

ASPIRES Côte d'Ivoire Vulnerability Assessment Case Study



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ACRONYMS LIST

ASPIRES	Accelerating Strategies for Practical Innovation & Research in Economic Strengthening
ES	Economic Strengthening
DHS	Demographic and Health Survey
ENV	Côte d'Ivoire National Survey on Living Standards
FG	Focus Group
FCS	Food Consumption Score
HEA	Household Economy Approach
HLSA	Household Livelihood Security Analysis
HVI	Household Vulnerability Index
LVI	Local Vulnerability Index
OVC	Orphans and Vulnerable Children
PCA	Principal Component Analysis
PCVA	Participatory Capacity and Vulnerability Analysis
PEPFAR	President's Emergency Program for AIDS Relief
PPI	Progress out of Poverty Index
PRA	Participatory Rapid Appraisal
PVA	Participatory Vulnerability Analysis
PWR	Participatory Wealth Ranking
PVR	Participatory Vulnerability Ranking
SAVI	Southern African Vulnerability Initiative
SLF	Sustainable Livelihoods Framework
USAID	United States Agency for International Development
VA	Vulnerability Assessment
VEU	Vulnerability as Expected Utility
VEP	Vulnerability as Expected Poverty
VER	Vulnerability as Uninsured Exposure to Risk

INTRODUCTION

A well-designed economic strengthening (ES) intervention begins with a firm understanding of the beneficiaries to be served and their context, and an assessment of beneficiary vulnerability is an important first step toward this end. Although there is no single blueprint for how to conduct a vulnerability assessment (VA), there are a range of tools and frameworks available that can and should be tailored according to context. This case study is intended to provide an example of the process of designing a vulnerability assessment for ES interventions based on the experience of the ASPIRES project's work for the USAID Health Office in Côte d'Ivoire.

The purpose of this case study is to outline how the ASPIRES project designed a vulnerability assessment for the context of Côte d'Ivoire and for the needs of the USAID Health Office's PEPFAR-funded Orphans and Vulnerable Children (OVC) programs, demonstrate the process of the appropriate selection of tools and methods, and share lessons learned from the experience. It does not cover study implementation or analysis, which are described in the article published on this study.¹ Although informative for other types of vulnerability assessments, this case study most clearly illustrates how VA works in the context of PEPFAR programming for OVC.

PURPOSE AND OBJECTIVES

Challenge

An informal review of the USAID Health Office's portfolio in Côte d'Ivoire suggested that existing interventions may have disproportionately targeted moderately vulnerable populations, with limited reach to the most vulnerable among potential beneficiaries. To orient its programming toward more vulnerable beneficiaries, the Health Office requested the assistance of the ASPIRES project to conduct a vulnerability assessment of its current and future beneficiaries at the regional and local levels.

The purpose of the VA was to obtain the information necessary to better inform future program design and targeting. The objectives of the assessment were to segment the population into discrete levels of vulnerability and to devise a means of targeting program beneficiaries at the household level. The five health regions in Côte d'Ivoire serving the greatest numbers of OVC households were selected for the assessment: Abidjan II, Gbeke, Gbokle-Nawa-San Pedro,

¹ Burke, H. M., Moret, W., Field, S., Chen, M., Zeng, Y., & Seka, F. M. (2016). Assessing Household Economic Vulnerability in HIV-Affected Communities in Five Regions of Côte d'Ivoire. *PloS one*, 11(9), e0163285.

Indenie-Djuablin, and N'zi-Iffou.

How Do You Define Vulnerability?

As with any vulnerability assessment, the important first step was to answer the question: “vulnerability to what?” In the case of economic strengthening, a practitioner’s first answer is usually “poverty.” However, the USAID Health Office’s interest in ES is shaped by its mandate to prevent the spread and mitigate the impact of HIV/AIDS. PEPFAR defines success in ES for OVC as “a family’s ability to invest in the education, nutrition, and health of its children” (The U.S. President’s Emergency Plan for AIDS Relief, 2012, p. 38). ASPIRES and Health Office colleagues started with this description to define the concept of vulnerability as “the degree of inability of households to provide for the health, education, and nutritional needs of HIV+ and HIV- household members in order to mitigate the economic and health impact of HIV, increase their ability to cope with infection, and reduce their risk for acquiring HIV.”

Defining Vulnerability Categories

After defining vulnerability, ASPIRES faced the task of breaking the concept down into meaningful categories for targeting purposes. Because the purpose of the VA was to inform PEPFAR ES interventions, we consulted PEPFAR’s existing guidance on matching desired ES intervention goals to targeted households according to their economic status, as seen in Table 1 below. These categories were adopted to provide the parameters for the vulnerability categories generated by the VA.

Moreover, we intended to use this assessment to develop a measure to be used over time for ES projects in Côte d’Ivoire. The measure developed needed to be validated, or tested to confirm its ability to accurately measure the concept of vulnerability at different levels. This was an important feature of the assessment with a direct impact on its design. Most ES projects create an arbitrary distinction between levels of vulnerability for the purpose of organizing program beneficiaries according to intervention type and monitoring outcomes according to program capacity. However, we sought to create a tool to distinguish between vulnerability levels in a programmatically significant way, with cut-off points between categories defined according to differences that affect program outcomes. In other words, the tool was intended to capture categories of vulnerability that demonstrate specific household economic needs and capacities so that they could be matched to the types of interventions that meet those needs.

Table 1. PEPFAR Beneficiary Categories for ES Interventions (PEPFAR, 2012 p. 42).

FAMILY SITUATIONS AND IMPLICATIONS FOR PROGRAMMING	
Families in destitution	
<p>Characteristics</p> <p>Trouble providing/paying for basic necessities (like food)</p> <p>No discernible or predictable source of income but potentially a lot of debt they cannot pay</p> <p>Very few liquid assets (e.g., cash savings, livestock, food/crop stores, and personal belongings that could be sold or traded for money)</p> <p>Probably classified as extremely food-insecure</p> <p><i>Take care to understand whether this situation is chronic, transient, or acute</i></p>	<p>Resilience outcomes</p> <p>Recover assets and stabilize household consumption</p> <p>Purchasing power outcomes</p> <p>(Re)build short-term capacity to pay for basic necessities</p> <p>Evidence-based strategies</p> <p>Consumption support</p>
Families struggling to make ends meet	
<p>Characteristics</p> <p>Usually paying for basic needs (like food) but not regularly paying for other needs (like school fees), especially if they require lump-sum payments</p> <p>One or more predictable sources of income</p> <p>Some liquid assets (as described above), which may fluctuate throughout the year as they are accumulated and liquidated</p> <p>Seasonal fluctuations in income/expenses, especially due to agricultural calendar (i.e., they do well for one part of the year but poorly for another part of the year)</p> <p>Probably classified as moderately food-insecure</p>	<p>Resilience outcomes</p> <p>Build self-insurance mechanisms and protect key assets</p> <p>Expand income and consumption</p> <p>Purchasing power outcomes</p> <p>Strengthen family capacity to match income with expenses</p> <p>Evidence-based strategies</p> <p>Money management</p>
Families prepared to grow	
<p>Characteristics</p> <p>Usually paying for both basic needs (like food) and other needs (like schooling and basic health care) on a regular basis; possibly struggling, but usually managing, to make lump-sum payments</p> <p>Some liquid assets that fluctuate less throughout the year than for struggling families</p> <p>Seasonal fluctuations in income/expenses, but probably not as dramatic as for struggling families</p> <p>Probably classified as mildly food-insecure</p>	<p>Resilience outcomes</p> <p>Smooth income and promote asset growth</p> <p>Smooth consumption and manage cash flow</p> <p>Purchasing power outcomes</p> <p>Grow family income to enable more/larger investments</p> <p>Evidence-based strategies</p> <p>Income promotion</p>

OUR APPROACH

Step 1: Examining Existing Resources

Because vulnerability assessment is a common starting point for ES projects we opted to consult existing tools and resources to inform the design of the VA rather than starting from scratch. No existing guidance on the topic specific to ES was identified, so we completed a review of the published and gray literature on various vulnerability assessment methods to gain an understanding of relevant approaches (Moret, 2014a). This review was published as a report and informed a complementary technical brief (Moret, 2014b) describing the process of selecting between methods. In this section, we will outline how we went through each step of this process.

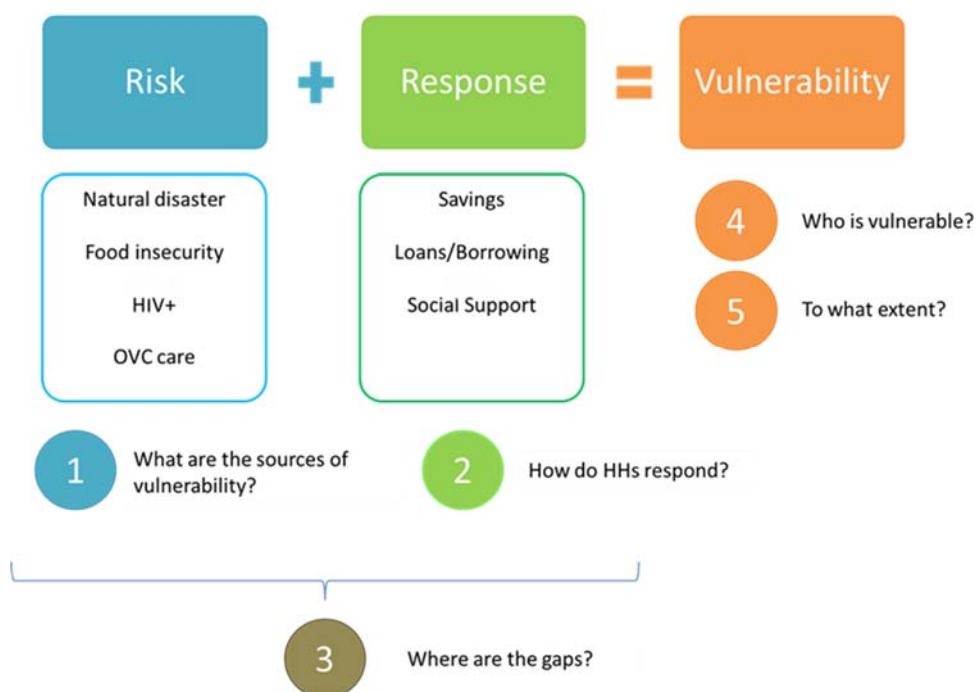
Although vulnerability is defined in different ways across different disciplines, most of the literature defines vulnerability using some variation on the basic formula: Risk + Response = Vulnerability (See Figure 1) (Moret, 2014a). Vulnerability assessment seeks to measure the gap between the risks a household (or other unit) faces and its capacity to cope with those risks. This is compared against a baseline of what is considered an acceptable condition in a given context. Risks include ongoing threats as well as shocks. Responses include protective household capabilities, assets, and risk management and coping strategies (Naudé, Santos-Paulino, & McGillivray, 2009).

According to Naudé et al. (2009), a vulnerability assessment should be predictive rather than descriptive, so the ASPIRES VA was designed to say something about the future potential state of a household, rather than measuring static characteristics like poverty levels. The ASPIRES VA was also designed to describe five components Hoddinott and Quisumbing (2003) identify as essential to vulnerability assessment (p. 185):

- What is the extent of vulnerability?
- Who is vulnerable?
- What are the sources of vulnerability?
- How do households respond to shocks?
- What gaps exist between risks and risk management mechanisms?

Additionally, the literature review yielded insight on the sustainable livelihoods approach, as recommended in PEPFAR OVC guidance (PEPFAR, 2012), as a means of capturing the multi-dimensionality of household vulnerability (Alwang, Siegel, & Jørgensen, 2001), particularly how livelihood assets protect against risks and shocks. Usually these assets are conceptualized according to five different types of capital endowments: financial capital, human capital, natural capital, physical capital, and social capital. These were all assessed as part of the ASPIRES VA.

Figure 1. Vulnerability Equation (Moret, 2014b p.2)



Step 2: Selecting Methods

In addition to reviewing the major theoretical literature sources for vulnerability assessments, the literature review compiled and discussed various published approaches and tools related to ES. ASPIRES was able to narrow these approaches down by considering:

- the level of analysis required to meet the purpose of its VA,
- the data needed to adequately address the domains required, and
- the scope, financial requirements, and validity of the tools available.

This process of decision-making is outlined in the decision tree in Annex I.

Purpose

Based on the literature review, we were able to delineate three major purposes for vulnerability assessments: 1) baseline analysis for strategic planning, policy, project design, and M&E; 2) baseline analysis for project design and community mobilization; and 3) targeting at the household level. Our purpose related to both 1) and 3), meaning that our assessment would require two levels of analysis.

Level of Analysis

We identified two levels of analysis required for the purpose of the VA. The first pertained to the geographical level of analysis, including macro (country-wide), meso (regional), and micro (household). The second related to statistical levels of analysis, including population-level and household-level analysis.

For the purpose of segmenting the population into different vulnerability groups, the VA had to be designed at a population level. In other words, the assessment was designed to be conducted with a sample that was representative of a larger population of interest, with statistical analysis allowing researchers to infer information about the vulnerability of the whole population. The VA was restricted to several health regions rather than a representative sample of the entire country, so analysis was also required at the meso, or regional level. These constraints meant that ASPIRES had to identify tools that were designed to be used with fairly large populations, subject to statistical analysis, and provide information about the whole population in a region.

For household targeting, however, ASPIRES needed a different kind of instrument—one that operated on a micro level of analysis to sort individual households into vulnerability categories. Rather than relying on statistical analysis of a sample, targeting individual households requires data on all households in a population in order to identify those who qualify for program enrollment.

Data Needs

Because economic vulnerability is complex, we chose to use a comprehensive, general analysis of vulnerability based on the sustainable livelihoods approach instead of focusing on a single aspect of economic vulnerability. However, the Health Office made clear that there were several indicators of particular interest to the assessment, including health (emphasizing HIV), nutrition, and education. Several existing tools met the criteria for general livelihoods assessments featuring these key indicators. We selected the Household Livelihood Security Analysis (HLSA) and Household Vulnerability Index (HVI) as the most relevant to our population-level analysis in Côte d'Ivoire. We decided that participatory methods would be the best fit for household-level analysis.

Selecting Tools

We selected and adapted tools for the VA based on their alignment with our budget, scope, and the sustainable livelihoods framework (SLF). We also wanted the VA to generate valid categories of vulnerability in order to develop a tool capable of matching households to relevant ES interventions. We had a sizeable budget and a large scope to define vulnerability levels among a large population. This allowed us to use a large-scale, mixed methods approach to define, measure, and validate a vulnerability classification using a household survey. The assessment was considered worth the investment because the Health Office would be able to use the tool for years to come for program design, targeting, M&E, and to measure the impact of its programs on the vulnerability of populations of interest.

For some programs or interventions, however, this approach is not feasible or desirable. Smaller-scale projects may not need extensive household surveys and may only be interested in specific factors of vulnerability. Best practice recommends using mixed methods, but smaller projects may be more constrained in the selection of methods.

Step 3: Customizing Tools for Local Context

We identified quantitative surveys developed using the HLSA and HVI approaches as a starting point for the VA. However, these tools were designed for other country contexts and needed to be adapted so that indicators would capture what was relevant to economic vulnerability in the context of Côte d'Ivoire. To do this, we conducted a desk assessment of secondary data and primary qualitative research and used this information to adapt the existing tools.

Most comprehensive livelihoods assessments are flexible and can be tailored according to scope and budget.

Understanding the Context: Desk Review

The structure of the desk review was derived from HLSA guidance on basic information needs for a VA (Frankenberger, Mock, & Jere, 2005). The domains covered include: hazards and assets, physical and environmental information, and key features and trends at the community, household, and intra-household levels. Topics roughly aligned with capital assets from the SLF, including attention to data related to the economic, education, health, and social systems in Côte d'Ivoire. This was an open-ended exercise supplemented by conversations with local Health Office staff for additional input on context.

The review found many risks and coping mechanisms similar to those discussed in other contexts in Sub-Saharan Africa, as reflected in HLSA and HVI tools. However, we also found unique contextual factors that needed to be considered. First, the desk review brought to light important regional and cultural differences in Côte d'Ivoire, including, as of 2014, continued unrest in the western part of the country following nation-wide conflict in 2012.

Our desk review also revealed important economic factors that affected the indicators we chose to include in our survey, such as key agricultural indicators to reflect the importance of that sector to the economy. Food security was an important theme in the desk review. Finally, in accordance with HLSA guidance to include intra-household indicators, we included both household- and child-level indicators related to education and food security in the final survey.

Getting Local Perspectives: Exploratory Qualitative Research

After the desk review, we designed a participative data collection strategy involving focus groups and a community ranking exercise. The focus group guide was developed to better understand local perceptions of vulnerability. It also included questions about the specific risks faced by people in the study area and how they respond to those risks. We focused on questions about risks associated specifically with families' ability to provide for the health, education, and nutrition needs of their households, as well as protective capital assets. It concluded with prompts for participants to describe households at various levels of vulnerability, so that the facilitator could get a better sense of where to place cut-off points between levels.

Three community groups were also invited to participate in a household-level, participatory

ranking exercise. Participants were sampled from the catchment areas surrounding PEPFAR service sites in three of the five health regions studied. To identify households eligible for anti-poverty programs, researchers often use an exercise known as participatory wealth ranking (PWR), where participants rank the households in their community to identify which households are poorest. We adapted this approach to focus on vulnerability rather than poverty, and renamed it as participatory vulnerability ranking (PVR). In this exercise, participants created a map of the community and were then divided into several groups. These groups ranked all of the households in the community according to vulnerability level and separated them into a set number of categories representing different levels of vulnerability. The facilitator then asked the groups to explain their definition of each category of vulnerability.

The qualitative investigation yielded several important insights that were fed into the development of a quantitative instrument. Many of the risks identified in the focus groups are covered by common livelihoods surveys. These included lack of financial resources, job loss and death of the head of household, early pregnancy, and high dependency ratios. Some issues that we had not previously considered emerged as well, including the risks associated with lacking birth certificates, the effects of weather on nutrition, and environmental factors associated with health risks. The focus groups also provided insights on context-specific capital assets, such as local savings groups known as *tontines*, and the practices of informal lenders known as *margouillats*. As a result of the qualitative work, the ASPIRES team ensured that the quantitative instrument emphasized indicators related to water, sanitation and hygiene, infrastructure, and financial services. Additionally, questions about birth certificates, land ownership, and specific shocks were added. We were able to determine that the communities we worked in considered the PVR an acceptable means of household targeting. The PVR exercises also yielded further insights on vulnerability categories, which were used in the analysis of the quantitative study.

We faced some tension between comprehensiveness and efficiency in the qualitative phase of the study. Focus groups were lengthy, and some questions generated redundant answers. It is likely that the facilitator could have been trained to ask more incisive questions in order to avoid general responses related to universal vulnerability factors, like poverty. Additional training may have helped the facilitator to dig into context-specific vulnerability factors and the thresholds at which these factors make an impact.

It is also likely that focus groups were slowed down by the very broad definition of vulnerability used in the study. The FG guide could have been cut down to risk questions with follow-up probes on risk management, rather than an entire, separate section on coping mechanisms. The PVR exercise was able to generate some information on thresholds that help distinguish between vulnerability levels, but more detail would have been helpful. Finally, collecting identifying information from the PVR participants would have allowed us to compare survey results to the results from the ranking exercise, serving as an additional source of validation for the cut-offs between categories.

Step 4: Designing the Survey

Using templates derived from the HLSA and HVI, we structured the survey around risks and responses and organized it according to types of capital assets. For many questions, generic response options were replaced with validated national household survey responses derived from the latest Côte d'Ivoire Demographic and Health Survey (DHS) and Living Standards Survey (ENV). For the purposes of validation, the survey also incorporated other validated scales. This would allow analysts to see how data from the survey correlates with well-known scales after the survey is completed. These included the Progress out of Poverty Index (PPI) (Schreiner, 2013), HIV Stigma scale (Kalichman et al., 2005), and Food Consumption Score (FCS) (FAO, WFP, & Institut National de la Statistique, 2013).

We then submitted the questionnaire for feedback from a group of local stakeholders. We further refined the question wording and translation during the training of data collectors. Annex II describes the domains included in the draft questionnaire, sources for indicators, and revisions made in light of stakeholder feedback.

Unlike the HVI, the vulnerability categories generated by the ASPIRES questionnaire were not based on pre-weighted indicators. Rather, statistical reduction techniques were used during the analysis phase to identify pathways of vulnerability.

To inform cut-offs between vulnerability categories, we included a subjective measure in the survey. This allowed data collectors to rank a household's level of vulnerability based on his/her perspective.

One challenge we faced in the survey design process was the operational issue of maintaining the integrity of the questionnaire throughout a process of continuous revision, translation, and back-translation. We managed this with careful version control, but had to caution the survey firm, who took on translation, against making any substantive changes when revising translation wording. Continuous back-translation was required. We learned that it is important to develop and communicate a system for editing and translating survey tools early in the process of development.

We also found that it is helpful to have someone with an understanding of the local context present at the data collector training to help flag sensitive questions, questions that might trigger vague answers from survey respondents, or responses that do not fit local norms. This can help with survey instrument refinement and lead to more complete responses and higher quality data.

We also found it beneficial to pre-test the survey instrument with data collectors in the regions where the survey was to be conducted. Pre-testing the survey instrument gave the data collectors an opportunity to practice what they had just learned in the training and to identify questions that need to be reworded or rephrased. Often projects don't have the resources to pre-test in all the regions where a survey will be conducted, so pre-testing in all regions was a strength of the ASPIRES study.

RESULTS AND LESSONS LEARNED

Narrowing Down Vulnerability

We discovered early on in the process of developing an assessment that there is no standardized definition of vulnerability in the PEPFAR guidance on OVC, and the scope of the term “vulnerability” can be limitless. It is important to note that although the assessment was focused on economic vulnerability, it did not seek to measure vulnerability to poverty. The purpose of economic strengthening interventions is to reduce economic vulnerability to shocks and stresses for the purpose of affecting specific well-being outcomes. In the case of USAID activities pertaining to OVC, the well-being outcomes of interest relate to resilience to the effects of the HIV/AIDS epidemic. With instruction from the USAID Côte d’Ivoire Health Office, ASPIRES defined vulnerability as “the degree of inability of households to provide for the health, education, and nutritional needs of HIV+ and HIV- household members in order to mitigate the economic and health impact of HIV, increase their ability to cope with infection, and reduce their risk for acquiring HIV.”

Drawing on the economics and sustainable livelihoods literature on vulnerability, we conceptualized vulnerability as a function of the risks faced by a household and their ability to overcome those risks. We measured risks as shocks and stresses to household economic status, and we conceptualized responses as the assets that allow households to manage and cope with risk, measuring these as the five capital assets outlined in the sustainable livelihoods approach: physical, financial, social, natural, and human capital assets. Indicators were defined for these assets using existing survey templates, validated indices on poverty, food security, and HIV stigma, and participatory methods. They were further refined through stakeholder input and pretesting. Data was collected from 3,750 households in five regions of Côte d’Ivoire and analyzed using principal component analysis (PCA), a statistical method used to identify correlations between indicators and ultimately distinct pathways of vulnerability.

However, data reduction methods could not isolate specific pathways to explain the variance between different levels of vulnerability. Even the most basic validated indicators—food security and poverty—could only explain a small percentage of who was considered vulnerable. Because of this, we were not able to complete our original plan to reduce our survey instrument down into a small set of key indicators to create a simplified tool for targeting.

In our review of the literature, we found three studies that used similar methodology to develop vulnerability indices (Gebrehiwot & van der Veen, 2013; Ghimire, Shivakoti, & Perret, 2010; Oluoko-Odingo, 2011). All three studies were focused on socioeconomic vulnerability related to environmental hazards, with variables focusing on assets related to rural livelihoods, environmental hazard exposure, as well as general socioeconomic characteristics, such as literacy, demographic characteristics, and access to health facilities. Because these studies defined vulnerability in the narrower context of rural livelihoods and environmental hazards, they included fewer and a more homogenous set of variables in their analyses. This may have

resulted in their composite scores reflecting more of the diversity in the full set of measures compared to our study, which includes both rural and urban households.

Since HIV outcomes are affected by household economic status, one way to better understand which assets are necessary for resilience in which livelihood groups is to conduct a livelihood analysis. Livelihood assessments typically employ life history interviews, participative community activities, and other methods to disaggregate different groups of people who experience similar vulnerabilities. They help define which assets and shocks/stresses affect vulnerability for which households. Similarly, the Household Economy Approach to livelihood and food security assessment disaggregates households by livelihood zone and wealth groups. Although we began our study with a qualitative assessment, it did not attempt to disaggregate the population by livelihood types or other organizing principles that could affect vulnerability. The lack of disaggregation may have affected our study results. We had to eliminate analysis of our natural capital indicators due to a high rate of non-response. As both rural and urban populations had high rates of non-response, this may have been due to the wording of the questions, but it may have also been that the indicators we chose were simply not the most relevant for the livelihoods of our survey populations. Indicators related to land and livestock may have a big effect on the welfare of rural populations, but most of our study population was urban or semi-urban, so these indicators were less relevant to them.

Our sample population was large and heterogeneous, so it is likely that the shocks and assets identified at a high level were too general to be relevant indicators of vulnerability for all households. Assets can vary in their significance for a household depending on how they relate to the livelihood strategies of that household, which also depend on whether that household is located in a rural or urban context. In other words, assets selected as vulnerability indicators may need to be further disaggregated by their significance to households according to livelihood type and urbanicity. Our quantitative study disaggregated by region and beneficiary status, but even these categories may represent too heterogeneous of a population to comprise a single measure of vulnerability. It may be more effective to disaggregate in an earlier stage of study.

Defining Useful Categories of Vulnerability

In addition to identifying which assets impact vulnerability for which groups of people, vulnerability assessments should define the thresholds at which key assets affect well-being outcomes. In our qualitative study, we attempted to identify thresholds by asking focus groups the amount of specific assets that were required for a household to survive and how much was required to live comfortably. However, we received a wide range of responses to these questions that made it difficult to identify thresholds. This method may have been more successful had we disaggregated our population based on livelihood characteristics and exposure to different types of shocks, as different livelihood groups depend on different productive assets. It might have also been more successful if we had posed our questions in a less quantitatively precise way. Given the number of missing responses to survey questions on the quantity of land owned and cultivated, it is possible that most members of the survey

population simply did not conceptualize the quantity of land they owned in the same terms as the question (in hectares) and did not know how to estimate a response.

Part of the goal of our study was to place households into different categories of vulnerability in order to match them to relevant ES interventions using the PEPFAR pathway approach. These categories included: destitute, struggling to make ends meet, and prepared to grow. We added a fourth category of “not vulnerable” for households which did not require ES. Many NGOs use simple, rapid tools to assess vulnerability using poverty and other well-being indicators and category cut-offs based on equal divisions of the total score. In our case, because our indicators were not weighted, our survey did not yield numeric scores for individual households. Instead, we used subjective data collector input and the results from our qualitative research to come up with a common distribution of households across vulnerability categories. Both of these methods have drawbacks.

First, the results from our participatory exercise came from only three focus groups, so the distribution generated was probably not representative of our study population. Furthermore, the distribution of vulnerability categories was derived from a household ranking exercise based on the definition of vulnerability arrived at in each group. The definition of vulnerability may have varied between groups, reducing the comparability of the categories generated. This aligns with previous research on community-based poverty targeting, which demonstrates that community-based definitions don't always correspond to each other (Stoeffler, 2014). However, these community-based definitions have tremendous potential to enhance the validity of a vulnerability assessment as well. The ranking exercise could have been used to validate the quantitative assessment tool by collecting identifying information for the households ranked, then comparing their community-based ranking against their quantitative survey results.

The second method of generating cut-offs was to allow data collectors to categorize households based on the information gathered from the survey and their subjective impressions. Data collectors were all selected from the regions of study and expected to recognize a localized concept of vulnerability. Data collector ratings are limited by subjectivity, as the data collector's perception of a household's economic status may not necessarily be associated with how a household handles the HIV-related shocks of interest to the study, or the assets required to overcome them. Nonetheless, this method is similar to the kind of rankings that are currently generated by programs using a case management approach.

Constructing asset indices is not the only way to quantify vulnerability at the household level. Research tells us that we can infer the vulnerability status of a household based on how they handle risk and cope with shocks, which, unlike the assets that contribute to resilience themselves, tend to be similar across households based on vulnerability. In fact, PEPFAR's pathway approach to matching ES interventions to household economic status is primarily concerned with risk management and coping functions. For example, a household able to diversify its sources of income and make investments is engaged in risk management and is likely less vulnerable to shocks, whereas a household that is selling off productive assets in

response to a shock is increasingly vulnerable to future shocks. Although our study included some of these indicators, there is still more research to be done on using this type of approach, rather than asset indices, for targeting.

A WAY FORWARD: RECOMMENDATIONS

Our experience yields important implications for donors and researchers who want to assess a population's vulnerability. Based on our study, we recommend the following approaches to designing a vulnerability assessment:

- **There is no single measure of “vulnerability.”** Economic vulnerability is multidimensional, and no single index can capture all of its aspects. Instead, understanding vulnerability requires different methods.
- **Begin with a specific definition of vulnerability.** In other words, answer the question: vulnerability to what and for whom? This requires a definition of the shocks and stresses of interest, as well as a time period of interest. Vulnerability assessments are designed to be forward-looking, but outcomes over time will vary according to the likelihood of additional shocks and stressors. Our understanding of the effects of shocks and stressors is also usually influenced by retrospective study of the effects of previous shocks in a given timeframe. A specific timeframe and prospective data collection will increase the accuracy of the assessment.
- **NGOs can use simple tools to capture specific elements of vulnerability that the program wants to address, but secondary data and good qualitative research are needed to understand causal pathways of vulnerability.** The scope of a vulnerability assessment will depend on its intended use. For NGOs using VA for M&E or targeting purposes, simple measures of specific components of vulnerability may make more sense than large-scale studies over long time periods. Simple tools can help identify the “what” of beneficiary needs, but qualitative data is needed to understand “how” vulnerability works in-context and to identify points of intervention.
- **Build on existing tools.** It takes a lot of work to develop and validate a new tool, so use existing validated measures where possible. Even validated tools will need to be tested and adapted for the specific context where they are used.
- **Define locally specific categories of vulnerability for matching households to ES interventions.** Category cut-offs should be based on the identification of asset thresholds required for managing risks and coping with shocks at defined levels of vulnerability for a specific population. Another strategy would be to identify risk management and coping strategies linked to these thresholds and use those to categorize households according to vulnerability level.

- **To understand the vulnerabilities of a heterogeneous population, disaggregate early.** The assets required to cope with shocks and manage risks will not be the same for different groups of people. Shocks will vary by location, availability of different kinds of assets will depend on rural/urban status, and productive assets in particular will vary by livelihood type. If setting thresholds for measuring resilience based on asset availability, ensure that the risks and assets assessed are appropriate for the population of interest. Methodologies like HEA, for instance, disaggregate by wealth zones and livelihood types.
- **Use community perceptions to validate measures.** One trick for off-setting errors inherent in quantitative tools, and to validate such tools, is to incorporate the subjective assessment used by local people who know the context well. Cut-offs between vulnerability categories can also be validated using data from participatory data collection exercises, such as ranking exercises, to compare how communities view vulnerability categories to how households are classified by a tool. Note that these exercises may need to be disaggregated by rural/urban status, livelihood type, or other factors that may affect vulnerability for different groups of people.

CONCLUSION

Vulnerability is complicated and multi-faceted, as our study confirmed. We were not able to identify discrete pathways of vulnerability relevant to the entirety of our heterogeneous study population, and we were not able to identify a small set of key indicators that could be used to categorize households into the PEPFAR categories using our broad definition of vulnerability. It is possible that a narrower definition of vulnerability, using indicators selected based on usefulness in decision-making for specific intervention types, might generate more coherent results. Nonetheless, we were able to gather important information related to household welfare that can be used to inform future PEPFAR programming, including the segmentation of future and potential beneficiaries into contextually-informed vulnerability categories. These data may be especially useful when disaggregated using existing livelihood data.

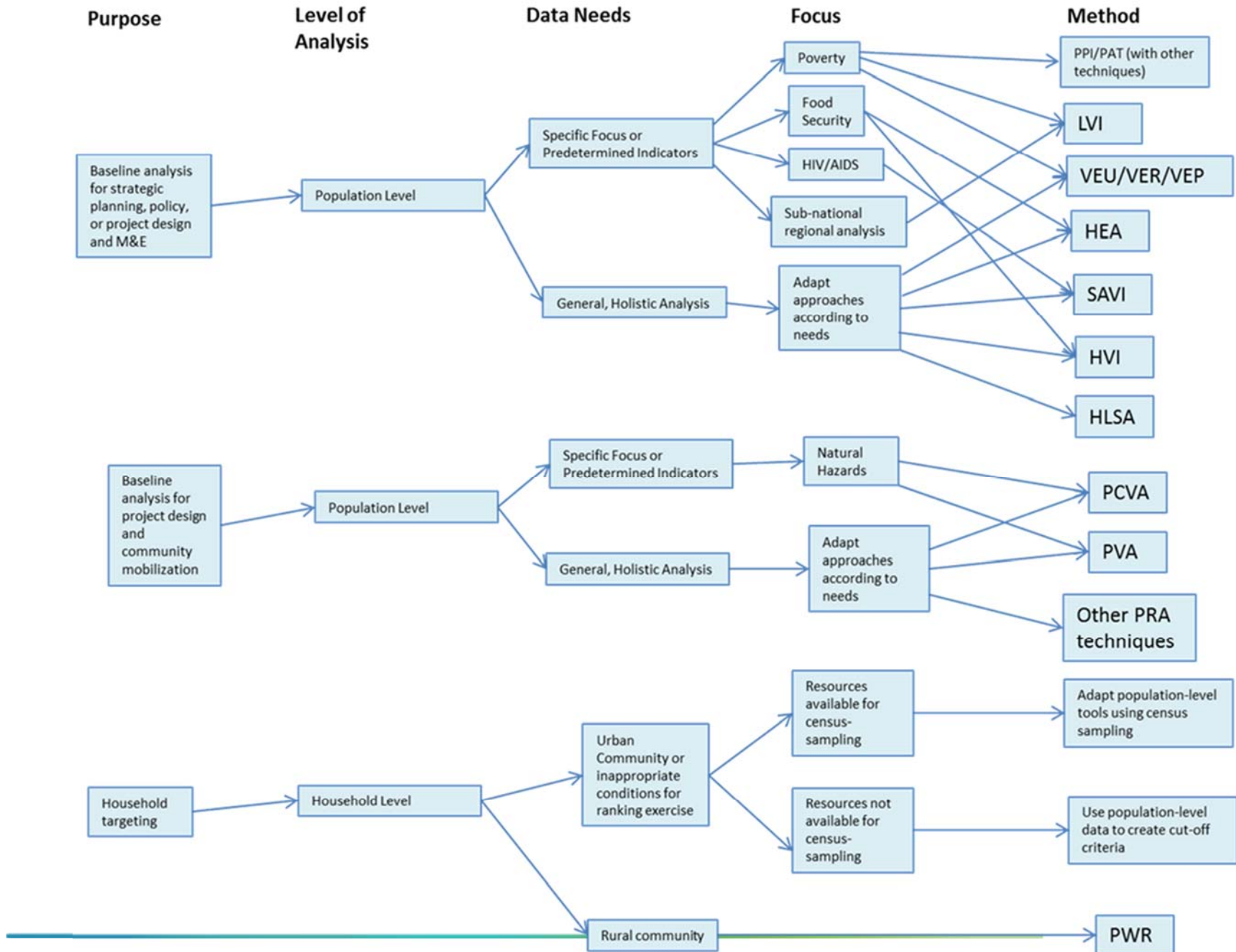
There are several potential directions that vulnerability assessments for ES can take, including developing more simplified tools, relevant specifically to targeting households for ES intervention involvement and matching households to appropriate interventions, to examine key asset thresholds for outcomes of interest or to segment households based on risk management and coping mechanisms. Although it may be possible to identify several discrete pathways for specific aspects of vulnerability, such as those relevant to ES interventions, the issues faced by OVC households are complex and require multiple intervention types, affirming our study finding that there are numerous unique pathways to the broad definition of vulnerability to shocks that these households experience. As such, ASPIRES recommends that implementers employ a case management approach to ensure that individual household needs are uniquely assessed and addressed rather than relying on simplified measures.

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ANNEX I. VULNERABILITY ASSESSMENT DECISION TREE (MORET, 2014B P.3)



ANNEX II. STRUCTURE AND REVISIONS OF SURVEY

Domains	Sources	Notes
<i>Human Capital</i>		
Demographics and education	HVI (Kureya, 2013), ENV(Institut National de la Statistique, 2008), PPI (Schreiner 2013)	<ul style="list-style-type: none"> Added birth certificates based on FG feedback
Skills and productivity	HLSA (Mazzeo, 2009)	<ul style="list-style-type: none"> Stakeholders suggested that this section did not represent vulnerability in communities served Removed some questions: specific skills, chores for different HH members
Info about HIV	HVI (Kureya, 2013), DHS (Institut National de la Statistique (INS) and ICF International, 2012)	<ul style="list-style-type: none"> Moved to later in survey and simplified question
<i>Physical Capital</i>		
Assets and services	PPI (Schreiner, 2013), HVI (Kureya, 2013), DHS (Institut National de la Statistique (INS) and ICF International, 2012), ENV (Institut National de la Statistique, 2008)	<ul style="list-style-type: none"> Question structured after HVI example, with response options drawn from national-level surveys
Health and WASH	PPI (Schreiner, 2013), HVI (Kureya, 2013), DHS (Institut National de la Statistique (INS) and ICF International, 2012)	<ul style="list-style-type: none"> Considered one of the most important indicators by stakeholders Simplified questions about water sources Direct questions about HIV status replaced with indirect questions about chronic illness due to IRB feedback
Nutrition and Food Security	HVI (Kureya, 2013), FCS (FAO et al., 2013)	<ul style="list-style-type: none"> Considered one of the most important indicators by stakeholders Removed questions about food aid, redundant with section on external aid
<i>Natural Capital</i>		
Land availability and use	HVI (Kureya, 2013)	<ul style="list-style-type: none"> Stakeholders suggested that this section did not represent vulnerability in communities served

Domains	Sources	Notes
		<ul style="list-style-type: none"> Removed some detailed questions from HVI, such as use of fertilizer and amount of land used for staple crop; removed questions about cutting trees and collecting wild fruit
Agricultural production	HVI (Kureya, 2013)	<ul style="list-style-type: none"> Stakeholders suggested that this section did not represent vulnerability in communities served Removed detailed questions from HVI
<i>Financial Capital</i>		
Income	HVI (Kureya, 2013)	<ul style="list-style-type: none"> Considered one of the most important indicators by stakeholders Removed details that coincided with external support
Expenses	HLSA (Mazzeo, 2009), HVI (Kureya, 2013)	<ul style="list-style-type: none"> Added rent as important expense based on FGDs
Financial Services	ALMA Kenya	<ul style="list-style-type: none"> Details on interest rates and collateral removed
<i>Social Capital</i>		
External Support	HVI (Kureya, 2013)	<ul style="list-style-type: none"> Some detailed q's expected to be less common removed; details on church removed based on stakeholder input
Stigma	HIV Stigma Scale (Kalichman et al., 2005)	<ul style="list-style-type: none"> Used instead of questions found in HLSA example
Social Cohesion and welfare perceptions	HVI (Kureya, 2013)	<ul style="list-style-type: none"> Shortened
Migration	ENV (Institut National de la Statistique, 2008)	<ul style="list-style-type: none"> Stakeholders suggested that this section did not represent vulnerability in communities served Removed
<i>Shocks and Coping</i>		
Various livelihoods shocks	HVI (Kureya, 2013)	<ul style="list-style-type: none"> Stakeholders suggested that this section did not represent vulnerability in communities served, but the study team disagreed
<i>Other Indicators</i>		
PPI	(Schreiner, 2013)	<ul style="list-style-type: none"> Commonly-used, brief poverty scorecard included to assess correlation with other indicators
Stigma Scale	(Kalichman et al., 2005)	<ul style="list-style-type: none"> Validated stigma scale
Food Consumption Score	(FAO et al., 2013)	<ul style="list-style-type: none"> Several food security scales were considered, but the FCS was selected because it addresses both frequency of consumption and amount and is

Domains	Sources	Notes
		appropriate for moderately vulnerable households, unlike the Household Hunger Scale, which is more oriented toward the extremely vulnerable
Subjective measure		<ul style="list-style-type: none"> <li data-bbox="764 369 1430 590">• To factor in potential statistical error and to inform the development of cut-off points in the analysis process, a subjective measure was introduced to the survey. This allowed data collectors to rank a household according to level of vulnerability based on his/her perspective.