

CENTRIC SYSTEMATIC AREA SAMPLING

The Centric Systematic Area Sampling (CSAS) method enables surveyors to take a spatially representative sample of acutely malnourished children in the health district being surveyed during the likelihood survey. It involves drawing a grid of squares or quadrats on a map of a health district and sampling the villages or communities closest to the centre of the quadrats and using the appropriate in-community sampling technique (see next section) to locate all of the acutely malnourished children in that village or community. This is the optimal method which surveyors can use to select villages or communities randomly for the likelihood survey. To do it, a large printed map is needed which displays the locations of all of the villages or communities in the area being surveyed. If this is not available, then the spatially stratified systematic sample should be used (see next section). **Selection of number of villages:** Surveyors should calculate the number of villages to be sampled (using the formula in the previous page). **Adding quadrats to the map:** Then, they should draw quadrats on the map or onto an acetate sheet placed over the map. The number and size of quadrats should be selected so as to spread the sample of villages over the entire programme area. Many small quadrats are better than few large quadrats as the samples will be spread more evenly and over more of the programme area. For example Figure 1 shows a map divided up by 8 quadrats while Figure 2 shows a map divided up by 19 quadrats. While both enable surveyors to sample the same number of villages, the map in Figure 2 enables a more even spread of villages over more of the area.

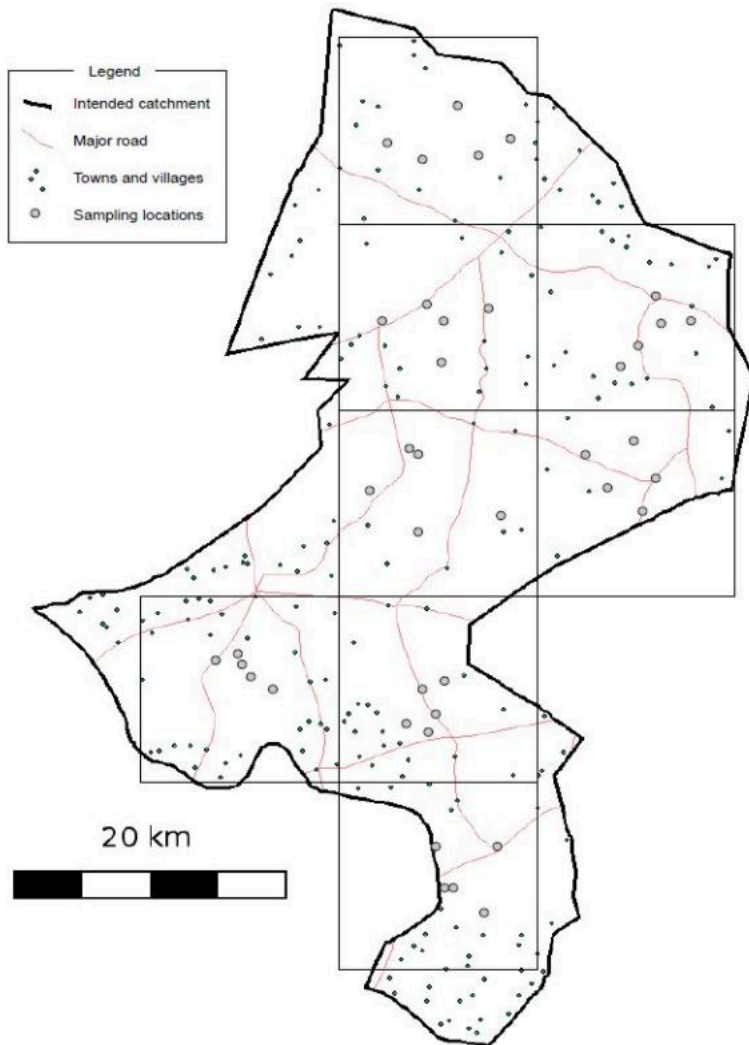


Figure 1: A course CSAS/quadrat sample of villages

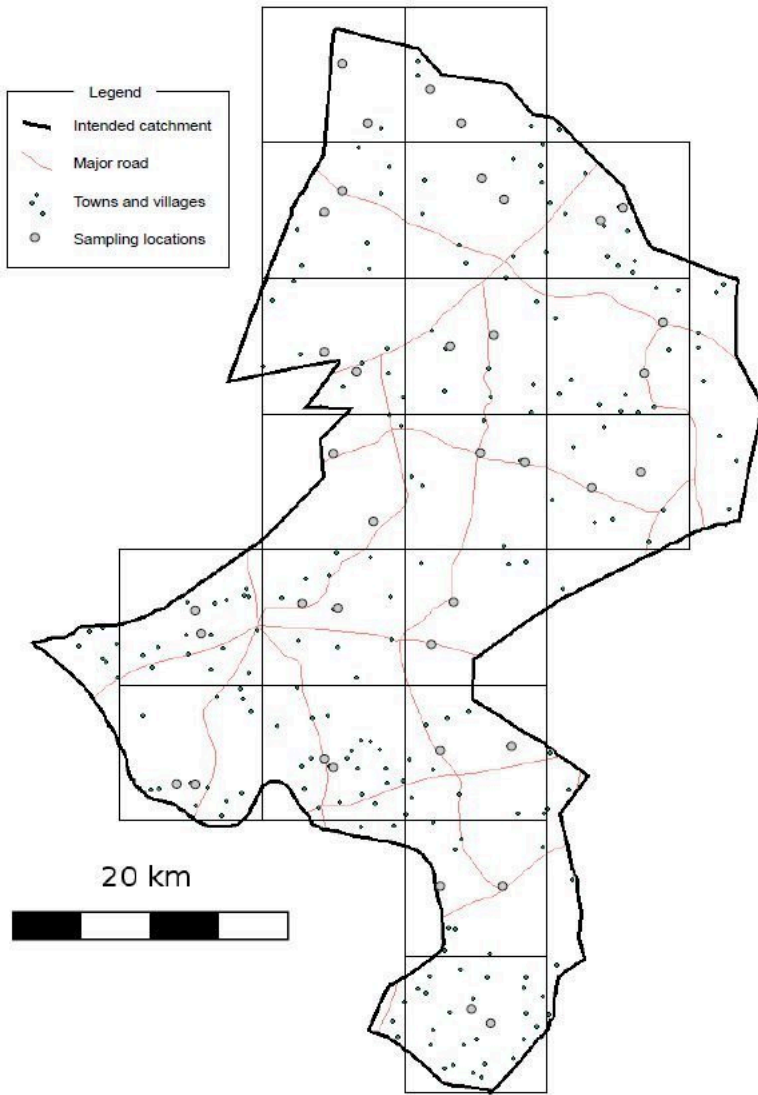


Figure 2: A finer and wider CSAS/quadrat sample of villages than in Figure 1

Surveyors should use as many quadrats as is feasible with the time and resources available for the survey. Any quadrats placed on the map which contain less than 50% of the survey area should be excluded. **Calculating number of villages per quadrat:** Once the number of quadrats is finalised, the surveyors should work out how many villages to select in each quadrat by dividing the recommended number of villages (n villages) by the number of quadrats. Therefore using the example from the previous page where a total of 35 villages needed to be sampled, the number of villages per quadrat for Figure 1 would be: $\lceil 35 \div 8 \rceil = \lceil 4.38 \rceil = 5$ While the number of village per quadrat for Figure 2 would be: $\lceil 35 \div 19 \rceil = \lceil 1.84 \rceil = 2$ The result of this formula should always be rounded up. **Selection of villages in quadrats:** With this number, the surveyors should select villages to sample in each quadrat and by drawing two lines across the centre of the box and selecting the correct number of villages closest to the centre. Figure 3 provides an example of this:

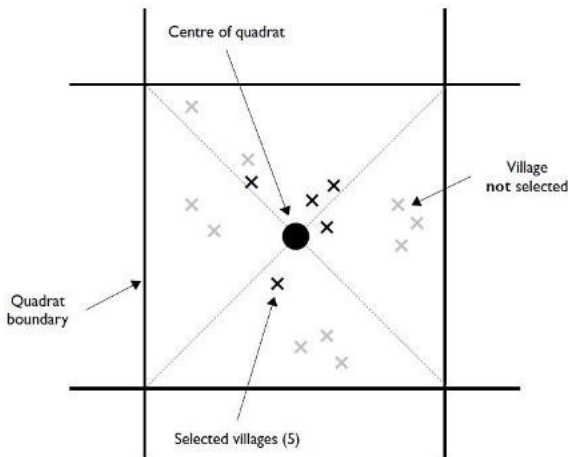


Figure 3: Selection of villages to be sampled using CSAS sampling