

SAMPLING DESIGN FOR THE BANGLADESH URBAN INFORMAL SETTLEMENTS BASELINE SURVEY 2016

The Bangladesh Urban Informal Settlements Baseline Survey (BUIBS) 2016's main objective is to collect detailed consumption data from urban slums households following the same methodology used by the Bangladesh Bureau of Statistics (BBS) to collect household consumption data to construct official poverty estimates using the Household Income and Expenditure Survey (HIES).

The BUIBS will collect data from a total of 600 urban slum households in the Dhaka City Corporation – 10 slum households from 57 medium and large size slum communities, and 5 slum households from a total of 6 small size slum communities. The sampling frame for this study comes from the 2014 BBS Census of Slums and Floating Population.¹ Urban slums or slum communities are classified into three different strata – small size slums (5-10 households); medium size slums (11-200 households); and large size slums (more than 200 households).² These three strata are not all used as domains of study but rather defined based on field logistics operations – each stratum will follow a slightly different field operation strategy to account for the fact that finding, listing, and interviewing households in small slums poses very different challenges for the field implementation than interviewing households in medium or large slums.

The Primary Sampling Units (PSU) in the BUIBS are the slum communities. There are a total of 3,360 slum communities with more than 5 households in the Dhaka City Corporation. PSUs are equally allocated between strata 1 and 2 (small and medium size slum communities) and stratum 3 (large slum communities) using a combination of PPS and practical allocation. More specifically, PSUs are allocated across strata using PPS with the number of slum households used as the measure of size and rounding to account for the pre-determined cluster size of 10 slum households per PSU for medium size slum communities and 5 slum households per PSU for small slum communities. Using this rule we get an allocation of PSUs which very closely resembles the distribution of slum households across the three strata. Table 1 reports the number of slum communities and households in the BBS 2014 Census of Slums and Floating Population and the BUIBS sample by stratum.

In the second sampling stage, the list of households in selected slum communities was updated as part of the field work. Using this updated list of households, 5 or 10 households were selected from each slum community using systematic equal probability sampling. The distribution of the BUIBS sample by stratum is shown in the last set of columns of Table 1.

¹ In the BBS 2014 Census of Slums and Floating Population slums are defined as compact settlements of 5 or more households, which generally grow very unsystematically and haphazardly in an unhealthy condition and atmosphere on government and private vacant land. Slums are defined by six characteristics including structure of dwelling, density, ownership of land, water supply and sanitation, lighting and road facilities, and socio-economic conditions.

² The cut-off from small to medium size slums is based on the distribution of slum communities' size and corresponds roughly to the roughly the 30th percentile. The cut-off from medium to large size slums is based on the capacity of the local survey implementation firm to conduct a listing exercise in a slum community over the course of a day of work.

**Table 1. Number of Slum Communities and Households
in the BBS 2014 Census of Slums and Floating Population and the BUISBS sample**

Stratum		BBS Slums Census				BUISBS sample		
		Slums		Households		Number		
ID	No. households	Number*	Share	Number*	Share	Slums	Households**	Cluster size
1	5-10	1,011	30.1%	7,801	4.4%	6	30	5
2	11-200	2,205	65.6%	70,481	40.1%	27	270	10
3	201-plus	144	4.3%	97,610	55.5%	30	300	10
Total:		3,360	100.0%	175,892	100.0%	63	600	-

* The BBS Census of Slums and Floating Population includes a total of 3,402 slum communities in its micro database. Our final sample frame includes only 3,360 slum communities – 42 communities are excluded from the sampling frame as they include less than 5 slum households. Similarly, the BBS Census of Slums includes a total of 176,033 slum households but only 175,892 of them are included in our sampling frame.

** Numbers reported correspond to rounded PPS selection based on the number of slums households.

As mentioned previously, the selection of slum communities and households will follow slightly different field implementation strategies across strata in three dimensions – creation of replacement slum communities, listing exercise, and selection of households. In terms of the creation of replacement slum communities, the first stage sampling will include a ratio of 2:1 replacement slum communities for stratum 1 or small size slum communities (i.e. 2 replacement slum communities for each slum community that needs to be selected). For stratum 2 (medium size slum communities), the first stage sampling will include a ratio of 1:2 replacement slum communities (i.e. 1 replacement slum community for each 2 slum communities that need to be selected). For stratum 3 (large size slum communities), the first stage sampling will include a ratio of 1:3 replacement slum communities (i.e. 1 replacement slum community for each 3 slum communities that need to be selected).³

The listing and selection of households in the final stage will also follow different field protocols across strata. For stratum 1 (small size slum communities), all households will be listed. If the selected slum community has only 5 households, all households will be interviewed. If the selected slum community has more than 5 households, systematic equal probability sampling will be used based on the updated list to select 5 of them will be selected to be interviewed. For stratum 2 (medium size slum communities), all households will be listed and subsequently 10 will be selected to be interviewed using systematic equal probability sampling based on the updated list. Lastly, for stratum 3, slum communities will be segmented into listing blocks of around 200-250 slum households each. Then one of the segments will be randomly selected from each slum community to conduct the full listing exercise, and then 10 households will be selected from the updated list to be interviewed using systematic equal probability sampling.

The BUISBS will be fielded over a period of 16 days, using 30 teams of two interviewers each. Each team will be responsible for visiting 2 slum communities during this period and administer 10 household surveys in each community. Slum communities will be allocated into teams based on practical considerations (e.g. distance of slum communities). During the first two days, interviewers will conduct the listing and do the sampling using the field protocols described above for each of the stratum. In the next 14 days, each enumerator will visit 5 households each day for a total of 7 times to collect 2-days recall consumption

³ The BBS Household Income and Expenditure Survey (HIES) uses a ratio of 1:4 in its final sampling stage to select households (i.e. 1 replacement household for each 4 households that needs to be interviewed).

data. At the end of the 14-days period, each enumerator will have completed 10 full questionnaires (5 from each of assigned slum community).