Comprehensive Food Security and Vulnerability Analysis (CFSVA):

An External Review of WFP Guidance and Practice

Development Information Services International

Strengthening Emergency Needs Assessment Capacity (SENAC)

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Comprehensive Food Security and Vulnerability Analysis: An Internal Review

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Views expressed herein are those of the authors and do not necessarily reflect the view or policies of WFP.

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1. INTRODUCTION

1.1 Executive summary

The CFSVA is rapidly evolving into an appropriate information source for a broad range of WFP program and advocacy information requirements. Programming goals for WFP reflecting the changing environment for food-resourced programming and increased experience using the livelihood framework clearly demonstrate that food programs are better designed and more appropriately implemented when focused on reducing vulnerability. The convergence of evidence points toward a strategy for reducing vulnerability through an asset-based approach to risk management. Essentially, food-resourced programming for both relief and recovery interventions should leave beneficiary households and communities with better access to assets than before the intervention. These assets can then be used to reduce any negative impact on food security from future risk exposure. Assets are broadly defined in the livelihoods conceptual framework to include natural assets from the environment, human assets like education, and social assets from the community in addition to more common usage of the word assets. One of the reasons that analyses relevant to livelihoods programming need to be comprehensive is because of this broad view of assets in the livelihood framework. Food aid is no longer intended to only meet the immediate nutritional needs, but now must also strengthen livelihoods and reduce vulnerability.

VAM contribution to WFP program design is required to go beyond estimating how many people are currently food insecure and where they currently live. In addition to these quantitative aspects, a comprehensive analysis must also organize and present a coherent answer to more difficult programmatic questions such as:

- Who is food insecure? The answer informs targeting.
- Why they are food insecure? This informs program design and implementation of monitoring and evaluation systems.
- Does food resourced programming have a comparative advantage? This informs an advocacy strategy.

The implications of a shift to comprehensive vulnerability analysis to meet these types of information requirements cannot be overstated. This type of analytical activity is much more resource intensive and conceptually challenging than analytical functions like counting and mapping. This type of activity requires higher-level organizational and analytical structures like a learning strategy and an information management system.

The first use of the term comprehensive in connection with VAM analysis was in the document Food Aid and Livelihoods in Emergencies: Strategies for WFP (May 2003, p.11). The development of the CFSVA to support the information requirements of livelihood programming is evident through its focus on assets, analysis at household/community level, and the temporal/geographic aspects of livelihoods. Although not fully integrated into the case studies and guidance we have reviewed, there is a clearly indicated interest in analysis of the role of policy in livelihood strategy choice and a better understanding of risk. The close link to livelihood thinking was found throughout the CFSVA review, and is probably the most relevant difference between CFSVA and previous VAM studies.

Another useful distinction of the CFSVA is its focus on vulnerability. While an ENA might be restricted to how many people are currently food insecure and where they are, CFSVA seeks to analyze multiple dimensions of vulnerability. An essential attribute of the concept of vulnerability is that it is forward-looking. Assessments of current assets or livelihood strategies are made through the temporal lens of risk analysis. What risks exist, how frequent they are, and any estimates of severity are essential to vulnerability assessment. Seasonality of livelihood strategies is key to understanding when certain households are most vulnerable, and often certain

places are more highly exposed to risk than others. While consumption, gender and nutrition information are useful in understanding how well a household can be expected to manage a risk, the temporal and spatial lens of risk analysis should organize vulnerability assessment. The review team recommends that guidance materials and training on risk analysis be developed for staff involved in CFSVA. A thorough understanding of vulnerability and vulnerability frameworks should be cultivated in staff involved in CFSVA.

1.1.1 KEY FINDINGS

This review is intended to assess the adequacy of normative guidance for the CFSVA activities and how well CFSVA reports in 2004 and 2005 compared to the guidance. Where improvements in guidance or methodology were possible, this review will make recommendations. Five normative guidance documents were available for review that covered the topics of Sampling, Food Security Profiling, Gender Analysis, Nutrition Assessment, and Livelihoods Assessment. The review team also analyzed eleven CFSVA documents from Iran, Afghanistan, Burundi, Ghana, Azerbaijan, Haiti, Nicaragua, Tajikistan, Niger, Angola, and Uganda. To better understand the role and requirements of the CFSVA, several foundational documents were reviewed such as an external auditors report on VAM (WFPVAM Review, 2004) and the report of a global VAM meeting in Dakar (Strengthening the role of VAM, 2004).

The review concluded that the CFSVA has a critical role as an evidence base for WFP planning in both emergency and non-emergency programming. There is clear evidence of the evolution of valuable tools in CFSVA activities. Market assessment and market information has become more common in SENAC funded studies but is not necessarily systematically integrated into CFSVA analysis. More standard approaches to food consumption indicators are being more consistently applied. Some of the newer techniques such as food security profiling are interesting and need to be systematically compared against more traditional outcome measures of poverty and nutrition to better understand their utility. Although presentation of CFSVA documents has become more standardized, both content and format could be more consistent to maximize their usefulness for programming.

The purpose and methods of the CFSVA activity still seem to be developing. This may be reflective of the need for WFP to develop a corporate information strategy and specific definitions food insecurity and vulnerability for its programming. It is recommended that a working group be tasked with clearly defining the role of CFSVA in a WFP information strategy, suggested contributions of CFSVA activities would include:

- Risk analysis and the likely effects of hazard and shocks on vulnerable people,
- Identification of vulnerable groups and vulnerable places for monitoring,
- Quantification of food insecurity and vulnerability, and
- Understanding the temporal and spatial distribution of food insecurity.

CFSVA runs the risk of becoming synonymous to survey within WFP. Several important aspects of the CFSVA will need further development in order to make the activity truly more comprehensive. Analysis, rather than the simple listing of descriptive statistics, makes CFSVA activities more valuable to program design and advocacy. Improved understanding of vulnerability and quality risk analysis elevate CFSVA activities beyond survey results listed in frequency tables. Secondary data analysis (SDA) found in CFSVA reports could be more systematic and analytical. SDA should focus on synthetic techniques and analysis rather than listing indicators from other surveys. In some cases, it seems that SDA is carried out as a parallel activity to primary data collection. Normative guidance on how SDA relates to primary data collection could also be developed. Through the PRSP process and the monitoring of key indictors of the Millennium Development Goals, many organizations are engaging in surveys and

studies. Partnering with these organizations could be possible, or this type of secondary data could be reanalyzed to meet CFSVA objectives. Partners could also contribute to a more comprehensive understanding of vulnerability particularly at the national policy level and community level. Core indicators for WFP strategic planning should be systematically included in all CFSVA activities including outcome measures of nutritional status, morbidity, mortality, food expenditure, consumption indicators, access to water, access to education, and access to health care.

1.1.2 RECOMMENDATIONS ON CFSVA CONCEPTUAL ISSUES

The review concluded that there are several competing conceptual definitions of a CFSVA activity. Perhaps most troubling is the idea that CFSVA is somewhat like a baseline survey that collects indicators before a crisis for comparison with an EFNA. This tends to give rise to the exhaustive discussion of descriptive statistics in the body of some CFSVA documents. The CFSVA seems to use an Availability-Access-Utilization model in some case studies, and a livelihoods or vulnerability model in others. The vocabulary on key concepts such as *comprehensive* and *vulnerability* are not consistent across documents.

Analysis in CFSVA case studies tends to be disjointed. Different sections in some of the CFSVA case studies do not seem to refer back to a central organizing principal such as vulnerability. Clear links are not always made between SDA, market analysis, demographics, and formal qualitative findings. This incongruity may be related to less-than-clear relationships of one normative guidance document to another. Another possible source of the seeming disconnect of different parts of some CFSVA activities may be that the CFSVA is not clearly defined in an overall WFP information strategy as discussed above. It was noted that there are several overlaps between activities and methods of CFSVA with EFSA, preparedness, contingency planning and Food Security Monitoring activities. Harmonization of information activities at WFP could also lead to integration of analysis in CFSVA activities.

The CFSVA approach to normative guidance should also be comprehensive and focus on informing WFP programming or advocacy. Attributes of a livelihoods framework could function as the organizing principals of normative guidance, such as:

- A focus on assets for risk management and livelihoods strategies
- Household and community level analysis
- Acknowledging the temporal and spatial attributes of different livelihoods
- Risk analysis as part of an understanding of sustainability
- The role of policy in risk management or livelihood strategy choice.

Around a core understanding of the broad aspects of assessment at the household and community level, normative guidance could develop example analysis plans and survey instruments that measure outcomes like nutritional status, consumption measures or integrate cross-cutting themes like gender. These subjects are not appropriate for stand-alone guidance documents without some sort of core organizing principal.

The guidance documents as they are currently structured do not necessarily seem focused on the specific information requirements of a CFSVA or how content in one subject relates to other information requirements. Reading the disjointed set of guidance documents, there is almost the sense that a CFSVA could be done with food security profiles or gender analysis or as a livelihoods analysis. Reviewers recommend that a systematic approach to the development of normative guidance would not be topically organized, but present a comprehensive approach to meeting WFP programmatic information and advocacy requirements.

Reference and normative guidance materials come from a number of sources but would probably be better organized as part of an overall learning strategy. As in most cases, it is likely that resources for learning are limited. A strategy with clear objectives would need to prioritize learning objectives. There is a need to identify which types of documents are related to different learning objectives. A comprehensive learning strategy would probably include foundational documents such as:

- Conceptual framework documents
- Handbooks
- Guidelines
- Manuals
- Tools

Guidelines on programmatically relevant topics are not exactly the same as manuals that cover technical subjects like sampling or a specific method of data collection like PRA. Guidelines have the primary objective of improving analysis and making analysis relevant to program design or advocacy. Manuals list steps that are to be followed in a specific situation or present general protocols. It is better to have a clear conceptual differentiation between documents that inform analysis and documents that are technically focused on a specific method or tool.

Develop a conceptual framework document for the CFSVA -- It is recommended that a working group be commissioned to develop a framework document for CFSVA. Background documents on the application of social protection risk management and the livelihoods framework to CFSVA activities should be prepared. Finally, a workshop specifically focused on vetting a conceptual framework document for CFSVA should be convened. It could be seen as a follow-on to work done at the Strengthening the Role of VAM workshop in Dakar (2004). New and different participants external to WFP with backgrounds in risk assessment, social protection, livelihoods, nutrition, and economics of poverty should all take part in the workshop. A wide representation of WFP staff from programming, policy, technical units, logistics, management and other units in ODA could also have valuable contributions to the development of a CFSVA framework that meets WFP information needs.

Create guidelines for relevant cross-cutting themes -- It is recommended that a list of cross-cutting themes that are relevant to WFP programming be prepared by VAM through consultation. Guidelines on programmatically relevant topics would support analysis of CFSVA results that would be more relevant for WFP program design or advocacy. In addition to the guideline on Gender analysis, other relevant subjects like HIV/AIDS, protection/DNH, disability, life-cycle and environment should be considered.

Develop technical manuals -- It is recommended that a better practice review focus on the most promising techniques that might be appropriate in CFSVA activities. Different data collection methods like household surveys and participatory techniques probably need technical manuals that are appropriate to the scale and objectives of the CFSVA. Data analysis techniques could be expanded for CFSVA activities to include formal qualitative techniques, regression analysis, statistical testing, spatial analysis, and temporal analysis. One of the key challenges to CFSVA might be to keep representation and analysis conceptually separate. For example, spatial analysis needs to be a separate manual from mapping. Graphs, tables and a document formatting or style guide would make an excellent manual.

1.1.3 Recommendations on CFSVA methodological issues

CFSVA is lacking guidance in key areas of analysis. The CFSVA case studies are uneven and some lack risk analysis or spatial analysis at all. It is recommended that use of risk analysis and spatial analysis be evaluated for better practice. Technical manuals on risk analysis and spatial analysis could be developed as supporting documents for an intentional capacity building program in these areas. Integration of quantitative and qualitative approaches to food insecurity is another promising area for capacity development.

Certain technical areas of the CFSVA need more technical guidance materials, revision of existing guidance, and an intentional program of capacity building. Sampling, survey design, and secondary data analysis could be improved in future CFSVA studies. It is recommended that a list of priority learning objectives be developed based on criteria developed by VAM. For example, reducing costs may be a priority and this can be most easily achieved by having reasonable sample sizes. Sampling design would then be a clear priority for revising normative guidance and developing an intentional capacity building strategy. Two areas were identified by the review team to reinforce:

- Normative guidance on sampling with emphasis on strategy and design.
- Applied nutritional analysis with an expanded section on interpretation and application of nutritional indicators in food insecurity vulnerability analysis.

Some non-standard techniques are commonly used in CSFVA studies. Livelihood zoning is a technique that raises particular concern. It seems the construction of these zones varies from study to study. They seem to add little or no analytical power to statistical analysis with most common food security indicators. Inclusion of these zones in sample design increased samples sizes drastically in the cases reviewed, and their use in estimation is not consistent with any known statistical or spatial analytical procedures. Similarly, using cluster analysis for estimation of prevalence of food insecure households needs to be investigated. Cluster analysis is commonly used as an exploratory or descriptive technique, and there are few, if any, examples of its use in estimation. The math required to estimate confidence in estimates based on a clustering algorithm is rather involved and would require a specialist[1]. Cluster analysis is very sensitive to indicator choice as well as to the model used for clustering. For example, if a k-means clustering algorithm is used, the clusters will have an obvious normal distribution. This type of distribution usually creates small clusters at the extremes and a few large clusters in data at the center of the multi-dimensional distribution. This is the type of distribution commonly seen in CFSVA case studies, and the use of other classifiers on the same data would create very different sets of clusters. This is one way to explain why cluster analysis is not used for estimation. The interaction of livelihood zoning and cluster analysis in the CFSVA case studies turns the assessment of the accuracy of estimation into a significant mathematical puzzle. It is recommended that an expert consultation be undertaken by a qualified applied geographer and a highly qualified statistician to review these techniques. Data sets that have used these techniques should be reanalyzed. Accuracy and the added value of using these techniques over more standard methods should be evaluated. If they are accurate and useful, manuals and an intentional program of capacity building in these areas could be developed.

[1] The reviewers suggest that it may be possible to create a non-parametric probability distribution for clusters through Monte Carlo simulation. These results could then be used to make some estimates of the precision of the clusters and perhaps estimate confidence intervals. This operation would have to be done for each clustering analysis separately and would require a highly-skilled analyst)

Overall, it is recommended to systematically include anthropometric indicators in any survey activities to improve the completeness of food insecurity analysis and the capacity to look at the role of food access in nutritional status.

A way forward with respect to estimation of the prevalence of food insecurity would be to review common estimation techniques like regression. A review could also explore classification techniques that may be appropriate for estimation, including Bayesian classifiers, fuzzy logic classifiers, and artificial neural networks. Many of these algorithms are now available in commonly used statistical packages. Such a review would more precisely demonstrate the effect of different classifier choices on cluster construction using the same input data.

1.1.4 Recommendations on Relevance of CFSVA

CFSVA documents could be more usable by decision makers if the reports had a standard format. It is recommended that each report include an executive summary with substantive findings and graphical overview. The main body of the document would focus on analysis with key results of statistical and spatial analysis. Lists of frequencies and descriptive statistics would largely be in tables as annexes. Methods, questionnaires, and figures could also largely be included as annexes.

Timing of CFSVA activities could make the information more relevant to WFP programming. CFSVA activities should try to be relevant to the WFP program cycle. The information would always be valuable in the development of a new country program or PRRO. Timeliness of these reports is also a key factor. The review team does not see why it should take longer than six weeks to two months to produce a CFSVA report on the tasks described in CFSVA case studies.

Inclusion of programming staff in the planning of CFSVA activities would probably improve the quality of the activity as well as make the results more relevant to programming. It is recommended that a CFSVA activity convene a planning workshop with the participation of key staff. The goal of this workshop should be the allocation of staff and financial resources to the CFSVA activities.

CFSVA results may be more useful to different audiences through different forms of dissemination. An information assessment or similar consultative technique could help define the audiences for CFSVA. Communication of CFSVA results could be developed in a few forms for different audiences such as briefings, overviews, topical reports or the entire report.

Metadata seems to be an essential component of the CFSVA activity. There was not normative guidance or mention in the case studies of a metadata plan for CFSVA activities. It is recommended that full metadata protocols be developed for referenced databases of surveys data collection. This will facilitate any reanalysis, evaluation activities, and future EFNA. Spatial data and any documents used in the SDA need to be archived with full metadata.

1.1.5 Recommendations on staffing issues related to CFSVA

To ensure a level of quality and consistency, competency-based assessment of staff potentially involved in CFSVA activities might be a good idea. Particularly if manuals or guidelines are already prepared, a competency-based assessment is fairly straightforward. Subject area experts are identified within or external to WFP. These experts develop a list of specific tasks that staff competent in a particular subject area could perform. To pass a competency-based

assessment, someone who would be involved in CFSVA would submit documents, correspondence, pictures, or other evidence that they have done things similar to tasks described in the expert task list, and the experts simply vote on whether someone is competent. Before someone new to CFSVA does statistical estimation of food insecure populations for example, it might be a confidence building measure to have a group of experts support that the analyst is competent in statistical estimation.

Many of the techniques and programmatic topics relevant to CFSVA activities require expert consultation in normative guidance, activity design and analysis. In addition to developing this capacity in-house, VAM may consider developing institutional arrangements with academic, private consulting, or policy organizations that have capacity in key areas of interest. Institutional arrangements have several advantages over short-term consultancy. Many institutions learn and teach from knowledge gained from working with WFP. This means that more qualified junior staff may become available to recruit in order to meet growing needs for analytical capacity. Institutions often have people available to help on short-notice or at inconvenient times. Depth of staff at institutions means that backstopping can be handed off in the network to someone who is available to help if a primary point of contact is busy. Institutions can grow together. As certain activities become more common, additional capacity can be built in partner institutions without a burden on WFP human resources.

1.1.6 RECOMMENDATIONS ON CORPORATE ISSUES RELATED TO CFSVA

An information system is required to support the magnitude and complexity of the CFSVA activities. The first component of the information system that is sure to improve quality and consistency of CFSVA activities is a data model. A data model is the essential definition of what information is relevant to your activity. In the case of a CFSVA, information relevant to vulnerability would be the basis of a CFSVA data model. Data models then define at a sufficiently granular level the data that needs to be captured by the information system. Metadata protocols are defined for different types of relevant information to facilitate archiving and retrieval. Robust search functionality vastly increases the findability of important information. Intelligent summary in the form of maps, timelines or graphs increases the usability of information when it is integrated into an information system. Much of the information included in a CFSVA will probably be updated more frequently than CFSVA activities are performed. An information system can often use different forms of digital syndication or reminders to facilitate the update of essential information. For example there are many services on meteorology or hazards that are updated in near real time which can be integrated into a data model.

It is recommended that the development of a CFSVA information system should be integrated with other functions at WFP. The CFSVA system should be developed on similar platforms with similar definitions as WFP preparedness, early warning, food security monitoring and EFNA. It is recommended that a comparative analysis of indicators for assessment and analytical activities focus on definition of terms, composition of indicators and conceptual frameworks. Digital archives, software and hardware used in managing information by different units should be assessed for compatibility. The best way to avoid potential compatibility problems is to stay with ISO standard definitions, particularly with regard to meta-data. Also, open source software that conforms to international standards may be preferred.

An excellent opportunity exists for integrating CFSVA with the preparedness unit work at WFP. ODAP could help VAM develop a priority list of countries where a CFSVA would be most useful to future programming.

External partners need to be considered in the design of the information system. Different audiences use different means of communication. Messages or topics in comprehensive analysis

activities will need to be disseminated with a focus that is relevant to partners programming or advocacy needs.

The other major recommendation to address WFP corporate CSFVA issues is the development of a learning strategy. The first step in the development of a CFSVA learning strategy would be to prioritize learning objectives. Sampling design, risk analysis, spatial analysis and anthropometric measurement could be recommended as prioritize from this review. A consultation with experts and stakeholders is probably needed to create a comprehensive list of learning priorities.

A learning strategy can then be developed to meet learning objectives. With the priority objectives as a guide, participants in capacity-building activities would be identified within the organization. A program of intentional capacity building would include the materials mentioned previously, some sort of interaction with subject area experts and peers, and evaluation of learning.

Different types of activities are appropriate for some of the learning objectives identified in this review. Workshops might be the best way to develop some guidance on conceptual framework for CFSVA. Technical consultation with subject area experts is probably the best way to develop manuals for methods and techniques. Guidelines for cross-cutting themes require activities that bring experts in programming together with subject area experts. This is probably a combination of consultancy, consultation and workshops. Consolidating the materials that are developed as part of the CFSVA learning strategy will require a different set of skills. This would be an excellent opportunity to develop an institutional arrangement with an organization that has a proven capacity in distance learning.

These measures of strategic planning and intentional learning are most likely necessary to achieve the institutional change necessary to support high-level analytical activities like the CFSVA within WFP. CFSVA requires high-level expertise in several specific subject areas, and thus probably will require the assembly of expert teams. It is unlikely that you would find an expert, for instance, in gender or risk analysis that is also good at mapping, livelihoods and nutrition analysis. Finding a subject area expert who also has an in-depth understanding of WFP programming may also be difficult. An appropriate course of action would be to assemble a list of necessary skills to complete a CFSVA activity, and subsequently recruit a team of WFP staff, partners, and consultants to work together.

Maintaining consistency and quality of CFSVA activities is a major challenge that will need structures like an information system and learning strategies. In the end, these efforts are justified as CFSVA is clearly valuable to both WFP programming and WFP partners in need of comprehensive information to inform livelihood-focused interventions.

1.2 Background

World Food Programme has one of the most extensive operational approaches to food security vulnerability and monitoring among major global organizational actors. In the mid-90's, WFP established the Vulnerability Assessment and Mapping unit (VAM),[2] which began to establish baseline vulnerability for numerous countries where WFP was working. VAM initially based its work on secondary data, often generating country level synthesis reports. However, WFP/VAM rapidly caught on to the need for primary data and also the recognition that WFP's operational presence in country also made it the only viable entity for the collection of large-scale primary data in the area of food security on a consistent basis in the developing world. Combined with VAM's strong emphasis on mapping and the geospatial representation of data, VAM became a significant actor in providing food insecurity/vulnerability information. One of VAM's strengths was that it was connected to one of the key response agencies, so VAM analyses often focused on identifying food aid needs as well as a better understanding of the nature and causes of food insecurity/vulnerability in countries VAM assessments gained popularity among donors and in-country partner organizations.

VAM grew in popularity both within and outside WFP, resulting in significant growth in the VAM programme. In the last 10 years, the VAM unit grew from 5 to about 50 staff, and from a HQ based technical support division to a worldwide network of data analysts present in every Regional Bureau and in many WFP presence countries. Also during the past ten years, WFP's programme portfolio has shifted in emphasis from predominantly development food aid to emergency (EMOP) and protracted relief and recovery (PRRO) programming. At the same time, throughout the humanitarian community, there has been an increased recognition of the need for accountability and better informed humanitarian action. The recent initiative in good humanitarian donorship has put forth the urgency of performance monitoring, early warning, improved needs assessments on one hand. On the other hand, a number of factors are now requiring a more judicious application of food aid to emergency and recovery situations.

Consistent with WFP's shifting emphasis on emergencies and a donor environment that is demanding more responsive, appropriate and effective use of food aid; WFP has pro-actively engaged in strengthening its assessment and analytical capacity. While VAM traditionally collected information about food insecurity and vulnerability, new units were set up to focus on emergency needs assessments and early warning, Therefore, on one hand, the organization is differentiating the need for a more comprehensive understanding of vulnerability and food insecurity. At the same time, other analytical activities, including early warning, on-going monitoring and emergency needs assessments are being developed and implemented. In the past five years also what are nowadays called ODAN (Emergency Needs Assessment) and ODAP (Emergency Preparedness and Response, primarily a HQ level team that provides global early warning, contingency planning and other preparedness measures) were established to respond to this need.

In 2003, WFP published its 2004-2007 Strategic Plan[3], which identified a number of deficiencies in emergency needs assessment, the scope and depth of vulnerability assessments and early warning/monitoring as areas to be strengthened. The differentiation of analytical tasks

[2] The VAM unit has been renamed ODAV branch in the reorganization occurred Since VAM is well known as a function and not only as a unit outside WFP, it has become practice to keep calling the branch with its old acronym. The same is done in this review.

[3] WFP/EB.3/2003/4-A/1, Strategic Plan 2004-2007, October 2003.

required by these functions is a work in progress at WFP and is being facilitated by the organizational move at the end of 2003 to unite ODAV, ODAP and ODAN into a new Unit named ODA (Assessment, Analysis and Response Unit), created with the intent of providing complete analytical support to operations.

These organizational changes reflected an evolving corporate food insecurity and vulnerability concept that identifies the analytical activities chronologically (but not univocally coincident with the three ODA branches) in relationship to disaster events. Subsequently, the Strengthening Emergency Needs Assessment Capacity in World Food Programme (SENAC) Project was elaborated and them financed by ECHO in 2004. The SENAC Project envisioned a number of activities intended to rationalize and improve information to guide emergency programming. Activities funded under SENAC included those intended to improve pre-crisis baseline information and monitoring as well as emergency needs assessment methods. Applied research on key thematic issues to improve assessment methods and utilization of information for preparedness and response also was included. These areas include market analysis, dietary indicators, distinguishing chronic and transitory food insecurity, dependency, and non-food interventions. As a consequence of the SENAC Project VAM's activity has instead evolved to a Comprehensive Food Security and Vulnerability Analysis (CFSVA), which is to take place before an acute crisis event occurs, in principle. The idea is to gain a quantified and in-depth understanding of baseline vulnerability with an eye towards planning and forecasting emergency needs. Food security monitoring and emergency needs assessments are viewed as *sequelae* sequential to the CFSVA.

The term 'Comprehensive' in connection with the VAM analyses seems to have first been used in a policy document which suggested how VAM analyses might evolve to enable WFP to intervene on the livelihood level (Food Aid and Livelihoods in Emergencies: Strategies for WFP, May 2003, p. 11). The document defined the limitations of food aid, and recommended a comprehensive process linking early warning, contingency planning, VAM, programming, and operating at the household level both for baseline assessment and monitoring. It is also expressed the need for pre-crisis analysis of livelihoods which includes information on policies (Food Aid and Livelihoods in Emergencies: Strategies for WFP, May 2003, p. 7).

In the SENAC context the CFSVA is pre-crisis information because it focuses on vulnerability and risk analysis. Vulnerability is essentially a forward-looking analysis that uses an understanding of risk to describe communities and groups of people that could become food insecure due to a shock. CFSVA is intended to be both comprehensive (i.e. assessing all major dimensions of food insecurity, vulnerability, the role of gender) and an in-depth analysis of livelihoods and their dynamics. It also is intended to provide quantitative estimates of who is vulnerable, how many, where and why. Collection and organization of information before a food security emergency is also intended to improve the reliability of emergency needs assessments when and if another food crisis happens in the country, and to inform the development of monitoring and early warning systems. The CFSVA was to enhance traditional vulnerability assessments by extending the depth of information collected on livelihoods, nutrition and gender.

Overall objectives of CFSVA are two fold:

- To provide information to WFP decision makers and other actors focusing on food insecurity on how best to programme food assistance through an analysis of which and how many people are vulnerable to food insecurity, where these people are located, why they are food insecure, and how food or other assistance can make a difference in reducing hunger and supporting their livelihoods; and
- Improving the depth, scope and availability of country reports and data sets (numerical and spatial) for detailed secondary analysis

Specific objectives include information on:

- The areas and population groups that are the most food insecure and malnourished, including: how many they are, how they are distributed in the country; why they are food insecure, and how food or other assistance can make a difference in reducing hunger and supporting their livelihoods; and if possible, targeting criteria for the different socioeconomic subgroups;
- Specific benchmarks identifying and using indicators from which to measure post-shock changes;
- An understanding of changes in the vulnerability of these populations over time;
- An overview of how well markets function and are integrated, assuming the availability of adequate secondary data;
- Future risks for food security (e.g. socioeconomic, natural, political or other shocks) for incorporation in to contingency planning

In summary, the CFSVA activity was tasked to the VAM unit and is to be one of the WFP's tools to better inform emergency response. The CFSVA represents an evolution of the VAM methods in at least three distinct ways. First is the emphasis on pre-crisis assessment, or getting ahead of shocks to characterize food insecurity vulnerability. Second is to prepare for shocks in depth, particularly emphasizing nutrition, livelihoods, markets and gender analysis. The third is the focus on database building or having good spatially referenced geophysical and social data.

1.3 Purpose and Methods of the CFSVA Review

The purpose of this assessment is to determine the effectiveness of VAM in the implementation of CFSVA and to identify areas for improvement (see **Annex A** for TOR). Specifically, the review will:

- Assess the adequacy of normative guidance provided by WFP for the implementation of CFSVA
- Review eleven CFSVA cases to determine their conformity to standards
- Make recommendations for improvements in CFSVA.

In order to get feedback on usability, completeness and relevance in a programming context, interviews with some Programme and VAM staff involved at the CO and RB level in Angola, Nepal and Niger were conducted, [4] (**Annex B**).

Initially, the scope of work envisioned four CFSVA case studies; however, given the historical evolution in CFSVA methodology and also in keeping with the desire to assess and learn from incomplete but on-going CFSVAs financed under the SENAC project, it was decided by WFP and the review team to include CFSVAs from three recent periods:

[4] The staff contacted in the Uganda CO declined the invitation to participate in the review through the interviews, the reason being that the report at the time was still not complete and it was therefore not possible to express opinions on the use of the document.

- The Standard Analytical Framework (SAF) mature time period (mid 2002 - mid 2003)
- The post DFID audit period pre-dating SENAC (mid 2003 – early 2004)
- The SENAC period (early 2004 – present)

The CFSVA review thus covers eleven recent CFSVA reports (**Table 1**). All of the works reviewed were undertaken in 2003 or later. One difficulty encountered was that SENAC supported CFSVAs were largely in progress during the assessment phase. This meant that documentation for these analyses was still incomplete. The methodology includes desk review of documents as well as directed interviews with WFP staff.

Document review included three types of documents. Normative guidance for undertaking CFSVAs (EFSA manual, VAM Guidelines: Household Food Security Profiles, Livelihoods, Gender, Nutrition and Sampling); Specific country documentation for each of the eleven cases, and key foundation documents that describe WFP's vision for the CFSVA and its corporate food insecurity and vulnerability information strategy.

Table 1: Country Studies Reviewed in CFSVA Assessment

Country	*Document*	*Conducted by*	*SENAC funded*	*Year*	*Page*
Iran	Food Security and Livelihoods Vulnerability Analysis of Afghan and Iraqi Kurd Refugee Households Encamped in Iran	WFP Iran WFP Afghanistan WFP-VAM Rome	No	Jun-04	47
Afghanistan	Report on Findings from the 2003 National Risk and Vulnerability Assessment (NRVA) in Rural Afghanistan	WFP - VAM Rome MRRD - VAU WFP Afghanistan WFP Pakistan	No	Dec-04	123
Burundi	Food Security and Vulnerability Analysis Report	WFP Burundi WFP-VAM Rome	No	Dec-04	67
Ghana	Food Security and Vulnerability Analysis of Five Regions in Ghana	WFP Ghana University for Development Studies, Ghana WFP-VAM Rome	No	Dec-04	43
Azerbaijan	Report on Food Security and Nutrition Survey (2004)	WFP Azerbaijan WFP - VAM Rome	No	Feb-05	134
Haiti	Food Security and Vulnerability Analysis Report	WFP Haiti WFP - VAM Rome	No	May-05	55
Nicaragua	Food Security and Livelihoods Survey in the Autonomous Atlantic Regions	WFP Nicaragua WFP – ODAV (VAM) Rome	No	Jul-05	82
Tajikistan	Household Food Security and Vulnerability Survey in Rural Tajikistan	WFP - ODAV (VAM) Rome WFP Afghanistan	No	Jul-05	143
Niger	Analyse de la sécurité alimentaire et de la vulnérabilité au Niger (CFSVA) Partie 1 : Rapport / Partie 2 : Annexes	WFP - ODAV (VAM) Rome WFP Niger WFP Dakar	Yes	Sep-05	103
	Profile of cereal markets			Dec-05	66
	Niger : Analyse de la sécurité alimentaire et de la vulnérabilité (CFSVA: Collecte et analyse des informations secondaires			Dec-05	84
Angola	Comprehensive Food Security and Vulnerability Analysis (CFSVA)	WFP Angola WFP - ODAV (VAM) Rome WFP Johannesburg	Yes	Oct-05	74
Uganda	Comprehensive Food Security and Vulnerability Analysis, Rural Uganda, Profiling Households Food Security and Vulnerability	WFP Uganda WFP - ODAV (VAM) WFP - ODK	Yes	Dec-05	88

Several foundational documents helped to clarify how CFSVA contributes to the role of VAM. These documents are often cited in the VAM thematic guidelines. They include:

- An external auditor's report to WFP's executive board on the role of VAM (Review

of the World Food Programme's - Vulnerability Analysis and Mapping, May 2004) and the report of a Global VAM meeting in Dakar (Strengthening the role of VAM, 2004) contributed largely to CFSVA guidelines and surveys;

- A good practice document describing six VAM surveys (Vulnerability Analysis: Concepts and Case Studies in emergency, recovery and development settings, January 2004)
- WFP strategic plans, strategic priority documents, management priorities, and relevant operational department directives.

Generally, this assessment reviews the effectiveness of CFSVA normative guidance. It examines the extent to which country case CFSVAs are effective, that is, are both methodologically robust and sufficiently comprehensive to meet WFP expectations on vulnerability information. The assessment also incorporates information collected from staff interviews.

Specific outcomes of this assessment include:

- Identification of gaps in normative guidance
- Identification of common deficiencies found in CFSVAs, including scope, methods, and usability
- Identification of any problems with the selection and prioritization of countries for CFSVAs
- Recommended modifications to existing guidelines in both scope, content, organization and style
- Recommendations as to how to strengthen CFSVA's effectiveness

2 REVIEW

2.1 Conceptual Review

2.1.1 Definition of CFSVA

Problem: There is no standard and operational definition of CFSVA and its components. CFSVA is not defined specifically in the EFSA manual.

CFSVA is never formally defined in WFP normative guidance. There is an implication within the EFSA manual that it is a pre-crisis information activity. VAM documentation, namely the Standard Analytical Framework defines Comprehensive Vulnerability Analysis (CVA) but does not really *operationally* define it. It lists various components of the CVA[6] and identifies secondary data analysis and various primary data collection activities as elements of the analysis in general terms, but does not clearly identify the purpose, objectives and scope of the CVA, and the EFSA does not include CFSVA in its glossary. Field staff do indeed indicate that the distinction between CFSVA and EFSA is not clear, resulting in difficulties in operationalizing the analyses in the field[7].

Thus, a central problem is that food insecurity and vulnerability to food insecurity are not clearly operationally defined by WFP (or others). The term 'vulnerability' is used differently among the normative guidance documents. For example, SAF identifies vulnerability as the "probability of an acute decline in food access or consumption, often in reference to some critical value that defines the minimum levels of human well-being"[8]. The Guideline on Integrating Livelihoods into Food Security and Vulnerability Analysis defines vulnerability as "exposure to risks that leads to a decline in different dimensions of household welfare"[9]. The EFSA manual defines vulnerability as "presence of factors that place people at risk of becoming food insecure or malnourished including those factors that affect their ability to cope"[10].

Although the implicit purpose of both the CFSVA and the EFSA is to identify who is food insecure or vulnerable to food insecurity, how many, where and why; there is no clear guidance given as to how the CFSVA is different from the EFSA, except for their timing. If at times the distinction made in defining the CFSVA is its 'comprehensiveness', at other times it seems to be 'pre-crisis' timing. Guidance also implies that the CFSVA and EFSA should include components of livelihoods and household access, current and future risks, food availability and markets, food consumption, utilization and nutrition/health, and gender analysis as per SAF and EFSA.

Classification of who is food insecure

The absence of an operationalized definition of CVSVA leads to difficulties in achieving standard CFSVAs in the field[11], often resulting in analyses that cannot be easily utilized by WFP for programme design and

[6] Standard Analytical Framework, pp. 9 and 10.
[7] From interviews.
[8] SAF, p.2.
[9] Integrating Livelihoods in to Food Security and Vulnerability Analysis: Draft Guidelines, VAM.
[10] EFSA Handbook, 2005, acronym list
[11] Based upon the review of cases and interviews with field VAM officers

implementation. While there is much discussion of food security and vulnerability indicators, there remains a need for a clear discussion of **how decisions are reached on food insecurity and vulnerability classification**. WFP is not alone in this regard as it confounds the study of food insecurity/vulnerability more generally.

Through its increasing use of Principal Components Analysis (PCA) and cluster analysis, WFP has made progress with regard to the classification problem (who is food insecure and vulnerable to food insecurity). However, the establishment of specific definitions of food security and vulnerability to food insecurity is still problematic. The VAM Guideline on Household Profiling comes close to providing specific guidance on how to utilize statistical techniques for data reduction and classification on dietary indicators and other measures of household access, but the lack of clear attention to the classification problem leads to CFSVA outcomes which are probably less relevant to programming than they could be.

'Assessment' vs. 'Analysis'

Another definitional problem is the unclear distinction between the terms 'assessment' and 'analysis' in the guidance. The **CFSVA is intended to be an analysis**; it is described as a multi-method activity that attempts to integrate information from various data sources to answer key questions about food insecurity and vulnerability. On the other hand, three out of eleven reports surveyed are labeled 'assessments'. This terminological use reflects a larger concern that CFSVA has become operationally synonymous with 'survey'. Therefore, heavy emphasis is placed on design and analysis of household survey data in the VAM guidelines. This may be due to the fact that there is not a clear articulation of the various activities under the CFSVA and possibly the specification of different specific outputs that might be associated with a CFSVA. For example, the CFSVA should include the identification of relevant data sets and in many cases, where other partners have not done so, the acquisition and archiving of these. Key important data include local level population data, geophysical data and survey data as well as intermediate data products such as land use, hazards maps, and ecological/agro-ecological zone maps. Proper archiving and organization of these data, map products and reports may in some cases be as important as an analysis report for the purposes of upstream EFSA, for example.

Household level data

An additional factor that impedes classification and the relevance of CFSVA is that important food insecurity information is **frequently unavailable at the household level** because the survey component of the CFSVA does not always include data on nutritional status. This is a significant omission as anthropometric indicators could be used in combination with dietary and other household access measures to classify both current insecurity and vulnerability to food insecurity. Surveys done with SENAC funding more commonly integrate anthropometry into the CFSVA survey work, which has strengthened the CFSVA.

2.1.2 Normative Guidance Framework

Problem: There is currently no overarching framework upon which to base normative guidance related to CFSVA, food security monitoring and ENA, these increasingly inter-related activities.

For this review, documents available from VAM and ODA was analyzed, specifically the EFSA Handbook. Because these different materials were developed at different times and with different staff, the expectation is that they are not closely linked and harmonized towards the common goals of CFSVA. That is indeed the finding.

The VAM and ENA both have developed good products that serve as useful guidance; however, they should be harmonized to support the key functions of CFSVA: food security monitoring and emergency food needs assessments. It is also important to clearly distinguish the different types of guidance. For example, what is the difference between handbooks, guidelines, manuals? How are they inter-related? Currently, these distinctions are not clear and the different documents are, as might be expected, not consistent among themselves, nor are they linked to a larger strategy for food insecurity and vulnerability analysis and assessment.

One key finding is that concepts, frameworks and terms are differently defined among the various documents. As mentioned earlier, there is not yet a common definition of CFSVA. More importantly conceptual and terminological inconsistencies are found throughout normative guidance for very key concepts such as vulnerability, livelihoods assessments, for example. The VAM Standard Analytical Framework and EFSA Handbook's Chapters 1 and 3 attempt to provide frameworks. But these two versions are different and even the conceptual frameworks of food insecurity/vulnerability from which these frameworks operate are not the same. The need for clear and consolidated guidance to make the process less subjective and susceptible to influence by individual approaches has been mentioned by VAM staff during interviews.

Livelihood groups vs. livelihood zones

The conceptual framework for understanding and measuring food insecurity/vulnerability is also inconsistent across the documents. Some utilize availability, access, utilization. Others build from the WFP 2000 document where risks are added to the framework. Some focus on livelihood analysis as the keystone to vulnerability analysis. All of the documents should share a common framework for the understanding of food insecurity/vulnerability. Similarly, the **concept of livelihood zone and livelihood groups is an important distinction to be made**. While livelihood groups are clearly instrumental to the understanding of food insecurity and how to address it, livelihood zones--as they are currently operationalized in the field--have not yet been demonstrated to be operationally robust units of analysis for food security/vulnerability analysis.

Variability in guidelines

Annex E, Summary of VAM Thematic Guidelines, indicates the variability in format and content of the VAM thematic guidelines. Of course, most of these are still identified as drafts. Note that the length of these documents ranges from 13 to 56 pages, and only 3 of 5 contain a bibliography. Some are clearly oriented to provide field tools whereas others are providing broad conceptual guidance.

Normative guidance provided through the EFSA Handbook suggests that CFSVAs should all explore the availability, access, utilization dimensions of food insecurity. There is, however, an implicit recognition in the various documents that CFSVAs should at a minimum address the following thematic issues:

- Gender analysis
- Livelihood analysis
- Risk exposure/risk management
- Household food insecurity and vulnerability profiling
- Nutrition and health
- Markets and food availability

Space and time in analysis

The geographic component of VAM analysis in combination with satellite imagery was mentioned in the SAF as an instrument both for targeting and for problem analysis. However, in neither the EFSA handbook nor the VAM guidelines is there yet guidance provided for **geospatial data collection, data management, analysis or use**. There is a guideline in progress but a draft is not yet available for review. The team feels that this is an important aspect of the CFSVA and that the lack of emphasis to date has resulted in an under-use of these types of data and analytical techniques in the CFSVA. This results generally in an under use and analysis of environmental risk factors and spatial variability in risk and vulnerability. Population density maps overlaid with malnutrition and infrastructure, for example, can provide critical information for crisis mitigation and the calibration of early warning and food security monitoring activities, as well as for contingency planning. Overall, spatial analyses are an essential element of risk and vulnerability characterization. Yet, to date, few tools are available to guide field staff with these types of analysis, and their articulation as part of the CFSVA work is not explicit.

Although a part of the SENAC definition of CFSVA, normative guidance does not stress **temporal analysis** (other than price series, to some extent). Nor do specific guidelines exist which demonstrate which indicators should be analyzed and how to undertake the analysis. This gap represents an area where the CFSVA framework for analytical procedure could be augmented. Tied up with temporal analysis is the **analysis of risk**, which despite being mentioned in the SAF framework, is not developed in guidance nor performed in cases reviewed.

Furthermore, no indication is given on how to decide which countries should be addressed, and--as remarked by VAM staff in ODD--at what time of the year this sort of study is to be done. Country selection is particularly pertinent if CFSVA is to be done for all 'pre-crisis' situations.

In summary, while the thematic content and methods of CFSVA have evolved significantly, they remain a work in progress. Guidelines exist for some specific aspects of CFSVA, most notably a Standard Analytical Framework, the EFSA Handbook and thematic guidelines for sampling, gender analysis, livelihood analysis, household food security profiling and nutrition health. However, difficulties arise out of the lack of a clear definition of CFSVA. Normative guidance that explicitly identifies CFSVA within a larger corporate data model for food insecurity and vulnerability analysis and assessment has not yet been developed, and important guidance materials are simply missing in several areas, or could be augmented. Most notably, these areas include:

- geospatial analysis/techniques,
- temporal analysis,
- assessment/analysis of risk exposure/risk management,
- integration and triangulation of data from multiple sources.

In the following sections, this report discusses specific limitations of the guidance materials which WFP has already posted.

2.2 Methodology in Guidance and Cases Reviewed

2.2.1 Sampling

2.2.1.a Review of Guidance

Sampling was the major methodological problem for VAM surveys singled out in the External WFP VAM Review (2004). Perhaps in response to the External VAM Review, sampling was the first of the VAM thematic guidelines to be completed. Terminology and common sampling methods for surveys are presented in a straightforward manner. The VAM sampling guideline is largely an adaptation of the FANTA Sampling Guide (Magnani, 1997) with good and relevant illustrative examples from VAM surveys. It focuses specifically on two-stage cluster methodology, and generally on probability sampling methods that are appropriate when the objective of the assessment is to determine the percentage or number of people who are food insecure.

2.2.1.b Review of Cases

Sampling still remains an area that should be improved in undertaking CFSVAs. Sampling strategies utilized in the cases reviewed frequently involved some form of two stage cluster design; however, stratification and final stage selection of households continue to need refinement.

Of the surveys reviewed here, Azerbaijan, Burundi, Ghana, Haiti, Nicaragua, and Tajikistan generally use this two-stage cluster method (**Annex F**: Sampling Methods in Case Studies). Cases studied employed a variety of stratification techniques, including the use of administrative units, ecological zones and some type of food economy/livelihood zones in formulating a sample design. The specific methods followed were often not described in sufficient detail to evaluate the effectiveness of the sampling strategy. Final stage selection of households, handling of refusals/inaccessible areas, and any required weighting of the samples were not sufficiently described in the methodology sections.

The assessments appeared to make a common mistake in assuming that stratification does not require ex-post weighting of the strata. However, unless the selection probabilities are the same across the strata identified, post hoc weighting is required. Both Uganda and Angola move sampling closer to good practice by trying to construct stratification schemes that permit administrative and livelihood considerations in to the stratification. Niger, on the other hand, is only analyzed according to the agro-ecological zoning criteria, which limits the ability of the results to be applied to administrative areas. The Uganda study used multiple stage selection and it was not clearly articulated why this was the choice. Multi-stage selection as it was performed in Uganda limits the representativeness of the sample selected to the geographical clusters that the sample was to characterize.

While Uganda made reference to secondary data analysis and linked it to the construction of the survey sampling frame, the other two SENAC cases did not relate sample design to the secondary analysis work. Other than Afghanistan and Angola, each survey had a reasonably recent sampling frame that would have been ideal for community selection. Burundi used a standard probability proportional to size (PPS) approach to community selection, allowing for representative results at a number of analytical aggregations. The Iran survey focused on the special problem of refugees and employed a purposeful approach to community selection. The other seven studies used non-standard and mixed methods of community selection. In Azerbaijan, Tajikistan and Angola, communities per stratum were selected according to an incremental scale of 20, 30 or 40 household depending on the population size. This technique is not recommended as it does not actually perform the basic function of PPS sampling; it does not naturally weight statistics for reporting as there is no consistent relation between community selection and the population represented. The studies in Afghanistan, Ghana, and Nicaragua chose a mix of purposeful, random, and other approaches to community selection, none of which were truly PPS.

In earlier cases in particular, final stage selection of households did not always conform to good practices, though this situation appears to have improved; in the most recent cases household selection followed one of the three common methodologies outlined in the guidelines. In Angola, Burundi and Iran it was possible to select households in a community (village, camp, etc.) from a sampling frame, but due to lack of a reliable household sampling frame in Ghana, Haiti, Nicaragua and Uganda, the transect method of household selection was employed. In Azerbaijan households were selected by grid segmentation for the same reason, and in Niger and Tajikistan no selection method was specified in the report.

The Afghanistan CFSVA had unique challenges and took a novel approach to both community and household selection. Although the actual methodology used was not completely documented, agro-ecological zones that were weighted by land area informed the number of communities visited. Household selection was done through focus group interviews. A single household was chosen to be representative of each one of three "wealth groups" identified through discussion (very poor, poor, or medium). The responses from that single household were then weighted in proportion to the number of households the community focus groups estimated were in the wealth groups. This method was developed specifically for the situation in Afghanistan and not meant to be statistically representative.

The **samples for the surveys reviewed were very large**. The smallest sample was 530 households in the refugee camps in Iran and the largest was 11,757 households in the Afghanistan. Five out eleven country studies have more than 2,500 household in sample. One reason the CFSVAs have such large samples is that they have many strata. Five to fourteen separate zones were used in the stratification of the Azerbaijan, Haiti, Nicaragua, Tajikistan, Angola and Uganda CFSVA surveys. It is not clear from the text how many zones were used in the sampling for the Afghanistan surveys, but at least 5 agro-ecologic zones and 368 districts were considered. The Ghana survey had the greatest number of strata, but as the text below illustrates, there was a need for much more specific documentation of sampling methods used:

> "Actual choice of communities in the districts was done in the field using stratified random sampling and/or cluster random sampling. In districts where many communities were to be selected the district was divided into the existing sub-district or agricultural zones and the communities randomly sampled by the Supervisors from the zones. In districts where few communities were sampled, the zones were clustered and the communities randomly sampled. Some communities were purposively sampled to ensure some representation of communities that are adjacent to forest reserves." [13]

It is generally quite common in income/expenditure, labor sector, and multiple indicator surveys to stratify based on a rural/urban distinction. This stratification can clearly help increase the precision of statistics for consumption, health and education because urban areas have very different services, institutions and ways of make a living. In urban and rural areas these statistics would be significantly different and an average would not be as useful as the stratified statistics.

However, this review suggests that stratification by agro-ecological or food economy zone (FEZ) might need rethinking or more careful consideration. Of the nine country studies which

[13] Food Security and Vulnerability Analysis in Five Regions of Ghana, VAM, December 2004

stratified by zone for sampling, only in three—Haiti, Niger and Uganda—was an explicit reason for adopting the zonal stratification cited. In each case the reason given was the achievement of a lower, yet cost-feasible level of aggregation. Yet, only seven of the nine studies which stratified by zones actually utilized zones as a strata in the reported analysis of outcomes. (**Annex F**)

Table 2: Differences between Zones in Country Studies

	Angola	*Azerbaijan*	*Ghana*	*Haiti*	*Nicaragua*	*Niger*	*Tajikistan*
Wasting	Not significant	2/6 diff	-	-	Not significant	-	-
Underweight	1/6 diff	Not significant	-	-	Not significant	-	-
Stunting	3/6 diff	2/6 diff	-	-	1/5 diff	-	-
Dietary diversity	-	-	-	Not significant	-		-
Meal frequency	-	-	-	-	-	-	-
Expenditure on food	-	Not significant	-	-	-	1/6 diff	Not significant
Total expenditure	2/6 diff	Not significant	-	-	1/5 diff	1/6 diff	Not significant
Literacy	Not significant	Not significant	-	-	1/5 diff	Not significant	Not significant
Primary enrolment	2/6 diff	-	-	-	Not significant	Not significant	Not significant
Access to water	3/6 diff	-	-	-	-	1/6 diff	3/14 diff
Access to health/vaccinations	3/6 diff	-	-	-	-	2/6 diff	Not significant
Coping	-	-	-	-	Not significant	1/6 diff	Not significant
Risk	-	Not significant	-	-	4/5 diff	1/6 diff	-

Furthermore, there remains some question as to the level of variability in key food insecurity indicators between these zonal strata (**Table 2**). While it is difficult to rigorously evaluate interzone variability on key food insecurity/vulnerability measurement from the CFSVA documents, visual inspection indicates that interzone variability might not be significant in a number of cases. Malnutrition as reflected by anthropometry was only collected in four surveys: Nicaragua, Azerbaijan, Uganda and Angola. Nicaragua showed no difference in malnutrition by zone for prevalence of wasting and underweight in children 6-59 months. Only one zone had significantly higher prevalence of stunting. Of the six zones in Azerbaijan, four zones had similar malnutrition rates. These four zones were very similar in many respects, including access to water and electricity. The other two zones of Azerbaijan had lower rates of malnutrition but also very similar access to all sorts of infrastructure. It seems that an urban/rural stratification for the Azerbaijan CFSVA might have worked just as well as stratification by zone.

In terms of demographics, none of the CFSVAs showed significant variation by zone. Household size, percentage of female headed households and elderly headed households are all similar regardless of zone in the same country.

Stratification by zone decreases the usability of the surveys. Findings could not always be summarized at more programmatically relevant geographic areas such as administrative units. Stratification by zone also frequently introduced the need to weight the observations in order to produce aggregate estimates. That is, when sampling was done to ensure equal size in each zone, the sample was no longer self-weighting, unless the populations of each of the zones also was equal, which is almost never the case. When equal sample sizes within strata are selected even though the populations contained in those zones are not equal in size, then the sample must be weighted post hoc to accurately estimate desired population parameters such as the prevalence of

food insecurity/vulnerability.

Where some type of zoning is to be utilized to stratify survey samples, guidance should be provided to field staff to enable them to stratify such that they are also able to easily aggregate findings by administrative units. The Uganda CFSVA provides an example of how that can be done[14]. The Burundi CFSVA is one example of a standard random population proportional sample used without stratification, and **thus allowing for representative estimation** of statistics at different levels of aggregation: "The overall sample size gives sufficient numbers [to estimate a representative statistic] in all natural zones, provinces, and many communes".

In general, the difficulties with sampling are reflected by comments from the actual CFSVA reports:

Afghanistan CFSVA- "The lack of a population-based sampling frame implies that results from the NRVA do not statistically represent all of rural Afghanistan and are ***relative***, rather than absolute."(Page 15)

Azerbaijan CFSVA– "The sample allows ***comparisons*** between Economic Zones but is not precisely representative of the population." (Page 21)

Ghana CFSVA – "…the communities randomly sampled by the Supervisors from the ***zones***. (Further explanation above in the text. Five different methods of selecting a community for the sample)." (Page 6)

Haiti CFSVA – "It is important to iterate that zones were included in the sampling frame only if they had 14% or more of the localities in the department, so department results reflect only these ***zones***." (Page 12)

Nicaragua CFSVA – "It (re-sampling after the survey was finished) is acknowledged that this may have an impact on the representativeness of some of the findings as the case numbers in two of the original coastal ***strata*** were reduced."(Page 17)

Tajikistan CFSVA – "The findings are representative of the average for the district clusters (zones) only. They do not differentiate between districts nor do they account for variation within a district."(Page 23)

Burundi CFSVA – "Despite the clustering, the sample size per commune/commune cluster is still too small to produce statistically representative results and thus the findings should be interpreted with caution and should be used as general and comparative estimates rather than precise figures." (Page 9)

The finding that "zonal" strata used for sampling are not always being used to report summary outcomes, the evidence that there is often little variation between them when zonal summaries are reported, the increase in sample size each level of stratification requires, and the problems zonal stratification creates with regard to summarizing outcomes at programmatically useful levels (e.g. administrative units) suggest that a closer look at the practice of stratifying by zone may be beneficial overall. The team recommends that the issue of inter-zone variability be more carefully evaluated through a re-analysis of data sets that represent both agro-ecologic and food economy zoning in order to provide a more definitive answer on the question of stratification by zone as a key strategy for sampling.

[14] The Uganda example provides a good illustration of how to combine administrative and livelihood consideration in to sample design.

2.2.2 HOUSEHOLD FOOD SECURITY/HOUSEHOLD ACCESS

2.2.2.a Review of Guidance

The principle guidance is found in the VAM Thematic Guideline on Household Food Security Profiles and Chapters 1 and 5 of the EFSA Handbook. The Guidelines provide guidance on how to undertake food insecurity profiling while the EFSA Handbook elaborates the programming questions that are meant to be answered and the role of CFSVA in providing information to answer these questions, focusing heavily on the identification of food gaps and projected gaps at the household level. The Guideline could be more inclusive of the range of tools that can be utilized to assess household food access and vulnerability, such as poverty mapping[15] and other spatial analytic techniques that combine household survey and census data to identify small area estimates of poverty (household food access based measures).

The VAM Guideline on Household Food Security Profiles provides an operational definition of food insecurity groupings and guidance on how to understand the nature of food insecurity vulnerability through an examination of dietary consumption, food source, household expenditure and income sources and assets. The Guideline is stronger on analytical approaches than on the specifics of data collection around the various indicator groups. It is not clear that specific guidance related to data collection of expenditure and income source measures are included in normative guidance, which may be a major omission that should be addressed. The Guideline stops rather abruptly on page 25 (as if incomplete) without articulating how to utilize asset information to inform the profiling exercise or informing the CFSVA. No references or annexes are included. Another strategic issue is the question of for whom this Guideline is written. It probably does not contain sufficient detail for a typical field analyst on one hand (eigen value cut points, how to decide on final number of clusters, how to collect data items), and lacks a clear and concise road map of the analysis for users.

The VAM Guidelines consider only the use of household probability survey data, while the EFSA considers three different approaches to gathering data on household food access and projecting access shortfalls. Neither reference discusses the possibility of using these techniques in a complementary fashion, nor do they provide guidance on how to identify groups that might be vulnerable to transient or chronic food. The documents miss one other strategic element of analytical guidance, that is, how to factor nutritional status and other aspects of utilization into the food insecurity and vulnerability classification scheme and how to separate out the food and non-food related causes of malnutrition.[16], including the use of multivariate and multiple regression analysis.

The VAM Guideline outlines a set of procedures for analyzing household food security of household survey data using two principal analytical techniques: principal component analysis (PCA) and cluster analysis. They are applied to each of the key variable groupings, that is, consumption, expenditures, income sources/assets. Through the cross tabulation of clusters created through this process, food insecure groups are identified and the magnitude of food insecurity is

Which components for PCA

[15] Baulch, Bob. Assessing Food Insecurity and Vulnerability Using Household Survey Data, 2005. www.fivims.org

[16] This later point could be included in the nutrition guidelines/chapter six in the EFSA manual on utilization

quantified using a type of food gap analysis.

Food insecurity and vulnerability classification is based on **household consumption**, using a combination of food group consumption frequency and diversity, and combined with food source data (purchased, produced, etc.). The manual refers to food items, but the correct and more accurate approach is to enumerate basic food groups.

Food group frequency is both an intuitive and practical measure. There is surprising agreement within the community of food insecurity analysts that it is a fairly good proxy indicator, and it is recommended as a proxy indicator of household access by international organizations such as IFPRI and the FANTA Project[17]. While evidence suggests that proxy measures based on food group frequency correlate with caloric intake and dietary quality, work needed to actually utilize proxies based on food group frequency to classify households as food insecure (such as selection of cut-points) has not been done. It is quite possible that in order to utilize these proxies for classification, initial work will need to be done in country to calibrate the indicators[18]. The work currently being undertaken by IFPRI under the SENAC project on dietary proxies will probably result in much more specific guidance in this respect. It may be that quantitative intakes should be undertaken as part of a CFSVA in order to identify proxies for classification and on-going monitoring. It also is important to note that the recall period of seven days, while logical, is not standard practice. Specific discussion of the rationale and justification for the seven-day period should be made.

How to use food group frequency

As a default standard, recent guidelines on the use of **food diversity** as a proxy for food security suggest that data be collected using 12 food groups based on the Food and Agricultural Organization, Food Composition Table for Africa, 1970 (www.fao.org/docrep/003/X6877E/X6877E00.htm). FANTA Project documents provide a reasonable discussion of how to modify the number of groups. The description of methods for collecting dietary data and sources is general and not sufficiently detailed to guide implementation in the field.

Food Composition Table for Africa.
Rome, Italy, 1970.
(www.fao.org/docrep/003/X6877E/X6877E00.htm)

A. Cereals
B. Root and tubers
C. Vegetables
D. Fruits
E. Meat, poultry, offal
F. Eggs
G. Fish and seafood
H. Pulses/legumes/nuts
I. Milk and milk products
J. Oil/fats
K. Sugar/honey
L. Miscellaneous

Food source is an interesting indicator to include and brings the market or supply perspective of food access as well as capturing those groups that are food aid dependent. Food crisis usually affects households that produce their food differently than households that purchase the majority of their food.

While expenditure data represents an important indication of household access, justification for the collection and use of expenditure data is not convincingly provided, nor is adequate guidance provided on how to collect expenditure data. The purpose of collecting this

[17] Swindale, Anne and Bilinsky, Paula, Household Dietary Diversity Score for Measurement of Household Food Access Indicator Guide, FANTA Project, 2005.

[18] An analysis of data from Mozambique by Rose, Mock, Oliveira and Clotard suggests that different cut-points might be needed at the sub-national level.

data and how it will ultimately be used (e.g. as a benchmark, or only for convergence of evidence) is important to clarify. The Guideline highlights an example data collection module with a small number of categories, which is likely to result in incomplete data capture. In addition, how own production will be incorporated into the survey instrument and analysis is not clearly presented. In many countries, expenditure survey templates that have been tested already exist. The reviewers are concerned that guidance related to collection and use of expenditure data is not currently adequate.

Exploratory work and actual measuring

The methodology suggested for using a combination of PCA and cluster analysis is definitely useful for exploratory work, though its application to some types of measures might not be appropriate[19]. The Guideline illustrates how this method of analysis amplifies findings that might be generated using more basic types of analysis more frequently used in the field, such as the creation of simple dietary indices, weighted indices, etc. The two-step PCA cluster approach clearly generates groupings that provide a clearer picture of dietary patterns, for example. The manual illustrates the dietary profile of households that consume wild foods, for example, which provides a much clearer picture of the dietary patterns of these households and the ways in which their diets may or may not be inadequate. By combining these clusters with information about source, an even clearer indication of food insecurity vulnerability is provided.

However, the basis for classifying clusters according to their food security/consumption status is never clearly articulated and it needs to be as this consumption-derived grouping is a central piece in the food insecurity and vulnerability analysis as currently undertaken by WFP. The reviewers are also concerned that empirical justification for classifying households in food insecurity vulnerability groups is not yet available. Thus, while dietary consumption groupings are useful for exploring and describing food insecurity vulnerability, it is not yet clear that the food group frequency derived proxy can or should be utilized to classify food insecurity/vulnerability.

In addition, if field operators are to do the work then more specific detail is needed somewhere for analysts to execute the tasks of the analysis, such as: distributional assumptions of the techniques, what specific measures to include in the PCA, how to decide on the number of clusters, etc. If PCA and cluster analysis is done by only a small trained group of analysts and not by field staff, less detail should be provided but more guidance on how to interpret and use the analysis should be available.

Another somewhat problematic aspect of the manual is its lack of clarity on the **problem of classification of food insecurity/vulnerability**. There is an implicit assumption that the analyst will use a consumption based cluster grouping to do this; however, page four cautions against the use of indices to classify food insecurity/vulnerability. Ultimately the purpose of the CFSVA and other diagnostics are to identify and quantify food insecurity and vulnerability to food insecurity. The role of the profiling exercise in producing quantitative estimates still is not clear explicitly. For example, should the clusters be used to generate prevalence estimates? Should these profiles be combined with census and other data to generate small area estimates? Should more standard indicators such as percent of the sample below dietary thresholds be utilized ultimately for classifying food insecurity/vulnerability? These types of issues should be clearly

[19] PCA has distributional assumptions. Data that are non-normally distributed might result in misleading results. There are other suggested methods of summarizing asset data (Demographic and Health Surveys, poverty surveys).

articulated in normative guidance unambiguously, or at least criteria for adopting specific approaches should be discussed.

2.2.2.b Review of Cases

Focus on household food access is central to the CFSVA. Food security profiling is the analytical exercise that serves as the main way to accomplish this. The eleven cases show great diversity in how these analyses are undertaken, though there is some commonality in the treatment of how dietary intake is analyzed and classified and the identification of food groups is variable. There is also great variability in how it is utilized to classify food insecurity vulnerability and also how other dimensions to the profiling exercise such as household food access more generally and livelihoods are analyzed. At the same time the analysis of risk exposure/management is inconsistent and spotty across the studies. On the other hand, the three SENAC cases suggest that WFP is moving more quickly towards more comparable methods of household food security profiling.

Use of PCA/cluster algorithm

In general across the eleven studies, most utilize the PCA/cluster algorithm to classify dietary consumption in some way to characterize household food access. However, **Annex G** shows that the number of foods groups utilized, the number of ultimate clusters produced varies greatly from study to study. In some cases, food consumption is characterized as adequate or not, employing some type of food gap analysis at the household level (usually following normative guidance). In other cases, diets are classified as poor, borderline, etc. In most cases, it was unclear how these categories were determined.

However, great diversity is found in how the profiling is carried out by the different analyses reviewed. At times, the dietary consumption proxy is utilized to classify consumption adequacy, which is then used as a benchmark for food insecurity and vulnerability classification. At times consumption and expenditure are used to cross-classify groups into food insecurity/vulnerability categories (Uganda and Niger, for example), and at still other times several indicators are utilized to categorize food insecure/vulnerable households (e.g. Angola). There is yet no standardized approach for classifying food insecurity/vulnerability and this translates in to great variability of approaches across the surveys, though there has been greater convergence since SENAC as indicated by the fact that two of three of the in-depth cases analyzed employed similar techniques.

Most of the analyses employed the PCA/cluster algorithm at some point in the analysis. However, they varied in how it was applied. While the PCA cluster was applied somewhat more uniformly across dietary intake variables, cases varied greatly in how they analyzed diet in relation to other dimensions of food insecurity. Among the later SENAC cases, for example, Uganda followed normative guidance in utilizing PCA/cluster to characterize livelihood groupings, then sequentially analyzed dietary adequacy in relation to a summary expenditure grouping, livelihood grouping, etc. Uganda used a combination of consumption and expenditure to classify households in to food insecure/vulnerability categories, ultimately represented by four classes. This analysis then cross-classified vulnerability using a number of availability, access and utilization characteristics. It also includes an effort to assess the potential impact of bird flu on food insecurity/vulnerability. Both studies utilized PCA/Cluster analysis to classify livelihood groups. The characteristics of these livelihood groups were then explored as was their food insecurity/vulnerability.

In both cases, these various cluster based grouping had apparent internal, face and construct validity, demonstrating credible associations with component measures. In the case of Uganda, an attempt was made to link the food insecurity and vulnerability summary indicator to

utilization/nutritional indicators, however, this analysis could have gone further in discussing how anthropometric indicators, for example, might be utilized in combination with the other food insecurity measure. The Niger survey, unfortunately, did not include anthropometric measures, so it was not possible to draw linkages between these measures and the access-based food insecurity and vulnerability indicator.

The Angola study undertook PCA/Cluster analysis to arrive at 11 livelihood groups and four dietary intake groups, which, again, appeared to have some internal, construct and face validity. However, the classification of households into food insecurity/vulnerability groups (three food insecurity/vulnerability criteria and six livelihood groupings) is less clear and does not consistently relate to component elements of vulnerability (such as education, assets, nutrition, displacement, and assets) as expected. A variety of access related indicators were included in some type of cluster analysis that is not described in detail.

The food security profiling exercise is not really integrated with risk exposure/management. Although all three SENAC reports treat risk exposure/analysis at some level of the analysis, only Uganda makes an attempt to "model" the impact of shocks/hazards to food insecurity vulnerability. The Angola report devotes less than one page to the discussion of risks/shocks and risk management.

Looking across the sample of VAM assessments included in this study, the clustering of consumption proxy indicators resulted in four to ten different cluster groups being identified in the different CFSVA activities. The groups in the CFSVA for Iran, Nicaragua, and Tajikistan were named based on their characteristics, such as "very low consumption", "low consumption", "fairly good consumption", and "good consumption". Groups identified in Haiti and Ghana CFSVA activities were named more for their "low diversity" or "high diversity". In Azerbaijan and Burundi, the groups were marked with a letter (A-G) and a note about the components of the diet such as "manioc and fish" or "eggs and vegetables".

In the HFSP process, common indicators for vulnerability and food security are then presented as frequencies (or means, medians) organized by these consumption groups. In very few cases are the differences between groups evaluated using statistical analysis. In general, indicators behave in one of two ways in the profiles. Indicators that tend to correlate well with consumption are clearly different for the relatively well-off and the poorest households, such as:

- Income
- Agricultural production
- Education
- Some household assets

Indicators that are not consistently correlated with consumption include:

- Risk
- Coping
- Income source
- Demographics
- Acute and chronic malnutrition

Risks such as high prices for food and drought are reported with equal frequency across all groups with the exception of the finding that this may not be the case in food aid dependent groups. Theft of harvest was reported more for relatively well off groups in the Nicaragua CFSVA. Self-reported risk exposure and correlation to other indicators tends to be country- or situation-specific.

In almost all CFSVAs reviewed, there is a small group with very low consumption (5-10%). This group is usually comprised of small households with very old, ill or disabled members. These groups often receive part of their food as a gift. The consumption-based grouping is good at identifying this group of households that would be called 'dependant'. The consumption-based groups are also very good at identifying households that have relatively high income, education and assets. This group of relatively well-off households is also small. For the majority of households in consumption-based groups between the dependant group and the relatively well-off group, there are no significant differences in most of the indicators used in the profiles.

The food security profiling approach that WFP is promoting through normative guidance (VAM) is being institutionalized as evidenced by its application and increasing conformity to guidance. The methodology and strategy for profiling has both strengths and limitations. As far as strengths are concerned, well executed profiling characterizes food insecurity/vulnerability in a way that the use of standard indicators of food insecurity would not (food poverty, malnutrition, food gap). The methods appear to provide good exploratory information about the nature of vulnerability and also can help identify ways to refine vulnerability classification criteria.

Perhaps the **greatest drawback to clustering methods** as a means of classification of food security/vulnerability is that **these groupings cannot be replicated though time or compared between countries**. For example, the group with very low consumption in Azerbaijan or Nicaragua is similar to the better off groups in Burundi or Ghana. Another problem is that these groupings have not been calibrated against standard benchmarks that can be used to drive programme decisions, such as food poverty and malnutrition rates which are *absolute* classifications, but are rather internally described and therefore represent *relative* classifications.

2.2.3 NUTRITION/UTILIZATION

2.2.3.a Review of Guidance

The normative guidance related to nutrition/utilization is perhaps the most comprehensive set of normative guidance in that the types of information to be collected and sources of this information are well identified between the ENA and VAM guidelines. Materials for the collection of anthropometric data and interpretation of anthropometric indicators and trends are good and well illustrated with VAM case data. The format of the VAM document is more that of a reference manual than a guideline, and opportunities to adjust format and content of these guidelines are discussed in the Recommendations section of the review.

2.2.3.b Review of Cases

Strenght of anthropometric indicators

The **Nutritional** module added to CFSVA surveys for mothers and children does not usually include anthropometrics, except more recently. Of the three SENAC cases, two of these include anthropometric measures as part of the household survey (Angola and Uganda). In both cases, anthropometric indicators were included in the analysis; however, in neither case were they included in the food insecurity/vulnerability classification strategy, nor was the food access component of malnutrition sufficiently investigated.

Anthropometric measurements compared to an international standard are the most common and objective indicator of nutritional status. The CFSVA for Afghanistan, Iran and Tajikistan did not include anthropometric indicators. The other 5 examples of the CFSVA included national level malnutrition indicators from secondary data sources. The CFSVA for Azerbaijan, Burundi and Haiti presented information from UNICEF MICS. CFSVA for Ghana and Nicaragua had recent DHS surveys that provided estimates of malnutrition. A national

nutrition survey was being conducted at the same time as the Tajikistan CFSVA project.

Anthropometric data was collected during the CFSVA surveys in Azerbaijan, Burundi, Nicaragua, Angola and Uganda (**Table 3**). The Burundi CFSVA survey chose a different age screening criteria for children of 0-59 months rather than the more common 6-59 months. The Nicaragua CFSVA reported acute malnutrition at 1.6%, 6.2% for Azerbaijan, and 7.1% for Burundi (which was consistent with the statistics from the secondary data source).

The CFSVA for Afghanistan, Iran, Niger and Tajikistan did not include anthropometric indicators. Other CFSVA included national level malnutrition indicators from secondary data sources. The CFSVA for Azerbaijan, Burundi, and Haiti presented information from UNICEF MICS. CFSVA for Ghana and Nicaragua had recent DHS surveys that provided estimates of malnutrition. A national nutrition survey was being conducted at the same time as the Tajikistan CFSVA project.

Table 3: Nutrition Information in Country Studies

	Iran	Afghanistan	Burundi	Ghana	Azerbaijan	Haiti	Nicaragua	Tajikistan	Niger	Angola	Uganda
Anthropometrics for children	N/A	N/A	0-59 months	N/A	6-59 months	N/A	6-59 months	N/A	N/A	6-59 months	6-59 months
BMI for women	N/A	N/A	No	Yes	Yes	N/A	N/A	N/A	N/A	Yes (15-49 years)	Yes (15-49 years)
Maternal health and nutrition module	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes

A module on **maternal health and nutrition** was included in eight of the eleven studies. This included common questions found in a DHS survey. Many of the questions were related to access to health care. Mothers reporting night blindness during pregnancy indicated Vitamin A deficiency. Source of water and sanitation were presented as indicators of utilization aspects of food security.

The studies do not indicate when specifically the data were collected and which season is reflected by the survey. Being out of the temporal context the interpretation cannot take into account if they refer to a secure part of the year or not (for example, the Afghanistan data was collected immediately after a good harvest).

2.2.4 GENDER

2.2.4.a Review of Guidance

Gender analysis is an area that WFP has done a good job mainstreaming generally within its organization. The VAM Guideline entitled Integrating Gender Perspectives into the Vulnerability and Food Security Analysis is a thorough treatment of qualitative approaches. It is relatively complete and well referenced. It is organized around an Availability-Access-Utilization type framework but does not take into account the risk/risk exposure and management factors, which is one of its major limitations. Like most of the CFSVA guidelines, *it focuses on how to do a survey,* describing methodologies for qualitative analysis/assessment that are more generally useful to the CFSVA and EFSA enterprise and therefore probably should be pulled out into a more generic guideline/manual/tools for these methods. Brief definitions of gender concepts are provided and the rest of the Gender Guideline discusses Participatory Rapid Appraisal (PRA) techniques.

The secondary analysis of household survey data and trends could be more clearly and thoroughly described. For example, which food insecurity outcomes should be explored; anthropometry, mortality as well as others that have been described should be considered.

It would also be useful to describe how gender differentials found during CFSVA would be likely to affect vulnerability to shocks and what this might imply for monitoring and for EFSAs when a crisis strikes. That is, the part of the guidance that needs to be strengthened most at this point is clear guidance on what key indicators are most important during the CFSVA and how these can be utilized to plan information gathering activities and response. Gender issues should also be very prominent in the EFSA Handbook's conceptualization of the assessment framework as well as in field implementation of assessments.

2.2.4.b Review of Cases

Mainstreaming gender is a substantial initiative at WFP and most reports contain recommendations to address gender inequities, sometimes even when not indicated by the results. Perhaps in response to policy documents such as WFP's Enhanced Commitment to Women and programme guidance like SPHERE, a gender perspective has become commonplace in programme design in recent years. The attention to gender in programme recommendations seems to be disproportionate to the gender *analysis* actually found in other sections of most CFSVA documents. That is, in several cases, data analysis did not uncover gender differentials in food insecurity vulnerability while recommendations indicated that female-headed households should be targeted.

The SENAC-sponsored surveys did investigate gender of the household head in most of the profiling activities. The SENAC-sponsored surveys uncovered indications of female household headship as a risk factor in Angola and Uganda and elucidated the nature of this risk (Uganda and Angola) through the analysis of quantitative data. No mention of the community level analysis is provided in these three studies. It also would be most helpful to disaggregate nutrition and utilization indicators by household headship, which was not apparent in the three SENAC sponsored survey reports.

In the Tajikistan CFSVA, there is a substantive analytical section on gender. Focus groups were separate for men and women in the CFSVA work for Afghanistan and refugees in Iran. This allowed some interesting comparisons of perspective on food security between the women's and men's groups. PRA focusing on gender relations in Tajikistan helped to explain control of resources, activities, and even touched on domestic violence. This type of information can be very valuable in designing gender sensitive food-oriented activities that work with women's schedules, skills, and assets.

Common population statistics disaggregated by sex are included in all the CFSVA surveys, such as reporting literacy rate for adult women and adult men (**Annex H**). Attendance and enrollment in primary education is consistently disaggregated for boys and girls. These types of statistics are easily interpreted for food-oriented programming. If there is a large difference between men and women in literacy rates, it is recommended that any literacy and skills training should target women. School feeding projects are often focused to increase the enrollment and attendance of girls. These types of recommendations were indeed present in the CFSVAs.

CFSVA surveys that primarily relied on household questionnaires and quantitative analysis techniques did not add significant value to understanding gender and how that might affect household food security. The most common way to bring a gender perspective to household food security analysis is to disaggregate the data by sex of head of household. Despite common recommendations to target food-oriented activities to female-headed households, gender of head of household does not have a consistent relationship with common food security indicators. Four

of the eight non-SENAC studies recommended targeting female-headed households. One point that arises out of these studies is that female heads of households themselves are not the reason why their households are more vulnerable. **Income is a major factor**. Also, vulnerable households headed by females often have a **high disability or dependency ratios**. These might be better indicators for vulnerability and food insecurity.

Based on the study results, a certain gender gap does exist in education and employment which affects income level and food access; therefore it may be advisable to include **household gender ratio as an indicator**. Including the **mother's education level** in the survey can also be used as an indicator of child education and health. Mother's education level is particularly important for gender issue and highly correlated to children education and health level. Including this information would improve the CFSVA.

Intra-household distribution of food often affects the food security of men and women differently. Several indicators such as the order in which men and women eat have been related to differences in nutritional status. A module on intra-household food security might strengthen the information in a CFSVA document for appropriate project design.

Nutrition and health statistics are often disaggregated by gender and provide substantial, objective and interpretable information about difference in welfare for men and women, boys and girls. Child malnutrition was reported for boys and girls in breastfeeding, immunization, morbidity and vitamin intake. The inclusion of a women's health module in the quantitative survey provided much needed input for food-oriented activities targeting women. Women's Body Mass Index is included in several studies and provides information on the nutritional status of women.

As stated in the guidelines and generally agreed in the literature, gender is not simply the differences between males and females. Gender analysis focuses on the relationship between men and women. Understanding these gender relationships are essential to successful programme design that works with women and men to improve food security. When there is a significant difference in food security or welfare between men and women, programs should leverage assets to improve or balance access to essential services of education and health.

2.2.5 LIVELIHOODS

2.2.5.a Review of Guidance

Normative Guidance the **concept of livelihoods and livelihood analysis in CFSVA is an area that can be greatly strengthened**. The EFSA Handbook and VAM "Integrating "Livelihoods" in to Food Security and Vulnerability Analysis: Some Initial Guidance", has firmly engrained the terminology of livelihoods into the CFSVA undertaking and ENA. However, the terms livelihood zone, livelihood groups and livelihood framework are not clearly delineated and should be as they are analytically distinct activities. While the VAM Guideline approaches the implication that livelihood analysis is a holistic framework within which food insecurity and vulnerability analysis can be encompassed, the EFSA treatment of livelihood is more aligned with livelihood analysis as a tool to understanding household food access and also as an organizing tool for assessments.

As an organizing analytical framework, EFSA utilizes the availability, access, utilization paradigm more frequently. The review team believes that the conceptual framework for measuring food insecurity/vulnerability should at a minimum more comprehensively incorporate risks, risk exposure and risk management, as well as "welfare outcomes" including measures such as nutritional status, consumption, mortality and other key measures that CFSVA is attempting to

both quantify and explain. To date, the livelihood framework is the only one that integrates vulnerability, risk, welfare outcomes and differing levels of social systems into the analysis of food insecurity/vulnerability. It should be possible to merge these frameworks and adopt the fairly comprehensive livelihood framework to focus on food insecurity/vulnerability as the analytical goal.

Operationalize livelihood

One of the missing elements in the VAM normative guidance is to describe how livelihood analysis fits in to the CFSVA analysis and particularly how the analysis and CFSVA should inform the modeling of the impact of risks/hazards on different livelihood and wealth groups. The EFSA handbook describes modeling, but no where in the guidance is there a description of how the CFSVA should operationally contributes to this goal. As a consequence, field staff are without clear guidance as to how to measure and model risk exposure.

The use of **livelihood zones** within the context of CFSVA and EFSA, that is, "an area that is relatively homogeneous and distinct from neighboring areas in terms of main food production and income activities, cultural practices, and hazards affecting food security", is still problematic in that it is difficult to operationalize in the field in any standardized fashion. This compromises the comparability of CFSVAs. Also, as we demonstrated in the review of field cases in the Sampling section, there is reason to believe that the goal of identifying relatively homogenous and distinct zones may not be occurring in practice. If livelihood zones are to be retained as a stratification factor for CFSVA work, then refinement of normative guidance in constructing these zones is critical.

The guidance on **measurement of risks/risk exposure** should be augmented. While types of risk exposures are enumerated in the VAM Guideline, there is no normative guidance on how to collect and analyze vulnerability and exposure to risks, which should include not only household survey instruments but also data on physical factors such as agroclimatologic factors, land degradation/use, presence of industry and other.

The VAM Guideline is largely conceptual rather than practical, which may be appropriate given that the broad conceptual level is not treated elsewhere in normative guidance. Other value added to the analysis of food insecurity vulnerability is the emphasis on risks and risk management and also social networks/capital, a topic that is under-emphasized in food security literature.

2.2.5.b Review of Cases

Annex H summarizes livelihood analysis components of the CFSVAs. **Generally, livelihood analysis is not the organizing framework utilized by WFP to undertake these studies**. Instead, availability, access, and utilization together with food security profiling is most common. Livelihood analysis appears in two major ways within the SENAC-sponsored surveys. First, all three of them include a livelihood cluster-based classification that is used in the food security profiling exercise to assess the risk of different livelihood groups. Secondly, each report makes some reference to risk exposure/management, though this is not generally a strong area of the CFSVA.

In the CFSVA studies, many elements of a formal livelihood framework are in some way included in the analyses (**Annex H**: Livelihoods Study with Risk Assessment in Country Studies). Some of the studies, e.g., those in Azerbaijan, Burundi and Ghana, do not include a discussion of access to health and education services or social networks. The analysts should note that livelihoods analysis should include not only the assets at household level but also social assets more broadly.

The terminology of covariate and idiosyncratic risk has caught on within VAM. For risk analysis, seven out of eleven studies categorize the risks as covariate or idiosyncratic, though these often are not distinguished in the analyses nor are the livelihood and vulnerability groups systematically examined in relation to the types and frequency of risks they face. The Iran CFSVA classifies risks based on its sources (natural risk/health risk/economics risk, etc.). Note that the Ghana CFSVA does not discuss the risk types in the study although it does provide information on coping methods. In most studies they do not provide detail on how they define risks as covariate or idiosyncratic. In the Tajikistan CFSVA, it mistakenly defines the covariate risk as any natural, political or economic shock or event that can affect the welfare of the household. Such a definitional problem will also affect the accuracy of study.

Covariate or idiosyncratic?

Aside from Uganda, the studies do not attempt to model the impact of risk on food insecurity vulnerability even when the data collected might provide some ability to do this. Previous coping behaviors combined with income sources/assets might be utilized to assess the likely impact of shocks on food insecurity in the event of a future shock. These types of analyses are currently not being done.

2.2.6 Spatial and Statistical Analysis

2.2.6.a Review of Guidance

The guidance for Spatial Analysis was still being developed at the time this review was completed. A complete Statistical Analysis guidance is also not available. Elements included in the Household Profiling Guidance could be extracted and integated for this purpose.

2.2.6.b Review of Cases

All reference CFSVAs are primarily statistical studies, with the use of complimentary secondary data or accompanying qualitative data. The use of accurate statistics to make inferences to the larger population and to test for differences in key indicators between strata is closely linked with the sampling methodologies used. This statistical analysis will be discussed. Additionally, the presentation of these results spatially, principally by using maps, and the analysis of spatial data, both a priori to create zones for stratification, and post hoc, to explore additional relationships between survey findings and existing geographic data will be explored here.

Several different sampling methodologies have been used, many linked to the stratification proposed in the sampling design and analysis plans. Although most samples achieve some form of probability sampling giving the households included in the sampling frame a known non-zero probability of being selected, this probability is usually not equal for all households. To make accurate population inferences, a data weighting system is required in the analysis.

Sampling and weighting in the analysis

For example, in the Angola CFSVA, the sample gives equal probabilities of being sampled to households within a province, but between provinces, these probabilities are not equal. No weighting system is described in the report, yet inferences are made and referred to as representative even when combining provinces. Page 48 of the Angola report states "These

samples allow for relative comparisons to be made between the provincial samples while allowing the final estimates of malnutrition to be representative of the areas included in the overall sample." Additionally, other sections of the report give "average sample" estimates, although these are not reported as being weighted in the analysis. As indicated in **Table 4**, only four reports out of the eleven reviewed here have a self-weighting sample (like Burundi) or report using weights (like Haiti, Afghanistan[20], Uganda). All other reports to some extent (with the possible exception of Iran) make estimates of all combined strata despite the lack of equal selection probabilities or weighting system. Although the numbers are often presented as, for example, percentages *of the sample* and not of *the population* (semantically avoiding making an inference to the greater population), it is extremely likely that they are still frequently read, interpreted and used as such. This is of particular importance in light of the VAM objective of answering the question: How many are the hungry poor.

[20] Afghanistan was a peculiar example where no accurate estimates of population at any level were available, so the results, despite being weighted to be representative to the communities sampled from, cannot accurately make inferences to the total population. This is clearly stated in the report.

Table 4: Sampling and Weighting Systems			
	Self-weighting	**Weighting methodology reported?**	**Was weighting used?**
Iran	No - not a representative sample outside of individual camps sampled (most reporting done by camp or groups of camps by ethnic groups- but no inferences made to other unsurveyed camps)	No	No - not necessary when reporting results for each of 8 camps surveyed (each camp had random sample taken), but SHOULD HAVE BEEN used when reporting by Kurdish vs. Afghani populations.
Afghanistan	No (nosample frame available)	Yes (weighted to have sample representative of communities sampled from, excluding the most wealthy-but not representative to national level)	Yes
Burundi	Yes	N/A	N/A
Ghana	No	No	No - and should have been (several unweighted numbers are reported)
Azerbaijan	For household sample-close, but completely. For IDP population, no frame available.	No	No - may have improved the representativeness of the HH results, although the sample approached self weighting. No frame to use for weight calculations for IDP data.
Haiti	No	Yes	Yes (sometimes not used, but the non-weighted results are indicated)
Nicaragua	No (OK within zone, but need weights to combine different zones)	No	No (and should have been when reporting overall numbers, combining zones).
Tajikistan	No - "A total of 5,155 households were interviewed, which allows comparisons between zones but is not precisely representative of the population at district level." P. 22	No	No (for the most part, data is reported by zone, which requires no weighting - but occasionally data is reported across zones (usually referred to as the mean if households sampled), but no weighting system is used).
Niger	No	No	No (may not have been needed)
Angola	Yes for province. No for national.	No	No - totals are presented, but no weights were used. They are sometimes referred to as representing the sample.
Uganda	No	Yes (very briefly)	Yes

Statistical testing

The next step in making inferences to and between areas of interest is testing for **statistical significance of household surveys results**. Three of the eleven reports (Afghanistan, Ghana, Niger) contain no reference to statistical testing (such as statements of statistical significance or the reporting of p-values). Among these three, Afghanistan is the only to acknowledge this fact. Among the other eight reports, the use of statistical tests ranges from extremely inconsistent/rare to relatively frequent (only in the case of Uganda). No report identifies statistical tests used (t-tests, chi-square, linear regression, etc.), nor does any provide a statement on the distribution of the data, which prohibits the reader from critiquing the statistical methodology.

To summarize each paper:

- Iran: P-values frequently reported in relation to HH data. However, it is not universally used when reporting differences.
- Afghanistan: No statistical testing (see page 88 "For the purposes of this report, no tests involving degrees of freedom are used.")

- Burundi: Some (p-values reported for anthropometry comparisons between groups)
- Ghana: No statistical testing
- Azerbaijan: Some statistical testing, particularly for anthropometric data. Not consistently reported throughout.
- Haiti: There are several mentions of "significant" or "not significant" differences, but no p-values reported.
- Nicaragua: Very little, inconsistently used
- Tajikistan: Some, but inconsistently used
- Niger: None
- Angola: Statistical tests used, but inconsistently
- Uganda: Statistical tests used relatively consistently (the best reporting of statistical testing among the eleven papers).

Design effect and analysis of complex samples

Ten of the eleven studies use a **complex sampling design** (2 stage or multi stage cluster sample, as well as stratification), Iran being the only exception, with a simple (or systematic) random sample. However, **no study accounts for this cluster sample design** when making statistical comparisons between strata or estimates of confidence of the results as the represent the greater population. Two studies refer to the **design effect**: the Haiti report uses it in the calculation of sample size (a design effect of 2 is used), and Uganda uses it in sample size calculation and to calculate the design effect after the data is collected.

In all analyses, SPSS is used for some or all of data analysis (though ADDAT is used for the cluster analysis throughout). SPSS is incapable of calculating complex sample estimates unless researchers install SPSS Complex Samples, an add-on module for SPSS. Otherwise, when weights are applied, SPSS alone is unable to calculate any p-values when degrees of freedom are involved (this is pointed out in the Afghanistan and Haiti reports). SPSS uses a system of pseudo-replication, which artificially inflates the sample size to account for the applied weights. Even when weights are calculated to keep the sample size stable, this can be a drawback when running statistical tests.

Spatial analysis: A priori

Spatial techniques are frequently used as a component in the survey design for defining zones within a country for sampling purposes. However, the methodology varies widely (from simply using existing data to creating zones through a PCA/cluster analysis drawing from several data sources), and little normative guidance exists for this. There is very little mention in any of the reports about testing of these zones. Once concern is that the zones may not in fact be an accurate representation of homogenous zones, but no evidence is given either way. Additionally, the sampling is often based on these zones, limiting options to disaggregate in different ways post hoc.

Hazard analysis commonly requires spatial techniques for analysis. An increasing number of spatial data sets are available for different types of hazard, frequency of hazard events, and severity of hazard impact. Although understanding hazards is only a step in analyzing risk at a household or community level, these spatial data sources could help in the design of sampling or questionnaires. There are several good examples of the use of risk exposure or hazard maps to look at specific types of vulnerability, such as a hurricane in Dominican Republic, conflict in Cote D'Ivoire or drought in the Western Sahel(Good Practice Document, VAM2004).

Spatial estimation of poverty and other factors in vulnerability analysis are being increasingly employed to inform secondary data analysis. Income and expenditure surveys are producing spatial products on poverty indicators at spatially disaggregated levels useful to a CFSVA study, e.g. small area estimation of poverty indicators. A common sense approach to

CFSVA sampling design would be to match as closely as possible at the same spatial units that poverty or social indicator that is regularly collected. Simple analysis techniques like map overlay may be best for rapid secondary data analysis. For example, overlay procedures may be useful in answering questions about where the most poor people are exposed to frequent or severe hazards.

Another consideration for the addition of spatial information to case studies reviewed is to facilitate the creation of geospatial data sources. The results for many of these surveys could be geo-referenced, ideally to community or even household level, using existing data from the sampling frame or information gathered with GPS units during data collection. However, this is not consistently done in all studies. Spatial analysis techniques require geo-referencing at the household or community level.

Spatial analysis: Post Hoc

Representation of descriptive statistics in thematic maps or of survey locations in point/polygon maps are the most common post-hoc uses of spatial techniques in CFSVA case studies. Usually, mapping is used only to present findings by zone or administrative boundaries. Some discussion of the patterns of the thematic representations is often discussed as visual spatial analysis (visual inspection) of the results. These types of visual inspection can be very useful in giving context to problems; for example, more households farm near the river and more households keep livestock in drier areas. These types of visual inspection are rarely complete enough to fully answer the question of where food insecure households are located.

The most dangerous use of this type of "analysis" is to overuse visual inspection and jump to conclusions about why households are food insecure. When soil maps or agro-ecological zones (a combination of soils maps and some climate information) are commonly used in CSFVA studies to make a thematic map, what the analyst is seeing are the patterns of soil. Even if contrasting colors are exaggerated between zones is maximized, what the analyst sees is different shapes of the different soil formations. Zoning runs the real risk of falsely assuming that the qualities of the soil, climate, or agricultural zone are substitutes for the characteristics of the communities in those places. It is clear that policy environment, infrastructure, and economics have a greater influence on assets, strategies, and dynamics of livelihoods than soil alone. Using soil type and environmental factors as the basis of an explanation of differences in different people from different places seems to come terribly close to ideas of Environmental Determinism[21]. This approach does not conform to any current spatial analysis practice and would not be supported by any trained geographer.

Zoning does not seem to work for food security analysis either. For common food security indicators and most demographic, social, nutritional and livelihoods indicators there is no significant difference between zones based on soil maps or agro-ecological zones in the case studies reviewed. **Table 2** of this document compares indicators in CFSVA case studies across zones, and the majority show no difference between zones. The rest tend to show differences for only one to three of the zones. The purpose of zoning (stratification) is to add power to

[21] Environmental Determinism was a common conceptual framework in the 18th century for describing differences between peoples that was briefly revived in the middle of the 20th century. Environmental Determinism has proven to be conceptually vacant and dangerous in application.

prediction when extremely different groups are included in a population. This is clearly not the case with zones used in CFSVA studies and common indicators of food security

Although different types of representation or mapping of CFSVA results were included in CFSVA documents, common spatial analysis techniques are not used. Only in the Haiti report are the locations of communities and indicators of their food security status compared to other potential factors related to food security. Lack of spatial analysis, especially as related to the lack of risk analysis, is perhaps the largest methodological gap in the CFSVA studies.

In summary:

- Iran: geospatial analysis done a priori or post hoc, no information presented in maps
- Afghanistan: minimal use of spatial analysis- some survey results presented using maps.
- Burundi: Little use of spatial analysis, survey results presented with maps.
- Ghana: p. 7 "Spatial analysis was also used to create homogeneous district clusters in order to generalize findings to districts not covered in the sample." Some survey results presented in maps.
- Azerbaijan: a few results presented in maps
- Haiti: spatial analysis used a priori and post hoc. Zones created for sampling and analysis using satellite data, presentation of results in maps, presentation of locations of localities surveyed, and post hoc geospatial analysis: P. 42- "The locations of these localities were then mapped together with other possible food security related factors, in search of possible relationships."
- Nicaragua: Maps used to present zones and locations of communities surveyed, and also partially in zone creation (a priori and post hoc).
- Tajikistan: Zones created using spatial analysis and cluster analysis. Maps used to present results.
- Niger: maps used to present results and locations of communities sampled.
- Angola: maps presenting some results, and locations of communities surveyed.
- Uganda: secondary data used for spatial analysis to create zones for sampling and reporting, and many results presented using maps.

PCA and cluster analysis

Cluster analysis (usually using principle component analysis first) is the backbone of all eleven studies. The general methodology for this is covered in the normative guidelines. Although the methodology for this is only briefly described in most reports (ranging from a one or two sentence explanation to a few paragraphs outlining the methodology), one might assume that similar statistical methodologies are used. The methodology is described in the Burundi report (p. 31): "[…] households were clustered based on the four variables, creating relatively homogeneous household food security profiles.", which is a typical description of the results. However, no indicators of the relative homogeneity of these groups are given. At times, the percentage of variability conserved in the principal components used is reported; however, this says nothing of the homogeneity within the subgroups or the difference between the groups. In short, there is little basis for evaluating the soundness of the PCA/clustering analysis used in studies as none of the statistical characteristics of these are reported.

Cluster analysis is commonly used as an exploratory or descriptive technique, and there are few, if any, examples of its use in estimation. The math required to estimate confidence in estimates based on a clustering algorithm is rather involved and would require a specialist[22]. Cluster analysis is very sensitive to indicator choice as well as to the model used for clustering. For example, if a k-means clustering algorithm is used, the clusters will have an obvious normal distribution. This type of distribution usually creates small clusters at the extremes and a few large clusters in data at the center of the multi-dimensional distribution. This is the type of distribution commonly seen in CFSVA case studies, and the use of other classifiers on the same data would create very different sets of clusters. This is one way to explain why cluster analysis is not used for estimation. A review could explore classification techniques that may be appropriate for estimation, including Bayesian classifiers, fuzzy logic classifiers, and artificial neural networks. Many of these algorithms are now available in commonly used statistical packages. Such a review would more precisely demonstrate the effect of different classifier choices on cluster construction using the same input data.

2.2.7 MARKET ANALYSIS

2.2.7.a Review of Guidance

There is a guideline dedicated to market analysis in the EFSA handbook, which could potentially become the reference for CFSVA. The EFSA handbook provides a preliminary outline on how to carry out market analysis during an EFSA, and also provides some useful analysis tools, like:

- Food availability trends
- Food balance sheet
- Market structure diagram
- Graph of price trends
- Checklist for market related data to collect, etc.

Current study of food security is comprised of three elements: availability, access and utilization. Difficulty in food access and limited quantity of food can be due to irregular market supplies, difficulty in physical access to markets, and inadequate purchasing power or the shocks on market price. Market analysis is important for evaluation and estimation of food availability and accessibility. This has caught the attention of researchers and the recent EFSA handbook also includes market analysis in the future food security analysis framework.

An attempt should be made to collect local market information through government staff, traders and NGO field staff in order to determine market accessibility, terms of trade, market demand and changes in the function and flow of markets as a result of a shock. Community

[22] The reviewers suggest that it may be possible to create a non-parametric probability distribution for clusters through Monte Carlo simulation. These results could then be used to make some estimates of the precision of the clusters and perhaps estimate confidence intervals. This operation would have to be done for each clustering analysis separately and would require a highly-skilled analyst.

group interviews should be used to gather data on access to markets, seasonal food shortages, changes in terms of trade, price fluctuations, and credit terms used by traders.

2.2.7.b Review of Cases

Though market analysis is still relatively new in food security analysis, it is in this area that SENAC has made the largest contribution to CFSVA methodology; nine out of eleven country reports include a certain level of market analysis (**Table 5**). Although market analysis reports for countries reviewed here were unavailable with the exception of Niger, SENAC-sponsored market assessments and market information monitoring will greatly enhance the utility of data collected as a part of the CFSVA exercise.

Burundi was the only survey which included a sub-survey on market price, but like other country reports, it conducted a relatively cursory analysis of market data (e.g. distance to closest market). The Niger study had a separate report on cereal markets profile, but this was not integrated in to the CFSVA report and the analysis did not distinguish the market situation for different zones. The market analysis was not able to help identify the food insecure and vulnerable groups and did not provide recommendations on how to improve the market situation. Furthermore, market price analysis did not consider inflation or change in income level, so the study result did not reflect the real price change. Thus, the market analysis in the Niger study is not able to explain purchasing power issues at play.

The market analysis should not only focus on the goods market, but also the labor market and credit market as well. Latest CFSVA studies show that limited access to livelihood opportunities and insufficient purchasing power are two of the main causes for food insecurity. Further study on labor markets and credit markets will help better understand the causes of food insecurity.

Table 5: Market Analysis in Case Studies

		Iran	Afghanistan	Burundi	Ghana	Azerbaijan	Haiti	Nicaragua	Tajikistan	Niger	Angola	Uganda
Goods market	Market access	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
	Market types	No	Yes	No	No	No	No	No	No	Yes	Yes	No
	Market price	No	Yes	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes

The market analysis outlined in EFSA handbook could be enhanced. It covers information on how to collect and analyze the traditional goods market, and should be expanded to provide suggestions on how to improve the market situation and cope with shocks on the market.

2.3 Relevance and completeness

The purpose of this section is to assess the programmatic relevance and the completeness of CFSVA findings. The study is based on the three most recent analyses and reports reviewed by this team:

- Angola: Comprehensive Food Security and Vulnerability Analysis, October 2005
- Niger: Comprehensive Food Security and Vulnerability Analysis (Part 1 & 2), September 2005; and CFSVA: Collecte et Analyse des Informations Secondaires, December 2005
- Uganda: CFSVA, Profiling Household Food Security and Vulnerability, December

2005.

The overall objective of this study is to assess **whether CFSVA provided useful and relevant information for decision-making** (i.e. for programme planning and implementation). More specifically, we investigated whether CFSVA provided answers to the five key questions [23]:

- Who are the food insecure?
- How many are they?
- Where do they live?
- Why are they food insecure?
- Does food aid have a role to play?
    - If yes, what role?
    - What other interventions are appropriate?

Table 6 assesses relevance with respect to these questions. **Table 7** looks at whether the three CFSVA reports considered provided a complete analysis of food security by analyzing all of the food security dimensions (food availability, access and utilization).

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[23] WFP-VAM. Thematic Guidelines: Household Food Security Profiles, April 2005.
[25] Office of Food for Peace: Strategic Plan for 2006-2010

Table 6: Programmatic relevance	
Who are the food insecure?	Identifying the population groups that are only likely to be significantly affected by an event provides useful guidance for programme targeting. Overall, **CFSVA did well at identifying affected population groups,** based on the analysis of food security and livelihood profiles. Indeed, the reports reviewed provided clear and detailed descriptions of the food insecure and vulnerable groups based on their livelihood patterns and socio-economic characteristics (e.g. assets, demographic patterns etc.). In the report on the analysis of secondary data in Niger, criteria for the identification of vulnerable groups were quoted from two other sources (Aghrymet, 2005 and FAO 1994). Both sources established household vulnerability criteria based on specific socio-economic or demographic indicators or a particular livelihood (e.g. agriculturalists with small land holdings, households with less than a defined level of income, pregnant and nursing women); it was felt that these guidelines are not as comprehensive and useful for targeting as the ones provided by CFSVA.
How many are they?	All CFSVAs (except the analysis of secondary data in Niger) reported on the percentage of food insecure people per area (units of analysis were provinces, cluster of districts or agro-ecological zones); one CFSVA also reported on numbers of food insecure per province. Due to the sampling strategies adopted, **numbers and percentages of food insecure cannot always be estimated at a national level**, nor at subnational administrative levels or other programmatically relevant aggregations.
Where do they live?	Based on the analysis of the geographic distribution of food security profiles, **all studies clearly indicated which areas** (agro-ecological zones, provinces, districts or district clusters, depending on the unit of analysis) had the highest proportions of vulnerable and food insecure people, and should therefore be prioritized for intervention. While **it would have been useful and more practical in all countries to obtain information on the location of the food insecure and vulnerable at district level** (rather than, say, provinces, as it has also been pointed out by staff interviewed), we recognize that obtaining district level information has substantial financial and time implications, due to the large sample sizes required. More sophisticated geospatial analyses could be employed to characterize the food insecure at non-administrative aggregations (e.g. proximal to roads, higher altitudes, near borders etc.).
Why are they food insecure?	**Some, but not all, studies provided clear and detailed information on causes of food insecurity and vulnerability**. In Uganda and Niger (report on the analysis of primary data) regression analysis enabled the identification of possible underlying causes (predictors) of food insecurity and malnutrition at household level (e.g. level of education, breastfeeding practices), and also at community level in Niger (e.g. access to communication). Other studies only addressed the "why question" partially.
Does food aid have a role to play? If yes, what role? What other interventions are appropriate?	The ability of CFSVA to clearly define what interventions were appropriate in light of the analysis findings **varied from one country to another**. In two cases, Uganda and – to a lesser extent - Angola, the CFSVA reports provided useful recommendations on priority interventions (food and non food) for each area (strata or province), and within them target groups, based on area-specific problems identified in the analysis (e.g. low access to education, water, sanitation, high levels of malnutrition, low agricultural productivity). It was felt that these recommendations were evidence-based and very relevant for programme planning and prioritization, in particular in Uganda. The report on the analysis of primary data in Niger was weaker. Recommended interventions were simply enumerated, with little justification and, in most cases, no mention of target groups and/or areas, in particular in the case of food interventions. For instance, programme recommendations included food-for-work and food-for-training but failed to explain what type of activity should be undertaken within these programmes, and why, where and for whom specifically.

Table 7: Completeness of Analysis	
Food Availability Is the amount of food that is physically present in a country or area through all forms of domestic production, commercial imports and food aid. (WFP, EFSA Handbook, 2004).	The CFSVAs reviewed tended to **overlook the food availability dimension**. Indeed, with the exception of the Niger analysis of secondary information, none of the CFSVAs reviewed really addressed food availability at aggregate/area level or attempted to analyze markets. At best, the reports made general and brief comments on recent trends in domestic agricultural production, livestock activity, food imports and prices, types of foods typically produced in the country, but the information provided was rarely quantified and did not allow conclusions on the current status of food availability in the country and its impact on prices for instance. And while all CFSVAs did assess agricultural production at household level, this did not and cannot lead to meaningful conclusions at aggregate level. CFSVA's failure to analyze the food availability dimension of food security may be an indication that food availability/supply was not an issue in any of the countries under review; indeed, none of them had recently faced a severe shock that directly affected food supply (e.g. severe drought); or it might reflect the lack of secondary data. By contrast, the Niger report on secondary data analysis covered more extensively the food availability dimension. It looked at historical data on cereal production and imports to analyze cereal availability at district level. Based on this, the report provided a classification of districts based on vulnerability to food (cereal) availability.
Food Access Is a household's 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. (WFP, EFSA Handbook, 2004)	Food access was **extensively covered** in all CFSVAs reviewed, through the collection and analysis of household-level data related to a wide range of access indicators, including livelihood patterns, asset ownership, living conditions (in Angola), income sources, sources of food, food and non-food expenditure, food production, food consumption, coping strategies and access to markets (Angola). Descriptive statistics for the above-mentioned indicators were usually provided for the overall sample, across areas (agro-ecological zones province or strata) and livelihood groups. These variables were also the key components of the analysis for food security profiling (see below). In addition to the above-mentioned variables, the CFSVA conducted in Uganda included the following indicators in its review of household food access: access to credit, access to social services, water and sanitation and community services. The analysis of secondary information in Niger provided a partial picture of food access at district level, based on socio-economic factors influencing markets (prices, physical accessibility etc.), exposure to political risk, animal ownership and cash crops production.
Biological utilization of food 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. (WFP, EFSA Handbook, 2004).	The extent to which information on food utilization was collected and analyzed in the CFSVAs reviewed **varied from country to country**. In Niger, the information collected at household level included data on education (access, level, literacy), health (morbidity, access to healthcare) and access to sanitation. In Angola and Uganda, extensive information related to food utilization was collected, i.e. access to safe water and sanitation, access to social services (education, healthcare), women's nutrition and health status (including micro-nutrient and macronutrient malnutrition), women's education, health/hygiene practices and breastfeeding (in Uganda), child malnutrition, child health (recent illness), antenatal care, immunization and deworming (in Uganda). In all three CFSVAs, the reports provided descriptive analysis of the various indicators across areas and, in some cases, livelihood groups. The information was used for contextual analysis of household food security and for programming recommendations, i.e. types of interventions (e.g. improved access to safe water/sanitation), priority areas (e.g. areas with high levels of malnutrition) and target population groups (e.g. pregnant women for interventions on micro-nutrient deficiencies). In the report on the collection and analysis of secondary data for Niger, the food utilization dimension was analyzed at district level. Four variables were considered for classification of districts (level of vulnerability) based on food utilization, i.e. health coverage (it is not clear what indicator was used), acute malnutrition prevalence, education (gross primary enrollment ratio) and access to safe water (number of improved water sources per 250 inhabitants).

In summary, it was felt that the three CFSVAs which were reviewed provided relevant information for programming on who, where and how many were vulnerable and food insecure, based on relatively robust data and analysis (i.e. food security profiling and analysis of geographic distribution). In addition, two studies provided useful and evidence-based recommendations on the types of interventions required.

The CFSVA in Uganda, and to a certain extent Angola, were particularly successful in summarizing and linking "what", "who", "where" and "why" together, and also considering the timing and duration of food aid when appropriate. Niger however was less successful at bringing the various components together and justifying recommended interventions.

More generally, it is has become quite clear through the larger review process that utilization of CFSVA is a critical issue. In order to fulfill its' mandate of **contributing to the knowledge base on food security and vulnerability**, VAM outputs must be *read*, *understood* and *used* in WFP. Additionally, outputs should be communicated to and utilized by other humanitarian entities, developmental actors and national governments, in order to fulfill the stated aim of **advocating for the hungry poor** (SAF 2002, the WFP Review Report).

The VAM Audit report pointed out the need for improvement in the internal dissemination of finalized reports, and WFP expresses a concern in the Indicator Compendium with the fact that it remains unclear how much programming is incorporating VAM outputs. Many background documents insist on the need for improved utilization of VAM work to support inputs in several WFP functions besides programming (Baselines against the Strategic Priorities Guidance, June 2004 OEDE; Strengthening the role of VAM in WFP, April 2004, VAM).

Note: Practical recommendations regarding relevance, utilization and completeness tend to be intertwined with and comprised of issues of Concept, Methodology and Corporate Information Strategy. Therefore, recommendations coming out of this review section are integrated into these respective sections of the Recommendations.

2.4 Corporate Information Strategy

Problem: Within WFP there are a number of different expectations of CFSVA and VAM. WFP depends upon them to provide input into several organizational branches, as well as for the documentation and utilization of information gathered and knowledge developed through the CFSVA process itself.

Along with an explicit definition of CFSVA, one of the key conceptual issues faced by WFP is to clearly articulate its corporate information strategy and to task its various analytical units accordingly. At present, the responsibilities of VAM are still relatively diverse and multi-faceted. At the same time other units within WFP are developing tightly integrated and sometimes overlapping information functions.

Following the recent OD Directive, VAM internal efforts to standardize survey and analysis methodology (SAF) over the last two years have initiated progress towards a more comprehensive approach focused more on food security and less on emergency situations. The organizational process for producing the expected VAM outputs has started to become more formalized.

Currently, the main **users** of VAM elaborated information (analysis) are:

- Programming staff

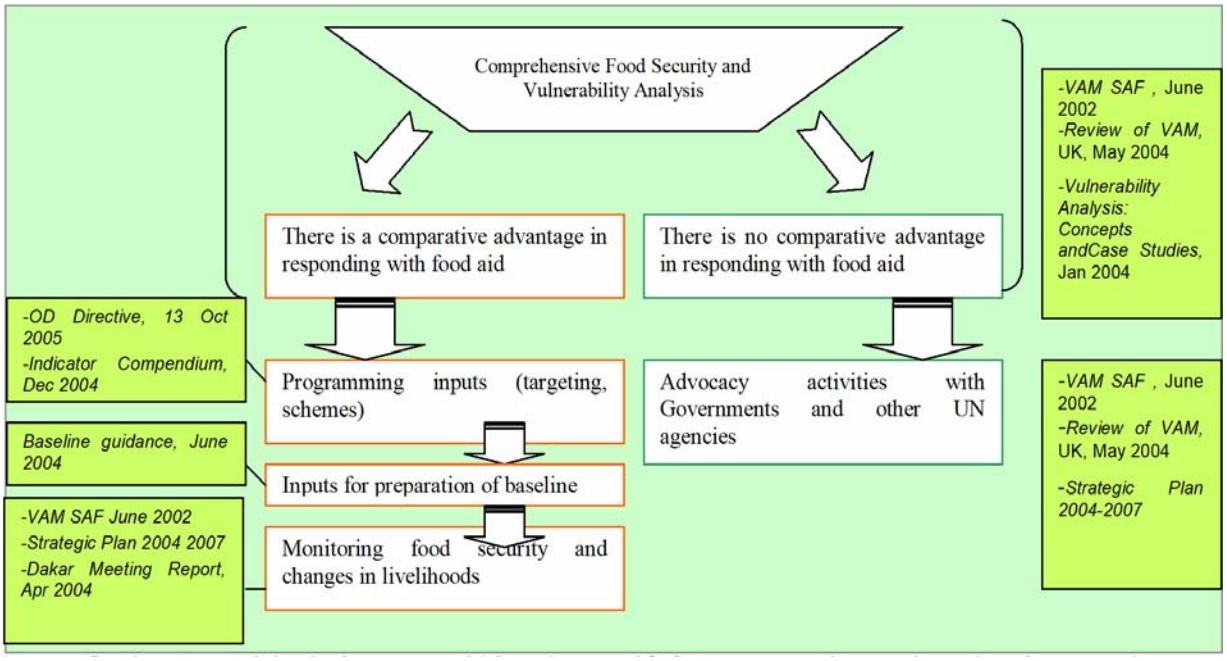
- ENA staff, Contingency Planning and Early Warning
- Partners (NGOs)
- National governments

The **modalities** in which VAM is supposed to interact with the intended users are:

- Direct participation in WFP programming meeting so as to have physical presence of VAM officers during project design
- Production and maintenance of a database on socioeconomic data and VAM outputs
- Training of WFP, partner and government staff

Through these modalities the CFSVA is supposed to provide answers to programming questions for users at several different levels. The key set of questions to be answered by the analysis is whether or not there is in fact a role for food aid, how it should be utilized and how best to prepare for known risks. While an 'affirmative' finding (*food aid can make a difference*) triggers a series of interactions and information flow mainly internal to WFP, the process initiated by the 'negative' finding requires communication strategies oriented mainly toward external stakeholders. **Figure 1** illustrates this conceptual role of the CFSVA.

Figure 1: Consolidated information model for utilization of CFSVA in WFP (source: DISI)



*References to the documents where statements have been found are in the green boxes.

The **information** that VAM is currently expected to produce is intended to build an organizational knowledge base on food security through

- The creation of an understanding of vulnerability and the potential role for food aid (pre-programme)
- The production of evidence-based vulnerability profiles
- The provision of recommendations on beneficiary targeting for programming
- Assistance in the design of surveys for assessment of situations prior to WFP interventions (baseline assessment)

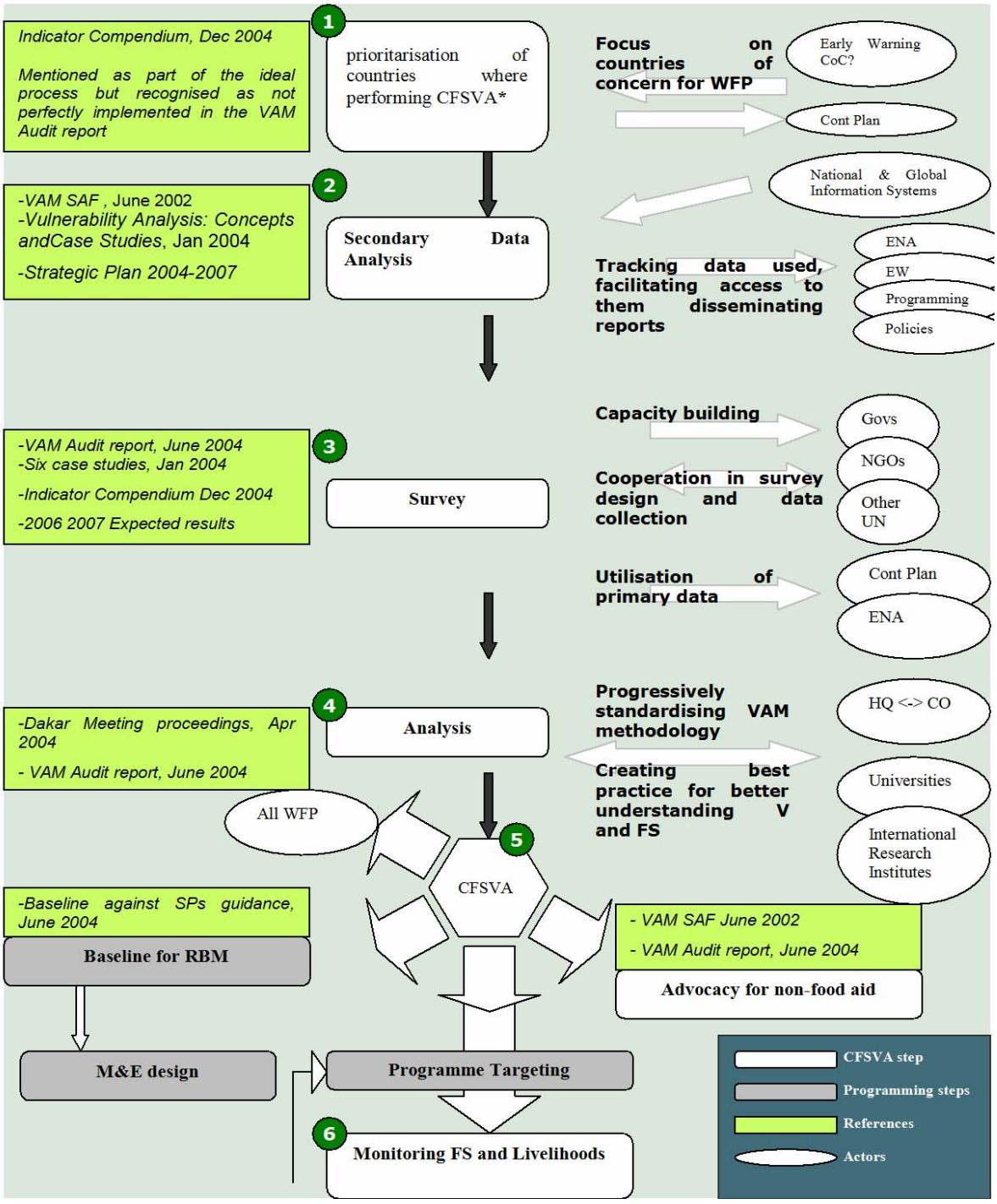
- The monitoring of changes in food security and livelihoods as long as the programs are implemented (OD Directive, 13 October 2005)

Along with these expectations, VAM also has a distinct capacity building role; VAM officers at COs and RBs are not only explicitly asked to "maintain and update databases of spatial and socio-economic data" but also "to develop mechanisms by which such data are shared with other programme units in the Country Office/RB" (OD Directive 13/10/2005). Tabular data, survey tools, and documentation on the development of the CFSVA are now considered important information as well, to be stored and tracked adequately by VAM officers and to be accessible for:

- Other VAM staff
- Staff involved in other WFP functions.

Figure 2 is an effort to identify and map the main elements (contents and actors) of the knowledge development process in parallel with the production of a CFSVA.

Figure 2. Main CFSVA process steps and information expected to be exchanged (source: DISI)



* The decision of prioritizing where performing a CFSVA is at present not completely influenced by the Countries of Concern (CoC).

2.4.1 USE OF DATA

The VAM process integrates the gathering, collection and analysis of different kinds of data, both secondary and primary. Much of the work necessary in perform the survey and subsequent analysis is at present being lost; the information gathered and the knowledge developed in these intermediate steps is not shared systematically across VAM or within the organization. Secondary data are not yet systematically reused for other purposes, nor are the primary data shared or archived according to any SOP. The reviewers should note that primary data collected are now being more systematically georeferenced.

2.4.2 SURVEY PROCESS AS KNOWLEDGE ON FOOD SECURITY

The process of survey design and coordination with partners (government and NGOs) for each CFSVA is to a large extent being lost, and represents a missed opportunity to build organizational knowledge, to develop lessons learned and material for capacity building, all of which are tasks to be performed by VAM.

For example, systematic archiving for access to survey instruments, as well as to the sampling documentation, is essential for:

- Creating panel data in the context of the FSMS
- Facilitating the performance of ENA after an emergency in countries where a CFSVA has been performed
- Allowing future review of appropriateness of methodology
- Standardization of VAM analysis and the establishment of benchmarks comparable across countries

Furthermore, the development of documentation on partner involvement, organization of training materials and the formal tracking of report dissemination can provide information valuable for the following purposes:

- Development of best practices and standardization of the training activities of enumerators
- Provision of documentation on initiatives aimed at capacity building for local NGOs and national governments
- Assessment of CFSVA impact as an instrument for advocacy

2.4.3 CREATING AND MAINSTREAMING STANDARDS

Standardization in survey design and analysis was highlighted as a problem to address in the VAM review of the external audit (VAM Audit report 2004), and it remains a problem as detailed in the methodological review section of this review. The greatest missed opportunity of the CFSVA is that studies are not comparable. They do not have similar sampling designs, use similar indicators or calculate indicators in the same way. They use different instruments and different methodologies, though there *is* a clear movement towards standard survey instruments.

This situation leads to high variability in CFSVA quality, and the comparability of studies across countries is very low. This geographic limitation is compounded by the fact that the household food security profiling analysis emphasizes internal patterns in data rather than common indicator metrics. While it is important that VAM experiment with new approaches to understanding food security and vulnerability, it is also critical that a documentation process with

a review mechanism also exists. Not only should internal guidelines be more detailed and connected in a global framework, but common interpretation, practices and approaches need to be actively encouraged. Meanwhile, VAM HQ should be monitoring the correct implementation of guidelines. A missed opportunity to achieve this type of review is the current SENAC TAG, which includes all relevant technical competence to review CFSVAs.

Moreover, it takes a great deal of time to complete a CFSVA; standard operating procedures for CFSVA should specify a two-month time frame. Currently the time between data collection and completion of the report averages over nine months. The Afghanistan report was finalized seventeen months after data collection, and the minimum time for a study to be completed was four months (**Table 8**).

Table 8: Duration of Case Study - From Data Collection to Final Report

	Iran	Afghanistan	Burundi	Ghana	Azerbaijan	Haiti	Nicaragua	Tajikistan	Niger	Angola	Uganda
Data collection	Dec-03	Jul-03	Sep-04	Jul-04	Mar-04	Sep-04	Feb-05	Nov-04	Mar-05	Jul-05	Jul-05
Report	Jun-04	Nov-05	Feb-05	Dec-04	Dec-04	May-05	Jul-05	Jul-05	Dec-05*	Oct-05	Mar-06
Duration	7	17	6	6	10	9	6	9	10	4	9

* Primary data analysis was completed at Sep-05, Secondary data analysis was completed at Dec-05.

2.4.4 CFSVA FOLLOW UP: MONITORING CHANGES

It has been noted in previous documents that VAM still has work to do with regard to providing information on food security change over time and the impact of programming choices on livelihoods (Strategic plan 2004 – 2007; Expected Results: Outputs and Activities by Organizational Unit Nov 2005).

The CFSVA should inform on-going monitoring in a number of ways, both in terms of substantive findings and methods. The CFSVA can identify key indicators as well as vulnerable groups/regions for on-going monitoring. To the extent that these indicators are clear and indicated with some type of absolute metric, this function can be fulfilled. All CFSVA reports should contain a section on implications for food security monitoring and EFSA.

The CFSVA also should inform the design of impact/results monitoring of WFP programs. However, it is important to note that the CFSVA may not be an adequate instrument for generating a baseline measure for results/impact monitoring. The reason for this is that the target population ultimately identified for intervention by the CFSVA may be a sub-population of that included in the CFSVA. In addition, the WFP programme will address specific aspects of food insecurity vulnerability, which may not be measured in the CFSVA. For this reason, it must be clear in the information strategy that a separate baseline survey may be needed.

3 RECOMMENDATIONS

This section presents the review team's recommendations for addressing the issues identified during the review process. Concrete potential next steps are proposed whenever possible.

3.1 Conceptual Recommendations

3.1.1 ESTABLISH CONCEPTUAL AND TERMINOLOGICAL GUIDANCE

An effort should be made to more precisely define what CFSVA is, its purposes, its relation to other analytical activities and to provide an overview of how it is done and how it fits in to the corporate data model. A road map is needed to show how different analytical activities such as food security profiling, risk analysis/modeling, gender analysis, and market analysis are boiled down operationally to answer the questions of who is food insecure, how many are food insecure, where they are and why they are food insecure. Guidance is needed to help field staff reach conclusions from data about (a) levels of food insecurity/vulnerability based on a clear understanding of what this means to WFP and (b) the relative importance of availability, access and utilization in describing food insecurity/vulnerability.

An essential preliminary step is the identification of the most appropriate, complete and current definition of vulnerability to food security. The following two are suggested:

- "FFP and its partners developed an expanded conceptual framework that adds the dimension of risk and vulnerability to the conceptual framework that was laid out in the Food Aid and Food Security Policy. This Strategy requires FFP and its partners to pay more attention to addressing food insecurity through a focus on reducing vulnerability and risk. Vulnerability means that food security can be lost as well as gained. Vulnerability also can be thought of as the inability to manage risk. When countries, communities and households are unable to cope effectively with shocks or hazards, in fact or potentially, they are vulnerable and potential candidates for assistance." [25]

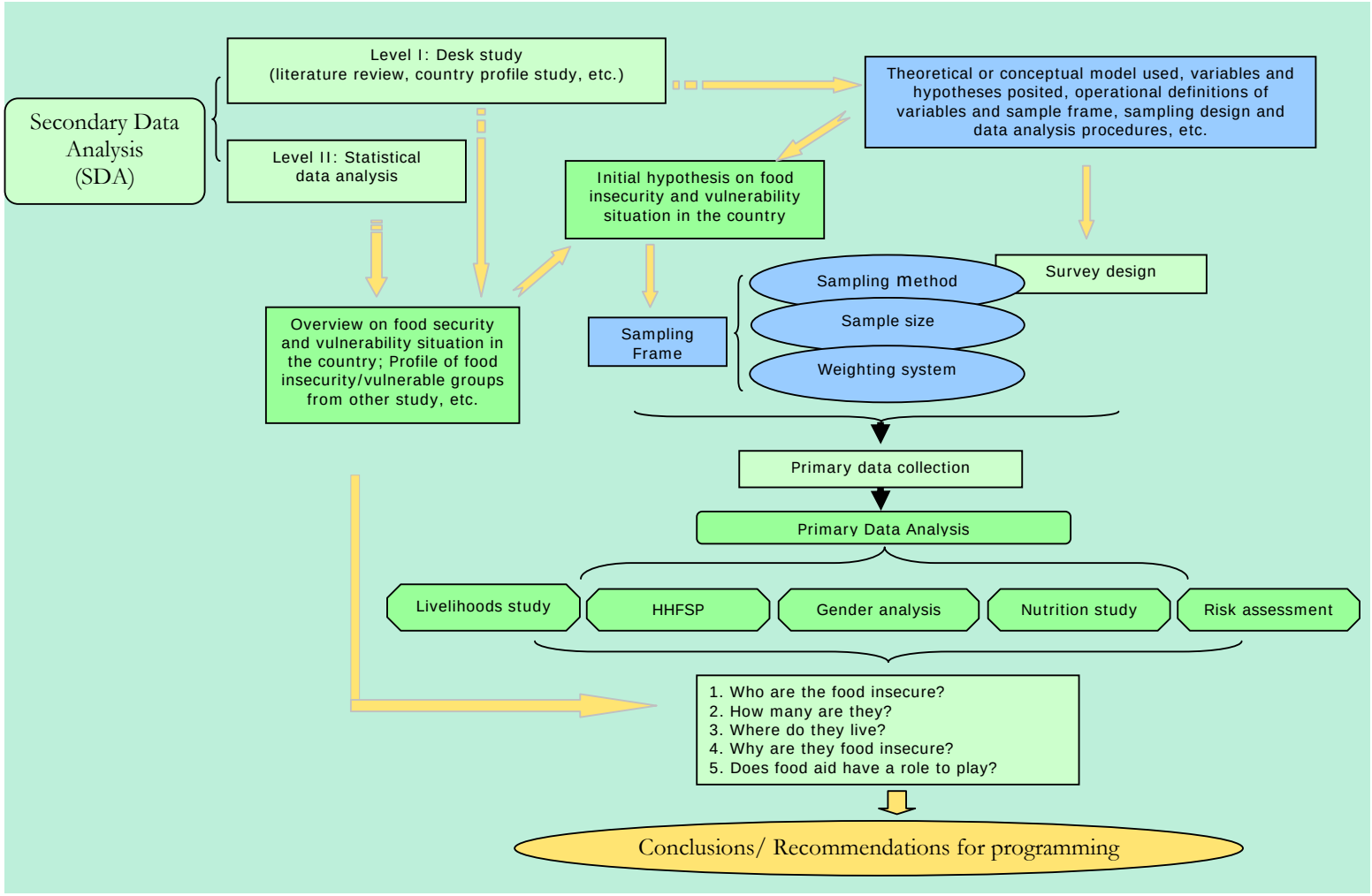
- In the World Bank Analysis Guide of Risk, Vulnerability & Vulnerable Groups, vulnerability is defined as "exposure to uninsured risk leading to socially unacceptable levels of well-being".[26]

3.2.2 BUILD A SOLID ANALYTICAL FRAMEWORK

A solid analytical framework for the CFSVA with common indicators validated by external experts and academies is needed.[27] **Figure 3** is an initial attempt to layout the CFSVA analytical procedure. Along these same lines, a roadmap-style tool for undertaking CFSVAs is needed to explicate the broader framework within which the CFSVA functions, a framework that is consistent and compatible with the EFSA Handbook. It is recommended that the tools developed by WFP in support of CFSVA and related activities be more clearly delineated in terms of purpose and more clearly designed to complement to each other. For example, it would be useful to distinguish the different purposes and target audiences of handbooks, guidelines, manuals, etc.

[26] World Bank: Analysis Guide of Risk, Vulnerability & Vulnerable Groups
[27] This recommendation comes from the interview process.

Figure 3: Analytical Procedure for Comprehensive Food Security and Vulnerability Analysis (source: DISI)



3.2 Methodological Recommendations

3.2.1 Thematic Guidance

The thematic guidelines developed by VAM often start with a section that gives relevant definitions in one thematic area. Then in subsequent sections a common survey or analytical technique is described. For example, the gender analysis guideline gives some definitions of terms but is mostly about Participatory Rapid Appraisal (PRA) techniques. The Livelihoods Guideline does a good job of defining common terms from livelihoods literature and then also explains how secondary data can be used for macro-level analysis. The Household Food Security Profile document defines common food security terms but focuses mostly on multivariate analysis techniques.

Although only one CFSVA document is clearly marked as draft, the CFSVA guidelines require additional work to be finished. WFP has some produced some great guidance documents in the past that can be considered as reference. For instance The Participatory Technique Toolkit (2001) is well designed.

One possible route that could be taken for developing guidance might be to try to build upon the guidance documents that were developed by VAM. It is suggested that a broader range of thematic guidelines should be chosen while guideline format should be simplified as much as possible. For instance, a set of "cheat-sheet" cards with definitions, quotes, and sources for vulnerability, nutrition, health, education, water/sanitation, hazards, environmental analysis, agriculture, poverty, livelihoods, and gender may be quite appropriate. They could be laminated and distributed as a trading card type of package. More comprehensive guidelines or handbooks could also be created for analysis subjects like:

- Secondary data analysis
- Qualitative methods used in food security analysis
- Quantitative methods used in food security analysis
- Vulnerability analysis
- Nutritional analysis
- Spatial analysis
- Understanding food aid and other interventions.

The guidelines in their current form do not generally give lists, definitions or explain how to calculate common indicators, nor do they give guidance on the differences between individual, household and population indicators. This shortcoming should be addressed and once common indicators are identified, simple tools such as worksheets could be prepared for measurement and calculation of the indicators. These kinds of tools are very useful for ensuring the quality and consistency of surveys.

Another option for the development of normative guidance is to rethink the strategy for normative guidance to CFSVA activities. An interdivisional working group could be established to address programming needs and begin to develop a master strategy to roll out the required modifications to normative guidance. The guidance documents as they are currently structured do not necessarily seem focused on the specific information requirements of a CFSVA or how content in one subject relates to other information requirements. Reading the current rather disjointed set of guidance documents, there is almost the sense that a CFSVA could be done with

food security profiles, gender analysis or as a livelihoods analysis. Reviewers recommend that a systematic approach to the development of normative guidance *not* be topically organized, but present a comprehensive approach to meeting WFP programmatic information and advocacy requirements.

Reference and normative guidance materials come from a number of sources but would probably be better organized as part of an overall learning strategy. As in most cases, it is likely that resources for learning are limited. A strategy with clear objectives would need to prioritize learning objectives. There is a need to identify which types of documents are related to different learning objectives. A comprehensive learning strategy would probably include foundational documents such as:

- Conceptual framework documents
- Handbooks
- Guidelines
- Manuals
- Tools

Guidelines on programmatically relevant topics are not exactly the same as manuals that cover technical subjects like sampling or a specific method of data collection like PRA. Guidelines have the primary objective of improving analysis and making analysis relevant to program design or advocacy. Manuals list steps that are to be followed in a specific situation or present general protocols. It is better to have a clear conceptual differentiation between documents that inform analysis and documents that are technically focused on a specific method or tool.

Develop a conceptual framework document for the CFSVA. It is recommended that a working group be commissioned to develop a framework document for CFSVA. Background documents on the application of social protection risk management and the livelihoods framework to CFSVA activities should be prepared. Finally, a workshop specifically focused on vetting a conceptual framework document for CFSVA should be convened. It could be seen as a follow-on to work done at the Strengthening the Role of VAM workshop in Dakar (2004). New and different participants external to WFP with backgrounds in risk assessment, social protection, livelihoods, nutrition, and economics of poverty should all take part in the workshop. A wide representation of WFP staff from programming, policy, technical units, logistics, management and other units in ODA could also have valuable contributions to the development of a CFSVA framework that meets WFP information needs.

Create guidelines for relevant cross-cutting themes. It is recommended that a list of cross-cutting themes that are relevant to WFP programming be prepared by VAM through consultation. Guidelines on programmatically relevant topics would support analysis of CFSVA results that would be more relevant for WFP program design or advocacy. In addition to the guideline on Gender analysis, other relevant subjects like HIV/AIDS, protection/DNH, disability, life-cycle and environment should be considered.

Develop technical manuals. It is recommended that a better practice review focus on the most promising techniques that might be appropriate in CFSVA activities. Different data collection methods like household surveys and participatory techniques probably need technical manuals that are appropriate to the scale and objectives of the CFSVA. Data analysis techniques could be expanded for CFSVA activities to include formal qualitative techniques, regression analysis, statistical testing, spatial analysis, and temporal analysis. One of the key challenges to

CFSVA might be to keep representation and analysis conceptually separate. For example, spatial analysis needs to be a separate manual from mapping. Graphs, tables and a document formatting or style guide would make an excellent manual.

Regardless of whether it is possible in the short-term to develop an overall strategy for CFSVA guidance, the review has identified specific steps to improve existing guidance. Following is a series of recommendations on normative guidance. These recommendations were collected and developed through the interview and research processes behind this review.

3.2.1.a General Form

- In moving the guidelines currently in development from drafts to final products, it is suggested that a standard format be identified and followed. A specific format is not currently recommended in this report as larger issues of normative guidance organization should ideally be addressed first.
- As mentioned in the Conceptual Recommendations section, a roadmap-style tool for undertaking CFSVAs, consistent and compatible with the EFSA Handbook, could inform the development of the tools developed by WFP in support of CFSVA. It would be useful to distinguish the different purposes and target audiences of handbooks, guidelines, manuals, etc.
- Include an evaluation of how common the approach presented is within VAM work and other common surveys.
- Always provide adequate bibliography (only two of the five documents have at present). Glossaries and informational notes should be included as well.
- Sources need to be included for the methods described in the guidelines
- They should follow standard structure, formatting and consistent content for different sections, text boxes and footnotes.
- Some improvement on CFSVA usability can be made through the provision of guidelines for standardized document structure:
    - Always include a clear and essential executive summary (first section), written in plain language, providing the main findings and the answers to the 5 VAM guiding questions
    - The analysis should be presented clearly and the findings justified. Outcomes useful for gaining an overview of the food security and vulnerability situation should be included in tables which can subsequently be incorporated in WFP country profiles and as inputs to survey design.
    - Compact tables with simple frequencies should be presented in the annex (third section)
    - Make the report complete with a short technical explanatory section[28]
    - A more in-depth explanation of how the sampling is decided should be included as a requirement in the template[29]
    - The report should ideally be shorter[30]

[28] This recommendation comes from the interview process.
[29] This recommendation comes from the interview process.
[30] This recommendation comes from the interview process.

3.2.1.b Sampling

This review recommends that the continued development of guidance and tools for sampling be made a priority. The following suggestions could be considered in this process:

Articulate the scope and purpose more strongly. Sampling is one of the more technical and misunderstood tasks in food insecurity and vulnerability work. The manual would be strengthened by an initial chapter that provides the context in which the household survey is being conducted. What are the key objectives of the household survey and what implications do objectives have on sampling design and sample size? The sample design and size are determined by the key objectives for conducting the survey. For example, the current version is explicitly geared towards estimating the prevalence and levels of household food insecurity. However, if one of the objectives also is to provide baseline estimates for on-going monitoring, then the sampling strategy and size would probably be different. Also, if the CFSVA household survey is not limited to food insecure areas that are likely to receive interventions, then the sampling strategy employed is unlikely to be appropriate for eventual evaluation purposes. Sampling is sufficiently misunderstood in the field that **a table outlining the different types of objectives for conducting household surveys and implications for sampling design would be useful.**

It also would be useful to describe key constraints that CFSVAs encounter, especially the fact that they are often conducted in fragile states where insecurity and lack of a good sampling frame may be important considerations demanding, sometimes, creative approaches such as variants of spatial sampling.

Include a section on geographic scope: the sample universe and domains. Another important consideration for CFSVA household survey work is the identification of the geographic scope of the survey. In some cases where food insecurity is widespread, the scope may be national. In other cases where food insecurity vulnerability is routine and localized, the household survey component of the CFSVA might be focused at the sub-national level. The discussion of geographic scope is a critical factor driving sampling design. It defines the sampling universe for the survey. The recent Malaria Indicator Survey guidelines[31] provide a good illustration of the treatment of this problem in the assessment of malaria risk.

Related to this concern is the identification of sampling 'domains' or geographic areas for which precise estimates of food insecurity are desired. For WFP, these may include administrative units or livelihood/agro-ecological areas. **What is important, however, is to distinguish stratification from the identification of domains**. These two terms should not be confused. "A survey domain is a subgroup of homogeneous units"[32] (e.g., subdivisions of an administrative region, livelihood zones) in which separate survey estimates are desired. "A stratum is a subgroup of homogeneous units in which the sample may be designed differently and is selected separately". Domains and strata can be the same but that is not always the case. One of the key

[31] ORC Macro, Malaria Indicator Survey: Guidelines for Sampling for the Malaria Indicator Survey, April 2005.

[32] UN Department of Economic and Social Affairs, Designing Household Survey Samples: Practical Guidelines, Series F No. 98, 2005.

implications is that, typically, WFP is interested in domains that are expected to display markedly different food insecurity and vulnerability characteristics. Ultimately, data are to be combined from the household survey with other information to determine programmatic actions. This last step generally aims to target and plan programs around administrative units. The problem of domain specification is an important one because it ultimately creates the boundaries on the total size of the sample.

Related to the issue of geographic scope and boundaries is the need for a discussion on how household survey data can be used in conjunction with other data sources to make estimates of food insecurity vulnerability. For example, the poverty literature has developed the idea of small area estimation based upon household survey data combined with census or administrative data.[33]

Enhance the discussion of sampling frames. The guidelines note that sampling frames are often problematic. However, this topic should be expanded. More detail should be provided about where to find sampling frames, how they can be updated with local level data, how their accuracy can be checked in the field and what procedures can be applied to data to accommodate the problem. It also is important to discuss the situation of sampling frames without population counts as this is a frequent problem in fragile state environments. Furthermore, as suggested by some of the staff interviewed, adding a methodological annex to the studies justifying the selection of sampling frames would be helpful for assessing the reliability of the study and for contributing to organizational knowledge on vulnerability issues.

Enhance the discussion of types of sampling. The guidelines should include a section on spatial sampling methods as this, too, has been utilized, especially in post conflict countries (Angola) or highly volatile settings (DRC). A comparison of spatial and population representative methods should be presented in terms of methods, advantages/disadvantages and analysis.

Clarify the specification of operational approaches to the creation of agro-ecological or livelihood zones. The sampling guidelines and other EFSA chapters refer to stratification by agro-ecologic or livelihood zones. While this is intuitively appealing, the empirical basis for generalizing the practice of stratification by zone--as currently operationalized--has not yet been demonstrated. The tendency for pre-stratification and domain identification by livelihoods or food economy zones to greatly increase sample size without adding much information useful for programming suggests that WFP undertake a more in-depth review of the relatively standard VAM approach to stratification (domains) based on zones, including the re-analysis of food insecurity indicator data from a sample of well-collected VAM data sets. Ultimately, it is very important that more specific and concrete guidance be provided to field staff to help them identify and frame zones, as well as understand how these zonal strata can be combined with a stratification of administrative units.

Specific modification of existing guidance

[33] Devereux, S.; Baulch, B; Hussein, K.; Shoham, J; Sida, H; Wilcock, D; Improving the Analysis of Food Insecurity: Food Insecurity Measurement, Livelihoods Approaches and Policy: Applications in FIVIMS, September, 2004. www.fivims.org.

- VAM sampling guidelines provide a good first step in describing how to undertake two-stage cluster sampling to estimate the prevalence of food insecurity/vulnerability. While details of approaches treated are technically appropriate, suggested enhancements to the guideline include a discussion of geographic scope, rational for selecting sample domains, the treatment of non-classical and unconventional approaches frequently required in fragile state environments, and when/how to weight sample results in analysis.
- In particular, Section 1.4 on stratification should be modified to reflect stratification to accommodate domains and stratification to increase sampling efficiency.
- In Section 3.2 on sample size for stratified sampling, it is important to distinguish domains from other types of stratification.
- Figure 1 in the sampling guidelines is somewhat misleading as the existence of a sampling frame is not the only criteria for choosing a sample design. Cost/practical considerations are very large. It is suggested that Figure 1 be deleted or replaced with a more complete decision tree.
- Replacement of households in the sample is brought up several times within the text. Most survey programs do not suggest replacement but rather increasing the planned sample size by 10% or more to anticipate the problem of abandoned or absentee households.
- Where some type of zoning is to be utilized to stratify survey samples, guidance should be provided to field staff to enable them to stratify such that they are also able to easily aggregate findings by administrative units.

3.2.1.c Household Food Security Profiling

The food security profiling guideline is good start; however, some possible refinements are suggested.

Normative guidance should more clearly articulate the various approaches that are being utilized to examine and estimate household food access/food insecurity. The role of anthropometric indicators in classifying the food insecure also should be addressed. Choices in the selection of indicators used to characterize food insecurity, vulnerability and household access quantitatively need to be more clearly articulated in some documents, and WFP should have a corporate statement about how it operationally defines food insecurity and food insecurity vulnerability. At present, while the profiling activity is useful for gaining insight into the nature of vulnerability, and could be utilized for classifying the food insecure/vulnerable, it stops short of that, leaving field staff with less guidance than they need to classify food insecurity vulnerability and to assess its relative determinants related to availability, access and utilization.

The reviewers' recommendation is that the **PCA/cluster analysis technique be identified and utilized as exploratory, but that more programme relevant indicators be used to classify the food insecure/vulnerable ultimately**. **Also, a more sophisticated integration of information on food availability and risk exposure/management should be brought into the analyses.**

Specific guidance is needed for the collection of data on expenditures, income and assets. Guidance also should articulate how the analysis of risks and shocks relates to the profiling exercise. Specific analytical advice is needed to enable staff to undertake PCA/cluster analysis and also advise on how to ultimately utilize results from these analyses to classify households

according to food insecurity and vulnerability. The sequential analysis provided in the VAM Guideline is convincing; however, it could benefit from an amplification of the *interpretation* of the tabular results. Examples of disagreement between food insecurity indicators and how these are handled would also improve the utility of guidance. A summary of indicators and how these are handled would improve the utility of guidance.

The information on food/non-food consumption, income, wealth index, food frequency and risk index are very useful in setting a benchmark to identify food insecurity/vulnerable groups, but none of them should be used alone to classify population. One suggestion is that a vulnerability index be built from a combination of this information, utilizing techniques like PCA and cluster analysis. The best way to evaluate vulnerability and classify food insecurity of different groups would probably be to present a convergence of evidence to a group of experts. Outcome indicators, indications from exploratory techniques, and structured outputs of formal qualitative activities all provide the analysis with a piece of the complex food insecurity picture. This information needs to be organized through a risk analysis or vulnerability lens and evaluated by qualified analysts to have the best chance at assembling an accurate description of food insecurity.

It is also recommended that the guidelines outline more standard approaches to the utilization of the cluster results to inform the selection of cut points for classification of dietary inadequacy. More generally, the PCA/cluster profiling exercise should be articulated as one piece of an overall strategy to identify and quantify the food insecure and those vulnerable to food insecurity. The role of PCA cluster as a technique should be more clearly identified as exploratory in the view of these authors.

Below is a list of specific points in the current guidelines that should be clarified or modified:

- Consistent use of the term modified food groups rather than food items
- Eliminate box in page 24, which is not useful as currently described
- Page 14 suggests that access to assets should be used but the module example is ownership. This should be rectified
- On page 4, delete reference to the use of indices or clarify it
- On page 20 cluster groupings are classified as having acceptable, borderline or unacceptable food consumption. However the basis for classification is not presented. It should be included.

3.2.1.d Nutrition

Normative guidance should probably **describe how different nutritional indicators are utilized for pre-crisis/CFSVA versus emergency applications**. This is not done in current guidance. The CFSVA can include analysis of secondary data on trends in multiple nutrition and health indicators, including an analysis of the extent to which food is actually a determinant of nutritional risk. CFSVA should also analyze indications of chronic nutritional stress of populations, which includes height related indices and adult body mass indices. Guidance should include or reference **what is known about the response of the different anthropometric indicators to shocks and relate these indicators within the CFSVA to expected nutritional impacts in country**. For example, where might *oedema* be expected? In which areas of the country is chronic malnutrition high enough to result in rapid deterioration of health and nutrition as a result of shocks? **Cultural practices that buffer shocks also should be included in the analysis, and some guidance provided**. For example, in some areas of the world

children are protected but the elderly are more likely to feel the effects of shocks. Guidance might organize considerations for CFSVA around a livelihood type analytical framework focusing on current food insecurity and vulnerability factors that will mediate the exposure to shocks in the future.

A clear **differentiation of indicators that should be used in pre-crisis/CFSVA work as opposed to EFSA** should be made. It would also be helpful to establish baseline mortality rates as part of CFSVA so as to better utilize crude mortality rates during an emergency (knowing the baseline). Guidance should also somewhere refer to differences that are currently found in the field with respect to measurement and summarization of anthropometric data as well as the impact of this on estimating malnutrition levels; this is a serious issue in field settings. For example, some organizations do not follow the convention of using child age to measure children recumbent or standing; some use percent reference median instead of Z-scores to classify nutritional status and some report in Global Acute Malnutrition levels instead of wasting. All of these differences can result in significant differences in field findings, which are highly relevant to CFSVA work.

For the purposes of CFSVA work, it would be useful to indicate **how secondary data** from common surveys such as DHS, MICS and other large survey programs **might be re-analyzed to better understand the role of food access** as a determinant of undernutrition and to compare this to other immediate determinants such as environmental, health care access and local caring practices (particularly with respect to child feeding). This need is treated in the VAM Guideline but should move more consistently through the logic of sorting out food and non-food causes. Similarly, the ability to resolve discrepancies between anthropometric and household access related indicators of food insecurity should be addressed more comprehensively somewhere in normative guidance.

One of the important strategic issues in the implementation of CFSVA is the **decision of whether to collect both nutritional status and food access measures** within the same household survey inquiry. The EFSA handbook attempts to provide guidance to field staff in this regard. However, these reviewers find that the EFSA handbook slightly confuses 'food security' information and information from specific data collection approaches such as the Household Economy Approach. The confusion is apparent where food security assessments are explained as being mostly based on purposive sampling, for example. In fact, whether food security is best assessed through the application of zoning and formal qualitative methods or household surveys combined with secondary data analysis is still contentious in the field. Perhaps language related to the selection of techniques should more clearly relate to the urgency of the assessment (suspected immediate crisis) as opposed to the type of information that is desired, e.g. "food security".

There is significant overlap in the material included in the VAM nutrition and health guideline and the EFSA Chapter Six. As noted above, the reorganization of normative guidance could streamline the guidance and make it more efficient for field and headquarters staff to use.

Other considerations include:

- Secondary data sources for nutrition are regularly included in CFSVA documents, but primary data collection can be often essential, as nutrition indicators are the basic outcomes of food security. Child anthropometrics might provide objective and robust information about household food security if consistently collected in CFSVA surveys.
- Guidance could be strengthened with respect to micronutrient indicators and how they are collected and interpreted.

- The studies should indicate when specifically the data were collected and which season is reflected by the survey.
- Analysis of the connection of maternal health/nutrition and household food security should be considered.

3.2.1.e Gender

- The part of the guidance that needs to be strengthened most at this point is clear guidance on what key indicators are most important during the CFSVA and how these can be utilized to plan forward information gathering activities and response.
- Gender issues also should be very prominent in the EFSA Handbook's conceptualization of the assessment framework as well as in field implementation of assessments.
- Although expert analysis of PRA focusing on gender relationships provides valuable information for programme design, participatory techniques are useful more broadly in qualitative data analysis for CFSVA, and they could be treated more effectively as a separate piece in the future organization of guidance.
- While household questionnaires and quantitative analysis are essential to food security profiling, and while WFP is making great progress in reporting gender-disaggregated data, qualitative information on gender relationships is not systematically collected. Focus groups and quantitative measures at the individual level seem to provide most information on gender.
- Reporting nutrition and health statistics disaggregated by sex is helpful in providing a gender perspective on food security and livelihood outcomes.
- Recommendations tend to target food-oriented projects to female-headed households and women, but there is not always a clear relationship between the recommendation and the food security analysis in the CFSVA. Justification for the suggestions should be researched and more explicitly presented in future studies
- Inclusion of intra-household dynamics of food and asset distribution might help explain gender differences in food security outcomes. This could improve gender sensitive programme design.
- It would also be quite helpful to disaggregate nutrition and utilization indicators by household headship.
- CFSVA surveys that primarily relied on household questionnaires and quantitative analysis techniques did not add significantly to an understanding of how gender might affect household food security.
- Income, disability and dependency ratios might be better indicators of vulnerability and food insecurity.
- Mother's education level is correlated to children education and health level. Including this information would improve the CFSVA.
- A module on intra-household food security might strengthen a CFSVA document for appropriate project design.

3.2.1.f Livelihoods

Overall, normative guidance on the use of the concept of livelihoods and livelihood analysis in CFSVA is an area that can be strengthened.

- Elements of livelihood analysis and some of its terminology are being incorporated into CFSVA; however, the integration of risk exposure/risk management assessment and analysis should be developed
- Livelihood zone, livelihood groups and livelihood framework should be clearly delineated as they are analytically distinct activities
- For risk assessment, there exists a problem of classifying the covariate risk and idiosyncratic risk. A guideline or special chapter on risk assessment is recommended to inform the measurement and analysis of risk exposure/management
- Social and political capital should be systematically collected and analyzed as part of CFSVA.
- The conceptual framework for measuring food insecurity/vulnerability should consider risks, risk exposure and risk management as well as "welfare outcomes" that include measures such as nutritional status, consumption, mortality and other key measures that CFSVA is attempting to both quantify and explain. It would be possible to adopt a fairly comprehensive livelihood framework to focus on food insecurity/vulnerability as the analytical goal.
- CVSVA could benefit from a description of how livelihood analysis fits into the analysis and particularly how the analysis and CFSVA should inform the modeling of the impact of risks/hazards on different livelihood and wealth groups.
- If livelihood zones are to be retained as a stratification factor for CFSVA work, then refinement of normative guidance in constructing these zones is critical.
- The guidance on measurement of risks/risk exposure should be augmented.

3.2.1.g Statistical and Spatial Analysis

- Statistical analysis methodologies can be treated more extensively and in depth.
- In the methodological section of the reports it would be a good idea to report the types of tests run.
- Very little multivariate analysis is run on nutritional data (some two way appears, but little or no regression analysis is run) in most of county study.[34] Use of multivariate analysis could be increased.
- More attention should be given in normative guidance to the use of weights and statistical testing.
- Where a non-self weighting sample is used, weights should be applied in the analysis.
- Although unweighted estimates made across zones are often referred to as representing the *sample* and not the *population*, these numbers are still likely to be interpreted by the audience as population level estimates, and used to calculate and answer the basic question "How many hungry poor are there?". This distinction should be made extremely clear.
- The design effect of cluster samples and stratification should be reported.
- The effects of cluster sampling should be accounted for when running statistical tests.

[34] Multiple regressions are applied in Niger and in Uganda CFSVA. No detail information on regressions was reported in the papers.

- Care should be taken in the construction of agro-ecologic zones. They should be tested thoroughly post hoc for homogeneity of results within zones.
- Survey data could be linked with other geospatial data (including other geospatially referenced VAM datasets) to look at other factors influencing food security
- Methodology for PCA/cluster analysis should be documented in more detail.
- The statistical significance of the food security groups defined by PCA/cluster analysis should be reported.
- A manual on spatial analysis would be useful normative guidance to CFSVA activities. Discussing analysis techniques in this section of the document is beyond the scope of the review, but these distinctions may be helpful in looking at possible spatial analysis for CFSVA survey results.
    - Representation might include:
        - Location maps
        - Thematic maps
        - Program resource or programming maps
    - Spatial analysis might include these common techniques:
        - Spatial techniques
            - Overlay
            - Boolean analysis
            - Buffering
            - Distance metrics
            - Interaction metrics
        - Statistical spatial techniques
            - Location can be included as an indicator in ANOVA or MANOVA(with some special diligence)
            - Distribution statistics
            - Directional/trend statistics
            - Spatial covariation
        - Network analysis
        - Spatial modeling techniques
            - Spatial regression
            - Kriging and complex spatial modeling

3.2.1.g Market Analysis

- Greater depth of market analysis is needed (goods market, labor market, credit market, etc.) is needed.
- Secondary data must be analyzed in order to capture the real market status. Inflation, and changes in income level are necessary to assess purchasing power.
- CFSVA should provide recommendations on how to improve the market situation and cope with shocks on the market.
- Sub-surveys on market prices should be carried out whenever possible.

5.2.2 Articulate a complete set of tools

The creation of standard procedures for the survey design and the analysis process should help speed up the work required in completing a CFSVA. A conceptually coherent, complimentary and succinct set of tools to lead field workers through the process of designing, organizing, analyzing and presenting the results of CFSVAs would be a significant step forward

for the CFSVA. VAM should provide field staff with a set of template reports, questionnaires, indicators, analysis plans, checklists. Samples of all these categories should be available through a VAM Information System (see the Corporate sections of this review).

5.2.2.a Tools for undertaking a good desk study

There is currently no consolidated guidance on this subject in VAM. It could be easily developed and benefits would likely be great.

5.2.2.b Tools for secondary data analysis of temporal data

Provided a solid methodology exists, study design should be defined on a case-by-case basis; it is very important to remember that secondary data analysis can sometimes be enough.[35] Therefore appropriate guidance on the kind of data to gather, the most reliable sources, together with general instructions for interpretation should be provided.

5.2.2.c Tools for primary data gathering

In terms of primary data gathering, guidance needs to address how to decide among technical options. There should be details on specific tools for the indicator areas: anthropometry, dietary consumption, expenditure, income sources, assets, other welfare measures, risk exposures and risk management. Techniques for survey data collection more generally should be described, including sampling, survey construction, implementation, data management. Tools for collection of qualitative data should also be developed.

Short information notes, checklists, and templates could be prepared for certain aspects of VAM surveys. These may include subjects like working with partners, informing communities, team safety, data collection checklist, data entry checklist, presentation skills, and document templates.

5.2.2.d Tools for analysis of qualitative and survey data, including geospatial data management and analysis.

Templates for analyzing a variety of dimensions of food insecurity/vulnerability should be included; sources of secondary data for analysis should include the types of analyses that should be produced and how these should be used to design a CFSVA.

WFP should consider the development of seamless data collection and analysis/presentation tools in collaboration with other key food insecurity/vulnerability analysis actors such as FEWSNET, FIVIMS, etc. In general, it appears necessary to strengthen the use of spatial analysis throughout the whole CFSVA process, and to increase the production of maps for presenting results.[36]

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[35] Recommendation from interview process.
[36] Recommendation from interview process.

5.2.2.e Operationalizing VAM findings

The issue of transforming VAM findings and recommendations into an actual implementation plans. [37] It would be an opportunity for a broader discussion of whether or not there is a need for VAM to help define and standardize the process for operationalizing the results of the CFSVAs. [38]

In order to improve the effectiveness of CFSVA recommendations, one possibility would be to implement an ad hoc survey module oriented at verifying the correctness of the beneficiary selection process. Based on sampling approach, a verification module could constitute the first assessment in the FSMS process and bridge two different tasks: provision of programming input (a task VAM has had since its beginning) and verification of impact (more recent expectation).

3.3 Corporate and Staffing Recommendations

3.3.1 Information System to operationalize a comprehensive information strategy

It is recommended that a complex and comprehensive **V**AM **I**nformation **S**ystem (or **VIS**, which means 'strength' in Latin) be designed to support VAM work. It should be aimed at developing complete institutional memory and at creating a community of practice. This community, built upon a common core methodological framework, would facilitate the exchange of available tools and good practices for surveys and analysis. The VIS, ideally integrated with a rigorous and well-established incarnation of VAMSIE, would encompass the following features:

- A corporate data model that outlines the specific information needed by WFP to carry out its mission
- A single and comprehensive presentation of guidance materials
- Tools for organizing and archiving reports and data sets, and for disseminating results and sources
- Functionality for documenting administrative process
- Collaboration tools for adapting survey template and analysis guidance
- Functionality for dissemination of results of analysis, of data collected, of knowledge developed

3.3.1.a A corporate data model that outlines the specific information needed by WFP to carry out its mission.

A corporate data model should specify an operational definition of food insecurity and vulnerability (as used by WFP) as well as the core indicators that are needed by the Agency to be effective. This is more than a "Compendium". In fact, it should specify priority indicators, how they are defined/measured and how they are combined with other information to inform WFP

[37] Recommendation from interview process.
[38] Recommendation from interview process.

programs. This exercise would inform the detailed design of data model and information architecture for the VIS.

The relationship between VAM and the Early Warning group in HQ, which works on defining list of countries of concern (CoC) according to observed EW trends, should be developed in order to inform the prioritization of CFSVAs. Communication could be strengthened between Sit room and VAM (at HQ, RBs, COs) to improve the strategic planning behind the choice of where to perform analyses. The early warning reports could also benefit from more systematic use of VAM key indicators and information such as market prices, food availability and malnutrition. The sources should be the VAM COs, but could also include other agencies or partners at the country level. The strengthening of early warning activities for specific countries with reinforced monitoring could be activated per initiative of VAM or the Early Warning group. A collaborative tool is needed to allow HQ and field actors to interact and keep tracks of changing situations through the same platform. Both narrative description and numeric data are required. A database of VAM analyses should be part of the VIS and it should include as metadata which conditions prompted each of them.

The process for selecting countries in which CFSVAs will take place is not yet as deliberate or rational as it could be. It is important that WFP have a guiding strategy for the implementation of CFSVAs. The framework for selecting countries should probably be driven by WFP's core mission first, that is, to work in food insecure countries. Consistent integration with other functions and units in WFP should be pursued. For example, the VIS could build on the outputs of the WFP early warning group which regularly disseminates updates on countries of concern.

With regard to country selection, emphasis should be placed on areas of the world where chronic food insecurity is high and where there are greater population concentrations. Fragile states (those that are particularly vulnerable to the effects of risks and hazards) could also be prioritized, along with areas where WFP has a comparative advantage to leverage or implement a CFSVA. Regardless of the specific criteria used for country selection, **a key need is to have a framework for prioritizing and implementing CFSVAs**.

The Contingency Planning exercises, at present coordinated mainly by ODAP, should be performed after each CFSVA. **The risks assessed by the CFSVA should be major inputs for the CP, along with the distribution of the proposed beneficiary population**.

The review team strongly suggests that this type of information strategy will help ensure that WFP is increasingly ahead of the curve in preparing for crises, and that it has a better chance of contributing to global goals such as the Millennium Development Goals.

3.3.1.b A single and comprehensive presentation of guidance materials

The VIS should guarantee the availability of:

- CFSVA relevant WFP background documents
- All CFSVA guidelines
- Targeted bibliographies
- A glossary
- Methodological tools
- Administrative tools for survey planning
- Templates for reports and guidelines
- Editorial guidelines

3.3.1.c Tools for archiving, organizing reports, data sets and disseminating results and sources (this appears to be in progress to some degree)

The VIS should strengthen what the VAM site has begun to guarantee, i.e. the accessibility of all VAM studies and the completeness of the process documentation. Each CFSVA should have an ID so that all the material submitted will be connected to a study. VAM studies carried out for programming activities are likely to be most relevant to WFP information needs, and it is therefore recommended that studies done in National Offices are used for the development of VIS.

Good examples of situation analyses and discussion of survey findings can be made accessible to analysts working on CFSVA reports through the VIS. Background information on survey implementation relevant to food security and vulnerability can be captured and shared through metadata, and could help in developing awareness of CFSVA by putting studies and results into context through online discussion.

These features, combined with the provision of tools for synthesizing reports in plain language and graphical summary, would constitute a core functionality of the VIS, that is, **to transform information produced throughout the CFSVA process into institutional knowledge on vulnerability to food insecurity and the analysis thereof.**

As VAM is expected to be the knowledge base on vulnerability and food security, theoretical references on issues (including ongoing debates) which are considered and used in the design and performance of all CFSVAs should be included in the VIS as well. Each CFSVA **literature review** should be an occasion to increase the digital library on vulnerability and food security issues, and each CFSVA bibliography should mention the theoretical background documents upon which it relies. Other more innovative solutions for promoting a broader basic knowledge of food security and vulnerability within WFP (and partners) can be integrated in the VIS at the country level.

Secondary and primary data selected and examined should be stored with comprehensive metadata (source, accuracy, purpose, comments and interpretation, and interim reports on data analysis). Selected indicators (demographics, geographic distribution, mortality, education, malnutrition, access to water, risk, coping strategies, etc) could be extracted and presented in tabular format accessible through intranet in order to provide WFP with standard country profiles containing comparable information. VAM officers could update these over time and users could access them through a temporal filter.

A series of tables of extracted of findings (and data) deemed important for various WFP unit/functions (in particular ENA, Early Warning, baseline study, monitoring) could be prepared, with their content and form customized to precisely match the information need. For example, a synthesis for Contingency Planning inputs could provide:

- Number and demographics of population
- Number and demographics of vulnerable and food insecure
- Their location
- Vulnerability issues and concerns (risks and population concerned, likelihoods, copying strategies, etc)
- Gender considerations

Finally, quantitative data should be aggregated into tabular reports of frequencies with confidence intervals, and qualitative data properly stored and made accessible. **The presentation of data and findings in standard format is a critical step towards comparability of results over time and between countries**.

Once a CFSVA is performed, **documentation on sampling** should be provided to the Food Security Monitoring System, thus connecting the monitoring activity with the CFSVA findings for primary data collection. Documentation of sampling choices and details of the interview process guarantee the feasibility of panel data collection, which can be used for monitoring changes in the livelihoods of beneficiaries.

3.3.1.d Documenting administrative process

In order to develop administrative capacity in survey design, aside from what has already been described, the VIS should include information on:

- Duration of CFSVA exercise and of each phase
- Costs
- Staff involved
- Follow up (including utilization for programming decisions, input retained by other WFP functions, actions by National Government and partners and connections to the Food Security Monitoring System findings)

3.3.1.e Collaboration tools for adapting survey template and analysis guidance

The VIS should integrate simple collaborative tools enabling VAM officers to communicate survey design to the wider community of practice (other VAM staff and technical support in HQ) *before* it is actually implemented. For example, an ID for a survey would be created in the VIS along with a date given at the beginning of the process, justification of need and the source of funding. Then a set of information on survey design could be provided by VAM officer:

- List of secondary data considered (complete with source and date)
- Presentation of methodology:
    - A table like **Table 9** could be completed documenting what indicator is to be considered at each level and how is each indicator going to be measured.
    - The sampling frame should be explained.
    - The benchmarks considered should be defined and justified.
- A description of instruments and informants for the qualitative assessment should be provided.
- A presentation of the questionnaire and of what every question is supposed to measure should be provided as well.

The VIS can subsequently notify all VAM officers and VAM HQ that a new CFSVA ID has been opened. There would then be a limited amount of time (e.g. 5 working days) for contributions and input, and finally for VAM HQ to approve the design and/or give recommendations.

Table 9: Example Table for Documenting Methodology in a VAM Information System (VIS)				
	Outcome	**Benchmark**	**Proxy**	**Descriptive**
Group (Community, IDP, Region)				
Household				
Individual				

1) Example Outcomes (directly related to the object of the study; always possible with availability)
   * Consumption
   * Nutrition
   * Disease
2) Example Proxies (mainly for access and utilization)
   * Income
   * Acute illness
   * Chronic illness
   * Source of water
   * Anemia
   * Night blindness

VAM studies do regularly experiment with new approaches and techniques in addressing food security and vulnerability issues, and standardization should not preclude this. Experimental surveys should be accommodated, and the VIS platform should provide the necessary structure for documenting the use of non standard methodology, possibly performed along side the regular study.

Distance training modules for newly recruited VAM officers should be also developed and available through the WFP intranet and the VIS, including modules on the use of simple spatial analysis techniques (see the Learning Strategy section below). Forums for discussion of methodology should be set up in the VIS as well, and a moderator should periodically consolidate the results of discussion in VAM discussion papers.

3.3.1.f Dissemination of results of analysis, of data collected, of knowledge developed

The production of vulnerability reports in textual format is not enough to make the impact on organizational knowledge that is expected of the CFSVA. It is therefore recommended that VAM focus on the development of a proactive information dissemination strategy. Improvement of the overall availability and usability of the data and information products--as the above recommendations envision it--will foster a better understanding of how food security changes over time. However, further organizational actions inside and outside WFP must be taken to make the proper impact on programming. Making the programme staff part of the design process is one essential element.

The OD Directive 13 October 2005 requires VAM officers to participate in a programming meeting at CO level. As was formalized in the SAF guideline, a meeting at CO level in the analysis process (after 'Situation Analysis' and before the actual survey) should be considered to discuss the vulnerability issues and develop common understanding of how they can be tackled by a WFP programming scheme. Normally a presentation of the CFSVA findings is organized for NGOs and government, but it could be extended in a **more structured workshop where implication for programming and for PRSP are analyzed and discussed with similar techniques**.

If the results of a CFSVA recognize no comparative advantage in food aid intervention, actions for dissemination become particularly necessary. In general, the more comprehensive the analysis becomes the more inclusive and considered should be the advocacy process in order to

help others with a more appropriate mandate follow up. Meetings and workshops can be the main means of dissemination, but a **web-based distribution** should be provided too; at present, **no CFSVA are on Reliefweb, probably the most widely used common source for humanitarian and developmental actors. This action should be taken immediately** and the VIS should be structured to feed web sites used by the humanitarian communities with timely information on finalized CFSVAs.

3.3.2 FOSTERING INTERNAL INTEGRATION: WITHIN VAM AND THE REST OF WFP

It is important that VAM develop a concept of the CFSVA that informs and accommodates a formal process for implementing consistent, correct and relevant studies. Where methodology needs to be made more standard, explicit and complete, the steps for performing the studies should be connected in a sequential fashion, starting with literature review and SDA to inform the survey design. However, less standardizable, country-specific needs must additionally be considered, including assessment of the availability of SDA, definition of timing, partnership, capacity building and advocacy.

In order for VAM to be effective in promoting standardized and comparable vulnerability analyses across countries and within WFP's decentralized structure, a solid community of practice should be established whose methodology and organizational behavior is informed by common guidelines and kept alive by regular thematic conferences, workshops, discussion papers and other appropriate means. Furthermore, development of good practices through regular collective revisions, evaluation of cases, assessments of indicator robustness and authoritative contributions from external academies could be important contributions to this process as well.

It is important that the analytical functions in ODA are tightly integrated and define their specific points of contact. Early warning could help define the countries of study, and inversely the choice of EW country indicators should be informed by the vulnerability profiles identified in the study. CFSVA could also contribute more to contingency planning. Strengthening opportunities to collaborate with units like Monitoring & Evaluation on the collection or analysis of panel data would provide important insights into the nature of vulnerability. Only through the collection and analysis of food insecurity and vulnerability information over time will modeling efforts become more rigorous and useful. Some level of primary and secondary data collection are performed in almost every country study, and developing a platform and a practice (along with practical manuals and training courses) for the systematic archiving and sharing of this country knowledge could go a long way towards the development of shared, advanced and up-to-date country profiles. These are essential for all WFP staff and partners.

3.3.3 FOSTERING INTEGRATION EXTERNALLY: PARTNERING, ADVOCACY, CAPACITY BUILDING

If VAM analyses are to be considered comprehensive, inclusion of different actors should be a priority. Having NGO partners on the ground for secondary and primary data collection ensures better coverage, sometimes making the difference in reaching areas inaccessible to the UN for security reasons. Developing partnerships with national governments can improve access to data and improve chances for success in advocating for the right interventions to help the hungry poor.

External integration opens up opportunities for VAM to build capacity among partner humanitarian actors and national governments as well as benefit from strategic capacity building

partnerships with Academies specializing in statistical and food security learning. **A specific guideline containing practical model 'Memorandums of Understanding' and other administrative tools should be prepared.**

3.3.4 LEARNING STRATEGY

Within WFP, VAM is viewed as responsible for developing corporate knowledge on vulnerability. Its performance in this role should be formally carried out through an intentional and measurable learning process. The transformation of VAM studies in CFSVA for programming needs requires a corporate effort to systematize methodology, make explicit requirements and produce good practice guidance which ultimately becomes common knowledge. This review, along with others realized within the SENAC project, is part of this process. Deliberate action should nonetheless be taken to ensure sustainability and effectiveness of this learning process.

A foundational document on the purpose of CFSVA is necessary, indicating background references and presenting methodological and organizational instruments. It should articulate the restructuring of guidance materials, starting from a framework based on an agreed model of vulnerability to food insecurity, and including the instruments to analyze it. It should choose the proper process and output for addressing each necessary function: conceptualization, operationalization, training and evaluation. Following is a list of actions that could be taken to initiate the process of developing and implementing an intentional learning strategy:

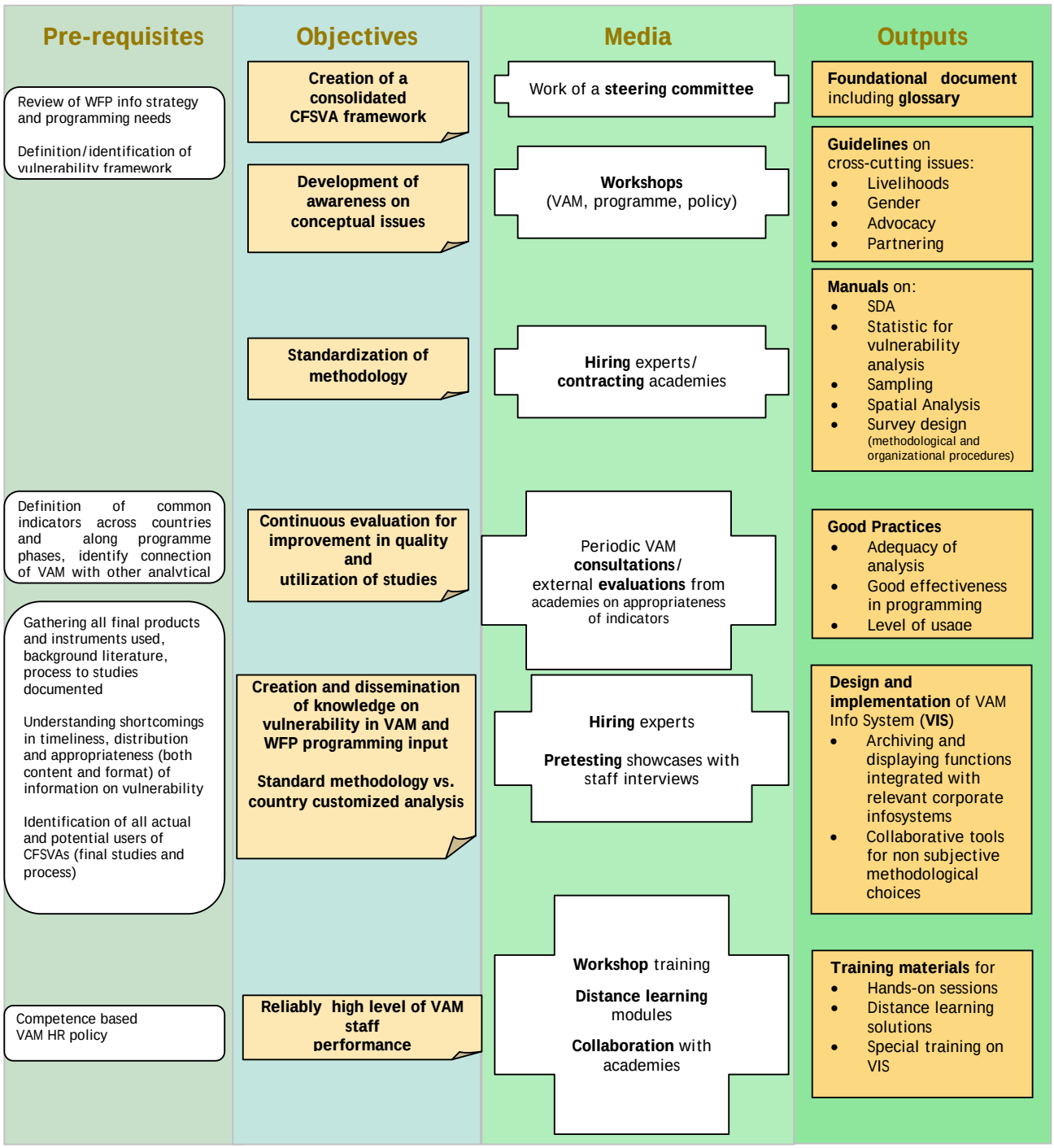
- Workshops to develop guidance on conceptual framework for CFSVA.
- Technical consultation with subject area experts to develop manuals for methods and techniques.
- Consultancy, consultation and workshops to develop guidelines for cross-cutting themes (like gender and environment). The point is to bring together experts in programming with subject area experts.
- Partnership with a distance learning and capacity-building institution to consolidate, package and present the materials that are developed as part of the CFSVA learning strategy.

Figure 4 outlines a quality-oriented learning strategy focused on:

- Ensuring relevance for programming objectives
- Ensuring robustness of analysis
- Ensuring reliable high level of staff performance

Significant resources may be needed to support this effort. The number of potential stakeholders would be large and include the extended humanitarian and developmental aid community, National Governments and other units in WFP. Such a Learning Strategy is really a natural outgrowth of the 10 years of practical application of vulnerability analysis by the VAM unit.

Figure 4: Inputs for a VAM comprehensive learning strategy oriented towards strengthening robustness and effectiveness of CFSVA (source: DISI)



3.3.5 STAFFING RECOMMENDATIONS

To ensure a level of quality and consistency, competency-based assessment of staff potentially involved in CFSVA activities is suggested. Particularly if manuals or guidelines are already prepared, a competency-based assessment is fairly straightforward. Subject area experts are identified within or external to WFP. These experts develop a list of specific tasks that staff competent in a particular subject area could perform. To pass a competency-based assessment, someone who would be involved in CFSVA would submit documents, correspondence, pictures, or other material indicating that that they have done things similar to those tasks described in the expert task list, and the experts simply vote on whether someone is competent. Before someone new to CFSVA does statistical estimation of food insecure populations for example, it might be a confidence building measure to have a group of experts make sure that the analyst is competent in statistical estimation.

Many of the techniques and programmatic topics relevant to CFSVA activities require expert consultation in normative guidance, activity design and analysis. In addition to developing this capacity in-house, VAM may consider developing institutional arrangements with academic, private consulting, or policy organizations that have capacity in key areas of interest. Institutional arrangements have several advantages over short-term consultancy. Many institutions learn and teach from knowledge gained from working with WFP. This means that more qualified junior staff may become available to recruit in order to meet growing needs for analytical capacity. Institutions often have people available to help on short-notice or at inconvenient times.

Depth of staff at institutions means that backstopping can be handed off in the network to someone who is available to help if a primary point of contact is busy. Institutions can grow together. As certain activities become more common, additional capacity can be built in partner institutions without a burden on WFP human resources.

To summarize:

- Adopt competencies based evaluations
- Adopt a more focused selection of technical staff
- Develop agreements with Academies
- Involve the institutional partners, the NGOs and other agencies more closely, in all phases. In particular, strengthen the work on advocacy[39]
- Improvement in planning of responsibilities, clear terms of reference for HQ, RB and CO[40]
- It is recommended WFP secure through a consulting agreement or hire a sampling expert who can augment and work with the VAM team sampling. Another approach would be to work closely on sampling with other agencies that have particular expertise and depth in sampling such as ORC/Macro, the US Census Bureau, or others

Involve the programme staff more in all steps: survey design, preliminary findings, presentation[43]

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[39] The recommendation comes from the interviews.

[40] The recommendation comes from the interviews.

4 CONCLUSIONS

The CFSVA is a critical tool for the rational planning of WFP programs in emergency and non-emergency settings. If well conceptualized, defined, executed, analyzed and disseminated, CFSVAs can significantly inform contingency planning, on-going monitoring and EFSA.

Among the documents reviewed, common themes for CFSVA objectives were recurrent:

- Systematic collection of data required for contingency planning, including disaggregated population and low level administrative data
- Quantification of chronic food insecurity and vulnerability to food insecurity
- Increased understanding of the nature and distribution of food insecurity and vulnerability to food insecurity
- Identifying specific "livelihood", socioeconomic and geographic groups that are particularly vulnerable/food insecure and understanding the dynamics of vulnerability
- Analyzing the likely effects of shocks and hazards on food insecurity (including through the use of trend data)
- Identifying vulnerable groups and locations as well as indicators for forward monitoring of food insecurity/vulnerability

Outputs of CFSVAs could benefit from further standardization in content and format. Essential analysis activities, such as the analysis of time trends in key food insecurity and vulnerability indicators, risk modeling, provision of information for contingency planning and the identification of indicators and strategies for on-going monitoring are not typically a part of the CFSVA report. They should be. The studies sometimes shift toward *assessment* at the expense of the *analysis* dimension. They are not yet developed in full integration with programming needs, nor are occasions for partnering with other authoritative actors or capacity building partners always capitalized upon. This is predominantly a consequences of the fact that the CFSVA remains in need of solid definition of scope, purpose and methodology.

It seems critical to remember that CFSVA is an analytical activity rather than simply a survey. As an analytical activity, CFSVA is intended to provide comprehensive information on food insecurity and vulnerability to food insecurity. The process of undertaking secondary data analysis as a step in the CFSVA is still relatively underdeveloped. And the role of secondary data analysis in informing CFSVA surveys, food security monitoring and EFSAs still needs to be more clearly articulated in normative guidance. The secondary analysis appears to be carried out as an almost parallel activity. In numerous cases, the secondary data analysis activity might substitute for primary data collection or it might help to direct primary data collection towards specific geographic areas and specific information needs arising from the analysis. Missed opportunities to analyze or collaborate with others in the analysis of panel data, where available, will give important insights in to the nature of vulnerability, which implies an interest in predicting the impact of shocks on food security. Only through the collection and analysis of food insecurity and vulnerability information over time, will modeling techniques become rigorous and useful.

The team found that the SDA, in general, is not being implemented as expected, though this may in part be due to lack of normative guidance and capacity within WFP. In many cases, poverty surveys that are increasingly emerging to both inform the PRSP process and monitor progress towards millennium development goals might meet part of WFP's CFSVA needs. In this case, CFSVA's might be largely based on secondary analysis combined with qualitative

inquiry and highly targeted granular data in specific areas of higher vulnerability. In fragile states, relevant secondary data may not be available. It is in these settings that large-scale primary data collection efforts should be focused. However, the reviewers have found that prioritization for primary data collection has not been optimal.

The focus of the CFSVA on providing core indicators that are most needed for WFP strategic planning needs to be reinforced. These might include food expenditure ratios, food poverty, inadequate dietary intake (if proxy measures can be calibrated); malnutrition as reflected by anthropometry and mortality (crude and under-five). CFSVAs also should focus on collecting (or collaborating with appropriate partners) and making data available that will be useful for further analysis of vulnerability, including geophysical and other geospatial data. Highly disaggregated denominator data and lower order administrative level data should also be gathered during the CFSVA exercise.

Through its food security profiling activities, WFP has generated useful approaches to understanding the nature and distribution of food insecurity/vulnerability by emphasizing a livelihood rooted analysis. The application of PCA and cluster analysis appears to be a useful way to explore these relationships, thus providing a basis for planning risk reduction and contingency programs, though its use to present final findings and conclusions about food insecurity/vulnerability requires further analysis. These techniques are not yet field friendly, which make it difficult for field staff to explain and use results. The PCA/Cluster guidance provided in the food security profiling guideline provides an overview and suggested strategy for undertaking household food security profiling. Some CFSVA's have deviated from this approach (by including too many variables in a particular step of the analysis) which generally resulted in less useful results.

This study uncovered several specific technical issues in the design and implementation of CFSVAs. These include most importantly:

- Stronger integration of information on food availability and risk exposure/management into the analyses
- Need for improved collection of expenditure data if it is to retained in the survey
- Improved collection and use of data relating to risk exposure/management
- More standardization of all key modules that will comprise the core CFSVA questionnaire
- More effective use of anthropometric and utilization information, including mortality in the CFSVA
- Strengthened sampling guidelines and tools so that field staff develop appropriate sampling strategies, sampling frames, weighting procedures and analytical plans
- A more rational and systematic approach to incorporation of livelihood zones in to the sample design. A systematic analysis of several data sets in order to review the value added of livelihood zones as a stratification factor should be undertaken
- Strengthened use of statistical methods and geospatial analysis in CFSVA
- Incorporation of georeferencing in all field data collection as SOP
- The need to rationalize normative guidance and to develop a cross unit approach to develop normative guidance and field tools.

The assessment also found that a number of organizational processes constrain the effectiveness of CFSVAs. These include lack of adequate **field monitoring** of CFSVAs, **timeliness** of CFSVAs and the **separation of closely linked analytical functions** within

different WFP offices. Furthermore, the assessment found that field program staff believed that they and their counterparts would benefit from a more **inclusive and systematic planning process** in the design of the CFSVA. The reviewers agree with this assessment.

More resources, financial and intellectual/human, are needed to systematize the methodology and create a strong community of practice through an intentional learning process. Internal dissemination of knowledge on vulnerability, capacity building and advocacy are essential part of this *comprehensive* action plan. Reviewers suggest two ways to approach the need for increased capacity in CFSVA activities. Once appropriate normative guidance is developed, competency based assessment of staff involved with CFSVA could be implemented. Institutional arrangements offer several advantages in supporting CFSVA.

Two organizational structures are recommended to support CFSVA activities. An information system is suggested as the first structure to support the magnitude and complexity of the CFSVA activities. Information relevant to vulnerability would be the basis of a CFSVA data model. It is recommended that the development of a CFSVA information system should be integrated with other functions at WFP. The CFSVA system should be developed on similar platforms with similar definitions and indicators as WFP with regard to preparedness, early warning, food security monitoring and EFNA.

The other organizational structure recommended to address WFP corporate CSFVA issues is the development of a learning strategy. The first step in the development of a CFSVA learning strategy would be to prioritize learning objectives. Sampling design, risk analysis, spatial analysis and anthropometric measurement could be recommended as priorities from this review. A consultation with experts and stakeholders is probably needed to create a comprehensive list of learning priorities.

A learning strategy can then be developed to meet these learning objectives. With the priority objectives as a guide, participants in capacity-building activities would be identified within the organization. A program of intentional capacity building would include the materials mentioned previously, some sort of interaction with subject area experts and peers, and evaluation of learning. Different types of activities are appropriate for some of the learning objectives identified in this review. Workshops might be the best way to develop some guidance on conceptual framework for CFSVA. Technical consultation with subject area experts is probably the best way to develop manuals for methods and techniques. Guidelines for cross-cutting themes require activities that bring experts in programming together with subject area experts. This is probably accomplished through a combination of consultancy, consultation and workshops. Consolidating and packaging the materials that are developed as part of the CFSVA learning strategy will require a different set of skills. This would be an excellent opportunity to develop an institutional arrangement with an organization that has a proven capacity in distance learning.

The SENAC project has been an opportunity for VAM to begin to rethink CFSVA as a tool to inform the development of livelihoods focused WFP interventions, both in emergency and non-emergency situations. Existing normative guidance and good practice can be built through evaluation of demonstrated strengths and weaknesses in current application, but new analytical and organizational structures may be necessary to meet CFSVA objectives. WFP background documents begin to describe an information strategy that requires comprehensive analysis to inform programming and to instruct advocacy. While the need for CFSVA to intelligently fit together with the EFSA processes is important, the respective ascription of the terms 'precrisis' and 'postcrisis' to the processes is probably misleading with regard to their actual

relationship. This obscures the utility of the CFSVA and the overall analysis functionality expected of VAM, that is, the development an overarching analysis framework for vulnerability and food insecurity, integrating a livelihood model. Defining the role of the CFSVA and describing the means to operationalize the framework remain the next important steps for VAM.

ANNEX A: TERMS OF REFERENCE

Development Information Services International (DISI)
Response to Terms of Reference for:
"Contents and methods of Comprehensive Food Security and Vulnerability Analysis (CFSVA)"

Introduction

The World Food Programme (WFP) has developed terms of reference for a review of its Comprehensive Food Security and Vulnerability Analysis (CFSVA) methodology.

In emergency situations, appropriate food aid interventions require reliable needs assessments that allow for effective targeting and efficient use of resources. Frequently, assessments are hampered by limited or outdated pre-crisis food security information at both national and household level. To address this constraint, several Country Offices with WFP headquarters support are implementing pre-crisis food security baselines studies -- Comprehensive Food Security and Vulnerability Analyses (CFSVAs) -- over a 2 year period in around 20 priority countries where information is currently inadequate or obsolete.

According to WFP the overall and specific objectives of the CFSVA are as follows:

A. Overall CFSVA Objectives

The CFSVA is undertaken by technical units within WFP Headquarters, regional and country offices. The overall objectives of these studies are:

- To provide information to WFP decision makers and other actors focusing on food insecurity on how best to programme food assistance through an analysis of which and how many people are currently food insecure or vulnerable to food insecurity, where these people are located, why they are food insecure/vulnerable (including which specific economic or other external factors affect their food security and which characteristics make them vulnerable to these factors), and how food or other assistance can make a difference in reducing hunger and supporting their livelihoods; and
- To improve the depth, scope and availability of country reports and datasets (numerical and spatial) for detailed secondary data analysis.

B. Specific CFSVA Objectives

Through an in-depth data collection and analysis exercise, the CFSVA will provide WFP and its humanitarian partners with information on:

- the areas and population groups that are the most food insecure and malnourished, including: how many they are, how they are distributed in the country; why they are food insecure, and how food or other assistance can make a difference in reducing hunger and supporting their livelihoods; and if, possible targeting criteria for the different socio-economic groups.
- specific benchmarks identifying and using indicators from which to measure post-shock changes;
- an understanding of changes in the vulnerability of these populations over time;
- an overview of how well markets function and are integrated, assuming the availability of adequate secondary data; and
- future risks for food security (e.g. from socio-economic, natural, political or other shocks) for incorporation in contingency plans.

The CFSVA is one of three principal emergency diagnostic and monitoring tools utilized by WFP. The other two are the Food Security Monitoring Systems (FSMS), and the Emergency Food Security Assessments (EFSAs). Development Information Systems International is responding to WFP's request for proposals to undertake an assessment of its CFSVA methodology.

The main objective of the work proposed by WFP is to assess how well the CFSVA meets the stated objectives and examine and suggest ways to strengthen the validity, reliability and efficiency of the tools and methods currently applied and recommended by the VAM unit.

Scope of Work

The CFSVA will be assessed as one component of the three information tools utilized by WFP to characterize the nature of food insecurity and vulnerability in countries and regions. The assessment will review the **relevance** of stated objectives in light of the broader WFP information strategy.

- The methodology of the CFSVA will be assessed, with specific emphasis on the following issues:
- Appropriateness of methods for the defined goals
- Appropriate analytical model
- Choice of data and information sources for secondary review and analysis
- Use of secondary data
- Geographic scope
- primary data collection and analysis
- Identification of primary data collection needs
- Geographic scope
- Sampling methods, universe and domain identification for sampling
- Choice of instrument and respondents
- Choice and use of food-(in)security indicators
- Analysis of the data, including the food security profiling (categorizing households in different vulnerability groups)
- appropriateness for application in difficult field conditions and with limited capacity of the analysts and limited logistical and financial resources
- scope and comprehensiveness of content and usability of data for monitoring, emergency assessment and contingency planning
- clarity and utility of results for emergency needs assessments and programming

Methods

a. Desk Review of Guidelines and relevant WFP methodological documentation: The DISI team will review relevant WFP guidelines, including CFSVA guidelines, EFNA, VAM guidelines and other documents to be agreed upon after the award of this purchase order. The three analysts will review different aspects according to their expertise. Dr. Mock will review gender, nutrition, household food security profiles, Dr. Rose will review livelihoods, data collection (related to dietary data and livelihoods), Nathan Morrow will review data management, physical data and spatial analysis. All three will review geographic scope and identify appropriateness of guidelines for field application. This activity will be completed and a five page discussion paper will be produced and discussed during the first Rome consultancy in November (preferably right before or after the SENAC TAG).

Comment: it would be better to look also at some existing CFSVA at the beginning of the review, since not everything is captured in the guidelines

b. Desk review of four previously conducted CFSVA, to be identified by the SENAC together with the researchers.

Utilizing the scope issues identified above, the analysts will review the four cases, identifying strengths (best practices) and weaknesses of the CFSVA. Issues requiring further clarification also will be identified for subsequent key information interviews. .

c. Discussion with key informants

As required during step (b), the researchers will interview analysts producing the CFSVA, VAM officers in HQ and in the field, emergency needs assessors using the CFSVA as inputs and other users of the reports.

d. Rapid assessment of all CFSVAs produced during the past two years

The researchers will rapidly assess the quality of CFSVAs produced during the past two years. The purpose of this aspect of the work is to assess the baseline quality level of CFSVAs. In this way, the team will be able to identify skills/competencies that appear to be generally weaker and stronger.

e. synthesis of findings and recommendations

The final phase of the work will entail synthesis of findings and development of recommendations for modification to methods and guidelines.

Outputs

- A discussion paper (of around 5 pages) will be presented at a meeting with the SENAC and VAM stakeholders after the completion of a. above.
- A draft project report that includes a. through e. will be produced for discussion with key stakeholders to be identified in consultation with WFP.
- A final report with all conclusions and recommendations as approved by SENAC executives.

Timeline and budget

Benchmarks:

Upon award of purchase order, conference call to lay out detailed work plan
Detailed work plan, October 10, 2005. ---- Nov 27th

- 5 page discussion paper on guidelines: November 10, 2005. Dec 27th
- Draft report, January 30, 2006 FEB 10th
- Final report, February 28, 2006 MAR 5th

The DISI team

The study will be led by Nancy Mock, President and owner as well as Associate Professor at Tulane University. Dr. Mock was a major designer of the Famine Early Warning System (FEWS) and has contributed to and evaluated numerous vulnerability analyses. Donald Rose is a nutritionist and agricultural economist with extensive experience in the assessment of food security data, especially household access and dietary data. He has published numerous articles on food security methods and the use of proxy measures for household access and dietary intake. Nathan Morrow is a vulnerability assessment analyst with specific expertise in the use of remotely sensed and geospatial data. They will be assisted by Isabel Raposo, an economist and analyst.

Capacity statement

Development Information Services International is a small business in Louisiana. The President and CEO is Nancy Mock. DISI has been in operation for seven years and is a corporation in good standing in the State of Louisiana. DISI provides evaluation and analytical services both domestically and internationally. DISI's clients include Chemonix and local law firms. DISI has undertaken vulnerability assessment work in Mozambique and it has provided statistical analysis services for class action legal disputes.

ANNEX B: LIST AND SUMMARY OF INTERVIEWS

Annex B: List of Interviews				
country	**contact**	**position**	**contacted**	**completed**
Niger				
	Koffi Akakpo	Vam Country Officer	x	x
	Sarah Gordon-Gibson	Deputy Country Office	x	
	Ibrahim ToudjaniAlou	Country programme officer	x	x
	Margot VanderVelden	Regional vam Officer	x	x
	Anna Horner	Country Programme officer	x	
	Paola dos Santos	Regional programme officer	x	x
Angola				
	Sonsoles Ruedas	Deputy	x	x
	Luc Verlest	VAM Country Office - consultant	not there	
	Mark Reino	programme officer	not there	
	Eric Kenefick	Regional Vam Officer	x	
	Ermelinda Caliengue	Vam Country Office	x	x
Nepal				
	Jean-Pierre de Margerie	Deputy	x	x
	LeelaRaj Upadhyay	M&E		X
	Pushpa Shrestha	M&E		X
	Peter.Scott-Bowden	Regional Programme advisor	on mission	
	Michael Sheinkman	VAM officer regional	x	declined
	-	Vam Country Office	-	
	William Affif	Programme Officer	x	X
	Parvathy Ramaswami	Regional Programme Officer	on mission	
	Menghestab Haile	Deputy Head of Vam	x	
Uganda				
	Tom Amolat	Programme coordinator	not there	
	Judith Lamu	Programme officer	not there	
	Jakob Mikkelsen	Programme coordinator	x	
	Amos Mwesigye	Programme coordinator	x	declined
	Ernest Mutanga	Vam Country Office	x	declined
	Loriston Alix	Deputy	x	Passed to programme staff
HQ				
	David Kaatrud	ODA, Chief	x	on hold
	Peter Horjus	VAM/SENAC Consultant	x	x

Annex B (Cont.): Summary of findings from interviews on use of CFSVA			
	Angola	**Nepal**	**Niger**
Programme staff (PS) involvement	N	N	Y
Internal presentation and discussion of findings with all the staff	N	Partially – within programme staff	N
Dissemination	N	N	N
Proper archiving of report	N	-	N
PS clear on methodology	Y	N – request for clarification on sampling	N – request for clarification on sampling
Vam Staff clear on methodology	Y	-	N
Use of CFSVA	*Targeting for new CP *Increase funding available	*Targeting for New CP *Understanding root causes of food insecurity *Understanding WB poverty mapping	Targeting for new CP
Use of data for further purposes	Planned for monitoring	*Crossing for understanding WB poverty mapping *expected - refinement of targeting according to PS	*Planned for monitoring *EFSA
Timeliness	Y	N	N (also bad timing)
Risk analysis	N	N	N
Country evaluation of partnership	Positive *involved UNHCR for defining intervention needs *involved NGO in data collection *working now to take the results to the Government	-	Negative *should be better focused on next time involving in design appropriate actors *more work on advocacy is necessary
Country evaluation of CFSVA usefulness for programming	Positive – recommendation included in CP	Not completely positive – recommendation included in CP	Not positive – initial recommendation rejected
Changes desired by PS	More resources to cover the all country	More involvement of programme staff (for prompt understanding of findings)	More involvement of pertinent partners (especially on early warning)
Changes desired by VAM staff	*Different questionnaire for different livelihood zones *better data on health/education	-	*More rigorous methodology *Data model more spatial *More connection with programme needs *More attention to partnership

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ANNEX D: OVERALL ANALYTICAL PLAN IN COUNTRY STUDIES

Annex D: Overall Analytical Plan in Country Studies			
		Iran	**Afghanistan**
Desk study		Yes	Yes
No. of References		4	2
Secondary data analysis		No	No
Primary data analysis		Yes	Yes
Time series information		No	No
Five ky questions in WFP/VAM studies:	**1. Who are the food insecure?**	Yes	Yes
	2. How many are they?	Yes	Yes
	3. Where do they live?		Yes
	4. Why are they food insecure?		Yes
	5. Does food aid have a role to play?	Yes	Yes
	Finding in the report	• Overall, the food consumption among the Afghani households is barely adequate as nearly half of the households survive on the minimum (or less) food requirements and only 28% of the sample can be considered to have a good access to food. • The food consumption situation among the Iraqi Kurd refugee households is relatively good as the vast majority regularly access the basic food requirements and only a small percentage had poor food consumption.	• When looking at the 436 Kuchi households included in the household level data alone, 54% of the Kuchi are in the 2100-3200 kcal/day/capita group, and 29% are in the 3200-5000 kcal group. Only 16% are below 2100 kcal/day/capita, and less than 1% are in the greater than 5000 kcal/day/capita. • Looking at the 11 diet subgroups, 28% of the Kuchi are in the medium kcal-good intake from dairy group, 19% are in the high kcal intake-low diet diversity, and 11% are in the medium kcal intake-large use of oil and fats categories. The remainder of the Kuchi are relatively evenly spread between the other subgroups, except for the very high kcal intake group, to which less than 1% of Kuchi belong. • Hirat and Ghor provinces show the highest levels of vulnerability, followed by Khost in the south, Bamyan in the central highlands, Badghis in the west, the northern provinces of Jawzjan, Faryab, Sari Pul, Samangan and Balkh, the central province of Kabul, and Laghman in the east.
Identify the food insecurity/vulnerable groups methods		Using multivariate statistical techniques to create clusters of households with distinct food consumption patterns. The variables used in the analysis included the dietary diversity, the frequency of consumption and variable and sources of the foods consumed.	Clustify households into different categrate base on the information on caloric intake per capita and dietary diversity.
Key criteria for food security/insecurity groups		Food consumption	Caloric intake per capita, dietary diversity
Distinguish chronic/transitory food insecurity		No	No
Questionnairs attched		No	No
Other comments		Didn't provide the result on geographic target and the explanation on why they are food insecure.	
Yes*	Answer "where do vulnerable people live" instead.		

Annex D (Cont'd): Overall Analytical Plan in Country Studies			
		Burundi	**Ghana**
Desk study		Yes	Yes
No. of References		7	3
Secondary data analysis		No	Yes
Primary data analysis		Yes	Yes
Time series information		Yes (Food price, the nutritional status of children)	Yes (Poverty trends by region)
Five key questions in WFP/VAM studies:	**1. Who are the food insecure?**	Yes	Yes
	2. How many are they?	Yes	Yes
	3. Where do they live?	Yes	Yes*
	4. Why are they food insecure?	Yes	Yes
	5. Does food aid have a role to play?	Yes	Yes
	Finding in the report	• Chronically food insecure households represent 16% of the total sample. They are characterized by poor dietary diversity, just managing food item 7 days a week. They consume pulses about once per week. They have the highest share of total monthly expenditure(51%), which is mostly spent on pulses, manioc, rice, also commonly relies on food gifts as a source of food. The main sources of income are sale of cash crops, temporary labor. The heads of household have the lowest level of literacy. One-quarter of the households are headed by women. As a response to shocks, this group is the most likely to work for food. • Ngozi,Kayanza,Kirundo and Karuzi have high percentage people in food insecuity.	• Highest vulnerability to food insecurity is characterized by limited access to food, highest percentage of households with 'very limited access to food'and high percentage of households with 'typical diet – low diversity'. Highest share of monthly expenditure for education (11% of total) and most household have highly diverse sources of income to reduce vulnerability to economic shocks. • Districts: Jirapa, Lawra, Nadowli, Sissala & Wa • Proposed intervention strategies: Food for Work, School Feeding, general economic development and poverty reduction programmes.
Identify the food insecurity/vulnerable groups methods		Creating homogeneous food security/food consumption groups by using multivariate analysis techniques, taking into account the inter and intra-variable relationships. The variables used in the analysis included the frequency of consumption of staple and non-staple foods, the source of the foods, the share of the household expenditures on food, and the share of expenditure on individual food items.	Using Principal Components Analysis (PCA) and Cluster analysis techniques to create clusters of households characterized by distinct food consumption patterns, similar reliance on accessing food through their own production and similar dietary diversity.
Key criteria for food security/insecurity groups		Food consumption	Food consumption
Distinguish chronic/ transitory food insecurity		Yes	Yes
Questionnairs attched		No	No
Other comments			Provide geographic target on vulnerable groups. Mention FFW and school feeding at the end of repor. No disscussion on role of food aid.

Annex D (Cont'd): Overall Analytical Plan in Country Studies			
		Azerbaijan	**Haiti**
Desk study		Yes	Yes
No. of References		8	4
Secondary data analysis		Yes	No
Primary data analysis		Yes	Yes
Time series information		Yes (Country comparisons of child nutritional outcomes)	No
Five key questions in WFP/VAM studies:	**1. Who are the food insecure?**	Yes	Yes
	2. How many are they?	Yes	Yes
	3. Where do they live?	Yes	Yes
	4. Why are they food insecure?	Yes	Yes
	5. Does food aid have a role to play?	Yes	Yes
	Finding in the report	• Very vulnerable to food insecurity (Group A - 12%): These households consume staple food items only and rarely consume nonstaples. About 20% of the food consumed is acquired from their own production. For the rest of their consumption, about half of the households rely on purchases while the other half relies on a combination of purchase and borrowing. Food is their highest monthly expense while debt repayments are the highest non-food expenditure. For income, they rely mostly on borrowing or pension as well as some labour activities. In general, they are poor with low asset and livestock ownership and high reliance on purchase or borrowing for food. They have the highest percentage of underweight children and second highest prevalence of child stunting in the sample as well as the highest levels of recent child morbidity. • The main problem for households in this group is inadequate access to food through market mechanisms due to lack of cash availability – meaning poverty. This is even more real for the 22% of households that do not cultivate the available land (the highest percentage across the 7 groups). In this case, it can be inferred that the poverty levels contribute to household food insecurity because they are not able to access adequate or diverse amounts of quality foods.	• The group with very low dietary diversity represents 14% of the households in the sample. The diets of these households rely primarily on cereals, some fat, occasionally pulses and tubers, and are characterized by a lack of meat and few fruits/vegetables. Fifty-one percent of adults and 47% of children are reported to have eaten only one meal the day before the survey. Fifty eight percent of households report always experiencing hunger, the highest in the sample. as never being hungry. • The most common answers for "why they had trouble accessing food" include poor parents, poor education, lack of assets, lack of land, and lack of work opportunities. Climatic shock was slightly less commonly cited as a cause of hunger. Less commonly cited answers include discrimination by sex, age, social status, political beliefs, or immigration status. • Vulnerability to food insecurity is highest in the Centre, especially among populations living in the savannah/grazing land and dense agroforestry zones.
Identify the food insecurity/vulnerable groups methods		Using multivariate statistical techniques to create clusters of households with distinct food consumption patterns. The variables used in the analysis included the dietary diversity, the frequency of consumption and variable and sources of the foods consumed.	Clustify households into different categrate base on the information on caloric intake per capita and dietary diversity.
Key criteria for food security/insecurity groups		Food consumption	Caloric intake per capita, dietary diversity
Distinguish chronic/ transitory food insecurity		No	No
Questionnairs attched		No	No
Other comments		Didn't provide the result on geographic target and the explanation on why they are food insecure.	

Annex D (Cont'd): Overall Analytical Plan in Country Studies				
		Nicaragua	Tajikistan	Niger
Desk study		Yes	Yes	Yes
No. of References		6	1	31
Secondary data analysis		No	No	Yes
Primary data analysis		Yes	Yes	Yes
Time series information		Yes (Poverty, education, health)	No	Yes
Five key questions in WFP/VAM studies:	**1. Who are the food insecure?**	Yes	Yes	Yes
	2. How many are they?	Yes	Yes	Yes
	3. Where do they live?	Yes	Yes	Yes
	4. Why are they food insecure?	Yes	Yes	Yes
	5. Does food aid have a role to play?	Yes	Yes	Yes
	Finding in the report	• Very poor food consumption group represents 17% of the household in the sample: Very low and inadequate food intake. Besides sugar and oil, households consume only one additional food item on a daily basis. • South coast and south interior area have highest percentage people in food insecurity. • The causes of food insecurity are complex and related to income poverty and isolation.	• Households with very poor food consumption represent 27% of the sample households and they are of two types: Chronically food insecure (10%) and Very vulnerable to food insecurity (17%) • More than 40% of the sample households in Zones 4, 7, and 9 were classified as being • Chronically food insecure or very vulnerable to food insecurity. The causes of food insecurity in rural Tajikistan are mainly related to two factors. The first one is limited access to livelihood opportunities in both the agricultural sector and employment/labor market.	• The most food insecure livelihood groups are the farmers/day laborers, people dependent on aid and petty jobs. • The areas with the highest proportions of food insecure are Tillaberi and Dosso region (savanna agro-ecological zones) with 39% to 47% of severely and moderately food insecure households. Agro-pastoral zones (Tahoua and Zinder) also have a relatively high proportion of food insecure (30-37%).• Causes of food insecurity include lack of access to infrastructure, transports and communications, high price fluctuations, level of education, income sources, asset and livestock ownership and natural hazards (drought, pest infestation).
Identify the food insecurity/vulnerable groups methods		Using multivariate statistical techniques to create clusters of households with distinct food consumption patterns. The variables used in the analysis included the dietary diversity, the frequency of consumption and variable and sources of the foods consumed.	Clustify households into different categrate base on the information on caloric intake per capita and dietary diversity.	Using Cluster Analysis on principal components, the households were grouped according to their life strategies (the most important ones) and classified into four categories food insecurity groups by studying crossing profiles of household food consumption and food accessibility. Also studying on the criterias (e.g.: small farmers having of small-scale farmings,women in pregnancy or Lactation, households of large family size, etc.) used in previous study in Niger in secondary data analysis part.
Key criteria for food security/insecurity groups		Food consumption	Caloric intake per capita, dietary diversity	Life strategies,food availability and/or access to the food
Distinguish chronic/ transitory food insecurity		No	No	Yes
Questionnairs attched		No	No	No
Other comments		Didn't provide the result on geographic target and the explanation on why they are food insecure.		

Annex D (Cont'd): Overall Analytical Plan in Country Studies

		Angola	Uganda
Desk study		Yes	Yes
No. of References		21	
Secondary data analysis		Yes	Yes
Primary data analysis		Yes	Yes
Time series information		Yes(Displacement,population trend, GDP, expenditure, education, health, ect.)	Yes (Economy structure, ODA, FDI, demography, etc.)
Five key questions in WFP/VAM studies:	**1. Who are the food insecure?**	Yes	Yes
	2. How many are they?	Yes	Yes
	3. Where do they live?	Yes*	Yes
	4. Why are they food insecure?	Yes	Yes
	5. Does food aid have a role to play?	Yes	Yes
	Finding in the report	• Very poor food consumption group represent 11% of household in the sample: very low food intake, almost certainly nutritionally inadequate. Households consume only one food item on a daily base (cereals). • The causes of food insecurity in rural Angola are mainly related to two factors: limited access to livelihood opportunities and poor health /malnutrition. Both related to the protracted civil conflict. • Highest relative vulnerability is found in Bié sample, followed by Huila with respectively 48% and 32% of the sample population highly vulnerable to food insecurity.	• Very poor food consumption group repreasents 15% of household in the sample:Very low food intake, almost certainly nutritionally inadequate. Households consume only one food group on a daily base, cereals, through acombination of maize and other cereals. • Causes and "food insecurity profiles" vary across strata. Among the most food insecure and vulnerable, the Acholi and Lango strata are mainly affected by insecurity that reduces food availability and the household's ability to access (financially, geographically) food. In the Karimojong and Teso-Dhola strata, insecurity as well as exposure to repeated external shocks (drought) is the likely explanation of food insecurity and vulnerability. In the Kiiga strata, access indicators are relatively good but diet diversity remains poor. Cultural factors may explain a traditionally less diverse diet. • The Acholi strata with 33% of the households food insecure and 38% vulnerable, the Karimojong with respectively 18% and 46% of food insecure and vulnerable and the Lango strata with 12% of food insecure and 37% of vulnerable. Vulnerability was also found to be very high in the Teso-Dhola strata (3% of food insecure, 53% vulnerable) and Kiiga strata (1% food insecure, 60% vulnerable)
Identify the food insecurity/vulnerable groups methods		Households were classified into more-or-less homogeneous groups with the same livelihood pattern and a similar level of wealth. according to a number of indicators (Productive and household assets, activities and relative contribution of these activities to the total household income level, education asset, displacement, exposure to risks, relative expenditures on food and non-food items, food intake patterns.	Classify food security status based on food consuption and access profiles.
Key criteria for food security/insecurity groups		Living conditions, livelihood and food intake pattern.	Food consuptions, food access.
Distinguish chronic/ transitory food insecurity		No	No
Questionnairs attched		No	No
Other comments		Provide geographic target on vulnerable groups.	

ANNEX E: SUMMARY OF VAM THEMATIC GUIDELINES

Annex E: Summary of VAM Thematic Guidelines				
Title	No. of pages	Outline of contains	Bibliography	Field tools
Sampling Guidelines for Vulnerability Analysis	39	1.introduction of different type of sampling methods - Simple random sampling - Systematic sampling - Cluster sampling - Two-stage cluster sampling - Multi-stage cluster sampling 2.How to determining the appropriate sample size - For non-stratified samples - For stratified samples 3.Examples from the field - Haiti - Tanzania	Yes	1.Sample size calculation formula 2.Web-based sample size calculator 3.Field examples
VAM Analytical Approach: Household Food Security Profiles	25	1.Overview and Rationale for WFP/VAM Analytic approach 2.How to creating household food security profiles - Principal Component Analysis - Cluster Analysis 3.Indicators used in household food security profiles - Selecting indicators - Possible indicators: food consumption, dietary diversity, food frequency, meal frequency, food and non-food expenditures, income and assets, etc. 4.Analysis of indicators for household food security profiles - Analyzing food consumption/food and non-food expenditures data - Interpretation of food consumption/food and non-food expenditures analysis - Determining the minimum food intake threshold/benchmark - Combining expenditure profiles with food consumption profiles - Incorporating other factors(income and asset data) into HFSPs	No	1.Sample questionnaires

Annex E (Cont'd): Summary of VAM Thematic Guidelines (cont'd)				
Title	**# of pages**	**Outline of contains**	**Bibliography**	**Field tools**
Guidelines for the Use of Nutritional Information in VAM	56	1.Introduction of malnutrition - Types of malnutrition - Causes of malnutrition (conceptual framework) - Measuring macronutrient malnutrition - Collecting, using and analyzing indicators of macronutrient malnutrition - Uses of anthropometric data - Measuring and analyzing micronutrient malnutrition 2.Secondary data sources and their use in VAM context 3.Primary data collection & analysis 4.Introductuin for dietary diversity - What is dietary diversity and how to measure it? - Associations between dietary diversity and child growth / socio-economic status - Dietary diversity as an indicator of household food security.	Yes	1.Sample women health and nutrition modules 2.Sample child health and nutrition module 3.link to EPI-Info and Nutri-survey 4.Sample questionnaires 5.Illustration on how to weight and measure children
Integrating a Gender Perspective into Vulnerability Analysis	38	1.Gender analysis frameworks and gender sensitive indicators 2.Gender sensitive survey design and implementation 3.Gender sensitive data collection methods/tools - Household surveys - Community discussions 4.Analysis of gender-disaggregated information:quantitative data and qualitative data 5.Gender analysis and program/intervention design	Yes	1.Web links to secondary data sources 2.Household survey module 3.Community discussion module 4.Gender-disaggregated activity calendar 5.Decision-making matrix 6.Income and expenditure mapping
Integrating "Livelihoods" into Food Security and Vulnerability Analysis	13	1.Introduction of livelihoods study (risk management enhanced) 2.Livelihoods analysis using secondary data / primary data 3.Integrate livelihood data and subsequent analysis of these data.	No	1. Sample questions for analysis and presentation of findings on livelihoods study

ANNEX F: SAMPLING METHODS IN CASE STUDIES

Annex F: Sampling Methods in Case Studies		
	Iran	**Afghanistan**
Survey area	Resticted to refugee camps	Nationwide
Reason for geographic restriction	Focus of the study was on approximately 80,000 encamped refugees living in the 28 camps (p. 6)	NA
Domains	officially recognized camps	5 zones, 32 provinces
Sampling method	Purposeful	Multi-stage cluster
Description of sample design	Inadequate	Adequate
Community selection	Purposeful	Mixed: Probability proportional to land area, and purposeful selection to represent all agro-ecological zones present in each district
Communities sample	N/A	1853
Household selection	Population proportional, sampling frame interval	Wealth groups through community interviews
HHs sample	530	11757
Additional selection	Ethnic group, opportunity to work	
Stratification	Ethnic groups, opportunity to work	Agro-ecological zones, wealth groups
Zone type	NA	"Argro-ecological"
Zone construction	NA	Presumably a merging of districts and shura according to "geography, topography, irrigation methods"
Reason using zones	NA	None given
Description of Strata	NA	Inadaquate
Truly population proportional sample	Yes	No
Weighting system	No	Yes
Reliable levels of Inference	camp (sampled population)	sampled population
[1] Plus three communities randomproportional to population		
[2] In a household or compound where several women lived, the youngest woman with children was chosen for sample		

Annex F (Cont'd): Sampling Methods in Case Studies		
	Burundi	**Ghana**
Survey area	Nationwide	Restricted to 5 vulnerable/poor regions
Reason for geographic restriction	NA	Regions with poor indicators of food insecurity and/or relatively higher levels of poverty, and Ashanti region because it was identified as a 'hot spot' by the Millennium Hunger Study (p. 3)
Domains	8 provinces, communes	5 regions
Sampling method	Multi-stage cluster	Mixed: simple random and two-stage cluster
Description of sample design	Adequate	Inadequate
Community selection	Sytematic proportional to population (stage 1), and simple random (stage 2)	Purposeful, probability, other
Communities sample	414	124
Household selection	simple random sample from sampling frame	Transect*
HHs sample	4243	1301
Additional selection		Non-standard household[2]
Stratification	None	Mixed: agricultural zones, administrative boundaries, proximity to forest reserves
Zone type	NA	(1) "Agricultural zones" used as samplingstrata; (2) ad hoc agro-climatic zones or "District Clusters" for extrapolating data, but not used as strata in sampling design.
Zone construction	NA	(1) No information in report; (2) Districts merged based on principal components analysis of remotely sensed land cover, elevation and population density
Reason using zones	NA	(1) None given for sampling; (2) for data extrapolation
Description of Strata	NA	(1) none for agrigultural zone strata
Truly population proportional sample	Yes	No
Weighting system	Self-weighting	No
Reliable levels of Inference	National, provincial, natural zones, and many commune	sampled population (but was extrapolated to sampled and unsampled districts based on agroecological characteristics)

Annex F (Cont'd): Sampling Methods in Case Studies		
	Azerbaijan	**Haiti**
Survey area	Nationwide	Restricted to 4 departments (but really 14 land-use zones within these departments)
Reason for geographic restriction	NA	budgetary/time restraints (p. 9)
Domains	7 economic zones	4 Departments, 14 land-use zones
Sampling method	Two-stage cluster	Two-stage cluster
Description of sample design	Adequate	Adequate
Community selection	Probability selection according to a roughly population proportional scale (20, 30 or 40 villages)	Probability proportional to population (based on proportion of commune size)
Communities sample	210	138
Household selection	Grid interval	Transect
HHs sample	3078	2405
Additional selection	Purposeful selection of IDP sample	
Stratification	Economic zones	14 land-use zones
Zone type	Economic zones	Land-use zones
Zone construction	Government has divided the rayons into 10 economic zones	4 homogenous department zones based on satellite land-use and population density data were identified, and zones which included at least 14% of a department's population were included in the study
Reason using zones	None given	Departments were determined to be "poorly suited to the information need of the operation" and a lower geographic aggregation lower than department was required (p. 9)
Description of Strata	No	yes
Truly population proportional sample	No	No
Weighting system	No	Yes
Reliable levels of Inference	Economic zones	Land-use zones, Departments are characterized only by zones which comprise 14% of the departmental population

Annex F (Cont'd): Sampling Methods in Case Studies		
	Nicaragua	Tajikistan
Survey area	Restricted to the two autonomous regions	National (but restricted to rural population)
Reason for geographic restriction	Primary aim of the survey was to obtain a better understanding of the population in the two Autonomous Atlantic Regions (p.15)	Focus was on rural population
Domains	2 Regions, 5 zones	14 zones
Sampling method	Two-stage cluster	Two-stage cluster
Description of sample design	Inadequate	Adequate
Community selection	Purposeful, probability, other[1]	Probability selection according to a roughly population proportional scale (20 or 30)
Communities sample	103	429
Household selection	Transect	Not specified
HHs sample	1029	5155
Additional selection	Living within 12 kilometers of coast	
Stratification	Regions, Livelihood zones	14 zones (homogenous district clusters)
Zone type	Livelihood zones	agroecologic zones
Zone construction	Municipios in each of the two regions were divided into interior and coastal zones based on the MFEWS "Livelihood Zone Map," creating 4 zones for stratification. A fifth zone directly adjacent to the coast was created during analysis based on livelihood data not specified in the report.	Districts were characterized in terms of remotely sensed population density, elevation and landcover data, then grouped into zones using Principal Component Analysis and Non-Hierarchical Clustering.
Reason using zones	None given	Neither Regions nor district could be used to stratify the sampling because of too few (4 Regions) or too many (58 districts) classes. (p.19)
Description of Strata	Yes	Yes
Truly population proportional sample	No	No
Weighting system	No	No
Reliable levels of Inference	Livlihood zones	Zones

Annex F (Cont'd): Sampling Methods in Case Studies			
	Niger	Angola	Uganda
Survey area	Restricted: rural villages, national (excluding 3 of 8 zones, 1 is all urban, 2 very low populations)	Restricted (rural in South-east)	Restricted (sub-regional level)
Reason for geographic restriction		Second-stage survey to a study undertaken early 2005 in the food insecure central highlands of the country (p.13)	Kampala was not surveyed as this exercise focused on rural households.
Domains	Zones: 6 zones (of 8)	8 zones, 6 provinces	4 regions, 13 strata
Sampling method	2-stage cluster	Two-stage probability sampling	Multi-stage cluster
Description of sample design	adequate	Inadequate	Adequate
Community selection	Probability proportional to population	Probability selection according to a roughly population proportional scale (20 or 30)	Probability proportional to population
Communities sample	180	143	13
Household selection	Not specified	Not specified	Transect
HHs sample	1800	1716	2987
Additional selection			
Stratification	6 Agro-ecological zones	Livelihood zone, Provinces	13 Livelihood zones
Zone type		"Livelihood Zones"	livelihood zones
Zone construction	Demographic /topographic /ecologically based zones	Citation: "More information on the Livelihood Zones for Angola can be obtained from the WFP Angola VAM publication on Livelihood Zones in Angola, 2004." (p.19)	Uganda National Household Survey 2002/3 data, derived data on household consumption groups, and data on land cover, length of growing period and population density were used to create homogeneous aggregates of districts
Reason using zones		None given	Goal was subregional charactization, but seen as too difficult to be represenative at 56 districts.
Description of Strata		Yes	Yes
Truly population proportional sample		No	Yes
Weighting system	No	No	No
Reliable levels of Inference		Zone, Province	Zone, Region

Annex G: Household Food Security Profiles in Country Studies

	Indicator	Food items	Food groups	Food consumption		Consumption-based hh groups	Grouping methods
				Seven-day recall	24-hour recall		
Iran	Household demography; Household Circumstances; Food aid; Food consumption and source of food; Household expenditures; Household and animal assets; Access to credit; Sources of income; Housing and household facilities;	13		Yes	-	5	Cluster analysis
Afghanistan	Income activities; Cropping; Household demography; Market access; Hazards and vulnerability; Migration; Programme participation; Topography and seasonal access to water; Access to education and health.	64	6	Yes	-	10	Cluster analysis
Burundi	Food production; Required food consumption; Household shocks and coping strategies; Maternal and child health nutrition; Household income; Expenditures; Community and household demographics; Migration/displacement; Housing; Market access and prices Coping strategy index; Transport; Lighting; Water and sanitation; Education; Community health care; Household and livestock assets; Land ownership and agricultural production;		12	Yes	-	6	PCA, Cluster analysis
Ghana	Household demographics; Asset ownership; Household food consumption; Maternal health and nutrition; Shocks and coping strategies Housing and household facilities; Household income and expenditure; Land tenure and farming systems;		13	Yes	-	6	PCA, Cluster analysis
Azerbaijan	Demography; Household income; Household expenditure; Food Sufficiency; Household shocks and coping strategies; Household and animal assets and credit; Housing and household amenities; Land use and agricultural production;		10	Yes	-	7	PCA, Cluster analysis
Haiti	Household demography; Household circumstances; Housing and household facilities; Household and animal assets; Access to credit; Sources of income; Household expenditures; Food consumption; Shocks and coping strategies; Maternal and child health.	20	11	Sub-set	Yes	4	PCA, Cluster analysis

Annex G (Cont'd): Household Food Security Profiles in Country Studies

	Indicator	Food items	Food groups	Food consumption		Consumption-based hh groups	Grouping methods
				Seven-day recall	24-hour recall		
Nicaragua	Household demography and migration; Housing and amenities; Infrastructure and access to community services; Education; Household and animal assets and credit; Land use and agricultural production; Income sources and livelihood activities; Household expenditures; Shocks and coping strategies; Self organization and external assistance.	9	9	Yes	-	4	PCA, Cluster analysis
Tajikistan	Household demography; Household circumstances; Housing and household facilities; Household expenditures; Household and animal assets; Access to credit; Sources of income; Food consumption and source of food; Food aid.	8	8	Yes	-	7	PCA, Cluster analysis
Niger	demography; Access to the basic social services (education, health, water,etc.); Agricultural production and stock; Shocks and coping strategies; Household assets (cattle, land, habitat); Livehoods; Expenditure; Dietary and food consumption.	15		Yes		4	PCA, Cluster analysis
Angola	Demographics and population movements; Educational status; Living conditions; Water sources; sanitation; Household assets; Livelihoods; Access to social services; external aid; Wealth index; Expenditures; Shocks and coping strategies; Nutrition and health.	12	12	Yes	-	4	PCA, Cluster analysis
Uganda	Demographics of Livelihood; Education; Health; Household assets; Access to Community Services; Income Sources and Access to Credit ; Shocks and coping strategies; Food and Non-Food Assistance; Food Utilization and Nutrition Status.		12	Yes	-	4	PCA, Cluster analysis

ANNEX H: GENDER ISSUES IN COUNTRY STUDIES

Annex H: Gender Issues in Country Studies						
		Nicaragua	**Tajikistan**	**Niger**	**Angola**	**Uganda**
Statistics for Female headed households	**Literacy**	N/A	No difference	No difference	Much worse in female headed household	Worse in female headed household
	Food frequency /diversity	N/A	N/A	N/A	N/A	N/A
	Nutrition status of children	N/A	N/A	N/A	N/A	N/A
	Risk	N/A	N/A	N/A	N/A	N/A
	Coping	N/A	N/A	N/A	N/A	N/A
Recommend targeting female headed households		No	No	Yes	No	Unclear*
Recommend food for training for women		N/A	N/A	Yes	Yes	N/A
Recommend food for assets for women		N/A	N/A	Yes	Yes	Recommend FFW but not emphasize on gender
Recommend school feeding to increase girls attendance		Yes	Yes	Yes	Yes	Recommend food feeding without emphasize on gender.
*"Recent data further suggest that women headed households in Uganda are not poorer than male headed households. However, a closer look at the data shows that specific groups of women are indeed poorer. Households headed by female widows as well as household headed by married women (husband absent or living with other wife - polygamous) are indeed poorer." P19, Uganda report(Draft)						

ANNEX I: LIVELIHOODS STUDY WITH RISK ASSESSMENT IN COUNTRY STUDIES

Annex I: Livelihoods Study with Risk Assessment in Country Studies

			Iran	Afghanistan	Burundi	Ghana	Azerbaijan
Survey		Household survey	Yes	Yes	Yes	Yes	Yes
		Community survey	-	Yes	Yes	Yes	-
		Focus-group survey	Yes	Yes	-	-	-
		Others	-	-	Market price survey, provincal survey	Individual survey	-
Information	Household demographics		Yes	Yes	-	Yes	Yes
	Risk assessments	Sources of Risk: natural risks/ health risks/ political risks/ economics risk, etc.	Yes	-	-	-	-
		Risk type: covariate or idiosyncratic	-	Yes	Yes	-	Yes
		Coping method	-	Yes	Yes	Yes	Yes
	Livelihoods study	Sources of income	Yes	Yes	Yes	Yes	Yes
		Monthly Expenditures (food/non-food);	Yes	-	Yes	Yes	Yes
		Productive assets (i.e., land, labour, pasture, livestock, credit/savings);	Yes	Yes	Yes	Yes	Yes
		Social networks (i.e., formal and informal organisations and their roles);	Yes	-	Yes	-	Yes
		Access to health and education services.	Yes	Yes	-	Yes	-
Analysis and Presentation of Findings		Livelihood Profiles of Grouped Households	Yes	Yes	Yes	Yes	Yes
		Effects of Prior Risks on Current Livelihood Patterns	-	-	-	-	-
		Combining Macro and Micro Experiences	-	-	-	-	-

Annex I (Cont'd): Livelihoods Study with Risk Assessment in Country Studies

			Haiti	Nicaragua	Niger	Tajikistan	Angola	Uganda
Survey		Household survey	Yes	Yes	Yes	Yes	Yes	Yes
		Community survey	-	Yes	Yes	Yes	Yes	Yes
		Focus-group survey	-	Yes	-	-	-	-
		Others	-	-	-	-	-	-
Information	Household demographics		-	Yes	Yes	Yes	Yes	Yes
	Risk assessments	Sources of Risk: natural risks/ health risks/ political risks/ economics risk, etc.	-	-	Yes	-	Yes	Yes
		Risk type: covariate or idiosyncratic	Yes	Yes	Yes	Yes	-	Yes
		Coping method	Yes	Yes	Yes	Yes	Yes	Yes
	Livelihoods study	Sources of income	Yes	Yes	Yes	Yes	Yes	Yes
		Monthly Expenditures (food/non-food);	Yes	Yes	Yes	Yes	Yes	Yes
		Productive assets (i.e., land, labour, pasture, livestock, credit/savings);	Yes	Yes	Yes	Yes	Yes	Yes
		Social networks (i.e., formal and informal organisations and their roles);	Yes	Yes	-	Yes	Yes	Yes
		Access to health and education services.	-	Yes	Yes	Yes	Yes	yes
Analysis and Presentation of Findings		Livelihood Profiles of Grouped Households	-	Yes	Yes	Yes	Yes	Yes
		Effects of Prior Risks on Current Livelihood Patterns	Yes	-	-	-	-	-
		Combining Macro and Micro Experiences	-	-	-	-	-	-

ANNEX J: EXPENDITURE/CONSUMPTION ANALYSIS IN COUNTRY STUDIES

Annex J: Expenditure/Consumption Analysis in Country Studies

	Expenditure/consumption Analysis	Food consumption	Expenditure					Comments
			Food expenditure	Non-food expenditure	Quantity /Quality	Caution with self production issue?	Used to identify food insecurity?	
Iran	Yes	13 food items: bread/wheat; rice; pasta; potatoes; pulses; vegetable oil; poultry meat; eggs, milk, vegetables; fruits; sugar.	9 categories: potatoes; rice; fish or meat; sugar; wheat/ bread; beans; tea; vegetable oil; other.	11 categories: debt; electricity /fuel; funeral; household expenses; medical; clothing; education; tobacco; remittances; transportation; other.	Quantity	No	No	Well done study on expenditure/consumption data. Only food consumption information used with dietary diversity information to identify the food insecurity/ vulnerable groups
Afghanistan	Food consumption only	6 groups: vegetable protein; fruits and vegetables; dairy products; oils and fats; animal protein; carbohyd -rates.	N/A	N/A	N/A	N/A	N/A	Superficial analysis on food consumption. No sufficient information to undertake food security profiles. Caloric intake per capita was use as main criteria for identifying the food insecurity/ vulnerable groups
Burundi	Yes	10 groups: Maize, rice, manioc, tubers, plantains, pulses, oil, fish, meat,leaves and vegetables.	6 categories: maize/sorghum/wheat/rice; meat/poultry/ fish; manioc/potatoes; oil; pulses; other.	10 categories: water/electricity/fuel/wood, health, social events, alcohol/ tobacco, transport, debts, education, clothing, farm equip/ seeds and other	Quantity	No	Yes	Well done study on expenditure/consumption data. Consumption information used with dietary diversity information to identify the food insecurity/ vulnerable groups

Annex J (Cont'd): Expenditure/Consumption Analysis in Country Studies

	Expenditure/consumption Analysis	Food consumption	Expenditure					Comments
			Food expenditure	Non-food expenditure	Quantity /Quality	Caution with self produc -tion issue?	Used to identify food insecurity?	
Nicaragua	Yes	9 food items or food groups: Cereals (maize, rice and sorghum; Tubers (including potatoes and yucca); Plantain; Beans; Meat (chicken, beef, pork and wild); Fish; Diary Products (dairy products, yoghurt and cheese); Eggs; Vegetables and fruit.	12 categories: oil/fat, salt, fruit & vegetable, eggs, sugar, coffee, meat/fish, , tub. & plant., cereals, outside, dairies, beans.	10 categories: tools; house; alcohol/tobacco; clothes; utilities; debts; transport; education, health,	Quantity	No	yes	Well done study on expenditure/consumption data. Consumption information used with dietary diversity information to identify the food insecurity/ vulnerable groups
Tajikistan	Yes	8 items or groups: bread/wheat flour; other cereals (maize, rice and barley) and pasta; potatoes; meat (poultry, beef and mutton) and beans; vegetable oil, fats and butter; dairy products (milk, yoghurt and cheese) and eggs; vegetables and fruit; sugar and sweets.	9 categories: legumes, sugar, food outside the home, meat/fish, dairy, oil/fats, potato/maize, bread and other.	8 categories: medical; transport; debts/fines; education; clothing/shoes; household items; social events; other	Quantity	No	No	Well done study on expenditure/consumption data, especially on food consumption part. Only food consumption information used with dietary diversity information to identify the food insecurity/ vulnerable groups

Annex J (Cont'd): Expenditure/Consumption Analysis in Country Studies

	Expenditure/consumption Analysis	Food consumption	Expenditure					Comments
			Food expenditure	Non-food expenditure	Quantity /Quality	Caution with self produc -tion issue?	Used to identify food insecurity?	
Niger	Yes	14 items: rice; mille; sorghum; maize; wheat; tubers; groundnuts; meat; fish; milk; vegetables; fruits; sugar; oil.	3 food categories: millet; other cereals; non-cereal.	4 categories: household expenditure; productive expenditure; debt payment; other.	Quantity	No	Yes	Superficial study on expenditura. Well done study on food consumption data on two level: zones and different life strategies. Consumption information used with other indicators on food accessibility to identify the food insecurity/vulnerable groups.
Angola	Yes	12 items or groups: cereals; fish; tubers; oil; beans; sugar/salt; milk and dairy products; fruit; eggs; vegetables; meat and other food.	N/A	health, education, transport, cleaining, ceremonies	Quantity	No	Yes	Superficial analysis on non-food consumption. In-depth study on food consumption pattern. Information on food consumption and dietary diversity are used to identify the food insecurity/vulnerable groups.
Uganda	Yes	16 items or groups: maize; roots and tubers; vegetables; eggs; other cereals; matooke(Banana); fresh fruit; milk; rice; beans and peas; oil/fat/butter; fish; bread; groundnuts; sim sim; meatand sugar.	19 categories: maize and maize meal, rice, other Cereals, cassava, bread, matooke, beans and peas GNuts/SimSim, fish, meat, oil/fat/butter, sugar, milk, other root/tuber, other vegetables, fresh fruits, eggs, salt, water.	15 categories: Alcohol/tobacco; soap; equipment/tools/seeds; rent; hiring labor; clothing/shoes; debts; celebrations/social events; fines/taxes; fire wood; transport; paraffin; medical expenses/health care; education/school fee; construction/house repair.	Quantity	Yes	Yes	Well done study on food and non-food expenditure data. Food consumption information used with other indicators on food accessibility to identify the food insecurity/vulnerable groups.