

Notes on methodology and data cleaning – mVAM surveys in Yemen

The household data presented in the Yemen mVAM bulletins have been collected from late July 2015 to present through live telephone interviews conducted by a call centre located outside the country. Call interviews covered all mobile service providers and telephone numbers were generated using the random-digit dialling (RDD) method.

As per standard survey procedures, respondents' consent was obtained prior to the interviews. For security and safety measures all respondents were identified with an anonymous ID.

The questionnaire asked questions on demographics, households' food consumption, coping strategies used and food assistance received. In addition, at the end of the survey, an open ended question was asked to give respondents the opportunity to share additional information on the food situation in their communities.

Food Consumption Score (FCS)

The food consumption score (FCS) is a proxy indicator for food security that measures the diversity of household diets, and how frequently food is consumed. The FCS is calculated using the frequency of consumption of eight food groups by a household during the 7 days before the survey using standardized weights for each of the food groups reflecting its respective nutrient density, and then classifies households as having 'poor', 'borderline' or 'acceptable' food consumption. The FCS results in Yemen are calculated using a universal adjusted set of thresholds taking into consideration the high consumption of oil and sugar in the country (poor \leq 28, 28<borderline \leq 42, acceptable $>$ 42). For more details on the food group composition, weighted values and FCS thresholds, please see the [Food consumption Analysis Technical Guidance Sheet](#).

FCS for mVAM surveys in Yemen

During the first round of the mVAM data collection of August 2015, the FCS module was asked in two different ways using 11 versus 8 FCS questions:

- a) Data collected between July 22 to August 18, 11 questions were asked – this included eight 'overall' questions for individual food groups (staples, proteins, pulses, vegetables, fruits, dairy, sugars, and fats) and three sub questions for the 'proteins' food group (meats, fish and eggs).
- b) Data collected after August 18 onwards, only the 8 'overall' questions for individual food groups (staples, proteins, pulses, vegetables, fruits, dairy, sugars, and fats) were asked. Indeed, the three subgroup questions for 'eggs', 'meat' and 'fish' were removed from the FCS module.

During the process of data cleaning, for a great number of respondents, two types of errors were identified:

1. the sum of Meat, Fish and Eggs is inferior to the overall proteins
2. the maximum value of Meat, Fish and Eggs is inferior to the overall proteins

Therefore, a decision to exclude the 3 sub-groups questions for proteins was taken starting from August 18 onwards.

Computation of the FCS indicator

After the data cleaning, the FCS indicator was computed in two different modes:

(1) **FCS.Estimated**: calculated using the frequency of consumption of eight food groups by a household during the 7 days before the survey using standardized weights for each of the food groups. In this case, the score of the protein food group was estimated through a regression model. Indeed, the overall 'protein' group was regressed, on the consumption of Meat, Fish, Eggs, their squared values and the interaction terms between those 3 variables. The regression did not include a constant to better represent the reality of the data. *The FCS_Estimated was calculated for the data collected before August 18.*

(2) **FCS**: calculated as the weighted sum of the 8 food groups and it was calculated *only for the data collected after August 18 onwards.*

Reduced Coping Strategies Index (rCSI)

The reduced Coping Strategies Index (rCSI) measures the frequency and severity of the behaviours households engage in when faced with shortages of food or financial resources to buy food. It assesses whether there has been a change in the consumption patterns of a given household. The rCSI is calculated using standard food consumption-based strategies and severity weighting. A higher score indicates that households are employing more frequent and/or extreme negative coping strategies. For the purpose of this bulletin, mVAM calculates the mean rCSI of households. For more details on the types of coping strategies considered and their respective severity weighting, please see the [Coping Strategies Index Field Methods Manual](#).

Weighting Methodology

When interpreting the data, all country-level figures (FCS and rCSI scores) are calculated using IDPs and Non-IDPs weights. Population estimates are taken from the Task Force on Population Movement data collected for Yemen.

Individual governorates are treated as separate strata using estimates of governorate population from the Task Force on Population Movement. Unadjusted weights are computed by dividing the governorate population by the governorate sample size. To account for the fact that households with more phones are more likely to be selected, these weights are then divided by the number of active mobile phones the household owns. Finally the weights are then adjusted by post-stratification to account for the sub-populations of IDPs vs Non-IDPs using the governorate-level IDP population estimates furnished by the Task Force on Population Movement. The post-stratification weights are computed by calculating the factor that adjusts the ratio of the total post-strata (governorate-level IDP or Non-IDP) weight to the total strata (governorate) weight to match the ratio of the post-strata population to the total strata population (e.g. $wIDPinTaizz_i = w_i [PopIDPinTaizz / PopTaizz * \Sigma IDPinTaizzw_j / \Sigma Taizzw_j]$)

Table 1: mVAM target sample size per governorate in Yemen

The data are collected from a sample of 2400 respondents in 21 governorates.

Governorate	Sample size
Abyan	85
Aden	65
Al Bayda	110
Al Hudaydah	145

Al Jawf	95
Al Mahrah	45
Al Mahwit	95
Sana'a City	180
Amran	95
Al Dhale	115
Dhamar	140
Hadramaut + Socatra	70
Hajjah	105
Ibb	155
Lahj	140
Ma'rib	95
Raymah	75
Sa'dah	140
Sana'a	125
Shabwah	125
Taizz	200
Total	2400