops
- farming system: mechanized, subsistence, plantation, rain-fed, irrigated
- productive potential: high yield, low yield, variable
- meteorological zone: high rainfall, low rainfall
- physical characteristics: altitude, soil types

plus ***urban*** zones for household food security analysis purposes. (In a few cases, other livelihood zones may also be recognized for the same purposes.)

Give particular attention to zones:

- that are subject to high yield variability;
- that are reported to have had exceptionally poor/good yields: satellite images will give an initial indication of major deviations from norms in rain-fed agriculture;
- where there are reports of pest damage or some other localized factor affecting yields, or livestock disease;
- where civil strife has affected planting, crop or animal husbandry practices, or other livelihood activities; *or*
- that have been excluded from the national crop sample frame or household food security assessments.

Zones should conform to ***existing administrative units*** for which disaggregated official production and other data exist, and be of a size that allows all zones to be visited by mission teams within the time available for field visits.

The ***administrative centres*** may be regional/provincial offices providing regional/provincial data, or district offices providing district data. They should:

- be accessible to the mission;
- have data for the zone including the latest/current data for the zone concerned;
- have specialist agriculturalist staff who can explain how, when and where agricultural data were collected, and provide qualitative supporting information on performance achieved; *and*
- have staff who are responsible for or otherwise well-informed about trade and market issues and the humanitarian situation and operations.

**Panel 4-5**

**Affected areas with sub-zones by severity rating**

| Agro-ecological/ livelihood zone | Sub-zones | | |
|---|---|---|---|
| | Severely-affected | Moderately affected | Less-affected |
| | • ..<br>• | • ..<br>• | • ..<br>• |
| | • ..<br>• | • ..<br>• | • ..<br>• |

**Panel 4-6**

**Possible approaches to field data collection, in order of preference**

| Approach | Notes |
|---|---|
| 1. The core team and locally-recruited experts in all topics visit each of the zones identified, starting in the EP and then visiting a number of sites within the zone using all the tools described in these guidelines. | This is the ideal but rarely possible because of the number of zones, limited time or resources, or travel restrictions on international staff. |
| 2. Multi-disciplinary field teams, each with at least one core team member, visit each of the zones identified using all the tools described in these guidelines. | The core team members responsible for each topic provide thorough briefings and data collection instruments to the locally-recruited experts prior to the field visits, and rigorously cross-examine them on their findings afterwards, to try to ensure a consistent standard of data and interpretation.<br>"2" is often necessary because time and resources are limited.<br>"3" may be necessary when many zones have to be covered and/or security restrictions prevent international personnel from travelling to some zones. |
| 3. Multi-disciplinary field teams, some comprising only locally-recruited experts, visit each of the zones identified using all the tools described in these guidelines. | |
| 4. The core team and/or multi-disciplinary field teams visit a number of accessible zones and AC/EPs using the tools described in these guidelines and extrapolate to other inaccessible zones based on information from key informants (and remote sensing, if available). | This may be necessary when insecurity prevents even locally-recruited experts from visiting certain areas.<br>Thorough triangulation of information from key informants at all levels, including information from international sources, is essential when extrapolating. |

| | |
|---|---|
| 5. Analysis of secondary data and key informant interviews only. | May be the only possibility when time and resources are very limited and/or most areas of concern are inaccessible. The findings will be of limited value. |
| 6. Observations during aerial flyovers. | May be used to complement all other approaches, when flyovers are possible. Findings from flyovers alone will be of very limited value. |

## Planning for data collection/interviews

- Review the sample generic ***interview guide and data collection format*** in **Annex 17** and prepare preliminary proposals for amendments or additions to customize it for local use by the multi-disciplinary teams, and draw up a basic ***list of key informants*** that teams should seek to interview and what the specific focus of the interviews might be - Panel 4-7 may provide a starting point.

Field teams will necessarily seek to identify the most relevant key informants in each zone and at each site visited but a standard, indicative list prepared in advance and used by all sub-teams will help to ensure some consistency and comparability among the data brought back by different field teams. When considering the checklist/format:

- Note that questions relating to the current year should be phrased in comparison to previous years. The concept of an "average" or "normal" year may not be very clear to farmers/rural households, so they should be asked to compare conditions with representative bad, average, and good years, using local time series information.
- Be sensitive to local cultural practices: in some countries, farmers may be unwilling to answer direct questions on household food and animal stock holdings or on labour activities, for example.
- Bear in mind that both interviewers and interviewees will be pressed for time: as a rough benchmark, expect to ask each farmer/household about 20 questions in half an hour. More time will be required if interviews are conducted through the help an interpreter.

If interviews will have to be conducted through the help of interpreters, arrange for ***translation*** of the check-list/ format.

**Panel 4-7**

**Field-level sources of information**

| *Informants* | *Issues to be focused on* |
|---|---|
| Administrative heads | Causes of crisis, including socio-political dimensions; area/s severity level/s; population numbers with source; affected sub-groups description and numbers; government responses; perceived additional needs; logistics situation |
| Provincial and district agricultural officers & subject specialists (agriculture, livestock, health, labour) | Affected areas/livelihood zones; affected specific sub-groups such as subsistence farmers, surplus food producers, cash crop producers, landless labourers, pastoral communities and approximate numbers involved; production shortfall in staples and substitutes; expected duration of crisis; pre-crisis malnutrition and changes in acute malnutrition; crisis impact on health, water and sanitation situation |
| Market actors (traders, millers, transporters, retailers) | Decline in local surplus sales; impact on supplies from regional markets; impact of trading constraints such as government controls on trade and prices; breakdown in infrastructure; estimate of local demand considering income losses; present price changes and future directions; market capacity to supply food |
| UN, NGOs, researchers working in the area | Vulnerability assessments and crisis-induced changes; impact on chronically food insecure; new entrants to food insecurity; observations on undesirable coping mechanisms; past experience on impact of assistance |
| Community groups [1] | Affected groups by livelihood type (for example, subsistence/surplus food producers, cash crop producers, non-food producers, agricultural labourers, pastoralists and their numbers); their pre-crisis food self-sufficiency or inadequacy; crisis impact on food availability (e.g. due to production failure, inadequacy of food substitutions, food transfers, formal and informal); crisis impact on livelihoods (e.g. reductions in food income, other incomes, transfers); non-damaging coping mechanisms and incidence of damaging coping mechanisms; food consumption shortfalls due to own production failure, income losses, inadequate substitutions and other coping efforts, price increases, transfers and borrowings by two categories that indicate household who were (i) already food-insecure, and (ii) previously food-secure. |
| Community sub-groups [2] | In-depth information on critical household food security issues for their particular population sub-group. |
| Individual farmers & households[3] | Information on household-level impact and implications of the crisis. |

Notes:

[1] Each group may include 10-20 adult members of the community that could be representative of different wealth/socioeconomic strata of the community, as indicated by community elders and mission observations.

[2] 5 to 8 members of the community selected to assure representation of variability (male, female, farmer, labourer, ethnic category).

[3] 5 - 10 individual farmers/households selected randomly in each locality.

## Identifying personnel for field teams and facilities for training

- Identify sufficient in-country personnel with appropriate skills and survey/assessment experience to constitute the proposed number of field teams:

*In all cases*:

- agronomists
- market specialist/economists
- household food security specialists

*Plus, depending on the situation*:

- livestock specialists
- agricultural rehabilitation specialists
- nutritionists
- anthropologists

- Try to ensure a balance in terms of skills, experience and gender in each field team. Ideally, there should also be a balance between national and international experts and in organizational representation (FAO, WFP, government, UN agencies, NGOs and donor observers).
- Ensure that all topic specialists understand that teamwork is essential and they will be expected to collect information for one another, when necessary, and contribute to the overall analysis and report (see the guiding principles in section 2.2), and participate in the team training immediately prior to the field visits.
- Identify locations/facilities where the training of the field teams can be organized by the core team members prior to the field work.

In-country personnel - especially national experts - are critical to the success of a CFSAM. They should be able to communicate in the principal UN language used in the country (usually English, French or Spanish). This is especially important for personnel who will join field teams with international team members or observers.

## Preparing supplies & equipment for field teams

- List the supplies and equipment that will be needed by the teams, including for vehicles.
- Identify the sources - from where they will be obtained (borrowed, rented or purchased).
- Prepare a budget.

### Arrange transport, security and communications

Based on the proposed itinerary:

- Make provisional arrangements for transport.
- Ensure any security or other clearances required will be able to be obtained quickly once the itineraries and membership of the various teams will have been finally decided by the team leaders.
- Make advance arrangements for any telecommunications necessary to ensure MOSS compliance.

## 4.6 Preparation by individual team members: briefing in Rome

In addition to preparing themselves for field travel, possibly in difficult conditions, individual team members should also, to the extent possible:

- acquaint themselves with the political background of the country and be aware of recent developments in food marketing, pricing and trade policies; *and*
- make themselves available to participate in the second preparatory teleconference organized by FAO and WFP 1 to 2 weeks in advance of the mission.

A checklist for personal preparations (things to carry) can be found in the *WFP Emergency Field Operations Pocketbook*, p 317. BBC Monitoring Reports and Reuter telexes may provide useful information on politics and policies.

At least the FAO members of a core CFSAM team will usually be expected to stop over ***in Rome*** for a few days prior to travelling to the country. This is the occasion for the team members to:

- Collect background data and information from the FAO/GIEWS and WFP/Food Security Analysis Service country officers;
- Clarify the objectives and scope of work of the mission;
- Discuss the priority issues, the provisional work plan and any socio-political considerations;
- Discuss which food commodities should be included in the analysis and the level at which data should be disaggregated; *and*
- Be briefed by other relevant FAO units and WFP/Food Security Analysis Service.

Panel 4-8 lists the information that may be provided by FAO/GIEWS. In addition, they may also have relevant press-cuttings and recent country abstracts. General macroeconomic and sectoral economic information from the World Bank (Economic/Sector Memorandum, LSMS), the Economist Intelligence Unit (Country Briefs) and other non FAO sources may be collected from the country officer and FAO's David Lubin Memorial Library.

**Panel 4-8**

**Information provided to teams by FAO/GIEWS and WFP-ODA**

The information normally provided by FAO/GIEWS includes:

- recent FAO/GIEWS reports and reports from the EWFIS
- National Food Balance Sheet (NFBS), Country Stat data
- FAO official crop and livestock production time series / AGROSTAT, non-cereals balances
- official population data
- satellite images and agro-meteorological analysis and forecasts
- names of in-country contacts/essential information sources
- previous CFSAM reports
- fertilizer and seed production and trade data
- crop calendars and country maps

For certain countries, the following information may also be available:

- cropping, soil, altitude maps
- update on the migratory pest situation
- vulnerability maps - from RMP or elsewhere
- information on food supply/demand situation in neighbouring countries
- USAID/FEWS or USDA country reports
- OCHA Inter-Agency Consolidated Appeal documents
- WFP Situation Reports, EMOPs (Emergency Operations)
- supporting documentation on soft-ware applications, conversion factors, ration rates and general methodology

The information that can be provided by WFP-ODA:

- Situation Reports, Early Warning Reports
- Recent (emergency) needs assessments
- Baseline studies, i.e. Comprehensive Food Security and Vulnerability Analyses (CFSVAs)
- Market reports
- Recent reports from Food Security Monitoring Systems
- Project documents, i.e. EMOPs, PRROs, CsP, SOs

# 5 Work during the mission

This chapter focuses on aspects that are relevant and important for planning the work of the mission as a whole. Specifics relevant to the planning of the different themes - agricultural production, markets and trade, and household food security - are dealt with in chapters 7, 8 and 13. The quality and value of the mission's findings and report depend heavily on the effort that is put into the initial work in the capital and preparing for the field visits.

Remember that you need to:

- use data and information from ***a range of sources as wide as possible*** - it is unlikely that any single source will provide a complete or accurate picture; hence the need to triangulate various findings to discern the convergence of evidence; and
- not only understand the present situation but also ***project forward*** 12 months!

## 5.1 Initial work and meetings in the capital

In the first 24 hours the team should make an ***initial situation analysis***:

- review the information already compiled;
- determine priorities for cross-checking available data and filling information gaps; *and*
- review the resources available and the provisional work plan and field visit schedule drawn up in anticipation of arrival of the team.

***Initial meetings*** in the capital should focus on:

- clarifying questions arising from the secondary data already reviewed;
- identifying additional sources of information and seeking additional data to fill gaps; *and*
- soliciting the professional opinions (and informal impressions) of officials and technical experts on crop prospects and factors influencing current season production, market and trade conditions, and the status of and prospects for households' food security.

Panel 5-1 provides a list of the interviews normally required together with the information to be sought and issues to be discussed. Meetings with ministries and other national institutions should be used to, amongst other things: (i) ensure that officials understand and contribute to the mission's activities; and (ii) identify any issues that need to be resolved and the reasons for any differences of opinion.

It may also be worthwhile to look at recent ***newspaper articles*** for an unofficial, but often informative perspective.

If, exceptionally, the CFSAM is taking place in ***parallel*** with another food-security-related assessment, the initial meetings should finalize arrangements for the two exercises to complement each other.

- *If there had been a CFSAM the previous year,* undertake a brief retrospective analysis of its conclusions and recommendations, the actions that were actually taken, and the outcomes.

**Panel 5-1**

**Contacts/meetings in the capital**
[an indicative list to be adapted to the local context and institutions]

| Contact | What to discuss: information to seek [and provide] |
|---|---|
| **Government Agencies** | |
| Ministry of Agriculture (MoA)<br>(crop production, livestock, veterinary, agricultural statistics, marketing and price sections) | agricultural conditions & prospects; current estimates and recent trends for crop production (staple foods and cash crops) for different zones; reasons for differences from "normal"<br>current livestock and rangeland conditions & prospects; current estimates and recent trends for livestock production for different zones; reasons for differences from "normal"<br>prices, supply and demand for agricultural produce and inputs in different zones; trends; reasons for differences from "normal"<br>questions (if any) in relation to data for recent years (which should have already been compiled and made available to the mission)<br>*provide information about the CFSAM process and discuss the participation of national and local-level MoA staff in the field visits* |
| National Early Warning Unit; Disaster Management Unit; Emergency/Relief Ministry/Commission; Food Security Unit | early warning data; food security conditions in different zones and for different population groups; ongoing and planned food security and humanitarian interventions<br>*provide information about the CFSAM process and discuss the participation of national and local-level staff in the field visits* |
| Food Reserve Agency; Grain Marketing Board | levels and condition of food stocks in different zones; prices and harvest prospects in different zones;<br>levels and direction of agricultural imports, exports and in-country food flows, and how they compare with "normal"<br>trends and prospects for food stocks and prices; reasons for differences from "normal" |
| Central Statistics Office<br>(also other relevant ministries e.g. Ministry of Economic Planning) | population and general economic data - recent years' GDP/GNP, growth rates, inflation, unemployment, imports, exports, trade balance, poverty indicators, etc. |
| Central Reserve Bank | level of foreign currency reserves, major commodity import priorities, exchange rates and policies, etc. |
| Agricultural Meteorology Section | rainfall data and forecasts; … |

| **UN & International Organizations** | |
|---|---|
| FAOR and WFP-R&CD | objectives & work plan of the mission; political, social & food security context; roles and perceptions of different stakeholders<br>*participation of national and local-level staff in the field visits* |
| UN Resident/ Humanitarian Coordinator | objectives & work plan of the mission; political, social & humanitarian context; roles of different stakeholders |
| OCHA/Humanitarian Information Centre | humanitarian context and data |
| FAO emergency coordinators and policy/ operations Officers | agricultural situation and data; emergency programmes; recovery prospects & programmes |
| WFP VAM and emergency Officers | food security data (pre-crisis and current); ongoing and planned emergency and other programmes |
| UNICEF nutrition and emergency officers | nutrition data; social context; ongoing and planned emergency programmes<br>*provide information about the CFSAM process and discuss the participation of national and local-level staff in the field visits* |
| UNDP programme staff | poverty & economic information; social context; recovery prospects & programmes |
| World bank, IMF | general economic situation & outlook; recovery prospects & programmes |
| UNHCR, IOM (*if there are refugees or displaced populations*) | population movements; repatriation/resettlement prospects & programmes |
| **NGOs, bilateral agencies and businesses** | |
| Major NGOs active in food-security-related programmes (e.g. CARE, World Vision…) | food security & nutrition data for the areas in which they work; social context; ongoing and planned emergency programmes; recovery prospects & programmes<br>*provide information about the CFSAM process and discuss the participation of national and local-level staff in the field visits* |
| External development/ information agencies (e.g. FEWS-Net, EU agricultural/food security units) | food security & nutrition data; social context; ongoing and planned emergency programmes; recovery prospects & programmes<br>*provide information about the CFSAM process and discuss the participation of national and local-level staff in the field visits* |
| Fertilizer distributors, seed suppliers, feed mills, millers, grain traders/ importers, retailers | current stocks; sales during the last season in different zones; quantities expected to be imported or purchased locally; reasons for differences from "normal" |

**Review and preliminary analysis of secondary data/information**

- Summarize available data and critically examine it for consistency, calculation errors, data collection methodology, gaps in the coverage of areas or population groups, and the credibility of the findings.
- Evaluate each secondary data source and reported finding for:
  - the data collection techniques used;
  - the manner in which the techniques were applied in the field, with particular attention to the adequacy and reliability of sampling;
  - the geographic area and/or population groups covered; *and*
  - whether the reported findings appear to be reliable and representative of the situation and, if not, what the direction of bias might be - over-estimation or under-estimation?

  This applies to *all* secondary data whether collected and analysed using probability sampling and statistical estimation or using rapid appraisal techniques, non-probability sampling and triangulation of data from key informant, household and group interviews. Your judgements on the quality of the available secondary data should be noted in chapter 1 of the CFSAM report.
- Review and refine the analysis undertaken during the preparatory phase of remote-sensing data (available from GIEWS and other sources) and those from ground observations, to identify areas where rainfall patterns or vegetation growth during the current season have varied significantly from previous years.

The purpose of the secondary data review at this stage is to:

*(i)* determine the level of credibility of the already-available data on various aspects of the food security crisis;

*(ii)* identify aspects on which discussions in the capital and field investigations need to focus in order to clarify issues and cross-check and complement the available data; *and*

*(iii)* identify the areas and locations that field teams should visit.

In relation to ***sampling*** methods used to collect data, the key issues are:

- the reliability of population/household data used as a basis for probability sampling, stratification, and the size of the sample(s) for quantitative surveys; *and*
- the adequacy of the number of interviews/meetings and the degree of representativeness in site selection for interviews and meetings when rapid appraisal techniques are used.

For further guidance on sampling issues, see section 13.4 and the reference material on the CD-ROM.

**Initial decisions and preparation of a mission work plan**

- Prepare a ***work plan*** including a comprehensive list of tasks to be accomplished with responsibilities and deadlines for each one. **Annex 8** provides a possible format for a work plan.
- Take final decisions (in the first 36 to 48 hours of the mission) on:
  - which ***staple foods*** will be included in the analysis of production, stocks, utilization (especially food consumption) and external trade;
  - the ***zones*** and administrative and market centres to be visited;
  - the number of ***field teams*** required for the field visits and their composition;
  - the ***transport*** and other arrangements for the field visits;
  - the ***data*** that are to be sought in the field, the content, layout and printing of the common multi-disciplinary ***checklist/format***, and any complementary formats for more detailed market or other information required; *and*
- Specify any ***additional secondary data*** that should be compiled in the capital while the teams are in the field.

The final decision on the ***staple foods*** to be included in the analysis of production, stocks, utilization (especially food consumption) and external trade will be guided by the reports of previous CFSAMs in the country but the team should ensure that the items chosen cover a high proportion (e.g. at least two thirds) of total nutritional energy in the figures for apparent food consumption in ex-post national food balance sheets (NFBS) in recent years. For this, look into the full ex-post NFBS of past years available in FAOSTAT and also at the FAO Statistics Division page on Food Security, which contains information on the share of starchy food in total energy intake by country and for various periods in recent decades. In general, a CFSAM analysis includes the most important cereal(s) plus tubers (such as cassava) in countries where they are important. Pulses are also included in a few countries (such as Burundi) where they contribute a significant proportion of dietary energy.

## 5.2 Finalizing arrangements for the field visits

To enable the team to make judgments concerning the reliability and accuracy of the existing data and any projections already made for the coming year, and to have confidence in extrapolating from its own findings and analyses to either validate or revise the existing estimates, the core team must:

- Review - and if necessary refine - the provisional field visit plan;
- Review - and if necessary refine - the standard checklist/recording format for field teams;
- Organize training for all team members and ensure that they will work together as teams and all members use the standard sampling procedures and recording format; *and*

- Ensure that all arrangements for transport, supplies, clearances, etc. are in place and adequate - see section 4.6.

If, exceptionally, the CFSAM is taking place in parallel with another food-security-related assessment, ensure that the relationship between the assessments is clear and that the itineraries and schedules for field visits are coordinated as much as possible.

The team must ensure the maximum rigour feasible in its own field investigations, carefully reconciling the need to visit many areas with the inevitable constraints of time, logistics, personnel and other resources. The final itinerary and schedule for field visits and the number and composition of sub-teams will be determined by the CFSAM ***team leaders*** following consultations among all members of the team and with the FAO and WFP country offices and the government.

### Finalizing itineraries

- Ensure that:
  - the number of multi-disciplinary teams and their proposed itineraries cover a broad sample of representative agro-ecological zones and populations in the affected areas - not only areas where the direct effects of the shock/crisis have been most severe but also some that are less affected;
  - agronomists will also visit a broad sample of normally-surplus producing areas in other parts of the country;
  - markets specialists will also visit a broad sample of market centres and logistic hubs that serve the affected areas, plus entry points for imports.

### Finalizing the checklist/format and procedures for data collection

To ensure that data collection during field visits will be efficient, the core team must:

- Review and finalize the draft ***checklist/data collection format*** for use by the multi-disciplinary teams ensuring that it captures the priority information needed to cross-check and complement, where necessary, existing data and assessments. Together with the available secondary data it must enable the team to obtain a clear understanding of the key changes in the food security situation, the processes that led to them, the likely evolution of the situation, continuing vulnerabilities and future risks in order to formulate recommendations with confidence.
- Finalize the standard list of ***key informants*** that field teams should use, flexibly, as a guide, when organizing meetings in administrative centres and at site (community/camp) level. Include indications of the issues that may be prioritized during interviews with the different groups of informants - see Panel 4-7 in section 4.5.
- Specify the number of community group and farmer/household ***interviews*** that field teams should aim to conduct at each site, and the sampling procedure to be used to select individual farmers and households for those interviews. (The number of interviews to be concluded in any one location is largely determined by the time and other resources available but, as a rule of thumb, aim for interviews with at least 5 unconnected sources in each locality.)

- Estimate the ***time*** required for each type of interview, and the time to travel between locations - including time for introduction and "settling in" - and ensure that the proposed schedule is realistic. Review and adjust the data collection requirements, target number of interviews, numbers of field team members and/or the itinerary, if necessary.

### Constituting and training the field teams

- Try, within the limits of the resources available, to ensure that each field team is balanced in terms of skills, experience and gender. Ideally, there should also be a balance between national and international experts and in organizational representation (FAO, WFP, government, UN agencies, NGOs and donor observers).
- Organize group training for all members of the field teams to:
  - ensure that all understand the purpose of the CFSAM (which is different from that of a normal "assessment"), the rationale for the selection of the zones and itinerary, and the methods and formats to be used for data collection and analysis (including the procedures for selecting informants);
  - start examining the available data on the zones they will visit and which they are expected to verify or refine; *and*
  - start working as teams.

Such training typically requires 1 to 2 days. See **Reference Note R6** for a sample agenda.

## 5.3 Conducting the field visits

In each zone visited, the process will be more-or-less as follows:

- Carefully review the available secondary data concerning the zone before arrival;
- Observe conditions en route to the zone;
- Meet with officials and other key informants in the provincial/district headquarters;
- Meet with the field staff of organizations that are involved in providing food-security assistance or that might be mobilized to provide such assistance if needed;
- Decide on the sites to be visited within the zone (purposive sampling);
- Visit the selected sites: talk with community groups, on-site extension and relief workers, farmers and selected households; examine crops and take samples to estimate yields (agronomists); observe conditions at household level; visit the local market;
- Observe conditions en route to and from field sites;
- Hold a field team meeting at the end of each day to exchange information and discuss implications for continuing data collection and the various elements of the overall analysis and report. *All* field team members should attend whenever possible.
- Hold a wrap-up meeting with officers at the provincial/district headquarters, if possible.

### Initial meeting

An initial meeting with the administrative head of the area together with the local representative of the entity sponsoring the mission - usually the MoA - can be useful for all members of the field team before splitting up to meet with other officials and key informants including the representatives of organizations involved (or that could be involved) in food-security assistance activities in the zone. Joint interviews with some other key informants can also be useful although, to save time and permit team members to go in depth into their own topics, some of such interviews will be conducted separately.

### Selecting sites to visit

Careful ***purposive sampling*** is critical in choosing the sites to be visited within each zone and the informants (individuals and groups) to be interviewed during a CFSAM. Even though the field and household-level data collection by CFSAM teams are spot-checks rather than a statistically representative survey, appropriate sampling is still important. As many purposively selected sites as possible should be visited to ensure representation of:

- areas with different agro-ecological characteristics and, where relevant, severity of shock/crisis impact; and
- communities with different livelihood patterns (groups) and, where relevant, ethnic origin.

Try to get away from main roads as much as possible as both households and crops benefit from proximity to transport networks. You *must* get a representative view of the overall situation.

Household-food-security-specialist team members should also interview a purposively-selected sample of *urban* households representing different population, livelihood and wealth groups.

For further guidance on sampling, see: WFP *EFSA Handbook*.

### At each site

- Meet with community groups and some households. Joint interviews with two or three team members can be useful although, to save time and permit team members to go in depth into their own topics, some interviews may need to be conducted separately.
- Always explain the purpose of your visit and the interview to farmers and other interlocutors who are devoting time to you.
- In food-insecure zones, explain to all interviewees that the mission is not in a position to decide on food aid allocations (and be aware that farmers and community leaders may under-estimate yield and stock figures if they recognize the WFP emblem on the team's vehicle!).
- Record the GPS coordinates for each site visited, if possible.

Don't forget to cross-check population figures (estimates) with key informants at all levels.

For additional general guidance on conducting field visits, see ◔ WFP *EFSA Handbook*.

Panel 5-2 lists some of the difficulties that may be experienced and provides practical hints how to avoid or deal with them. The list is distilled from CFSAM experience in many different countries exhibiting different levels of development with regard to the collection and analysis of agricultural statistics. **Annex 9** suggests how to get the most out of field visits and interviews.

**Panel 5-2**
**Frequent difficulties and how to avoid them**

| Frequently encountered difficulties | Hints: how to avoid or deal with the difficulties |
|---|---|
| ***Difficulties in provincial/district headquarters (and in the capital)*** | |
| Counterpart officers are not informed of mission despite requests made by senior government officials.<br>Officials do not have the same priorities or sense of urgency as the team.<br>Nature of mission is misunderstood: project proposals or funding commitments are expected. | *Ensure that all concerned in the capital and field locations are aware of the mission and understand its purpose, importance and timeframe.*<br>*Emphasize that the mission is not a project/ programme preparation mission with funds attached, but that accurate data are needed for decision-makers.* |
| Access to ministry information denied in the field | *Carry official letters confirming your identity and authorization to access data* |
| Data provided clearly do not represent the true situation: they may have been compiled in the office to meet Ministerial demands, not prepared on the basis of field assessments; they may be biased - up or down - for strategic purposes at the zone level.<br>Conditions have changed radically influencing performance since the original assessment was completed. | *Carefully scrutinize and cross-check all data; ask to see the raw data from which reports were compiled.*<br>*Ask the officers concerned, tactfully, how they explain the differences from previous years. Describe your own observations and ask, tactfully, how they explain the differences from the reported data.*<br>*In the report, present your own best estimates (judgments) with explanations.* |
| Some key informants are reluctant to work outside normal office hours (although most local staff is usually very co-operative). | *Use tact and diplomacy to secure cooperation, when necessary.*<br>*Schedule visits outside of office hours to key informants who are not bound by office hours (e.g. NGOs) to get maximum use of time.* |
| Teams are directed only to tragic cases of crop failure or extreme physical damage that are not representative of the area. | *The team leader decides on the sites to be visited.*<br>*Suggestions are listened to but the independence and integrity of the mission is maintained.* |

| Difficulties at field sites | |
|---|---|
| Farmers and other interlocutors are reticent at the beginning of an interview and stop talking when what they have said is challenged. | *Don't talk much. Encourage the farmer (or other interlocutor) to talk from the earliest possible moment.*<br>*Listen. Don't preach.*<br>*Never correct farmers' (or other interlocutors') statements: ask further searching questions, if necessary.* |
| Meetings with groups of farmers or community representatives become "political" or competitive exercises in expressing hardship and arguing for assistance. | *Talk with only 1 or 2 farmers or households at a time.*<br>*If local officials have brought people together, take the opportunity to explain the work of the team and then divide the audience into subgroups of no more than two persons for interviewing purposes.* |
| Some individuals accompanying the team do not like waiting long periods while agriculturalists or food security specialists collect the data they need (or want to do other things). | *Ensure that everyone who is a member of or travels with a field team attends the pre-field-visit briefings and trainings and understands the purpose and methods of the mission.* |

- Use your GPS to:
  - find locations previously identified (e.g. from the satellite image analysis) and pre-loaded in the GPS handset as being particularly critical;
  - keep records of the visited sites during the CFSAM and accurately position on a map those locations that have been described by the surveyors;
  - trace segments of routes followed that are described and documented; and
  - link digital photos to GPS data so that the digital photos are geo-referenced and spatially archived for later use within various GIS software.
- Summarize preliminary conclusions on needs, gaps and intervention requirements at the end of the visits in each zone. This is important for quantifying the problem and forming consensus among team members.

## 5.4 Preparing for and conducting de-briefings

The purpose of debriefings is to provide the government and other interested parties with preliminary information on the team's findings and to obtain feed-back. Separate debriefing meetings may be held with selected high-level members of the national government, the UN agencies, and other parties such as representatives of donor agencies, NGOs, the academic or research community.

De-briefings often take place in a politically-charged and tense environment, and great pressure is often brought to bear, from all sides, on the team members. Given the critical importance of this highly visible process, the team should strictly adhere to the ground-rules listed in Panel 5-3.

Present your findings and any preliminary conclusions (concerning crop estimates, for example) that you feel you can confidently present without fear of making a mistake. Your presentation may be sketchy or elaborate depending on the quality and specificity of data and fieldwork observations on which you have based your preliminary analysis. Additional analysis and time will be required to develop your final conclusions. Most de-briefing presentations include a few maps, photographs and graphs to support the main findings - and any tentative conclusions - that are presented in bullet-point format.

**Panel 5-3**

**Ground-rules for De-Briefings**

**Preparing for de-briefings:**

- Provide information first to high-level members of the national ***government*** which requested the CFSAM and other UN agencies, then to donors, NGOs, and other interested parties.
- Ensure that FAO and WFP speak with a ***consistent voice***. There may be differences of opinion on some aspects but the main findings and conclusions concerning the overall situation and about the general nature of interventions required must be agreed between the FAO and WFP members of the team before the de-briefing process starts.

**Conducting de-briefings:**

1. The ***FAO and WFP team leaders*** are responsible for the debriefing presentations. Other team members provide supporting information/findings. Observers and personnel from other agencies and institutions who participated in the field work may speak as representatives of their agencies or institutions but not as members of the assessment team.
2. Provide only ***preliminary general findings***. Present estimated production, consumption and price ***trends*** relative to historical data but without precise quantification: explain that quantitative estimates will be prepared and provided later.[1] At the same time, give sufficient, clear information to enable the audience to have confidence in the general soundness of the assessment and to allow them to react with additional information that may be useful to the team itself in finalizing the report. Use the de-briefings as an opportunity to validate - make a "***reality check***" of - your preliminary findings and analysis.
3. ***Resist pressure*** to provide estimates on which appeals can be based. Such pressure is almost inevitable and it is not unusual for national agencies to launch an appeal shortly after (or before) a CFSAM de-briefing. This should have no bearing on the team's position. Give all parties a realistic estimate of the date when the final report will be made available.
4. ***Journalists*** can attend the general de-briefings open to donors, NGOs and other interested parties and receive the same information including the fact that quantitative estimates will be prepared and provided later. There is nothing to be gained by giving specific interviews to the news-media prior to the release of the final report. Press releases are normally issued when the final report is issued - 24 hours after the national government has been given an advance copy for information. Ideally, press releases will be issued jointly by FAO and WFP.

[1] *This is important because once a specific quantitative estimate is given, it circulates so quickly and widely that it almost completely precludes the usefulness of sounder estimates presented later.*

## *5.5* Preparing the draft report

At the end of the mission, the core team will remain together in relative isolation for a few days in order to prepare the first draft of the report. This may be in the country or in another location in the region, depending on circumstances.

Each member of the core team is responsible for preparing that part of the report that corresponds to his/her particular expertise and TOR and contributing to the chapters on food security background, methods, response options and recommendations. While drafting their contributions, team members are expected to interact with each other to permit cross-fertilization and facilitate the production of an agreed, coherent, comprehensive overall report.

**Annex 1** presents an annotated outline for a report. The suggestions for the length of the various sections are indicative and relate to the *text* in the body of the report. Summary tables, graphs and maps that are essential to understand the text, and should therefore be included in the body of the report, would be in addition. Additional detailed supporting text, tables and maps could be in annexes. Try to limit the body of the report, excluding annexes, to about 20 to 25 pages.

Use your GPS data to create outputs maps that display the area covered during the survey that can be used as part of the CFSAM documentation as well as a basis for planning future CFSAMs.

# Part III

## Analysing the Context, Agricultural Production and Market Conditions

## 6 Understanding the crisis background and socio-economic context

This chapter suggests what needs to be done at the outset in terms of analysing and summarizing the *background* to the crisis and the socio-economic *context*.

Much of the data should be compiled and an initial analysis be completed by in-country personnel (staff or consultants) during the preparatory phase. The team will review, refine and supplement the analysis during the mission. If there was a CFSAM last year, the focus will be on up-dating information and assessing the significant changes since then. The key points will be summarized in chapters 1 and 2 of the report. Not all the information collected will be reflected in the report but all will be important to the team's understanding of the situation and for defining the focus of enquiries during the field visits, interpreting data, and formulating recommendations.

### 6.1 Food security crisis background

*What the CFSAM report might include (in chapter 1):*

Brief descriptions of the crisis-affected areas, the cause(s) of the crisis, the principal livelihood activities (indicating which have been affected and which not), whether it is essentially a crisis of food availability or access or both, and how it can be compared with previous crises in the country.

Brief summary of the nature and impact of food-security-related assistance to date.

Brief note of any issues arising from the previous year's CFSAM report (if there was any), and the follow up to it, that were taken into account in planning this year's exercise.

- Review the data provided by the FAO and WFP country offices, relevant government entities and other organizations. Focus in particular on differences among different areas and population groups and events in the last year.
- Use interviews with key informants in the capital and in field locations, and with community groups to confirm or refine the information you have.

On that basis, synthesize the available (secondary) data on:

- ***The population groups*** living in the affected area(s), their characteristics and numbers, and the groups that have been, or are likely to be, significantly affected:
  - Differentiate groups who, within any geographic area, may be differently affected by the shock/crisis and have different vulnerabilities - face different levels of risk - in the present situation; livelihood (or more general socio-economic) characteristics are relevant in many cases but ethnic or religious characteristics may predominate in situations of conflict or repression.
  - Distinguish groups in ways that can also be relevant for targeting assistance, to the extent possible.
- ***Distinct geographic zones*** within the areas affected, differentiating zones where the impact of the shock/crisis is likely - or is known - to be significantly different due to the terrain and/or the predominant economic activities:

- Use existing "livelihood zone" or "agro-ecological zone" maps whenever available.
- Add in *urban zones* if such are missing from existing categorizations that focus on agriculture and rural livelihoods.
- Superimpose geographic considerations relating to the *severity of physical impact* (e.g. distance from the path of the eye of a cyclone, distance from the coast in case of a tsunami, or the levels of fighting and insecurity in a conflict situation).

- ***The seasonal calendar(s)*** for the affected areas including normal crop cycles, food stock levels, employment opportunities, other livelihood activities, and any periods when physical access to particular areas is difficult and trade and aid flows are likely to be interrupted. Separate calendars may be needed for different agro-ecological zones.
- A ***time line*** showing the major events that have affected the area in the last few years and how those events may have affected any or all of the 3 CFSAM themes either directly or indirectly through changes in contextual factors. Prepare separate time lines for different geographic areas or population groups if there are significant variations. Present them in parallel on the same page, if possible.
- Information on the effects of ***previous shocks/crises*** in the affected areas and the lessons from the responses to those events.

| *Main secondary data sources & key informants* | |
|---|---|
| *…in the capital* | *…in field locations* |
| Ministry (or commission) for emergency/ relief | Administrative heads |
| National early warning, disaster management & food security units | Provincial and district agriculture, health, relief/community development officers |
| Ministries of agriculture, food, trade | WFP, UNICEF and other UN agency field staff |
| Central statistics office (population data) | NGOs |
| UN resident /humanitarian coordinator | Researchers working in the area |
| FAO, WFP, UNDP, UNICEF country offices | Community leaders/groups |
| Major donors (USAID, EU, etc.) | |

## 6.2 Population

*What the CFSAM report might include (in chapter 2):*

Population data for the country. Numbers and demographic characteristics of the populations of the affected area(s). The basis for the estimates. The range of other current estimates, if relevant. Breakdowns by geographic areas and livelihood groups, if available.

The numbers and demographic characteristics of any refugees or IDPs: recent and expected changes in those numbers.

Data for the total, national population are necessary for calculating consumption requirements for the national food balance sheet (report chapter 5). Disaggregated, sub-

national data are necessary for estimating the aggregate food security assistance needs of food-insecure population groups (report chapter 6) and for preparing sub-national balance sheets, when needed.

You will be provided with the latest national-level UN population data series by FAO/GIEWS. With that as a starting point:

- Discuss population estimates with the national central statistics office (CSO) or census office, if appropriate, and also obtain data that are ***disaggregated*** by region, age-sex group (if possible) and main livelihood groups (if available).
- Check that the disaggregated data are consistent with the national-level estimates.
- During field visits, cross-check figures for the areas visited with the local authorities, community leaders, UN agency field offices, and well-established NGOs.
- If you have strong grounds for questioning the official figures - if the official growth rate assumptions appear to be too high/low, for example - make adjustments after consultation with the FAO/GIEWS country officer and explain the method and reasoning clearly in your report.

If the UN series is found to be out of date because, for example, more recent census figures have been published or there has been a change in national boundaries, inform the FAO/GIEWS country officer and ensure that the NFBS time series is updated.

In some cases, population figures may be the subject of ***controversy*** nationally or with the international donor community. In such cases, use the planning figures agreed upon by the UN Country Team, but note in your report the range of other figures in use.

### Calculating population for balance sheet purposes

Usually the official population figures and also the UN projections are estimated for mid-year (30 June). CSO data may be for some other particular date, e.g. whatever date was chosen as census day. For CFSAM purposes, an estimate is needed for the population at the ***mid-point of the coming marketing year***, which is not necessarily 30 June but any other date to be used for population projections in the country. Use the applicable population growth rate ($g$) to make annual estimates to the date used in population projections, for current year $t$ and next year $t+1$, and then interpolate to the middle month of the marketing year. For example, if calendar year population figures are available for 2007 and 2008 (as mid-year point estimates) to convert them to April/March 2007/08 marketing give a weight of 9/12 to 2007 population and 3/12 to 2008 population.

### Allowing for migrations and estimating displaced populations

It is also important to ensure that population figures reflect any ***exceptional demographic change*** arising from, for example, disease, war or natural-disaster-related mortality, or abnormal cross-border migration. The UNDP, WFP, UNHCR and IOM offices may be able to provide data on such occurrences.

- In the case of ***out-migration***, estimate the total number of persons likely to be absent from the country (and completely independent of in-country food supplies) for

the entire marketing year and subtract the number from the national population estimate. This means that, if 300 000 persons are expected to be abroad for 6 months, subtract 150 000 from the total.

- In the case of ***in-migration***, include the total number of people expected to reside for the entire marketing year and be totally dependent on domestic food supplies. If, however, internationally-supported food distribution programmes for ***refugees*** are underway or planned for the entire marketing year, the refugees should *not* be included in the domestic population estimate, and refugee food assistance needs should be kept separate from the estimates of national food assistance requirements.
- Where there are internally displaced people (***IDPs***), obtain estimates of their numbers (for the purpose of estimating assistance requirements) from relevant government authorities and the UN Resident/Humanitarian Coordinator. If figures are disputed, use the planning figures agreedupon by the UN Country Team but include in the report the range of other current estimates.

### Stratifying the population: distinguishing different sub-groups

- Obtain, or develop, the best possible population estimates for the main livelihood groups within the affected area(s).

Use/prepare estimates based on your review of secondary data, discussions with development agencies working on livelihood issues, and information from community groups and key informants. Work with broad categories. Check for consistency against other available population data.

Panel 6-1 provides an example of a stratified table for population figures in a rural area. For urban areas, a similar table might include categories such as: public sector employees, informal sector employees, self-employed and unemployed.

**Panel 6-1**
**Example of rural population stratification**

| Area/ Zone | Subsistence farmers | Surplus food producers | Cash crop producers | Landless labourers | Pastoral |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| ... | | | | | |

| *Main secondary data sources & key informants* | |
|---|---|
| *…in the capital* | *…in field locations* |
| Ministry (or commission) for emergency/ relief | Administrative heads |
| Central statistics office (population data) | Provincial and district relief |
| UN resident /humanitarian coordinator | WFP, UNICEF and other UN agency field staff |
| UNHCR, IOM for refugees/IDPs | NGOs |
| Major donors (USAID, EU, etc.) | Community leaders/groups |

For further guidance on population estimates, see the WFP *EFSA Handbook* and associated technical guidance sheets.

## 6.3 Macro-economic situation and policies

*What the CFSAM report might include (in chapter 2):*

Overview of the macro-economic situation in the country and how (if at all) it has been affected by, or contributed to, the present crisis.

A short paragraph summarizing the nature and importance of food imports and exports, (including both registered imports/exports and unregistered cross-border trade) and any changes in flows due to the crisis.

Fiscal and trade policies and objectives, including any recent changes in policies, and their effects on food security.

How the government budget, income, expenditures, foreign exchange reserves, the exchange rate, etc. compare with previous years, and the implications for food security.

Analyses of macro-economic conditions and the effects of fiscal and trade policies are required in all cases but particularly in case of an *economic crisis* or when there has been, or will be, a severe *food or cash crop production failure*, e.g. due to drought or conflict. This section of the report will require particular - and sensitive - attention if macro-economic policies could be contributing to the crisis.

Data may be obtained from the ministries of finance, economy, commerce and trade, the central statistics office, the central bank, the World Bank, the IMF and UNDP. Information on the implementation/enforcement of policies and their effects will be collected from key informants in the capital and during the field visits.

- Begin your analysis by compiling tables and charts showing the data for key indicators for the last few (e.g. 5) years and current estimates, or projections. Typical ***economic indicators*** to be examined include:
  - rate of economic growth, GDP/capita;
  - rate of population growth;
  - relative size and growth of main economic sub-sectors, e.g. agriculture;

- evolution of key macroeconomic aggregates, value of exports, imports, trade balance;
- inflation and price indexes (food and non food);
- monetary and financial data (debt, foreign reserves, exchange rates); *and*
- poverty indicators.

Then:

- Identify ***trends*** in overall economic and poverty indicators, including foreign exchange reserves if data are available, especially in a slow-onset or protracted crisis;
- Make ***informed judgments*** concerning the nature and severity of the impact of the "event" on the national economy and on government expenditures and budget allocations for the food sector; *and*
- Identify the effects of ***government policies***, including trade and foreign exchange policies, and any recent changes in policy, on food production and trade.

Take account of the stock of natural and human resources, the effectiveness of policies, and the extent to which the management of public affairs is efficient, transparent and predictable.

Macro-economic conditions determine both: (i) the resources available to the government and private-sector traders to import food and the pressure to maintain or even increase exports in order to secure foreign exchange; and (ii) the extent to which households can generate income from non-agricultural activities, see Panel 6-2.

One of the main issues for the team is to determine the extent to which domestic, regional and international trade strategies can alleviate the aggregate impact of the original shock. This depends on the underlying causes of the crisis. Gaining an understanding of the questions in Panel 6-3 is essential to make a reasonable estimate of the extent to which commercial imports will make up some of the food deficit. They will also provide the basic information to predict food price trends for the remainder of the marketing year which, in combination with changes in family incomes, determine expected changes in food access by households.

**Panel 6-2**

**Some questions relevant to determining the economic impact of shocks**

***In case of an* exogenous (external) *shock***

- If there has been a fall in price of export commodities: is the country making up the slack by increasing the export of other commodities?
- Is the government reducing any export taxes to maintain some export revenue at the expense of public receipts?
- Is the Government reducing tariffs or surcharges on food imports, even temporarily?
- If there has been a rise in the price of imported goods: are importers shifting to less expensive substitutes for which there is effective demand?

***In case of an* endogenous (internal/domestic) *shock***

- What is the impact of a fall in production of cash crops on export earnings and producers' incomes?
- What is the short-term impact of a fall in the production of food crops on domestic supply and prices?
- Is spatial price arbitrage taking place between surplus (if any) and deficit regions of the country?
- Are border parity prices for food lower in some of the neighbouring countries, and if so, are there flows of food commodities into the country? Are there policy, institutional or physical impediments to such flows?
- Is there a perception among domestic wholesalers that domestic effective demand is strong enough to make domestic or cross-border trade on a large scale profitable?
- Are government policies and strategies regarding market interventions known and predictable? If so, are they likely to interfere with trader strategies (e.g. by selling at subsidized prices large quantities of food from government stocks or public import programmes)?
- Conversely, is the government willing to contribute to food price stabilization by allowing or encouraging commercial imports by the private sector?

| *Main secondary data sources & key informants* | |
|---|---|
| *…in the capital* | *…in field locations* |
| Ministries of planning, finance | Administrative heads |
| Central statistics office | Provincial and district planning & development officers |
| UN resident /humanitarian coordinator | WFP, UNICEF and other UN agency field staff |
| FAO, WFP, UNDP, UNICEF country offices | NGOs |
| Major donors (USAID, EU, etc.) | Researchers working in the area |
| Major food importers/exporters | Wholesale traders |
| Shipping/forwarding agents | |

## 6.4 Agricultural/food production sector

*What the CFSAM report might include (in chapter 2):*

Characteristics of the agricultural and food production sector including the relative importance - nationally and in the affected areas - of the main food and cash crops, livestock, fishing, and any other agricultural activities. The current policy environment and any significant changes in policies in recent years. Any land ownership issues.

The parts of the country that tend to be structurally surplus or deficit areas, and how production in the different areas has been affected; comparison with previous crises.

- Review information provided by the FAO and WFP country offices, relevant government entities and other organizations concerning recent policy changes and the effects on the sector of such changes and of changes in the security or other context conditions.
- Use interviews with key informants and community groups to confirm or refine the picture you have of the sector.

| *Main secondary data sources & key informants* | |
|---|---|
| *…in the capital* | *…in field locations* |
| Ministries of agriculture & commerce | Administrative heads |
| National food security unit | Provincial and district agriculture officers |
| Central statistics office | NGOs |
| UN resident /humanitarian coordinator | Researchers working in the area |
| FAO, UNDP, WB, IMF, country offices | Community leaders/groups |
| Major donors (USAID, EU, etc.) | |

## 6.5 Social and humanitarian context

*What the CFSAM report might include (in chapter 2):*

The main humanitarian consequences of the crisis. The nature and impact of assistance to date. Any changes expected in the type and volume of assistance in the coming year.

Social policies and issues (including socio-cultural or ethnic differences) that affect food security or the provision of assistance.

*If the country is in a recovery phase following a major disaster or conflict*: the progress of recovery to date in relation to food security and any variations between areas or population groups.

- Review information provided by the FAO and WFP country offices, relevant government entities and other organizations concerning recent and ongoing food-security-related humanitarian assistance operations and any changes in social policies or relations among different groups. Carefully review any available evaluation reports on ongoing operations.
- Use interviews with key informants and community groups to confirm or refine the information you have, particularly in relation to changes in the last year and possible differences among areas and population groups, and ask about the effectiveness of recent assistance and its targeting.
- Consolidate information available on the severity of the impact of the shock/crisis in different geographic areas and, in collaboration with partners, draw contours on a map showing the areas most severely affected and those less affected. This may reflect the rainfall deficit, the extent of physical damage, the intensity of fighting, etc. Where an inter-agency "IPC" classification has recently been completed (see section 1.3), you may consider using it and including the IPC map as an annex to the CFSAM report.

| *Main secondary data sources & key informants* | |
|---|---|
| *…in the capital* | *…in field locations* |
| Ministry (or commission) for emergency/relief<br>National early warning, disaster management & food security units<br>Ministries of social affairs/welfare & health<br>UN resident /humanitarian coordinator<br>FAO, WFP, UNDP, UNICEF country offices<br>Major donors (USAID, EU, etc.) | Administrative heads<br>Provincial and district relief & social welfare officers<br>WFP, UNICEF and other UN agency field staff<br>NGOs<br>Researchers working in the area<br>Community leaders/groups |

# 7 Assessing agricultural production

This chapter explains how a CFSAM mission assesses domestic agricultural/livestock production.

This part of a CFSAM is critical, but also particularly challenging, in countries where normal processes of gathering agricultural data have broken down - or were never adequate - and alternative methods of rapid assessment are required. Speed and the efficient use of time are very important. The findings and conclusions of the analysis are summarized in chapter 3 of the CFSAM report but also feed into the preparation of the national food balance sheet, any sub-national balances, and the analysis of food security for rural households.

## 7.1 Tasks in relation to agricultural production

Estimating the current (or forthcoming) main staple-crop harvest is the main task but others listed in Panel 7-1, are also needed in most CFSAMs.

**Panel 7-1**
**Tasks in relation to agricultural production (and links to the CFSAM report)**

| Principal tasks | Report chapters |
|---|---|
| • Assessing/estimating the production of the ***main staple crops*** that are being, or are about to be, harvested - *this is the primary task*; | 3 Agricultural production<br>6 Household food security |
| • Forecasting production of staple foods from ***secondary and other harvests*** that may become available during the coming marketing year; | |
| • Identifying expected ***surplus and deficit areas*** for the coming year, and how those surpluses and deficits are likely to be compared with those of a normal year; | 5 Food supply/demand balance (interpretation)<br>7 Analysis of response options |
| • Estimating/predicting changes from normal in the production of ***cash crops,*** that contribute significantly to livelihoods or government revenues. | 2 Macro-economic situation<br>6 Household food security |
| • Assessing the condition of ***livestock***, where livestock constitute an important means of livelihood, and probable changes from normal in the performance of livestock and their contribution to food supplies; *and* | 3 Livestock<br>6 Household food security |

In relation to the main harvest:

- put together an initial overall picture during the first days of the mission on the basis of secondary data (including rainfall and remote sensing data, data on the prices and distribution of agricultural inputs) and information from key informants in the capital (including the MoA, farmers associations, traders and NGOs); and then

- cross-check and refine that initial picture through observations and discussions during visits to purposively-selected sites.

The crop assessment undertaken by a CFSAM is a ***rapid appraisal***. In most cases it provides an early indication of national production for staple crops in advance of the official annual agricultural survey, to be undertaken later. Where the annual assessment of crop areas and yields has already been completed, the mission's responsibility is to: check the validity of those data; enrich them with the team's own findings and those of other organizations and institutions that may not have been available to the original assessors, and make and explain any adjustments found necessary. If the data collection is incomplete, the mission will have to compile its own estimates from data collected and cross-checked during field visits.

The analysis must cover all parts of the country, making as many verification visits of the distinct production zones as possible must be made. The report should provide a straightforward statement of the agronomist's independent estimates of production for the coming year, with explanations but unencumbered by other details, commentary or proposals.

Figure 7a reproduces the agricultural production and related elements of the overall CFSAM framework presented in Figure 3a. The challenge is to determine how the shock/crisis has affected the various factors that influence agricultural production and produce specific estimates and forecasts of production.

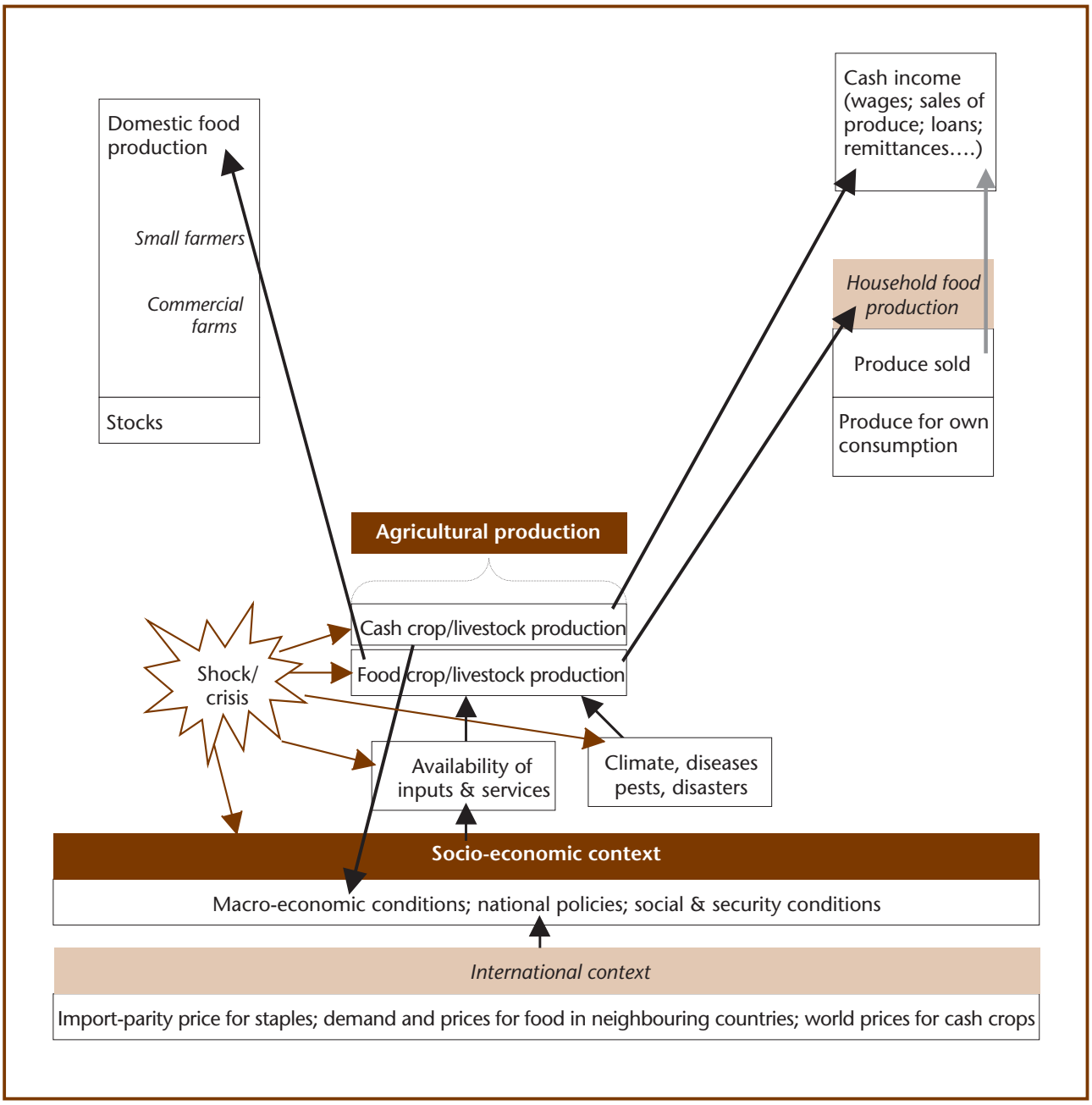
**Reference Note R3** lists 31 tasks (steps) that need to be accomplished in sequence in almost all CFSAMs, broken down into 4 phases: the initial phase in the capital city; the field visits for gathering agricultural data and estimating crop production; the analysis and debriefing phase in the capital following the field visits; and the report preparation. This chapter provides guidance for some of the key steps together with cross-references to Technical Notes that provide additional guidance.

The assessment of ***emergency needs for the agricultural sector*** arising from the crisis does *not* fall within the direct scope of the CFSAM: it is the responsibility of FAO-TCEO (Service for Emergency Relief Operations). However, CFSAMs often provide information on the basis of which TCEO may respond and TCEO occasionally participates in CFSAMs. Exceptional shortages of seeds, hand-tools, pesticides and fertilizer should be noted and, while the team should not try to calculate the quantities of specific inputs required for emergency interventions, the following information should be included in the report:

- types of inputs in short supply;
- geographical location(s) and causes of shortages;
- reasons why farmers cannot purchase on the open market;
- likely consequences for future crop production (a qualitative judgment);
- details of any programmes already underway to address the problem;
- opinions of government, NGOs and other UN agencies as to whether interventions are necessary.

TCEO will be invited to attend de-briefings in Rome and comment on the mission's observations.

Figure 7a **Agricultural production elements of the crop and food security analysis framework**




## Secondary data needs

Panel 7-2 lists the information needed by the team on (or before) arrival in the country in order to be able to quickly establish the agricultural-production component of the work plan for the mission. An important element is reviewing the government's final, ***official estimates*** of last year's harvests and critically examining the timing, geographical coverage and methods of the official data collection in order to plan what to check, or follow up on, during the field visits:

- *If the data are from a (centrally-managed) survey*, check that the survey was undertaken in accordance with the official sampling frame and that the sampling frame is well stratified and includes a statistically representative number of observations.

- *If the data are compiled by hierarchical data accumulation*, find out how the basic data are acquired (e.g. through farm visits or group meetings), the ratio of data collectors to farmers, and the time of data collection, and check the consistency of yields reported for the same crops from adjacent areas and the reasons for any differences.

**Panel 7-2**

**Secondary information needs to prepare an Action Plan for the Agricultural Production component of a CFSAM**

Essential information that should be available (to the team leader) before the start of the mission and before the core team arrives in the country includes:

- the main staple and cash crops
- the cropping calendar including scale, timing, duration and location of main and minor harvests
- the main farming sectors / systems - peasant, agri-business, rain-fed, irrigated, agro-pastoral, pastoral, capture fisheries or aquaculture - and their proportional contributions to overall production
- time-series of previous assessments
- the marketing year for which food supply is being assessed
- major issues or concerns for the current year, including relevant policy changes
- sources of data to be used

Official sources vary from country to country. Official government estimates for areas planted and/or preliminary/provisional yields are generally provided by either a Central Statistics Office or the Ministry of Agriculture (MoA). In some cases, grain parastatals or an official Early Warning Agency may have that specific role. Large private grain traders, commercial farmers and donor agencies may also collect some data for their own use and thus provide additional sources for triangulation purposes. At national level, time-series data for previous years will normally be provided by FAO/GIEWS, while longer but less up-to-date timeseries can also be obtained from FAOSTAT (http://faostat.fao.org/). These are usually derived from Central Statistics Office sources, are unlikely to be available for the current year at the time of the mission, and may differ from MoA sources that are regularly used by CFSAMs. In cases where parallel estimates have not been reconciled, the sources used in previous CFSAMs should be relied on, for consistency.

## 7.2 Gathering data in the field

### Initial meetings at zonal headquarters/administrative centres

- Inform the local MoA office immediately after your arrival. A team member who knows the area should do this *before* settling into the lodging in order to ensure that crucial officers will be present for meetings the same or the next day.
- Present letters of introduction/authority and arrange to meet full complement of subject matter specialists - and the archivist - under the chairmanship of the head-of-office or delegated official at the first convenient moment. The specialists should

cover extension, crop production, crop protection, typical post-harvest losses, marketing, credit, input supply, livestock production and veterinary services.

- Ask for the data listed in Panel 7-3 and observe the "golden rules" in Panel 7-4. If the data are in local languages, take photocopies or carbon copies and arrange for immediate translation.
- In consultation with the local specialists: select districts/sites/localities to visit representing as many different population (ethnic) groups and topographic, soil and rainfall zones in the area as possible; and identify any areas of special interest/concern. Coordinate plans for visits within the zone with the household-food-security specialist team members.

**Panel 7-3**

**Data to be requested at each provincial/district headquarters**

In relation to the current/forthcoming ***main staple harvest***, request the following:

- rainfall data in dekads or daily data, *not* just monthly totals, for all rain-gauges in the zone;
- crop area estimates;
- expected yields;
- information on the seeds, fertilizers and other agro-chemicals distributed and used;
- farming practices and any variations from the norm or from last year (or recent years).

In addition:

- ask about expectations for ***secondary food harvests*** (if any) and ***cash crops*** - probable areas, likely input availability and use, and how yields are likely to compare with normal;
- ask about ***livestock*** - the numbers/performance of various types of animals, trends over time, general health condition, particular types of problems encountered this year, treatments followed, etc.
- collect *final* post-harvest assessments from the ***previous year*** or years if available for comparison with this year's and last year's mission estimates and ask about the reasons for differences;
- obtain specialist reports regarding ***significant events*** in the zone, such as weather anomalies, disease/pest outbreaks, civil disturbances, unusual population movements, etc.

It can be useful to: (i) discuss the situation with the ***specialists***, without data, to get a general impression; (ii) get the crop return (area and yield) data from the ***statistics section/clerk*** and review them in the light of the specialists' opinions; (iii) go back to the specialists for further explanations, if needed; and (iv) ask both the specialists and the statisticians how long they have been working in the zone. This approach will help you to judge the quality of the data and the value of the opinions expressed.

**Panel 7-4**

**"Golden rules" for data collection at provincial/district headquarters**

The primary task of the agricultural component of any CFSAM is to produce figures for harvests of the main staples for the current or forthcoming season(s) within the new marketing year disaggregated by geographic areas. The data presented must be plausible and defendable. They must come from sources as close as possible to the farming community which, for a CFSAM, means the entry-points to the chosen zones, usually Ministry of Agriculture offices. Consequently:

- *Never leave a provincial/district headquarters without up-to-date and historic* planted *area, yield and rainfall data for the season's crops of interest.*
- *If time is short and data are not compiled, concentrate on the compilation of the data for the main staples.*
- *If data doesn't exist, insist on getting at least qualitative estimates (e.g. percent change over last year) from the district agricultural officer, extension officer, district veterinary officer and cross-check with second opinions. A consensus estimate is better than no estimate. Be neutral and try not to lead the respondents towards your views.*
- *Ask their expert views on the official forecast (if it exists) for area to be planted for the secondary season and reasons for differences.*
- *Do not accept that data will be sent/faxed/e-mailed later.* The road to incomplete databases is paved with broken promises!

Provincial/district officers often promise to send further data to HQ after the team has left. For these data the team should wait, provided that this would not disrupt the rest of the mission, and make use of the delay by compiling data already collected or taking additional farmer samples. If the data are still not available, a team member should remain behind to collect the data and then rejoin the team. The sending-on of data later may be accepted *only* for secondary information that has already been gathered elsewhere by others, e.g. prices.

***To ensure the best possible data***:

- Watch out for double-counting due to administrative boundary changes which may change the status of villages or even whole districts.
- Be aware of changes in numbers of households farming due to mass migrations of families.
- Check the units used i) at the point of data collection from the farmers and ii) when transcribed into the records. If local units are used, check that the conversion factors are consistent and plausible.
- Check the calculations, even if only *rough checking* in 1000s of hectares or tonnes, to be sure that all decimal places are correct. (Most data at most entry-points are added up by hand and entered/copied by hand, so that mistakes invariably occur.)

The final data base will be built up from a combination of information received and adjustments made following the CFSAM audit, particularly with regard to ***yield***. A CFSAM team, by virtue of the facilities placed at its disposal, is in a better position to

estimate actual yields than the local officers or any other organization. However, it is far less easy to estimate planted ***area***. CFSAMs may only ensure that the figures provided to them are plausible in relation to the land available for cultivation within each zone (entry-point area).

### Collecting data at field sites

In the case of each new crop in each area:

- conduct spot-check ***crop measurements*** by field cuts or counting of exact harvests from known areas if harvesting is on-going - see **Technical Note P3**;
- where pictorial evaluation technique (PET) manuals exist, use them; *and*
- talk with ***combine drivers*** and ***threshing machine operators*** in the fields where they are working.

If the mission is conducted at harvest time, field measurements will allow the mission to evaluate information received from other sources: Are they of the same order? If not, why not? (The measurements themselves do not provide a basis for estimating overall production however, as statistically accurate sampling methods are not applied and the number of samples taken is small.)

Visit ***commercial farms*** (which have their own recording systems) at every opportunity and compare field conditions with nearby peasant farms - see section 7.8. Note that large farms do not necessarily have better yields than peasant farmers: attention to detail is often much better on the peasant farms and this is often reflected in better yields. If commercial farmers are recording better yields than MoA figures, *find out why*. Avoid sweeping assumptions.

Remember: the focus is on ***assessing production*** not reviewing, or making recommendations in relation to, policies and practices. Production from all crops depends on the area (or number of plants) harvested and the yield per unit area (or plant). Field work is intended to provide, through direct or indirect means, a good understanding of those two components.

When agriculturalists collect additional data relating, for instance, to household food security, those questions should be addressed at the end of interviews *after* essential agricultural data have been collected.

### Make every journey a "transect"

CFSAM teams usually travel extensively during a mission, and can record various types of information pertaining to the crop and range condition to complement that from in-depth farm interviews or even yield estimates derived from crop cuttings. Done systematically while travelling, by trained or experienced surveyors, such "transects" can provide very useful information from a somewhat subjective but reasonably large sample of observations. **Technical Note P1** provides general guidance on the transect approach and methodology.

Typically, transect recording includes the date and time, general location (e.g. "while driving from point A to point B"), the type of crop, phenological stage and condition. Information may be collected as a data on a set of forms, as geo-referenced photo-

graphs of standing crops, or a combination of both. Each approach has both strengths and weaknesses. Large amounts of data recorded on forms that are not precisely geo-referenced do not lend themselves to rapid systematic analysis (unless all handwritten data are re-entered into a set of computer files, which, under CFSAM time constraints, is a daunting task). Geo-referenced photographs provide a large amount of precisely located, but very impressionistic information, more apt to jog the surveyor's memory than to provide, especially individually, a good basis for yield and production estimates. Both methods have served mid-season surveys or pre-harvest CFSAMs well, especially in countries where such exercises take place on a regular basis, and improvements in GPS and data collection technologies may allow assessment missions to build on the strengths of the transect approach while lessening some of its drawbacks.

The ideal would be to have trained/experienced surveyors record their observations on crop conditions in a geo-referenced fashion, and in a way which allows data to be used more directly for analysis, be it statistical, geographical, or based on a more systematic comparison with remotely sensed data (i.e. promptly available in digital format). There are two ways of doing this. The first is to have a simultaneous recording of crop conditions by one person and of precise geographic location by another with the help of a GPS unit. Although each waypoint may be associated with a transect record this still requires a fair amount of post-survey data entry. The other approach is to use an electronic device to enter transect information on a template; such information is directly usable for analysis. The best possible combination is to have a GPS-enabled data entry device which also records the precise geographic location of each data point.

## 7.3 Analysing rainfall and remote-sensing data

*What the CFSAM report might include (in chapter 3):*

Data on rainfall during the last crop season, seed, fertilizer, etc. and the implications for crop production.

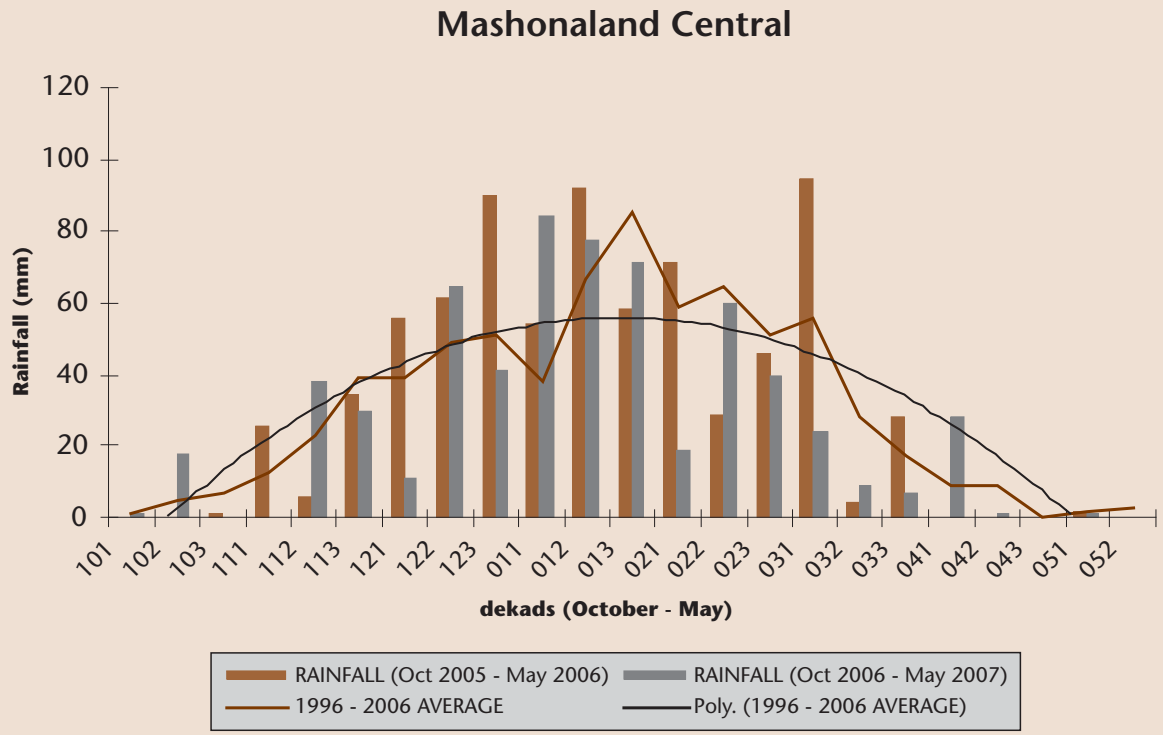
- Examine Interpolated Estimated Rainfall (IER) images, when available, and particularly IER graphs, to assess the quality of the crop growing season and estimate how agricultural production may be compared with previous years. Build on the analyses already undertaken by FAO/GIEWS to:
  - compare, for each zone/administrative area, the rainfall distribution over time during the crop growing season with that of the previous year and the long-term average;
  - identify areas where seasonal plantings would have been delayed and correlate this with information concerning the availability of inputs (seeds, fertilizer, fuel, etc.);
  - identify areas that experienced periods of excessive rains or too little rainfall, determine the numbers and lengths of dry spells;
  - compare IER and NDVI data to see the impact of the rainfall pattern on the vegetative growth and the lag periods between precipitation and vegetative growth; *and, on that basis*:
  - make a judgment concerning the impact on the eventual harvest in the different areas.

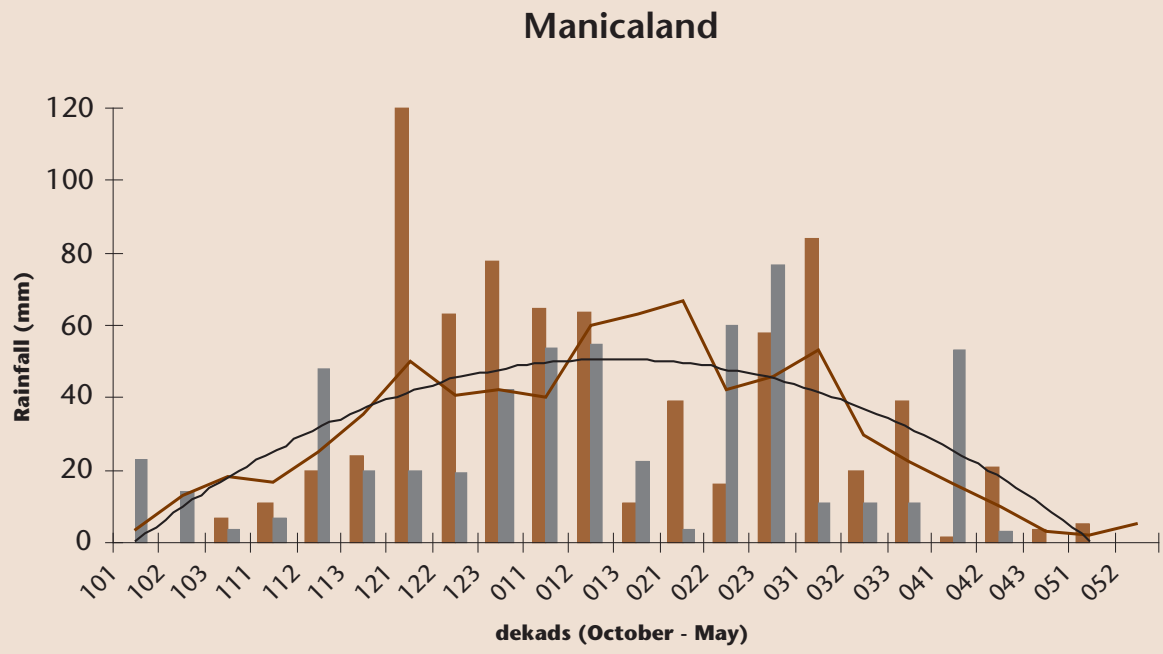
An example of the presentation and interpretation of IER data is given in Panel 7-5.

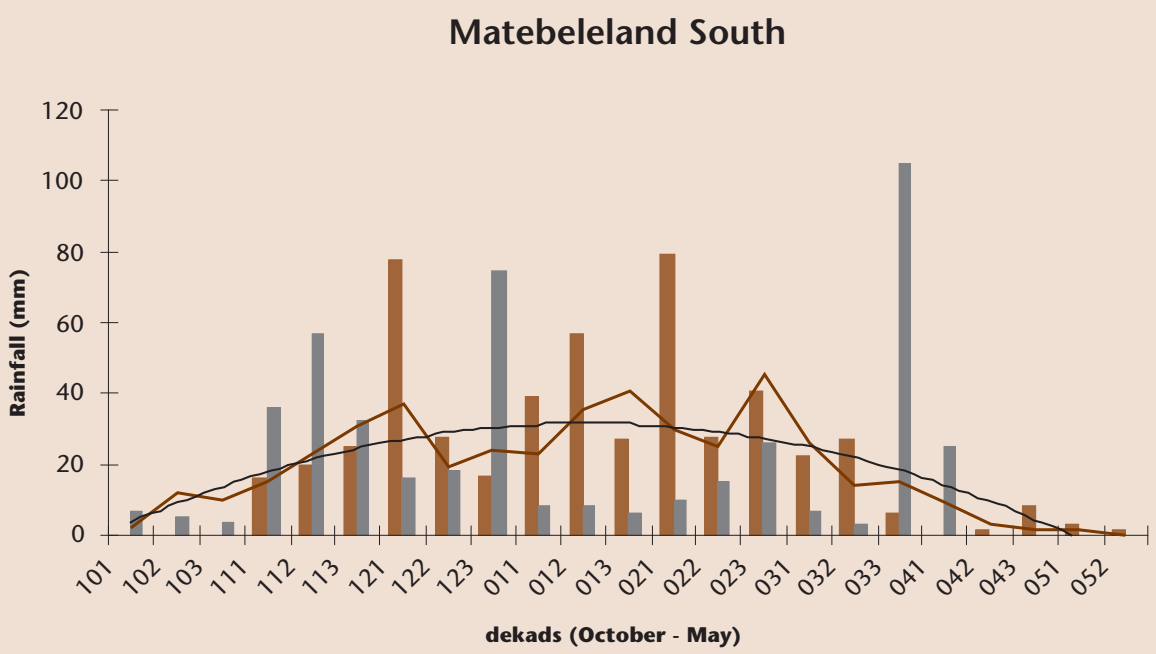
**Panel 7-5**

**Use of Interpolated Estimated Rainfall (IER) Information**
(from the CFSAM Report for Zimbabwe in 2007)

The graphs below show the estimated dekadal rainfall for 3 provinces in Zimbabwe in 2006/07 (dark blue columns) compared with 2005/06 (light green columns) and long-term average (red and black plots).






*Source: NOAA and FAO.*

The data show the existence of erratic rainfall patterns in terms of both temporal and spatial distribution during the 2006/07 agricultural season. This coincided with the weak oceanic warming of the El Niño that developed in the Eastern Equatorial Pacific in November, peaked in December, and continued till mid-February. Warming in the Eastern Equatorial Pacific Ocean is normally associated with low rainfall over the country.

The graphs confirm that the rains started earlier than usual - in the first dekad of October - but the amounts received at this time were generally low and most farmers had to wait until late November to mid-December for effective rainfall for planting. Many of those who planted early were obliged to re-plant or gap-fill, often several times, because of protracted dry spells or following germination.

Rainfall variation within regions (and even in quite small areas confirmed from smaller area images not shown here) in terms of temporal and spatial distribution was striking, and reflected in a similar variation in crop performance. Many areas experienced long dry spells in January and February despite the fact that the average rainfall during these two months for the whole country was adequate. At the end of March there were heavy cyclone-related downpours in parts of the north of the country, but their arrival was too late to benefit any but very late-sown crops; they did, however, benefit pastures.

## 7.4 Estimating production of the main staple crop

*What the CFSAM report might include (in chapter 3):*

Estimates of planted and harvested areas and yields for the main staple crops in different zones (differentiating small-holders and commercial farms, and irrigated and non-irrigated areas, if relevant). The factors that have affected areas and yields.

Expected aggregate production in different zones. Changes compared with a normal year.

Expectations for any second-season crops, where relevant.

Factors that could positively or negatively affect the production estimates.

- Estimate planted areas (in each zone) and identify the factors that have affected planted areas.
- Estimate yields per planted hectare (in each zone) and identify the factors that have affected yields.
- Estimate the levels of production (in each zone) and explain changes compared with recent years.

Estimates of production from any one harvest are calculated as follows:

$$\text{Production} = (\text{Area}) \times (\text{Yield per unit area})$$

Both planted area and yield depend on a range of natural and man-made factors that can vary dramatically from year to year and from place to place, particularly in marginal areas, and the CFSAM team must examine these factors as well as available estimates, as described below. Note, however, that most of these factors are not easily measured; have rarely, if ever, been studied in their own right to establish the existing range of absolute values in the country. Where they have been studied, they can vary according to source, fluctuate during the year, *and* vary markedly from year to year, according to the prevailing conditions. See **Annex 11**.

Available area and yield data are verified or adjusted according to the team's own cross-checking and information secured using rapid appraisal methods adapted to the prevailing conditions. They are invariably a compromise between the intellectual rigour required to provide a creditable analysis and the time and resources available, data accessibility, and freedom of movement of team.

In all cases, agricultural production sub-teams must collect three distinct types of data relating to staple food crops, as listed in Panel 7-6, which also shows how the data are used.

**Panel 7-6**

**Types and Uses of Agricultural Production Data collected during a CFSAM**

| Data | | Use of data |
|---|---|---|
| 1. Direct area and yield data by crop for each zone | ➧ | Production estimates for each crop and zone, plus national aggregate |
| 2. Data on factors affecting area planted and harvested, and factors affecting yields | ➧ | Explanations for the production estimates for current, main harvest<br>Projections for secondary harvests |
| 3. Data relating to events or activities that are influenced in some way by areas harvested and yield obtained | ➧ | Supporting evidence |
| Similar data should be compiled for cash crops, livestock, etc. if they contribute in a major way to food supply or income. | | |

The data should be entered in the standard CFSAM electronic format of linked Excel tables using international conventions for area (hectares, ha), yield (kilogram per hectare, kg $ha^{-1}$) and production (tonnes, t).

**Technical Note P7** provides data from Ethiopia over a 10-year period as an example of the performance achieved from the rigorous application of CFSAM food production assessment techniques. The data, which are for the main cereal and pulse crops, also show the relationship between the CFSAM harvest-time estimates and the final post-harvest data reported over the period.

### What is included in staple crop production?

Staple-crop production includes:

- the main cereal food crop(s);
- other crops such as pulses, roots, tubers and tree crops, where they provide an important contribution to the diet, *at least* in terms of probable variations from the *norm* in the availability of such products in the coming year, see section 7.4.

The estimates should include any quantities gathered prematurely - ***crops eaten green*** - from the next year's current harvest.[2] As these products are never estimated in their own right at the time of eating, they *must* be included in the on-going assessment of the main harvest to offer a complete estimate of yield and production for the current year. The inclusion of the current estimates of crops eaten green in the food balance sheet is necessary because it is assumed that similar use will be made of the same products at the time of the next main harvest.

[2] Maize and sorghum sold or eaten green before the main harvest but coming from the same fields is determined by extrapolating backwards from the crop sampled at the time of the main harvest.

## Estimating planted areas

Final ***area planted*** estimates are required, *not* "planned" areas or areas "ploughed". In the absence of final "planted" or "sown" area data, last year's final harvested area data should be used unless dramatic events have influenced planting/sowing e.g. conflict, migration, rainfall change, boundary change.

If final and complete data for harvested areas are available, they should be used. In most cases, however, harvesting is underway and harvested area data will be incomplete. Final planted area data then provide the best crop area statistics from which to estimate production.

Teams should request, at each administrative centre, final planted area data for ***each crop***. Panel 7-7 explains how to deal with areas where more than one crop is planted.

**Panel 7-7**

**Calculating planted area when more than one crop is planted**

- ***Relay cropping***: two crops are planted in series in the same season, i.e. the second one is planted after the harvest of the first one. This doubles the occupancy of the area under production regardless of whether the two crops are the same or different.[a]
- ***Intercropping***: two or more crops are grown together in the same field during the same season. When planted and harvested at different times, this doubles the occupancy of the field and, therefore, doubles the harvested area.[b]

The areas duplicated in circumstances noted above means that the actual *production* area will be twice the *geographical* area. Where data allow, the extent of the increase, regarding the individual crop areas, should be noted in the text and identified in tables.

The approach should be different in the case of:

- ***Mixed cropping***: two crops are sown together and the mixed products are harvested together. In such cases the area is not doubled and only the area of the dominant crop is recorded.[c]

*Notes:*

[a] *At least two crops of maize, from the same field, in the same season, are grown in West Equatoria, South Sudan. Pulses are grown following cereals in the Meher season in some areas of Ethiopia.*

[b] *Coconuts, cassava and cowpeas are all intercropped in coastal areas of Mozambique. Maize and beans are intercropped in South Sudan and in southern Ethiopia.*

[c] *Wheat and barley seeds are mixed, sown together and harvested together in northern Ethiopia. The area and production are noted separately in Tigray and allocated to barley data in Amhara. Mixed sorghum seeds are sown in South Sudan, although harvested at very different times, the area and production are simply allocated to sorghum.*

Total planted area data should be:

- collected for each zone, at each administrative centre, in its original form: a photocopy or carbon copy is preferred; if neither is available the data should be transcribed from the original onto CFSAM recording sheets;

- cross-checked year-to-year and place-to-place for consistency in transformation from local measures to international units (e.g. the Sudanese *feddan* is always 0.42 ha);
- compared with the known total agricultural/cultivated area of each zone;
- cross-checked against any known changes to numbers of households farming in each zone;
- cross-checked against any known boundary changes (to eliminate double counting);
- compared with last year's main season harvested area in each zone;
- cross-checked with any changes to the planted area of any preceding minor season in each zone; *and*
- compared with any known changes to area of industrial crops, tree crops, pasture land, forestry areas or fallowing practices.

Once this cross-checking has been completed:

- individual staple-food-crop planted areas should be compared with last 5 years' annual national, regional and zonal estimates;
- intercropped areas should be noted in each zone;
- the areas of the main crops should be expressed as ratios between one another and as percentages of the total area in each zone, for comparison with actual ratios and percentages noted during transects flown or driven by the agricultural-production sub-teams - see **Technical Note P1**.

### Identifying factors affecting planted area

Area planted is influenced by natural and man-made factors, as summarized in Panel 7-8. For brief details of positive and negative effects, see **Annex 12**.

**Panel 7-8**
**Factors affecting planted area**

| Natural factors | Possible variations |
|---|---|
| **Rainfall:** | Good pre-season and early starting rains. Late starting rains. Broken / false start to season. Excess rain at sowing time. Floods mid-season. Prolonged rainfall at end of season. Irrigation water supply increased. Irrigation water supply decreased. |
| **Extreme events:** | Localised planted area losses through flooding or landslides. |
| **Man-made factors** | **Possible variations** |
| **Inputs (credit, seeds, fertilizer)** | Early availability. Late arrival of inputs. Increased prices of inputs. |
| **Labour** | Crisis displacement with labour shortage early in season. Crisis displacement with labour shortage late in season. Long term migration. |

| | |
|---|---|
| **Draught animal power** | Viral diseases (epidemic e.g. rinderpest). Distress selling (most households).[A] |
| **Fuel availability disturbed** | Fuel supply late. Credit late or withdrawn. Prices dramatically increased. |
| **Farmer Confidence** | Local conflict/insecurity. National war threat. Stability of prices of outputs/ commodities. Increased prices of all commodities (e.g. when export trade opens). Stocks held on farm. |

[A] Do not confuse the regular sale of draught animals in areas with limited grazing or trypanosomiasis with distress selling. Rapid turnover of draught animals is valid strategy in such areas: farmers may buy pre-season and sell post-season to avoid feeding expenses and risks in the dry season.

***Changes*** in planted areas are usually more dramatic among market-oriented farmers who cultivate land in favourable areas where several crop options, including set-aside or fallowing, are possible. Subsistence farmers, with only small plots to cultivate, rarely have a wide choice of crops and must plant staple crops annually. The *consequences* for the farmers themselves are usually more dramatic for subsistence farmers whose marginal existence is finely balanced.

Get ***rainfall*** data from official government weather stations disaggregated into decades, compare data for recent months with recent years and long term averages, and identify changes. Triangulate the data against all other sources available, which might include:

- Remote sensed data, based on cold cloud cover, provided by FAO/GIEWS and other agencies including FEWS-net.
- Rainfall data collected by local MoA offices, NGOs, projects and provided to teams during field visits.
- Qualitative statements about "the rains" from farmers interviewed. Qualitative data from the semi-structured interviews with farmers and agriculturalists should be able to identify which, if any, of the effects occurred in the zones visited.

For ***extreme events***, get estimates for the planted/cultivable areas lost/affected but also determine whether losses may be recovered later as ex-flooded areas provide high levels of residual moisture for draw-down farming.[3]

Investigate in depth the occurrence and effects of ***man-made*** factors using:

- Secondary data (time-series and current data) from government agencies responsible for input supply, seed development, pest control, price and market presentation monitoring.
- Key informant interviews with national and sub-national offices of the above, traders and contractors.
- Key informant interviews with MoA staff at every administrative centre.

[3] In 2000, the dramatic floods in the southern point of Mozambique provided conditions for an excellent second season for short cycle crops.

- Semi-structured interviews with farmers in every zone.
- Transect driving/ flying/ walking, see **Technical Note P1**.
- Market surveys, see **Annex 14**.

### Estimating yields

***Yield*** (for CFSAM purposes) refers to the actual whole grain yield obtained at harvest time net of losses incurred during harvesting and threshing. Missions should *not* use "economic yield" data i.e. net of post-harvest losses (drying, storage, transport and transformation), seed and feed uses, as these elements will be calculated independently of the yield estimate and subtracted later when the balance sheet is calculated.

Yield data should be collected by zone, agricultural sector, season and crop, and calculated in (or converted into) ***kilograms per hectare***.

Theoretical yield estimates derived from remotely-sensed data may provide an insight into the general situation in specific areas but cannot be relied on. Estimates calculated from *crop forecasting formulae* depend on the accuracy of the long-term data entered into the formulae and are, therefore, not likely to be accurate in a developing country where a CFSAM is conducted - see Panel 7-9

The timing of CFSAMs means that, in most cases, the main annual harvest is underway when the teams are present, therefore:

- yield data available/obtained at each administrative centre will be incomplete;[4]
- teams must generate their own yield data from transect records; *Semi-structured interviews with farmers* see **Technical Note P2**;
  and *Sample crop cutting* see **Technical Note P3**;
- these estimates do not need any further adjustments unless some crops are to be harvested much later.

***Where the harvest has already been completed***, the team should try to: (i) assess the stored grain[5] from the volume stored on farm (net of any previous stocks), relate the estimate to the area harvested; and then (ii) provided animals have not already grazed the fields, make forensic observations of the stubble and stover to estimate harvested plant densities, from which yields may also be estimated if the average weight of heads (sorghum) or cobs (maize[6]) is known. The two estimates can then be cross-checked against each other.

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[4] Genuine yield data are usually unavailable as CFSAMs regularly arrive before sample surveys are completed; local agriculturalists will offer guesses based on varying degrees of information, some may have never left their offices and will be taken to the field for the first time by the Mission teams.

[5] In sacks, silos or in loose heaps (wheat, barley); stacked or heaped as cobs or heads (maize and sorghum).

[6] Grain makes up about 20 percent of a dry maize cob. Therefore, dry shelled maize cobs are 20 percent of total weight; grain wt.= 4 x dry cob wt. Sorghum heads are too variable to summarize in such a fashion. See Technical Note F10 for details and an Excel spreadsheet that can be used.

Following up on the critical examination, during the initial situation analysis, of the timing, geographical coverage and methods of the official data collection the team should, at each administrative centre:

- *if data were collected by a centrally-managed survey* ask how the survey was undertaken within the zone - Was the official sampling frame used? Is that sampling frame well stratified? How large was the sample?
- *if data were compiled through hierarchical compilation* check: how the data were acquired in the zone (through farm visits or group meetings); the ratio of data collectors to farmers; time of data collection; the consistency of yield of same crops between adjacent areas; and the reasons for any differences;
- collect the latest yield estimates for each crop in their original form (a photocopy or carbon copies are preferred, if not the data from official sources should be transcribed to CFSAM data sheet in MoA office[7]); and
- cross-check for year-to-year and place-to-place and crop-to-crop for consistency in transformation from local measures to international units (e.g. Is Ethiopian quintal always 100 kg ha or not?).

Where comprehensive yield surveys have been undertaken by local MoA staff, the team will **audit** the returns by checking the accuracy of calculations and the range of the estimates presented by sample crop cutting, see **Technical Note P3**.

In other cases, it will be necessary for the team to ***generate yield estimates*** to:

- fill any gaps in the data;
- replace any official data that refer to "target yields" or "genetic potential yields";
- replace any data that are compiled - fabricated - without field work (such data must be regarded as unreliable); [8] *and*
- adjust received data in the light of:
  - more information regarding factors affecting yield and final yield estimates;
  - contrasting estimates received from neighbouring and similar agro-ecological areas; *or*
  - inconsistency with the team's own well-recorded transect observations.

Any yield ***differences*** should be discussed and reconciled with local staff at the time, if possible, assuming that local extension officers or subject matter specialists are present in the field when transects are conducted and sample crop-cutting is done. However, teams should adopt the approach of ***auditors*** and not spend too much time trying to convince local officials of the inaccuracy of their data. Teams must make careful

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[7] This is one of the roles of MoA mission team member, the tables may be in local languages.

[8] Given government budget cuts, lack of transport, equipment, planning or experience, the CFSAM is, frequently, the only opportunity national extension agents or statisticians 1996, Mongolia 1996-, Albania 1999 and Serbia 2002, for example).

notes of any changes - replacements of adjustments - made including the extent of the adjustments and the reasons why they were made. ***MoA*** members of the team should take careful note of zone/administrative centres where inaccurate figures were provided to the team by specialists or administrators.

### Identifying factors affecting yield

Teams must provide yield estimates for each crop in each zone together with detailed qualitative reasoning to explain all significant deviations in yield estimates from normal. The relative importance of factors affecting yield should be explained in the text with emphasis on factors affecting the current crop.

Yield is influenced by natural conditions, husbandry practices and factors influencing farmer decision-making, as summarized below and in Panel 7-9. For details of positive and negative effects of the various factors, see **Annex 13**:

- ***Natural conditions*** affecting yield comprise the quantity, timing and distribution of rainfall; ambient temperature fluctuations from the norm; extreme events; and incidents and severity of pests and diseases.
- ***Husbandry practices*** affecting yield comprise primary and secondary cultivation methods; seed types and sources, sowing time and sowing rates; replanting frequency; timing and quantity of basal fertilizer dressing; timing and quantity of top dressing; level of weed infestation/control; migratory pests and their control; non-migratory pests and their control; harvesting methods.
- ***Factors influencing choice of husbandry practice*** include input-output price ratios, stocks in store, communications *viz* availability/accessibility of inputs and marketing opportunities; credit availability and charges; labour availability and charges; availability and cost of fuel and machinery spare parts.

**Panel 7-9**
**Factors affecting yield**

| Factor | Possible variations |
|---|---|
| **Rainfall** | Drought. Dry-spells at germination. Dry-spells at early vegetative growth. Dry-spells at flowering/pollinating. Dry- spells at grain-fill. Heavy rains. |
| **Extreme events** | Floods. Hailstorms. Unseasonably high temperatures. Unseasonably high winds |
| **Credit supply** | Delay in release of credit or credit terms. Reduction in credit. |
| **Fuel shortages** | Reduced fuel availability. Increased fuel prices. |
| **Seeds** | Seed shortages- local seeds. Seed shortages improved seeds (hybrid and composite). Seed failure. |
| **Fertilizer** | Early availability of basal dressing fertilizer. Late availability of basal dressing fertilizer. Price increases. On-time availability of top dressing. Late availability of top dressing fertilizer. Price increases. |

| | |
|---|---|
| **Labour** | Labour shortages early season. Labour shortages mid-season. Labour shortages late-season. |
| **Pests and diseases** | Migratory pests *viz* army worm, locusts, red-billed quelea (quelea quelea) may occur at any stage in the crop growth cycle with equal devastation. Post-CFSAM attacks of migratory pests. Non- migratory pests; gregarious movers *viz* grass-hoppers, sorghum midge, bugs, local birds (finches). Non-migratory pests; stationary/solitary-stalk borers, termites, rodents. Large mammals including baboons, monkeys, warthogs, elephants and hippos. |
| **Weeds** | Striga (buda or witch-weed). Easily recognised plant-parasite of sorghum. Grass and broad leaf weeds of cereals. |
| **Fungal diseases** | Seed-borne e.g. smuts, bunts (sorghum, wheat, barley). |
| **Storage pests** | Insects, moulds, rodents, birds. (A problem in all countries where CFSAMs are conducted). However, it should be noted that post-harvest losses are not deducted from yields directly. They are estimated separately and added to total utilization in the balance sheet. |

The factors noted in Panel 7-9 should be investigated in depth using:

- Secondary data collected pre-mission from various government agencies responsible for meteorological data, input supply, seed development, pest control, price and market presentation monitoring. (time-series and current data).
- Key informant interviews with national and sub-national offices of the above, MoA staff at each location, traders and contractors.
- Semi-structured interviews with farmers in every zone.
- Transect driving/ flying (aerial surveys)/ walking, see **Technical Note P1**.
- Field surveys and crop cutting in each zone, see **Technical Note P3**.
- Market surveys, see **Annex 14**.

Note that *changes in yield* from year-to-year and area-to-area are often substantial and occur in both subsistence and market-orientated sub-sectors. Farmers cultivating land in more favourable areas, where several crop options are possible, may be able to compensate for losses in yield of one crop by switching to another crop later in the season. This is not easily done if area is limited, however, and subsistence farmers who rely on relay cropping are vulnerable if one or more crops in the sequence perform badly. The *consequences* are particularly drastic for subsistence farmers in marginal areas whose existence is dependent on a single harvest.

## 7.5 Estimating/forecasting production of other food crops

*What the CFSAM report might include (in chapter 3):*

Estimates of (current or expected) planted and harvested areas and yields for other crops that represent an important part of the diet, including regional variations (differentiating small-holders and commercial farms, and irrigated and non-irrigated areas, if relevant). The factors affecting areas and yields.

Changes compared with a normal year.

Factors that could positively or negatively affect the production estimates.

Concern is for both "other crops" that are ready for harvesting and other harvests that are expected later in the year.

### Other crops ready for harvesting

Roots, tubers and tree crops contribute, directly and significantly, to food supply in many countries and must, therefore, be considered when a CFSAM team assesses domestic production and food supplies. The extent of their contribution varies both within and between countries according to the agro-ecological conditions and traditions. For example, enset (Enset ventriculosum) provides 95 percent of staple needs in parts of Ethiopia, while cassava provides >50 percent of all staple food in Mozambique.

For guidance on assessing the production of ***cassava***, which makes an important contribution to food supplies in a number of countries, see **Technical Note P4**.

### Other harvests expected later in the year

In discussion with MoA specialists, farmers, traders, etc. teams should examine the factors that will affect planted areas and yields for the expected harvests later in the year - see Panels 7-8 and 7-9, and **Annexes 12 and 13** - and jointly formulate rough estimates of how such harvests may be compared to normal.

## 7.6 Identifying surplus & deficit areas

*What the CFSAM report might include (in chapter 3):*

Areas with unusual deficits. Areas where surpluses are available.

- Prepare a table showing:
  - your estimates for harvested areas, yields and production for each distinct zone within and outside the crisis-affected area, and the total production for the country;
  - how these figures compare with what is considered to be "normal" (e.g. the average for the last 5 years).
- Identify the zones that are expected to be in surplus or deficit, and compare them (and the levels of the expected surpluses/deficits) with what is considered to be normal.

From secondary data you should be aware of the zones that tend to be structurally surplus or deficit areas in terms of staples, and those that are normally self-sufficient. Once the estimates for the current/forthcoming main harvest and indications for subsequent harvests have been compiled, review the status of each area/zone and, taking account of population estimates adopted by the team (see section 6.2) and the per capita consumption requirement (see section 11.1) indicate, in broad terms, the expected level of surplus or deficit for each zone and how it compares with normal.

Your estimate for total production will be included directly in the national food balance sheet (see section 9.1) while the estimates of surpluses and deficits feed into the analyses of potential trade flows (see sections 8.4 and 12.2) and, in some countries, sub-national supply/demand balances (see section 9.2).

## 7.7 Estimating the performance of cash crops

*What the CFSAM report might include (in chapter 3):*

Estimates of (current or expected) planted and harvested areas and yields for other crops that represent an important source of income, including regional variations (differentiating small-holders and commercial farms, and irrigated and non-irrigated areas, if relevant). The factors affecting areas and yields.

Changes compared with a normal year.

Factors that could positively or negatively affect the production estimates.

As for other cereals and other food crops, the challenge for a CFSAM is to obtain the best quantitative estimates or forecasts available for income-generating ***cash crops*** and check their validity by conducting a technical audit. Consider cash crops whose annual performance has a significant effect on the national economy or household incomes, for example: coffee, tea, chat, eucalyptus, sesame in Ethiopia; cotton, sesame, sugar cane in Sudan; coconuts, cashew, tobacco, sugar cane in Mozambique.

The production and marketing of such crops may fall under the jurisdiction of a range of different agencies or ministry departments. Production may be concentrated in state farms, parastatals or large-scale private enterprises and data may be retained in ***head offices*** in capital cities, and sometimes be considered as "trade secrets" and not divulged.

- Try to negotiate ***access to data*** for the current year through the relevant departments of Ministries of Agriculture.
- If access cannot be obtained, use the most recent company ***reports*** to ascertain the latest recorded performance and ***cross-check*** these recent data against (i) what is known nationally and locally about the performance of the enterprises during the current year, and (ii) information from semi-structured interviews with the enterprise agronomists.

**Panel 7-10**

**Approaching private enterprises**

The private sector is not obliged to share information and, like many things on a CFSAM, the approach to private enterprises must be made with self-assurance conditioned with tact. Sharing information with the company agriculturalist on growing conditions in other places already visited by the team can be a good way to establish a dialogue. The interview is likely to be most fruitful if conducted by the CFSAM agronomist accompanied only by one or two other very knowledgeable team members.

These enterprises, depending on their degree of sophistication, may also be another source of current and time-series data on rainfall, prices of inputs, and farm-gate prices of products. Their data can be used to cross-check data from government sources.

While data on cash crops are important in their own right, the performance of such crops may also be an indicator of the probable performance of the main staple crops grown in the same area at the same time, and can therefore be used to cross-check the estimates for main staple crops, if cash and food crops are grown under comparable conditions. If only cash crops are irrigated, for instance, appropriate adjustments are needed.

The assessment of production for cash crops, given prevailing farm-gate prices, provides a relative measure of rural incomes, which becomes important when estimating effective demand and relative vulnerability of producing households to food insecurity.

## 7.8 Assessing livestock conditions

*What the CFSAM report might include (in chapter 3):*

*Where livestock (or fish) are an important part of the diet or source of income*: the findings of the mission concerning the impact of the crisis and expected shortfalls in production compared with a normal year.

Factors that could positively or negatively affect the production estimates.

- Collect and analyse information from herders and in livestock markets on the condition and performance of livestock - or at least probable fluctuations from the *norm* in the availability of livestock products in the coming year: see **Technical Notes P5 and P6**.
- Examine the evolution of pasture/rangeland conditions from remote-sensing and other data and through interviews.

Livestock and livestock products contribute directly to food supply in their own right and are traded by animal producers to access staple foods. The contribution of livestock to food security ranges from 0 percent in a population of settled farmers with no domestic animals to 100 percent in pastoralist communities. The team must understand the levels involved in each zone and be able to accommodate the perceived range in operating procedures for assessment. Unfortunately, whereas most CFSAM countries have derived approaches for the collection of crop data, the same cannot be said for livestock data, see Panel 7-11.

**Panel 7-11**

**Limitations of the livestock data available in many countries**

In many cases, the team can at best obtain a copy of the latest ***livestock census*** for each zone, in each administrative centre. However, these data are usually extrapolated by the application of theoretical annual growth rates for each species. The data are often disaggregated in terms of sex and age groups for all types of farm animals down to the last chicken, but are unlikely to have been accurate at the time of publication. By the time they are collected by the CFSAM, they bear little relationship with reality. [A]

More accurate indications of changing livestock numbers may come from local ***veterinary returns*** showing services provided during the year but:

- ***treatment lists*** will generally apply only to livestock populations close to veterinary clinics, usually placed in towns, and to large animals such as cattle, buffaloes and camels; (equines/horses and small ruminants such as sheep and goats are rarely treated by vets);
- ***vaccination lists*** will generally apply only to limited geographic areas - those that were accessible to the service during the past/previous year. Thus, the areas covered are often limited by staff shortages and transport/fuel shortages, and may change from year to year as government policy and priorities charge. However, returns from major viral-disease vaccination campaigns (rinderpest) may include "percentage" coverage achieved which, by extrapolation, will provide a better indication of the total population of the species involved.

None of the statistics will indicate current or even historical levels of ***production***, *viz.* lambing or calving percentages, calving intervals, annual neo-natal or adult mortalities or any indication of body ***condition***. Administrators' claims of high levels of mortality rarely differentiate between death, sale and movement of stock, and never take account of *normal* death rates, which may be as high as 30-40 percent for neo-natal deaths and 10-15 percent for adult deaths

[A] Despite successive claims of losses due to droughts, central livestock statistics often show a steady increase from year to year!

Given the probable dearth of reliable data, the team must generate its own information in the short time available. A combination of interviews with herders, observations and interviews in livestock markets, and observations during transects, should provide a qualitative understanding of livestock conditions and performance in the zones visited:

- ***Semi-structured interviews with herders***: questions concerning livestock should be integrated in the multi-disciplinary interview guide/recording format (see section 7.8 and **Annex 17**) and follow the same protocols.
- ***Observations and interviews in markets***: collect data on the number and condition of animals being offered for sale, prices, and traders' perceptions - see section 8.5.
- ***Transect recording***: on every journey, keep records of the herds seen including:
  - approximate numbers by class (cattle, camels and small ruminants);

- conditions of grazing, browse and water-points; *and*
- *for cattle only*, a dominant body condition score, see below.

Regarding transects:

- Observations of herds/flocks of animals noted as being "***on-the-move/enroute***" offer opportunities to build up a series of situation statements concerning the numbers on the move including the direction and timing of seasonal and non-seasonal migrations of breeding herds/flocks, the direction and timing of movement of slaughter-stock, the body-condition of cows, and the body-condition of bullocks (slaughter stock and draught animals).
- Herds and flocks ***at pasture*** offer opportunities to judge numbers and condition (cattle only) in designated/known grazing areas at harvest time and will point to changes in transhumance patterns, if different from expected. Numbers of young-stock at foot in grazing herds provide an indication of production during the past season.

Quantitative data of herd performance are easier to obtain and more meaningful if dis-associated from absolute numbers and ownership. This ***Indicator Units***, as suggested in **Technical Note P6**, may be identified within herds or flocks in a country where CFSAMs are frequent. Discussions with the herders concerned can then be restricted to those animals only, avoiding discussion of whole herd statistics. Comparing the same indicator unit from year to year provides meaningful information for a food security assessment in any situation where livestocks make a significant contribution.

# 8 Analysing market conditions

This chapter provides guidance on collecting and analysing data concerning markets.

Information about markets is critical for a CFSAM team to understand both the overall and the household-level food security situation prepare the supply/demand balance and then link the aggregate supply analysis and the household-level analysis. The findings and conclusions of the analysis will be summarized in chapter 4 of the CFSAM report but also inform other elements of the report. For additional guidance, see reference materials on the CD-ROM.

## 8.1 Tasks in relation to market conditions

The purpose of the analysis of market conditions is to: understand how prices and markets have been affected by the shock/crisis, how they are performing now and are likely to perform in the coming months; understand how any market disruption has affected and will affect food availability and access in different areas. It must also inform the response options analysis by determining the capacity of markets to help meet needs in the affected areas, identifying possibilities to increase their performance, and foreseeing the likely effects of food or cash distributions or local purchases. The specific tasks are summarized in Panel 8-1.

**Panel 8-1**
**Tasks in relation to market conditions (and links to the CFSAM report)**

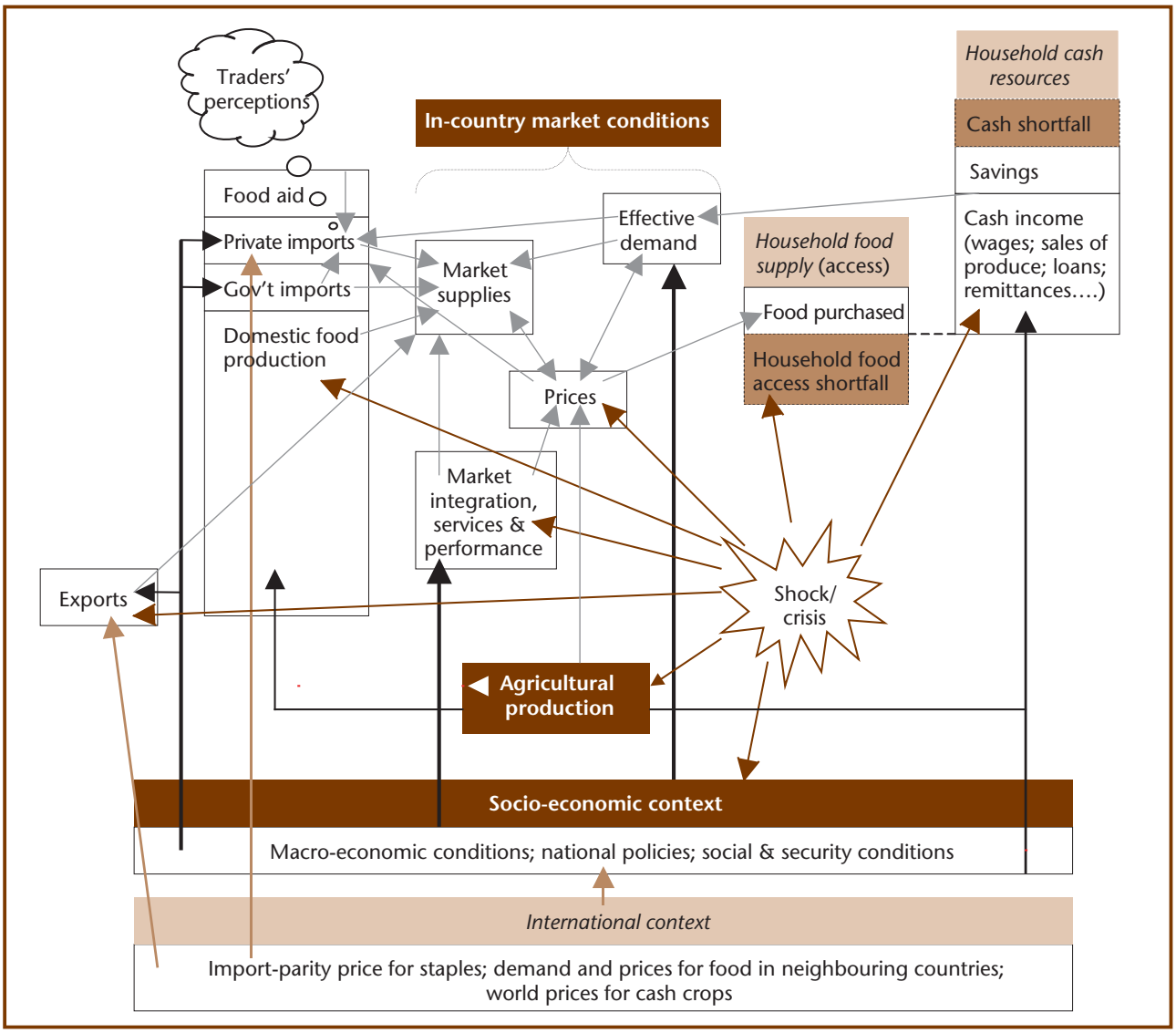
| Principal tasks | Report chapters |
|---|---|
| • Analysing changes and trends in ***prices*** and ***effective demand*** in different areas, forecasting how they are likely to change in the coming months, and determining the implications for commercial imports and in-country trade, hence food availability in deficit areas and food access for resource-scarce households. The current market prices reflect perception on stocks, anticipated harvest, trade flows, food aid and policies. | 4 Market conditions<br>5 Food supply/ demand balance (commercial trade) |
| • Analysing how the ***market system*** has been affected, determining ***how markets are functioning***, identifying bottlenecks, forecasting how the various elements are likely to change in the coming months, and estimating the effects on food availability and access in different areas. This includes analysing:<br>- the overall market structure and level of integration,<br>- the levels of competition and services in distinct areas,<br>- the trade flows between areas and with neighbouring countries, and<br>- the performance of markets in terms of food being available in markets in different areas to meet the demand that exists. | 4 Market conditions<br>5 Food supply/ demand balance (sub-national balances)<br>6 Household food security |

| | |
|---|---|
| • Assessing the ***capacities and limitations of traders*** to expand their operations - estimating the extent to which markets will be able, and are likely, to make food available at affordable prices in the affected areas through imports or in-country redistribution; identifying opportunities that might exist to increase the performance of markets in making food available in the affected areas | 5 Food supply/ demand balance (commercial trade)<br>7 Response options |
| • Determining the potential effects of ***food aid or cash transfers*** on food markets | 7 Response options |
| • Assessing the potential for ***local purchases*** and the effects that such purchases might have on local markets | |

In many countries it will be important to consider the supply situation, prices and trade flows not only within the country itself but also within and among ***neighbouring countries***.

The challenge is to figure out how the shock/crisis has affected, and will affect, the various elements of market conditions in the central part of the framework in Figure 3a and the factors influencing them -i.e. the sub-set shown in Figure 8a - and what effects different types of response might have. Figure 8a includes "traders' perceptions". Their perceptions of market conditions and the actions likely to be taken by the government and aid agencies in the coming months are critical to their trading decisions. They influence both in-country trade flows and private imports and exports and, therefore, food availability in different zones and the national supply/demand balance.

Figure 8a **Market conditions and related elements of the crop and food security analysis framework**




A common-sense approach coupled with simple data analysis can establish *ex-ante* where the private sector has the potential to help meet needs, where food aid transfers are needed, whether and when food aid distributions would disrupt existing production and marketing systems (hence future local production), and whether/where income or market support would be more effective in the long term than direct food distributions.

The principal focus is on markets for ***staple foods,*** but markets for ***cash crops*** and ***livestock*** also need to be considered in many countries and information is also needed on (factor) markets for ***agricultural inputs***. Information on markets for the inputs for and the products of other income-generating activities may be needed as well to inform the analysis of household food security. Livestock/fish markets need attention in any country where livestock/fish represent a significant part of the rural economy and household incomes.

You must understand and analyse the consequences of ***trade and other policies*** for markets, food availability and household food access, but it is not the role of a CFSAM mission to comment or pass judgement on the policies themselves. However, when certain policies or practices are undoubtedly contributing significantly to food inse-

curity, you should highlight this in your discussions and report, and you may make a recommendation for more in-depth investigation and analysis. The UN Country Team may be encouraged to initiate a dialogue on the issue with the government, perhaps in the context of the PRSP.

The starting point is a critical review of secondary data on prices in different areas and any recent market studies. Such data will hopefully have been compiled and, if necessary, additional studies undertaken during the preparatory period if previously existing secondary data were inadequate (see chapter 4). The task of the team is to:

- put together an initial overall picture during the first days of the mission in the capital on the basis of secondary data and information from key informants in the capital (including the MoA, farmers associations, traders and NGOs); and then
- cross-check and refine that initial picture through observations and discussions during visits to administrative and market centres and entry points for imports.

***Key informants*** will normally include trade officials, import/export traders, farmers' associations, traders' associations, domestic wholesalers in primary and secondary markets, food processors, transporters, retailers, consumers in the affected areas, and major NGOs.

**Panel 8-2**

**Some Dos and Don'ts when collecting and analysing market data**

| | |
|---|---|
| ☑ | Cross-check all information, whether from official or private sources.<br>Be aware that interviewees communicate information based on their own interests or vision.<br>Use all data and information with caution: take nothing at face value. Try to corroborate or triangulate information. |
| | ***Pitfalls to avoid***:<br>Mechanical forecasting based on so-called historical trends.<br>Underestimating the volumes of unregistered cross-border flows and their impact on prices, availability and consumption in the country.<br>Underestimating the importance of the interactions between the public and the private sectors.<br>Believing that stated policies are necessarily being implemented.<br>Underestimating the impact of political decisions on the dynamics of trade, whether intended or not. |

### Initial steps in the capital

- Review available ***price*** data and any ***market studies*** recently conducted in the country (and in neighbouring countries and, on that basis, prepare (or carefully review, if they already exist):

- charts showing: (i) the general structure of the food market system and supply chain in the country, and in the affected areas in particular; and (ii) the points at which the structure and chain are reported to have been affected by the crisis;
- sketch maps showing: (i) the major hubs in the market chain (wholesale markets, ports, border crossing points), the routes and the scale of normal flows between them and the zones that each serves - see, for example, Figures 8b and 8c; and (ii) the hubs and connecting routes that have been affected by the crisis and reported changes in the scale (or even the direction) of trade flows; *and*
- tables and graphs showing (monthly) prices for the main staple foods in the main wholesale markets over the last 5 years (if possible) - see for example Figure 8d in section 8.3.

- Identify any ***zones*** that appear to be poorly-served by markets or relatively isolated from markets in the rest of the country, or where prices do not seem to move in tandem with prices in neighbouring areas, and review the findings of any recent market integration studies.
- Identify any zones for which information is lacking.
- Develop an interview guide for specialist interviews with traders and other market key informants: adapt the format in **Annex 17** as required.
- Find out about any ***market information systems*** that exist in the country, managed by the government or traders' associations, for example. Individuals who manage such systems will be valuable key informants. See what information you can obtain for your own analyses but, at the same time, assess how efficiently and accurately those systems cover the specific issues of commercial imports and whether they are of practical use to traders.
- In a ***conflict situation***, determine:
  - whether the conflict has fragmented the country in terms of access to commercial imports and domestically-produced food; *and*
  - whether a predatory "war economy" has emerged and, if so (which is more than likely), how it impacts the general level of commercial imports, prices and the marketing channels through which imported and locally-produced foods are distributed.

It is important to ***identify good trade interlocutors***. Some in-country FAO and WFP staff (especially national logistics officers) and some donor representatives who have worked for a long time in the country have established networks of key informants, including traders, and have gained their confidence. They can provide names and contact addresses and arrange meetings.

Meet large traders first, as they can generally provide a broad, overall perspective. In addition, they can sometimes be contacted more easily.

Based on the general picture of food trade issues that emerges from these interviews, arrange and prepare for field visits and meetings with smaller local import companies, grain mills, wholesale traders and transporters, including those at key locations for cross-border trade.

Figure 8b **Sample map showing commercial flows, hubs and bottlenecks**

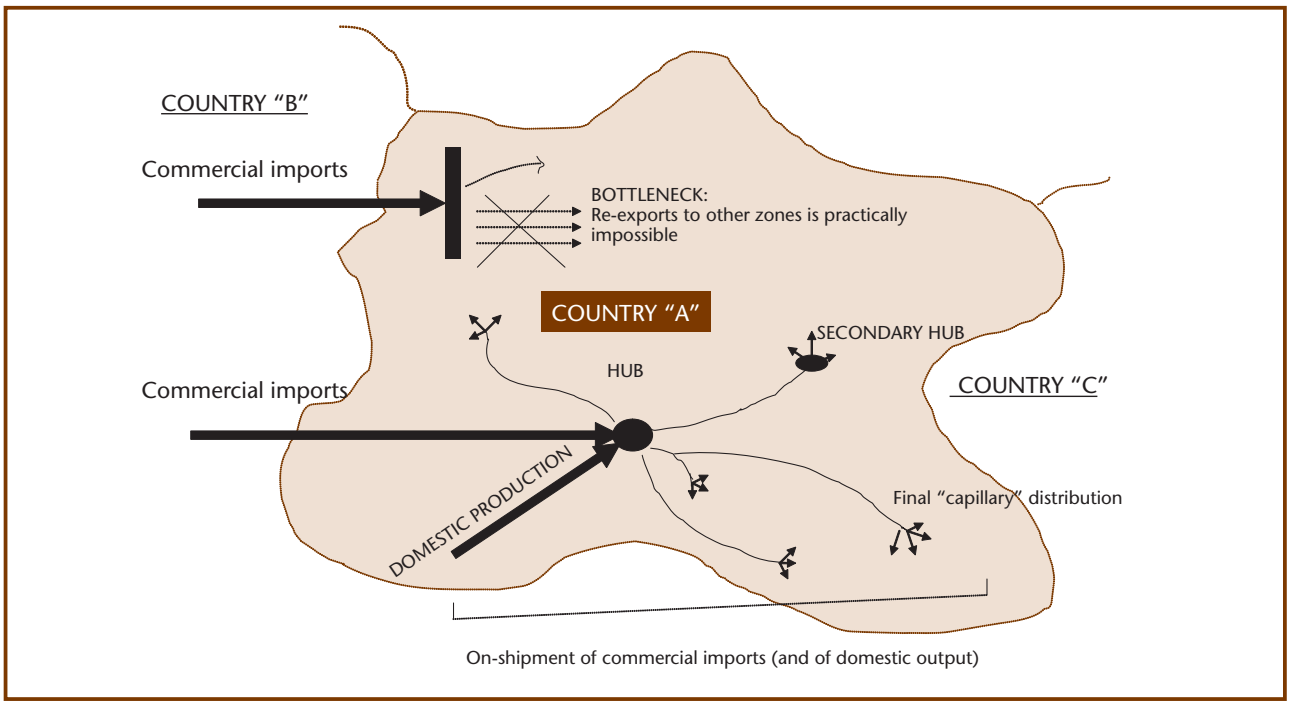
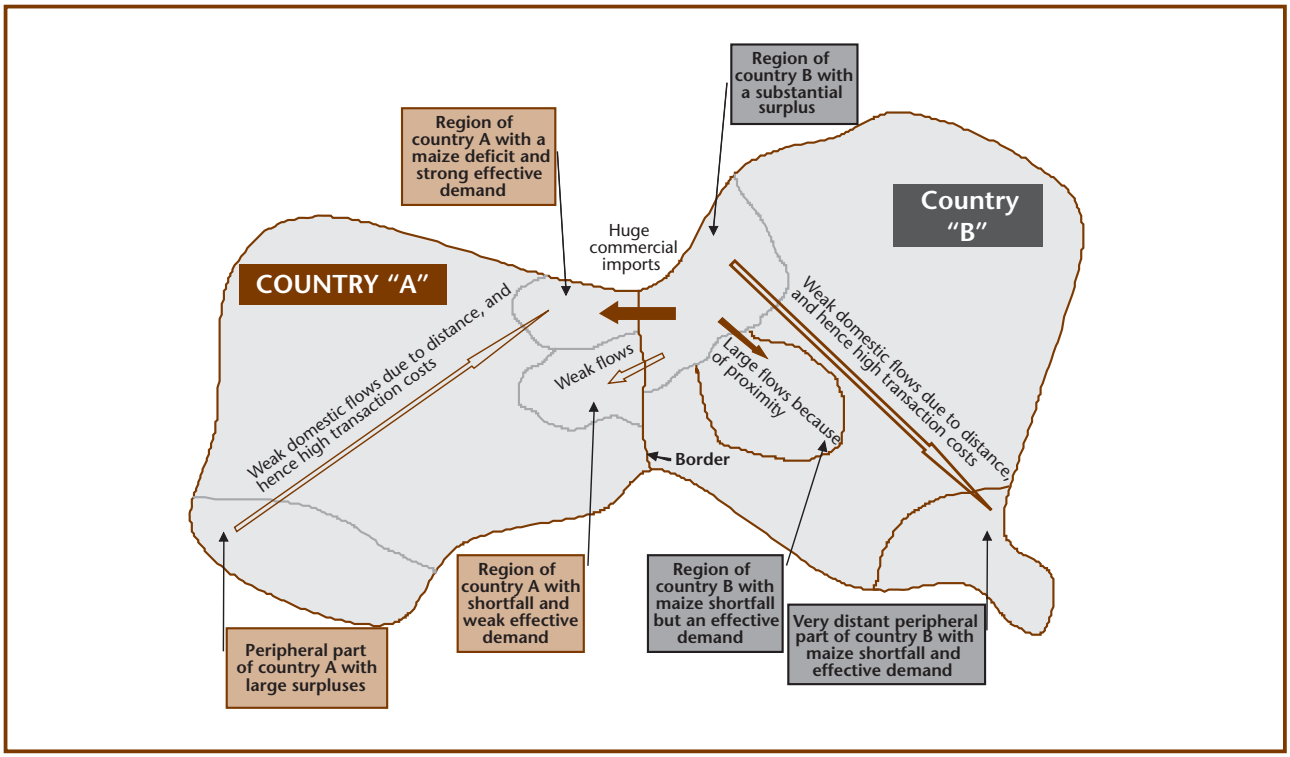



Figure 8c **Sample map showing commercial flows between and within two fragmented countries**




## 8.2 Gathering market data in the field

Data collection in the field focuses on verifying, completing and refining the preliminary picture of market conditions developed in the capital on the basis of secondary data and initial key informant interviews (see section 8.1). It includes two distinct data collection processes:

- the collection by members of ***multidisciplinary teams*** of price and some basic market data at *community level* and in associated *local markets* using parts of the standard interview guide and recording format - see section 5.2 and **Annex 17**; *and*
- the collection by ***market specialists/economists*** of detailed quantitative and qualitative market data from *traders*, other *main market actors*, and *trade and commerce officials* in the main marketing hubs through which imports and exports flow and domestic production is traded, as well as a sample of retail markets in the different affected zones - see sample interview guide and data collection format in **Annex 18**.

### Interviewing traders

- Talk with a sufficient number of traders to be able to detect and discount biased information and get a sense of the real market, import and food security problems, their causes and possible solutions, from a trade perspective.
- Learn about their perceptions of the overall food supply situation and prospects as well as their own operations.

Traders are in a high-risk business and anticipation is essential to their existence so their perceptions can be valuable in understanding the situation and preparing estimates - forecasts - for agricultural production and trade in the coming year. But traders have their own interests and what they tell you may be biased or intended to influence decisions or actions that would promote their own interests. With that in mind:

- Discuss changes brought about by the crisis compared with the normal situation and ask about:
  - their analysis of the impacts of the shock on food supplies and markets in general (in the country and in neighbouring countries);
  - their analysis of the impacts on food supplies and markets of measures already taken by the government or likely to be implemented in the near future (measures could include releases from food security stocks, public tenders for local purchases, closure of borders or other trade restrictions, etc.; the impacts may be in the country or in neighbouring countries);
  - the impact of the shock and government measures on their own trading activities;
  - their general expectations in relation to domestic production, government imports, private commercial imports in general, and in-country prices and trade flows; *and*
  - uncertainties in relation to government measures, government imports or food aid that are influencing their decisions on whether and when to import food or move food into deficit areas.

**Annex 18** provides a sample interview guide/ recording format for such detailed market interviews. Adapt it to the local situation and your specific information needs. Recognizing that traders may be less forthcoming if they see that everything they say is being written down, you may want to extract the main headings as a brief checklist (as

in panel 8-3), memorize the detailed sub-points, conduct an informal discussion while taking a minimum of notes, and then use the format to record the details immediately afterwards. If you are two team members, one may conduct the interview while the other listens and discretely takes notes, but this may still discourage your interlocutor from being open. Panel 8-4 provides some additional hints.

Information may also be sought from retail traders on the interest rate at which grain loans are being repaid. Deficit households often borrow grain from traders a few months before the harvest and repay it in kind at harvest time. The rate at which grain is repaid (e.g. two or even three measures repaid for one borrowed) can be an indication of the relative success of the current crop compared to the previous one, as well as of the impact of debt repayments on the food security of deficit households.

**Panel 8-3**

**Main topics to discuss with traders**
(sample format in **Annex 18**)

**Range & origin of items traded**

Staple foods: Livestock; Agricultural & other inputs

**Market integration, trade flows and zone served**

Markets from which supplies come; Markets to which produce is "exported"; Zone served by this market

**Number of traders at this location**

Number of traders selling staple food items; Number of traders buying (i) crops; (ii) livestock; Constraints on entry of new traders to this market

**Operations and capacities of trader(s)**

How their operations have been affected: (i) by the crisis; (ii) by gov't policies and interventions; How transaction costs and trading margins have changed; What "informal" taxes they have to pay; Storage capacity; Type of storage; Present stocks; Expected losses; Transport capacity (own or able to contract); Access to credit; Current through-put (tons/month); Maximum through-put at present prices; Main constraints on increasing through-put; % price increase that would enable them to increase (i) by 20 percent (ii) by 50 percent

**Trader's' perceptions (views) of market conditions**

Localities with no functioning markets; The staple foods in greatest demand; Which social groups can afford to purchase; Events that might affect those groups' purchasing power; Expected overall level of effective demand; Level of local/ domestic production; Expected prices in the coming months; Expected level of private imports; Views on total import requirements; Own plans

**Market Prices**

**Prices now, 3 months ago, one year ago, and anticipated trend for main crops and livestock**

*On all topics, the focus is on **changes** compared with previous year, and the reasons.*

**Panel 8-4**

**When talking with traders…**

- Show that you are interested in understanding how the market is working and value their experience and perspectives;
- Explain that your aim is to ensure that all population groups have access to sufficient food, and that you are seeking general data and their professional opinions, not company-specific data;
- Emphasize that you want to ensure that the actions of aid agencies, the government and the private sector are coordinated and complementary, as much as possible;
- Be aware that relations between traders and the government (and sometimes with other traders) are often tense and antagonistic; try to meet traders in an informal setting not in the presence of government officials, explain that you are "neutral" and try to establish a relationship of confidence; *and*
- Listen attentively: valuable insights into the nature of and reasons for food supply problems can come out unexpectedly in a casual remark or the middle of a long discourse.

## 8.3 Analysing prices

*What the CFSAM report might include (in chapter 4):*

Prices of cereals and other main foods, how they compare with a normal year and how they can be expected to evolve taking account of normal seasonal variations; how wholesale prices compare with the import-parity price and retail prices in different areas. General level of effective demand: how terms of trade have changed for purchasers of staple foods (ratios of cereal prices to those of livestock, the main cash crop, and wage rates).

Present a graph showing prices over the last 5 years up to the present, and (if possible) a projection of prices based on a partial supply/demand model.

Factors that could cause prices to rise or fall in the coming months. The implications of price movements for food security.

You need to know how prices are changing in order to assess households' access to food (for households - the majority - that depend on market purchases for some, or all, of their food). And you need to get an idea of how effective demand has changed in order to forecast prices and the levels of in-country trade flows and private commercial imports (registered or unregistered) and, therefore, the extent to which such flows and imports may contribute to meeting local deficits and the total import requirement.

### Analysing prices

Data on normal, pre-crisis staple food price levels in different areas, including seasonal variations, will usually be available from secondary data. Those data are likely to relate to the main wholesale markets. Enquiries in local markets and interviews with key informants will seek to determine how and why prices have changed from what

would be normal at different points in the supply chain and to cross-check and obtain supplementary information on pre-crisis price levels and patterns in particular areas, if/where necessary, and information on retail price levels. Some questions are suggested in Panel 8-5.

A ***time series chart*** as shown in Figure 8d can be useful. Examining (real) wholesale price variations over time and comparing them with import-parity prices and the level of private-sector imports can give valuable insights into market behaviour and help in forecasting likely price and import behaviour in the coming year, especially if the time series includes some previous crisis years.

When analysing price trends and changes in different markets/locations:

- look for significant differences in prices at different points in the supply chain and between different areas, and seek explanations;
- take account of normal seasonal variations;
- focus on and seek to explain unusual changes and especially volatility in prices;
- compare the movement of staple food prices in different areas with that of the consumer price index (CPI) in recent times;
- compare the cost of a basic staple food basket with the wage rates and producer prices of the main small-holder cash crops and livestock, and determine how the terms-of-trade for staple-food purchasers have changed and deduce the implications for food security;
- compare prices with import parity prices to determine the likelihood of private commercial food imports; *and*
- try to forecast price movements in the coming months, what the effects would be, what could affect the forecasts, and what could be done to reduce volatility and avoid excessive price increases.

**Panel 8-5**

**What to look at in price information**

Pre-crisis data:

- Seasonal and any other intra- or inter-annual patterns in the movement of prices.
- The ranges within which prices normally move.
- Spatial price differences.
- How prices changed in response to previous crises.

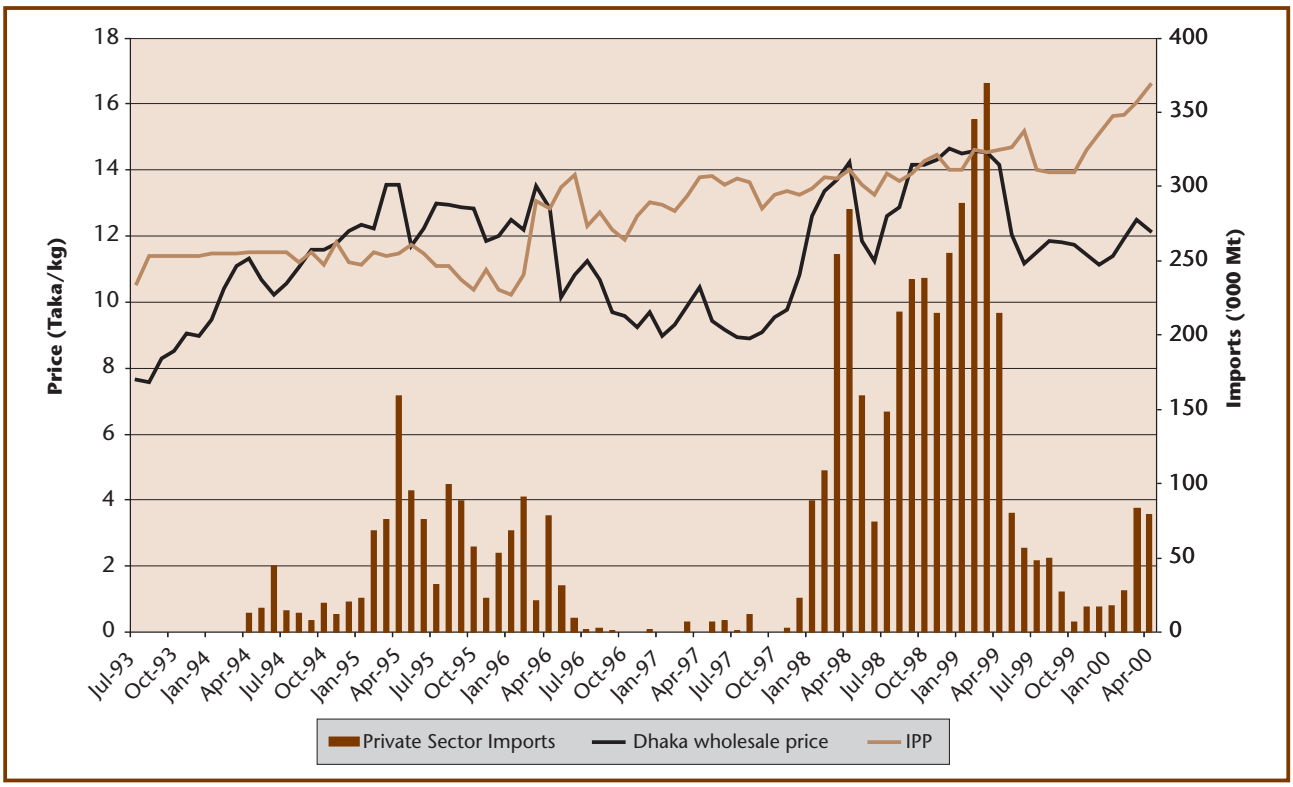
Current data:

- Prices at specific points in the supply/value chain (e.g. at the port, before or after storage, wholesale and retail in rural, intermediate and final consumption markets; be careful to only compare products of similar quality).
- Import prices at different entry points (ports and border crossing points for overland transport).

- The frequency and the type of speculation regarding imported commodities and the effect on the range of price variations.
- Comparison with prices of the same commodities at similar distribution stages.

For further guidance, see ◔ *Market Analysis IPP tool*.

Figure 8d **Example of comparing domestic and import parity prices (IPP) with private-sector import levels (in Bangladesh)**




Source: Based on Dorosh, P. 2001. Trade Liberalization and National Food Security: Rice Trade Between Bangladesh and India. *World Development* 29(4): 673-689.

## 8.4 Market integration, services and performance

*What the CFSAM report might include (in chapter 4)*

Brief descriptions of: (i) the food market system - the market chain and main market centres - and how it has been impacted by the crisis; and (ii) how the system is functioning at present and how this is likely to change in the coming year, considering the availability of services, logistic constraints and transaction costs.

Brief description of the degree of market integration and changes in the direction and levels of food flows within the country and across borders with neighbouring countries. If possible, present maps of flow directions and tables showing estimated quantities compared with normal.

Factors that could affect market performance and estimated flows.

The starting point is an understanding of the structure and characteristics of the market system prior to the crisis and how it has been affected by the crisis.

### Analysing market structure and constraints

The essential steps are to:

- Understand the ***supply/market value chains***[9] for domestically-produced food and private-sector commercial imports (registered and unregistered);
- Map out the ***major hubs*** in the marketing chain (wholesale markets, ports, etc.) and the zones each hub serves (see Figure 8b) and determine whether the hubs for imported commodities are separate from or the same as those through which domestically-produced foodstuffs transit;
- Find out who ***controls*** what (see Panel 8-6 concerning the import trade) and how ***prices*** change between the various links/stages in the supply/value chain;
- Identify the major ***logistic bottlenecks*** in the marketing chain and where they are (e.g. poor road conditions, broken bridges, areas of insecurity, damaged warehouses, etc.); *and*
- Identify any zones that have always been ***cut-off*** from the national market system and any that are newly cut-off due to the crisis, including zones that are beyond the reach of imported cereals (registered or unregistered) and/or domestically-produced food from surplus areas.

Ideally, much of the above will have been done during the preparatory, pre-mission phase and the task of the team will be to review, verify, complete and refine it, initially through discussions in the capital and then through enquiries during the field visits.

***For each affected area*** identify the markets that households depend on for getting food supplies and examine how effectively their role has been performed. The following information will help the analysis:

- Whether the area usually is in a food deficit or surplus situation.
- Types and approximate number of traders (wholesalers, retailers), their storage capacity and what has changed.
- Estimates of the weekly or monthly volume of trade in major staples and how this has changed compared with what would be normal for the season.
- The sources of supplies coming into the market: other regional markets; large commercial importers; cross-border trade.
- Types of main staples and their substitutes that are traded.
- Whether market infrastructure has been damaged.

[9] Usually from the primary producer to the final consumer.

**Panel 8-6**

**Private-sector imports: Understanding who does - and controls - what**

- Who carries out the import process, both *physical* (e.g. transport, handling, storage) and *commercial* (e.g. searching for suppliers or clients, taking on price instability, dealing with the uncertainty in governmental decisions that impact on trade of cereals, etc.)? What is the role of the State in this respect, especially through parastatals?
- Are importers also performing other functions, such as export, wholesaling, storage, or retailing of imported and/or domestically-produced foodstuffs? What are the implications for competition and market efficiency?
- Who dominates in the import marketing chain?
- Who provides credit and to whom? Is the import marketing chain characterized by "cascade" financial dependency in which each layer depends on the credit granted by the layer immediately upstream?
- Do importers have access to bank credit? If so which financial instruments do they resort to (e.g. collaterals), what are interest rates and how do they compare with normal?
- What are the constraints in obtaining hard currencies to purchase imported goods?
- Are large companies occupying a position of monopoly or oligopoly? Are some local importers in fact subsidiaries of international trading companies?
- Are new (small) importers emerging and to what extent? Are their capacities increasing in trading operations, storage, access to credit and information? Will this improve the functioning of the import marketing chain in the near future?

## Analysing market integration

Hopefully, a market integration analysis should already exist or have been conducted by the FAO or WFP country offices prior to the arrival of the mission. If this has not been done, you can get an idea of the degree of spatial integration between markets by examining historical price data, talking with well-chosen key informants, and getting information on market responses to previous crises.

Markets that are known to be linked by regular trade flows are well integrated when their prices move closely together over time, the spread between prices being due to transaction (transport, storage and handling) costs of moving the commodities from one place to the other. But beware of apparent "correlation" of prices between unrelated markets: co-movement could be due to simple seasonal effects and shed no light on integration or transaction costs - see Panel 8-7.

- Obtain current ***wholesale prices*** of staples in ***different markets*** of interest (giving due consideration to quality differences) and calculate the price differentials; if a series of monthly or weekly price data are available, calculate the price differentials over time;

- Obtain information on transportation and other transaction costs from WFP or interviews with a sample of traders and compare them with the observed price differentials; ask traders to explain the differences.
- Consider possible impact of infrastructure ***damages*** and/or breakdown in security conditions that affect marketing activities.
- Identify other, non-logistic constraints on marketing operations, such as access to ***credit***: How do importers procure credit, and on what terms and conditions? How do the banks behave? What are the credit limits? What is government policy concerning trade credits?

Assess the ***performance***[10] of the market system, including both wholesale and retail operations, in making food available to consumers throughout all zones, not only the main cities.

- Determine whether ***trade restrictions*** and/or ***food price controls*** are affecting market performance (see Panel 8-8).

Note that:

- integration can vary seasonally in that seasonal weather (or conflict) conditions may render certain transport routes unusable during particular seasons - roads during the wet/winter season, or rivers during the dry season; *and*
- market integration is an important determinant of food *access* as well as food *availability* in different areas. It also influences the availability of inputs for agricultural and other productive activities and the ability of people to sell their products and gain income.

For additional guidance in relation to market performance and efficiency, see Ben Watkins (2003) *Market Analysis and Emergency Needs Assessment: a review of the Issues,* in Emergency Needs Assessment, Volume II: Background Technical Papers (WFP).

**Panel 8-7**

**Spatial Market Integration and Price analysis**

Examine time-series (preferably monthly) price data for wholesale markets and, if possible, some retail markets in different areas, and plot the data on a graph. Price data, including graphs, for recent years may be available from national market information systems/services, in previous CFSAM reports, from FAO/GIEWS, or from the WFP country office.

Co-movement of prices between markets linked by trade patterns could be a measure of spatial ***integration*** for these markets. The difference in prices between different well-integrated markets reflects the ***transaction costs*** of moving food between them.

If prices are unusually high in one or more markets - and especially if they remain

[10] Marketing performance: the extent to which markets provide a link between producers and consumers quickly, reliably and at lowest possible cost. Marketing costs include the costs of collection, transport, handling, storage plus other transaction costs (e.g. financing, taxes, losses, etc.) and traders' margins.

high at harvest time - seek explanations: Are these markets properly integrated with others? Are there local market imperfections? Are surplus farmers well off and able to practice temporal arbitrage (i.e. wait until later in the season to sell their surplus at higher prices)?

Beware: Simple visual analysis of the curves can be informative but can also be misleading. *Regression* or *co-integration analysis* might be helpful but there are various pitfalls there as well and substantial resources are required (see WFP Market and Economic Analysis website). The analysis must be sufficiently rigorous to inform decisions (by the government, aid agencies and donors) on measures to address food insecurity.

For further guidance, see *WFP Market integration tool*.

### Analysing levels of competition and market services

- For the main market centres, determine:
  - how many traders are dealing in each of the main staple foods;
  - whether there are any (probably informal) barriers to the entry of new traders;
  - how and why things have changed, if at all.

If there are more than 10 traders, competition is likely to prevail; if there are less than 5, there may be collusion. If the largest 4 suppliers control >75 percent of the total market, there are opportunities for collusion and careful investigation of the competitiveness of the market may be needed. The diversity of traders (in terms of age, wealth, ethnic group, etc.) may provide insight into the ease of market entry and thus competitiveness - see WFP-MARKIT tool and Barrett, Lentz & Maxwell (2007), *A Market Analysis and Decision Tree Tool for Response Analysis: cash, local purchase and/or imported food aid? The Decision Tree Tool*, CARE.

- For both main market centres and local markets, check the access that traders have to credit and how it may have changed.

### Examining commodity flows and market performance

Flows measure the direction and quantities of food commodities that have moved in the past and are actually moving at present between different areas. The concern during a CFSAM is to (i) understand what has changed compared with normal trade flows and (ii) estimate likely flows during the coming year, in order to predict availability and prices in different areas.

- Map the trade flows, indicating the origins, areas of transit and destination; compare registered imports, unregistered imports and domestic products; identify main recent changes in these flows. Figure 8c provides an example of flows between two fragmented countries.
- Review with well-informed individuals (including both traders and officials in the Ministry of Commerce, for example) the information available on the routes and general magnitudes of food flows (current and historic) within the country to understand:

- the importance and seasonal variations in the various flows in "normal" years;
- how they changed in previous crisis years; *and*
- the present situation and prospects for the coming year.

- Try to determine what proportion of imports are (informally) ***re-exported***, especially where a high degree of integration of regional markets and especially where the country itself or some of its neighbours are landlocked. If such information is not already available, you will have to compile it through interviews with your key informants.
- Consider the effects and implications of ***trade policies***, as indicated in Panel 8-8, and also the effects of any informal "taxes" that may act as an impediment to domestic or international trade.

You will probably need to supplement the available information with additional information concerning ***unregistered cross-border trade*** (UCBT).

- Seek data on the nature and general magnitude of such flows during different seasons from *traders* and *cross-border points*. In addition, seek data on cross-border trade from the *neighbouring country/ies* and cross-check the two sets of data.
- Anticipate ***price changes*** (on both sides of the border), the likely effects on the direction and volume of flows, and the implications for food availability and access in different areas, especially but not only those close to markets in neighbouring countries. Envisage different scenarios for different price levels, if appropriate.
- Find out about ***exchange rates***, including "real" and "parallel" rates. The real exchange rate is the nominal (official) rate adjusted to take account of the relative price levels between the different countries: it measures change over time in the country's competitiveness. The parallel exchange rate (or "black market") rate indicates a misalignment of the official exchange rate.

**Panel 8-8**

**Trade policies and their effects: some questions to answer**

***Taxes, quotas, exemptions and their application***

A wide range of taxes and regulations may apply concerning the quantities and types of commodities crossing the borders with neighbouring countries. It is important to understand these policies, their implications for both registered and unregistered trade, and the manner in which they are actually applied. The team must learn about the way such measures have been applied - and changed - in the recent past, what measures were taken during previous crises and with what effects, and how, in the opinions of informants, they may be applied during the coming crop year.

- Tax exemption for small batches? What are they? What are the tolerances in reality? How do traders maximize their benefits?
- Is there a progressive tax regime or a sharp difference between taxed and untaxed quantities?
- Are these measures the same for all, or are they part of a broader "policy mix"?

- What measures are applied in neighbouring countries? What is their impact on trade to/from the country of concern*?*

***Regional and other trade agreements***

- Is the country a member of a regional organisation, such as SADC or ECOWAS, and the WTO? If so, what are the consequences in relation to food trade? Draw up a list of recent measures adopted as a consequence of membership of these organisations and analyse their impact on food and related imports from and exports to countries in the same zone.

***Exchange rates and international competitiveness***

Exchange rates and the availability of hard currencies for financing commercial imports are critical determinants of the level of imports. In order to understand trading patterns, examine:

- the level of competitiveness of domestic production induced by exchange rates. Distinguish between the official exchange rate and the exchange rate practised on the black market;
- the availability of foreign exchange reserves (how many months or imports does it cover); *and*
- government policies and motives in relation to exports or re-exports; they may be motivated by a need to obtain foreign exchange rather than food security or commercial considerations.

N.B. High exchange rates can favour imports to the detriment of domestic production. In Angola, for example, selling of large quantities of foreign exchange by the government drove up the value of the local currency.

***Measures affecting private trade***

- regulations affecting the domestic and foreign marketing of basic foodstuffs including transport and the powers given to - and the actual conduct of - parastatals for storage and sale, the use of strategic reserves, etc.
- regulations affecting credit access by commercial importers, and particularly the timely availability of bank loans.
- measures taken by the local authorities, which may differ from national policies. For example, the policies of provincial governors who may decide to place an embargo on cereals exports, or levy specific taxes on the movements of goods.
- The general spirit governing relations between the government and the private sector: Are the government and aid agencies transparent about their intentions in relation to food supplies? Do all parties talk with each other and make it a practice to work together and ensure that ambiguities are removed?

## 8.5 Capacities and limitations of traders

Forecasting the level of private commercial imports is a key element of preparing the *ex ante* national staple food balance sheet (see section 12.2). Market integration determines whether and where food flows within the country. The scale of those imports and flows and the extent to which they may contribute to increasing supplies (avail-

ability) in the country and specifically in deficit areas, depends not only on prices, effective demand, trade policies and regulations, but also on the capacities of the traders themselves. Questions concerning capacities are included in the standard market interview guide and recording format in **Annex 18**, item 6.

- Based on your discussions with traders and other key informants, and your own observations, estimate the proportion by which traders may be able and willing to increase their through-put at similar costs - hence the present level of private commercial flows - in the coming months. Treat with caution any suggestions that capacities and through-put could be increased by more than 50 percent.

## 8.6 Potential side effects of food or cash transfers

To inform the analysis of response options (see chapter 15), the analysis of market conditions must examine the effects that food transfers or cash transfers would be likely to have on local markets. These effects will depend largely on whether markets are integrated, the quantities of food available in the country, the levels of competition and the performance of markets serving the affected areas, and the stability of prices:

- Based on the level of market integration (see section 8.4), determine whether the effects of transfers (of food or cash) would be spread through a large area or remain concentrated in the localities of distribution.
- Based on the overall supply situation, the timeline for the arrival on the market of local crops, and the supply-demand curve, if data are available, determine how food or cash transfers would affect prices.
- Based on the degree of competition in local markets (see section 8.4), any constraints on market operations, any signs of hoarding, and the extent to which traders could increase their imports into the area if effected demand were to increase (see section 8.5), determine whether cash transfers would or would not cause significant price inflation.
- Based on data from households and discussions with community groups and key informants, determine whether some households are effectively excluded from markets and might therefore not be able to benefit fully from cash transfers.

The potential negative effects of "importing" large amounts of ***food*** into the local economy include: disincentives to producers and traders resulting from depressed prices (especially if food distributions are continued into the next harvesting season or adjoining unaffected areas find reduced demand for their produce in the affected areas); consequent reductions in food incomes resulting in producer and market inactivity affecting future food security of households, *and* the longer-term impact may depress growth of the local economy due to reduced demand for goods and services.

The potential negative effects of ***cash*** transfers include price inflation if the transfer is substantial compared with food availability. While this will benefit traders and households that sell food, non-beneficiary households that depend on markets will experience a decline in their purchasing power that could cause them to become food insecure while the inflated prices will diminish the value of the transfer to those who do receive it.

## 8.7 Potential for and likely effects of local purchases

If the household food security analysis could reveal a need for ***in-kind food transfers*** to certain population groups (through free distributions, food-for-work or subsidized sales) and the analysis of food production identifies areas of surplus production (see section 7.6), you must determine whether local procurement might be appropriate or not. This means determining whether purchases would have a detrimental effect on markets or poor consumers in those areas. To do this:

- Knowing the types and quantities of commodities required, identify potential (surplus) areas for purchases and the quantities available.
- Determine the prices that would have to be paid (which should be acceptable at or below import parity price that includes the total cost of importing and making it available in the target areas).
- Review the level of market integration in and around the surplus areas: is it sufficient to ensure that food flows within the area and to and from surrounding areas will limit the impact on prices of purchases by the government or assistance agencies?
- If the market is *not* integrated with those in surrounding areas, determine whether producers are able to find sufficient buyers for their surpluses: if not, local procurement could still be an option and have a beneficial effect on the local economy.
- If data are available, use a simple supply/demand model to examine how prices could be affected by different levels of local purchases and evaluate the risk of purchases crowding-out normal trade.
- Examine the operational feasibility of local purchases.

Local procurement in a particular area may be possible with no detrimental effects on the local market if market integration is sufficient to ensure that food flows within the area and to and from surrounding areas will limit the impact on prices.

Local procurement could also be an option (and have a beneficial effect on the local economy) in a surplus area whose market is not integrated with those in surrounding areas and producers are unable to find sufficient buyers for their surpluses.

## 8.8 Livestock markets

*What the CFSAM report might include (in chapter 4)*

*Where livestock are an important source of food or income*, a brief description of how markets have been affected by the crisis and how they are functioning now, and the implications for food security.

Basic questions concerning livestock markets are suggested in the standard interview guide/recording format in **Annex 17**, section 12. Questions on prices are included under item 14.

- Examine carefully how the terms of trade for livestock against grain have changed from what would be normal for the season and consider the implications for household food security.

- Find out how difficult it is for livestock sellers to find buyers.
- Examine the characteristics of the animals being offered for sale and consider the implications.

Most rural households raise small livestock for cash income and all pastoral groups rely on the sale of milk, other dairy products and live animals to secure cereals. ***Livestock-grain terms of trade*** are therefore crucial to the food security of many rural as well as pastoral households. In many drought-related crises, there is an immediate shift in the terms of trade to the detriment of livestock owners with livestock prices falling while grain prices rise.

Questions about ***origin and destination*** can provide an insight into general market conditions: animals are not only being taken from one market to another after being sold but may also be taken to several markets by their owners before finding a buyer.

The species and age/sex ***characteristics*** of animals being offered for sale, combined with prices, can be quite informative and in-depth interviews with key informants in markets should establish whether the prevailing situation is consistent with relatively good or bad times. As a rule, in good times small ruminants, mature steers and re-formed cows are mostly found on markets and fetch a relatively good price. In bad times, de-stocking leads not only to lower prices but also to the appearance of other types of animals: younger steers and even heifers. Obviously, in bad times the condition of animals presented on markets also shows stress from malnutrition. On the other hand, during recovery periods it is not unusual to find heifers for sale on markets, but at that time they fetch a much higher price and are mostly bought by pastoralists for herd restocking.

## 8.9 Labour and agricultural input markets

*What the CFSAM report might include (in chapter 4)*

Present daily wage rates and how they compare with the seasonal norm. Changes in the demand for labour compared with the seasonal norm and how that demand is likely to change in the coming year.

Brief description of the impact of the crisis on markets and prices for agricultural inputs, other inputs/raw materials for important income-generating activities, and households' essential non-food requirements, and the impact on food security now and in the coming year.

### Labour markets

Casual waged labour is a significant source of income for poor households. Basic questions concerning livestock markets are suggested in the standard interview guide/recording format in **Annex 17**, section 13.

- Compare current wage rates with the norm for this time of year. If the wage rate is significantly higher or lower than normal, find out why: whether more (or fewer) people are looking for work, more (or fewer) people are hiring, or a rise is due to general inflation.

Collecting information on the labour market is more difficult than for the food and livestock markets. Sometimes the labour market has a physical location, e.g. a roadside spot where workers gather each morning waiting for employment, but often this is not the case and enquiries will have to be conducted more informally and as the occasion presents itself. It may, for example, be possible to conduct a very quick interview with a group of workers in a field or on a construction site, or to seek out the largest land-owner (and largest employer) in a village to discuss casual labour issues.

### Agricultural input markets

The assessment of agricultural production should determine, through interviews with agricultural officers and extension workers and farmers, whether essential inputs such as seeds, fertilizer, fuel, etc. were available in sufficient quantities at the right time and at affordable prices for the last season. The market assessment should determine, through interviews with traders and MoA officials, how the input (factor) markets are likely to perform during the coming year.

- Obtain information about current stocks and purchases/imports in the pipeline, determine how they compare with what would be normal for this time of year and analyse price trends, and foresee the implications for agricultural production during the coming year.

Notes on preparing a chemical fertilizer balance sheet are provided in **Technical Note F3**.

# Part IV

## Analysing the Aggregate Food Supply/Demand Situation

The following chapters provide guidance on preparing estimates for the various components of the ***national*** staple food balance sheet. In addition, ***sub-national*** staple food surplus/deficit balances may be prepared in countries where food markets are not well integrated and certain areas are more or less isolated from the rest of the country.

# 9 Drawing up and interpreting the staple food balance sheet

## 9.1 The purpose and elements of a staple food balance sheet

The National food balance sheet is a means to summarize the aggregate impact of a shortage in domestic production by comparing total domestic utilization, based on apparent consumption in a reference year, with supplies (assessed domestic production, stocks, anticipated imports) in a year when domestic production has severely fallen short. In this case, the "reference year" level for apparent consumption is expressed as the per capita consumption of basic staples - usually the main cereals - calculated as the average of total utilization over several years. Even though per capita yearly consumption levels vary across countries, it would be arbitrary for the CFSAM team to set the level of how people perceive a loss due to a shortfall in production as something other than the difference between a food diet at a critical time and food consumption in a normal year. Average per capita consumption is, therefore, used as the *status quo ex ante* level of consumption for comparison purposes with a year of lower domestic production.

Caveat - The cereal or cereal-equivalent balance sheet provides a quick overview of the expected aggregate food supply situation in the country during the coming marketing year. However, the final product, as in any synthesis, incorporates many assumptions and simplifications that the user needs to keep in mind, to draw sound conclusions:

- the findings from a short and discrete CFSAM exercise undertaken shortly before the main harvest can only be taken as best estimates at that point in time, and only as a very approximate forecast for the coming year. Ideally, the balance sheet should be updated when additional information becomes available, particularly with respect to domestic production and commercial imports; *and*
- as an aggregate summary for the country (or a region), a food balance sheet does not provide any information on the *inequalities in access to food* among the country's population, nor does it, in itself, show whether food flows from surplus to deficit areas take place and, if so, with what degree of economic efficiency (see examples in 9.3).

The balance sheet is expressed as follows:

**Projected utilization = Projected domestic supplies + Total import requirements**[11]

***Projected utilization*** (forecast total requirements) includes: domestic requirements - the quantities needed for human consumption, seed, animal feed, industrial use (for products not for human consumption), and closing stocks - plus post-harv/est losses and exports.

***Projected domestic supplies*** include: opening stocks and forecast domestic production.

[11] Import requirement only when projected utilization exceeds projected domestic supplies. In other cases, rare for most food-deficit countries where CFSAMs are undertaken, the country may be self-sufficient or have projected exportable surplus.

The difference between projected utilization (total requirements) and projected domestic supplies needs to be made up by ***imports***, which include government imports, private commercial imports and food aid. Food aid on hand and in the pipeline includes all forms of donor-financed food imports (programme food aid from bilateral donors, food aid for development projects, and emergency food aid, if any). The CFSAM Team must establish the best possible estimates for all the elements listed above in order to arrive at an estimate for the ***uncovered import requirement***, if any. Chapters 9, 10, 11 and 12 describe how to establish these estimates.

Panel 9-1 provides some brief notes on the various elements of a balance sheet. Panel 9-2 provides an example of a balance sheet.

**Panel 9-1**

**Notes on the main elements of the Staple Food Balance Sheet**

***Production*** estimates for total production of the main staples are a major part of any CFSAM. Production estimates for the main crop are based on area and yield estimates shortly before harvest time. Production forecasts for any second-season crops, however, can only be projections based on historical data and information on how the planted area or the availability of inputs might vary from what was "normal", taking account of any land that has become inaccessible for any reason and any changes in cultivation patterns.

***Stocks*** include public stocks (marketing board, national security stocks) and private stocks (traders, farmers). While public and traders' stocks can be assessed through interviews, on-farm stocks can only be roughly estimated on the basis of rural cereal production compared with needs over the last few marketing years. (N.B. Food aid stocks are not included here; they are counted in imports as food aid on hand).

***Food Use*** (human consumption) is the largest component of projected utilization. For previous marketing years, total *apparent consumption* of staple foods is calculated as difference between (i) the total available supplies (domestic supplies + imports), and (ii) the total utilization for all purposes other than human food consumption use. *Per capita* apparent consumption is then calculated. Projected requirements are then estimated using the estimated national population at mid-marketing year for the coming year.

***Seed uses*** are estimated on the basis of anticipated area to be planted for next season, widely accepted standard seeding rates in the country or historical figures possibly adjusted according to conditions prevailing at the time of the CFSAM including anticipated replantings.

***Feed use*** is estimated from data on intensive and semi-intensive livestock feeding operations, including the back-yard livestock feeding.

***Industrial use*** generally refers to use of grains for production of biofuels. Processed foods are not included in this category, but under food use.

***Post-harvest losses*** generally are based on the regional norms by crop adjusted by examining the storage, transport and handling conditions in the country.

***Exports*** (registered and unregistered) can take place even when the overall supply balance is negative, especially when surplus areas are much closer to deficit zones across the

border than within the country, and when the foreign exchange needs are paramount. Estimates are based on historic trends, adjusted, if necessary, to forecast conditions.

***Commercial Imports*** often consist of a combination of public and private imports. *Public* cereal imports tend to be determined by a mix of policy choices, budgetary resources, and foreign exchange reserves. *Private* commercial imports, on the other hand, tend to be driven by the importers' perception of national effective demand (i.e. the extent to which people have purchasing power to buy imported food), and their perceptions of the intentions of Government and food aid donors in relation to public importation of food. The interaction between public, food aid and private import strategies can be quite complex and yield both unexpected outcomes and substantial economic inefficiencies.

***Food aid*** (as used here) comprises all donor-funded ***imports*** including programme food aid and targeted food aid for development and emergency programmes. It does *not* include commodities purchased locally for food aid programmes. It may include emergency government imports funded by special donor subventions.

Great care is needed when establishing estimates for each item but the most critical and difficult elements are projected domestic production and projected private commercial imports. Data will come from the analyses outlined in chapters 7, 8, 10, 11 and 12. Worksheets are provided in **Technical Note F1**. Estimating ***domestic production*** is particularly difficult in countries where there is a significant secondary harvest. Estimating ***commercial imports*** is always difficult and sensitive, as such imports depend not only on domestic prices and traders' capacities but also on government policies, the availability of foreign exchange and traders' perceptions of effective demand and the commercial risks involved as described in chapter 12. Those risks are influenced by government policies and any uncertainties concerning what the government and aid organizations may import and when such supplies might arrive.

**Panel 9-2**

**Staple food balance sheet Malawi, April 2004 - March 2005 ('000 tonnes)**

| | Maize | Rice milled 1/ | Sorghum /Millet | Wheat | Cassava in cereal equiv. 2/ | Sweet potatoes in cereal equiv. 3/ | Total in cereal equiv. |
|---|---|---|---|---|---|---|---|
| **Domestic availability** [1] | **1 712** | **44** | **63** | **4** | **692** | **440** | **2 955** |
| Opening stocks | 7 | 1 | | 2 | | | 10 |
| Production | 1 705 | 43 | 63 | 2 | 692 | 440 | 2 945 |
| **Total utilization (required)** [2] | **2 062** | **44** | **63** | **62** | **692** | **440** | **3 363** |
| Food use | 1 791 | 36 | 62 | 60 | 382 | 287 | 2 617 |
| Seed use | 38 | 2 | 19 | 0 | | | 60 |
| Animal feed & industrial uses | 20 | | | | | | 20 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Post-harvest losses | 256 | 1 | 6 | 0 | 207 | 132 | 603 |
| Closing stocks | 60 | 1 | | 2 | | | 63 |
| Exports | | | | | | | 0 |
| Cross commodity substitution | -103 | 4 | -24 | | 102 | 22 | 0 |
| **Import requirements** [2 - 1] | **350** | **0** | **0** | **58** | **0** | **0** | **408** |
| Estimated commercial imports (Government plus private - registered & unregistered) | 294 | | | 58 | | | 352 |
| Food aid in stock & in pipeline | 15 | | | | | | 15 |
| Uncovered import requirement | ***41*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***41*** |

Notes:

This example includes cassava and sweet potatoes, both converted in cereal equivalent, and also a line for ***cross-commodity substitution*** effects by which surpluses in these two items reduce import requirements for maize and sorghum/millets. In other cases, this line can transfer identified deficits of non-importable commodities, such as millets and/or sorghum, to additional import requirements of importable ones, such as maize.

1/ Paddy rice converted to milled rice at an extraction rate of 65 percent.

2/ Cassava cereal equivalent of 32 percent. Production based on the area harvestable within the 12 months of this marketing year.

3/ Sweet potato cereal equivalent of 28 percent.

A country in a substantial deficit situation has several not mutually exclusive options to avoid a fall in total food consumption: (i) to make an "extraordinary" effort to increase commercial imports; (ii) to apply for financial assistance to do so; or (iii) to request food aid to cover the net deficit. Whether a country in crisis can be expected to increase substantially commercial imports (or might actually fall below trend) depends on several factors, to be carefully weighed by the team: the number of years in consecutive crisis, the size of the food deficit compared to total utilization, the level of economic activity and export earnings, the financial position of the public sector in terms of hard currency.

The challenge is to figure out how the shock/crisis has affected, and will affect, the various elements of national supply/demand balance on the left-hand side of the framework in Figure 3a and the factors influencing them and what the effects of different types of response might be.

## 9.2 Drawing up the balance sheet(s); estimating uncovered import requirements

*What the CFSAM report might include (in chapter 5*

Present and explain the national balance sheet. Briefly explain why supply-demand balances have, or have not, been prepared at the sub-national level.

General comments on the balance sheet(s). Explanation of the team's estimate for uncovered food imports. Factors that could positively or negatively affect the estimate.

*Where sub-national balances have been prepared*: present and explain the balances for the different areas; highlight surplus and deficit areas and changes compared with recent years, and explain the implications.

- Prepare separate balance sheet columns for each of the major crops, if possible, and then convert all to a standard "cereal equivalent" to obtain aggregate estimates. For an example of such an analysis, see Côte d'Ivoire, 2004, for example (http://www.fao.org/giews/english/alert/index.htm). Do not assume that all crops are equally affected.

### Reviewing and interpreting the balance sheet

- Compare the balance sheet you have drawn up with those of previous years and examine the changes line by line: What is the significance of the changes? Are they indeed plausible?
- Reflect on the sources of your data and the bases of your estimates: How reliable are they? While retaining a specific figure - the best guess - for each item/line in the FBS, consider the range within which you could confidently say that the real value lies. What are the implications for your estimate of the uncovered food import requirement?
- *If there had been other CFSAMs in recent years*, compare the figures in the *ex-ante* balance sheets drawn up by previous CFSAMs with the figures in the up-dated, *ex-post* balance sheets now available for the same years: What can you learn from the differences between the CFSAM estimates and the subsequently reported figures? What could this mean for your estimates?

### Considering the supply/demand balance at sub-national level

In addition to the national balance sheet, sub-national staple food surplus/deficit balances should be prepared in countries where food markets are not well integrated and certain areas are relatively isolated from the rest of the country (e.g. Mozambique, Nepal, Sudan, etc.), particularly when an earlier CFSAM or the preliminary consultations identified the need. In such cases draw up gross, approximate supply/demand balances for each distinct part of the country as follows:

- Review the gross estimates of production/consumption surpluses and deficits by zone from the analysis of agricultural production - see section 7.5;
- Review the team's conclusions concerning effective demand in the deficit areas (see section 8.3) and trade flows in and out of each part of the country especially cross-border trade with neighbouring countries (see section 8.4);

- Draw up a rough supply/demand balance for each distinct part of the country taking account, if possible, of the expected cross-border trade flows and any important differences in the production and consumption patterns.

### Estimating the uncovered food import requirement

The estimates for domestic availability and utilization requirements (derived as described in chapters 7, 10, 11 and 12) result in an estimate for the total import requirement for the coming year.

Subtracting the estimates/projections for public- and private-sector imports based on perceived effective demand and administrative measures promoting or hindering trade flows (see chapter 12) results in an estimate for the total imported food aid requirement, including all forms of imported food aid.

Subtracting the quantity of food aid, including both programme and project food aid already pledged but not due to arrive in the country before the beginning of the next marketing year, gives the total ***uncovered food import requirement*** that would need to be made up by additional government, private and/or food aid imports (possibly including government commercial imports funded by special budget subvention from donors) during the coming year.

Section 14.2 provides guidance on comparing the uncovered food import requirement with the aggregate food-security assistance needs and drawing conclusions for action.

## 9.3 Examples of balance sheets and relationship with household shortfalls

### Examples

The following simplified examples show how national Food Balance Sheets (NFBS) relate to each of the three main types FAO/GIEWS classifications of food crises used in the FAO/GIEWS terminology: a) exceptional shortfalls in production, b) generalized lack of access (i.e. in a very poor country, a situation where most households cannot have access to abundant and relatively inexpensive local supplies), and c) severe localized food insecurity. The latter case "c" applies to countries where certain regions are economically "isolated" because of ongoing conflicts, political reasons, or a combination of both.

The examples compare estimated balances for an upcoming marketing year (t) with those for a previous year (t-1). They illustrate how balance sheet estimates of aggregate deficit (uncovered import requirements) may differ from estimated aggregate household food assistance requirements because of the difference in bases used for per capita consumption figures.

They show that the NFBS is necessary and important for understanding the general extent of a food crisis but that it is not sufficient and must be complemented with additional analysis of the various factors that influence the distribution of domestic supplies within the country.

**Table 9.1** illustrates a situation where ***production*** **and domestic availability have fallen** substantially from year t-1 to year t, the current marketing year. Projected habitual

food use may have grown with population, but total utilization has fallen because exports and closing stocks have been cut, due to tighter supplies. Even if the country is able to increase commercial imports compared with the previous year's level (from 360 000 tonnes to 500 000 tonnes), an uncovered deficit of 373 000 tonnes will remain to be covered through food assistance to avoid a fall in total food availability for consumption.

In this example, we assume a population of about 8 million people and that the deficit between domestic availability and total utilization (873 000 tonnes) is based on a per capita cereal consumption (SQE) of 135 kg/person/year. This deficit may be expressed in terms of an equivalent number of persons who have lost basic food productions and most means of support: about 2.7 million. The amount of food assistance that would be required to provide them with the cereal component of a 2 100 kcal ration would be about 403 000 tonnes. In this case, the FAO aggregate deficit (373 000 tonnes) and WFP aggregate food assistance estimates (403 000 tonnes) are different, because they are based on different consumption bases.

Table 9.1 **Exceptional shortfall in production**

| **1 Aggregate balance sheet** | | |
|---|---|---|
| National Food Balance Sheet (1,000 tonnes) | | *Drought (40% loss)* |
| | (t-1) | (t) |
| **Domestic availability (1)** | **1.550** | **950** |
| Opening stocks | 50 | 50 |
| Production | 1.500 | 900 |
| Main season | 1.200 | 600 |
| Secondary season (forecast) | 300 | 300 |
| **Total utilization (2)** | **1.910** | **1.823** |
| Food use at 135 kg/cap/year (3% growth p.a.) | 1.080 | 1.115 |
| Feed use | 300 | 300 |
| Seed use | 300 | 300 |
| Losses (12% of production) | 180 | 108 |
| Exports | 0 | 0 |
| Closing stocks | 50 | 0 |
| **Total Import requirement (2-1)** | **360** | **873** |
| Commercial imports | 360 | 500 |
| Food aid received and pledged | 0 | 0 |
| Uncovered import requirement | 0 | 373 |
| **2 Assistance requirements** | | |
| **2a Based on balance sheet "deficit"** | | |
| Population | 8.000.000 | 8.256.000 |
| Historical "normal" per capita consumption, kg/yr | 135 | 135 |
| Normal' food use (1,000 tonnes) | 1.080 | 1.115 |
| Deficit (1,000 tonnes) | | 373 |
| Deficit (number of persons at 135 kg/cap/yr) | | 2.759.704 |

| | | |
|---|---|---|
| **2b Based on 2100 kcal for the same number** | | |
| 2100 kcal, 70% from cereals = about 400grams/cap/day = 146 kg/cap/year | | |
| Cereals in 2100 kcal rations for deficit population (1,000 tonnes) | | 403 |
| (based on 400 grams cereals/cap/day) | | |

**Table 9.2** provides an example of an increase in production ***after a bad year*** in a very poor country[12] characterized by generalized lack of access to food, and where the simple mere numbers in the balance sheet may be misleading. Food use and total utilization have grown, but the respective shares of cereal production being held after harvest by households on the one hand, and by traders on the other, may depend on the extent of indebtedness in the previous year. For a very poor country, ***indebtedness*** during a bad year tends to be high and widespread, so reimbursements in kind at harvest time may represent up to half of households' food production by households. Although estimates for commercial imports and food aid requirements have fallen, the NFBS does not reflect the post-harvest change in ownership of food supplies. In such a case, the balance sheet would imply that little or no (imported) food aid is needed. However, in spite of a seemingly balanced demand/supply situation, most households would need (financial) support to buy back most of the food they used to repay debts. That food is available in the country but now held by private traders. A similar situation may arise in countries affected by sudden economic collapses and mass unemployment, even in the presence of sufficient domestic supplies.

In such a case, the CFSAM team should reach the conclusion that no food aid imports are required, but that the first priority is to develop or support mechanisms through which households can earn the money needed to buy back the food they had produced but no longer own. In this example, the relative price between crisis and harvest times is such that twice the quantity borrowed would have to be bought back by local households - 500 000 tonnes in this example against 250 000 tonnes borrowed (i.e. twice the quantity borrowed). Cash for work (CFW) or a combination of local purchases and food-for-work (FFW) programmes would be ideal if the capacity exists to quickly organize CFW or FFW on a large scale. Since prices tend to rise after harvest, such programmes should also start as soon after harvest as possible.

[12] This example is based on the case of Niger, where a very bad year (2004) was followed by a good one. However, a major share of 2005 production changed hands right after harvest, to repay 2004 debts.

Table 9.2 **Generalized lack of access (after a bad year)**

| 1 Aggregate balance sheet | | |
|---|---|---|
| National Food Balance Sheet (1,000 tonnes) | *Drought (40% loss)* | Post-crisis year |
| | (t-1) | (t) |
| **Domestic availability (1)** | **950** | **1.550** |
| Opening stocks | 50 | 50 |
| Production | 900 | 1.500 |
| Main season | 600 | 1.200 |
| Secondary season (forecast) | 300 | 300 |
| **Total utilization (2)** | **1.668** | **1.945** |
| Food use (3% growth p.a.) | 1.080 | 1.115 |
| Feed use | 300 | 300 |
| Seed use | 180 | 300 |
| Losses (12% of production) | 108 | 180 |
| Exports | 0 | 0 |
| Closing stocks | 0 | 50 |
| **Total Import requirement (2-1)** | **718** | **395** |
| Commercial imports (250,000 tonnes on credit) | 510 | 395 |
| Food aid received and pledged | 208 | 0 |
| Uncovered import requirement | 0 | 0 |
| **2 Assistance requirements** | | |
| Population | 8.000.000 | 8.256.000 |
| Historical "normal" per capita consumption, kg/yr | 135 | 135 |
| Normal' food use (1,000 tonnes) | 1.080 | 1.115 |
| Deficit at 135 kg/cap/year (1,000 tonnes) | | -0 |
| Repayment of 250,000 tonnes borrowed in t-1 | | 500 |
| May need equivalent of 500,000 tonnes of FFW or CFW to buy back the food. | | |

**Table 9.3** The third case also depicts an increase in production in year (t), after a particularly bad year, when both commercial imports and food aid were needed. Total food use and total utilization have grown from (t-1) to (t), and there is even scope for limited exports (13 000 tonnes). However, the overall increase in production "hides" long-term, substantial and severe ***local deficits*** in parts of the country. To illustrate this, the national balance is broken down into four regional ones; whereby Regions I through III have food surpluses adding to 166 000 tonnes, while Region IV has a severe deficit of 166 000 tonnes, which is why the national deficit is 0. For simplicity's sake, the population is assumed to be distributed evenly across regions and per capita consumption across regions is estimated to be equal, at 135 kg/person/year, in each region. If national markets were integrated and effective demand existed in Region IV, food would flow from the surplus to deficit regions to Region IV. In this case, the

surplus from Regions I, II and III may be stored or exported, leaving Region IV with a deficit of 166 000, equivalent to the annual requirements the full "normal" year supply of 1.228 million persons. To provide food assistance to that number of people at 2 100 kcal/person/ per day would require about 179 000 tonnes. In this case, the report could thus arrive at the apparently paradoxical conclusion that the aggregate balance is slightly positive, but that (the equivalent of) 179 000 tonnes of food assistance are required.

These three simple examples illustrate the complex and broad set of situations under which adjustments to the aggregate balance sheet, either because of the difference in bases used for per capita consumption figures, post-harvest re-allocations of domestic availability, or obstacles to mechanisms evening out the national supply, can result in sharply different outcomes. In conclusion, the aggregate cereal balance sheet is a necessary and important condition for understanding the general extent of a food crisis, but it is not sufficient, and must be complemented with additional analysis on the various economic and non-economic factors which influence the distribution of domestic supplies.

Table 9.3 **Severe localized food insecurity** (good year after a bad one)

| **1 AGGREGATE BALANCE SHEET** | | | Country Regions - Year (t) [3 surplus, 1 deficit] | | | | |
|---|---|---|---|---|---|---|---|
| National Food Balance Sheet (1,000 tonnes) | *Drought (50% loss)* (t-1) | Post-crisis year (t) | I | II | III | IV | National |
| **Domestic availability (1)** | **1.250** | **2.150** | **645** | **645** | **650** | **210** | **2.150** |
| Opening stocks | 50 | 50 | 15 | 15 | 20 | 0 | 50 |
| Production | 1.200 | 2.100 | 630 | 630 | 630 | 210 | 2.100 |
| Main season | 900 | 1.800 | 540 | 540 | 540 | 180 | 1.800 |
| Secondary season (forecast) | 300 | 300 | 90 | 90 | 90 | 30 | 300 |
| **Total utilization (2)** | **1.764** | **2.150** | **589** | **589** | **595** | **376** | **2.150** |
| Food use (3% growth p.a.) | 1.080 | 1.115 | 279 | 279 | 279 | 279 | 1.115 |
| Feed use | 300 | 300 | 90 | 90 | 90 | 30 | 300 |
| Seed use | 240 | 420 | 126 | 126 | 126 | 42 | 420 |
| Losses (12% of production) | 144 | 252 | 76 | 76 | 76 | 25 | 252 |
| Exports | 0 | 13 | 4 | 4 | 5 | 0 | 13 |
| Closing stocks | 0 | 50 | 15 | 15 | 20 | 0 | 50 |
| **Total Import requirement (2-1)** | **514** | **0** | **-56** | **-56** | **-55** | **166** | **0** |
| Commercial imports (250,000 tonnes on credit) | 300 | 0 | | | | 0 | 0 |
| Food aid received and pledged | 200 | 0 | | | | 0 | 0 |
| Uncovered import requirement | 14 | 0 | -56 | -56 | -55 | 166 | 0 |
| **2 ASSISTANCE REQUIREMENTS** | | | | | | | |
| Population (1,000) | 8.000 | 8.256 | 2.064 | 2.064 | 2.064 | 2.064 | 8.256 |
| Historical "normal" per capita consumption, kg/yr | 135 | 135 | 135 | 135 | 135 | 135 | |
| Normal' food use (1,000 topnnes) | 1.080 | 1.115 | 279 | 279 | 279 | 279 | 1.115 |
| Deficit at 135 kg/cap/year (1,000 tonnes) | | -0 | -56 | -56 | -55 | 166 | 0 |
| Population equivalent with full deficit (1000s) | | | | | | 1.228 | |
| 2100 kcal rations for deficit population (1,000 tonnes) (based on 400 grams cereals/cap/day) | | | | | | 179 | |

## 10 Estimating and forecasting stocks

A detailed analysis of the national food stock position, including the potential for stock draw-down or a need for stock build up, is essential for drawing up the balance sheet. The estimation should include all cereals and, in countries where they form an important part of the diet, roots, tubers and pulses.

*What the CFSAM report might include (in chapter 5)*

Brief description of the various types and locations of food stocks held by government, traders and others, and the policies governing the use of government (reserve) stocks.

Compare the current level of stocks (opening stocks for the FBS) with a normal year. Explain the basis for the estimate. Comment on any uncertainties and give a range of possible figures, where appropriate.

Explain the figure used for the target/planning level of stocks at the end of the coming marketing year (required closing stocks) and any difference from previous years.

### 10.1 Estimating opening stocks

Opening stocks include all food stocks that will be available for domestic utilization as of the first day of the upcoming marketing year but excluding supplies from crops that will be included in the coming year's production estimates, if some are already in store. Opening stocks may include:

- public sector working stocks, buffer stocks, food security reserves (FSR), relief sector stocks;
- private stocks including on-farm and miller/trader stocks;
- stocks of open pollinated cereal varieties for seed use;
- all commercially-imported foods in store, at port or in domestic transit at the beginning of the new year.

All stocks, including flours and meals, are calculated in ***whole grain equivalents*** using domestic extraction rates. Tubers, including cassava and sweet potato, should be in dry-weight equivalents.

Try to break stock information down by sector and commodity type, although data constraints often make this difficult. The main sources for opening stock information are, typically, the grain reserve parastatal agency, early warning system or food information service, and interviews with private traders and farmers.

Note that food aid stocks are *not* included in "opening stocks" but appear in the balance sheet, combined with food aid in the pipeline, as a separate "food aid" item that is discounted, together with expected commercial imports, against the total import requirement.

#### On-farm opening stocks

Good data will rarely be available for on-farm stocks. You may have to arrive at your own estimate as follows:

1. consider the average level of opening stocks recorded for previous years by commodity: this average reflects stock behaviour under "normal" conditions;
2. examine whether "normal" conditions apply, and therefore whether the average should be used or adjusted.

**Panel 10-1**

**Factors influencing normal on-farm opening stock levels**

The average size of on-farm opening stocks will depend on the beginning of the marketing year and when it falls in relation to the harvesting of the main crops, for example:

- in Kenya, farmers may harvest three months into the marketing year - so subsistence and semi-subsistence households may carry-over in excess of three months' consumption supply.
- in Ethiopia low levels of old crop carry-overs will be expected, as part of the new main crop has already been harvested at the beginning of the new marketing year.

In countries with diversified food production, Burundi, Rwanda, Democratic Republic of Congo, for example, early-maturing pulse and vegetable crops may reduce the need for farm carry-over stocks.

Human consumption of green maize may also obviate the need for high carry-over stocks.

A significant increase in on-farm opening stocks could be motivated by expectations or sharp price rises in the coming year (due to poor crop expectations), a bumper crop in the previous year, or marketing problems that restricted sales opportunities. Below-normal farm stocks could be motivated by low price expectations (due to good harvest prospects), a poor crop in the previous year, or factors such as civil strife that can make stock-holding risky.

If any of these factors is suspected, seek corroboration from farm interviews. Ask farmers how much they are holding in relation to previous years and ***why***. Beware of drawing conclusions from a small sample but, if there is clear evidence of higher or lower than expected stock holdings, it may be necessary to adjust the average national on-farm stock estimate up or down.

The probability of ***zero*** on-farm carry-overs at the national level is very low. However, after one or more years of crop failure (due to severe drought or other reasons) in a country where most farmers are subsistence producers, stocks from the last season may have been exhausted, including even seed reserves. Most smallholders would then already be dependent on food aid distributions or on purchasing very small amounts of food on a daily or weekly basis with meagre incomes from casual labour. In such cases, on-farm carry-over stocks at the end of the marketing year may be indeed very low or negligible.

If your opening stock estimate is significantly different from the historical average, explain clearly the reasons behind the deviation in the report.

### Private trade stocks

Where some or all marketing activities of a commodity are performed by the private sector (officially or unofficially), estimates are needed for the stocks held by wholesalers, retailers, millers and large commercial farms. Information on such stocks is generally scarce. Your estimates will generally rely on time-series data extrapolation but you should interview a sample of small-, medium- and large-scale traders, and visit some of their warehouses, if possible, to get an idea of whether current stock holdings are significantly different from what would be normal, and adjust trend estimates accordingly.

Where a trend analysis is not possible, calculate the average for the last few years, excluding freak years, and make adjustments if there was an exceptionally good or poor harvest in the previous year, there are exceptionally good or poor prospects for the current crop, or there have been major changes in government marketing and price policies.

N.B. The likelihood of high private-sector carry-overs is small: prices at the beginning of the new marketing year are likely to fall with the arrival of the new crop and incentives to store from one marketing year to another are therefore weak.

### Public (government) opening stocks

Public opening stocks may include some or all of the following:

- working stocks for supplying the civil service or military;
- buffer stocks for price/supply stabilization interventions;
- a food security reserve (FSR) or strategic grain reserve (SGR) to address unforeseen supply problems; *and*
- working stocks for ongoing food distribution programmes.

Public stock quantities are generally well documented and food parastatals and the aid agencies concerned - including WFP - should have data on stocks but give attention to the following aspects:

- Be sure to get estimates of opening stocks (not just current stocks): ask the relevant officials about their intentions for the interval between the mission's visit and the beginning of the new year, calculate the likely net drawn down (sales less purchases in the interval), and subtract that quantity from the current stock estimate.
- Exclude any supplies from the current crop that might already be in store, to avoid double counting.
- Exclude any stock that is unfit for human consumption unless it will be used as livestock feed in the coming year.

If you suspect that official stock figures may not be accurate, pose a few discrete questions to store keepers and auditors and, for a sample store, try to make a rapid visual assessment of the quantity in stock to see whether it tallies with the official stock records.

### Stocks in port and in transit

Check whether official opening stock figures include stocks in port and in transit or refer only to stocks in government stores. This is particularly important in a country with significant food imports. Commercial sector stocks may also be at port or in transit at the beginning of the marketing year. Include any quantities in port and in transit in your opening stock estimate unless they will be consumed before the beginning of the new marketing year, but be careful to avoid double counting.

To estimate stocks in port and in transit: examine expected time of arrivals (ETAs) and actual delivery data. Consult WFP logistics staff or commercial importers to determine the average lead time between the arrival of shipments in harbour and delivery to their final consumer, including milling time. Include in the opening stock estimate all consignments that are expected to arrive before the start of the new marketing year but not in time to be consumed in the current year.

### Cross-checking total opening stock estimates

When you are satisfied that you have a complete set of opening stock data, calculate the total for each commodity, convert to standard cereal equivalents, if necessary, and insert the overall total in the National Food Balance Sheet (NFBS). Compare this with the previous year's projected closing stock estimate. If there is a significant difference, an adjustment may be needed to the previous year's food-use estimate as food-use is the residual item for previous year's balance. If your opening stock estimate implies a major change in per capita consumption during the previous year, and especially if it is based on questionable assumptions, re-examine your estimate. Total food consumption is less likely to be prone to major inter-annual fluctuations than carry-over stock levels.

## 10.2 Establishing a planning figure for closing stocks

Closing stocks are defined as *all* in-country stocks, except the food aid stocks, on the last day of the marketing year. The methods for forecasting public and private-sector closing stocks for the end of the coming marketing year are very different and you should establish planning figures for them separately.

### Estimating on-farm and private traders' closing stocks

Use the long-term average regressed trend, or the latest information obtained from traders/importers. Include domestic production as an explanatory variable in a country that is not a significant importer.

### Estimating public closing stocks

Establish planning figures separately for:

- Working stocks for ***continuous food interventions***, where relevant (e.g. if the State maintains food supplies for specific groups such as public servants or the military); and
- Reserve stocks for ***occasional*** interventions to protect buyers or sellers against extreme supply and price fluctuations or for emergency interventions.

Carefully assess the government's stated objectives for stock levels. Are they appropriate, from an efficiency perspective? Are they feasible, in terms of the availability of budgetary and hard currency resources?

- ***Working stocks*** should be fairly stable and predictable. Base your estimate on the current (opening) stock level, but make adjustments to take account of any planned changes in the scale of the programmes concerned or operational factors that will influence stock rotation time. Improved internal distribution mechanisms, for example, may speed up stock rotation and reduce the desired level of working stocks.
- In a country where donors provide food assistance to support national ***reserves***, guidelines on closing stock levels will generally have already been agreed upon bilaterally or multilaterally. If so, use those figures. If, however, the government proposes a significant increase in stock levels to be achieved through food assistance, and donors are not in general agreement with the target closing levels, use a conservative estimate based on current stocks. Donors are rarely willing to provide assistance for large stock build ups.

Where the government intervenes heavily in the domestic food market, its objective is likely to be national food supply/price stabilization. The minimum public closing stock level of a food commodity will then be calculated to cover average monthly government sales or ration distributions from the beginning of the coming marketing year until the next main crop reaches the retail market, allowing food imports during that period:

- If the beginning of the marketing year coincides with the retail availability of the main domestic harvest, closing stocks should be kept to a minimum working level as they incur costs and occupy valuable storage space.
- If there is a lag between the beginning of the marketing year and the domestic harvest, the desirable closing stock level will depend on the reliability of imports during the lean season and the variability of crop production.

If ports and internal transport facilities are good, and crop production reasonably reliable (not subject to delays), closing stock calculations should take into account likely monthly imports in the pre-harvest period at the beginning of the next year, based on historical data on the timing and scale of monthly imports, production, and sales. If both imports and domestic production are unreliable, higher levels of lean-season carry-overs will be required to ensure that average sales volumes are met.

# 11 Estimating domestic food utilization requirements

Domestic "utilization" includes human consumption, seed, feed and industrial uses of food commodities, plus post-harvest losses and closing stocks. This chapter discusses the estimation of these elements for the coming marketing year with the exception of closing stocks discussed in section 10.2. The total is crucial for the calculation of total import requirements and of the uncovered food import requirement, if any.

*What the CFSAM report might include (in chapter 5)*

***Food consumption requirements***

Brief explanation of the team's best estimate of per capita consumption and how it compares with estimates in previous years and with that of similar populations in neighbouring countries. Comment on any uncertainties and give a range of possible figures, where appropriate.

***Other uses and post.-harvest losses***

Brief explanations of the team's best estimate of requirements for animal feed, seed and industrial uses, and for post-harvest losses, and how they compare with estimates in previous years. Comment on any uncertainties and give a range of possible figures, where appropriate.

Factors that could positively or negatively affect the estimated requirements or losses.

## 11.1 Estimating food use/consumption requirements

For CFSAM balance sheet purposes, "food use" is the quantity of staple food required for human consumption. The analysis is sometimes limited to cereals but non-cereal staple foods - including roots, tubers and pulses - should be included if they represent important sources of dietary energy in the country.

### Estimating effective demand for staple food

As indicated in section 3.4, the level of effective demand influences private commercial imports and therefore the proportion of the total import requirement that can be expected to be covered by commercial imports, and the residual that will remain uncovered.

***Where elasticity data are available*** from detailed household income and expenditure surveys, households' effective demand for staple foods can be estimated by adjusting the normal apparent per capita consumption rate(s) (SQEs - see section 11.1) for the changes in the ***price*** of food and changes in ***incomes***. This can be done for each main staple separately if data are available for individual staples and for cross-price elasticities between different staples or, more simply, for all staples together. See Panel 11-1 and step 1 in Panel 11-2.

Multiplying by the estimated population gives an estimate for the aggregate effective demand which, if traders' perceptions are similar, would be reflected in changes in private commercial imports, as indicated in section 3.4. Applying that change to the "normal" level of imports and taking account of changes in domestic production, an

estimate can be prepared for the residual, uncovered import requirement, as shown in step 2 in Panel 11-2.

The estimated *changes* in effective demand may also serve to provide an indication of aggregate household food access *shortfall(s)* for households that rely substantially on market purchases for their food. Such an analysis takes into consideration the response of traders as well as consumers and local food producers to food price changes due to a shock. It avoids the biases that may affect estimates obtained using the other methods of estimation and can help to design responses to minimize any negative effects of external assistance on the local economy. Note, however, that shortfalls estimated in this manner are implicitly estimated in relation to pre-crisis consumption (as is the food balance sheet) rather than internationally-accepted nutritional norms.

The key steps, therefore, are:

- Obtain appropriate elasticities or make explicit assumptions based on data for other similar areas/population groups.
- Decide whether to estimate demand for the main staples separately or make a single estimate for all staples combined.
- Estimate per capita and absolute changes in effective demand as indicated in Panel 11-2.
- Compare the results obtained to estimates produced by using other methodologies.

Other methodologies include:

- the partial equilibrium (Zambia) model in ◆ **Technical Note F7**; *and*
- ◆ the *Shock-response spreadsheet model* on the WFP Market and Economic Analysis website.

**Panel 11-1**

**Estimating changes in per capita effective demand for staple food (kg/capita)**

The percentage change (õ) in per capita effective demand for a given staple food (X) is the sum of the percentage changes in X due to the changes in the factors that determine effective demand for that food.

The principal factors that determine effective demand are: real price at the consumer level for that staple food (P) and the real per capita income level (Y). Other factors are the real price of a substitute commodity (S) and income distribution within the population (D).

However, change in income distribution (D) at the national level is expected to be small and a suitable and accurate measure for this factor is not easily available, so a rough estimation of changes in effective demand at the national level can be made while omitting this factor. However, its effects on specific sections of the population and specific regions should be discussed.

Thus, for estimation of *the percentage change in per capita demand for a particular staple food at national-level*:

$$\delta X = (\delta P * \eta_P) + (\delta Y * \eta_Y) + (\delta S * \eta_S) \text{ [equation 1]}$$

where $\delta X$, $\delta P$, $\delta Y$, $\delta S$ and $\delta D$ are the percentage changes in X, P, Y and S, and $\eta_P$, $\eta_Y$, and $\eta_S$ are the demand elasticities of X with respect to P, Y and S, respectively.

For estimation of the *percentage change in per capita demand for staple foods in general* (all staples together), the calculation can be further simplified as follows, omitting S since, in practice, there is no real substitute for aggregate staple foods:

$$\delta X = (\delta P * \eta_P) + (\delta Y * \eta_Y) \text{ [equation 2]}$$

Estimation of demand for specific commodities (major staple foods including cereals and pulses) is important where commodity-specific price changes and the substitution of one for another are significant, especially if the crisis has affected production of various commodities differently due to regional differences in severity of the crisis or different seasonal stages of various crops. If this is not the case, one needs to deal only with the aggregate food demand level.

## Panel 11-2
## Calculating the change in effective staple food demand (tonnes)

There are two steps: (1) calculating the change in *per capita* effective demand; (2) calculating the *absolute value* of the effective, commercial demand.

Data required:

| Data items | Example |
|---|---|
| 1. Normal level of demand for each commodity (SQE) | **150 kg/capita/year** |
| 2. Price elasticity of demand for the major staple food | **-0.2** |
| 3. Income elasticity of demand for the major staple food | **0.5** |
| 4. Expected change in price level of the major staple food for the coming marketing year with the anticipated assistance interventions by the national and international humanitarian community | **10%** |
| 5. Expected change in per capita income for the coming marketing year with the anticipated assistance interventions | **-6%** |
| 6. Expected level of mid-year population for the coming marketing year. | **100 000** |

### *calculating the change in per capita effective demand*

Start with the status-quo estimate (SQE) of per capita consumption based on a 5-year or other appropriate period. The trend in these estimates in the recent past may be due to a trend in the per capita income, so if the consumption figure is adjusted for the income change (growth change) it should not be adjusted for the time trend[13] as well. To reduce the degree of inaccuracy, use the time series of consumption figures

[13] In some cases, when estimating demand for specific commodities, changes in the taste and preferences of the population may be significant and may need to be considered. Time trend may be used as a proxy in such cases.

from the national food balance sheets based on the updated/actual consumption rather than forecasted consumption. This SQE should then be adjusted for the current year that is affected by a specific crisis using formula in equation 2 in Panel 8-7 for each of the major commodities and then sum the result.

| | |
|---|---|
| Percent change in per capita effective staple food demand | = (-0.2 *10%) + (0.5 * -6%) |
| . | = (- 2% - 3%) |
| | = - 5% |
| and expected per capita effective food demand | = 150 kg. * (1 - 0.05) |
| | = 142.5 kg. |

***(2) Calculating the absolute value of the effective, commercial demand***

(This analysis is similar to supply/demand concept explained in Panel 3-2)

| | Example (tonnes) |
|---|---|
| **A.** Total food consumption requirement in a normal year (based on SQE of 150 kg per capita per year) | **15 000** |
| **B.** Total effective/commercial food demand (SQE adjusted for price and income effects; 142.5 kg per capita) | **14 250** |
| **C.** Domestic production | **13 250** |
| **D.** Anticipated commercial imports (demand) = B - C | **1 000** |
| **E.** Total import requirement (commercial plus humanitarian) = A - C | **1 750** |
| **F.** Uncovered food import gap (to be met by external food aid) = E - D | **750** |

The difficult task is determining what to do in a case where there has been significant and persistent food aid consumption. For example, if average consumption through food aid was 5 kg/capita/year and if we assume that, in the absence of food aid, the population would purchase about half of this amount, then we consider this 2.5 kg as a potential commercial demand. The final estimate for the commercial food demand in this example would then be 142.5 + 2.5 = 145 kg/capita/year.

***Where elasticity data are NOT available***

- Look at ***relative changes*** in
  - macro-economic indicators, wage rates, the consumer price index and the price of a basic household food basket compared with historical trends;
  - the condition of various livelihood patterns in key deficit areas;
  - the profile of the buyers in retail markets in the affected area(s), see Panel 11-3; and
  - the extent to which some of these could rely on food from surplus areas (e.g. relatively more than in the past if they are doing well in the current year, or relatively less if they are doing less well than in a past similar year); and thus

- Determine how the crisis has impacted on demand for the various crisis-affected population groups and forecast how that is likely to change in the coming months - the direction and general magnitudes of the expected changes.

This can provide a rough ranking of areas where the market *may* help make up for *some* of the food shortages. The market will not, however, resolve the problem of population groups that lack income.

For specific population groups, this involves forecasting the ***periods*** during which they will purchase staple foods from the market and their ***purchasing power*** at those times, i.e. their access to cash and the prices of staple foods at those points in the future or the terms-of-trade between cash crops or saleable assets (such as livestock) and staple foods.

Note that ***debt repayments*** can absorb much of the income of poor farmers (and other households), reducing effective demand. Furthermore, farmers who have to sell a part of their harvest to meet other obligations and then purchase from the market later in the year can be faced with unaffordable high prices at that time (see Panels 3-2 and 3-3 in section 3.3).

**Panel 11-3**

**Establishing consumer profiles**

- What proportion of the population could be classified as subsistence farmers? What is the degree of dependence on markets by these groups for food and other requirements?
- What is the proportion of food producers and among these, what is the proportion of net buyers?
- What is the proportion of non-producers with complete dependence on markets for food?
- What proportion of their total income do households spend on food?
- What are the major staples and substitutes for different population groups?
- How have household incomes been affected by the crisis (own production, labour income, transfers)?
- Are there recent estimates of price and income elasticities of demand applicable to the areas and populations under consideration?

**Using proxy for staple food consumption during rapid assessment:**

In practice, where no reliable effective demand estimates are available a simple proxy for the per capita food consumption requirement can be the apparent per capita consumption or the ***status-quo*** level of consumption. In this case the (staple food) consumption requirement for the coming year is estimated as follows:

Status-quo estimate (SQE) for staple food consumption per capita × the estimated total population

This assumes that people should eat as much in the coming year as they have in the last few years. (The SQE is *not* based on any normative or recommended *nutritional*

*requirement*: it may or may not meet the average energy intake requirement as established by FAO and WHO.)

- The ***status-quo estimate*** (SQE) is derived from the apparent per capita staple food consumption in recent years, adjusted for special circumstances, if necessary, as described below.
- Prepare status-quo estimates (SQEs) for per capita consumption for each staple food included in the CFSAM analysis and balance sheet, and then an aggregate (or total) SQE for all staple foods expressed in terms of cereal equivalent or total energy content.
- ***Population*** is estimated at the mid-point of the coming marketing year allowing for population changes from previous years - see section 6.2.

The reasoning behind the choice of *status quo* as a benchmark for the preparation of national food balance sheets is as follows: In countries where CFSAMs take place, average incomes are low and food consumption represents an important share of household budgets. The income elasticity of demand is less than one but always substantial and positive; people, therefore, consume as much of basic foods as circumstances allow. This is why total food consumption actually increases in good years and tends to decrease in bad years. Taking an average over a few years, excluding exceptionally good and bad years, is an approximation for a "normal" year.

### Deriving "Status Quo Estimates" for food consumption

There are 4 steps:

- Calculate the ***apparent per capita staple food consumption*** for each staple food included in the CFSAM analysis and balance sheet from: (i) total apparent consumption data from each of the last 5 years; and (ii) population data from the same years. Use the *ex-post* national food balance sheet (NFBS) data in FAOSTAT[14] as a starting point but cross-check against other data available in country. Remember that, in *ex-post* NFBS, aggregate food consumption is calculated as the residual of food availability once all non-food uses have been accounted for. Look out for any revisions that may not yet have been incorporated in FAOSTAT, especially in the figures for population, production and post-harvest loss coefficients. Also consider whether the past data for cross-border trade (especially unregistered imports and exports) are reliable. Do *not* use the estimates (forecasts) of food consumption in the balance sheets drawn up by previous CFSAMs.
- Determine whether the last few years have been ***exceptional*** in any way or there has been a distinct ***trend*** in apparent consumption figures that might make it inappropriate to use the average apparent per capita consumption over the last 5 years - see Panel 11-4. If so, look further back in time to identify "normal" levels of food consumption and establish an ***adjusted*** SQE planning figure based on analysis of available data (and provide an explanation in the CFSAM report).

[14] FAOSTAT provides FBS data for nearly 200 countries since 1990. The data are based on national statistics and cross-checked with other sources (such as trade partners, FAO field experts, and others). FBS from 1961 are also available on-line for many countries.

- Allow for ***cross-substitutions*** between foods if there is evidence that consumers faced with higher prices for preferred staples are shifting to some extent to less preferred, cheaper staples. Use data from household income/expenditure studies, where available. If little information is available for the populations of concern, use data for similar communities in neighbouring countries. In all cases, make estimates using a range of values and a conduct sensitivity analysis. For more guidance, see:
  - the partial equilibrium (Zambia) model in **Technical Note F7**; *and*
  - the *Shock-response spreadsheet model* on the WFP Market and Economic Analysis website.

  Note that demand elasticity varies with income and is different for different foods. A single, average figure for the elasticity of demand for staples (as available in the FAO/GIEWS database *…URL…?*) can be used to obtain a rough aggregate estimate of demand. (It will not be sufficient to inform the household-level food security analysis, however.)
- Calculate the ***aggregate (or total) SQE*** of all staple foods (expressed in terms of cereal equivalent or total energy content) and check that it is consistent with historic levels or trends. If it is significantly higher or lower, there may be errors in the estimated SQEs for individual items which need to be re-examined and, if necessary, adjusted. Alternatively, there may be an underlying trend in total staple food consumption that should indeed be reflected in the total current year SQE estimate. If so, this should be clearly explained in the report.

**Panel 11-4**

**Circumstances in which a 5-year average for apparent consumption may not be appropriate**

- When the apparent per capita food consumption (i.e. SQE) is found to be higher than the international norm of 2100 kcal multiplied by the normal cereal proportion in the diet (in caloric terms), then the cereal requirements for human consumption are calculated using this norm. This is done to avoid overestimation of the total food requirement and thereby the overestimation of food aid on a per capita basis.

- **When there has been a distinct upward or downward trend**

If the country has been undergoing an upward or downward trend in food consumption during recent years, you must decide whether the projected food use for the coming year should be based on the ***average*** food use of recent years or the ***trend*** of food consumption during recent years.

If a trend value is used, explain the reason in your report. Underlying consumption trends may be driven by: shifts in relative price as a result of underlying changes in production (adoption of new production technologies, for example), shifts in relative prices as a result of domestic policy changes (price de-control, import policy), macroeconomic changes, underlying shifts in demand (tastes, average income, demography) and changes in levels of donor food assistance.

A careful analysis of trends will help to ensure that food assistance in the coming year does not distort the commodity composition of domestic markets or long-term economic adjustment processes.

- **When the last few years have been exceptional in terms of food consumption**

If a country has undergone a ***protracted crisis*** such as a long drought and for most of that period has received insufficient external food assistance, the 5-year average will not be representative of - it will be lower than - the historical, pre-crisis level of consumption.

On the other hand (and less commonly), if a country has been enjoying an ***exceptionally good food situation for a few years***, possibly including extensive public subsidies during an (ultimately non-sustainable) fiscal bonanza, the latest 5-year average may be unsustainably high, well above the historical long-term average. (The same might conceivably be the case if a country accustomed to lower levels of consumption had received substantial food aid inputs in recent years based on recommended energy requirements rather than SQE.)

In case of an ***exceptional decline*** of an important ***non-cereal energy food*** commodity which is not widely traded on the world market or provided as food assistance (e.g. cassava), it may be necessary to convert the net dry-weight shortfall into its cereal equivalent and to add it to the SQE estimate for the main staple cereal as "commodity cross substitution" (CCS). In this case, cereal imports would be expected to cover an exceptional shortfall in non-cereal production. If this procedure would result in a sizable increase in import requirements for a particular cereal commodity in relation to total food consumption, it could distort domestic food markets and (in the long run) dietary preferences. It should therefore be used sparingly and only after consultation with the GIEWS country officer.

See **Technical Note F8** for details

Once a full set of SQEs are available for individual cereals, cross-checked, and adjusted to reflect CCS, the aggregate SQE is multiplied by the mid-new year population estimate to give the national food-use estimate for the forthcoming year.

## 11.2 Estimating seed use requirements

For the purposes of a CFSAM, the analysis of seed use should be restricted to ***domestically-produced seeds for food crops*** to be planted during cropping seasons that fall within the current marketing year. Ensure that all imported food-crop seeds are excluded from the food import estimates. If domestic hybrid or composite production for seed is included in the domestic cereals production estimates it should also be included in the seed use estimates. Conversely, if production for seed is *not* included in the total grain production estimates, nor should it be included in the seed use estimates. In many developing countries, open-pollinated seeds are used from on-farm production. Hence, seed and food uses are directly substitutable. All such seed use should be included in the estimate.

To estimate total seed use of a particular commodity, use time series data to make an approximate forecast of planted area for all relevant crops which are likely to be planted from seed stocks or production available in the new year. This will include all plantings which fall within the new year, excluding the current crop. From farm interviews and discussions with the staff of MoA, estimate average per hectare seeding rates by commodity, crop season and sector. Cross-check the figures against the estimated seed use in FAO Food Balance Sheets for previous years. Adjust seed rates for potential replantings. Multiply average seeding rates by area forecasts to give a total seed use estimate for each crop and sector. Subtract commercially produced or imported seeds from the total, if they have already been excluded from the crop production and trade data.

In cases of an ***exceptionally poor current crop***, the supply of seed for the next crop may be threatened, particularly if the country's capacity for seed imports is constrained. This would apply in countries where local varieties are predominant in rain-fed agriculture, where hybrid seed production is rain-fed, or where domestic seed production has been influenced by some non-weather-related factor. If you perceive that such a situation may arise, be sure to mention it either in the report or during the de-briefings.

## 11.3 Estimating feed use requirements

Feed use comprises all the consumption of domestic and imported grains in the livestock sector. Include all whole-grain uses and milling residues in the estimation but *not* crop residues. If you intend to estimate non-cereals utilization, the analysis of feed use should also include non-cereal staples.

The approach to estimate feed use requirements will largely depend on the availability of data:

- Where data are available on ***in-country production for feed*** - if, for example, certain crop varieties are cultivated only for feed - use it.
- Data on ***imported feedstuffs*** may be more readily accessible, at least for past years, when certain commodities or grain qualities are imported exclusively for the feed sector.
- Where there is a significant commercial livestock sector, collect data on annual throughput from the main ***feed suppliers and mills***.
- The series of *ex-post* ***NFBS*** (in country or at FAOSTAT) provide information on historic levels of reported feed use at the national level, albeit approximate.

Take account also of the trend in livestock numbers - the most up-to-date estimates and trends for national large and small ruminant herds, swine, poultry, etc..

In countries with a ***commercial farming or livestock sector***, the proportion of a ***food crop*** used as feed may be modelled as a function of the relative prices of the food crop and livestock. If good price series are available, as well as a series conveying the physical proportion of the relevant crop product used as feed, a regression may be specified, for example one of the following form:

$$\pi_F = b_0 + b_1[log(p_L)] + b_1[log(p_C)]$$

where $\pi_F$ is the proportion of the crop's supply used as animal feed (taken from previous ex post NFBS available in country or from FAOSTAT), $p_L$ is the price of the relevant livestock or livestock product, and $p_C$ the price of the relevant crop. Historical series of crop and livestock prices may be available in the country. The estimated value of $\pi_F$ along with reasonable estimates of the price of crops and livestock at the time of the mission may be used to predict the proportion of the relevant crop's use for feed purposes in the commercial livestock sector.

***Milling residues*** are often used in the feed sector. It is therefore necessary to make a rough calculation of the annual milling throughput, the extraction rate (available from FBSP) and the proportion of residues that are sold for feed. All milling residues that are *not* sold for feed should be included in the "losses" element of the NFBS.

Remember that a significant change in ***pasture, browse*** or ***fodder availability*** (for example, as a result of drought or exceptional rainfall) may lead livestock farmers to increase or decrease feed use. However, unless good quality supporting data are available, you may be forced to depend on average or trend-adjusted estimates.

## 11.4 Estimating post-harvest losses

For CFSAM purpose, post-harvest losses (PHL) include all losses that occur after harvesting, including threshing and storage losses. Data are usually scarce, however, and estimates of post-harvest losses to the domestic crop are usually based on a ***certain percentage*** of annual supplies (including those of carry-over stocks).

Nevertheless, try to discuss the subject with national post-harvest/storage specialists, look at the quality of public and private trade storage conditions, where possible, and try to determine whether anything has changed that would necessitate an adjustment to the previously-used PHL rate.

Exceptional ***changes to the PHL rate*** may result from:

- the introduction or eradication of a virulent storage pest;
- one-off changes in supplies of storage pesticides;
- major changes in storage and marketing policy, opening or closure of government stores; *or*
- heavy post-harvest rainfall in a country where uncovered storage is practised or a substantial proportion of the crop is left in stacks in the field.

Note that:

- In countries with limited storage capacity or highly variable domestic prices (typically land-locked countries with largely tropical rain-fed agriculture) storage losses of domestic produce may not be linearly related to the ***size of the harvest***. A poor crop, implying higher prices, will act as an incentive for better storage and handling practices. Conversely, a bumper crop and low price expectations may reduce the returns on good storage management. In some countries, there is a physical capacity limit to covered stores and silos, and crops in excess of this limit may therefore be subject to open storage and higher than usual marginal loss rates. Adjustments may accordingly be made to the PHL rate used.

- Post-harvest losses also vary according to season reflecting the ***crops grown***, the amount to be stored, and duration of storage as well as storage conditions. Basically, the smaller the grain the lower the loss, so *teff* (in Ethiopia) or *fonio* (in Mali) is estimated to have a mean loss of <3 percent per year whereas maize is expected to have a mean loss of 20 percent per year in the same countries. Consequently, grain losses in any one year vary according to the proportion of crops grown *viz;* the significant fluctuations in teff/maize planting ratios in Ethiopia depending on early season rainfall.

Note that high loss rates can be expected for emergency food assistance as ***emergency programmes*** often operate under severe logistic constraints. Losses in food aid quantities should be used to adjust the food aid stocks on hand in the balance sheet. Misappropriated as distinct from damaged stock should *not* be included in the loss estimate because the food remains "available" in the country.

**Panel 11-5**

**Calculating losses to imported foods**

To calculate losses to imported foods:

1. Agree on a plausible average annual loss rate (Z) with traders, relief agencies and other importers; divide this by 12 for the monthly loss rate.
2. Calculate the average time that imports are likely to be in-country (T).
3. Calculate Z/12 x T x M as the total annual losses to the expected current year quantity of imported food (M).

## 11.5 Estimating requirements for industrial use

Industrial use of food crops generally refers to non-food uses, such as biofuels, industrial starch, medicines, etc. Use of grain for brewing purposes (i.e. making beer) involves an industrial process but the end product is used for human consumption and provides calories. Hence it is not considered as "industrial"use.

# 12 Forecasting external commercial trade

*What the CFSAM report might include (in chapter 5)*

Brief explanations of: (i) the team's estimate for effective demand (at present and during the coming year); (ii) traders' intentions in relation to imports and exports, and any uncertainties that are influencing their decisions; and (iii) the team's estimates for registered public and private commercial imports and exports, and unregistered cross-border imports and exports in the coming year.

How those figures compare with previous years. Factors that could positively or negatively affect the estimates. Give a range of possible figures, where appropriate.

The focus is on ***cereals***, as they are the most commonly traded food commodities. You may also consider trade in non-cereal staple food commodities, where they represent a significant proportion of the national diet, a significant income source for households or an important foreign currency source for the government.

For the purposes of a CFSAM, commercial food imports are imports that are purchased and brought into the country by the State or private traders, and destined to be used within the country. Some, but not necessarily all, will be destined for normal commercial sale. Some may be sold at partially or totally subsidized prices representing a form of assistance to domestic vulnerable groups. The subsidies, which may be funded from domestic or foreign resources, may go directly to consumers or to processing industries, or take other forms. Some food brought into the country as commercial imports may be used as food aid to households. For example, the government may import food commercially and then distribute it to schools or make it available to poor or vulnerable households free or at a subsidized price.

Food aid from international donors is *not* included in commercial imports but counted separately.

## 12.1 Influences on external trade

Commercial imports, public or private, may be bought with ***foreign exchange*** available to the government (central bank) or private traders, or accessed through loans from foreign creditors. ***Loans*** may include commercial loans from foreign banks or exporters, or loans from donors or international financial institutions.

***Private-sector*** imports (and exports) are influenced by trade policies and changes in trade policies, taxes and regulations, and traders' perceptions of effective demand, their commercial interests and the risks involved all influence.

There are important interactions between private-sector commercial imports, government (public-sector) policies and imports, and food aid imports, as outlined in section 3.6. You must understand and describe these inter-relationships in order to be able to make reasonable estimates and appropriate recommendations.

**Panel 12-1**

**Import capacities**

Import capacity measures the quantity of basic foodstuffs that the government and the private sector is able to purchase from abroad during the coming year.

***Government import capacity*** depends on the total budgetary resources available and the government's budgetary priorities (hence the resources earmarked for the public procurement of food, notably imported food). These priorities can be a source of controversy, particularly with certain donors, who may feel that the government is not making sufficient efforts to feed its people.

Budgetary priorities also affect the possibilities that the government gives to the private sector to procure foreign exchange to finance private sector imports.

***Private sector import capacity*** depends on government policies, traders' perceptions of effective demand, their financing capacity (access to foreign exchange and financial reserves or credit), the opportunities to barter (e.g. obtain cereals in exchange for livestock), and their perceptions of the risks involved (which includes their confidence in the behaviour of the government and food-importing aid agencies).

Even if foreign exchange is plentiful, it will not be used for private sector imports if traders are unsure of the effective demand, are unable to finance themselves, or consider the risks too important.

## 12.2 Compiling data on registered external trade

Before estimating imports and exports for the current year, ensure that you have: (i) a full set of past -year import data by commodity type; (ii) existing new-year import forecasts; and (iii) historical series of past imports also disaggregated by commodity, whenever possible.

Data on flour trade should be included as whole-grain equivalent, using domestic extraction rates. Seed imports should *not* be included.

Data on ***historic*** recorded international cereal trade are available from FAO/Rome, and the WFP country office may have data on shipments in the current marketing year. FAO may also provide current monthly data on international cereal flows by country of origin and destination. The FAO/GIEWS country officer includes available data in the briefing pack for the CFSAM team. The Ministry of Commerce or CSO may hold data on previous years' trade.

Data on ***intended government imports and exports*** for the new marketing year may be available from the Ministry of Finance/Treasury (food imports may be specified in the breakdown of the budget). If grain parastatals control external trade, they should provide a useful source, as well as the Early Warning and Food Information System (where appropriate).

There are numerous data sources for ***current-year commercial imports*** but the data may not be complete or reliable:

- If the country has already commenced its new marketing year, you can obtain data on arrivals and expected time of arrival (ETAs) from customs and excise offices, WFP, the grain parastatal and possibly the Ministry of Trade/ Commerce. Data on formal exports may be available from the same with the exception of WFP.
- If the country is heavily dependent on trade, the team would be well advised to visit the main ports or border trading posts to talk with officials and traders there.
- In all cases, check the FAO database of cereal dispatches by country of origin and destination to arrive at reasonable estimates about the most recent flows of commercial trade and a more reliable projection of commercial flows during the coming marketing year. (The FAO database usually includes data with only one or two months delay.)

The food trade has been totally or partially liberalized in many of the countries in which CFSAMs are likely to be conducted. There are only a few where the State still retains a monopoly or near monopoly of cereal trade. However, even in liberalized trade countries ***cereal boards*** may still regulate trade to some extent and in some cases authorize imports, while also keeping records of the amounts traded.

## 12.3 Forecasting private-sector trade

The international grain trade is a volatile business and forecasting is difficult, especially in data-scarce countries. Preparing estimates for projected private commercial imports and exports is one of the greatest challenges the CFSAM team will face. There is no ideal method. You will have to make a judgment based on:

- analysis of ***trends*** and how trade changed during previous crises;
- estimates of ***effective demand*** for staple foods, when possible - see section 8.3;
- examination of macro-economic and other likely ***influences*** on traders' decisions (see Panel 12-2); and
- ***interviews*** with a sample of the main traders to learn about their perspectives and intentions.

See section 8.5.

**Panel 12-2**

**Factors that influence private commercial trade especially imports**

***Prices and perceptions of effective demand***

- the difference between import parity prices and wholesale prices within the country (in areas close to points of entry for imports) - see *Import-parity price tool* on the WFP Market and Economic Analysis website.
- domestic wholesale/retail price expectations - perceptions of domestic supply and demand prospects. Note that high price uncertainty may act as a disincentive to importers; government storage, marketing, pricing or trade policy may increase or decrease this uncertainty.

***Macro-economic factors*** likely to influence private commercial trade are:

- *exchange rates*: note that in countries with fixed exchange rates, it is important to consider both the price and the availability of foreign exchange through formal channels. In those countries foreign currency may often be rationed, especially when official rates differ from parallel (and often illegal) free market rates used for un-recorded transactions;
- *domestic interest rates*: as most grain trade is on credit, high interest rates will act as a disincentive;
- *inflation rates*: high/variable inflation increases the uncertainty over real returns to trade.

***Market factors*** that may influence traders' decisions include:

- border or world market commodity prices, tariff levels, taxation;
- storage costs: high domestic storage costs act as an incentive to export now rather than store for domestic sale at a later date; low costs encourage more storage and may therefore discourage imports later in the marketing year.

***Institutional*** variables which should be considered include:

- physical private sector storage and transport capacity - there are considerable economies of scale in international grain trading hence capacity constraints may make trade unprofitable;
- banking confidence and credit guarantee problems - importers may have difficulties raising letters of credit in the exporting country, because of domestic financial insecurity;
- domestic quality or quantity controls for imported goods, or in countries to which grain is exported;
- uncertainty as to public-sector intentions regarding commercial food imports and appeals for food aid, which would affect the market for private commercial imports.

You may estimate changes in effective demand for staple foods individually or as a whole as described in section 8.3, depending on the availability of data on elasticities.

You may also use a partial-equilibrium demand model to anticipate how prices might move, build scenarios for prices and commercial imports, estimate the likely volume of private commercial imports and make rough estimates for the maximum quantities of food aid that can be imported without unduly disturbing the market. See Panel 12-3. A model developed in Zambia by Michigan State University and the World Bank in collaboration with WFP is available in **Technical Note F7**.

In addition to the government and WFP country office, the agricultural attaché at the USA embassy and the EC delegation may be useful sources of information on external trade.

Occasionally, traders will have already made initial decisions at the time of the mission and may be able to provide details of planned new-year exports, imports and ETAs. This information will provide you with a minimum bench-mark below which private trade is unlikely to fall. Cross-check such information against what you learn from the trend analysis and other key informants. Interviews with traders will also help to determine which factors will be important in determining final private trade decisions.

Look closely at the time series data to identify ***trends***, identify any unusual changes and try to find out what the causes might have been, and look specifically at previous crisis years to see how registered import and export flows reacted. Trend or average values are only likely to be good estimates when inter-annual variability is low, which is unlikely. The results should not be used in isolation, however. Several micro- and macro-variables that can not be modelled explicitly without extensive data and time-consuming analysis should also be considered. You will have to use judgment in assessing the quantitative influence of these variables.

**Panel 12-3**

**Using a partial equilibrium demand model**

A spreadsheet can be used to analyse how the volumes of commercial imports may change in response to changes in prices due to a shock provided, the following are available:

- baseline data on production, imports and prices including import-parity prices; *and*
- an estimate of average demand elasticities for the main staple and cross-price substitutions for the main substitute (to get a single, rough estimate of import levels) or, better, estimates of the elasticities for different population groups and the breakdown of population numbers and consumption levels among those groups (to produce a more accurate estimate of the consumption shortfall by household group).

Where figures for demand elasticity are not known:

- use figures for similar populations in a neighbouring country, if available;
- assume figures in the range -0.3 to -0.5 and include a sensitivity analysis.

The projections for private commercial imports must be cross-checked against:

- levels of imports in previous crisis years compared with the trend in imports at the time; *and*
- the factors (other than traders' perceptions of effective demand) that could limit such imports - government trade policies and regulations, and the availability to traders of credit and foreign exchange, or possibilities for barter with overseas suppliers.

The model included in **Technical Note F7** was developed in Zambia and is designed for situations in which there is one predominant staple (maize in the case of Zambia) and one principal substitute (cassava in Zambia). Its use in countries where there is a greater variety of staples is yet to be demonstrated. It has been used (in Zambia) in the context of production shortfalls (and bumper crops) but can also be used to develop scenarios and estimates in case of sharp reductions in incomes and purchasing power.

## 12.4 Estimating unregistered cross-border trade

Unregistered cross-border trade (UCBT) includes all staple food cross-border flows that are not officially documented by the government. They may be illegal or simply unregistered. Such trade flows are a common feature of countries with high tariff rates,

price or movement controls, or extensive un-monitored borders. They are notoriously difficult to estimate and volumes are likely to be highly seasonal. Rough orders of magnitude of UCBT can be understood from previous CFSAM reports, key informant opinions and, occasionally, local estimates. In some parts of Africa (e.g. eastern and southern Africa), WFP is now monitoring UCBT on a sample basis in order to produce rough estimates.

- If estimates exist, scrutinize them as all other secondary data and, on that basis, make the best estimate (forecast) you can of the likely level of UCBT for the whole country for the coming year.
- If no estimates are available, you can get a rough idea of the magnitudes by visiting a sample of border crossings, noting the number and tonnage of trucks carrying cereals and, tactfully, interviewing traders in the main receiving markets. If harvesting has already commenced in the supplying country, trade may already be in evidence but no strong conclusions should be drawn from observations during a short sample period.
- In all cases, try to get - and then take account of - information about supply and demand conditions in the neighbouring countries. (The FAO/GIEWS country officer may be able to provide current year forecasts of cereal deficits or surpluses, recent harvests and crop prospects in neighbouring countries which will be useful for verifying UCBT estimates.)

Supply and demand conditions on both sides of the border together with the ***exchange rate*** and government policies, ***controls*** and enforcement are the key determinants of the level of UCBT. See Panel 12-4.

Calculate the difference between the ***prices*** in markets on both sides of the border in a common currency, and the cost of transporting a ton of grain from the surplus market in one country to the deficit market in the other. This, together with exchange rate movements, knowledge of the likely effects of any recent ***policy changes***, and information from key informants, may give a useful indication of likely UCBT in coming months. If the price differential per ton significantly exceeds the transport cost, there may be an incentive for trade. This is particularly likely when urban markets in one country are farther from the main growing areas than urban markets in the other country. If a significant change in transport costs or the cross-border/domestic market price differential is identified, the team should adjust the historic UCBT estimate accordingly when making the forecast for the forthcoming year.

Estimates of UCBT (exports and imports) should be included in the estimates of total commercial exports and imports by commodity. As with all estimates, the reasoning and assumptions behind the UCBT forecasts should be clearly explained in your report.

**Panel 12-4**

**Influences on unregistered cross-border trade (UCBT)**

UCBT thrives on border and internal movement controls, and may also be influenced by pricing policies:

- High levels of producer price support, for example, may encourage unscrupulous traders to try to sell illegally imported food on the domestic market.

- Internal movement controls may provide an incentive for UCBT by distorting market prices.
- Sales taxes or stringent quality controls can also boost UCBT.
- Changes in exchange rate policy and in exchange rates on the parallel (illegal) currency market, will have a significant influence on incentives, and hence on cross-border trade.

## 12.5 Forecasting public-sector trade (exports and imports)

For CFSAM purposes, public sector trade comprises all grain imports and exports for which the government decides on the quantities traded. This includes the operations of government-run import-export enterprises (which still exist in some poor countries) and trade which the government controls either by sub-contracting to the private sector on the basis of tenders or by issuing export/import permits to the private sector for each operation (which is more common).

### Public Sector Exports

Where the government is responsible for grain exports (directly, through grain parastatals, or by subcontracts to the private sector). Use the ***government's planned figure*** for total annual exports if this has already been decided. If the planned exports exceed the mission's estimate for the national surplus, seek advice from the GIEWS country officer in Rome. Sometimes, the government will have a specific method for planning exports. If possible, apply the same method to calculate the new-year exports, if sufficient data exist, and discuss findings with relevant officials.

If you are making forecasts of both public and private sector exports, parameters will have to be restricted to ensure that, together, they do not exceed the total exportable volume.

Adjust export forecasts to reflect any non-production factors that may affect inter-annual export levels, for example: border price expectation, domestic demand conditions and exchange rates and, perhaps most importantly, government closing-stock policy.

### Public Sector Imports

When estimating public sector food imports (PSFI) for the new year, be careful to distinguish between "planned" and "actual" (average or usual) imports.

- If the government has already ***budgeted*** for a certain quantity of imports, ascertain the total planned quantities by commodity. If this exceeds the estimated total food import requirement net of private sector imports and cross-border trade, inform the FAO/GIEWS country officer. In general, the planned imports should be entered into the NFBS and the closing stock figure be re-calculated as the balancing element.
- If ***no planning figures*** are available, calculate (for a food-assistance-recipient country) public sector imports on the basis of the Usual Marketing Requirement (UMR).

The UMR is the quantity of food that a country can be expected to import without placing excessive burdens on foreign currency reserves and the government budget. The guideline for calculating UMRs is provided in **Technical Note F5**. You may have to arrive at a *provisional* estimate for the current year UMR. Ultimately, however, UMRs are decided in the context of negotiations (usually held in Washington) on the food assistance plans of the major exporting countries.

Examine carefully whether planned imports are significantly higher or lower than the agreed UMR or, if the donors' negotiations have yet to take place, the team's provisional estimate:

- If the planned PSFI level ***exceeds*** the estimated UMR, this may indicate that food imports will place a strain on domestic foreign exchange reserves or the government budget.
- If planned PSFIs are ***not sufficient*** to cover the total import requirement (net of private sector imports and unregistered cross-border trade) and they are below the UMR, the implication, from the donors' perspective, is that the government should import more commercially. (Donor food assistance allocations are generally based on the principle of *additionality*: if the total import requirement for a commodity exceeds the UMR, the difference may be covered by food assistance. But, as food assistance is a scarce resource, allocations among countries should be according to need - i.e. with priority to those that are least able to pay for commercial imports.)

The starting point for calculating the new year UMR for a food commodity (which we will call UMR1) is the average level of food imports for the previous five years, excluding freak high and low years (UMR5). However, the UMR1 should take fluctuations in national income and foreign exchange earnings as well as government budgetary constraints into account. If food imports represent a significant part of total imports, a sharp drop in GDP, caused, for example, by a major decline in export earnings, may imply that the economy can afford only a smaller quantity of commercial food imports than normal. Should this situation arise, take this into account when establishing the estimate for UMR1".

Ascertain whether the government can afford to finance the UMR:

- If the government budget has already been prepared, find out what allocation (E) has been agreed upon for PSFI expenditures.
- If budgetary allocations have not yet been made, you will have to estimate E taking account of the factors listed in Panel 12-5. Try to arrive at an agreed figure in discussions with relevant officials - typically Ministry of Finance and the Central Bank - and the IMF and World Bank delegations. (There are too many unknowns in the new year to be able to estimate E with any accuracy, especially when an unspecified part of the budget is allocated to subsidization of food imports.)
- Then calculate the total cost of public commercial food imports and assess the adequacy of budget allocations as shown in Panel 12-6.

## Panel 12-5

### Factors likely to influence government budget allocations for food imports

Budget allocations are likely to be influenced by:

- the size of the food deficit;
- major changes in other types of government spending: a rapid increase in military expenditure, for example, may lead to belt-tightening in other sectors;
- political pressures: the fear of large and politically vocal urban populations may encourage governments to import food;
- changes in government revenues: changes in tax levels, or in revenues from sales, income or trade taxes;
- general budget cuts: if the government is seeking to cut its budget deficit or for any other reason is following a tight fiscal policy (under pressure from the IMF to control spending, for example); *and*
- exchange rate uncertainties: with a floating exchange rate, a large increase in public sector imports could lead to a depreciation of the currency, crowding out private-sector imports.

## Panel 12-6

### How to calculate the total cost of public commercial food imports and assess the adequacy of budget allocations

Once a figure for E has been arrived at, the total cost of food imports (C) is calculated as follows:

$$C = M^* [ (Pw - Pd) + (S + H) ]$$

where M* is the maximum quantity of imports which will not overshoot the budget. Pw the border price at which imports are purchased in local currency terms, Pd the average domestic sales price, S the domestic storage costs and H the total domestic handling and marketing costs per ton (if these are not budgeted separately). If the budget is fully utilized, the total import costs C are equal to the total budget (E), therefore:

$$M^* = E / [ (Pw-Pd) + (S + H) ]$$

If $M^* < UMR5$ it will mean that the budget will have to be increased to finance the imports. If E is already regarded as the maximum that the government can allocate to food imports, there may be an argument for calculating $UMR1 = M^*$. If $M^* \geq UMR5$ then budgetary constraints should not be regarded as a limiting factor in calculating UMR1. Note that if the domestic price exceeds the marginal cost of importing, storing and marketing the food, the government makes a profit - and food purchase will not be limited by budgetary considerations.

In a country with an over-valued exchange rate or very low export earnings, foreign currency may be rationed and ***foreign exchange*** (FX) availability a major constraint on commercial food import capacity. If there has been a major change in FX availability, as a result of a fall in the world price of a major export commodity, for example, you should confirm that FX allocations for food imports are sufficient to cover the UMR or planned level. The Central Bank or Ministry of Finance/Treasury will usually be able to provide information on FX allocations.

# Part V
## Assessing Household Food Security and Emergency Needs

# 13 Assessing and analysing current and expected household food security and needs

This chapter outlines how a CFSAM team might go about analysing household food security among populations in the affected areas and any ongoing programmes of assistance.

*CFSAM teams are advised to refer to the WFP needs assessment website for the latest WFP guidance in relation to assessing household food security.*

*What the CFSAM report might include (in chapter 6 introduction)*

*Overview*: Short introductory paragraph explaining the main factors determining the food security of households in different population groups and the principal livelihood activities (and normal coping strategies) that have, and have not, been affected.

The types, levels and targeting of ongoing food-security assistance.

Explanation of the approach and method(s) used to assess household food access, and the sources of data on nutritional status and health.

## 13.1 Tasks in relation to household food security

The challenge is to generate the best possible ***understanding*** of the elements listed in Panel 13-1 and ***quantified estimates for*** the numbers of people that will require assistance and the levels of assistance needed. Assistance requirements should be expressed in terms of the ***months*** during which the different groups will need assistance and the ***proportion of their consumption requirements*** that should be covered during those months.

N.B. The household food security analysis will provide estimates for "assistance" requirements. The response options analysis described in chapter 15 will determine whether that assistance should be provided in the form of food aid, cash and/or other non-food transfers taking account of the findings of the household analysis *plus* the market analysis, the food balance sheet and other factors.

**Panel 13-1**
**What the household food security analysis is required to produce**

| What must be understood and estimated | How the information will be used |
|---|---|
| • The ***numbers*** and ***characteristics*** of people and households that will be food insecure - will be unable to access adequate food without adopting damaging coping strategies - in different areas/zones; *and* | To determine the number of people/ households that will need assistance.<br>To establish profiles for those people/ households as a basis for selection and targeting assistance. |

| | |
|---|---|
| • The ***nature***, ***causes*** and ***severity*** of food insecurity in different population groups including the periods during which particular types of people/ households will be unable to access adequate food during the coming 12 months as a result of the crisis and the levels of assistance they will require. | To determine the type(s) of assistance - food and/or non-food - that could be appropriate depending on the causes of food insecurity and whether it is transitory or chronic.<br>To define the quantities of assistance that different population groups might need during specific periods. |
| • The prevalence of ***malnutrition*** (acute malnutrition and micronutrient deficiencies) in different areas and among different population groups, the causes of that malnutrition, and the implications for humanitarian response. | To identify any specific nutritional problems within particular population groups and determine the implications (if any) for food-security-assistance programmes, and what other kinds of intervention might be needed. |
| • The appropriateness and effectiveness of current and planned food-security-related assistance ***programmes*** and ***other options*** for providing and targeting assistance to those who will need it. | To make recommendations concerning the continuation or adaptation of existing or planned food-security assistance programmes or the planning and implementation of new types of programme [to be determined in the response options analysis described in chapter 15]. |

This will be done on the basis of a careful, critical review of the reports of recent food security assessments and nutritional surveys, programme monitoring and evaluation reports, and other secondary data including pre-crisis (baseline) data, together with observations and findings during field visits and discussions with key informants at all levels.

Your enquiries and visits are intended to cross-check and complement existing data. Your report is expected to present your independent analysis of all the data available to you and the conclusions and recommendations you draw from them at the end of the mission. Where necessary, one recommendation may be for a follow-up, detailed household food security assessment. CFSAM teams are not expected - and do not have the time or resources - to conduct thorough, independent, household food security field assessments/surveys of their own.

The specific tasks are summarized in Panel 13-2.

**Panel 13-2**
**Tasks in relation to household food security (and links to the CFSAM report)**

| Principal tasks | Report chapters |
|---|---|
| ***During the first few days in the capital*** | 6 Household food security |
| • Critically review the methods, findings and conclusions of all recent household-level assessments that are available. | |
| • Triangulate the information available from different sources to identify convergence and any inconsistencies or gaps.<br>(Include all available household food security and nutritional status data, and data concerning agricultural production and markets.) | |
| Review the reports of and plans for food-security-assistance programmes of the government and all concerned agencies. | |
| • Finalize data collection instruments and the selection of zones for field visits, and train sub-team members. | |
| ***During field visits*** | |
| • Gather data on the selected indicators from key informants and households at purposively selected sites in each zone. | |
| ***During final analysis*** | |
| • Triangulate all data to draw conclusions concerning the situation and food security assistance needs of different population groups in different zones (and specify any remaining information gaps).<br>(Include: the present nature and distribution of food insecurity and how the situation is expected to evolve; expected household food access shortfalls; the periods during the coming 12 months when specific population groups will need assistance, their numbers, and the levels of assistance required.) | |
| • Analyse information on the nature, causes, severity and distribution of mortality and malnutrition, and the implications for food security assistance and special nutritional support. | |
| • Estimate aggregate needs for food-security-related assistance in the coming 12 months. | |
| • Analyse the appropriateness of ongoing food-security-related assistance programmes and targeting arrangements for the coming 12 months. | 7 Response options |

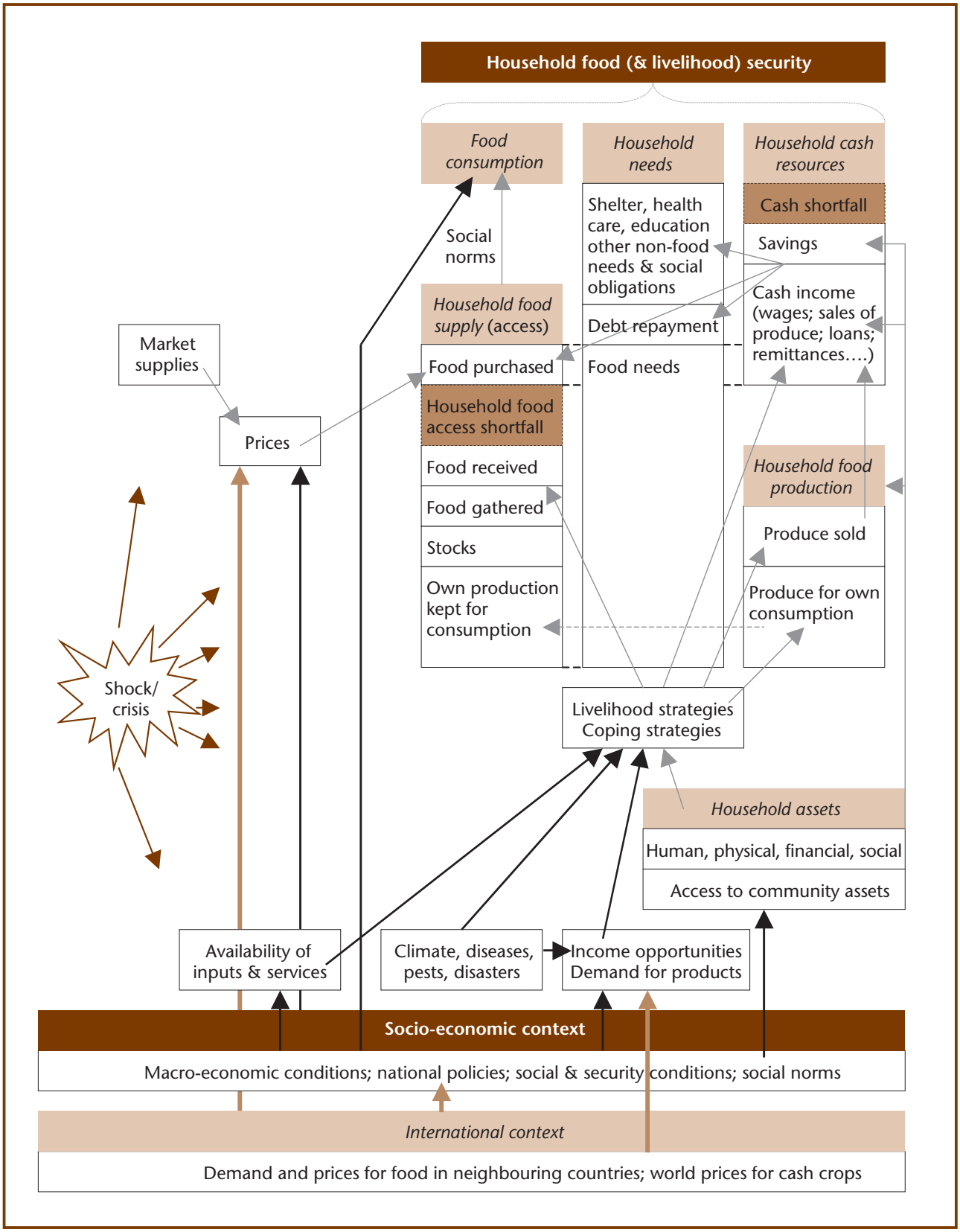
Figure 13a (extracted from Figure 3a) illustrates the principal factors that determine household food security. You need to understand the impact of the crisis on households' own food production, their income and expenditures, their ability to purchase from markets and obtain food from other sources, and their coping strategies (those they are using and others available to them). Based on that understanding, you need to estimate the resulting impact on households' food access, the shortfalls they will face and when. There are two distinct elements:

1. ***assessing the present situation*** at household level - a "situation analysis" including the nature, causes and present severity of food insecurity of different population groups; *and*

2. ***forecasting*** how the food security situation at household level will evolve in the coming 12 months taking account of present trends and any foreseeable opportunities or shocks that could influence that evolution. Opportunities might include a good harvest or cessation of a conflict while further shocks might include new floods or a renewal of fighting, for example.

Information on the present situation will come from recent assessments and reports, discussions with key informants, and your own observations and enquiries during field visits. Forecasting will be based largely on discussions with key informants together with your analysis of trends.

Figure 13a **Household food (& livelihood) security and related elements of the crop and food security analysis framework**




Panel 13-3 suggests the main topics that typically need to be addressed in your analysis and therefore during interviews with key informants, groups and individual households. After adaptation to the local situation - and taking account of gaps identified in

the analysis of secondary data and any items that need to be specifically cross-checked (see section 13.3) - the points in Panel 13-3 may form the basis of checklists/guides for your enquiries during field visits.

**Panel 13-3**

**Typical focus of CFSAM household food security enquiries**

[Topics that typically need to be asked about and discussed during field visits, and on which data need to be synthesized and analysed during the end-of-mission process of analysis and drawing conclusions]

- Note the livelihood and other important characteristics of the household(s) concerned.

***Concerning own food production*:**

- Ask about/Synthesize data on:
  - expected quantity of staple foods from own production this year;
  - per capita staple food from own production (to be calculated based on family size);
  - how this staple food production compares with previous years;
  - how household reserve stocks compare with previous years;
  - expected own production of other foods (especially protein-rich and vitamin-rich foods).
- Discuss/Analyse:
  - how many months of self-sufficiency their own production supplied in previous years;
  - how many months it will supply this year - when own supplies will run out;
  - how production of other foods compares with previous years.
- Cross-check against agricultural production data and existing household food security assessments.

***Concerning market purchases and other sources of food*:**

- Ask about/Synthesize data on:
  - how much staple food the household(s) bought from the market in previous years and when;
  - how much they expect to buy this year and when;
  - what food they received from other sources in previous years;
  - what they expect to receive from other sources this year.
- Discuss/Analyse:
  - how current staple food prices compare with previous years;
  - how the types and quantities of food available in markets now compare with previous years.
- Cross-check against market data.

***Concerning food sources in general*:**

- Discuss/Analyse:
  - the relative importance of different sources of food now and how it compares with previous years at the same season;
  - how the relative importance of different sources is expected to change in the coming months due to seasonal and other factors;
  - the months when these households expect to face a critical deficit during the coming year.
- Cross-check against existing household food security assessments.

***Concerning income sources/cash resources*:**

- Ask about/Synthesize data on:
  - wage rates;
  - how wage rates and expected income from employment or casual labour compare with previous years;
  - the terms of trade for sales/exchange of livestock and other produce against staple foods;
  - how the quantities of food received in exchange for livestock is expected to compare with previous years;
  - farm gate prices for cash crops;
  - how income from the sale of cash crops is expected to compare with previous years;
  - how income from petty trading is expected to compare with previous years;
  - how remittance income (e.g. from relatives abroad) is expected to compare with previous years.
- Discuss/Analyse:
  - how overall income during the coming year is expected to compare with previous years.
- Cross-check against existing household food security assessments.

***Concerning expenditures*:**

- Ask about/Synthesize data on:
  - the proportion cash income spent on food, and how it compares with previous years at the same season;
  - the amounts spent each month on other essential items (rent, health care, fuel, schooling, etc.) and how it compares with previous years.
- Discuss/Analyse:
  - how essential non-food expenditures are expected to change in the coming year.
- Cross-check against existing household food security assessments.

***Concerning coping strategies*:**

- Ask about/Synthesize data on:
  - how the household(s) intend(s) to try to make up for their food deficit;
  - the coping strategies they are using now;
  - the strategies they are planning to use during the coming year, and when.
- Discuss/Analyse:
  - how sustainable the various coping strategies are and whether productive assets are being, or are likely to be, sacrificed.
- Cross-check against existing household food security assessments.

***Concerning food consumption*:**

- Ask about/Synthesize data on:
  - how many meals people are eating each day and how that compares with previous years at the same season;
  - what range of foods people are eating now and how that compares with previous years at the same season;
  - how the size of meals eaten now compares with previous years at the same season.
- Discuss/Analyse:
  - the reasons for any changes in consumption compared with previous years.
- Cross-check against existing household food security assessments.

## 13.2 Reviewing existing assessment reports

As part of the preliminary analysis prior to planning the field visits you must:

- Critically review the methods, findings and conclusions of whatever recent household-level assessments are available. Judge the reliability and representativeness of the existing assessments and identify any gaps in coverage of areas in which households' food security may have been affected. Give particular attention to:
  - the areas and population groups covered by the available assessments, and the basis for the disaggregation of population;
  - the range of data collected and used, and the depth of the analysis undertaken including cross-tabulations among variables; *and*
  - the basis for the estimates of current food access shortfalls (or classifying the severity of food insecurity), and the basis for forecasting gaps and hence assistance needs in the next 12 months.
- Whatever methods have been used, note any limitations and concerns in your report along with a brief discussion of how you addressed them in verifying or adjusting the final estimates of food access shortfalls (gaps) and the numbers involved.

Existing household-level assessments and estimates of need are likely to be based on one or more of the following approaches:

- household survey using proxy indicators of food consumption (diet diversity and food frequency), access (food and income sources) and/or a coping strategies index;
- "household economy approach" (HEA) rapid appraisal; *or exceptionally*
- a "food poverty" (purchasing power) approach.

**Annex 16** provides brief explanations of these methods, their strengths and weaknesses, and references to documents where further details can be found. Note that some methods (especially those using proxy indicators) provide valuable descriptions of the impact of the crisis on food security but rely heavily on professional judgment when it comes to estimating the actual magnitude of the resulting household food access shortfalls and therefore the level of assistance required.

As a starting point, it may be useful to develop, on the basis of the team's own preliminary understanding of the situation, a short list of the data items that seem to be most critical in the current situation and use that as a basis on which to judge the adequacy of the data collection and analysis undertaken by the existing assessments.

### Reviewing assessments based on household surveys and proxy indicators

These methods use the strategies that affected households adopt in order to try coping with a food crisis as proxies for their levels of food insecurity. Data are gathered through household surveys based on *probability sampling*. Two principal methods for classifying households in this way are in use:

- ***diet diversity*** combined with ***food frequency*** (DDF), which may be converted into ***food consumption scores*** (FCS), together with data on ***food sources*** and ***income sources***; *and*
- a locally-derived ***coping strategies index*** (CSI) representing a number of coping strategies.

The second edition of the WFP *Emergency Food Security Assessment Handbook*, expected early 2008, describes a methodology that combines all of the above.

Changes in these proxy indicators reflect changes in levels of food security - and the severity of food insecurity. They identify variations in the severity of crisis impact on different communities and areas. DDFF scores in themselves do not provide estimates of food access shortfalls. Thresholds are established based on the degree of deviation from a benchmark taken as representing adequate consumption, and judgments are made to link particular DDFF, FCS or CSI scores with specific levels of food insecurity and assumed ranges of food access shortfalls. In both cases the statistical data should be interpreted in the light of complementary qualitative data from community group interviews and key informants.

- If any such assessments are available, examine the data and reports, keeping the questions shown in Panel 13-4 in mind.

**Panel 13-4**

**Questions to ask when reviewing assessments using household surveys and proxy indicators**

If assessments based on household surveys and ***dietary diversity and other proxy indicators*** are available, review the reports and examine the data with a view to answering the following questions:

- Do the thresholds established for different levels and severity of food insecurity adequately reflect the nature of the humanitarian emergency or livelihood crisis?
- Are deviations measured - comparisons made - in relation to an already food-insecure situation (chronic food insecurity) or a previously food-secure situation?
- Is account adequately taken of seasonal variations in consumption habits?
- What method was used to group and classify households in relation to the chosen thresholds, and how might conclusions differ if the data were analysed in a different way?

  (In the WFP assessment in Darfur in 2005, principal component analysis and cluster analysis produced different results from the same dataset: see WFP & UNICEF, *Emergency food security and nutrition assessment in Darfur*, Sudan 2005.)
- What other data were used and on what basis were conclusions drawn concerning the magnitude of food access shortfalls during the coming year - and the levels of assistance required - for different population groups?

If assessments based on a ***coping strategies index*** are available, you should review the reports, examine the data and answer the same questions as above plus:

- What weightings were assigned to the various indicators to calibrate the index for the community/ies concerned, what was the basis for those weightings, and how would the classifications and conclusions change if different weightings were used?

In ***both cases***:

- Carefully review the areas and population groups covered in the surveys and differentiated in the analysis: Is coverage adequate? Are populations disaggregated in a manner that reflects important distinctions among the population groups and can be used for targeting assistance?
- Give special attention to whether any distinction has been attempted between chronic and transitory food insecurity, and the estimation of crisis-related food access shortfalls (gaps); *and*
- Verify the plausibility of the conclusions through your own interviews with key informants, community groups and a few purposively selected households.

## Reviewing assessments and estimates based on Household Economy rapid appraisals

The *Household Economy Approach* (HEA) developed by Save-the-Children (UK) examines food access in the context of changes in households' livelihood and coping strategies, their incomes and expenditures. It uses a variety of rapid appraisal methods to

build up a picture of the economy of households in a defined population group and generate, amongst other things, quantitative estimates of the decline in household food access due to a shock. Assessments using this approach are undertaken at three different levels of detail and sophistication, and probable reliability -comprehensive, simplified and rapid - but the same level of specific HEA training and experience is required of assessors and interviewers in all cases.

- If any such assessment is available, be sure you have a good understanding of the method used and then critically evaluate:
  - the representativeness of the groups interviewed;
  - the techniques used to derive quantitative estimates to establish what are essentially household balance sheets expressed in terms of calorie equivalents; *and*
  - the projection of price impacts on the household economy in situations where relevant price and income elasticities are not available from household food consumption/expenditure surveys.

### Reviewing assessments and estimates based on "food poverty" (purchasing power) or household income/expenditure survey data

- If an assessment had used the average deviation of food ***expenditures*** from the cost of a minimum ***food basket*** to approximate a food access gap, check whether account was taken of:
  - the type of foods on which the expenditures were made; *and*
  - the amount of food consumed from own production, which reduces the amount that needs to be purchased.
- If, exceptionally, data are available from a recent household income/expenditure survey based on probability sampling, examine whether they are ***relevant to the current crisis*** period and, if so, examine:
  - the methodology, especially the sampling method, used in the survey;
  - whether key food security variables were included to enable calorie consumption to be estimated;
  - whether data are broken down according to the socio-economic groups that may be differently affected by the crisis and that the CFSAM needs to distinguish, such as agriculturalists, herders, labourers, women-headed households, etc.

**Annex 16** includes suggestions how income/expenditure survey data might be used *if* they appear to be relevant to the current situation.

## 13.3 Reviewing secondary data and identifying gaps and what needs to be cross-checked

- Review, in addition to recent assessment reports, other secondary data including:
  - pre-crisis baselines;

- agricultural production data (see chapter 7);
- market data (see chapter 8); *and*
- reports - progress, monitoring, evaluation reports - on and plans for assistance programmes.

• Triangulate *all* secondary data (those listed above plus assessment data) to identify:

- elements on which there is convergence among different sources and in which you can probably have confidence;
- any data gaps in relation to specific topics or geographic areas, issues relating to individual assessments, or inconsistencies among data from different sources that need to be cross-checked; *and*
- any issues arising from programme reports that need to be followed up to enable you to formulate your own recommendations for assistance.

A format such as the one in Panel 13-5 may be useful to compile the key information from secondary data. It can help to identify any gaps or inconsistencies. Separate tables may be prepared for each distinct zone/area. Information concerning different livelihood groups may be indicated within each cell.

**Panel 13-5**

**Sample template for compiling secondary data and determining what needs investigation**

| Topic | Source 1 | Source 2 | Source 3 | Gaps, inconsistencies |
|---|---|---|---|---|
| ***Assessment data*** | | | | |
| Method, sampling and reliability of data | | | | |
| Principal livelihood groups distinguished | | | | |
| Food sources (own production, market purchases, other) | | | | |
| Income and essential non-food expenditures | | | | |
| Coping strategies and their sustainability | | | | |
| Food consumption | | | | |
| Estimated food access shortfalls/Severity of food insecurity | | | | |

| Topic | Source 1 | Source 2 | Source 3 | What needs to be cross-checked |
|---|---|---|---|---|
| ***Food-security assistance*** | | | | |
| Type of assistance and its appropriateness | | | | |
| Targeting methods and their effectiveness | | | | |
| Operational issues | | | | |

## 13.4 Preparing for enquiries during field visits

- Finalize the interview guides/data recording formats.
- Finalize the selection of zones and the itineraries for the multidisciplinary field teams, ensuring that they will enable you to fill gaps while getting an overview of the household food security situation.
- Define procedures for selecting sites - villages, urban neighbourhoods, etc. - for visits within zones.
- Draw up indicative lists of key informants that all field sub-teams should seek to meet in order to obtain the required information.
- Ensure, through the pre-field-visit training, that all members are familiar with methods and questionnaires.

Guides and recording formats for semi-structured interviews with ***key informants*** and ***community groups*** should be developed by adapting the list in Panel 13-2 to the local situation and including items required to fill gaps or cross-check items identified in the triangulation process described in section 13.3.

The multidisciplinary interview guide and recording format for ***household interviews*** (in **Annex 17**) should be similarly adapted to local conditions and gap-filling and cross-checking needs.

A standard procedure for selecting the ***sites/communities*** to be visited within zones is important for ensuring comparability among the findings of different sub-teams. Estimate the number of sites you expect to be able to visit in each zone; plan to visit one or maximum two "typical" less-affected communities and divide the remaining number of communities that you can visit between moderately-affected and severely-affected communities according to the relative proportion of both groups within the zone, privileging the worst affected, For further guidance, see Technical Guidance Sheet No.8, *Initial Emergency Food Security Assessments*, WFP/Food Security Analysis Service 2007.

If a substantial scaling-up of current assistance operations could be needed, or if assistance operations may need to be extended to new areas or new population groups, take that into account when listing key informants and include corresponding issues of ***institutional and operational capacity*** in the interview guides.

## 13.5 Gathering household food security data in the field

### Initial meetings at zonal headquarters/administrative centres

- Inform the relevant local authorities immediately upon your arrival and arrange meetings with all concerned government officials, NGO staff involved in relief or development programmes in the affected areas (see Panel 5-1 in chapter 5), others on the indicative list of key informants, and any other entities or individuals involved in or knowledgeable about the food security situation and related assistance operations.
- In consultation with the local specialists: select districts/sites/localities to visit representing as many as possible of the different livelihood and other population (ethnic) groups, and identify any areas of special interest/concern. Coordinate plans for visits within the zone with the agriculture specialist team members.

If you do not already have it in secondary data, it may be useful to obtain or develop a list of all the principal localities in the zone categorized according to the perceived degree of severity of the crisis impact on food security: severely affected/food insecure; moderately affected/food insecure; less-affected/food insecure. That will then enable you to purposively select a number of sites from each category according to the agreed procedure (see section 13.4 above).

### Gathering data at field sites

- Gather data through semi-structured interviews with community development, agricultural and health extension workers; community groups; community sub-groups representing different livelihood groups; NGO staff and others involved in relief or development programmes in the locality.
- Gather data on a few selected indicators from a sample of ***households*** at each site visited, in each zone, including urban as well as rural sites.
- For all interviews, use the agreed multi-disciplinary interview guide/recording format (see above).
- Give particular attention to:
  - cross-checking/obtaining information concerning the likely evolution of the situation and risks during the ***coming 12 months***; and
  - assessing the mechanisms available for identifying the people in need of assistance, the capacity of effective ***targeting***, and any limitations and weaknesses that could lead to significant inclusion or exclusion errors, especially if a substantial scaling-up of current assistance operations could be needed, or if operations may need to be extended to new areas or new population groups in the zone.
- Ask whether the households that are now food insecure were also food insecure in previous years, to get an idea on whether their food insecurity is chronic or transitory.
- Be on the look out for additional, unanticipated information.

Gather data from 5 or 10 randomly or purposively selected households representing each main livelihood group at each site for an overall total of 100 to 200 households.

Figure 13a indicates some of the main linkages among the various elements that contribute to and influence household food security. In discussions and in the analysis of data you should try to explore those and other possible linkages and influences in order to understand who is food insecure (which groups) and why. This is essential for the analysis of response options and targeting possibilities (chapter 15).

For general guidance on gathering data in the field, see section 5.3. For detailed guidance on conducting interviews and related data-gathering activities in the field, see: **Annex 9** *How to get the most out of field trips and interviews*, and the ◔ WFP *EFSA Handbook*.

Where a baseline ***CSI*** already exists but no CSI-based assessment has yet been completed, it *may* be feasible to conduct a sufficient number of meetings (e.g. purposive selection of 2-3 communities representing different expected levels of crisis impact in each zone) to get a rough idea of the situation of different groups - see **Annex 16**.

At the end of the visits within each zone, summarize your findings in relation to household food security together with those in relation to production and markets using a format similar to that in Panel 5-3 (in section 5.3).

### Summarizing information for each zone

At the end of the visit to each zone, prepare a ***summary*** noting:

- Critical contextual factors;
- Main livelihood groups;
- How the current conditions have affected food access (production, markets, income, etc) and consumption for the different livelihood/population groups;
- Prospects for the coming year taking account of trends, opportunities, risks, and the vulnerabilities of different population groups;
- Estimation of population requiring assistance during particular periods; *and*
- Key recommendations and observations

These summaries will facilitate the task of putting together the overall picture when back in the capital.

## 13.6 Analysing the distribution, severity and nature of food insecurity

*What the CFSAM report might include (in chapter 6)*

Brief description of the impact of the crisis on different population groups (normally livelihood groups but possibly ethnic) in different crisis-affected areas, their coping strategies and current food security/access status, their prospects and vulnerabilities.

Estimates of the levels of food insecurity - the household food access shortfalls - of different groups in different areas and the expected duration of the crisis-induced/enhanced shortfalls. Explanation of the basis for the estimates (or categorizations).

Map showing the geographic distribution of different levels of food insecurity.

Factors that could positively or negatively affect the food security/access of the different groups in different areas.

The extent to which currently-observed food insecurity is chronic or transitory, and the implications for assistance strategies.

Using information from your initial analysis of secondary data and the data you gathered during your field visits, and comparing with the pre-crisis situation:

- Decide on a classification system and thresholds for different levels of food insecurity and corresponding levels of food-security assistance that the households concerned might require.
- Define the profiles of households that are experiencing, or will experience, particular levels of food insecurity (e.g. severely food-insecure, moderately food-insecure, less food-insecure) corresponding to specific estimated, or assumed, levels of assistance needs.
- Determine the causes of the food insecurity for each group and distinguish households that were already chronically food insecure from those that are newly and transitorily food insecure.
- Identify any remaining gaps or inconsistencies in the available data.

***Profiles*** should be defined - and households distinguished - in ways that will be able to be used for selection and targeting of assistance, whenever possible. The possible effects of HIV/AIDS should be considered, amongst other factors.

The ***classification system*** may be based on cross-tabulations of indicators of proxy, indicators of food consumption and food access from a household survey, or specific estimates of food and cash shortfalls from a rapid appraisal household economy assessment (HEA) or, perhaps less satisfactorily, simple classifications of poor, average or good food access proposed by community groups in semi-structured interviews. Whatever the basis, you will have to:

- define the ***periods*** during which particular households will not be able to acquire sufficient food through self-provisioning - from own production and purchases using available income - and thus the periods during which they will need assistance;
- link the chosen classifications to particular ***levels*** of required ***food-security assistance***: e.g. "equivalent to 50 percent - or 75 percent - or 100 percent - of household food needs"; *and*

- explain the rationale for the levels of assistance proposed and the duration in your report.

Panel 13-6 provides an example. In that case, it was judged that the households concerned required a full ration of staple food (equivalent to 13.5 kg) for the specified periods. Choose periods that are relevant and appropriate to the local situation. Specify the numbers of people and assistance requirements for each zone separately, see the example in Panel 13-7.

**Panel 13-6**

**Example of estimated assistance needs**
(Table reproduced from Lesotho CFSAM report 2007)

| | Jul-Sept | Oct-Dec | Jan-Mar | Total |
|---|---|---|---|---|
| Number of people | 138 200 | 202 900 | 401 200 | 401 200 |
| Cereals (tonnes) | 5 600 | 8 200 | 16 200 | 30 000 |
| Other food (tonnes) | 1 300 | 1 800 | 3 600 | 6 700 |

**Panel 13-7**

**Specifying assistance needs in particular periods**
(Example from Zimbabwe CFSAM report 2007)

In [region 1], a semi-arid zone, livelihoods are earned from a combination of crop and livestock farming … during the current marketing year production is "poor" or "near-total-loss" … the mission estimates that up to 40 percent of households are likely to run out of own production starting in July. The remaining 60 percent are expected to meet their food requirements up to the end of September. From October onwards, the population in need with increase to about 60 percent…

In [region 2], a rain-fed agricultural area with intensive crop production and livestock farming on a large scale … food shortages will be experienced in […] districts due to poor food and cash crop production. An estimated 45 percent of households in […] will require assistance from July/August while 35 percent in […]and 30 percent in […] will need assistance by October.

The household analysis and the ***profiles*** of food insecure households may be based on livelihood groups (e.g. subsistence farmers, cash-crop producers, daily labourers), residency status (residents, displaced), household characteristics (e.g. with no able-bodied adult), or some combination. They should be "operational" such that they can be used for targeting assistance, if selection will be needed within communities. Profiles may be identified through cross-tabulation associations of survey data among the various factors found to affect household food security and the various population groups, or

through discussions with community groups and key informants -
see ◔ WFP *EFSA Handbook*.

To the extent that estimates of present consumption levels are available or possible, those levels should be compared with (i) the international *normative* reference of 2100 kcalories/person/day; *and* (ii) a local *pre-crisis* reference - the average consumption in kcalories/capita/day observed prior to the crisis among households that are now affected by the crisis:

- Comparison of current and projected consumption levels with the pre-crisis reference level gives a measure of the impact of the shock on food consumption. It helps to understand the impact on those who were previously either food secure (new entrants to food insecurity due to the shock) or food-insecure (deepening of chronic food insecurity), see section 3.7.
- Comparison with the normative reference indicates the "gap" that nationally and/or internationally supported assistance should seek to address.
- The difference between the two sets of figures can then be considered when comparing and reconciling the findings from the food balance sheet, which is based on pre-crisis levels (see section 11.1) and the household-level analysis.

Note that, strictly speaking, the normative reference of 2100 kcals should be adjusted for demography, temperature, activity level and the general health and nutritional status of the population as outlined in Panel 15-6 (in section 15.1) but, in practice, this is normally done only for refugee and some displaced populations.

### Taking account of market disruption and price changes

You need to understand how people's access to food has been affected by changes in market functioning or conditions either directly through prices and/or lack of availability or indirectly through effects on livelihood activities and hence purchasing power.

- Identify the areas where:
  - markets have been disrupted and no longer assure previous trade patterns in food and non-food supplies that are essential for food security;
  - people no longer have physical access to their normal markets;
  - markets never supported any significant level of trade.
- Foresee how prices may change and the impact such changes will have on household food access among different population groups.

Anticipating the effects of price changes is difficult but you may:

- Examine pre-crisis distribution of income, consumption and vulnerability;
- Anticipate seasonal variations in prices during the coming year;
- Assume that households will respond to and try to cope with price fluctuations in the same manner as in normal years although the quantities purchased will be lower due to their reduced purchasing power;

- Identify population groups that will and will not be able to cope with the high prices and estimate their numbers; estimate the proportion of the population that will not have access to sufficient food at different price levels, if possible - see, for example, the report of the Malawi VAC (Vulnerability Assessment Committee) 2006;
- Consider carefully - and state explicitly - your assumptions regarding incomes, expenditures, effective demand and commodity substitutions for different population groups.

Detailed price forecasting is difficult but scenarios can be developed based on particular sets of assumptions. In your report, present the most likely scenario together with your assumptions and notes indicating how the situation and needs might be expected to vary if conditions and prices evolve differently. See:

- The Shock-response analysis tool on the WFP Market and Economic Analysis website, which may be helpful in analysing the effects of market shocks on food consumption.
- The Wholesale-Retail price analysis tool on the WFP Market and Economic Analysis website, which may be helpful in foreseeing the effects of price changes.

### Determining whether food insecurity is chronic or transitory[15]

- Examine information about the situation *before* the crisis to determine the nature, extent and severity of food insecurity pre-crisis, and which population/livelihood groups were concerned. How different was this from the current situation?
- Consider the responses to questions as to whether households that are now food insecure were also food insecure in previous years.
- Analyse the population-consumption curve as described in Panel 3-5 (in section 3.7), if data are available.
- If the pre-crisis situation is not well documented, try to compile a retrospective picture of pre-crisis food insecurity through community group discussions and key informant interviews. Questions that you might ask in this connection are:
  - Who was food insecure before the crisis, using locally adapted terminology and concepts to define "food insecure"? What coping strategies were used, and by whom?
  - If pre-crisis food insecure groups are similar to those that are currently food insecure, have the proportions and/or numbers of food-insecure people increased?
  - If pre-crisis food-insecure groups were different from those that are currently food insecure, what are the reasons for this?

[15] Adapted from WFP EFSA Handbook, second edition, draft July 2007

## 13.7 Analysing the severity, distribution and causes of malnutrition

*What the CFSAM report might include (in chapter 6)*

Brief summary of the health and nutritional situation in the different affected areas and among different population groups, including the most likely causes of poor health and malnutrition.

The implications for food security assistance and special nutritional support.

- Examine available reports from recent nutritional status surveys: check their coverage and reliability as well as the severity, rates and distribution of malnutrition reported.
- Distinguish acute malnutrition (indicated by wasting - low weight-for-height or low MUAC) and chronic malnutrition (indicated by stunting - low height-for-age).
- Make your own observations of any obvious clinical signs of malnutrition at sites visited (but do not attempt to calculate malnutrition rates on that basis!).
- Discuss the nutritional situation, trends, comparisons with seasonal norms with health personnel and agencies at all levels; also discuss the probable causes of malnutrition - whether inadequate food availability, food access, food utilization, care practices and/or health-related factors.
- Examine the nature, capacities and effectiveness of any nutrition interventions already being implemented by the Ministry of Health, other government institutions, NGOs and communities.
- On that basis determine:
  - how malnutrition is distributed among the different population groups and zones;
  - whether the prevalence of malnutrition (and mortality) is "typical" for the population in the current season;
  - what might explain changes and trends in rates of acute malnutrition;
  - whether and how general food-security assistance might need to be adapted and/or what other measures (e.g. selective feeding) may be needed to address specific nutritional problems; *and*
  - what other measures (health, sanitation or public education) may be needed to address those problems.

Note that data from a nutritional survey can be considered reliable - and compared with other such data - only if standard methods and procedures were systematically applied, see Panel 13-8. For detailed guidance on checking the reliability of nutritional survey data and interpreting such data, see:

- *Measuring and interpreting malnutrition and mortality*, CDC/WFP 2007
- *The meaning and measurement of acute malnutrition in emergencies*, H Young & S Jaspers, ODI 2005
- *Protecting and promoting good nutrition in crisis and recovery*, FAO 2005

**Panel 13-8**

**Reliability check for survey results**

[Reproduced from UNHCR/WFP Joint Assessment Guidelines, 2004; adapted from WFP Emergency Field Operations Pocketbook, 2003]

| Points to check | What you need to know - standards that should be met |
|---|---|
| • *Nutritional indices* - were they appropriate for the objectives of the survey? | The recommended indicators for *wasting* (acute malnutrition) are:<br>- for children - weight-for-height (WFH)<br>- for adults - body mass index (BMI)<br>In a protracted operation, both wasting and *stunting* (chronic malnutrition) for children - WFH and height-for-age (HFA) |
| • *Cut-off points* - were appropriate cut-offs used? | As in the table below. |
| • *Sample population* - was it appropriately defined? | *For children*: children 6 to 59 months of age (or children 65 to 100 cm in height/length) and, when needed, 6 to 9.9 years of age.<br>*For adults*: 20 to 59.9 years. |
| • *Sampling procedure and sample size* - were random sampling methods used? Was the sample size appropriate? | One of the following:<br>- *Two-stage cluster sampling*: At least 24, preferably 30, clusters selected using strict random procedures from a list of all identifiable units/zones; 30 children randomly selected from within each cluster.<br>- *Systematic/interval sampling*: Dwellings numbered on a plan of the site; sample size determined to give an appropriate confidence level (usually 95 percent); sampling interval calculated accordingly and strictly applied.<br>- *Random sampling*: About 450 selected from a list of the entire population using a random number table. Comparisons among different groups within the total population will only be valid if the sample size was adequate for each distinct group. |
| • *Sample bias* - might the sample have been biased? | Sample bias can arise if standard procedures are not strictly applied everywhere:<br>- all selected households must be visited, none missed out; no other households included;<br>- all subject members of each selected household must be measured/interviewed, none missed due to temporary absence from the home. |

| | |
|---|---|
| • *Measurement error* - might there be any systematic measurement error? | Systematic error can arise if measuring equipment, techniques or recording is faulty:<br>- scales should be accurate and read to 0.1 kg;<br>- height/length boards should be well made and read to 0.5 cm. |
| • *Measures taken to reduce bias and error* - were staff employed for the survey already competent or appropriately trained? Was supervision adequate? | In order to minimize bias and error:<br>- all survey personnel should have been trained following standard procedures and good practice guidelines, including adequate supervised practical field training;<br>- trainers must be competent and experienced;<br>- supervisors should verify the standard measuring and recording by surveyors. |

## 13.8 Estimating numbers and aggregate food-security assistance requirements

*What the CFSAM report might include (in chapter 6)*

***Estimated numbers of people in need of food security assistance***: The number of food-insecure people in each (livelihood) group in each area, and the proportion/number in specific categories of acute, crisis-induced or crisis-enhanced, food insecurity now and in coming year.

Explanation of how the estimates were arrived at and any issues involved.

***Aggregate emergency food security assistance needs***: The aggregate of the team's estimates for the needs of different population groups including the periods when food security assistance would be needed at household level.

Factors that could increase or decrease the overall needs (shortfall estimates).

Existing assessments should estimate the proportions of people experiencing, or expected to experience, particular levels of food insecurity and who are therefore in need of specific levels of food-security assistance. This will be done by statistical analysis in case of an assessment based on a household survey, or (normally) by proportional piling in case of an assessment using rapid appraisal methods. In both cases, the percentage would be used to extrapolate to estimate total numbers.

- Cross-check the validity of those proportions for the zones and population groups concerned and the extent to which they may, or may not, be representative of the whole affected population through discussions with key informants and your own findings at the sites visited; establish proportions for each zone and/or livelihood group, as appropriate
- Establish population estimates for each zone and/or livelihood group, as appropriate, from figures obtained at national level (see section 6.2) and adjusted, if necessary, on the basis of information gathered during the field visits.

- Calculate the numbers of food insecure people in need of assistance in each area or livelihood group, and the overall total.
- Explain in your report the triangulation process by which you arrived at your final estimates. This may include observations on your perceptions of over-estimation or under-estimation in existing assessments and how you made adjustments using your own findings.

The format in Panel 13-9 may be useful as a worksheet to compile and present the data from different zones and to derive an aggregate estimate of food security assistance needs.

**Panel 13-9**

**Composite estimate of the affected population and food security shortfalls:**

| Name of agro - ecological zone/ livelihood zone/ geographic area | Total Population | Food-insecure affected population | Food access shortfall (per capita cereal equiv) | | Total food security gap of affected population | | Period (No. of hunger months) |
|---|---|---|---|---|---|---|---|
| | | | Normative reference | Pre-crisis reference | Normative reference | Pre-crisis reference | |
| 1.<br>2.<br>3.<br>… | | | | | | | |
| **Total** | | | | | | | (average) |

## 13.9 Analysing ongoing food-security-assistance programmes and targeting

*What the CFSAM report might include (in chapter 1, crisis background)*

Brief summary of the nature and impact of food-security-related assistance to date.

While providing an input to the food security crisis background in chapter 1 of the CFSAM report, the analysis of ongoing programmes and targeting arrangements of all food aid (multilateral and bilateral), cash or other non-food transfer programmes, is an essential input to the response options analysis - see chapter 15.

- Carefully review the project documents, periodic reports, and the reports of any evaluations of ongoing food-security assistance programmes (food and/or cash transfers or other programmes such as market support).
- Give particular attention to: the areas and population groups covered; targeting and selection mechanisms and criteria; and the levels, timing and duration of the assistance.
- Discuss with a range of key informants who are not directly involved in the programmes, and with community groups concerned:

- the impacts and the effectiveness of targeting and implementation arrangements of the various programmes; *and*
- any ideas they may have for changes or other programmes to better meet the needs in the coming year.

- Discuss with representatives of the organizations involved:
  - the objectives and effectiveness of the programmes, the operational and other problems faced, their plans for the coming year; *and*
  - the extent to which they would be able (if at all) to increase their implementation capacity and coverage, in case that should be required; *and*
  - any logistic or other constraints that might limit their capacity sustain or increase their activities (or the possibility of other organizations to complement their efforts).
- Triangulate the information from all sources to draw conclusions concerning the effectiveness of the ongoing programmes, their relevance for addressing needs during the coming year, and the capacity available for similar or alternative programmes during the coming year.

Do some (rudimentary) mapping of existing and planned food security interventions - the areas and beneficiaries covered and the type and duration of assistance. The table in Panel 13-10 may provide a useful format. This kind of listing of on-going and planned activities can be useful to: (i) avoid duplication of assistance; and (ii) judge the scope for scaling up and need for improvements.

**Panel 13-10**

**Compilation of ongoing or planned response interventions**
(An example adapted from WFP EFSA handbook second edition, draft Nov 2007)

| Actors | Type of intervention ongoing or planned | Type and number of beneficiaries | Place of intervention | Duration of intervention (start-end) |
|---|---|---|---|---|
| ***Ministry of social affairs*** | *Subsidized food* | *?* | *- Area B*<br>*- Area D* | *One-off food delivery in ….* |
| ***WFP*** | *General food aid distributions of full ration* | *"Vulnerable" households including:*<br>*- have less than 1 ha*<br>*- women-headed households*<br>*- "the poorest" as identified by leaders*<br>*Total: ~ 50,000 people* | *- Area A*<br>*- Area B*<br>*- Area C*<br>*- Area D* | *From … to …* |
| | *Supplementary feeding:*<br>• *Ration for child*<br>• *Take-home full ration for household* | *Moderately malnourished children*<br>*Total:*<br>*~ 3,500 children*<br>*~ 500 households* | *- Area B*<br>*- Area D* | *From … to …* |
| ***Church*** | *Targeted food aid distributions:*<br>*~ 3/4th ration* | *"Vulnerable" households as identified by community* | *- Area B*<br>*- Area C*<br>*- Area D* | *From … to …* |
| ***NGO…*** | *Cash-for-work* | *Landless households* | *- Area C* | *From … to …* |
| ***……*** | *…..* | *……* | *…..* | *….* |

# Part VI
## Conclusions & Recommendations

# 14 Conclusions

## 14.1 Problem synthesis

- On the basis of the separate analyses of the four main components/themes, compile a concise synthesis summarizing the nature of the problem(s) and variations among geographic areas and population sub-groups.

The formats in Panel 5-2 (in section 5.3) and **Annex 10** may be adapted for this purpose.

## 14.2 Comparing estimates from the balance sheet and household analyses

*What the CFSAM report might include (in chapter 7)*

Comparison of the uncovered import requirement from the national food balance sheet and the estimates of aggregate food security assistance requirements. Short explanation of the reasons for and significance of differences.

Explanation of the team's conclusions concerning: (i) aggregate assistance needs of the affected, food-insecure populations; and (ii) the uncovered food import requirement and whether any part of it could be met by additional commercial imports rather than food aid.

The macro-level balance sheet and household-level analyses measure different things:

- the ***household analysis*** provides an estimate of the aggregate assistance ***needs*** (if any) of food-insecure crisis-affected people; whereas
- the ***balance sheet*** produces an estimate of total ***import*** requirements to maintain overall pre-crisis consumption levels and, within that, any uncovered food import requirement.

In addition:

| *Balance sheet estimates of uncovered import requirement:* | *Estimates of aggregate household needs:* |
|---|---|
| • are based on maintaining average ***status quo*** consumption of ***staple foods*** for the country as a whole, cereals/staples may make up only 70 percent to 80 percent of a typical diet, and the average intake of poorer section of the population may be less than the international norm of 2100 kcal/person/day; | • focus on food-insecure households, include ***all foods*** and are estimated on the basis of the nutritional norm of ***2100 kcal/person/day*** - and therefore include the chronic deficits of poor households as well as crisis-related deficits; |

| | |
|---|---|
| • do not take account of the distribution of food ***access*** among the population. However, they look at changes in consumers' income and terms of trade (purchasing power) resulting from the crisis at the aggregate level; *and* | • attempt to assess and take account of the distribution of food ***access***, including changes in income and terms of trade, by estimating the food access shortfalls of different population groups before aggregating; *and* |
| • Although macro level cross-commodity substitutions are considered, there is difficulty in taking account of substitutions of one food by another in household purchases and diets. | • may take some account of substitutions. |

- Explain these differences in your report but also discuss and explain the ***magnitude of the difference*** between the estimates from your two sets of analyses.
- If you cannot provide convincing explanations, re-examine your estimates considering the issues listed below. If you still cannot provide a convincing explanation of the differences, note in your report the limitations and constraints on your data, possible areas of bias and the assumptions made.

Specific issues you may wish to consider include:

- ***The types of foods included in the analysis***: Given that non-cereal foods typically make up 20 to 30 percent of caloric intake you may compare 70 to 80 percent of the aggregate household-level deficit with the balance sheet deficit.
- ***Status quo and nutritional norm differences***: You may: (i) examine and discuss the difference between the aggregate household deficit estimated on the basis of the pre-crisis norm (SQE) and the one based on the nutritional norm of 2100 kcals/person/day; and (ii) compare both with the national balance sheet deficit. Note that:
  - because of income inequality and other impediments of access to food, there will be an unequal distribution of food consumption around the average per capita level, with some people well-nourished (even over-eating) and others suffering serious under-nourishment. The average pre-crisis consumption level of the households that are now the most food-insecure is likely to have been lower than the national past average. This is because the households most vulnerable to food insecurity are, in many cases, those that already have relatively low consumption levels in normal times; and
  - in a very poor country, the SQE itself may be below the average normative requirements.
- ***National-level and affected-population estimates***: The balance sheet estimates include the production shortfalls of all producers in the domestic supply side and the total population on the demand side. The household-level assessment excludes: (i) areas considered to be relatively little affected and the populations in those areas; and (ii) households in the affected areas who are not considered to be food-insecure. *To examine the effects of these differences*, you might use the per capita national deficit level to estimate the average shortfalls in the areas not included in the household assessment and adjust the national estimate for comparison.

- ***Biases due to sampling limitations and "pressures"***: When proper sampling and survey methods have been compromised due to time and resource constraints, household-level estimates may include segments of the population that are not affected by the crisis. This phenomenon may be exacerbated by political and social pressure. In addition, there could be a moral obligation (and practical considerations) to include, for example, households in the area under consideration who are not directly affected by the current crisis but are facing serious chronic food insecurity. *To correct for such biases*, you should comment on the limitations of its assessment methodology and indicate approximately to what degree an over-estimation may occur due to the shortcomings and why an adjustment in the estimate may not be possible.

## 14.3 Proposing how import requirements and assistance needs might be met

Proposals for addressing uncovered import requirements and household assistance needs will depend on their amount and for which is greater than the other. There are two possible situations:

- Case 1: the uncovered import requirement is ***greater*** than the estimated food security assistance requirement, i.e. additional imports are required to meet a commercial demand over and above the assistance needs of crisis-affected food-insecure households. This may arise where the crisis is primarily precipitated by a large drop in production e.g. Swaziland 2007, Zimbabwe 2007, Lesotho 2007.
- Case 2: the uncovered import requirement is ***less*** than the estimated food security assistance requirement, i.e. there is food in the country that exceeds current effective demand. This may arise when the emergency in question reduces the ability of a large part of the population to access food; typical examples of this situation are DPRK 2004, Mozambique 2005. Case 2 could also include situations where national deficit is zero or even where national surplus exists, for example, Ethiopia in 2005 to 2007 or Sudan in 2007 and 2004.

Panel 14-1 illustrates the two cases and how the import requirement and the household needs could be met in these two situations:

- In Case 1: emergency food aid imports might be recommended to cover the entire emergency/ humanitarian assistance requirement (350 000 tonnes) leaving the remaining 50 000 tonnes for which market demand exists to be brought in by small private traders and individuals in one or a combination of the other ways indicated, failing which, there would be an unmet consumption need affecting low-income population groups.
- In Case 2: emergency food aid imports might be recommended up to the limit of the uncovered import requirement (400 000 tonnes) while the remaining 50 000 tonne requirement of crisis-affected food-insecure households would have to be covered by other emergency/humanitarian aid to give them access to the supplies that exist in the country. This might be through distributions using locally-purchased commodities, cash or other non-food transfers, or stock drawdown. Additional imported food aid should be avoided as this would upset the national food balance as supply would then exceed utilization requirements.

**Panel 14-1**

**Reconciliation of national food deficit with food assistance requirements**
[cereals and cereal equivalent in '000 tonnes]

| **Case 1: Uncovered food import requirement is greater than the food-security assistance requirement** | | **Case 2: Uncovered food import requirement is less than the food-security assistance requirement** | |
|---|---|---|---|
| **Total Import Requirements** | **1000** | **Total Import Requirements** | **1000** |
| Anticipated commercial imports | 600 | Anticipated commercial imports | 600 |
| **Uncovered import requirements** | **400** | **Uncovered import requirements** | **400** |
| Of which food aid on hand/in pipeline | 10 | Of which food aid on hand/in pipeline | 10 |
| Aggregate household food-security assistance requirements | 350 | Aggregate household food-security assistance requirements | 450 |
| External food aid imports[1/] (including stocks on hand/in pipeline) | 350 | External food aid imports[1/] (including stocks on hand/in pipeline) | ≤400 |
| *Ways in which the remaining import requirement might be covered (50 000t):* | | *Ways in which the additional assistance needs might be met (≥50 000t):* | |
| Additional unregistered cross border imports/petty trade | ? | Local purchases for food aid | ? |
| Additional in kind remittances from abroad (cereals/staples) | ? | Additional cash remittances from abroad | ? |
| Additional gov't commercial imports | ? | Cash or vouchers distribution to needy household | ? |
| Additional donor-assisted imports to be sold in the market | ? | Additional stock drawdown (i.e. reduction of foreseen closing stocks) | ? |
| Others | ? | Others | ? |
| *Or*: Unmet consumption and food price rise (mostly by low income population groups) | ? | *Or*: Unmet consumption (mostly by the food-insecure population groups) | ? |

[1/] "External food aid imports" could include in-kind food aid for humanitarian operations or donor financing for government imports for the same purpose.

Note that cash or food vouchers can be effective where food supply is available, markets work well and distribution and control systems can be assured. In case 2, cash or vouchers might be envisaged to cover at least the 50 000 tonne assistance requirement that exceeds the uncovered food import requirement. If traders could be relied on to respond quickly to a commercial demand, the quantity might even be further increased and the quantity of imported food aid reduced accordingly.

## 15 Analysing response options

At this stage of the analysis, you should focus (as this chapter does) on evaluating the various response ***options*** that could be available. Once you've done that, you will be able to develop an appropriate ***set of interventions*** comprising one or a combination of those response options that, together, would make up the most appropriate and feasible, integrated response, taking account of ongoing and planned activities, as outlined in chapter 16.

The analysis of response options will *be based on extensive discussions with programme, operations, logistics and security managers in the field as well as in the capital to understand what could actually be feasible, particularly in the short term. Adequate time must be allocated to such discussions at all stages of the mission.*

*What the CFSAM report might include (in chapter 8)*

Brief statement of the *objectives* of food-security-related assistance arising from the preceding analyses, and any logistic, institutional or other *constraints* that may limit the feasibility of certain response options.

The pros and cons of *food aid* in this situation. Whether specific types of food aid intervention *might* be appropriate for particular target groups during particular periods.

The pros and cons of *cash transfers* or other *non-food transfers* to target beneficiaries in this situation. Whether specific types of cash-based or other support *might* be appropriate for particular target groups during particular periods.

Any *market interventions/support* that could help to improve food availability in the affected areas and access for the target groups.

### 15.1 Identifying appropriate and feasible responses

- Identify the response and targeting options that could be appropriate and feasible, and specify the advantages and disadvantages - the ***pros and cons*** - of each option.
- Whenever direct ***transfers*** (food or cash) are considered, consider potential negative effects and how they can be minimized: see section 8.6.
- Consider whether a ***combination of food and cash transfers*** could be appropriate, or food transfers during particular (lean season) periods and cash during other periods.
- Consider options such as ***subsidized sales*** and ***market support*** that could be supported by other donors in addition to the more traditional "relief" interventions of food or cash transfers (including food-for-work and cash-for-work) often supported by WFP and other humanitarian agencies.

Response recommendations must be both appropriate and feasible taking account of the humanitarian needs, market concerns, logistic constraints (if any), and the availability and capacity of viable, reliable mechanisms to deliver and distribute the assist-

ance - food, cash, vouchers and/or other forms of assistance - to the target populations. The "most appropriate" intervention may not always be feasible, especially if the timeframe for implementation is short. Second-best interventions may then need to be recommended.

Review carefully the analysis of ongoing and planned assistance activities - see section 13.9 - and allocate adequate time to meet with programme, operations, logistics and security managers to understand what is feasible, particularly in the short term.

Where resource transfers to households are needed, the overall availability of food supplies in the country and market conditions in the affected areas are the principal factors that determine whether food, cash or other non-food transfers would be appropriate. Security conditions and operational capacity (especially distribution means) are key determinants of feasibility. Nutritional imperatives and costs also need to be considered.

The ***range of interventions*** that may be considered to address crisis-related food-security problems includes (but is not limited to) those listed in Panel 15-1.

**Panel 15-1**

**Food-security interventions that may be considered by CFSAM teams**

*Responses providing direct food & livelihood support to households*:

- Food transfers (using imported or locally purchased food) - general free distribution, food for work, emergency school feeding, etc.
- Cash or other non-food transfers - cash distribution, cash for work, food vouchers, provision of non-food items or services that enable households to commit more of their own resources to food.
- Support to income-generating activities and other community-based strategies to enhance food security.

*Responses to make more food available in markets at affordable prices*:

- Market interventions - subsidized sales, especially of self-targeting, second-choice cereals, market capacity support (e.g. ensuring the availability of credit to traders).
- Logistic infrastructure support - repair of basic transport, storage and handling infrastructure to facilitate trade (as well as the delivery and distribution of assistance).
- Liberalization of commercial imports by the government (e.g. lowering import duties or eliminating quotas).

If the team includes members with appropriate expertise, you may also make general recommendations in relation to:

- agricultural inputs - seeds, fertilizer, farm tools, fodder, re-stocking, etc.;
- training and technical support for agricultural production or income generation;
- supplementary or therapeutic feeding for malnourished individuals;
- special food and nutrition support for people suffering from HIV/AIDS, TB or other chronic diseases, or households with members suffering from those conditions;

- food fortification or micronutrient supplementation, especially distribution of vitamin A and iron supplements;
- other public health programmes to help address the underlying causes of nutritional problems, e.g. water supplies, sanitation, immunization;
- education, training and technical support to improve household food preparation, feeding, care and hygiene practices.

Some of the aspects you need to consider are listed in Panels 15-2 and 15-3. They are summarized in Figure 16a (in section 16.1). Hopefully you will have explored feasibility issues in your discussions with key informants, especially operational agencies, during meetings in the capital and your field visits.

**Panel 15-2**

**Aspects that determine the appropriateness of different response and targeting options**

| | |
|---|---|
| When the assistance is needed by the intended beneficiaries | If it is a really urgent life-saving need, speed in giving people access to food will be paramount for a short initial period. Otherwise, due attention should be given to all the other aspects listed. |
| The availability of food in the country | If sufficient food is available (see the food balance sheet), food transfers using imported commodities may not be appropriate. Cash transfer or food transfers using locally-purchased commodities should be considered. |
| The preferences and priorities of the food-insecure people themselves, especially women | People (especially women) often know what is best for them. This includes whether they have physical access to markets where they might be able to procure food, and what their experience has been with previous aid programmes. |
| Market conditions, especially price levels, the degree of integration and competition, the capacity of traders to increase their deliveries to and within the affected areas, and the likely impact on prices of food or cash transfers (see sections 8.5 and 8.6) | Where markets are integrated and competitive food is available and traders have additional capacity, cash transfers (including cash for work), vouchers and subsidized sales may be appropriate (and food transfers disrupt markets and hinder recovery).<br>Where such conditions do not exist, food transfers may be needed unless and until markets recover, possibly with market support. |
| Protection concerns | Programmes that might increase the personal safety and security risks faced by women, men or children should be avoided, if possible.<br>Programmes that could reduce such risks should be favoured. |

| | |
|---|---|
| Lessons from past emergency and recovery experiences | Previous experience may indicate responses that have, or have not, been effective and cost-efficient. |
| Existing national strategies and protocols for emergency response and sustainable development | Responses should normally be in line with national policies and not undermine long-term development strategies unless absolutely unavoidable when lives are at risk. |

**Panel 15-3**

**Aspects that determine the feasibility of different response and targeting options**

| | |
|---|---|
| The infrastructure and operational capacity available to assure the delivery and distribution of food or cash, or the distribution and redemption of vouchers.<br>The time it would take to set up operations and estimated set-up and running costs | ***Food*** transfer programmes require substantial logistics (transport, storage and handling) capacity and inventory management and control systems. Where these are already in place, set-up costs may be small. If they are not already in place, set-up costs are likely to be high and there may be limits on what can be delivered in the short term. Operating costs are likely to be high.<br>***Cash*** transfer programmes require secure, reliable systems for the transfer and distribution of cash and the maintenance of accounts. Where banks exist and function throughout the affected area, set-up and operating costs may be low. Otherwise - and where there is no experience with large-scale cash transfer operation - setting up may be difficult and time-consuming.<br>***Vouchers*** require secure, reliable systems to distribute and account for vouchers and a network of retailers able and willing to accept them and assure sufficient supplies on a continuous basis. Unless a system already exists, setting up may be difficult and time-consuming. |
| Social, political, security and other contextual factors | Certain approaches to targeting may or may not be feasible depending on social cohesion.<br>Insecurity or restrictions imposed by the government or other parties may inhibit the movement of food or cash. Insecurity may restrict the amounts of food or cash households can store. |
| Seasonal considerations | Food transfers may be inappropriate during periods when local farmers will be seeking to sell their produce.<br>Some transport routes may be impassable during certain periods, restricting the possibilities for both aid agencies and traders to move supplies. |
| Lessons from past emergency and recovery experiences | Previous experience may indicate practical difficulties with particular types of activities in the area concerned. |

***Food transfers*** are likely to be most appropriate when:

- there is a serious food shortage and a need to increase food availability; *or*
- markets are weak, segmented, dysfunctional, or are inaccessible due to insecurity; *and*
- prices are not likely to be depressed at a time when local producers are attempting to sell.

Where the social structures and traditions of the society make needs-based ***targeting*** of households difficult, food transfers *may* permit a certain degree of (self) targeting *if* second-choice commodities are used. It is often suggested that food may also be more appropriate when ***women control food*** and men control cash in the household. However, some recent studies have suggested that there is little evidence that men misappropriate cash transfers in any significant way for purposes other than food and family welfare. Food transfers may be less appropriate when the overhead ***costs*** or ***losses*** from spoilage or theft would be high.

***Cash transfers*** are more appropriate when:

- the market is able to provide sufficient supplies of food rapidly; *and*
- a cash injection would stimulate the local economy without causing inflation, especially significant increases in food prices.

Cash transfers may be less appropriate when the set-up ***costs*** or ***security risks*** are high.

***Market interventions*** (see Panel 15-4) may be especially appropriate when the price of the usual staple has risen due to scarcity and is no longer affordable to poor but normally food secure households *and* targeting of general (free) rations is not feasible, especially in urban areas, *or* there is a need to revitalize the food market (including milling) sector.

**Panel 15-4**

**Market interventions**

Market interventions may include subsidized sales or simply the provision of a second-choice staple to retailers who agree to sell at a controlled price.

Such operations can be organized using either food aid commodities provided by bilateral donors for that specific purpose, stocks from a national security reserve, or commodities purchased by the government domestically or on the international market. If reserve stocks are used, donors may agree to help replenish the reserve, which is then equivalent to borrowing from the reserve for immediate use. The volume of subsidized sales must be set to avoid undercutting local traders who would otherwise hoard or relocate their current stocks.

If such market interventions are to be considered, you will need information on:

- the numbers of retailers willing to participate in the scheme;
- the milling and storage capacity available;
- the price differentials between the main staple and the low-cost staple; *and*
- the capacity available to fortify the low-cost staple if there is evidence or a risk of micronutrient deficiencies.

***Market support*** may include actions that help make the market more responsive to conditions of low effective demand, such as lowering transaction costs, increasing supplies of low-cost consumption substitutes, increasing credit availability for the trading system, or increasing or improving the storage facilities available to traders.

Panel 15-5 provides an example of a format that could be used to determine the suitability of cash transfers. The format might be adapted for use in relation to other response options, with relevant lists of "key concerns".

**Panel 15-5**
**Format for analysing the suitability of a particular response option**

| Key concerns | | Mission conclusion | | |
|---|---|---|---|---|
| | | High possibility | Moderate/ marginal possibility | Low/zero possibility |
| | *Market environment* | | | |
| 1. | Markets will adequately respond to meet effective demand for food backed by cash transfers with minimal risk of inflation | | | |
| | *Household-level issues* | | | |
| 2. | a). Households' physical access to markets is not constrained | | | |
| | b). Households will be better-off with cash transfers | | | |
| | *Implementation/operational issues* | | | |
| 3. | Innovative delivery mechanisms can minimize cash delivery operational problems | | | |

For more specific guidance on identifying responses that *might* be appropriate to address short-term problems, see: ◆ WFP *EFSA Handbook*.

For additional guidance on determining whether food or cash transfers might be appropriate, see ◆ *A Market Analysis and Decision Tree Tool for Response Analysis - Cash Local Purchases and/or Imported Food Aid*.

When considering ***feasibility***, consider:

- the institutional issues indicated in Panel 15-6;
- possible logistic constraints, also indicated in Panel 15-6;
- any other factors that may constrain response capabilities; *and*
- timing: how quickly and during what periods the assistance needs to be delivered to the populations (how much lead-time is available to put things in place?).

Note that it is important to discuss the capacities and intentions of current and potential food security actors/partners during the field visits, as well as in meetings in the capital, in order to get a clear idea of the willingness and ability of each one to expand their programmes to include new activities and/or areas, in case needed.

**Panel 15-6**

**Considerations relating to feasibility - institutional and logistical aspects**

***Institutional feasibility***:

If there are *ongoing humanitarian operations* in the areas where food security assistance is required, ask yourselves the following questions:

- Are the ongoing (or planned) activities appropriate? Would you want to propose any change in the nature or design of ongoing (or planned) activities given your analysis of the situation? If so, explain why.
- Do they serve the priority population groups that you have identified for assistance in the coming months (including both rural and urban populations, where relevant)?
- How does the scale of the ongoing activities compare with what you estimate to be required in the coming months? If it is much less, to what extent and how quickly could the ongoing activities be scaled up?

If there are *no ongoing food-security-related activities* in some of the areas of need, or if the ongoing activities are on a *much smaller scale* than is now required, consider the following questions:

- Are there additional organizations with relevant experience that could be mobilized to help implement appropriate interventions in the areas concerned?
- Are there other forms of assistance that c/should be considered instead or in addition?

***Logistic feasibility***:

Is road access likely to be difficult or impossible for any reason: e.g. due to insecurity (the case of parts of Sudan and Ethiopia in 2007) or earthquake damage (as in Pakistan in 2007)?

Is a fuel shortage likely to be an issue (as in Zimbabwe in 2007)?

## 15.2 Proposing arrangements for targeting

- Determine whether geographic and/or household targeting would be desirable within the affected area(s) and, if so, what the targeting criteria should be and what targeting mechanisms should be used.

Good targeting is necessary not only to ensure that the benefits go to the most food-insecure households but also to avoid negative effects on markets and disrupting local commercial trade, especially in the case of food transfers. Choosing the right intervention - one that can reach the intended beneficiaries and will be more attractive for them than non-targeted population groups - can be considered the first step in good targeting.

Panel 15-7 lists some of the principal options that may be considered. For detailed guidance on choosing targeting arrangements, see the WFP guidance on targeting.

**Panel 15-7**

**Some household targeting options**

*Targeting of food or cash transfers*:

- ***Community-based targeting*** in which, on the basis of agreed needs-based (socio-economic) criteria, the community selects which households are to receive food or cash transfers and/or participate in food-for-work or cash-for-work activities. This requires a cohesive community with a value system that protects the most vulnerable groups.
- ***Working with implementing partners to conduct household (house-to-house) surveys*** to identify those in real need. This is feasible only where indigenous partners have the capacity and where most people do not need food aid.
- ***Providing transfers only to specifically defined categories of vulnerable households*** that are easily distinguished (such as female-headed households or households with a chronically-sick member) or have already been recognized and registered administratively. This is feasible in more developed societies, but experience shows that it often misses some of the most food-insecure.
- ***Providing transfers only in exchange for work***. This is satisfactory only when the numbers of people in real need are limited and adequate work opportunities can be provided. A social/ nutritional safety net is needed for households that do not have able-bodied adults who are able to work.

*Targeting of food transfers*:

- ***Providing food commodities that are attractive only to the most-needy people***. This is effective in many situations, but is not always appreciated by officials and community leaders.
- ***Providing a limited general ration for everyone and an additional ration for specifically defined categories of vulnerable households***. This is more complicated and requires more resources than a single distribution programme.
- ***Providing a general ration to everyone based on average need, and relying on internal mechanisms within the community to ensure that no one starves***. This is the most frequent approach, but experience shows that in many situations internal mechanisms cannot be relied on to assure redistribution among households according to need.

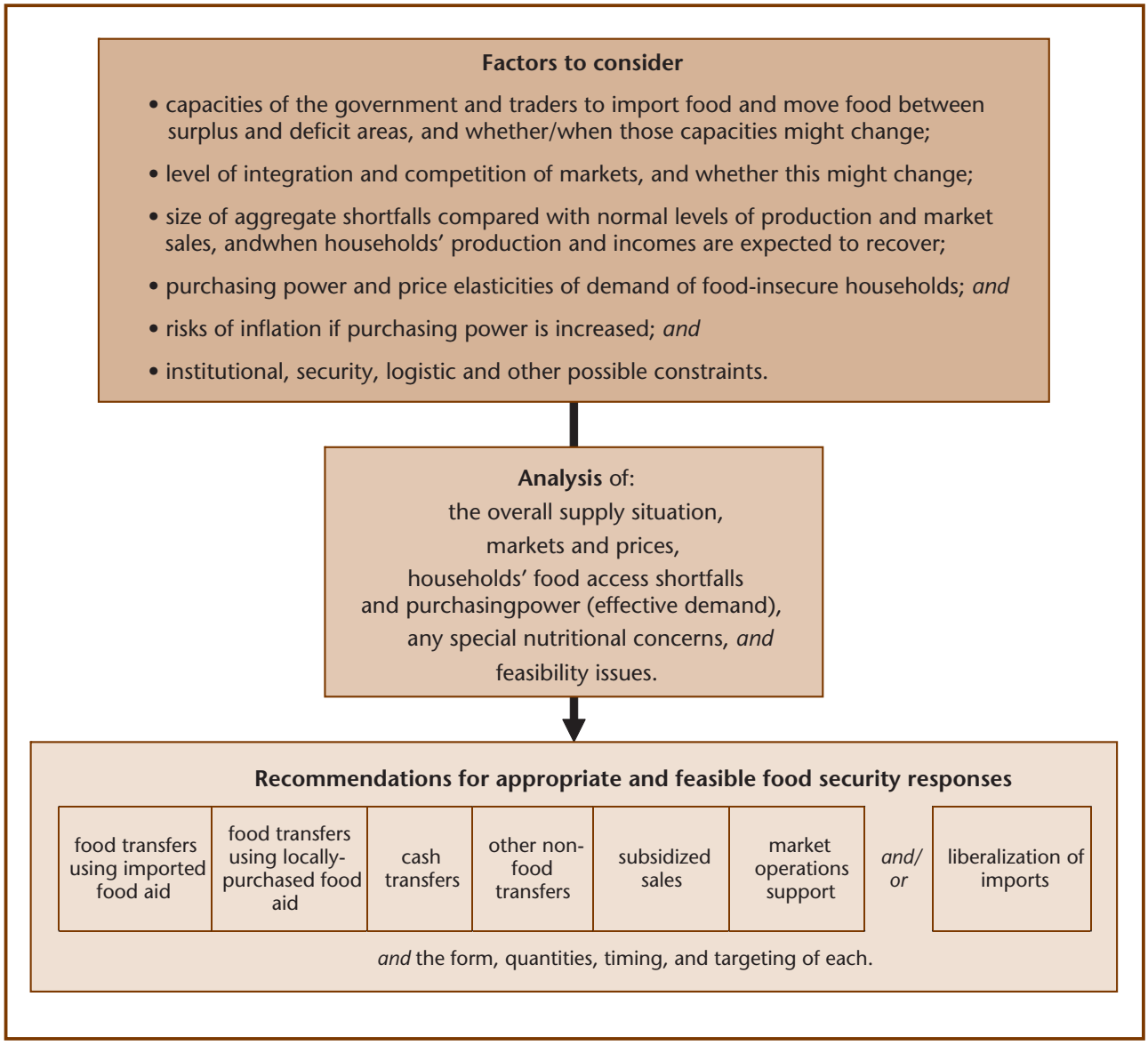
[Adapted from *Emergency Field Operations Pocketbook*, WFP 2002]

# 16 Formulating recommendations

## 16.1 Recommending a set of interventions

The team's responsibility is to recommend a response to the consumption problem in a manner that takes fully into account the functioning of markets and does not have negative effects on markets or on long-term incentives for local food production. Figure 16a summarizes the factors to consider.

Figure 16a **Factors to consider when analysing and recommending response options**




During the early stages of a crisis the priority may be on humanitarian objectives and ensuring that interventions do not have negative effects on markets and the recovery of livelihoods. From the earliest possible moment, however, attention should also be given to ensuring that food-security assistance supports the recovery - or enhancement - of markets and livelihoods. In most cases, there will already be an ongoing assistance operation and plans, or recommendations, for the continuation or modification of those operations. You should:

- Propose (or endorse) a set of food-security assistance interventions that would simultaneously:
  - meet the humanitarian objectives of saving lives and protecting and restoring livelihoods; *and*
  - have short-run and longer-term positive effects on the local economy and determinants of future food security, particularly agricultural production and markets.
- Form your own judgment as to the appropriateness for the coming 12 months of the ongoing or already-planned operations in the light of your conclusions regarding the needs of different population groups.

Build on existing capacities and experience in the country to the extent possible. Propose the setting up of new systems and capacities only if absolutely necessary: setting up is often costly, takes time and could be risky.

### Taking account of the inter-actions between assistance and medium-term food security

- Consider the inter-actions between assistance, local food markets and production, and the potential effects on food security in subsequent months when developing a set of recommended interventions.

Food transfers and/or other forms of food-security assistance (including cash or other non-food transfers) can be essential to save lives and livelihoods in a crisis, and to promote recovery by enabling affected households to have access to adequate food during certain periods. However, if food or other transfers are poorly targeted or food is distributed during a harvest period it could have unwanted effects on market prices and traders' decisions in relation to imports and the movement of food from surplus areas and on producers' decisions on how much to plant for the next season.

For example:

- Food aid imports may reduce market prices by reducing demand and adding to total domestic supply. The reduced prices benefit consumers but may penalize local producers who sell while also reducing the quantities private traders might otherwise have imported. The price reduction will therefore be less than it might have been and total availability increased by less than the quantity of food aid imported.
- Local purchases of food in surplus areas for distribution in crisis-affected areas can help to stabilize markets *if* the purchasing and distribution are completed well before the next harvest. If not, they may further disrupt markets.
- Cash or other non-food transfers to beneficiary households will increase their purchasing power and, consequently, their access to food *if* sufficient food is physically available. The transfers may also reduce the need for farmers to sell the bulk of their production just after the harvest. But the increased demand may also lead to inflation of food prices.
- Subsidized sales of cereals in the affected areas (using stocks from a national security reserve or bilaterally-donated supplies) can increase the quantities of food accessible

to poorer households and moderate price increases (or reduce prices) for other staples in those areas. However, this may induce traders to move their stocks to areas where effective demand is strong and prices are higher, reducing the effect on prices in the affected areas. It could also create a risk of future shortages if traders were to abandon the area.

- Promises or even suggestions of food aid imports are likely to reduce the quantities that private traders import and, if the promises (or suggestions) are not fulfilled, result in total availability being lower and prices higher than they would otherwise have been.

These potential effects must be taken into account when analysing and deciding on response interventions, failing which, the assistance may have less than the desired impact on food security and, in the worst case, may even hinder recovery.

### Assessing the relative costs of transfers

Food-transfer programmes usually have high operational and administrative costs in addition to the cost of the food. Operational and administrative costs *may* be substantially less for a cash transfer (a cash-in-lieu-of-food) programme *if* existing financial institutions can be used to make the transfers to the selected beneficiaries. However, fixed setting-up costs must also be considered and these might be low for food distribution *if* food distribution mechanisms are already in place and high for cash transfers.

If food markets are operating efficiently and food security problems are predominantly income-related, the value of the food aid to the recipient approximates the local price of the commodity. In this case, a measure of the relative ***variable-cost-benefits*** of food and cash transfers can be derived by comparing the estimated "alpha-values" of the two options and adding in the ***fixed costs***, see **Technical Note H1**. If it is difficult to find relevant information for the analysis proposed there, at least calculate and report the relative costs of providing a unit of food and providing its cash equivalent.

### Defining the value of transfers

For ***food transfers***, a "full" ration (usually only for refugees and IDPs who are more-or-less totally dependent on the food ration) is designed to meet the nutritional needs of the beneficiaries - 2100 kcal/person/day, on average, adjusted if necessary for temperature, activity level, demographic breakdown and general health and nutrition status, as outlined in Panel 16-1. For examples of full rations, see WFP *Programme Guidance Manual* (PGM), WFP *Food & Nutrition Handbook*, or WFP *Emergency Field Operations Pocketbook*.

A "partial" ration (for most population groups) is designed to make up the difference between nutritional requirements and what people/households can, on average, reasonably be expected to provide for themselves, i.e. to cover the estimated household food access shortfall for the target group (see section 13.4). To the extent possible, account should be taken of - compensation made for - any nutrient imbalance in what people can provide for themselves, but partial rations are usually limited to only a small number of items (less than in a "full" ration).

**Panel 16-1**

**Energy requirements**

For initial planning purposes, 2,100 kcal/person/day is taken as the average minimum daily energy requirement for a "typical" population in a warm climate undertaking light physical activity. The average requirements of different groups within a population are shown in the table below.

When data are available, the initial planning figure should be adjusted according to:

- *Temperature*: Add 100 kcal for every 5°C that the mean daily temperature falls below 20°C (i.e. +100 kcal at 15°C, +200 kcal at 10°C, +300 kcal at 5°C, +400 kcal at 0°C).
- *Age/sex distribution*: When adult males make up more than 50 percent of the population, requirements are increased; when the population is exclusively women and children, requirements are reduced. Adjustments of plus or minus 5 percent may be appropriate.
- *Physical activity level*: Add 140 kcal for moderate activity, and 350 kcal for heavy activity (e.g. during construction or land preparation works).

When the nutritional situation of the population is extremely poor or the crude mortality rate significantly elevated, an additional 100-200 kcal may be added to the basic ration. However, this may not be needed if there is extensive supplementary and therapeutic feeding.

Source: *Food and Nutrition Needs in Emergencies*, UNHCR-UNICEF-WFP-WHO 2000, as summarized in *Emergency Food Operations Pocketbook*, WFP 2002, p 146, and *Joint Assessment Guidelines*, UNHCR-WFP 2004, p 280.

For ***cash transfers***, the transfer is usually based on the cash value of the cereal equivalent of the food consumption shortfall based on the market price consumers are likely to face. Determination of which market price to use will pose some problems, because at the time of CFSAM, the crisis would have driven up the food prices. Since the rationale for selecting the cash option is the expectation that markets will supply the shortfall, prices should tend to come down with increasing trader supplies and, with sufficient competition, rest around import parity price levels. If you propose cash transfers, you may need to recommend close monitoring of the price changes to enable transfer levels to be adjusted if/when necessary.

In general, households receiving an additional unit of income will spend only part of it on food (the income elasticity of demand for food is less than one). Among poor households, the proportion of the additional unit of income spent on food is likely to be about 60 percent to 70 percent; less for richer households. This means that a much higher value than the market value of the food shortfall would have to be transferred if the desired nutritional goals (consumption increases) are to be attained. This phenomenon also holds true for food transfers, which also represent income for the recipient who frequently realizes an increase in cash available for non-food expenditures by selling part of the food ration and/or reducing expenditures on other food items. In food transfers no allowance is made to compensate for the reduced consumption benefits relative to nutritional goals. It is implicitly assumed that the "savings" contribute to (re)building livelihoods and contribute to future food security.

### Minimizing the potential negative effects of transfers

As noted in section 8.6, both food and cash transfers can have negative effects on local markets and non-recipients in certain circumstances. You must, therefore:

- Select response options carefully *and* suggest how to minimize potential negative effects;
- When large-scale transfers may be needed, examine (amongst other things) any evidence of negative effects of previous emergency assistance on markets and domestic production.
- Limit the total inflow of food aid to what is clearly needed; *and*
- Set robust exit criteria both for the transfer programme for the different types of beneficiaries and areas.

When the balance-sheet analysis shows that there is an uncovered deficit that needs to be met by additional (emergency) food aid but the same analysis or a partial equilibrium demand analysis (using the "Zambia model", for example) shows that the maximum quantity of food that should be imported is less than the aggregate need of food-insecure households, a ***combination of food and cash transfers*** may be the best response, see Panel 16-2. The levels of the two transfers must carefully set: the cash transfer could enable households to purchase those quantities of food that are available on the domestic market (without unduly inflating prices), while the food transfer could make up for the supply deficit, without unduly depressing prices.

**Panel 16-2**

**The case for combined food and cash transfers**

It is common knowledge in food transfer programs that beneficiaries tend to exchange/sell a part of their rations to use in purchases of other necessities of food (that are not covered in the rations such as vegetables, fish and meat, condiments etc) and day-to-day living (soap, utensils, fuel, school supplies, transport costs). For the beneficiaries, selling or exchanging rations is an inefficient way of meeting the other needs because of the discounting of commodity values that take place in these transactions. The process will also not help in achieving the expected nutritional objectives. The mission may recommend a partial cash transfer in food transfer program as a response to this phenomenon.

The case for partial food transfers in a cash transfer program may also be seen as a necessity if constraints on supplying adequate supplies of important food items, e.g. staples, are expected due to national or regional supply failures, high international prices or trade restrictions. A partial supply of major food items and cash to purchase the balance requirements from the market (if the market is deemed to have the capacity to respond to such needs) could be the appropriate response in this situation. The objective here should be to maximize market use while assuring supply of basic food items, which the market is unlikely to supply adequately to the households.

## 16.2 Scheduling public-sector imports and imported food aid [16]

- Prepare a schedule for the delivery - arrival in-country - of public-sector imports and all imported food aid.

Thus far the guidelines have concentrated exclusively on the quantities of food and food imports required. The timing of public sector imports and food aid for market sales can be as important as the annual quantity of deliveries. Poorly-timed imports lead to excessive storage costs, losses and price fluctuations that, in turn, undermine private trade and can lead to severe food shortages at times or can flood domestic markets.

In import-dependent countries guidelines for delivery schedules may already be operational. But a country with an exceptional food aid requirement or which has only recently become a major importer may not have precise guidelines on scheduling. In these circumstances donors will have to be informed not only of the quantities of food aid required but also ***when*** it should be in-country. Desirable delivery schedules should be derived from an assessment of intra-annual supply and demand patterns.

## 16.3 Defining what should be monitored

***Monitoring*** the food security situation, especially with regard to food supply changes and implementation of external assistance to affected households is normally carried out by a national food security information system (FSIS) and the country offices of FAO and WFP. However:

- You should, in your report, include recommendations for monitoring developments in key aspects influencing household food security, which in turn could have significant impact on estimated food needs and assistance levels.
- Focus on factors that would have a ***significant influence*** on assistance requirements and programme design. You may conduct a quick sensitivity analysis to distinguish factors that could have a significant impact from those that would not.
- Where possible, suggest trigger levels for specific indicators that should lead to action (either specific programme changes or further study).
- Take account of any forthcoming, already-planned events such as a population census, or re-registration for refugees or IDPs.
- You may also highlight any programme implementation monitoring requirements that are not already in place.

Recommendations might focus on, for example:

- prices of food and other essential commodities, especially following any cash transfer distributions;
- changes in the security environment that can affect the programme;
- market response in terms of commodity flows;
- household behaviour in the use of cash for food and non-food purchases.

[16] Adapted from 1996 guidelines section 9.4.

Where appropriate, you may recommend a ***follow-up assessment***. If, for example, following a failed major crop, you foresee prospects of a second crop significantly augmenting food supplies in certain zones during the later months of the crop year, you may want to propose a follow-on mission at that time to assess the new supply situation and make adjustments to the previous estimates of food security shortfalls.

## 16.4 Suggesting what could be improved

- Reflect on the experience of the mission and highlight anything that could significantly improve the conduct and outcome of a future CFSAM. This might include in-country data collection, reporting and analysis systems, preparations in advance of the mission, or the methods used during the mission.

For example, if data on commercial imports (especially unregistered but possibly also registered trade) are deficient or considered unreliable, you may want to propose putting in place a local monitoring system along the lines of the WFP system in Southern Africa and in parts of Eastern Africa.

# Annexes

# Contents

## Annex 1

# Annotated outline for a CFSAM report

The suggestions shown for the length of the various sections are indicative and relate to the *text* in the main body of the report. Summary tables, graphs and maps that are essential for the understanding of the text, and should therefore be included in the body of the report, would be in addition. Additional detailed supporting text, tables and maps could be in annexes.

| Chapter & section [Suggested length] | What should be included |
|---|---|
| **Contents** | Contents list including page numbers. |
| **Abbreviations & acronyms** | All abbreviations and acronyms used in the report. (Restrict to the minimum necessary!) |
| **Highlights** [1 page/400 words] | Concise summary of the key findings and recommendations, using bullet points when appropriate. |
| ***1. Introduction*** [1½ pages/600 words] | |
| **Objectives** | The objectives of the CFSAM (as confirmed/agreed upon during the first days of the mission). A brief explanation of the reason for any particular focus, if appropriate.<br>The relationship with other assessment processes in the country. |
| **Food security crisis background** | Brief descriptions of the crisis-affected areas, the cause(s) of the crisis, the principal livelihood activities (indicating which have been affected and which not), whether it is essentially a crisis of food availability or access or both, and how it compares with previous crises in the country.<br>Brief summary of the nature and impact of food-security-related assistance to date.<br>Brief note of any issues arising from the previous year's CFSAM report (if there was one) and its follow up, that were taken into account in planning this year's exercise. |
| **Methodology** | Brief summary of the approach and methods used to collect and analyse data and the principal sources of secondary and primary data.<br>Brief comments on (i) the quality and limits of the data and the team's confidence in the findings and conclusions presented in this report, and (ii) any assumptions made. |

| Chapter & section [Suggested length] | What should be included |
|---|---|
| ***2. Socio-economic context*** [2 pages/800 words] | |
| **Population** | Population data for the country. Numbers and demographic characteristics of the populations of the affected area(s). The basis for the estimates. The range of other current estimates, if relevant. Breakdowns by geographic areas and livelihood groups, if available.<br>The numbers and demographic characteristics of any refugees or IDPs: recent and expected changes in those numbers. |
| **Macro-economic situation and policies** | Overview of the macro-economic situation in the country and how (if at all) it has been affected by, or contributed to, the present crisis.<br>A short paragraph summarizing the nature and importance of food imports and exports, (including both registered imports/ exports and unregistered cross-border trade) and any changes in flows due to the crisis.<br>Fiscal and trade policies and objectives, including any recent changes in policies, and their effects on food security.<br>How the government budget, income, expenditures, foreign exchange reserves, the exchange rate, etc. can be compared with previous years, and the implications for food security. |
| **Agricultural sector in the national economy** | Characteristics of the agricultural and food production sector including the relative importance, agricultural policies - nationally and in the affected areas - of the main food and cash crops, livestock, fishing, and any other agricultural activities. The current policy environment and any significant changes in policies in recent years. Any land ownership issues.<br>The parts of the country that tend to be structurally surplus or deficit areas, and how production in the different areas has been affected; comparison with previous crises. |
| **Social and humanitarian context** | The main humanitarian consequences of the crisis. The nature and impact of assistance to date. Any changes expected in the type and volume of assistance in the coming year.<br>Social policies and issues (including socio-cultural or ethnic differences, HIV/AIDS, etc.) that affect food security or the provision of assistance.<br>*If the country is in a recovery phase following a major disaster or conflict*: the progress of recovery to date in relation to food security, and any variations between areas or population groups. |

| Chapter & section [Suggested length] | What should be included |
|---|---|
| ***3. Agricultural production*** [4 pages/1600 words] | |
| | A short paragraph summarizing the principal food and cash crops grown in the country and in particular in the affected areas. |
| **Rainfall and other key inputs** | Data on rainfall during the last crop season, seed, fertilizer, etc. and the implications for crop production. |
| **Cereals and other starchy staple crops** | Estimates of planted and harvested areas and yields for the main staple crops in different zones (differentiating small-holders and commercial farms, and irrigated and non-irrigated areas, if relevant). The factors that have affected areas and yields.<br>Expected aggregate production in different zones. Changes compared with a normal year. Areas with unusual deficits. Areas where surpluses are available.<br>Expectations for any second-season crops, where relevant.<br>Factors that could positively or negatively affect the production estimates. |
| **Other crops (including cash crops)** | Estimates of (current or expected) planted and harvested areas and yields for other crops that represent an important part of the diet or source of income, including regional variations (differentiating small-holders and commercial farms, and irrigated and non-irrigated areas, if relevant). The factors affecting areas and yields<br>Changes compared with a normal year.<br>Factors that could positively or negatively affect the production estimates. |
| **Livestock, fisheries & associated products** | *Where livestock or fish are an important part of the diet or source of income*: the findings of the mission concerning the impact of the crisis and expected shortfalls in production compared with a normal year.<br>Factors that could positively or negatively affect the production estimates. |

| Chapter & section [Suggested length] | What should be included |
|---|---|
| ***4. Market conditions and prices*** [1½ pages/600 words] | |
| | A short introductory paragraph explaining the importance of food markets and identifying the other principal markets that affect livelihoods and food security in the affected areas. |
| **Food prices** | Prices of cereals and other main foods, how they can be compared with a normal year and how they can be expected to evolve taking account of normal seasonal variations; how wholesale prices compare with the import-parity price and retail prices in different areas. General level of effective demand: how terms of trade have changed for purchasers of staple foods (ratios of cereal prices to those of livestock, the main cash crop, and wage rates).<br>Present a graph showing prices over the last 5 years up to the present, and (if possible) a projection of prices based on a partial supply/demand model.<br>Factors that could cause prices to rise or fall in the coming months. The implications of price movements for food security. |
| **Food market structure, services, integration & performance; food flows** | Brief descriptions of: (i) the food market system - the market chain and main market centres - and how it has been impacted by the crisis; and (ii) how the system is functioning at present and how this is likely to change in the coming year, considering the availability of services, logistic constraints and transaction costs.<br>Brief description of the degree of market integration and changes in the direction and levels of food flows within the country and across borders with neighbouring countries. If possible, present maps showing flow directions and tables showing estimated quantities compared with normal.<br>Factors that could affect market performance and estimated flows. |
| **Livestock markets** | *Where livestock are an important source of food or income*, a brief description of how markets have been affected by the crisis and how they are functioning now, and the implications for food security. |
| **Labour and agricultural input markets** | Present daily wage rates and how they can be compared with the seasonal norm. Changes in the demand for labour compared with the seasonal norm and how that demand is likely to change in the coming year.<br>Brief description of the impact of the crisis on markets and prices for agricultural inputs, other inputs/raw materials for important income-generating activities, and households' essential non-food requirements, and the impact on food security now and in the coming year. |

| Chapter & section [Suggested length] | What should be included |
|---|---|
| ***5. Food supply/ demand balance*** [1½ pages/600 words] | |
| **National** (and sub-national) **staple food balance sheet**(s) | Present and explain the national balance sheet. Briefly explain why supply-demand balances have, or have not, been prepared at the sub-national level.<br>*Where sub-national balances have been prepared*: present and explain the balances for the different areas; highlight surplus and deficit areas and changes compared with recent years, and explain the implications. |
| **Stocks** | Brief description of the various types and locations of food stocks held by government, traders and others, and the policies governing the use of government (reserve) stocks.<br>Compare the current level of stocks (opening stocks for the FBS) with a normal year. Explain the basis for the estimate. Comment on any uncertainties and give a range of possible figures, where appropriate.<br>Explain the figure used for the target/planning level of stocks at the end of the coming marketing year (required closing stocks) and any difference from previous years. |
| **Food consumption requirements** | Brief explanation of the team's best estimate of per capita consumption and how it can be compared with estimates in previous years and with that of similar populations in neighbouring countries. Comment on any uncertainties and give a range of possible figures, where appropriate. |
| **Other uses and post-harvest losses** | Brief explanations of the team's best estimate of requirements for animal feed, seed and industrial uses, and for post-harvest losses, and how they can be compared with estimates in previous years. Comment on any uncertainties and give a range of possible figures, where appropriate.<br>Factors that could positively or negatively affect the estimated requirements or losses. |
| **External trade** | Brief explanations of: (i) the team's estimate for effective demand (at present and during the coming year); (ii) traders' intentions in relation to imports and exports, and any uncertainties that are influencing their decisions; and (iii) the team's estimates for registered public and private commercial imports and exports, and unregistered cross-border imports and exports in the coming year.<br>How those figures compare with previous years. Factors that could positively or negatively affect the estimates. Give a range of possible figures, where appropriate. |

| Chapter & section [Suggested length] | What should be included |
|---|---|
| **Analysis of balances and uncovered food import requirements** | General comments on the balance sheet(s). Explanation of the team's estimate for uncovered food imports. Factors that could positively or negatively affect the estimate. |
| ***6. Household food security and nutrition*** [3 pages/1200 words] | |
| **Overview of household food security and assistance** | Short introductory paragraph explaining the main factors determining the food security of households in different population groups and the principal livelihood activities (and normal coping strategies) that have, and have not, been affected.<br>The types, levels and targeting of ongoing food-security assistance.<br>Explanation of the approach and method(s) used to assess household food access, and the sources of data on nutritional status and health. |
| **HH food security of different groups** | Brief description of the impact of the crisis on different population groups (normally livelihood groups but possibly ethnic) in different crisis-affected areas, their coping strategies and current food security/access status, their prospects and vulnerabilities.<br>Estimates of the levels of food insecurity - the household food access shortfalls - of different groups in different areas and the expected duration of the crisis-induced/enhanced shortfalls. Explanation of the basis for the estimates (or categorizations).<br>Map showing the geographic distribution of different levels of food insecurity.<br>Factors that could positively or negatively affect the food security/access of the different groups in different areas.<br>The extent to which currently-observed food insecurity is chronic or transitory, and the implications for assistance strategies. |
| **Health and nutritional status** | Brief summary of the health and nutritional situation in the different affected areas and among different population groups, including the most likely causes of poor health and malnutrition.<br>The implications for food security assistance and special nutritional support. |

| Chapter & section [Suggested length] | What should be included |
|---|---|
| **Estimated numbers of people in need of food security assistance** | The number of food-insecure people in each (livelihood) group in each area, and the proportion/ number in specific categories of acute, crisis-induced or crisis-enhanced, food insecurity now and in coming year.<br>Explanation of how the estimates were arrived at and any issues involved. |
| **Aggregate emergency food security assistance needs** | The aggregate of the team's estimates for the needs of different population groups including the periods when food security assistance would be needed at household level.<br>Factors that could increase or decrease the overall needs (shortfall estimates). |
| ***7. Conclusions & recommendations***<br>[2 pages/1000 words] | |
| **Conclusions** | Comparison of the uncovered import requirement from the national food balance sheet and the estimates of aggregate food security assistance requirements. Short explanation of the reasons for and significance of differences.<br>Explanation of the team's conclusions concerning: (i) aggregate assistance needs of the affected, food-insecure populations; and (ii) the uncovered food import requirement and whether any part of it could be met by additional commercial imports rather than food aid. |
| **Objectives and response options** | Brief statement of the *objectives* of food-security-related assistance arising from the preceding analyses, and any logistic, institutional or other *constraints* that may limit the feasibility of certain response options.<br>The pros and cons of *food aid* in this situation. Whether specific types of food aid intervention *might* be appropriate for particular target groups during particular periods.<br>The pros and cons of *cash transfers* or other *non-food transfers* to target beneficiaries in this situation. Whether specific types of cash-based or other support *might* be appropriate for particular target groups during particular periods.<br>Any *market interventions/support* that could help to improve food availability in the affected areas and access for the target groups. |
| Recommendations | A short paragraph introducing the team's recommendations and explaining whether they are in line with what other recent assessments recommended or not, and if not why not. |

| Chapter & section [Suggested length] | What should be included |
|---|---|
| **Recommended food security assistance strategy** | The overall food security assistance strategy recommended by the team - types of intervention, targeting arrangements, quantities, and delivery/distribution schedule:<br>• the types of food aid intervention recommended, if any, including target groups, ration levels and duration;<br>• the types of cash-based or other support for households recommended, if any, including target groups, levels of assistance and duration;<br>• any *market interventions/support* recommended, including type, magnitude, targeting and duration.<br>The risks if the proposed assistance is not provided to the target beneficiaries in time, if the targeting is not respected, or if the assistance is distributed late. |
| **Recommendations for other required non-food responses** | Brief mention of any non-food items or other support that households, communities or institutions might need, in parallel with the assistance recommended in the preceding section, to ensure that overall food security and nutritional objectives are achieved. |
| **Recommendations for follow-up action and monitoring** | Recommendations for follow-up, in-depth assessments of specific issues, if required.<br>The factors/indicators that the team recommends should be monitored, how, where and at what frequency in order to inform programme adjustments (if/when needed) and to provide early warning of any new crisis. |
| **Recommendations for future improvements** | Recommendations of the team (if any) for improving the quality of data for future assessments and improving the preparation and implementation of future assessments. |
| ***Annexes*** | |
| | Detailed supporting text, tables and maps, as required. |

## Annex 2

# Complementary inputs of FAO and WFP team members during a CFSAM

| Topic | FAO team members | WFP team members |
|---|---|---|
| **Food security crisis background** | FAO can provide overall agricultural, food security and nutrition policy information and analysis. This is combined with an analysis of current economic situation and trends, including the impact of the world market, when relevant. | WFP summarizes how the determinants of food insecurity at the household level, including long-term exposure to risk and the relative effectiveness of coping strategies have been affected both by the shock (e.g. crop failure) and by changes in the economic, policy, institutional and social environments. |
| **Socio-economic context** *(population, macro-economy, agric sector, social policies/ issues)* | FAO usually provides national population, economic and agricultural and livestock production figures, as well as food security and nutrition-related policy analysis. | WFP contributes basic demographic and socio-economic indicators - age pyramid, mortality rates, literacy, unemployment, etc. - and sub-national-level information on livelihood systems, incomes and population displacements. CFSVA data are critical to any CFSAM. |
| **Agricultural production** | This section relies on preliminary government estimates of area cultivated and yields, as checked, validated and adjusted by FAO for internal and historical consistency, and on the basis of field visits informed with current year rainfall and remotely sensed data. Sites are selected to represent the variety of production systems and conditions, to the extent allowed by time and number of assessors. | WFP contributes historical and current year data on variations in livelihood systems (e.g. VAM and CFSVA data) that help to inform the selection of sites to be visited by the agricultural production sub-teams. This is especially valuable when variations in livelihood systems are not directly related to differences between agro-ecological areas. |

| Topic | FAO team members | WFP team members |
|---|---|---|
| **Markets**<br>• **Food markets**<br>• **Other critical markets (for livelihood activities)** | FAO can draw on its experience in assessing the relative efficiency and performance of markets for agricultural commodities. Seasonal and historical analysis of prices (requiring monthly data from selected markets to update the available datasets) and analysis of linkages among national policies, domestic markets, and regional/ international markets (depending on the availability of pre-crisis market assessments). | Contributions from WFP may include: Information on the domestic or regional grain sector including practices, constraints and costs (procurement officers); wholesale and retail food price data; information or data on cross-border flows; analysis of in-country food markets; impact of markets on household food access; |
| **Stocks** | Public stocks information is collected by FAO; stocks held by traders and surplus farmers are estimated on the basis of interviews, and general supply-demand conditions for the ending marketing year. | WFP has access to additional information on public and other in-country emergency stocks, on food consumption, dietary practices and nutrition. These can help refine assumptions made on remaining stocks, including at the farm level. |
| **Domestic utilization requirements** | For this basic component of the balance sheet, FAO typically uses either official or UN population estimates, adjusted for the relevant marketing year, and estimates of past aggregate apparent consumption of cereals, or cereal equivalent amounts, for major staples. | WFP contributes information on food consumption and nutrition trends, which may be used to adjust the "status quo ante" estimate.<br>(For instance, a progressive fall in the nutritional level of the population may suggest that the "normal" historical average is not adequate or sustainable, in terms of minimum energy requirements and/or problems in relation to the health and sanitation environment.) |

| Topic | FAO team members | WFP team members |
|---|---|---|
| **External trade** | The extent to which a country can make up a food deficit with its own resources is estimated by the FAO team on the basis of macro-economic trends and current conditions, foreign exchange reserves, government policies and an appreciation of the relative strength of effective demand for imported staples. | WFP contributes household-level data on incomes and expenditures useful to the assessment of effective demand. In some cases, WFP can also provide qualitative or quantitative information on cross-border food flows, which need to be integrated into official statistics or estimates of external trade. |
| **Staple food balance sheet(s)** | FAO provides the estimated aggregates for production, population, utilization and the general trend in commercial imports. The FAO economist draws up the balance sheet integrating elements from other team members. | WFP provides data on food aid and contributes to the review and interpretation of the balance sheet. |
| **Household food security status, coping & vulnerabilities** | FAO can contribute technical information on the nature and degree of shocks to livelihood systems, on the expected effectiveness of coping mechanisms available to affected households, and on a range of practical options for emergency response activities. | For this critical part of the report, WFP combines information on the nature and severity of the shocks, and data collected during the mission with baseline and VAM data, the results of CFSVAs, EFSAs, and information from other food security assessments. |
| **Health & nutritional status** | FAO can contribute detailed national food balance sheets prepared for all countries as a guide to the relative importance of main staples in the diet, assist in assessing the nutritional adequacy of diets in the light of access to food and human nutrition requirements, and provide guidance for the analysis of food security, nutrition and health indicators. | WFP compiles and critically reviews the information from nutrition/health surveys carried out by other agencies (coverage and representativeness, seasonal issues, association of malnutrition with health, care and food security factors). |

| Topic | FAO team members | WFP team members |
|---|---|---|
| **Estimated HH food access shortfalls** | FAO provides information on the aggregate determinants of food security and their implications for nutrition. | WFP uses household- and community-level information and the aggregate determinants to analyse and estimate household food access shortfalls (usually until the next main harvest) for different population groups, and the numbers of persons in the various affected groups. |
| **Comparison of estimates from balance sheets and HH analyses** | FAO provides the macro-economic context with aggregate supply-demand data including an assessment of effective demand as a key factor driving commercial imports. The understanding of effective demand also indicates what share of the population is so chronically poor that they don't contribute significantly to aggregate demand for food in the market economy. | WFP provides the household-level analysis identifying *transitory* food insecurity in terms of household food access shortfalls (gaps).<br>WFP may also provide both macro-level and household-level analyses regarding the extent to which *chronic* food insecurity has been deepened by the crisis. This information is essential to explain the difference between the aggregate food supply/demand gap from the balance sheet, and the level of requirements for food security assistance. |
| **Response options**<br>(food aid, non-food responses) | FAO can contribute technical information on the appropriateness of non-food interventions and on how these would combine with food aid interventions (adding to them in the short-term, and substituting for them in the longer-term). Where applicable this may include agricultural emergency/ rehabilitation needs and recovery options. | WFP provides analysis and recommendations of response options for household food security interventions including non-food (e.g. cash/vouchers) as well as food response options, where appropriate. |
| | FAO and WFP participants jointly appraise national and sub-national capacities to respond, and the capacity of the market to cover the food needs of the population. | |

| Topic | FAO team members | WFP team members |
|---|---|---|
| **Recommendations**<br>(food security assistance strategy, ongoing monitoring, future improvements) | Recommendations are developed jointly. | |

## Annex 3

# Checklist of actions for the FAO and WFP country offices

The FAO Representative (FAOR) and the WFP Representative and Country Director (R&CD) play an important, joint role in the successful completion of CFSAMs. Together, they are typically expected to assure the following; the list may be refined during the preparatory consultations.

### Preparatory phase (pre-mission)

Once the decision has been taken to organize a CFSAM, the FAOR and WFP R&CD should:

- Secure a timely ***request*** from the government for the CFSAM and assurances that the relevant line ministry (usually the Ministry of Agriculture) is ready to host the mission and assign technical staff to act as counterparts and facilitators for field visits and arrange introductions to people that the team wishes to meet.
- Make sure that the Ministry/Government inform their ***field staff*** of the upcoming mission, and request them to make relevant information available.
- Arrange for ***letters of introduction/authority*** for the mission from an appropriate, high-level member or official of the government, see **Reference Note R5**. Inform the UN Country Team, donors, NGOs, and other stakeholders about the coming mission and, in agreement with the government, ***invite*** them to briefing meetings and, if they wish, to join the mission on field visits as observers.

  (Ensure that everyone understands the independent nature of the CFSAM and the role of "observers" - see **Annex 5**.)
- Arrange ***meetings*** for the mission during the first few days in the capital.
- Prepare suggestions for the ***areas*** that might be visited during the mission and an ***itinerary***, and estimate the number of sub-teams and the logistic support that would be required.

  (The final decision on the areas and sites to be visited - and the number and composition of sub-teams - will be made by the CFSAM team leader(s) after their initial meetings in the capital, but some advance planning is essential.)
- Prepare a ***budget*** for in-country costs of the mission (to be co-shared between FAO and WFP).
- Gather food security background ***information*** (recent assessment reports, maps, studies, sitreps) from various in-country sources, including information on: the current food production and supply situation and forecasts for the coming year; markets; the food security situation at household level and the vulnerabilities of various population groups; and population numbers. (See **Annex 6**) Work with govern-

ment and other partners to expedite any already-scheduled in-country ***assessments*** that the CFSAM may need to draw on.

- Arrange for additional data collection or specific small/quick ***studies*** to fill any important information gaps prior to the mission, if needed and feasible, as agreed upon during the preparatory consultations.

  (This may include, for example, up-dating existing market analyses, if needed, especially in a conflict-affected country, or arranging for such analyses to be prepared, if necessary.)

- Arrange for ***national consultants***, if necessary (including for pre-CFSAM work), and identify any additional in-country personnel who might be mobilized for the fieldwork: ask them to hold themselves available.

- Arrange for ***office facilities*** - space, computers, printers and a fax - to be available for the Team throughout the duration of the mission.

- Arrange necessary ***transport***.

- *If security is an issue*, ensure that all mission members have satisfied the UN security requirements, arrange for security ***clearances***, if required, and appropriate security ***briefings*** on arrival in the country and before leaving on field trips.

### At the beginning of the mission

When the core CFSAM team arrives in the country, the FAOR and WFP R&CD should:

- Provide an initial briefing of the mission (by the FAOR and WFP R&CD) on the general economic and food security situation in the country, on the security situation, and other appropriate country-specific information.

- Brief the government. The FAOR and WFP R&CD should introduce the mission members, state the purpose of the mission, and request the full co-operation of both headquarter and field staff of national agencies. During this briefing, the FAOR and the WFP R&CD may inform the government that the mission will provide a debriefing after the field visits. However, there should be no statement, direct or implied, that the mission report is to be submitted to the government for comments, approval or clearance before its release. The report is a UN (FAO/WFP) document and full independence of the process needs to be clearly maintained, in the interest of all parties.

### Following the field visits

Once the team has completed its fieldwork and before it leaves the country, the FAOR and WFP R&CD should:

- Arrange and co-chair a debriefing with the government - usually Minister of Agriculture and relevant staff from MoA, National Early Warning, Food Security, Nutrition and Statistics Units; *and*

- Arrange and co-chair debriefings - separately or combined - with (i) interested donors; and (ii) interested NGOs and other legitimate stakeholders.

At these debriefings, the mission leader is expected to provide an overview of the mission's methodology and findings supported as necessary by the core team members. The WFP mission member should present likewise the results of the emergency food security assessment(s) carried out during the mission. However, in all instances, the findings should be presented in qualitative terms since data analysis is still at an early stage and no firm conclusions can yet be drawn. For the same reasons, at this stage there should be no press statements, press releases or interviews with the media.

## Post Mission

The core team, while finalizing the report, may consult, if necessary, the FAO and WFP country offices to ensure the accuracy of the report. However, the findings and recommendations of the mission will not be "negotiated" but remain the responsibility of the team. The report must remain strictly confidential until cleared by the FAO/Rome and by the WFP Regional Director.

Once the report is cleared, the FAOR receives an advance copy to be delivered to the government, just before the report is made public. The FAOR and WFP R&CD also receive advance copies of any press releases prepared by FAO/Rome or WFP.

The country FAO and WFP offices are requested to keep track of comments or reactions by the government, and to transmit requests for clarification to FAO/GIEWS and WFP (RB andFood Security Analysis Service).

The FAOR and WFP R&CD should feel free to provide suggestions on potential improvements for future CFSAMs.

# Annex 4

## Sample terms of reference for individual team members

### FAO Economist

***Duties and Responsibilities***

Under the overall supervision of the Chief, Global Information and Early Warning Service (ESTG) and the direction of the mission team leaders, and in close collaboration with all other CFSAM team members, the expert will:

- consult with government officials, UN and bilateral agencies, and NGOs on the current food supply situation in the country;
- briefly review the macro-economic position of the country, examining available current information on various parameters affecting the food supply, agriculture and employment situation. These include, but are not limited to, balance of payments, relative prices of inputs and outputs, exchange rates, interest rates, unemployment and wage rates;
- examine available information on the structure, conduct and performance of domestic markets including market integration, seasonal price behaviour and government market policy, and collect additional, complementary data on the functioning of domestic markets through interviews and observations;
- investigate the structure and functioning of import and export markets for food and agricultural products, the quantities of cereals and pulses imported commercially, and the quantities of cereals, pulses and other key export-earning commodities exported, including unregistered cross-border trade;
- contribute to the preparation of a multi-disciplinary interview guide/recording format for use by CFSAM field teams, the orientation training of those teams prior to the field visits, and the selection of the areas and sites to be visited;
- participate in visits to selected sites within the crisis-affected area(s) to observe conditions and collect additional data and, where necessary, make additional visits separately to key market centres in other areas;
- review and collate available information on population in different parts of the country and make a projection to the mid-200# marketing year;
- prepare a detailed supply/demand balance for staple foods for the coming marketing year, including requirements for consumption and other uses; on-farm, government and commercial stocks; expected commercial imports and hence any unmet import requirement, including food aid, at national level [and, where appropriate, at sub-national/ zonal levels];
- based on the post-harvest crop estimates revise the previous year's grain supply/demand balance;

- together with the WFP team members, identify areas/populations facing food shortages and analyse the appropriateness of different possible food-security assistance response options (including food aid and non-food responses);
- support the team leaders in briefing government officials, donor representatives and other agencies on the work and findings of the mission;
- prepare relevant sections of the mission report and contribute to the preparation of the overall, consolidated technical report on findings and recommendations.

### *Qualifications and Experience*

Advanced university degree in agricultural economics or economics (M.Sc. or Ph.D. or equivalent advanced post-graduate degree) with substantial experience in food supply assessment and good analytical and drafting skills. Work experience in the region desirable.

### *Duration*

The assignment will be for a period of [about four to five] weeks.

## FAO Agronomist

### *Duties and Responsibilities*

Under the overall supervision of the Chief, Global Information and Early Warning Service (ESTG) and the direction of the mission team leaders, and in close collaboration with all other CFSAM team members, the expert will:

- consult with government officials, UN and bilateral agencies, and NGOs on the current food production and agriculture situation in the country;
- examine available remote-sensing data and satellite imagery and rainfall estimates;
- contribute to the preparation of a multi-disciplinary interview guide/recording format for use by CFSAM field teams, the orientation training of those teams prior to the field visits, and the selection of the areas and sites to be visited;
- travel with other team members to the crisis-affected areas and, separately, to the main producing areas to observe conditions and interview farmers, agricultural officials and other key informants;
- identify the main factors that affected planting and the development of crops during the current season (taking into account weather conditions, availability of inputs, the impact of the conflict, pest and diseases, etc.);
- review the agricultural data generation processes in the country and identify the causes of any differences in estimates from different sources and any biases that influence particular data;
- on the basis of available data and through direct observations and interviews during field visits, prepare estimates for cropped areas, yields and total production of cereals and other major food (and cash) crops for the current season and forecasts for the secondary season (if any) within the coming marketing year;

- provide estimates of aggregate production of each of the main staple foods for inclusion in the national staple food balance sheet [and, where appropriate, sub-national/zonal balance sheets];
- identify surplus and deficit zones and how the sizes of the estimated surpluses or deficits compare with recent years;
- review the post-harvest assessment of the previous year's crop and analyse changes observed, if any;
- appraise the state of livestock and the contribution of livestock and livestock products to the overall food supply situation and household food security of specific population groups;
- draft relevant sections of the mission report and contribute to the preparation of the overall mission report and recommendations;
- support the team leaders in debriefing relevant government authorities, donor representatives and other agencies on the work and the findings of the mission;

***Qualifications and Experience***

Advanced university degree in agronomy (M.Sc. or Ph.D. or equivalent advanced post-graduate degree); substantial experience in crop assessment. Work experience in the region desirable.

***Duration***

The assignment will be for a period of [about four to five] weeks.

**WFP Food Security Specialist**

Under the direction of the mission team leaders, in close collaboration with the other mission members and under the general supervision of the WFP Regional Director, the expert will:

- Critically review all available information on the food security situation at household level - including, but not limited to, the findings of recent assessments and food aid monitoring reports - giving particular attention to the methods used to collect and analyse the data;
- Examine available market data (including spot and trend price analyses, market linkages, etc.) and the implications for household food security among the various population groups affected by the crisis;
- Review available data on the nutrition situation (including data from nutrition surveys and surveillance), identify the nature and distribution of reported nutritional problems, and examine the probable linkages with the food security situation and other factors;
- Contribute to the preparation of a multi-disciplinary interview guide/recording format for use by CFSAM field teams, the orientation training of those teams prior to the field visits, and the selection of the areas and sites to be visited;

- Participate in visits to selected sites within the crisis-affected area(s) to observe conditions and collect additional data from key informants and a small sample of households in order to cross-check and complement the data available from other sources;
- Based on an analysis of household food access taking account of, in particular, changes in food sources, income sources, market conditions and prices, terms of trade, essential non-food expenditures, coping strategies (including dangers of asset depletion) and indicators of food consumption:
  - identify and geographically locate the population sub-groups (both urban and rural) that are experiencing severe or moderate food insecurity, or are at risk of losing physical or economic access to adequate food;
  - distinguish, as much as possible, between chronic food insecurity and transitory food insecurity that is directly or indirectly attributable to the emergency situation; and
  - define the profiles of the groups and individuals in need of food security assistance according to their socio-economic status, gender, etc. Give particular attention to the situation of marginal income earners.
- Review government policies, the nature and effectiveness of the responses of the government and other organizations to the present food security crisis, and the capacities of the government and others to address the food security problems in the coming year:
- Review the past, ongoing and planned food aid interventions of WFP and other food aid donors and highlight critical issues in the light of recent experience.
- In collaboration with the FAO economist and WFP socio-economist:
  - identify and geographically locate the population sub-groups (both urban and rural) that are experiencing severe or moderate food insecurity, or are at risk of losing physical or economic access to adequate food;
  - analyse the advantages and disadvantages of food aid and non-food (e.g. cash, vouchers or other non-food transfer) responses as means to address the observed food insecurity and nutrition problems. This includes examining relative advantages, cost effectiveness, benefits for the beneficiaries, and possible negative effects on local food production and markets;
  - evaluate possible targeting mechanisms, identify the relative advantages and constraints of the available options and assess local implementation capacities; *and*
  - indicate possibilities for local/regional purchases of food aid commodities, where appropriate, and how food distributions can make use of and support local supply, logistic and trade structures
- Draft relevant sections of the mission report and contribute to the preparation of the overall mission report and recommendations;
- Support the team leaders in briefing government officials, donor representatives and other agencies on the work and findings of the mission.

### WFP Socio-Economist

Under the direction of the mission team leaders, in close collaboration with the other mission members and under the general supervision of the WFP Regional Director, the expert will:

- Analyse the background/pre-crisis and current information on the degree of dependence of socio-economic groups on food markets and the effects on household food security of changes in: prices, market functioning, income, as well as social status and gender;
- Work in close collaboration with the FAO Economist on the review/analysis of the macro-economic situation of the country and complement it by examining available information on the structure, functioning and capacity of local markets including prices in different regions, trade flows, etc.
- Assess local transport problems and accessibility of local markets for traders and consumers, keeping seasonal variations in mind;
- Estimate current household food stocks and local storage capacities of households, traders, organizations working in the area;
- Examine ways of ensuring that the affected population groups have access to adequate food (i.e. consider possibilities for Food For Work, Food For Training, School Feeding, etc.) and identify the most appropriate and feasible response option(s) which may include food and/or non-food transfers. If appropriate, also consider proposing market-based response options;
- Assess how government social support systems have been affected (e.g. pensions, safety-net programmes), the effectiveness of those systems, and how they may need to be supplemented. In addition, examine the scope of current mechanism(s) of delivering food-security assistance, including food and/or non-food responses;
- Determine potential effects of food or cash transfers on markets;
- Contribute to the preparation of a multi-disciplinary interview guide/recording format for use by CFSAM field teams, the orientation training of those teams prior to the field visits, and the selection of the areas and sites to be visited;
- Participate in visits to selected sites within the crisis-affected area(s) to observe conditions and collect additional data from key informants and a small sample of households in order to cross-check and complement the data available from other sources;
- Draft relevant sections of the mission report and contribute to the preparation of the overall mission report and recommendations;
- Support the team leaders in briefing government officials, donor representatives and other agencies on the work and findings of the mission.

## Annex 5

# Guidelines for observers

The following is an updated version of the guidelines agreed among FAO/GIEWS, WFP-Food Security Analysis Service and the representatives of WFP's principal donors in July 2005.

### Guidelines for the participation of observers in FAO/WFP crop and food security assessment missions

For countries facing a widespread and serious food emergency, FAO and WFP jointly carry out Crop and Food Security Assessment Missions (CFSAMs), at the request of national governments. The primary purpose of these missions is to provide accurate, timely and credible information on imminent food security problems in a country or a region so that appropriate actions can be taken by the governments, the international community, and others, to minimize the impact of the food emergency on the affected populations.

### Main tasks of CFSAMs:

- To verify/refine/make (as appropriate) estimates - forecasts - of ***food production*** in the forthcoming marketing year - at national and, where appropriate and possible, at sub-national levels - based on assessment of the status of and prospects for major staple food crops and, where appropriate, livestock and fisheries;
- To verify/refine/make (as appropriate) estimates of food ***stocks, losses and utilization requirements*** (for human consumption, animal feed, industrial uses) in the coming year;
- To verify/refine/make (as appropriate) estimates of ***exports*** and ***imports*** in the coming year including the public and private sectors' capacity to import food based on an assessment of the overall macro-economic situation, an analysis of prices, effective demand and traders' expected behaviour and already-planned food aid;
- To prepare a national ***staple food balance sheet*** - and balance sheets at sub-national level where appropriate and possible - and estimate any uncovered food import requirement;
- To identify possibilities for ***local purchases*** in surplus areas (if any) to help cover deficits in the crisis-affected areas including the quantities that could be purchased, where and when, without unduly disturbing the market and prices;
- To verify/refine information available on the ***food security situation*** (and vulnerabilities) at ***household level*** among populations affected (or expected to be affected) by the crisis, and identify the population groups that are (or will be) unable to meet their basic food needs - that are/will be acutely food insecure - as a result of the cri-

sis, differentiating those who were chronically food insecure before the current crisis from those who were not;

- To verify/refine/make (as appropriate) estimates of the ***numbers of people*** in need of emergency food security assistance, their expected ***food access shortfalls/gaps*** in the coming year, and the periods when they will need assistance.
- To recommend the actions to be taken to address the ***uncovered import requirement*** (if any) and food insecurity at household level including the type and quantity of ***targeted assistance*** (food and/or non-food) required, when and for how long, to ensure that the target population groups will have access to adequate food during the coming year. (These recommendations to be based on analysis of market conditions and institutional and logistic capacities and constraints for the delivery and distribution of food or other food-security related assistance.)
- To recommend any follow-up, more detailed assessments or other actions that may be required.

When, in the process of the above, the CFSAM team identifies avoidable constraints on food production and marketing operations and it may make practical suggestions (or propose further studies) to overcome those constraints and expedite the recovery of food production and market operations in order to ensure - or at least maximize their contribution to - food availability and access in the affected areas in the coming year. The team may also draw attention to any (public health or other) action needed to address nutritional problems and improve food utilization at the household level.

**Mission Composition:**

Usually, the mission includes, on the FAO side, an agricultural economist and an agronomist, and on the WFP side an Emergency Food Security Specialist. Various national consultants also participate. Most of the time, these FAO and WFP staff or consultants are accompanied by national government staff, usually from line ministries. The host government's role is to facilitate the work of the UN mission. As available, the mission is also joined by representatives from donor agencies or NGOs as observers. In some instances, specialist NGO staff may be recruited by WFP to join its staff as member of the mission. The following guidelines are intended to clarify their role.

**Role and Responsibilities of Observers:**

Both UN agencies are aware of the importance placed on the results of these missions by the donor community for food and non-food aid allocations worldwide. Although donor agencies rely on a variety of information sources to make decisions on food aid and emergency response activities, the FAO/WFP assessments usually figure prominently, because of their mandate to provide an independent, unbiased and professional judgment.

***Guiding principle:***

*To ensure transparency of the assessments and to build partnership in the assessment exercise, FAO and WFP welcome participation of donor representatives and NGOs in CFSAMs as observers. However, in order to maintain the independence and objectivity of the missions and to guard against any potential doubts regarding mission findings, neither donor representatives, NGOs nor recipient government officials participate as core mission members. It is the responsibility of the FAO and WFP staff to prepare the mission report which is regarded as a UN document. Observers are not responsible for the report and its conclusions. The number of observers needs to be kept small to ensure the efficient working of the mission.*

The main ***purpose*** of observer participation is:

1. To ***observe the work of the mission***, thus ensuring the transparency of the process,
2. To ***contribute to the quality and quantity of information and analysis***, and
3. To ***provide technical inputs*** aimed at improving the output of current and future missions.

Observer participation can take place in CFSAMs at any one or all ***three stages of the mission***:

- ***Before***, in planning and preparing the country specific or regional assessments;
- ***During the mission***, to contribute information and analysis pertaining to the work of the mission; *and*
- ***After the mission***, to provide comments and feedback in order to improve on the process and/or methodology.

**Other considerations:**

- Observers are to make their own arrangements (i.e. obtaining government permission, making all travel provisions, etc.).
- In order to enable donors to get a balanced overview of, and contribute to, the work of the mission, observers should be available and ready to participate in a significant proportion of the field visits and the team's meetings in the capital.
- The mission members should allow for sufficient time in the field for an exchange of views with the observers on the preliminary findings. However, all input from observers should be provided promptly, and as guided by the FAO and WFP staff participating as mission members so as not to delay the team's work in-country and its departure.
- The observer's written comments must be communicated to the mission before the mission leaves the country.
- The observer's written comments to the team must simultaneously be sent to FAO and WFP Headquarters (GIEWS andFood Security Analysis Service).

In order to facilitate observer participation, **FAO and WFP shall take the following steps**:

- Inform all parties with potential observers of planned missions, as early as possible;
- Arrange pre-assessment consultative meetings whenever possible;
- Allow for exchange of views with observers and all other interested parties on preliminary findings prior to the mission leaving the country, without any prejudice to the independence of views of the mission members;
- Consider observer contributions in the continued development of normative guidance for CFSAMs.

## Annex 6

# Secondary data to be compiled prior to the mission

| Topic | Background (pre-crisis) information | Current situation |
|---|---|---|
| **Food security crisis background** | Previous CFSAM reports.<br>Reports/studies of previous similar crises in the country.<br>Information/reports (including early warning reports) on the causes of the present crisis. | Expectations concerning:<br>• the likely evolution of the situation<br>• potential duration of the crisis<br>• risks of deterioration |
| ***Context and markets*** | | |
| **Socio-economic context** | | |
| **Population and livelihood patterns** | Population data and demographic characteristics for the country and affected areas including:<br>• urban/rural breakdowns;<br>• percentage of population in agriculture by region;<br>• agricultural labour force by region.<br>Pre-crisis profiles of the affected areas including the principal livelihood activities.<br>Agro-ecological or livelihood zone maps. | Data on population movements (numbers and timing) |

| Topic | Background (pre-crisis) information | Current situation |
|---|---|---|
| **Macro-economic context** | Rate of population growth.<br>Macro-economic data for recent (e.g. the last 5) years:<br>• Rate of economic growth, GDP/capita;<br>• external trade data - value of exports, imports, trade balance;<br>• monetary and financial data - debt, foreign reserves, exchange rates for recent years;<br>• consumer price index (or other indicators of Inflation for food and non food);<br>• government budget, income, expenditures for recent years.<br>Relative size and growth of main economic sub-sectors, e.g. agriculture.<br>Fiscal policies affecting food security. | Current estimates and projections for:<br>• GDP growth;<br>• external trade;<br>• debt, foreign exhange reserves, exchange rates;<br>• consumer price index (or other indicators of Inflation for food and non food);<br>• agricultural output and exports growth; and<br>• government budget, income, expenditures for current/ forthcoming year. |
| **Agricultural/ food production sector** | Sector studies and other reports describing the characteristics of the agricultural and food production sector including:<br>• main farming sectors - peasant, agri-business, rain-fed, irrigated - and their contribution to overall production;<br>• the relative importance - nationally and in the affected areas - of the main food and cash crops, livestock, fishing, including foods that are an important part of the diet or source of income and any other agricultural activities;<br>• the current policy environment and any significant changes in policies in recent years;<br>• the parts of the country tend to be structurally surplus or deficit areas;<br>• self-sufficiency ratio in staples;<br>• classification of surplus/deficit food producing areas;<br>• regional food (staples) preferences and substitutes;<br>• State support to agriculture (subsidies; guaranteed prices);<br>• food net seller/net buyer proportions by region. | Reports on farming areas affected. |

| Topic | Background (pre-crisis) information | Current situation |
|---|---|---|
| **Social policies/ issues** | Information/reports on socio-cultural or ethnic differences or social policies relevant to food security in the affected areas. | Information/reports on specific socio-cultural or ethnic issues in the current crisis. |
| **Recovery progress and prospects** | Reports/evaluations of recovery following previous similar crises. | *If the country is in a recovery phase following a major disaster or conflict*, reports on the progress of recovery to date in relation to food security. |
| ***Market conditions*** | | |
| **Food markets** | Wholesale prices of cereals and other main food over the last 5 years (monthly if possible) in each of the areas/markets of interest, including seasonal variations (graphs + tables).<br>Import parity prices at different entry points in recent years.<br>Market profiles, structure/integration analyses, including (if possible) assessments of market integration and data on marketing margins.<br>Policies and regulations affecting trade (import/export controls, quotas, taxes, price controls, regional trade agreements, etc.).<br>Data on imports, exports including across borders with neighbouring countries.<br>Food flows within the country, for recent (e.g. the last 5) years.<br>Maps showing flow directions.<br>Data on the price elasticity of demand for the main staples (for different population groups). | Current wholesale prices of cereals and other main food in the markets of interest; price trends and fluctuations.<br>Current import parity prices at different entry points.<br>Recent market assessments.<br>Estimates of current trade flows (and directions if different from normal). |
| **Labour and other critical markets** | Daily wage rates over the last 5 years including seasonal variations (graph + tables).<br>Prices for livestock over the last 5 years including seasonal variations (graph + tables).<br>Prices for agricultural inputs, and inputs/ raw materials for important income-generating activities, over the last 5 years including seasonal variations. | Current wage rates, prices and trends. |

| Topic | Background (pre-crisis) information | Current situation |
|---|---|---|
| ***Food production*** | | |
| **Crop production** | Basic data on main staples and cash crops.<br>The cropping calendar including timing, duration, scale and location of main and minor harvests.<br>Planted area and yield data for main and subsidiary staple food crops last year and for previous years, broken down by region/zone.<br>Rainfall data (in dekads) for the last 5 years.<br>Factors that have positively or negatively affected production in the past. | Rainfall data (in dekads) for the last 12 months.<br>Satellite imagery, NDVI and other data.<br>Most recent estimates for planted areas, yields and production.<br>Main issues and concerns for the current/ forthcoming year. |
| **Livestock, fisheries & associated products** | *Where livestock or fish are an important part of the diet or source of income*: data for the last few (5?) years on:<br>• performance, prices and trade volumes for livestock;<br>• prices, catches and trade volumes for fish.<br>Factors that have positively or negatively affected production in the past. | *Where livestock or fish are an important part of the diet or source of income*:<br>• information/data on the impact of the crisis on livestock and fish catches;<br>• current prices and trends. |
| ***Food supply/ demand situation*** | | |
| **Stocks** | Data on government and private commercial cereal/staple food stocks over the last 5 years, broken down by area/ location.<br>Policies governing the use of government (reserve) stocks. | Current government and private commercial stock levels. |

| Topic | Background (pre-crisis) information | Current situation |
|---|---|---|
| **Domestic utilization (requirements)** | Data from any food expenditure and/or food consumption surveys in recent years.<br>Estimates of apparent per capita consumption derived from food balance sheets over previous years.<br>Data on food consumption in neighbouring regions or countries for populations similar to those in the areas now affected.<br>Data from diet diversity surveys in recent years in the areas now affected.<br>Information relevant to food consumption from nutrition surveys in recent years.<br>Estimates for post-harvest losses in previous years.<br>Estimates for quantities used for animal feed, seed and industrial uses, in the last 5 years.<br>Factors that have affected requirements in previous years. | Data from any food consumption surveys in recent months in the affected areas.<br>Data on food consumption in recent months in neighbouring regions or countries for populations similar to those in the areas now affected.<br>Data from diet diversity surveys in recent months in the affected areas.<br>Information relevant to food consumption from nutrition surveys in recent months.<br>Reports/information on whether losses are similar to or different from "normal".<br>Reports/information on whether other uses are likely to be similar to or different from "normal". |
| **External trade** | Trade policies and any changes in such policies in recent years.<br>Data on (monthly) registered trade in food commodities in the last 5 years.<br>Factors that affected the quantities imported and exported.<br>Estimates for unregistered cross-border imports and exports in recent years.<br>Factors that affected the quantities imported and exported. | Any changes in trade policies in recent months.<br>Information/reports on how grain importers and exporters are responding.<br>Most recent data on imports and exports. |
| **Staple food balance sheet(s)** | National staple food balance sheets from previous (the last 5) years.<br>Any sub-national balance sheets that have been prepared previously.<br>Data on food aid imports and local purchases the last 5 years. | |

| Topic | Background (pre-crisis) information | Current situation |
|---|---|---|
| ***Household food security*** | | |
| **Food security status, coping & vulnerabilities** | Household food security and vulnerability analyses (WFP CFSVAs and other).<br>Reports of poverty studies (national, regional, sectoral).<br>Reports of recent household income-expenditure surveys.<br>Data on chronic food insecurity (national, regional, sectoral).<br>Information/reports on coping strategies normally used by different population groups (livelihood or ethnic groups).<br>Reports of assessments in previous similar crises in the same or similar areas.<br>Baseline data on diet diversity or a composite coping strategies index for the areas and population groups now affected.<br>Baseline data on diet diversity or a composite coping strategies index for similar population groups in neighbouring regions or countries. | Assessment reports and other data on household food security compiled in recent months for all or some parts of the affected areas and populations.<br>Information/reports on coping strategies currently used by different population groups.<br>Most recent estimates of numbers of people affected:<br>• in each (livelihood) group;<br>• in each area;<br>• the proportion/ number in specific categories of acute, crisis-induced or crisis-enhanced, food insecurity |
| **Health and nutritional status** | Data on prevalence of HIV-AIDS and other diseases.<br>Reports on the impact of HIV/AIDS and other diseases on household food security, nutrition and livelihoods.<br>Nutritional survey data from the last few years, broken down by area and population group, including trends and reports on the causes of malnutrition.<br>Mortality and morbidity data for recent years, including trends and the main causes of mortality and morbidity. | Nutritional survey data from the last few months in the affected areas, broken down by area and population group, including trends and reports on the causes of malnutrition.<br>Mortality and morbidity data for recent months, including trends and the main causes of mortality and morbidity. |

| Topic | Background (pre-crisis) information | Current situation |
|---|---|---|
| ***Assistance needs and response options*** | | |
| **Response options** | Reports and evaluations of food-security-related (food and non-food) assistance in previous crises including:<br>• targeting/section criteria and methods used<br>• rations/levels of assistance<br>• logistic challenges and systems<br>• exit strategies<br>Lessons-learned from food security and nutrition-related assistance in the areas now affected and in previous crises.<br>Information/reports on existing safety-net programmes (of government or other agencies).<br>Government policies in relation to assistance to food in-secure and crisis-affected populations.<br>Contingency plans for responding to crises. | Project documents, implementation reports and evaluations for ongoing food-security (food and non-food) assistance programmes including:<br>• targeting/section criteria and methods<br>• rations/levels of assistance<br>• logistic challenges and systems<br>• exit strategies<br>Information/reports on logistic, institutional or other constraints that may limit the feasibility of certain response options.<br>Recommendations from other sectoral assessments (especially health, protection and recovery assessments) of possible relevance to decisions on food security interventions.<br>Current controversial issues. |

**Important background information and some relevant international sources**

- Living standards/poverty assessment studies (World Bank; IFPRI; other web search)
- Nutritional survey results/studies on nutrition and consumption (FAO; UNICEF; WFP; WHO; World Bank; IFPRI; other web search)
- Food security status/changes (IFPRI; FAO; WFP-VAM; web search)
- Safety net programs (World Bank; IFPRI; web search)
- Market performance/integration studies (World Bank; FEWS-Net; IFPRI; other web search)

- Past CFSAM reports (FAO GIEWS)
- Recent country profiles (FAO Nutrition Country Profiles, Economist Intelligence Unit, World Bank, European Commission, web search)
- Macro-economic indicators (Ministry of Economy/Finance, Central Bank, web search)
- Agricultural and food security policies (web search)
- Economic effects of food aid/transfers (web search)

For suggested sources for other, more general information, see WFP EFSA Handbook, annex A4, *Some useful sources of secondary data*.

# Annex 7

## Use of Geo-Spatial information

Remote Sensing (RS) data and Geographic Information System (GIS) products are increasingly available at affordable prices. They can provide baseline information (e.g. land cover, distribution of population density, mean annual rainfall) and up-to-date data on key environmental and man-made factors (e.g. current rainfall, urban expansion), and inform forecasts of rainfall and crop yields. Multi-temporal analysis of RS/GIS data is a particularly useful tool to detect anomalies from "normal situations" and evaluate degrees of deviations and/or duration of the anomalies for early warning purposes. Various indicators are regularly used to assess rainfall/vegetation conditions and to estimate impacts on agriculture and livestock. New techniques to derive crop area estimates from medium and high resolution sensors are constantly coming into use.

### Satellite Remote Sensing

Satellite data are mainly used for the following purposes:

1. Monitor the state of vegetation in cultivated and rangeland areas;
2. Monitor the rainy season and identify areas which are likely to have suffered from, or might be affected by, drought or excessive rainfall;
3. Estimate yields for major crops; *and*
4. Estimate the extent of cultivated land.

Two sources of satellite data are regularly received and used for the CFSAM:

- Interpolated Estimated Rainfall (IER) images distributed by FAO/ARTEMIS and based on the Decadal Rainfall Estimates generated by the Climate Prediction Centre (CPC) of the National Oceanic and Atmospheric Administration (NOAA), Washington D.C., USA. This data is only available for Africa, its spatial resolution (pixel size) is 4.5-5 Km.
- Global Normalized Difference Vegetation Index (NDVI) images from the SPOT Vegetation Programme (product VGT S10). These images provide 10-day synthesis, based on the selection of the "best" measurement of the entire period. The VEGETATION Programme is developed jointly by France, the European Commission, Belgium, Italy and Sweden. It delivers satellite-based products tailored to monitor land surfaces' parameters with a frequency of about once a day on a global basis and a medium spatial resolution of one kilometer.

IER and NDVI images are received every 10 days and processed by the GIEWS Workstation team for deriving the following products by country:

- Estimated Rainfall (IER)
- Monthly Cumulated Rainfall (CR): Cumulated IER by 1 to 12 months

- Difference of the Cumulated Rainfall with long term average by 1 to 12 months: difference between the considered CR and the long term average of the same time interval (e.g. if CR is 2 months from 2nd dekad of March to the 1st dekad of May, the average will be calculated using all CRs of the same time interval for all available years)
- Standardized Precipitation Index (SPI) by 1 to 12 months: It is a relatively new drought index based only on precipitation and can be used to monitor conditions at different time scales. The temporal flexibility makes SPI useful for both short-term agricultural and long-term hydrological/agricultural applications. The SPI is an index based on the probability of precipitation for any time scale. Each time scale reflects the impact of drought on the availability of the different water resources. Soil moisture conditions respond to precipitation anomalies on a relatively short scale. Groundwater, streamflow, and reservoir storage reflect the longer-term precipitation anomalies. The SPI calculation for any location is based on the long-term precipitation record for a desired period. This long-term record is fitted to a probability distribution, which is then transformed into a normal distribution so that the mean SPI for the location and desired period is zero. Positive SPI values indicate greater than median precipitation, and negative values indicate less than median precipitation. Because the SPI is normalized, wetter and drier climates can be represented in the same way, and wet periods can also be monitored using the SPI.
- Normalized Difference Vegetation Index (NDVI): It is based on the principle that live green plants absorb solar radiation in the photosynthetically active radiation (PAR) spectral region. Leaf cells also scatter (i.e., reflect and transmit) solar radiation in the near-infrared spectral region. The NDVI is calculated as follows: NDVI = (NIR - RED) / (NIR + RED) where RED and NIR stand for the spectral reflectance measurements acquired in the red and near-infrared regions, respectively. By design, the NDVI itself varies between -1 and +1. The NDVI of an area containing a dense vegetation canopy will tend to positive values. Free standing water (e.g., oceans, seas, lakes and rivers), which have a low reflectance in both spectral bands (at least away from shores), result in very low positive or even slightly negative NDVI values. Soils, which generally exhibit a near-infrared spectral reflectance somewhat larger than the red, tend to generate rather small positive NDVI values.
- Difference NDVI with the previous dekad: it shows how the season is evolving indicating whether the vegetation is in good health or it is subject to stress
- Difference NDVI with the previous year: it compares the current vegetation state in respect to the situation of the same dekad of the previous year.
- Difference NDVI with the long term average: the long term average is taken as baseline information representing the "normal" situation. The difference highlights positive or negative anomalies that can impact on crop yield at harvest time.

The following products are being tested:

- Crop area estimates: GIEWS, in coordination with the European Space Agency is testing a new methodology to detect agricultural areas from images captured by radar and optical sensors at high and medium resolution (ASAR, MODIS, Landsat, SPOT). This technique uses multi-temporal images to identify vegetation activities which correspond to the growing of the seasonal crops. Baseline information such

as land cover, crop calendar and information on local agricultural practices are used to fine-tune the model and focus on cropping seasons.

- Rainfall estimation for Asia and Central and South America: alternative data sources, ranging from satellite to ground station data are currently being used to generate decadal rainfall maps for regions not covered by METEOSAT.

### GIS data

GIS data representing topography, roads, hydrology, built-up areas, etc. are important baseline information. Spatial characteristics have often an impact on the environment and/or agricultural/social/economic activities. Basic sets of these data are available in the GIEWS Workstation and are used for mapping purposes before and after the CFSAM.

The availability of geographic layers representing crop zones is of primary importance for the CFSAM. At the moment, generic crop maps, which can be overlaid on the satellite images and other GIS layers, are available in the GIEWS Workstation. However, action is being taken to update these maps using satellite-based products.

The use of GPS by CFSAM teams is outlined in section 3.9 of the guidelines.

### Other spatially-related products

Spatial information is also used to derive products such as tables and charts describing temporal variations of certain parameters. IER multi-temporal images, for example, are regularly processed to calculate rainfall averages by administrative units at first and second levels (e.g. provinces and districts). In this process, all pixels of a satellite image falling within an administrative unit are averaged and stored in a database. The availability of this information for a sufficient number of years allows users to chart those values in many different ways, compare different time periods and/or areas or plot data against the average. This provides good indications about the evolution of the rainy season and possible implications on agriculture.

## Annex 8

# Sample mission schedule and work plan format

### Sample mission schedule and work plan format

| Typical schedule for a CFSAM mission | | | | |
|---|---|---|---|---|
| Date | | | | |
| 15/04/07 | Sun | 1 | | Travel to country |
| 16/04/07 | Mon | 2 | 1 | Meetings with MoA, other Gov't agencies, NGOs, donors;<br>Organization, logistics, etc. for field visits;<br>Training of field team participants |
| 17/04/07 | Tue | 3 | 2 | |
| 18/04/07 | Wed | 4 | 3 | |
| 19/04/07 | Thu | 5 | 4 | |
| 20/04/07 | Fri | 6 | 1 | Field visit programme by various teams: |
| 21/04/07 | Sat | 7 | 2 | |
| 22/04/07 | Sun | 8 | 3 | |
| 23/04/07 | Mon | 9 | 4 | |
| 24/04/07 | Tue | 10 | 5 | |
| 25/04/07 | Wed | 11 | 6 | |
| 26/04/07 | Thu | 12 | 7 | |
| 27/04/07 | Fri | 13 | 8 | |
| 28/04/07 | Sat | 14 | 9 | |
| 29/04/07 | Sun | 15 | 10 | |
| 30/04/07 | Mon | 16 | 11 | |
| 01/05/07 | Tue | 17 | 12 | |
| 02/05/07 | Wed | 18 | 1 | Return to capital city<br>Discussions with stakeholders; debriefings |
| 03/05/07 | Thu | 19 | 2 | |
| 04/05/07 | Fri | 20 | 3 | |
| 05/05/07 | Sat | 21 | 1 | Analysis and initial report writing |
| 06/05/07 | Sun | 22 | 2 | |
| 07/05/07 | Mon | 23 | 3 | |
| 08/05/07 | Tue | 24 | 4 | |
| 09/05/07 | Wed | 25 | 5 | |
| 10/05/07 | Thu | 26 | 6 | |
| 11/05/07 | Fri | 27 | | Travel from country |

| Work Plan | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Task | Person (or group) responsible | Time allocated | Done Y/N | Day 1 | Day 2 | Day 3 | Day 4 | etc. |
| 1 | | 1 day | | | | | | |
| 2 | | 2 days | | | | | | |
| 3 | | 1 day | | | | | | |
| 4 | | 2 days | | | | | | |
| 5 | | 1 day | | | | | | |
| etc. | | | | | | | | |

## Annex 9

# How to get the most out of field trips and interviews

*Adopt an approach closer in style to investigative journalism than to scientific research*

Deadlines determine the level of detail but within that framework there must be a high degree of rigour. A unique mixture of flexibility and standard operating procedures is required.

*Meet people in their own surroundings and in sight of practical reality, whenever possible*

Most people (farmers and officials) are more comfortable talking in their own surroundings where they can look at and refer to their own activities or documents. The interviewer can also judge responses and ask follow-up questions arising from the reality around. Arrange to talk to farmers on their own farms, or at least out-of-doors. Meet with officials in their own offices where they have immediate access to data, wall-charts, reports, etc. as *aide-mémoire*.

*Recognize that access to information is a privilege not a right*

Farmers, traders, extension workers, government officers, NGO staff, millers, threshing-machine operators, combine-drivers give up their time to share their knowledge with you.

*Show respect; avoid arrogant or intrusive behaviour*

Address farmers and other interlocutors with courtesy. Drive carefully on people's properties. Listen, don't preach. Don't interrupt when an informant is answering a question. Don't intervene when another team member is asking questions.

*Don't intimidate*

Avoid having too many people (or vehicles) on visits to field sites. Only one or two team members should conduct an interview with farmers or households. If the sub-team is large, split the group and interview more persons.

*Have a lead interviewer for each interview*

From the outset of any particular interview, one team member should orchestrate the interview. Contributions from other team members should come after the main interviewer has finished. Let the group leader guide the flow of questions/answers in a structured and organized manner.

*Stick strictly to the purpose of the mission, which is to learn about the situation*

CFSAM field visits are *not* extension visits to correct or influence the actions of farmers or anyone else, or opportunities to collect data unrelated to the mission. Objective is to "receive" knowledge/information not give it, so listening is more important than talking.

*Use standard, agreed checklists and data collection instruments/formats*

Standard interview guides and recording formats add rigour to semi-structured interviews and ensure that similar questions are asked by all teams in a similar order.

*Be prepared!*

Every team member must be prepared and able to "hit the ground running". This includes having studied relevant secondary data as well as having all necessary interview guides, recording formats and equipment.

*Use every journey as a "transect"*

Don't be content with information given to you during pre-set interviews at given sample destinations. Observe conditions and take notes on all journeys to zones and individual field sites, see **Technical Note P1**.

*Make no promises*

Emphasize that you are not decision-makers and it is not your business to prepare project proposals, but to compile the most accurate picture possible of the situation.

## Annex 10

# A framework for analysing the food security impacts of a crisis

The table below suggests the likely effects of a ***production shortfall*** on different population sub-groups. Structured interviews with policy makers and analysts, large and small traders, local officials, representatives of producers' associations and individual households (farmers, herders, and urban consumers) should be designed to test and refine the hypotheses presented.

A table like this can be created to develop and test hypotheses relevant to whatever type of crisis is being addressed.

| Main Group | Primary Impact | Information needs and analysis |
|---|---|---|
| **Surplus Producers** | Potentially an increase in unit and total value of marketable surplus | Estimation of basic food production; assessment of marketable supply from surplus areas. Localization with respect to proximate cereal deficit areas, and relative level of income in deficit areas (i.e. is there effective demand for cereals for surplus areas?). |
| **Deficit producers/ rural poor** | Increase in quantity and unit cost of food to be purchased, especially later in the marketing year.<br>Can be combined with a decrease in non-food agricultural incomes. Many of the rural poor have debts, to be reimbursed in kind at harvest time. | Estimation of basic food production, annual household food requirements, and gap, expressed in months of consumption. By main agro-ecological or social group, assessment of coping capacity in terms of: current level of indebtedness, alternative income, savings, substitution to other food sources, migration, sales of assets. |
| **Small traders** | Potential exposure to default on outstanding loans to small producers who suffered total crop failure.<br>Larger capital requirements (higher unit prices).<br>May extend credit to some households for hungry season food purchases. | Degree of integration of farming households into the market economy.<br>Relative level of competition among small traders.<br>Capacity by small traders to retail food flowing from surplus to deficit areas. |

| | | |
|---|---|---|
| **Large traders/ importers** | Large potential profit on sales from surplus to deficit areas (**spatial** arbitrage). This may involve cross-border trade.<br>Potential profits to be made from large-scale **temporal** arbitrage (buying at harvest time, storing, and selling later in the marketing year). | Extent of wholesale market efficiency and integration. Transaction costs in food marketing. Marketing, transport and storage capacity. Impact of national trade policies on marketing activities. Effectiveness of formal and informal barriers to domestic or cross-border trade. |
| **Urban "rich"** | Increase in prices of basic foods to be purchased.<br>If capital is available, can purchase at harvest time food stocks for household consumption. Can purchase livestock to be grown out or fattened for later resale. Less disposable income may be available to hire domestics or casual labourers, or for gifts/ alms giving. | Distribution of household incomes in urban areas. Share of food in household budgets of upper income households. |
| **Urban poor** | Increase in unit and total cost of food to be purchased over the year. Wages or earnings may not be directly affected, but expenditures for food to rise. | Distribution of household incomes in urban areas. Share of food in household budget for low income and poor households. Indicators of informal employment and income generating activities. Estimates of food gap and assistance requirements. |
| **Chronically destitute** | Increase in the unit and total opportunity cost of food given to the very poor. Expected decrease in gifts of food and other goods to the chronically destitute. | Assessment of the total caseload (i.e. numbers supported by food aid, NGO donations, public or private charitable activities), and of the expected decrease in private charitable contributions due to the combination of lower incomes and higher food prices. In an especially bad year, a number of the most marginal farming households may become almost entirely destitute (loss of last remaining assets, very heavy indebtedness or mortgage of small land holding, etc.). They may then join the ranks of the chronically destitute -at least for the marketing year. |

## Annex 11

# Factors affecting agricultural production

Agricultural production, including food and other crops and livestock husbandry, is determined by the interaction of farmers with:

- natural resources - biophysical framework of soils, water, temperature, flora and fauna;
- traditional practices;
- government policies (e.g. land tenure, marketing, animal welfare, labour relations);
- international trade agreements;
- public opinion and concerns;
- environmental fluctuations.

The above interactions result in **farming systems**. A farming system may be defined as a combination of elements in recognisable proportions, which, over a predetermined period, produces an identifiable agricultural product/s of an anticipated standard in anticipated quantities. Table I offers a comparison between the components of two extreme farming systems.

Table 1: **Typical Components of "Peasant" and "Agribusiness" Farming Systems**

| | Peasant | Agribusiness |
|---|---|---|
| System | Subsistence + near subsistence | Commercial |
| | Multi-product | Single product |
| | Vulnerable | Protected |
| | Risk averse | Risk taking |
| | Traditional | Progressive |
| | Low input / low output | High input / high output |
| Land | User rights based | Owned or leased |
| | Unsurveyed | Surveyed |
| | Tribal / state land ownership | Secure tenure |
| | Marginal | Favoured |
| | Structurally deficit (often) | Area size suited to enterprise |

| | Peasant | Agribusiness |
|---|---|---|
| Labour | Intensive | Extensive |
| | Non-mechanised | Highly mechanised |
| | Informal skills | Formal training |
| Labour | Family | Non-family |
| Planting material | Land races | High yielding varieties; high response varieties |
| | Composites | Hybrids |
| | Carry-over seeds | Purchased yearly |
| | Untreated | Treated with seed dressing |
| Water | Seasonal - insecure | High potential areas or irrigated fields - secure |
| Credit | No credit or informal credit only | Wide range credit available |
| Services | Rare; government only | Public / private extension |
| Markets | Surplus sold on local markets | Produce entirely for sale |
| | Post-harvest sales | Controlled marketing strategy |
| | No added value | Quality control |

Table 1 shows that in most cases, the components of the two systems are at opposite ends of the component spectrum. Therefore, although in any system the quantity of *production* is essentially *area x yield per unit area,* the type of system affects dramatically the nature of the work required to obtain an accurate assessment of the crop produced.

The panel below compares crop assessment approaches appropriate to the *agri-businesses* of pre-independence and post-independence Outer Mongolia with the approach to assessing the production of a peasant-based economy of a similar size (c. 1 million ha).

**Assessments of farming systems that are predominantly agribusiness or peasant-based**

In pre-independence Outer Mongolia, all agricultural production came from ***less than 50*** state collectives (vertically-integrated ***agri-businesses***) of some 20,000 ha each. Such collectives were staffed with a cadre of resident Subject Matter Specialists (SMSs) who were conversant with every aspect of production/processing and the factors affecting the components of performance. The collectives were fully-recorded in every detail and data were accessible to authorized missions. Consequently, CF-SAMs had only to audit the data already collected and processed to obtain a very reasonable understanding of the annual national production of crops.

Following independence, the collectives were privatised and, during the first 3 years, the 50 collectives were fragmented with the result that the number of independent units increased to around ***500 private enterprises*** of about 2 000 ha each. The SMSs left most of the units and farm recording was abandoned in most places. Crop assess-

ments thus became a much more complex task as basic data regarding area, yield and the factors affecting both area and yield were no longer immediately available. Nevertheless, the relatively small number of production units on about 1 million ha, compared to a peasant farming economy, still enables CFSAMs to visit all, or a least a substantial proportion of, farms and obtain production estimates by measuring areas and sampling yields in each enterprise.

By contrast, a similar area farmed in a ***peasant-based*** economy necessitates estimating performance of some ***500,000 independent units***, each with their own components and perspectives.

Contrary to general perceptions, peasant systems of agriculture, which determine the level of national production in most developing countries, are influenced by a complicated network of factors as shown in Figure 1, below, of which half are outside the control of the farmer.

A basic understanding of the inter-relations between factors affecting production is an essential prerequisite for an accurate assessment of production. Assessment procedures need to take into consideration any disruption or disturbance to the factors involved in the inter-acting network shown in Figure 1 when looking for variations from expected levels of production based on data from the available time-series.

The most direct source of information regarding factors affecting agriculture are the farm-families themselves, the ones who actually do the work. Their knowledge of the season in their own localities is essential for each team to obtain. This may be through interviews using a common checklist as outlined in the next section.

Interviews, then, may be considered as the *building blocks* of qualitative data but they need *mortar* to hold them together. Such binding material should come through the team's own continuous observations of the rural situation, formalized through the simple procedure of turning every journey into a transect. (**Technical Note P1**)

**Checklist**

To explain the level of food production in any one year you need to identify and, to the best of your ability, quantify the following:

***Fixed factors***

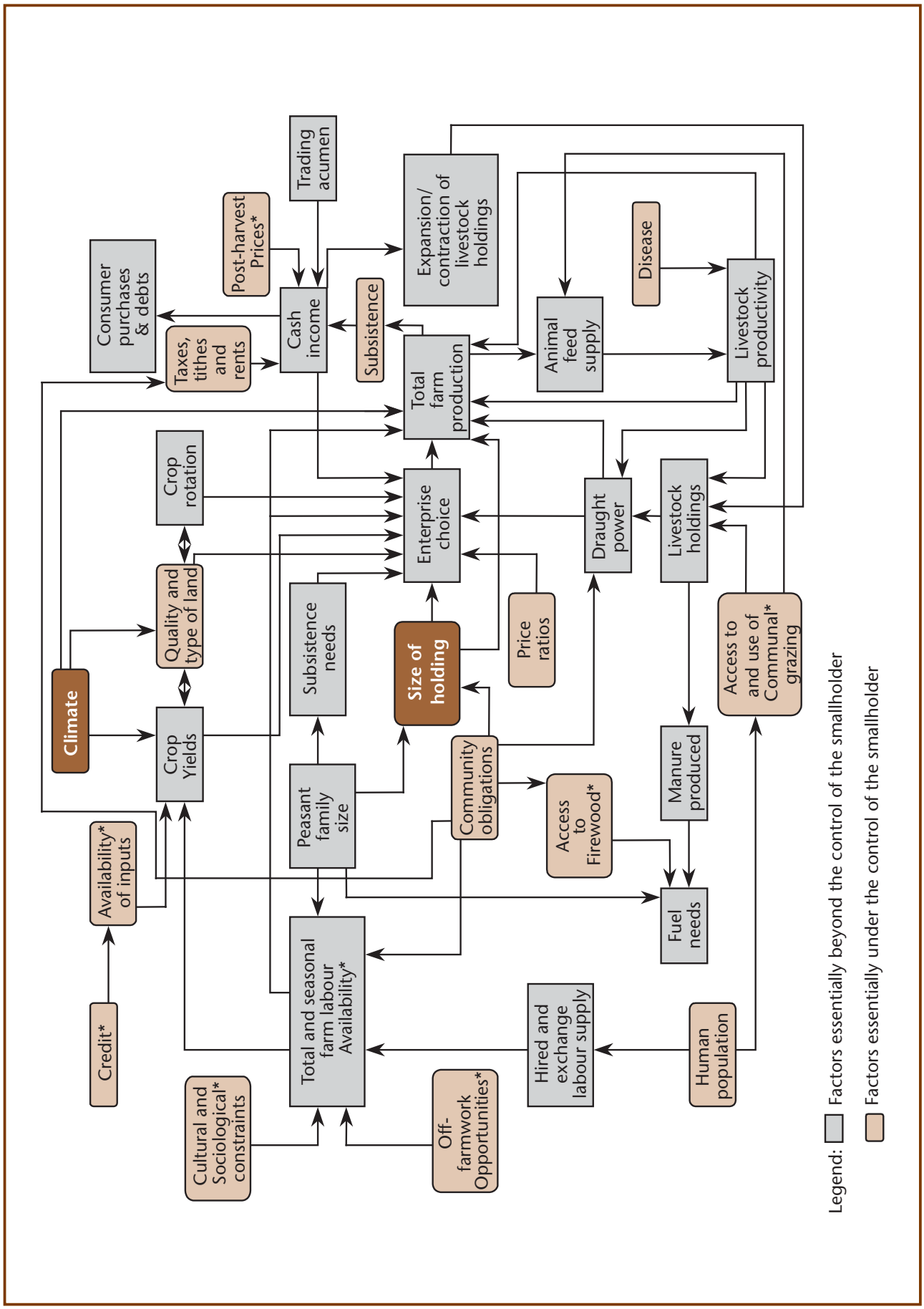
- Access to land
- Household labour availability
- Season's rainfall both quantity and quality
- Irrigation possibilities

***Variable factors***

- Credit, access and cost
- Mechanical power, spare parts access, fuel availability.
- Draught animal health and availability

- Seed availability and quality; actual planting times.
- Fertilizer use, availability and cost
- Migratory pest challenges and responses
  - army worm
  - locusts
  - quelea quelea
  - Non-migratory pest attack
  - movement from norm
  - control, both traditional and pesticide use
- Fungal disease challenges- seed dressing
- Weed challenges- weeding regimes and herbicide use.
- Natural disasters: floods, landslides, hail
- Civil disturbances: wars, threats of wars, raiding/theft
- Population disturbance
  - settlements, resettlements
  - political pressures to move
- Market control measures
  - local taxes
  - restrictions on movement of grain or traders.

Figure 1 **Main factors influencing enterprise choice and productivity of a peasant farmer Factors affected negatively by unrest/conflict are marked ***



## Annex 12

# Factors affecting planted area

### (a) Natural factors

| Rainfall | | |
|---|---|---|
| **Conditions** | **Effect** | **Possible Impact** |
| Good pre-season and early starting rains | Long cultivation window:<br>➧ maximum area cultivated | All possible areas cultivated<br>➧ Plenty of time for all forms of cultivation. Opportunistic use of common land, reduced fallowing[1] |
| | ➧ early or timely sowing. | ➧ Less intense competition for contractors; hiring rates stable.<br>➧ Long-cycle crop areas increased.<br>➧ High and even germination rates |
| Late starting rains. | Heavy clay soils uncultivable early:<br>➧ delays in cultivation<br>➧ delays in sowing | Cultivation window reduced:<br>➧ hand-dug areas *may* be reduced.<br>➧ pressure on contractors, hiring rates increased areas *may* be reduced[2].<br>➧ long-cycle crop varieties; areas *probably* reduced<br>➧ short cycle crops; area *probably* increased.[3] |
| | Sandy soils:<br>➧ dry-sowing increased | ➧ *probably* no effect on area sown. Fields may need to be gap-filled when rains begin. |
| Broken / false start to season. | Seeds germinate, then die. | Reseeding necessary;<br>➧ Reduction in area if seed supply limited[4]<br>➧ Area switch from cereals to later sown crops *e.g.* pulses or ground nuts. |
| Excess rain at sowing time | Water logging | Cultivation /sowing delayed on heavy soils. Problems similar to late starting rains for farmers on heavy soils using machinery/ machinery contractors. |
| Floods mid-season. | Land-loss, crop loss BUT may be a opportunity to replant crop on residual moisture | Main crop area reduced<br>Area increases in minor or opportunistic crops. |

| | | |
|---|---|---|
| Prolonged rainfall at end of season. | Harvest-time rain<br>➧Lodging | Mechanised farmers/contractors may miss some areas.[5] |
| | Post harvest rain | Opportunistic planting of second crops. |
| | Improved water stocks | Increases in dry season irrigated area. |
| Irrigation water supply.<br>Increased.<br>Decreased | More water available for dry season cultivation.<br>Less water available for dry season cultivation | Area increased.<br>Area decreased. |

[1] Afghanistan-the CFSAM in 2000 noted a massive 40% increase in total cereal area due to expansion of rain-fed farming in a very good rain year compared to 1999.

[2] Increased pressure on contractor's services with concomitant increases in labour rates, oxen hire rates, tractor hire rates. Under these conditions either i) less land is cultivated by those using contractors or ii) number of passes reduced; or iii) best sowing time missed as planting season extended beyond preferred period.

[3] Overall area may be the same.

[4] Very important consideration for wheat, barley (sowing rates-120 to 200+ kg/ha); less important for sorghum and maize (10-25 kg/ha)

[5] In Ethiopia, there is opportunistic planting of sassa barley in East Tigray to capitalize on late rains; In Mozambique, a second crop of short cycle maize is grown in the in south provinces. Rice is grown in the swampy/ waterlogged areas. In South Sudan a second crop of groundnuts is grown in west Bahr el Ghazal and sweet potatoes in Bahr el Jebel

### (b) Man-made factors

| Inputs | | |
|---|---|---|
| **Factor** | **Effect** | **Possible Impact** |
| Early availability of farmer seasonal ***credit,*** improved ***seeds*** and basal dressing ***fertilizer.*** | Market-oriented farmers have timely access to inputs which boosts farmer investment:<br>➧Maximum area cultivated | All possible areas cultivated<br>Plenty of time for all forms of cultivation. Opportunistic use of common land, reduced fallowing<br>Less intense competition for contractors; hiring rates stable. |
| | ➧Early or timely sowing. | Long-cycle crop areas increased.<br>High and even germination rates |

| | | |
|---|---|---|
| Late arrival of inputs | Market orientated farmers have reduced time for investment.[6]<br>➧ Credit supply low or not available<br>➧ Credit demand high.<br>➧ Delays in sowing<br>➧ Black market thrives | Optimum sowing time missed.<br>➧ HRV[7] areas reduced<br>➧ Area of long-cycle crop varieties *probably* reduced.<br>➧ Area of short cycle crops *probably* increased. [8]<br>➧ Input prices increase |
| Increased prices of inputs. | Market orientated farmers have increased outlay.[9]<br>➧ Decline in sales possible<br>➧ May get increase in share-cropping<br>➧ Small farmers don't buy inputs | HRVs;<br>➧ Reduction in area.<br>Traditional varieties.<br>➧ Area switch to low-input cereals<br>➧ Areas stay same but ownership changes. |
| **Labour** | | |
| Crisis displacement with labour shortage early in season | Abandon village fields- early season. New clearings unlikely. | Cultivation stopped.<br>Area reduced<br>Area switch to late-sown crops<br>No expansion of cultivated area |
| Crisis displacement with labour shortage late in season. | Abandon village fields late season. | Harvest missed.<br>Area lost |
| Long term migration. | Farming population reduction. | Fewer farming households.<br>Possible area reduction[10]<br>Possible land redistribution/share cropping[11] |
| **Power sources** | | |
| Draught animals-viral diseases (epidemic e.g. rinderpest); | Dramatic loss, oxen sharing cannot keep- up with demand. | Fewer animals to cultivate.<br>Area reduction. |
| Draught animals-distress selling (most households)[12] | Dramatic loss, oxen sharing cannot keep- up with demand. | Fewer animals to cultivate.<br>Area reduction. |
| Fuel availability disturbed. | | |
| Fuel supply late | Contractors raise prices Black-market flourishes. | Area probably sustained, quality falls. |

| | | |
|---|---|---|
| Area reduced or redistributed to very wealthy. | Investors reduce area unless price forecasts good.<br>Owner- farmers struggle to find fuel. | Area reduced or redistributed to very wealthy. |
| Prices dramatically increased | Owner- farmers struggle to find fuel. | Area reduced or redistributed to very wealthy. |
| **Farmer Confidence** | | |
| Local conflict/ insecurity- confidence draining. | All farmers.<br>➧ No far fields. | All farmers.<br>➧ Area reduced[13] |
| National war threat- uncertainty. | Boosted self sufficiency programme.<br>➧ Maximum planting unless near frontier. | ➧ Area of staples increased[14] |
| Stable prices of outputs/ commodities. | ➧ Planning possible. Sustained practices.<br>➧ New investors | Area expansion sustained at a predictable level. |
| Increased prices of all commodities.[15] | ➧ Market orientated farmers and mechanized farming increases. | Rapid and widespread area expansion.[16] |
| Increased prices of some commodities.[17] | ➧ Crops switched by large scale farmers[18] | Crop area ratios change; total area *may* remain similar. |
| Stocks held on farm. | Subsistence farmers with plenty of on-farm stocks | Reduce planted area, increased fallow area.[19] |

[6] Subsistence farmers less effected, use their own seeds and may not use fertilizer

[7] HRV- high response varieties

[8] Overall area may be the same.

[9] Response depends on expected crop prices;guarantees or no guarantees, stocks from previous years.

[10] Angola- areas deserted by influential landlords left unfarmed by peasants remaining for many years.

[11] Afghanistan- monied households left but land farmed by others in their absence(share-cropped)

[12] Do not confuse regular sale of draught animals in areas with limited grazing/ trypanosomiasis with distressed selling. Rapid turnover of draught animals is valid strategy in such areas. (Buy pre-season sell post- season; avoid feeding expenses/risk in dry season)

[13] South Sudan - local areas fluctuate, since peace negotiations began, area increases in each locality are being noted each year as more and more far-fields are being cultivated. Mozambique showed massive increase in planting post civil war. Where law and order breaks down the converse is true.

[14] Eritrea (1996,7-8) increased mechanized farming in western lowlands. This was immediately reversed when war broke out and the security in the area was threatened.

[15] e.g. When export trade opens.

[16] May be accompanied by land grabs with agro-pastoralists being dispossessed of farm/grazing lands. (Darfur 2000; East Sudan, 1994/5; Somalia 1986)

[17] e.g. When export trade opens.

[18] North Sudan (2000/1-2002/3) massive changes in rainfed sorghum areas - switch to sesame.

[19] Noted in Mozambique 2006.

## Annex 13

# Factors affecting yield

| Factor | Effect | Possible Impact |
|---|---|---|
| **Rainfall** | | |
| Drought | Poor plant growth - no development | Crop failure - no yield |
| Dry-spells at germination | Poor germination, reseeding | Optimum planting time missed, plants vulnerable, lower yield |
| Dry-spells at early vegetative growth | Reduced tillering, fewer heads | Fewer heads per $m^2$ yield reduced.[20] |
| Dry-spells at flowering/ pollinating | Reduced fertilisation; poor seed set | Fewer seeds, reduced yield per plant |
| Dry-spells at grain-fill | Smaller seeds | Lower yield per plant |
| Heavy rains | Water-logging - disturbed nutrient uptake. | Lowered metabolism-reduced growth. |
| | Rotting of roots and stems | Plant death |
| **Extreme events** | | |
| Floods | Parts of fields submerged | Plants lost, yield per ha reduced.[21] |
| Hailstorms | Early damage to leaves | Recovery likely; probably little effect (exaggerated because looks bad) |
| | Damage to head | Seed loss, yield reduced |
| Unseasonably high temperatures | Increased plant water-demand, desiccation | Increased dry-spell effects |
| | | Very high dry-matter grains-apparent yield reduction |
| Unseasonably high winds | Increased plant water-demand, desiccation | Increased dry-spell effects |
| **Credit supply** | | |
| Delay in release of credit or credit terms | Interference with timeliness of all operations | Slight yield reduction of input using farmers |
| Reduction in credit | Reduced availability of all inputs | Serious reduction in yields of input using farmers |

| **Fuel shortages** | | |
|---|---|---|
| Reduced fuel availability | Reduced availability of tractors, increased pressure on contractors | Reduction in passes, poorer cultivation- possibly lower yields for small seed crops. |
| Increased fuel prices | Increased contractor ploughing per ha rates | |
| **Seeds** | | |
| Seed shortages[22]- local seeds | Lack of local seeds carried-over from previous harvest is a concern for heavy seed rate cereals/pulses, e.g. *wheat, barley, oats* and *all pulses* (90 kg to 180 kg per ha).<br>NOT usually a problem for low sowing rate cereals such as *sorghum, pearl millet* | Vulnerability;<br>IDPs>Transhumants>Set tled<br>Reduced sowing rates will probably reduce yields;<br>Less seed selection means poorer quality seeds, poorer germination followed by reduced yields.<br>Sowing dates slip as farmers search for seeds, missing the optimum sowing rate and leaving plants more vulnerable. |
| Seed shortages[23] improved seeds (hybrid and composite) | Late arrival or overall shortage of hybrid seeds will increase seed prices/ reduce uptake and so reduce area sown to hybrids | Commercial farmers affected may use local seeds resulting in reduced yields or they may switch crops |
| | Late arrival of composite seeds | Subsistence+ and commercial farmers affected, they may adjust sowing rates with possible reduced yield effect.<br>Poorer quality seeds used leading to poor germination and reduced yield |
| Seed failure | Replanting (maybe more than once) - Untimely sowing.<br>Possibly no alternative seeds | Increased pressure on seeds reduced sowing rates, untimely sowing all leading to reduced yields.<br>Increased fallow areas |

| | | |
|---|---|---|
| **Fertilizer**[24] | | |
| Early availability of basal dressing fertilizer | Plenty available at sowing time.<br>Prices stable | Correct application to both HRVs and local seeds means higher yields are expected |
| Late availability of basal dressing fertilizer | Shortages at sowing time- insufficient to meet demand. Prices increase and a black market flourishes. Less basal dressing used esp. by subsistence/subsistence + farmers | Reduced use of HRVs- decreased yields |
| Price increases | | Reduced application by peasants who cannot afford parallel prices leads to reduced use and reduced yields |
| On-time availability of top dressing | Plenty available, prices stable-Correct application | Good growth especially of HRVs leading to higher yields of grains; and high yields of straw |
| Late availability of top dressing fertilizer | Shortages occur with price increases and a black market flourishes for commercial farmers | Top dressing window missed, commercial farmers reduce use |
| Price increases | | Subsistence farmers stop using top dressing with a possible reduction in yields of grain but a definite reduction in straw yield |
| **Labour** | | |
| Labour shortages early season | Land clearing affected, increased weed growth later | Weed induced yield reduction unless weeding frequency is increased later in year |
| Labour shortages mid-season | Wages increased, commercial farmers reduce weeding frequencies [25] | Weed induced yield reduction is to be expected |
| Labour shortages late-season | Wages increased, delayed harvesting. Increased in-field pre-harvest losses | Poor quality harvesting means yields may be reduced |
| **Pests and diseases** | | |
| Migratory pests *viz* army worm, locusts, red-billed quelea (quelea quelea) may occur at any stage in the crop growth cycle with equal devastation | All farmers subject to widespread attacks unless coordinated (national and international) control measures are in place with usable chemicals and equipment | Devastating loss of yield in uncontrolled circumstances |

| | | |
|---|---|---|
| Post-CFSAM attacks of migratory pests[26] | Destruction of remaining harvestable crops | Reduction of production, after mission leaves country will radically change assessment |
| Non- migratory pests; gregarious movers *viz* grass-hoppers, sorghum midge, bugs, local birds (finches) | Temporary infestations will cause losses and control may be economic. Local bird damage increased when labour reduced | Yields will be reduced but the losses, nationally, are rarely devastating. Chemical control in mechanized areas. Manual control is practical on small plots |
| Non-migratory pests; stationary/ solitary-stalk borers, termites, rodents | Endemic low level losses are expected | Occasional serious outbreak with build-up of infestations to economic levels allowing chemical treatment |
| Large mammals including baboons, monkeys, warthogs, elephants and hippos | Destruction and loss of plants all through season but particularly at harvest, near forests and national parks | High labour demand-24 hr per day animal and 12 hr day bird scaring near forests or woodland with coordinated action are needed |
| **Weeds** | | |
| Striga (buda or witch-weed)<br>Easily recognized plant-parasite of sorghum | Empty patches, striga rarely infests whole fields, germinating shoots destroyed pre-emergence;[27] | Localized problem whose effect is often greatly exaggerated unless it occurs a) in irrigated plots with no rotation or b) confined rain-fed fields where families or large scale contractors have no chance of shifting |
| Grass and broad leaf weeds of cereals | Weeds are endemic throughout all CFSAM countries- ubiquitous weeds can obscure whole fields of plants[28]. Usually controlled up to 3 x per season per plot by hand weeding.<br>Worse in good rain years | Far worse impact than striga, grass and broad leaf weeds negatively affect the yield of all cereals, heavy drain on household labour resources/high cost in commercial sector<br>Serious yield reduction in un-weeded fields in good rainfall years |

| | | |
|---|---|---|
| **Fungal diseases** | | |
| Seed-borne *e.g.* smuts, bunts (sorghum, wheat, barley) | Problem mostly noted in commercial sector, seed treatment supported | Reduces commercial value of seed |
| | Heavy infection needs cultural action creating extra demands on labour | Reduces crop establishment, therefore yield |
| **Storage Pests**[29] | | |
| Universal problem in CFSAM countries - insects, moulds, rodents, birds | Infestation levels vary but are always exacerbated when wet/immature grain harvests are put into poor storage conditions | Few studies but losses likely to range from 10-40% depending on crops.<br>Best guide to follow is: *the bigger the grain, the greater the loss.* |
| | Most serious pest large grain borer (LGB) | Losses 80% recorded in localities in Tanzania (short season CFSAM 1998) |

[20] All the effects of dry-spells are less severe in fields of local landraces which have a much longer spread of dates for each physiological stage. The corollary is that HRVs are more vulnerable but they produce higher yields when all the conditions are favourable.

[21] If floods widespread, the flood will be noted to have reduced area of main crop, not yield. Make sure the EPs have not done both!

[22] Usually in CFSAM countries > 90% peasant farmers use their own seeds carried over from previous year

[23] Usually < 10% peasant farmers use purchased seeds in CFSAM countries.

[24] There is mixed utilization of fertilizer in peasant sectors; purchase of fertilizer is influenced by extension activities, cost of fertilizer, farm-gate price of commodity, credit availability and weather forecasts. A fall in use usually follows liberalization of central economies. Fertilizer is also a saleable commodity in its own right; internal and cross- border trade flourishes when regional differences in prices occur. A thriving black market causes a redistribution that may have serious yield implications if the fertilizer leaves the country.

[25] Maybe increases use of herbicides.

[26] Army worm, which tends to infest crops early in their cycle, is removed by heavy rains. Sudan- red-billed quelea may attack the late sorghum harvest, fundamentally affecting yields or areas harvested after the CFSAM has left.

[27] When purple-blue flowers are seen, the real damage is already done.

[28] Kosovo 1999, delayed harvesting caused whole fields to be completely obscured, combine harvesters produced I bag of weed seeds for every 2 bags of grain!

[29] Usually don't affect yield, get some attacks on standing grain crops left to dry in field. (south Ethiopia-1995)

## Annex 14

# Market surveys

Markets are a very useful source of information regarding the status of the agricultural season but more is required than a simple examination of prices. You need to know who is buying what and why? Who is selling what and why? Who is benefiting and who is losing?

### Key Informants and Information

The obvious key informants are those buying and selling natural-resources-based products.

While spot prices are monitored, data on the following market characteristics should also be collected, including how the situation varies from last year and what would be normal:

- the numbers of people buying or selling,
- the local products they are selling/buying,
- from where they have come,
- to where they are going,
- the means of transport,
- difficulties experienced in movement of goods
- the quantities they are handling,
- the quality of the goods,
- the number of presentations made for the same items before sale,

As popular memories are only as accurate as a trader's acumen and instinct allow, request written records of presentations and actual sales with prices (disaggregated by quality, class and gender for livestock) from the ***municipal authorities*** for each market visited.

This exercise and all other market related work should be undertaken by a ***local CF-SAM team member***, who speaks the language of the area. International team members should remain at a distance as their presence almost invariably has a serious adverse effect on the validity of market data obtained. Vehicles with logos relating to food aid or donor institutions should not be used for this exercise.

Such data, once obtained, should be cross-checked by interviews conducted by the same team members, by themselves, with the cluster of traders present in the market at the time of the visit and reasons for any measurable changes in market conditions and prices discussed.

Predictions as to changes in the condition of the market over the coming few months should also be sought from traders in local commodities and straights who have traded in the locality for several years.

Be aware of the fact that the dealer rings, price setting, and trader monopolies are the norm rather than the exception and are uncontrolled in most CFSAM countries. See also Annexes 17 and 18.

## Annex 15

# Examples of staple food balance sheets for three main types of food crisis

The following examples show how national FB sheets relate to each of the three main types of food crises distinguished in 1.2 by comparing balances for the upcoming marketing year (t) with those for the previous year (t-1). They can also help illustrate how balance sheet estimates for emergency food aid imports may differ from the aggregate of estimated household food access shortfalls.

The first table (below) illustrates a situation where ***production fell*** substantially from year t-1 to year t, the current marketing year. Projected habitual food use would grow with population, but total utilization has fallen because exports and closing stocks have been cut, due to tighter supplies. If the country is unable to increase commercial imports over and above the previous year's level, the uncovered deficit of 2.84 million tons needs to be covered through food assistance to avoid a fall in total food consumption. However, if the country is not one of the poorest, and an exceptional doubling of commercial imports to 1.6 million tons is economically possible, the net deficit may fall to just over 2 million tons.

| **Exceptional shortfall in production**<br>National Food Balance Sheet (1,000 metric tons) | | |
|---|---|---|
| | (t-1) | (t) |
| **Domestic availability (1)** | **12,800** | **9,300** |
| Opening stocks | 500 | 500 |
| Production | 12,300 | 8,800 |
| Main season | 12,000 | 9,000 |
| Secondary season (forecast) | 300 | 300 |
| **Total utilization (2)** | **13,612** | **13,000** |
| Food use (3% growth p.a.) | 10,616 | 10,934 |
| Feed use | 300 | 300 |
| Seed use | 650 | 650 |
| Losses (12%) | 1,476 | 1,116 |
| Exports | 70 | - |
| Closing stocks | 500 | - |
| **Total Import requirement (2-1)** | **812** | **3,700** |
| Commercial imports | 800 | 800 |
| Food aid received and pledged | 12 | 60 |
| Uncovered deficit | - | 2,840 |

The second illustration assumes an increase in production ***after a bad year***, in a very poor country[30]. Food use and total utilization have grown, but the respective shares of cereal production being held after harvest by households on the one hand, and by traders on the other, depends on the extent of indebtedness in the previous year. For a very poor country, ***indebtedness*** during a bad year tends to be high and widespread, so reimbursements in kind at harvest time may represent up to half of food production by households. Although commercial imports and food aid requirements have fallen, the NFBS does not reflect the post-harvest change in ownership of food supplies. In such a case, the report should conclude that no substantial amounts of food aid are needed, but that, in spite of a seemingly balanced demand/supply situation, most households critically need financial support to buy back most of the food, available in country but now held by private traders. Similar situations may arise in countries afflicted by sudden economic collapses and mass unemployment, even in the presence of sufficient supplies.

| **Generalized lack of access**<br>National Food Balance Sheet (1,000 metric tons) | | |
|---|---|---|
| | **(t-1)** | **(t)** |
| **Domestic availability (1)** | **12,800** | **13,400** |
| Opening stocks | 500 | - |
| Production | 12,300 | 13,400 |
| Main season | 12,000 | 13,100 |
| Secondary season (forecast) | 300 | 300 |
| **Total utilization (2)** | **13,112** | **13,562** |
| Food use (3% growth p.a.) | 10,616 | 10,934 |
| Feed use | 300 | 300 |
| Seed use | 650 | 650 |
| Losses (12%) | 1,476 | 1,608 |
| Exports | 70 | 70 |
| Closing stocks | - | - |
| **Total Import requirement (2-1)** | **312** | **162** |
| Commercial imports | 112 | 102 |
| Food aid received and pledged | 200 | 60 |
| Uncovered deficit | - | 0 |

The third case also depicts an increase in production. Total food use and total utilization have grown from t-1 to t, due to a large increase in exports (although imports continue for cereals not grown in country). However, the overall increase in production "hides"

[30] For the lowest-income food deficit countries, it is not uncommon for FAO and WFP to carry out assessments on a regular basis.

long-term, substantial and severe ***local deficits*** in parts of the country where the exportable national surplus is not available to large numbers of people. With relatively small amounts of food aid, the aggregate uncovered deficit has theoretically disappeared, but large numbers of people may still not have physical or financial access to food, and need food assistance because domestic resource transfers are inexistent.

| **Severe localized food insecurity**<br>National Food Balance Sheet (1,000 metric tons) | | |
|---|---|---|
| | **(t-1)** | **(t)** |
| **Domestic availability (1)** | **12,800** | **14,500** |
| Opening stocks | 500 | 500 |
| Production | 12,300 | 14,000 |
| Main season | 12,000 | 14,200 |
| Secondary season (forecast) | 300 | 300 |
| **Total utilization (2)** | **13,612** | **14,694** |
| Food use (3% growth p.a.) | 10,616 | 10,934 |
| Feed use | 300 | 300 |
| Seed use | 650 | 650 |
| Losses (12%) | 1,476 | 1,740 |
| Exports | 70 | 570 |
| Closing stocks | 500 | 500 |
| **Total Import requirement (2-1)** | **812** | **194** |
| Commercial imports | 112 | 160 |
| Food aid received and pledged | 200 | 34 |
| Uncovered deficit | 500 | 0 |

# Annex 16

## Methods used to assess household food insecurity

This annex provides brief explanations of methods, strengths and weaknesses of assessments and estimates based on:

- diet diversity and food frequency
- a coping strategies index
- a household economy rapid appraisal
- a food poverty (purchasing power) approach

Note that the second edition of the WFP *EFSA Handbook* (expected early 2008) will describe an approach that combines food consumption scores (based on diet diversity and food frequency) together with indicators of food access to create households food security categories.

### Dietary diversity (DD) and food frequency scores (FF)

When a DD, FF or combined DDFF score is used, the proportion of households deviating from the score corresponding to a minimum balanced and sufficient diet can be calculated according to given thresholds (e.g. proportion below 80% of the score, % below 70% of the score etc.). However, the score does not enable the analyst to estimate *how much food is lacking* because it cannot be directly linked to a quantification of the amount of food consumed. A calibration of the score is needed to provide equivalences with kilocalorie (and, ideally, macronutrient) intakes.

Strengths: Evidence from multi-country analysis suggests that household-level dietary diversity is strongly associated with per capita consumption (a proxy for income) and energy availability, suggesting that dietary diversity could be a useful indicator of household food security (defined in relation to energy availability).[31] Research to quantify this association has shown that a 1 percent increase in dietary diversity is associated with a 1 percent increase in per capita consumption.[32] By attaching nutritional values to DDFF scores, reductions in those scores may be approximately associated with nutritional (energy) intake decline, which could be a basis to estimate food gaps.

Weaknesses: Household-level consumption patterns and changes have to be recorded, which can be time consuming (yet, less complicated than food consumption/expenditure surveys). DDS approach does not shed light on causes (incomes, prices, own-production) of a consumption deterioration; information on causal factors is necessary to determine on the robustness of the conclusions from focus group-based DDS. Recall

[31] Marie T Ruel (2004) *Is dietary diversity an indicator of food security or dietary quality? A review of measurement issues and research needs*, FCND Discussion Paper No: 140. IFPRI

[32] Hoddinot, J. and Yisehac Yohannes (2202) *Dietary Diversity as a Food Security Indicator*, FCND Discussion Paper No. 136, Washington D.C.: IFPRI

techniques to get benchmark DDS may result in estimates biased upwards because of the tendency to exaggerate shortfalls when external aid is expected.

For details, see:

- FAO, EC, FANTA Project, *Guidelines for Measuring Household and Individual Dietary Diversity*, FAO Rome March 2007 (includes a dietary diversity questionnaire)
- WFP *EFSA Handbook*
- Swindale & Bilinsky. *Household Dietary Diversity Score (HDDS) for Measurement of Household Food Access: Indicators Guide (v.2)*, FANTA Project, Washington DC, Sept. 2006

### Coping Strategies Index (CSI)

The CSI enumerates various consumption-related coping strategies commonly used by a population. Four general categories of coping are measured, with individual strategies defined specifically according to location and culture:

1. Dietary change (e.g. eating less preferred but less expensive food etc.);
2. Increasing short-term food access (borrowing; gifts; wild foods; consuming seed stock);
3. Decreasing numbers of people to feed (short-term migration);
4. Rationing strategies (mothers prioritizing children/men; limiting portion size; skipping meals; skipping eating for whole days).

Panel 1 shows a typical hierarchy of coping strategies for a rural, mixed farming population.[33]

**Panel 1**

**Typical hierarchy/progression of coping strategies**

***Stage One: low damaging responses***

Changes in cropping and planting practices
Sale of small stock
Reductions in current food consumption levels (food diversity, number of meals)
Collection of wild foods
Use of inter-household transfers and loans
Increased petty commodity production
Migration in search of employment

***Stage Two: high damaging responses***

Sale of livestock
Sale of agricultural tools

[33] Adapted from, Corbett,J., (1988). *Famine and household coping strategies*. World Development, 16, 1099-1122

Sale or mortgaging of land

Credit from money lenders/merchants

Further reductions in current food consumption levels

***Stage Three: Destitution***

Distress migration

Begging, prostitution, scavenging

Data on the frequency of each activity/strategy (in a week/month) is collected and a score value assigned (ranging from 7 to 0 in weekly assessment). Each activity/strategy is assigned a severity score based on the perception of community focus groups (an average of individual group perceptions). The frequency score and the severity score and then combined to derive the CSI. The higher the frequency and number of coping strategies being used the higher the CSI value and more food insecure the household.

Strengths: CSI is relatively easy to construct, using household information with focus group (community) perceptions, and is well suited to asses the short-run impact of a food shock (transitory food insecurity). In several studies in Africa, the CSI has been found to be accurate indicator of household food insecurity.[34] In addition to measuring food security, CSI can also be used to monitor the impact of various food aid interventions. The CSI can help to identify population groups/areas in severe or moderate stress.

Weaknesses: CSI is a relative measure of food insecurity and not an absolute measure that can provide an indication of the food gaps. It also does not have information to distinguish between pre-crisis coping strategies (associated with chronic poverty and food insecurity) and crisis-driven strategies; hence, posing difficulties in distinguishing chronic food insecurity from transitory food insecurity. The methodology does not provide CSI thresholds to determine the nature of the crisis - for example, whether it is a humanitarian crisis or a livelihood crisis. Constructing a pre-crisis index using recall technique may help to overcome these deficiencies to some degree.

For details, see: Maxwell D, B.Watkins, R.Wheeler and G.Collins. ( ). *Coping Strategy Index: A tool for rapid measurement of household food security and the impact of food aid programs in humanitarian emergencies* (CARE and World Food Programme)

### Household Economy rapid appraisal

The Household Economy Approach (HEA) provides a direct estimate of the food gap by establishing a household "food balance" which matches "resources" (all income and food sources converted into kilocalorie or cash equivalents) against "requirements" (food intake and other essential needs converted in kilocalories or cash equivalents). The HEA disaggregates households by wealth groups. It takes some time to obtain reliable information from each group interviewed, which therefore imposes limits on sample size and raises questions about the representativity of the findings.

[34] Senefelds S and Polsky K., "Chronically Ill Households, Food Security and Coping Strategies" (Paper presented at the conference on HIV/AIDS, Food and Nutrition Security, Durban. S. Africa. April 2005. IFPRI)

The approach:

- defines the basic patterns of livelihoods by geographic areas (livelihood zones) and the wealth status of households;
- provides a description of households' baseline living conditions (food and other income sources; expenditures);
- analyses nature of the hazard (situation of crops, livestock, food prices, incomes including food income, gifts, exchange of household production and labour);
- examines household response (use of livestock assets; expand income sources; minimize expenditures; food substitution);
- assesses the food gap of households that remains after different efforts at coping.

Assessments using this approach are undertaken at three different levels of detail and sophistication:

(a) A ***comprehensive***, classic HEA assessment involves very detailed interviews by specifically-trained interviewers with a number of purposively-selected groups of households in each livelihood or agro-ecological zone, and the collection and thorough cross-checking of data on all relevant food and income sources and expenditures, and other complementary information, during each interview.

For a summary description, see ◔ WFP-EFSA Handbook, 5.8, Q*uantitative analysis of household food sources, income and expenditures*.

For details, see:

◔ Save the Children UK (August 2000) *The Household Economy Approach: a resource manual for practitioners,* Development Manual 6.

Guide to Rapid Food Needs Assessment, available from the Food Economy Group at http://feg-consulting.com

(b) A ***simplified*** HEA assessment reduces the amount of data collected (and therefore the time required) by determining the relative importance of different sources of food, income and expenditure (using proportional piling), collecting data on two of the more important items (ones for which reliable data are more easily collected), and extrapolating to the other items. For an example, see:

◔ WFP-Food Economy Group Technical Support Unit, WFP Sierra Leone (2002), *Food Security Analysis Field Kit*.

(c) A ***rapid*** HEA eliminates the interviews with groups of households and relies entirely on information from well-chosen key informants. It is intended to build up a picture of how food access varied in the recent past and how it is likely to evolve in the coming (3-6) months in a localized area, especially to help interpret nutrition survey data. For details, see:

◔ SMART (April 2006), *SMART Methodology: Measuring Mortality, Nutritional Status and Food Security in Crisis Situations*, version 1, chapter 6, *Food Security*:

Strengths: The HEA methodology: (i) allows insights into the crisis-induced "change" in food security compared with baseline information; (ii) has the capacity to estimate

a food deficit taking into account both the impact of a shock on food availability, prices, food and non-food incomes and savings and the households' potential to cope (substitutions, savings, debts, assets sales, gifts, more labour sale); (iii) helps identify potentially damaging coping strategies; and (iv) allows identification of chronic food insecurity.

Weaknesses: (i) Information gathering is through key informant and focus group interviews, which may compromise representativeness and requires high skills to avoid biased information and undertakes the internal cross-checking for consistency that is integral to the method; (ii) It requires good judgment and considerable experience to quantify qualitative information, for example on coping strategies; (iii) crisis ending and future prospects may not always be covered. The reliability of estimates from simplified and rapid variants may be questionable - they are susceptible to serious over-or under-estimations.

An example of a household balance sheet obtained, using the HEA approach, is given in Panel 2.

**Panel 2**

**Household income and expenditure balance sheet in cereal equivalent terms: an example**

Area /zone:____(name)_____ No. of sites surveyed___10_____

Average household size___**5**____

| | Recent pre-crisis period averages | | | Current averages | | |
|---|---|---|---|---|---|---|
| | Cash value ($)/year | Cereal equival-ence (per year) | In kilo-calories per capita per day | Cash value ($)/year | Cereal equival-ence (per year) | In kilo-calories per capita per day |
| **Average household income** | | | | | | |
| Food produced & consumed | $140 | 400 kg | 780 kcal | $ 100 | 285 kg | 554 kcal |
| Food produced & sold | $ 35 | 100 kg | 194 kcal | 0 | 0 | |
| Other agriculture | $ 35 | 100 kg | 194 kcal | $ 20 | 57 kg | 110 kcal |
| Livestock sales | $105 | 300 kg | 582 kcal | $ 110 | 314 kg | 610 kcal |
| Off-farm cash income | $ 35 | 100 kg | 194 kcal | $ 25 | 71 kg | 138 kcal |
| Remittances | $ 18 | 50 kg | 97 kcal | $ 25 | 71 kg | 138 kcal |
| Draw on savings | $ 18 | 50 kg | 97 kcal | $ 20 | 56 kg | 109 kcal |

| | | | | | | |
|---|---|---|---|---|---|---|
| Debts incurred<br>----- | -- | | | | | |
| **Total income** | **$ 386** | **1 100 kg** | **2 138 kcal** | **$ 300** | **854 kg** | **1 660 kcal** |
| **Required expenditure** | | | | | | |
| Minimum food consumption requirement | $ 378 | 1 080 kg | 2 100 kcal | $ 378 | 1 080 kg | 2 100 kcal |
| Cereals seeds/ losses | $ 59 | 170 kg | 332 kcal | $ 59 | 170 kg | 330 kcal |
| School fees | $ 18 | 50 kg | 96 kcal | $ 18 | 50 kg | 97 kcal |
| Medical expenses | $ 35 | 100 kg | 194 kcal | $ 35 | 100 kg | 194 kcal |
| Clothing | $ 18 | 50 kg | 97 kcal | $ 18 | 50 kg | 97 kcal |
| Cooking/fuel | $ 18 | 50 kg | 97 kcal | $ 18 | 50 kg | 97 kcal |
| Debt repayments | | | | $ 10 | 27 kg | 52 kcal |
| Rent | | | | | | |
| Essential transport | | | | | | |
| --------- | | | | | | |
| **Total requirements** | **$ 526** | **1 500 kg** | **2 914 kcal** | **$ 536** | **1 528 kg** | **2 967 kcal** |
| *Balance/unmet need* | *$ 140* | *400 kg* | *776 kcal* | *$ 236* | *674 kg* | *1 307 kcal* |

Source: adapted from WFP (2005) *EFSA Handbook*

### "Food poverty" (purchasing power) approach

The average deviation of food ***expenditures*** from the cost of a minimum ***food basket*** is used as an indication of the food gap. It is calculated as the ratio of food expenditures to the cost of the food basket, taking into consideration households' own food production. This difference can be converted into kilocalories to approximate a food access gap, similar to (though less thoroughly than) the HEA approach.

A limitation of this approach is the lack of knowledge of the type of foods on which the expenditures are made. If purchased food bring few calories but are expensive (e.g. some animal-based food), the food expenditure level may be close to the cost of the minimum food basket but food consumption be deficient in terms of energy. It is also necessary to adjust the food expenditures for the amount of food which is self-consumed and therefore needs not to be bought.

### Data from a recent household income/expenditure survey

If, exceptionally, data relevant to the current situation are available from a recent ***household income/expenditure survey*** based on probability sampling, they may be analysed as follows:

- If the data include food ***consumption*** data, comparison with the reference levels in order to estimate food access shortfalls involves: converting food quantities into calorie (and other nutrient) equivalents using nutrient conversion tables; deriving estimates for apparent calorie consumption per person per day using household composition data; and comparing the apparent consumption with the reference levels - the nutritional norm (2100 kcals) and previous consumption levels.
- If quantitative consumption data were *not* collected but only ***food expenditure*** data, rough estimates of consumption may be obtained by taking the recorded food expenditures, expressing them in cereal equivalents (using the market price of cereals) and then in calorie equivalents, as in Panel 1 above.
- If the consumption of foods ***other than cereals and other starchy staple foods*** is significant, however, an adjustment must be made for the higher costs of other foods (such as fish, meat, vegetables, fruits and pulses) compared with cereals. The calorie-equivalents of the other foods can be calculated directly if both expenditure and price data are available for the other foods to enable their quantities to be calculated. If not, an assumption might be made that non-cereal foods cost about 20 percent more than cereals, on the average, and the cereal-calorie equivalent conversion of these foods adjusted downwards by taking only 80 percent of the conversion.

In all cases, the mission will need to test the validity of these estimates in the light of observations and findings from its field investigations, especially during community group and household interviews.

With figures for calorie intake, shortfalls may be estimated compared with the nutritional reference level (2100 kcal/person/day). Alternatively, the calorie consumption estimates may be used directly to categorize the degree of severity of food insecurity. An example of a food security status classification is shown in Panel 3.

**Panel 3**
**Food insecurity severity levels - an example**

| Food security status | Calorie consumption /person/day |
|---|---|
| *Food secure* | consistently above 2,100 kcal |
| *Marginally food insecure* | between 1,800 kcal and 2,100 kcal |
| *Moderately food insecure* | between 1,500 kcal and 1,800 kcal |
| *Severely food insecure* | less than 1,500 kcal |

Source: Stephen Devereux. January 2006

## Annex 17

# Sample multidisciplinary interview guide and data recording format

A format such as this may be used by all CFSAM field team members (working singly or in small sub-teams) to guide discussions and record information during field visit interviews with rural households and key informants at district and community levels. It is not intended to be used as a questionnaire. It should be adapted to local needs.

Teams must also collect recent reports of agricultural performance, food security assessments, market studies, nutritional and vulnerability surveys, and data on ongoing assistance programmes in the areas visited.

| | |
|---|---|
| **Season:** 20..... / 20..... | main harvest season ☐ / secondary harvest season ☐ |

**1. Location**

| | |
|---|---|
| Region/district | Informant |
| Village/locality | Position |
| [*For household interviews only*]<br>Household size: | Organization |
| Landholding: | |

**2. Type of crop production**

| | | |
|---|---|---|
| Rain-fed ☐ | Irrigated ☐ | Supplementary irrigation ☐ |

**3. Growing Conditions** [Information from individual farmers or district/community-level key informants]

***Rains***

| Start | | End | | Dry spells | | Rainfall amount | Compared previous year |
|---|---|---|---|---|---|---|---|
| Early ☐ | Date | Early ☐ | Date | Month | Number of weeks | Below average ☐ | Better ☐ |
| Normal ☐ | | Normal ☐ | | | | Average ☐ | Same ☐ |
| Late ☐ | | Late ☐ | | | | Above average ☐ | Lower ☐ |

***Irrigation***

| Type | Compared to previous year (amount, regularity, timing, cost) | General observations regarding irrigation status |
|---|---|---|
| Pump ☐ | Better ☐ | |
| Spate ☐ | Same ☐ | |
| Other ☐ | Lower ☐ | |

***Agricultural inputs supply***

| | Below normal | Normal | Above normal | Remarks [reasons if below normal] |
|---|---|---|---|---|
| Agric. machinery supply | ☐ | ☐ | ☐ | |
| Fuel supply | ☐ | ☐ | ☐ | |
| Spare parts supply | ☐ | ☐ | ☐ | |
| Agricultural tools supply | ☐ | ☐ | ☐ | |
| Fertilizers supply<br>*Main source*: | ☐ | ☐ | ☐ | |
| Manure supply<br>*Main source*: | ☐ | ☐ | ☐ | |
| Seeds supply<br>*Main source*: | ☐ | ☐ | ☐ | |
| Seed quality | ☐ | ☐ | ☐ | |
| Empty sacks supply | ☐ | ☐ | ☐ | |
| Labour supply | ☐ | ☐ | ☐ | |
| Credit/grants supply<br>*Main source*: | ☐ | ☐ | ☐ | |

***Agricultural activities by crop*** [Adapt the list of crops to the country. "Other" may include cash crops.]

| | Sorghum | | Maize | | Millet | | Wheat | | Rice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | previous | current | previous | current | previous | current | previous | current | previous | current | previous | current |
| % of improved seeds | | | | | | | | | | | | |
| Ploughing date | | | | | | | | | | | | |
| Sowing date | | | | | | | | | | | | |
| Cultivation (manual/animal/ tractor) | | | | | | | | | | | | |
| Replanting dates | | | | | | | | | | | | |
| Number of weeding | | | | | | | | | | | | |
| Number of irrigations | | | | | | | | | | | | |
| Fertilizer (N/ha) | | | | | | | | | | | | |
| Harvesting date | | | | | | | | | | | | |

***Area, yield and production*** [Adapt the list of crops to the country. "Other" may include cash crops.]

| | | Sorghum | Maize | Millet | Wheat | Rice | Other |
|---|---|---|---|---|---|---|---|
| Planted area (ha) | Current year | | | | | | |
| | Previous year | | | | | | |
| Harvested area (ha) | Current year | | | | | | |
| | Previous year | | | | | | |
| Yield (kg/ha) | Current year | | | | | | |
| | Previous year | | | | | | |
| Production (tonnes) | Current year | | | | | | |
| | Previous year | | | | | | |
| % losses | Current year | | | | | | |
| | Previous year | | | | | | |
| Self-sufficiency (in months HH) | Current year | | | | | | |
| | Previous year | | | | | | |
| Factors that affected area, yield and losses: | | | | | | | |

**4. Pests & crop diseases** [Adapt the list to the country. Information from farmers or key informants]

| | None | Crop affected | Control | | Level of damage | | |
|---|---|---|---|---|---|---|---|
| | | | Yes | No | Mild | Average | Serious |
| Desert Locust | | | | | | | |
| Quelea Quelea Bird | | | | | | | |
| Rats | | | | | | | |
| Local birds | | | | | | | |
| Grasshoppers | | | | | | | |
| Tree Locust | | | | | | | |
| Crickets | | | | | | | |
| Sorghum Bug | | | | | | | |
| Head Worm | | | | | | | |
| Others (specify) | | | | | | | |
| Remarks: | | | | | | | |

**5. Household livestock**
[Adapt the list to the country. Condition: 1 = very poor; 5 = very good. Information from livestock owners or key informants]

Mostly transhumant ☐ / Mostly sedentary ☐

| | Number | Number previous year | Number breeding females | Condition (1-5) | Condition previous year | Current diseases | Diseases previous year |
|---|---|---|---|---|---|---|---|
| Cattle | | | | | | | |
| Sheep | | | | | | | |
| Goats | | | | | | | |
| Poultry | | | | | | | |
| Other | | | | | | | |
| Remarks: | | | | | | | |

**6. Pasture & water for livestock** [Condition: 1 = very poor; 5 = very good. Info from owners or key informants]

| | Condition (1-5) | Condition previous year | Remarks |
|---|---|---|---|
| Pasture | | | |
| Water | | | |

**7. Household livelihoods** [Information from individual households or district/community-level key informants]

| | Current | 3 months ago | Previous year | Comments on changes |
|---|---|---|---|---|
| Household's cereal stock | | | | |
| Number of family meals per day | | | | |
| Products (food & other) bought in the market | | | | |
| Products (food & other items) sold in the market | | | | |
| Other sources of cash income | Petty trade ☐<br>Wage labour ☐<br>Handicrafts ☐<br>Remittances ☐<br>Other | Petty trade ☐<br>Wage labour ☐<br>Handicrafts ☐<br>Remittances ☐<br>Other | Petty trade ☐<br>Wage labour ☐<br>Handicrafts ☐<br>Remittances ☐<br>Other | |
| Food aid received (kg/mth) | | | | |
| Other assistance received | | | | |
| Distance to nearest market for food & agric inputs (km or hours walk) | | | | |

**8. Coping strategies** [Information from households, community groups or district/community-level key informants]

| | |
|---|---|
| Coping strategies usually used in times of stress | |
| Coping strategies currently in use | |
| Degree of success in coping | |

**9. Food security assistance** [Info. from households, community groups, or district/community-level key informants]

| | Current situation and plans | Changes compared with previous year |
|---|---|---|
| Types of assistance provided/received | | |
| Selection criteria & mechanisms; strengths & weaknesses | | |

| | | |
|---|---|---|
| Estimated number in need of aid: | Estimated number without income or access a functioning market: | Estimated number actually receiving aid: |

**10. Health and nutrition issues** [Info. from health/nutrition professionals and community discussions/observations]

| | Current situation | Changes compared with 3 months ago & previous year |
|---|---|---|
| Nutritional status of children | Sources: | |
| Major diseases/sickness in the past 3 to 6 months | Sources: | |
| Water supply & sanitation conditions | | |
| Access to and quality of health care | Sources: | |

**11. Local grain market conditions** [Info from market observations, traders, district/community-level key informants]

Market location:

| | Current situation | Changes compared with previous year; reasons |
|---|---|---|
| Range & quantities of food items available | | |
| Origin of market supplies | | |
| Range & quantities of inputs and other items available | | |
| Main wholesale market(s) from which supplies come | | |
| Markets to which produce is "exported" | | |
| Number of traders & buyers | | |
| Traders' problems due to the crisis (transaction costs, other) | | |

**12. Livestock market conditions** [Info from market observations, traders, district/community-level key informants in areas where livestock plays a major part in the local economy]

Market location:

| | Current situation compared with previous year; reasons |
|---|---|
| Numbers if animals being offered for sale | |
| Body conditions of animals brought for sale | (Healthier or less than usual at this season?) |
| Age and sex of animals on sale | (More or fewer young animals? More/fewer female animals? More/fewer draught oxen?) |
| Prices for healthy animals | |
| Terms of trade of a healthy animal against the main cereal | |
| Reasons why sellers have brought animals to market | (Normal or "distress" sales) |
| Number of traders & buyers | |
| Traders' problems due to the crisis (transaction costs, other) | |
| How prices and numbers are expected to change in the coming months | |

**13. Labour market conditions** [Info from market observations, traders, district/community-level key informants]

Market location:

| | Current situation | Changes compared with previous year; reasons |
|---|---|---|
| Number of people seeking work | | |
| Daily market wage rate for unskilled manual labour | | |
| Where labourers are coming from | (From more distant locations than usual?) | |
| Number of days that labourers find work each month | | |
| Whether labourers are migrating out of the area | (If so, where are they going and why?) | |

**14. Market Prices** [Information from households and markets visited. Adapt list to the country. Ask about and record the buying or selling price, as appropriate.]

Market location:

| | Current | | 3 months ago | One year ago | Anticipated trend (up/down) | Remarks |
|---|---|---|---|---|---|---|
| | Buy | Sell | | | | |
| **Crops** | | | | | | |
| Sorghum | | | | | | |
| Maize | | | | | | |
| Millet | | | | | | |
| Wheat | | | | | | |
| Rice | | | | | | |
| Ground nuts | | | | | | |
| Cotton | | | | | | |
| Other (fruits, vegetables) | | | | | | |
| | | | | | | |

| | Current | | 3 months ago | One year ago | Anticipated trend (up/down) | Remarks |
|---|---|---|---|---|---|---|
| | Buy | Sell | | | | |
| **Livestock** | | | | | | |
| Cattle:<br>Heifer | | | | | | |
| Breeding cow | | | | | | |
| Replacement cow | | | | | | |
| Steer | | | | | | |
| Breeding Goat | | | | | | |
| Male Goat | | | | | | |
| Breeding ewe | | | | | | |
| Ram/replacement ewe | | | | | | |
| Other | | | | | | |
| | | | | | | |

**15. Public and commercial stocks of cereals** [Information from storekeepers or district officers of the relevant national agency, traders and grain mills.]

Area/ location:

| | Now | A year ago | Storage type | % storage losses expected |
|---|---|---|---|---|
| Government stocks | | | | |
| Commercial stocks | | | | |
| Current rate of off-take per month: | | | Current rate of replenishment: | |

## Annex 18

# Sample market details interview guide and data recording format

A format such as this may be used by market specialists (or economists) to guide discussions and record information during field visit interviews with traders, other main market actors, and trade and commerce officials in the main marketing hubs through which imports and exports flow and domestic production is traded. It may also be used in a sample of retail markets in the different affected zones. It is not intended to be used as a questionnaire. It should be adapted to local needs.

Specialists must also collect reports of price and trade statistics and reports of any recent market studies in the areas visited.

**1. Location**

| | |
|---|---|
| Region/district | Informant |
| Town/locality | Position |
| Name of market | Organization |

**2. Type of market or other institution**

| | | |
|---|---|---|
| Primary wholesale ☐ | Secondary wholesale ☐ | Retail ☐ |
| Port ☐ | Border crossing ☐ | Grain mill ☐ |

**3. Range & origin of items traded** [Origin: local; specified neighbouring areas; grain from last year's harvest or the current harvest or security stocks; specified other sources]

| | Items | Origin | Changes compared with previous year |
|---|---|---|---|
| Staple foods | | | |
| Livestock | | | |
| Agricultural & other inputs | | | |

**4. Market integration, coverage and trade flows**

| | Markets | Scale of flow | Changes compared with previous year: reasons |
|---|---|---|---|
| Markets from which supplies come | | | |
| Markets to which produce is "exported" | | | |
| Zone served by this market | | | Localities with no functioning markets: |

**5. Number of traders at this location**

| | Present number | Changes compared with previous year |
|---|---|---|
| Number of traders selling staple food items | | |
| Number of traders buying (i) crops; (ii) livestock | | |
| Constraints on entry of new traders to this market | | |

**6. Operations and capacities of trader(s)**

Individual trader ☐ / Group of traders at this location ☐

| | | |
|---|---|---|
| How their operations have been affected: | (i) by the crisis: | (ii) by gov't policies and interventions: |
| How transaction costs and trading margins have changed | | |
| What "informal" taxes they have to pay | | |

| | Current situation | Changes compared with previous year |
|---|---|---|
| Storage capacity<br>Type of storage | | |
| Present stocks | | |
| Expected losses | | |
| Transport capacity (own or able to contract) | | |
| Access to credit | | |
| Current through-put (tons/ month) | | |
| Maximum through-put at present prices | | |
| Main constraints on increasing through-put | | |
| % price increase that would enable them to increase: | (i) by 20% | (ii) by 50% |

**7. Traders' perceptions (views) of market conditions**

Individual trader ☐ / Group of traders at this location ☐

| | Current situation | Changes compared with previous year |
|---|---|---|
| The staple foods in greatest demand | | |
| Which social groups can afford to purchase | | |
| | **Prospects the new marketing year** | **Changes compared with previous year** |
| Events that might affect those groups' purchasing power | | |
| Expected overall level of effective demand | | |
| Level of local/ domestic production | | |
| Expected level of marketable surplus (compared normal) | | |
| Expected prices in the coming months | | |
| Expected level of private imports | | |
| Views on total import requirements | | |
| Own plans | | |

**8. Market Prices** [Adapt list to the country together with section 14 of the multidisciplinary format. Ask about and record the buying or selling price, as appropriate.]

| | Current | | 3 months ago | One year ago | Anticipated trend (up/down) | Remarks |
|---|---|---|---|---|---|---|
| | Buy | Sell | | | | |
| **Crops** | | | | | | |
| Sorghum | | | | | | |
| Maize | | | | | | |
| Millet | | | | | | |
| Wheat | | | | | | |
| Rice | | | | | | |
| Ground nuts | | | | | | |
| Cotton | | | | | | |
| Other (fruits, vegetables) | | | | | | |
| | | | | | | |
| **Livestock** | | | | | | |
| Cattle: Heifer | | | | | | |
| Breeding cow | | | | | | |
| Reformed cow | | | | | | |
| Steer | | | | | | |
| Breeding Goat | | | | | | |
| Male Goat | | | | | | |
| Breeding ewe | | | | | | |
| Ram/reformed ewe | | | | | | |
| Other | | | | | | |
| | | | | | | |

## Annex 19

# Numerical conventions, weights and measures

### Numerical Conventions

In the final CFSAM report text and summary tables all data should be rounded at least to the nearest thousand metric tons. The standard textual numerical conventions are:

1 000 tons - 99 000 tonnes

100 000 tons - 999 000 tonnes

1.xx - 99.xx million tonnes (rounded to the nearest ten thousand)

100 - 999 million tonnes

Avoid the use of other notations - like "100,000" which can cause confusion.

Note that rounding of data should occur only in the final summary tables. To avoid rounding errors keep all disaggregated data unrounded (to the nearest ton). If rounding commands are used on data imported from a spreadsheet, you should check that the rounded figures add up to the totals: if they do not, the table should be foot-noted *"totals computed from unrounded data"*

### Measurement and Conversion Factors

In countries where the mission is not sure of the conversion of local weights and measures into the metric system, refer to "World Weight and Measures: Handbook for Statisticians" FAO (1955)

All planted area estimates should be in hectares 1 hectare = 10 000 $m^2$.

All yield estimates should be in kilogrammes or tonnes per hactare and refer to the whole grain. Country specific paddy/rice and grain/flour conversion rates are available from the latest version of Food Balance Sheets and Per Caput Food Supplies, FAO. Note that both milled and paddy weights are included in the NFBS for rice. Tables including rice data should always specify whether they refer to milled or paddy. Where data on grains is available on bunker and dry weights, use dry weights. The absolute maximum foreign matter and water content should be 15 percent of total weight. Do not convert yield estimates into dry weights unless there is strong information on water and foreign matter and the official time-series data has been converted into dry weights. Roots and tuber data should be in cereal equivalent or in dry rather than fresh weights.

When prices are quoted, the dollar value at the official exchange rate at the time of the price observation should be quoted in parentheses: e.g. (£ 1.00 = US$ 2.20 on 14 February 1995). If prices or other values are base-year adjusted, the base year should be cited e.g. US$ 120 (1985=100).

### Crop Production Aggregation

The aggregation of production weights across food types is problematic if roots and tubers with low carbohydrate contents are aggregated with pulses and cereals. If comparisons are made between new year and historic production of all food crops, the usual convention is to calculate total production in cereal equivalents (of the most

commonly consumed cereal) and to compare total cereal equivalent production in the new year with the equivalent calculations for past years. GIEWS uses the following cereal equivalent for the selected commodities.

Table 1: **Cereal (and maize) equivalent of selected crops based on FAO's calorie content of selected foods (in terms of retail weight "as purchased")**

| Crop | Calories per 100 gm | Maize equivalent | Cereal equivalent | Approximate CE factors* |
|---|---|---|---|---|
| Wheat Average | 333 | | | |
| Medium wheat whole meal or flour | 334 | | | |
| Hard wheat whole meal or flour | 332 | | | |
| Soft wheat whole meal or flour | 333 | | | |
| Rice Average | 359 | | | |
| Husked or brown | 357 | | | |
| Home pounded | 359 | | | |
| Milled, white | 360 | | | |
| Maize Average | 360 | 1,00 | | |
| Grain or whole meal | 356 | | | |
| Meal, coarse, bolted | 360 | | | |
| Meal, fine, bolted & degerminated | 363 | | | |
| Barley | 332 | | | |
| Sorghum | 343 | | | |
| Ragi millet | 332 | | | |
| Pearl millet | 348 | | | |
| Cereals (Average of wheat, rice, maize, barley, sorghum, millets) | 344 | | 1,00 | |
| Potatoes | 70 | 0,19 | 0,20 | 0,20 |
| Sweet Potatoes | 97 | 0,27 | 0,28 | 0,28 |
| Cassava Average | 109 | 0,30 | 0,32 | 0,32 |
| Banana | 67 | 0,19 | 0,19 | 0,20 |
| Plantains | 75 | 0,21 | 0,22 | 0,22 |
| Yam | 90 | 0,25 | 0,26 | 0,26 |

Source of FAO's Food Composition Tables for International Use - www.fao.org/docrep/x5557e/x5557e04.htm

* Note: Cereal equivalent in each country may differ somewhat depending on the dominent varieties.

If the mission wishes to make general observations on trends in total crop production (including non-food crops) aggregates should be expressed in value terms, using a constant price index. Quantity weighted price indices should be calculated using a standard procedure such as the Laspreye, Paasche or Fisher index.

# Annex 20

## Technical and reference notes (*on CD-ROM only*)

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