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## Introducing a Simple Measure of Household Hunger for Cross-Cultural Use

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### INTRODUCTION

This technical note introduces the Household Hunger Scale (HHS), a simple, new indicator to assess household hunger in food insecure areas. The HHS consists of three questions and three frequencies that, when administered in a population-based household survey, allows for estimating the percent of households affected by three different severities of household hunger: 1) Little to no household hunger; 2) Moderate household hunger; and 3) Severe household hunger.

The HHS can be meaningfully used for assessment, geographic targeting, and monitoring and evaluation in settings affected by substantial food insecurity. Different from most indicators of household food insecurity, the HHS is unique in having been intentionally developed and validated for cross-cultural use. This means that HHS results from one food insecure context can be directly and meaningfully compared to HHS results from another food insecure context.

Here we briefly describe the origins and measurement properties of the HHS and illustrate how the HHS can be applied in both a programmatic and a policy context. To frame the discussion, we begin by defining the concept of household food security and describing key challenges associated with cross-cultural measurement of food security. We also provide an overview of common tools available for measurement of the access component of food security to highlight how these tools might be complemented by or substituted for the HHS.

The aim of this technical note is to provide summary information about the HHS. Individuals interested in learning about the methodology to validate the HHS, or seeking details about the results of the HHS validation work, are referred to the companion technical report, where a more extensive discussion about the HHS is provided: M. Deitchler, T. Ballard, A. Swindale, and J. Coates, *Validation of a measure of household hunger for cross-cultural use* (2010).

<sup>1</sup> USAID 1992.  
<sup>2</sup> FAO 2002.  
<sup>3</sup> Ibid.  
<sup>4</sup> De Onis et al. 2006.  
<sup>5</sup> Webb et al. 2006.

## DEFINING AND MEASURING FOOD SECURITY

Food security occurs when “all people at all times have physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life.”<sup>1</sup> This definition of food security is founded on three fundamental elements: 1) Adequate food availability; 2) Adequate access to food by all people (i.e., the ability of a household to acquire sufficient quality and quantity of food to meet all household members’ nutritional requirements for productive lives); and 3) Appropriate food utilization/consumption.

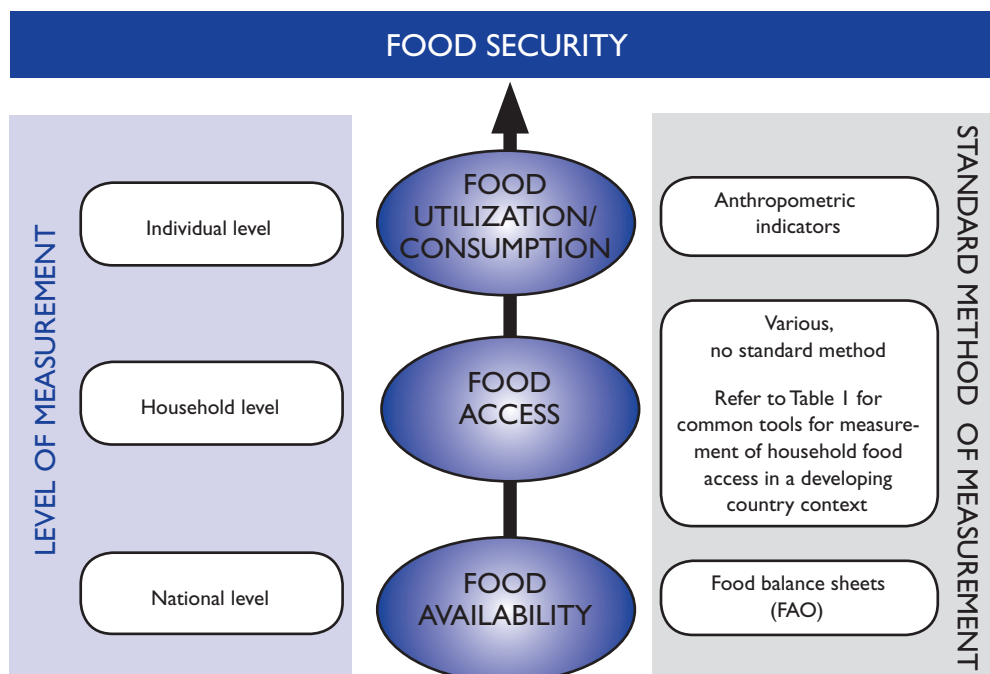
The three elements have a hierarchical relationship: Food must be available for households to have access, and a household must have access to food for individual household members to have appropriate food utilization/consumption. All three elements of food security must be achieved for food security to be attained.

In light of the complex nature of food security, it is generally agreed that different indicators and data collection methods are needed to assess the three different elements underlying food security.<sup>2</sup> While food balance sheets<sup>3</sup> and anthropometric indicators<sup>4</sup> provide well-established methods for obtaining data on the availability,

utilization/consumption elements of food security, a standard measure of household food access has not yet been adopted for global use (Figure 1). This is partly because, unlike indicators of food availability and food utilization/consumption, there is not yet a measure of food access that has been validated for cross-cultural use, to allow for direct and meaningful comparison of results across different contexts.

The lack of a cross-culturally valid measure of household food access is not due to lack of interest or use for such a tool. The challenge is the rigor demanded of such a measurement instrument. Cross-cultural comparability requires that both a standard tool and a standard metric can be used in all settings. In other words, for a tool to be cross-culturally valid it must be valid in all settings and the meaning of the items that make up the tool and their relation to the experience of inadequate food access must also be the same across all settings. Few measurement tools meet such rigorous criteria and no measurement tool can be assumed to be cross-culturally comparable in the absence of empirical validation. For these reasons—and because the measurement of household food access is complex enough in and of itself<sup>5</sup>—issues concerning cross-cultural comparability have historically not been well explored in tool development.

**Figure 1. Measurement approaches to assess the three elements of food security**



## WHAT SIMPLE MEASURES ARE AVAILABLE TO ASSESS HOUSEHOLD FOOD ACCESS?

Simple tools to measure household-level food access range from qualitatively derived measures that are intended to be developed from the “ground up” to standard tools intended for universal application. The “ground up” tools reflect the specific context in which the assessment is being carried out, while standard tools, usually multiple item scales, are intended for use in all contexts, with the caveat that the results derived from different contexts might not be meaningfully compared.

In way of overview, we summarize below (Table 1) the measurement properties of some of the more commonly used tools to measure household food access in a developing country context. However, for the purpose of this technical note, we focus our attention on the approach that motivated the development of the HHS: the U.S. Household Food Security Survey Module (HFSSM). For context, we therefore also summarize below (Table 2) the measurement properties of the HFSSM and HFSSM-inspired tools.

**Table 1. Measurement properties of common tools for measurement of household food access in a developing country context**

MEASUREMENT APPROACH	PROPERTIES OF MEASUREMENT APPROACH		
	Standard tool for universal application	Standard cut-off available for categorizing households as having or lacking food access	Approach and tabulation method validated for cross-cultural use
Coping strategies index (Original version)	NO	NO	NO
Coping strategies index (Reduced version)	YES	NO	NO
Food consumption score	YES	YES	NO
Household dietary diversity score (HDDS)	YES	NO	NO
Household economy approach	NO	NO	NO

**Table 2. Measurement properties of HFSSM and HFSSM-inspired tools for measurement of household food access in the United States and developing country contexts**

MEASUREMENT APPROACH	PROPERTIES OF MEASUREMENT APPROACH		
	Standard tool for universal application	Standard cut-off available for categorizing households as having or lacking food access	Approach and tabulation method validated for cross-cultural use
U.S. Household Food Security Survey Module (HFSSM)	NO (for use in US)	YES	NO
Latin American and Caribbean Food Security Scale (ELCSA)	NO (for use in LAC region)	NO (cut-offs vary by country in LAC region)	NO
Household Food Insecurity Access Scale (HFIAS)	YES, IN DEVELOPING COUNTRIES (but not validated for universal application)	NO (previous cut-offs established for HFIAS are no longer recommended)	NO
Household Hunger Scale (HHS)	YES, IN FOOD INSECURE DEVELOPING COUNTRIES (validated for use in seven diverse contexts)	YES	YES (cross-cultural comparability validated for seven diverse contexts)

<sup>6</sup> Nord et al. 2008.

<sup>7</sup> For some items, the yes/no response for scale score calculation is a transformed variable, created from more detailed information provided by the respondent.

<sup>8</sup> Nord et al. 2007.

<sup>9</sup> Ibid.

The HFSSM is a well-established method used by USDA and other organizations to collect information about household food access in the United States. The approach is based on the idea that the experience of food insecurity causes predictable reactions that can be captured through a survey and summarized in a scale. Respondents are asked directly whether or not the household has experienced events typical of a food insecure household during a specified recall period, including experiences related to anxiety about the household food supply, insufficient quality of food, and insufficient quantity of food consumed and the physical consequences of insufficiency.<sup>6</sup>

The HFSSM questionnaire consists of 18 items (Table 3). A household's responses across these items are summed (where yes = 1; no = 0<sup>7</sup>) and the resulting value is the household's food insecurity score. Predetermined cut-points on the scale's score continuum are then used to classify each household's score into one of three cate-

gories: food secure, low food security, very low food security.<sup>8</sup> Sometimes referred to as an "experiential" or "perception-based" method, the HFSSM approach has been used by USDA to monitor food assistance programs and estimate the prevalence of household food insecurity since 1995, and has been validated consistently to be a statistically meaningful measure of food insecurity in the United States.<sup>9</sup>

As a method to measure household food insecurity, the HFSSM approach has great appeal. Apart from the approach having already been validated for use in the United States, the method offers a simple, direct, and intuitive approach to collecting data on household food access. Therefore, beginning in 2000, FANTA undertook a set of multi-year research activities to explore whether the HFSSM approach could also offer utility in a developing country context. These activities included qualitative and quantitative field work in Burkina Faso and Bangladesh, in which culturally specific questions around household food access

<sup>10</sup> Table 3 is adapted from Table A-1 in Nord et al. 2007.

<sup>11</sup> Scale items are abbreviated to describe the main concept represented by each question. The complete wording of each item includes additional details and an explicit reference to resource limitation, e.g., "...because (I was/we were) running out of money to buy food" or "...because there wasn't enough money for food" (Nord et al. 2007).

<sup>12</sup> These items are asked only if the respondent replies "yes" to the previous question. The actual wording of the question is: "How often did this happen – almost every month, some months but not every month, or in only 1 or 2 months?" (Nord et al. 2007).

**Table 3. HFSSM items and response codes<sup>10</sup>**

<i>Recall period: 12 months</i>	
<b>Scale items<sup>11</sup></b>	<b>Response codes</b>
<i>Household items:</i>	
1. Worry food would run out before (I/we) got money to buy more	Never, Sometimes, Often
2. Food bought didn't last and (I/we) didn't have money to get more	Never, Sometimes, Often
3. Couldn't afford to eat balanced meals	Never, Sometimes, Often
<i>Adult items:</i>	
4. Adult(s) cut size of meals or skipped meals	Yes, No
5. Adult(s) cut size of meals or skipped meals in three or more months <sup>12</sup>	Yes, No
6. Respondent ate less than felt he/she should	Yes, No
7. Respondent hungry but didn't eat	Yes, No
8. Respondent lost weight	Yes, No
9. Adult(s) did not eat for whole day	Yes, No
10. Adult(s) did not eat for whole day in three or more months <sup>12</sup>	Yes, No
<i>Child items:</i>	
11. Relied on few kinds of low-cost food to feed child(ren)	Never, Sometimes, Often
12. Couldn't feed child(ren) balanced meals	Never, Sometimes, Often
13. Child(ren) were not eating enough	Never, Sometimes, Often
14. Cut size of child(ren's) meals	Yes, No
15. Child(ren) were hungry	Yes, No
16. Child(ren) skipped meals	Yes, No
17. Child(ren) skipped meals in three or more months <sup>12</sup>	Yes, No
18. Child(ren) did not eat for whole day	Yes, No

**Table 4. HFIAS items and response codes<sup>13</sup>**

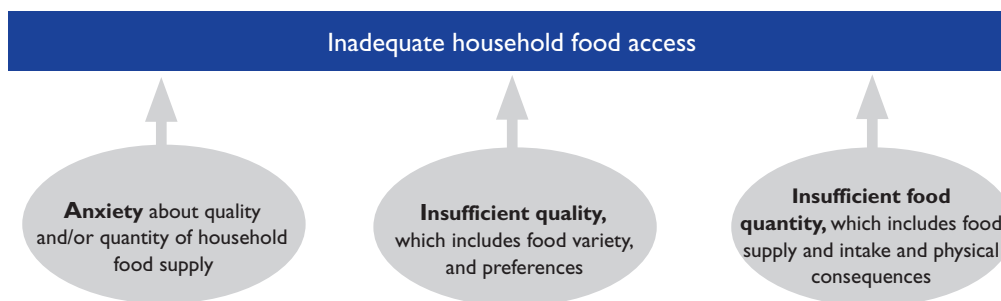
<i>Recall period: 4 weeks</i>	
Scale items <sup>14</sup>	Response codes
<i>Household items:</i>	<i>Frequency categories:</i>
1. Worry that the household would not have enough food	Never, Rarely, Sometimes, Often
2. Not able to eat the kinds of food preferred <sup>15</sup>	Never, Rarely, Sometimes, Often
3. Eat a limited variety of foods <sup>15</sup>	Never, Rarely, Sometimes, Often
4. Eat some foods that you really did not want to eat <sup>15</sup>	Never, Rarely, Sometimes, Often
5. Eat a smaller meal than you felt you needed <sup>15</sup>	Never, Rarely, Sometimes, Often
6. Eat fewer meals in a day <sup>15</sup>	Never, Rarely, Sometimes, Often
7. No food to eat of any kind in your household <sup>15</sup>	Never, Rarely, Sometimes, Often
8. Go to sleep at night hungry <sup>15</sup>	Never, Rarely, Sometimes, Often
9. Go a whole day and night without eating <sup>15</sup>	Never, Rarely, Sometimes, Often

were identified and then evaluated through population-based surveys; a literature review to document the use of the HFSSM in other developing country contexts; and multiple consultations with academics, government agencies, private voluntary organizations, and other stakeholders to arrive at consensus on the construct validity of a household food access measurement tool for use in a developing country context. The collective findings from this set of activities,<sup>16</sup> along with the findings from other HFSSM validation studies carried out in the Latin America and Caribbean (LAC) region,<sup>17</sup> ultimately led, in 2006, to the development of a “standard” measurement tool to be field-tested in dif-

ferent developing country settings (Table 4). The tool was named the Household Food Insecurity Access Scale (HFIAS).<sup>18</sup>

Consisting of nine items and four frequency responses, the HFIAS was developed to reflect three apparently universal domains of the experience of inadequate household-level food access: 1) anxiety about household food supply; 2) insufficient quality, which includes variety and preferences; and 3) insufficient quantity of food supply, the amount consumed, and the physical consequences of insufficiency<sup>19</sup> (Figure 2). The aim was to provide a tool that was easy to implement, captured multiple dimensions of inadequate food

**Figure 2. Universal domains of inadequate household-level food access**



<sup>13</sup> Coates et al. 2007b.  
<sup>14</sup> In the HFIAS questionnaire, each item is administered initially as a yes/no question. If a respondent replies “yes” to any item, a follow-up question is administered to ask how often the item had been experienced in the 4 weeks preceding the survey (e.g., Scale Item 1. In the past 4 weeks, did you worry that your household would not have enough food? If yes: How often did this happen? Rarely (once or twice in the past 4 weeks); Sometimes (3–10 times in the past 4 weeks); Often (more than 10 times in the past 4 weeks) (Coates et al. 2007b).

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<sup>15</sup> The actual wording of this item includes explicit reference to resource limitation, e.g., “...because there was not enough food” or “because of a lack of resources” (Coates et al. 2007b).  
<sup>16</sup> Coates et al. 2006; Frongillo and Nanama 2004; FANTA 2004; FANTA 2005.  
<sup>17</sup> Melgar-Quinonez 2004; Pérez-Escamilla et al. 2004.  
<sup>18</sup> Coates et al. 2006b.  
<sup>19</sup> Swindale and Bilinsky 2006.

access, and was applicable to a wide range of developing country contexts. An additional, and ambitious, objective was to ensure that this tool would be valid for comparative purposes, across cultures, regions, and population groups. While other simple tools for measurement of food insecurity were being developed and popularized around the same time, cross-cultural comparability has not been rigorously pursued or validated in any of the other approaches.

### ANALYTIC METHODS TO EVALUATE THE CROSS-CULTURAL OBJECTIVE OF THE HFIAS

Of course, it is not enough to aim to develop a tool that is cross-culturally comparable; it is also necessary to examine empirically whether or not the aim of cross-cultural validity has been achieved. To do so, in 2008, FANTA-2 partnered with FAO and Tufts University to carry out a validation study. Seven diverse HFIAS datasets collected by collaborating organizations were analyzed and evaluated for cross-cultural validity (Table 5) using statistical methods based on the Rasch measurement model, an Item Response Theory (IRT) approach. A full description of these methods is available elsewhere.<sup>20</sup> Here, we limit the description to a discussion about the general principles of the Rasch model, to highlight the ways in

which the model is appropriate for assessing the cross-cultural validity of a multiple item scale, such as the HFIAS.

In brief, the Rasch model uses probability theory to estimate severity parameters for each item of the scale and for each household administered the scale. The model is based on the idea that the construct being measured exists in less and more severe forms and that the scale items also vary with regard to level of severity. The model assumes that households are more likely to answer “yes” to less-severe items than to more-severe items and that items are more likely to be answered “yes” by households more severely affected than by households less severely affected (Figure 3). The model assumes the mathematical form of these relationships is logistic. The severity parameters estimated for each item and household are thus on a logit scale.<sup>21</sup>

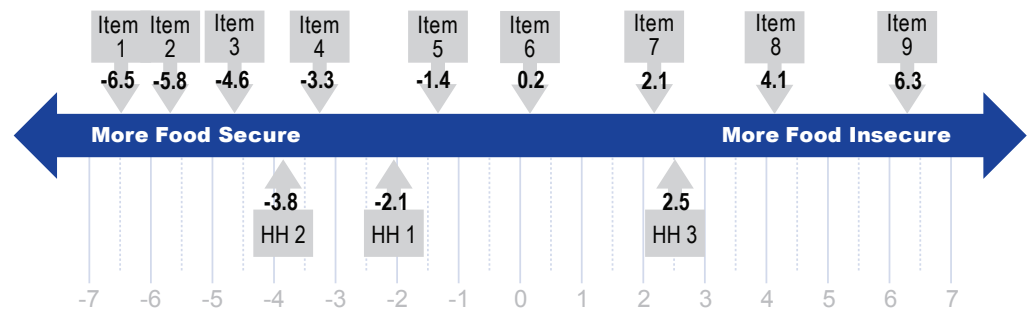
The Rasch model has certain advantages over other IRT models that make it appropriate for assessment of cross-cultural validity. Of particular importance is that the model estimates the severity parameters for items and households separately, resulting in item- and household estimates that are sample- and item-independent. This allows not only for items and households to be compared directly, but also for the cross-cultural comparability of the

<sup>20</sup> Deitchler et al. 2010.

<sup>21</sup> Bond and Fox 2001.

<sup>22</sup> In the example shown in Figure 3, the scale consists of nine items. Item 1 was the least severe item and Item 9 the most severe. Three households responded to all items that make up the scale. Based on the item and household calibrations, household 2 would have been expected to reply “yes” to items estimated as less severe than its household calibration (i.e., Items 1, 2, and 3). Similarly, household 3 would have been expected to reply “yes” to every item except those estimated as more severe than its calibration value (i.e., Items 8 and 9). These expectations are probabilistic, not absolute. They are increasingly probable as the distance between the severity of the household and item increases. In other words, household 3 would be expected to have a higher probability of replying “yes” to Item 6 than “yes” to Item 7 and a higher probability of replying “no” to Item 9 than “no” to Item 8.

**Figure 3. Example: items and households placed on a logit continuum of food insecurity<sup>22</sup>**



**Table 5. HFIAS validation study collaborators and datasets used in analysis**

<b>Collaborator</b>	<b>Name of dataset/survey</b>	<b>How dataset is referred to in this Technical Note</b>	<b>Geographic area represented</b>	<b>Objective of survey</b>	<b>Season of data collection</b>	<b>Period of data collection</b>
Mozambique - FAO	FAO project funded by Belgium Survival Fund: Protecting and Improving Household Food Security and Nutrition in HIV/AIDS-Affected Areas of Manica and Sofala Provinces	Mozambique Round 1 (R1)	Central Mozambique: Nhamatanda and Chibabava districts in Manica Province and Gondola and Tambara districts in Sofala Province; Sampling design for the survey was stratified to allow for district-level results to be reported	Assess the nutrition and food security situation in vulnerable areas (baseline survey)	Pre-harvest	December 2006
Mozambique - FAO	FAO project funded by Belgium Survival Fund (see above)	Mozambique Round 2 (R2)	Central Mozambique: Chibabava and Gondola districts; Sampling design for the survey was stratified to allow for district-level results to be reported	Assess the nutrition and food security situation of two vulnerable districts assessed in the baseline survey (see above) in a different season	Post-harvest	July 2007
Malawi - Department of HIV and AIDS and Nutrition and UNICEF	Malawi Vulnerability Assessment Committee (MVAC) Nutrition Survey	Malawi	North, Central, and South Malawi: Karonga, Lilongwe, and Lowershire districts	Assess the nutrition and food security situation in vulnerable areas	Pre-harvest	December 2007
West Bank and Gaza Strip - FAO	Palestinian Public Perceptions of their Living Conditions	West Bank/ Gaza Strip	National: urban and rural areas in the West Bank and Gaza Strip	Assess Palestinian perceptions of their living conditions	Pre-harvest	April–May 2007
Kenya - Samwel Mbugua and Egerton University: Human Nutrition	Livelihoods, Food and Nutrition Insecurity Status of HIV-Affected Households in Nakuru Municipality	Kenya	Data collected among HIV-affected households in Nakuru municipality; Data not statistically representative	Assess the livelihood, food, and nutrition insecurity status of HIV-affected households in Nakuru Municipality	Dry season, short-rain harvest (widespread drought at time of data collection)	January 2007
Zimbabwe - Center for Applied Social Science, University of Zimbabwe	Risk and Vulnerability Reduction in Zimbabwe: The Role of Humanitarian Food Security Responses to HIV/AIDS	Zimbabwe	HIV-affected beneficiary households in three districts	Assess the role of humanitarian food security responses to risk and vulnerability reduction among beneficiary HIV-affected households	Post-harvest (widespread crop failure)	May 2007
South Africa - South Africa Human Sciences Research Council	Greater Sekhukhune District Municipality Livelihood Survey	South Africa	Greater Sekhukhune district municipality	Assess the nutrition and food security status in vulnerable areas	Post-harvest	August 2006



**Table 6. HHS items and response codes**

Recall Period: 4 Weeks	
Scale items	Response codes
<i>Household items:</i>	<i>Frequency categories:</i>
1. No food to eat of any kind in your household	Never, Rarely or Sometimes, Often
2. Go to sleep at night hungry	Never, Rarely or Sometimes, Often
3. Go a whole day and night without eating	Never, Rarely or Sometimes, Often

items that make up a scale to be tested, since the severity parameter estimated for each item is invariant to the particular group of households that make up the sample.<sup>23</sup>

**CROSS-CULTURAL VALIDITY RESULTS**

To explore the cross-cultural validity of the HFIAS, we first applied the Rasch model to data from the full HFIAS, consisting of nine items and four frequencies. The results from this analysis revealed that the full HFIAS was not valid for cross-cultural use, as the same items in different datasets were shown to have substantially varying levels of severity. We then used those results to identify alternative subset scales to test for cross-cultural validity; analyses thereafter continued iteratively, testing various reduced sets of HFIAS items and frequency response categories.

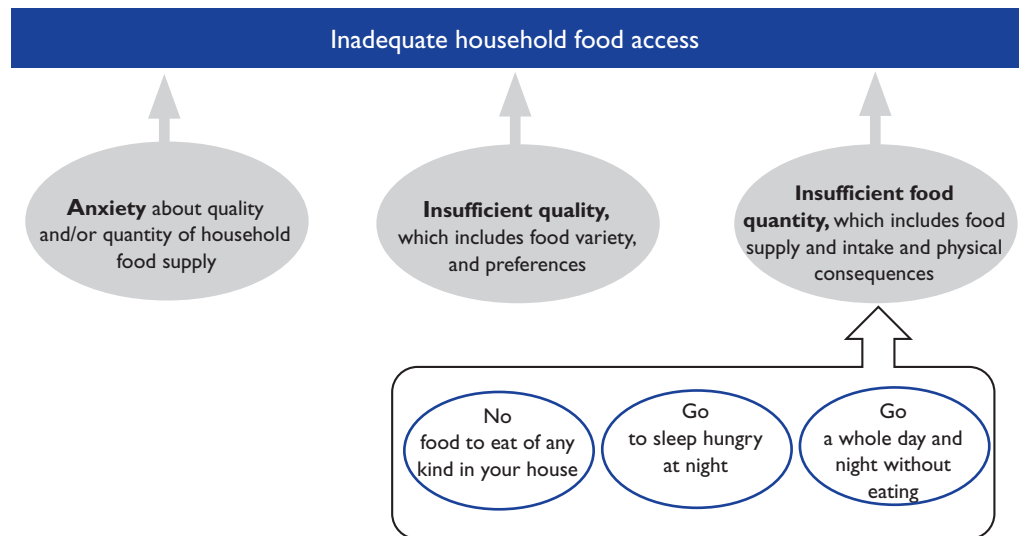
Of the various scales tested, only one scale, consisting of three items and three frequencies, demonstrated the potential for cross-cultural validity (Table 6). We

named this scale the Household Hunger Scale to emphasize the outcome (household hunger) that appeared to be measured by the three items in the scale. The HHS items pertain more to household food deprivation than household food access more broadly, and thus represent only one of the three domains perceived as integral to the experience of insecure food access (Figure 4).

**HHS INDICATORS FOR TARGETING, ASSESSMENT, AND MONITORING AND EVALUATION**

When the HHS is administered, a continuous scale score (with a minimum possible score of 0 and a maximum possible score of 6) can be tabulated for each household in the sample by summing a household's responses to items 1, 2, and 3 (refer to Table 6) where never=0, rarely or sometimes=1, and often=2. The sample median HHS score can then be used for targeting, assessment, or monitoring and evaluation purposes. In many circumstances, however, categorical variables are easier to interpret

**Figure 4. Aligning the HHS items with the domains of inadequate household food access**





and therefore often preferred to continuous variables, insofar as indicators for informing program and policy design and monitoring and evaluation are concerned.

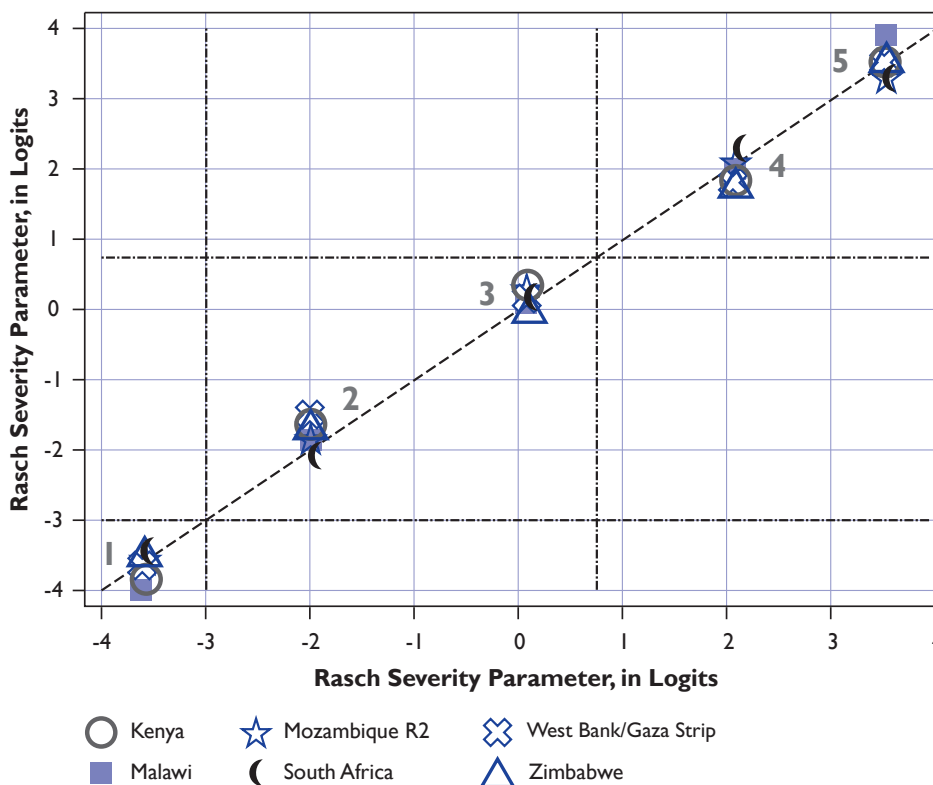
To create a categorical measure of household hunger, we used the Rasch severity parameters estimated for each household scale score (ranging from 1 to 5). This allowed us to identify cut-points that would allow for a cross-culturally equivalent categorical variable of household hunger. Both conceptual principles and empirical results informed the HHS cut-point decisions. Based on the range of household hunger the HHS was shown to measure, it seemed appropriate to create three categories from the range of scale scores possible (0–6). Conceptually, it was deemed important for any categorical variable developed to account for the frequency with which the items were experienced. In particular, we thought that no household that reported having experienced any item “often” should be classified in the least severe category. So that the categories would preserve cross-cultural equivalence, we also thought it impor-

tant that within the logit range identified for each hunger category, the same scale scores should be represented for each dataset. Using this framework to guide our decision making, we identified cut-points between the scale scores of 1 and 2 and the scale scores of 3 and 4 as appropriate. We named the categories “little to no household hunger” (scores 0–1), “moderate household hunger” (scores 2–3), and “severe household hunger” (scores 4–6).

The cross-cultural comparability of the HHS (and the categorical variable created) is illustrated visually in Figure 5, where Rasch severity parameters for each scale score are compared by dataset. Perfect cross-cultural equivalence is illustrated by equivalent severity parameters for each scale score, that is, when the scale score plotted is at or very near to the identity (i.e., diagonal) line. The horizontal and vertical lines in Figure 5 represent the Rasch cut-points for the categorical HHS variable created. As would be expected of a culturally invariant indicator, for all datasets the same scale score range is represented by each category of the HHS.

<sup>24</sup> For this analysis, the Mozambique R1 dataset was used as the standard for all comparisons. To construct the figure, the severity parameters for the Mozambique R1 dataset were plotted against the x axis and each of the other datasets plotted against the y axis.

Figure 5. HHS cross-cultural household measure plots<sup>24</sup>



## WHAT IS THE RELEVANCE OF THE HHS?

Although the subset of HFIAS items that make up the HHS are among the more severe experiences of inadequate household food access, analysis of the seven datasets used in the validation study clearly showed that the range of severity covered by the HHS is program- and policy-relevant (Table 7). In all of the datasets collected in sub-Saharan Africa, more than 60 percent of households in the sample had a scale score > 0 on the HHS. In the West Bank/Gaza Strip, 40 percent of households had a scale score > 0. Bivariate analyses exploring the relationship of median income per consumption unit by HHS category further highlighted the programmatic and policy relevance

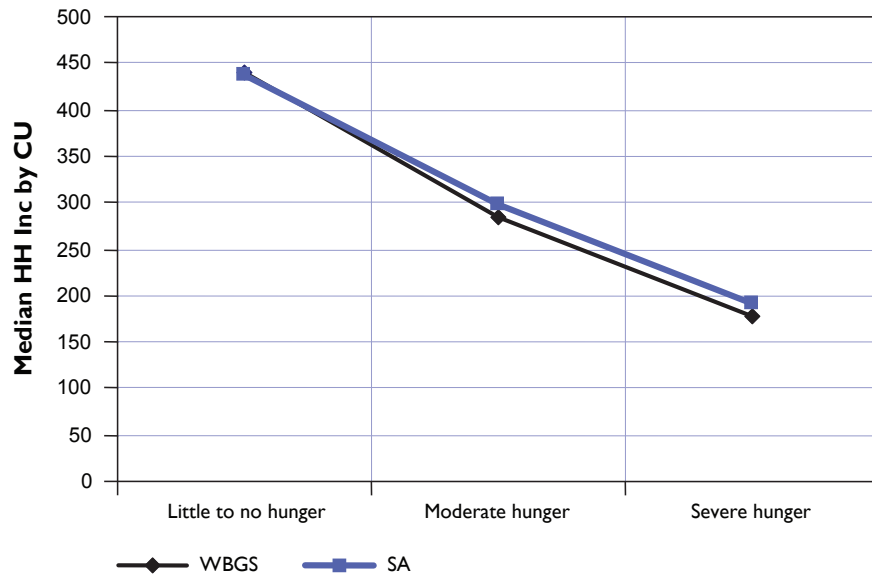
of the HHS. A strong relationship in the expected direction was demonstrated for multiple datasets (Figure 6). Similar relationships were observed in other datasets with other food access variables. In addition, where time series data were available, the HHS was shown to be sensitive to seasonal and climactic events (Figure 7). This implies that the HHS is also likely to be sensitive to successful program interventions, though no HHS pre-post intervention data have yet been collected to confirm this. Together, the results available to date suggest that the HHS can meaningfully be used for assessment, geographic targeting, and monitoring and evaluation in settings affected by substantial food insecurity, as well as for comparative purposes.

**Table 7. HHS sample estimates<sup>25</sup>**

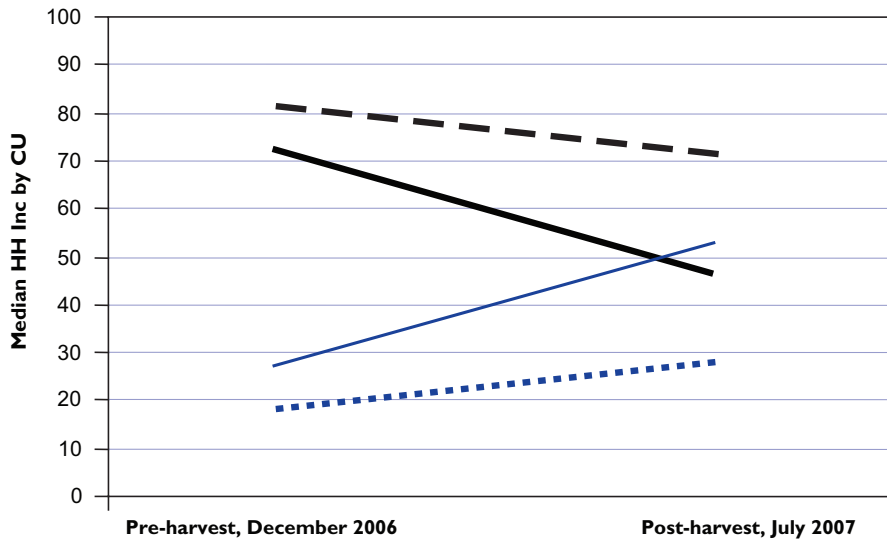
Collaborator	Dataset	Period of data collection	Season of data collection	Little to no household hunger (%)	Moderate household hunger (%)	Severe household hunger (%)
Mozambique - FAO (n=591)	Mozambique R1	December 2006	Pre-harvest	42.8	46.4	10.8
Mozambique - FAO (n=299)	Mozambique R2	July 2007	Post-harvest	43.1	48.8	8.0
Malawi - Department of HIV and AIDS and Nutrition and UNICEF (n=1,161)	Malawi	December 2007	Pre-harvest	51.9	37.2	10.9
West Bank and Gaza Strip - FAO (n=1,973)	West Bank/Gaza Strip	April-May 2007	Pre-harvest	74.9	18.7	6.5
Zimbabwe - Center for Applied Social Science, University of Zimbabwe (n=176)	Zimbabwe	May 2007	Post-harvest	51.7	33.5	14.8
South Africa - South Africa Human Sciences Research Council (n=491)	South Africa	August 2006	Post-harvest	31.2	46.4	22.4

<sup>25</sup> For the Kenya dataset (n=152), purposive rather than probability sampling was used. Although a sample estimate could be calculated for the dataset, it is not clear what a sample estimate would mean in this case. Therefore, results for Kenya are excluded from Table 7.

**Figure 6. Median monthly household income by consumption unit for each HHS category (results for West Bank/Gaza Strip and South Africa datasets shown)**



**Figure 7. Time series HHS results for two districts in Mozambique: Pre- and post-harvest and with and without adverse climactic events**



Chibabava, Sofala Province    - - - - Little to no hunger    - - - - Moderate to severe hunger  
*In Chibabava, household hunger remains relatively constant over time. Series of climatic shocks: droughts, floods in early 2007, and Cyclone Favio occurred just before harvest.*

Gondala, Manica Province    — Little to no hunger    — Moderate to severe hunger  
*In Gondala, household hunger improves significantly over time. The Gondala harvest is less affected by climatic shocks.*

## OPERATIONAL ISSUES TO CONSIDER<sup>26</sup>

The cross-cultural comparability of the HHS offers a distinct advantage over other tools to measure household food access (or hunger) in developing countries. With the HHS, a direct and valid comparison of the measure obtained can be made across different population groups. In addition, data can be meaningfully aggregated across diverse settings and populations. HHS data can thus be validly used for decision making, to prioritize among regions or diverse settings with highest need; for cross-regional and cross-national monitoring and evaluation of policies and programs; and for global tracking of household hunger.

As with any valid cross-cultural tool, however, there are limitations associated with the measure obtained. First and foremost, there is a clear trade-off between a culturally specific instrument and a cross-cultural instrument. Cross-cultural comparability is a high-level measurement criterion to achieve. To develop a tool that is cross-culturally valid, some cultural specificity must be de-emphasized. As a result, the HHS might not be the most sensitive measurement tool to use in every context.

Other tools might provide a more culturally specific measure of hunger, and it is certain that other tools are required to obtain a more complete measure of food access that incorporates elements of anxiety or reduced food variety and food quality. The use of the HHS should therefore not preclude the concurrent use of a culturally specific measure of food access or food deprivation in those contexts or settings where a valid, culturally specific measure of food insecurity or hunger is available or is in the process of being developed. This might mean that in a particular setting it would be appropriate to complement the use of the HHS with a coping strategies index; the household economy approach; or the recently launched Escala Latinoamericana y Caribeña de Seguridad Alimentaria (Latin American and Caribbean Household Food Security Scale), which has demonstrated

validity within several countries in the LAC region.<sup>27</sup> A broader set of HFIAS items and frequency categories might also have demonstrated validity in certain contexts. In these settings, the HHS should not be used alone but in combination with a culturally specific household food access measurement tool, so that a valid measure of food access can also be obtained, when survey resources allow.

In addition, it should be noted that while the HHS offers promise as a culturally invariant tool for assessment of household hunger in a broad range of settings, at this time, cross-cultural validity has only been demonstrated for the seven datasets included in the validation study. It is not yet known the extent to which the HHS will demonstrate cross-cultural validity in a broader range of settings. Therefore, as HHS data are increasingly collected in an expanded range of contexts, FANTA-2 will continue to evaluate the cross-cultural validity of the scale, to the extent that the data collected are made available for validation purposes.

## CONCLUSION

The HHS is a simple measure, consisting of only three questions and three frequency responses. The tool can be integrated easily into surveys and does not take long to administer. While food balance sheets can provide comparative data at the national level,<sup>28</sup> such data provide little information to guide the prioritization of programs within countries and do not indicate the distribution of food availability or access at a subnational level. The lack of household-level information can impede the prioritization of interventions, geographic targeting, and monitoring and evaluation of programs and policies both within and between countries. To effectively address food insecurity and household hunger, it is essential to be able to describe the status of populations in a simple yet meaningful, comparative way to assess where attention is needed most. The HHS offers a simple, rigorously validated option for obtaining such a measure when diverse contexts or population groups are being assessed and cross-cultural comparability is needed.

<sup>26</sup> For a full discussion of operational issues and guidance related to use of the HHS, refer to the HHS guide, forthcoming at [www.fanta-2.org](http://www.fanta-2.org). A further discussion of related operational issues is also provided in Deitchler et al. 2010.

<sup>27</sup> Pérez-Escamilla et al. 2007; Bermudez et al. 2010; Pérez-Escamilla et al. 2009; Pérez-Escamilla et al. 2008.

<sup>28</sup> FAO n.d. (accessed at <http://faostat.fao.org> on September 8, 2010).

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## ADDITIONAL READING

Validation of a Measure of Household Hunger for Cross-cultural Use. Deitchler et al. 2010.  
[http://www.fanta-2.org/publications/hhs\\_validation\\_2010.shtml](http://www.fanta-2.org/publications/hhs_validation_2010.shtml)

Household Food Insecurity Access Scale (HFIAS) for Measurement of Household Food Access: Indicator Guide (v3). Coates et al. 2007.  
[http://www.fanta-2.org/publications/hfias\\_intro.shtml](http://www.fanta-2.org/publications/hfias_intro.shtml)

Household Hunger Scale Indicator Guide. Forthcoming at <http://www.fanta-2.org>.



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### ABOUT FANTA-2

FANTA-2 works to improve nutrition and food security policies, strategies, and programs through technical support to the U.S. Agency for International Development (USAID) and its partners, including host country governments, international organizations, and NGO implementing partners. Focus areas for technical assistance include maternal and child health and nutrition, HIV and other infectious diseases, food security and livelihood strengthening, and emergency and reconstruction. FANTA-2 develops and adapts approaches to support the design and quality implementation of field programs, while building on field experience to improve and expand the evidence base, methods, and global standards for nutrition and food security programming. The project, funded by USAID, is a five-year cooperative agreement.