Survey Design and Sampling: A methodology note for the 2015-16 surveys of Syrian refugees and host communities in Jordan, Lebanon and Kurdistan, Iraq

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Abstract. This paper briefly describes the sampling strategy and survey design implemented in the 2015-16 surveys of Syrian refugees and host communities in Jordan, Lebanon and the Kurdistan region of northern Iraq. The three surveys were designed to generate comparable findings on the lives and livelihoods of Syrian refugees and host communities in the three settings. The absence of updated national sample frames and the lack of a comprehensive mapping of the forced displaced within these countries posed challenges for the design of these surveys. This methodology paper describes the strategy implemented in the three contexts to generate known ex-ante selection probabilities through a variety of data sources, the use of geospatial segmenting to create enumeration areas where they did not exist, and to use data collected by humanitarian agencies to generate sample frames for displaced populations. The strategies implemented in these surveys can be useful in designing similar exercises in contexts of forced displacement.

1. Introduction

As of April 2018, the United Nations High Commissioner for Refugees (UNHCR) reports that an estimated 6.6 million Syrians are internally displaced within the country, that over 5.6 million Syrians have fled to seek refuge in other countries, of which around 8% are accommodated in camps.[2] In addition to these official figures, there are anywhere from 0.4 to 1.1 million unregistered Syrian refugees in Lebanon and Jordan, and an estimated one million Syrian asylum-seekers in Europe.[3] In effect, more than half of Syria's pre-war population has been forcibly displaced since the beginning of the Syrian civil war.

The Syrian crisis has caused one of the largest episodes of forced displacement since World War II and some of the densest refugee-hosting situations in modern history.

[1] The findings, interpretations and conclusions expressed herein are those of the authors and do not necessarily reflect the view of the World Bank Group, its Board of Directors or the governments they represent.

[2] http://www.unhcr.org/en-us/syria-emergency.html

[3] According to a 2014 background paper on Unregistered Syrian Refugees in Lebanon, from the Lebanon Humanitarian INGO Forum, "general estimates and media reports citing unnamed Lebanese officials put the number of Syrians living in Lebanon and not registered with UNHCR between 200,000 and 400,000, although the reliability of and sources for these estimates—which do not distinguish between those in need of protection and/or assistance and those not in need—are unknown". The paper cites a range of estimates (from around 10 percent to 50 percent) based on data from various sources, with differing coverage and survey periods. The 2015 Jordanian census estimated 500,000-600,000 more Syrians than the numbers registered with UNHCR.

Syria's immediate neighbors host the bulk of Syrian refugees: Turkey, Lebanon, and Jordan rank in the top five countries globally for the number of refugees hosted – according to UNHCR data, as of June 2018, Turkey hosted 3.5 million Syrian refugees, Lebanon 0.97 million, and Jordan 0.66 million. In fact, Lebanon and Jordan hold the top two slots for per-capita recipients of refugees in the world, at 180 and 87 refugees per 1,000 inhabitants, respectively (UNHCR Global Trends, 2015).[4] The influx into these countries has also occurred at a more rapid rate than prior refugee crises. At one point in the conflict, an average of 6,000 Syrians were fleeing into neighboring countries every day.[5] Beyond the immediate impact of inflow of refugees, the host countries are also dealing with other consequences of the Syrian conflict, including the disruption on trade and economic activity and growth and spread of the Islamic State (also called ISIS) in Iraq. While the Kurdish Region of Iraq (KRI) hosts at least 200,000 Syrian refugees, the ISIS-induced displacement from neighboring parts of Iraq means that KRI is now hosting over 2.25 million displaced persons, approximately 40-50 percent of its population.

While each neighboring country has received many Syrian refugees in both absolute and relative terms, that is where the commonality ends. Each country has responded to the influx in its own way, influenced by its previous experience of handling protracted displacement situations. Given its history of encampment of the displaced Palestinian population, Lebanon has refrained from setting up camps for Syrians. There is also understandable wariness and anxiety of the impact the influx may have in the delicate domestic political power-sharing equilibrium. In KRI, the influx of Syrian refugees overlaps with a significant number of Iraqi citizens seeking a safe haven from the ISIS militants. The refugees and IDPs are located both in camps and non-camps, with a very porous camp boundary that allows its residents to move freely and work outside the camp. At the time of the survey, Jordan had an explicit policy to house refugees in camps and few refugees have legal residency and/or work permits, although a significant majority of refugees had moved outside the camps.

Creating an evidence base to frame the policies for refugees in host environment requires a sampling methodology to select a sample that represents both the host and refugee populations. There are several challenges associated with conducting a representative survey of the host community population *and* the forcibly displaced. In all three settings we consider, a reliable and updated sampling frame for the resident population was not available.[6] No sample frames existed for forcibly displaced populations as they were excluded from available national sampling frames. Databases maintained by humanitarian agencies for internal programming purposes are often incomplete and out of date. The displaced also have high degree of mobility and they are often unwilling to speak to surveyors. In this context, and in similar contexts of forced displacement, the selection of a representative sample of hosts and the displaced becomes a major challenge to drawing credible inferences about their socio-economic outcomes.

[4] Since these figures are based on official UNHCR registration numbers, they do not reflect the unknown number of unregistered refugees, as already noted in footnote 2. At the end of 2014, the United Nations estimated that registered Syrian refugees represented 29 percent of the total population in Lebanon and 9.5 percent of the total population in Jordan. Areas with the largest number of Syrians, such as the Bekaa Valley in Lebanon, have seen much higher proportions of refugees to local citizens.

[5] Quoted by the UN High Commissioner for Refugees in a speech to the United Nations Security Council in 2013.

[6] The last official population census in Lebanon was in 1932 and the available sampling frames were also considerably dated in Jordan and KRI.

In this paper, we describe the strategies that had to be devised to overcome these challenges when designing the sampling procedure for the *Syrian Refugee and Host Community Surveys* (SRHCS), which were implemented over 2015-16 in Lebanon, Jordan and the Kurdistan region of Iraq. The goals of the survey originally were:

i. to assess the socio-economic and living conditions of a representative sample of the Syrian refugee and host community population.
ii. to understand the implications in terms of social and economic conditions on the host communities.
iii. to identify strategies to support Syrian refugees and host communities in the immediate and longer term.

The remainder of the paper is structured as follows. Section 2 describes in detail the strategy for sampling host community and refugee households in the three settings. Section 3 presents summary statistics describing the populations sampled. Section 4 concludes by drawing general lessons from our experience on sampling forcibly displaced populations.

2. Sampling Strategies

In all three settings, the main challenge to implementing a survey that would yield estimates representative of the refugee and host community populations, was the lack of an updated or comprehensive sample frame, including for hosting populations and especially for displaced populations. In general, the latter were completely missing from existing national sample frames. None of the three countries had at the time, a recent population and housing census, duly updated for population growth and movement, which could have provided the frame to choose the survey sample for the hosting community.

Each of the three contexts presented different challenges. Lebanon and Iraq have both not had a census for several decades and existing sample frames were out of date at the time of the SRHCS. In Lebanon, information from this sample frame was not available at low levels of geographic disaggregation, while in Iraq, internal displacement of millions of Iraqis had made existing frames obsolete. In Jordan, while census exercises are undertaken every decade, data from the most recent census was not available for the SRHCS, and we had to rely on a relatively outdated sample frame based on the 2005 census. Differences in the distribution of Syrian refugees across the three contexts implied a country-specific approach as well. In Lebanon, there were no refugee camps for Syrians; in Jordan, there were two main refugee camps for Syrians; and in Kurdistan, Iraq, Syrians as well as Iraqi internally displaced people (IDPs) lived in a number of camps, but were also free to move in and out.

In Lebanon and Kurdistan, auxiliary information on spatial distribution of refugees and IDPs available from the United Nations High Commission for Refugees (UNHCR) and the International Organization for Migration (IOM), was merged with the sampling frame. Sub-district level refugee and IDP prevalence information was used to stratify sub-districts by intensity of prevalence: low, middle, and high. The sample was further stratified into subgroups of interest, depending on the context. In Lebanon, the survey was representative of the host community and the Syrian refugee population. In Kurdistan, the scope of the survey was expanded to include IDPs, so that the survey was representative of the host community, Syrian refugees inside and outside of camps, and IDPs inside and outside of camps.

In what follows, we detail the sampling strategy for Lebanon, which was the most complicated, and then describe the strategy for the other two contexts.

Lebanon. Conducting a representative survey in Lebanon was especially challenging. The first difficulty was that, as of 2015, there was no recent or reliable sample frame, even for Lebanese households, as the last official population census was conducted in 1932. Typically, such a sample frame consists of the universe of enumeration areas in a country, with associated estimates of population. This meant that we had to construct our own sample frame by selecting a few Small Area Units (SAUs) and then conducting a full listing operation by visiting every household within the selected SAUs and collecting basic demographic and contact information. The second difficulty was that there was no available cartographic division of the country into geographic areas small enough to be the subject of a full listing operation, which could then serve as a sampling frame for the SAUs. *Circonscription Foncières (CF)* were the finest level of disaggregation available; CFs are generally too large to be listed as some have populations of over 100,000. Finally, there was no available sampling frame for Syrian refugees in Lebanon, which meant that we had to depend on UNHCR data on registered Syrian refugees, combined with the estimates of Lebanese population at the CF level. Given these challenges and time and budgetary constraints, the sample was selected in multiple (four) stages as described below.

A. First sampling stage

The sample frame for the first stage is the list of 1,301 CFs published by the Council for Development and Reconstruction (CDR) in 2004 and the 2014 UNHCR registration database. Each CF is identified by way of its administrative affiliation – Kaza, Qadha and Mohafza. The UNHCR database reports the total population in each CF, as well as the number of Lebanese and Syrian population in each.[7,8,9] The CF cartographic boundaries are described digitally in a linked Geographic Information System shape file.

The CFs were sorted into three strata depending on their ex-ante prevalence of Syrian population, as follows:

- **Low prevalence**: where the Syrian population accounted for less than 20% of the total population;
- **Medium prevalence**: where the Syrian population accounted for between 20% and 50% of the total population;
- **High prevalence**: where the Syrian population accounted for over 50% of the total population.

Prevalence of Syrian refugees at the CF level was defined as the number of registered Syrian refugees from the 2014 UNHCR database divided by the sum of the number of registered Syrian refugees and the 2004 Lebanese population counts from the CDR database. The first columns of **Error! Reference source not found.** show the distribution

[7] Lebanese population distribution by cadasters, supplied by CDR Shapefile (2002-03); Population estimate of Lebanese 4 million referenced in the Lebanon Crisis Response Plan (LCRP).
[8] Total population of Syrian refuges as reported by the UNHCR registration database as of December 2014.
[9] Total population of Palestinian refugees in Lebanon (PRL) estimated between 260,000 and 280,000 (UNRWA-AUB, 2010). Database provided the population distribution by camps and gatherings. In addition, the total population of Palestinian refugees from Syria is estimated to be 43,000 according to the UNRWA; UNHABITAT UNDP study on gatherings.

of the CFs into strata, as well as the population in each stratum, as per the UNHCR database.

Our intention was to select 75 CFs in total. The decision of how to distribute them across the 3 strata faced the classical dilemma of whether to do it in proportion to the population of the strata, which would deliver nearly optimal estimates for the country as a whole, or to allocate the same sample size (ie 25 CFs) to each stratum, which would deliver estimates of nearly the same quality for each of them. Since both considerations were important for the 2015 SRHCS, we opted to do it in accordance to Markwardts's rule (also known as the "50/50 equal/proportional allocation"), which is generally considered a good compromise between the two extremes. The last three columns in **Error! Reference source not found.** show the chosen allocation, the corresponding sample sizes (in number of households), and the expected maximum margins of error.[10]
Within each stratum, CFs were selected for inclusion with probability proportional to size (PPS), using the total population as a measure of size, and with implicit stratification by administrative units (Kaza, Qadha and Mohafza). Some of the large CFs were selected more than once. For instance, there were 34 selections made from among the "low prevalence" CFs (as per Table 1), and one extremely populous CF (Chiyah, located in Mount Lebanon) was randomly selected three times. As a result, the 75 selections were drawn from 71 different CFs. Annex Table 1 shows the list of sampled CFs, where the last column indicates the number of times each CFs was selected in the sample (e.g. one, two or three times depending on each case). Annex **Error! Reference source not found.** shows the geographical distribution of the selected sample CFs across the country.

B. Segmentation of Circonscriptions Foncières (PSUs)

Given that CFs are larger in size than typical census Enumeration Areas which are roughly of 200 households each, the majority of the selected sample CFs was too large to be manageable for implementing a complete household listing operation. For this reason, these large CFs were divided into 'super segments' and 'segments' of roughly equal size within each category, using total number of households as a measure of size. The number of households in each 'super segment' or 'segment' was estimated based on observation of height of buildings and estimated population density in each area in the 2015 ESRI World Imagery[11] and 2015 Google Earth imagery, combined with local knowledge of these areas.

Based on the estimated measure of size, only five CFs were considered to be too large in size and hence were selected for 'super segmentation'. At a later stage, all CFs and 'super segments' were divided into 'segments' due to their large size. Annex **Error! Reference source not found.** illustrates the segmentation of a CF into 'super segments' and 'segments' of roughly equal number of households within each category.

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[10] More precisely, the last column of **Error! Reference source not found.** shows the maximum expected margins of error for the estimation of a household-level prevalence P (such as the percentage of households with children, the percent of households reporting illnesses, etc.) at the 95% confidence level. These are given by $ME = 1.96 [Deff\ P\ (1\text{-}P) / n]^{0.5}$, where n is the sample size and *Deff* is the *design effect*, basically due to the tendency of neighboring households to behave similarly in regards the indicator being observed. The column was computed for $Deff = 2$ (a value found in practice for many indicators of interest) and $P = 0.5$ (for which ME is maximum).

[11] Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

C. Second sampling stage: Super Segmentation of Circonscriptions Foncières

In the second stage, the boundaries of the 'super segments' in each CF were drawn using the 2015 ESRI World imagery basemap. These boundaries take into account the total estimated household count, as well as natural boundaries such as major roads, rivers, and paths that can easily be recognizable by field teams during the listing operation and implementation of the household questionnaire.

Within each super-segmented CFs, the sample 'super segments' were selected with equal probability, based on the assumption that each 'super segment' is of roughly equal size. The number of 'super segments' selected within each CF was the same as the number of times the corresponding CF was selected in the first sampling stage. For instance, if a CF was selected three times in the first sampling stage, we selected three 'super segments' within this CF. Similarly, if a CF was selected only once or twice on the first sampling stage, we correspondingly selected one or two 'super segments' on the secondary sampling stage.

Annex Table 2 shows the list of 'super segments' within selected CFs, where the ninth column indicates the number of times each CFs was selected in the sample (e.g. one, two or three times depending on each case). The column headed "Prob 2" shows the probability of selecting the 'super segment' within each CF.

D. Third sampling stage: Segmentation of Circonscriptions Foncières

In a third stage, the boundaries of the 'segments' were drawn for all CFs and selected 'super segments' within CFs. Similarly to the process of 'super segmentation', boundaries of segments were drawn using the 2015 ESRI World imagery basemap. These boundaries also take into account the total estimated household count, as well as natural boundaries such as major roads, rivers, and paths.

Within each CF or corresponding 'super segment', the sample 'segments' were selected with equal probability, with the underlying assumption that each 'segment' is of roughly equal size. Annex Table 3 shows the list of 'segments' for all CFs, where the last column indicates the probability of selecting the 'segment' within each CF in the third sampling stage.

E. Fourth sampling stage

The sample frame for the fourth stage is the full list of all households in the sample CF segments. The listing operation consisted of a full enumeration of all physical structures in the area, with each physical structure being classified as a primary or secondary residential dwelling, commercial building, school, hospital, government office etc. The listing operation collected information about the household occupying each residential dwelling, and each household was classified as either a Syrian refugee household or a host community household. Care was also taken to record two households living in the same unit separately.[12]

[12] One segment (in the Saida Ed-Dekermane CF, segment number 61119-0-26) was dropped from the original sample since the field team could not get access to the area due to insecurity and was thus unable to implement the household listing operation. Therefore, the intended sample of 40 household in this segment was distributed among two other similar segments, selecting 20 additional households in each. The selection of these two segments was based on the household listing data and local knowledge provided by the survey firm. The two identified segments are located in Saida Al-Qadima and Mazraa 2 (Beirut) and

To ensure the quality and completeness of the listing operation, enumerators relied on high-resolution paper maps identifying all buildings within each segment. Each building or structure was pre-assigned with a unique identifier. Enumerators then created a record for each residential unit and household following the protocol described in the 2015 SRHCS Manual of Enumerator. The 40 households to be visited by the 2015 SRHCS in each segment (with a target of 20 Syrian refugee and 20 non-Syrian refugee households in each) was selected from the listing data by systematic equal-probability sampling.[13]

F. Selection probabilities and sampling weights

Given the sampling design discussed in the last paragraphs, the probability p_{hizsj} of selecting household $hijzsj$ in segment $hizs$ of super-segment hiz in Circonscription Foncière hi of stratum h is given by:

$$p_{hizsj} = \frac{k_h n_{hi}}{\sum_i n_{hi}} \times \frac{t_{hi}}{T_{hi}} \times \frac{g_{hi}}{G_{hi}} \times \frac{m_{hij}}{n'_{hi}}$$

where the four fractions on the right-hand side respectively represent the probability of selecting the CF in the first stage, and the conditional probabilities of selecting the super-segment, the segment, and the household in the second, third, and fourth stages, and:

- k_h is the number of CFs selected in the stratum (the fifth column in **Error! Reference source not found.**),
- n_{hi} is the number of households in the CF, as per the sample frame (the column headed 'population' in **Error! Reference source not found.**),
- t_{hi} is the number of 'super segments' to be drawn in the CF, as per the first sampling stage (the column headed 'No. super segments selected' in Annex Table 2),
- T_{hi} is the total number of 'super segments' in the CF, as per the segmentation procedure (the column headed 'No. of super segments' in Annex Table 2),
- g_{hi} is the number of segments to be drawn in the CF, as per the second sampling stage (the column headed 'n_segments to draw' in Annex Table 3),
- G_{hi} is the total number of segments in the CF, as per the segmentation procedure in the third sampling stage (the column headed 'n_segments per SSU' in Annex Table 3),
- m_{hij} is the total number of households identified as Syrian refugees during the household listing operation;
- m_{hizsj} is the number of households selected in the segmented CF (with a target 20 Syrian-refugee and 20 non-Syrian-refugee households in this case); or m_{hij} = $mhij$ + (40- $mhij$)

are similar to the Saida Ed-Dekermane segment in that they have: i) a high share of Palestinian refugees; ii) high density of urban population; and iii) high poverty rate.

[13] After listing, only 15 households were found in segment 31116-11. Therefore, all eligible households were selected for interviewing (full census). The total sample size was reduced by 25, for a total 2,975 sample households.

- n'_{hizs} is the number of households in the segmented CF, as per the household listing operation.

To deliver unbiased estimates from the sample, the data from each household *hij* should be affected by a sampling weight (or raising factor) w_{hzsij}, equal to the inverse of its selection probability (i.e. $w_{hizsj} = p_{hizsj}^{-1}$).

Kurdistan. Much of the sampling procedure in Kurdistan resembled that of Lebanon, except for one important difference: unlike in Lebanon, the frame for the first stage sample existed in Kurdistan (albeit outdated), and a subset of the enumerations areas had updated population information from the 2012 IHSES survey (which did not take into account subsequent internal displacement). A subsample of the 2012 clusters were selected for our survey, followed by a comprehensive listing exercise to update the frame for second stage sampling. Four strata based on refugee and IDP prevalence were defined as following:

- Low Syrian prevalence (< 5%) and Low IDP prevalence (< 15%)
- Low Syrian prevalence (< 5%) and High IDP prevalence (>= 15%)
- High Syrian prevalence (>= 5%) and Low IDP prevalence (< 15%)
- High Syrian prevalence (>= 5%) and High IDP prevalence (>= 15%)

In the first stage, within each stratum, enumeration areas were selected with probability proportional to size (PPS) using the number of households reported from the 2012 listing exercise as a measure of size. In the second stage, 18 households per PSU were selected: six Syrian households, six IDP households, and six host community households in each PSU to the extent possible. In areas where there were less than six Syrian or IDP households, the shortfall was met by host community households. The sampling frame for second stage sampling was the complete list of households in the selected EAs from the listing exercise.

Jordan. In contrast to Lebanon and Iraq, Jordan has carried out Population and Housing Censuses on regular intervals, with the last one in late 2015. What was particularly attractive about the latest census from the perspective of sampling was that it explicitly asked about the nationality of all residents. This would have allowed stratification of areas by density of Syrians. However, the original design could not be implemented because we could not access the new sample frame based on the 2015 Jordanian census. The design was then amended to include a representative sample of the Azraq and Za'atari camps (which account for the vast majority of Syrian refugees in camps in Jordan). This sample was complemented by purposive samples of the surrounding governorates, Mafraq and Zarqa, where the sample included areas physically proximate to the camp and other areas with a high number of Syrian refugees. In Amman Governorate, a purposive sample was drawn, combining a geographically distributed sample with a sample of areas with a high prevalence of Syrian refugees per the 2015 census, as indicated by the Jordanian Department of Statistics. Analytically, this implies the insights from Jordan will be limited to camp residents, neighboring areas of the camps, and Amman governorate. For this reason, Amman is left out of the rest of the discussion, where our focus is on relating the innovative approaches that we followed to obtain near-representative sample in absence of recent sampling frame.

3. Survey Design and Descriptive Statistics

The survey instrument was administered across Lebanon, Jordan, and KRI, with slight modifications depending on the structure of refugee living conditions. The survey includes detailed questions on demographics, employment, access to public services, health, migration, and perceptions. The results offer comparisons between a) the refugees before and after displacement, b) host communities before and after the influx, and c) the host communities and the displaced. These enable us to ascertain past and current outcomes to benchmark the host communities prior to the influx; determine whether the displaced differ systematically from the broader population of origin; identify the immediate effect of displacement on the forcibly displaced; and explore how the local influx of the forcibly displaced has shaped host community outcomes.

Tables L1-J3 present descriptive statistics based on SRHCS for each representative sample and setting discussed in the preceding section. We first consider some commonalities in the household samples across settings to illustrate some of the conclusions of the survey (Panel A). Typically, when compared to the host community, Syrian refugees live in larger households that translate into larger dependency ratios. The latter also tend to rely more on income derived from wages (as in Lebanon, Zarqaa and Mafraq) or less on income from business earnings (as in Kurdistan, especially outside camps), and, as expected, more on humanitarian assistance. An overwhelming majority of Syrian refugees (and IDPs in KRI) are not home-owners and rent their dwellings.

Panel B shows that Syrian refugee households in all settings are on average headed by males and these are younger (6 to 8 years). This also seems to be true for IDPs in KRI. In terms of educational attainment, few (less than 20% of) refugees in all settings have completed secondary schooling or more. This is also true when we restrict our attention to labor market respondents from 20 to 60 years old (Panel C). Despite differences in policy, in all settings, a large share of refugees participate in the labor force and work. Finally, and consistent with the reliance of household income on wages, the large majority of forcibly displaced in all settings work for wages without contracts.

4. Conclusion

The three surveys described in this paper were designed to generate comparable findings on the lives and livelihoods of Syrian refugees and host communities in the three settings. The absence of updated national sample frames and the lack of a comprehensive mapping of the forced displaced within these countries posed challenges for the design of these surveys. These challenges are not unique – indeed, most developing countries face similar issues, which are exacerbated at times of large scale internal population movements or in contexts of a large localized or widespread influx of migrants. Such data challenges become particularly stark in countries hosting forcibly displaced populations.

This methodology paper describes the strategy implemented in the three contexts to generate known ex-ante selection probabilities through a variety of data sources, the use of geospatial segmenting to create enumeration areas where they did not exist, and to use data collected by humanitarian agencies to generate sample frames for displaced populations. The strategies implemented in these surveys can be useful in designing similar exercises in contexts of forced displacement. Moreover, this effort shows the

importance of including refugees and non-nationals in national sample framess. The move by Jordan's statistical agency to explicitly include non-nationals in the 2017/18 household survey is a commendable step in the right direction.

Tables and Figures – Main and Annex

Table L1. SRHCS (Lebanon) - Household and household head's characteristics, per refugee status

	Host Community					*Syrian Refugees*				
	N	Mean	SD	Min.	Max.	*N*	Mean	SD	Min.	Max.
Panel A: Households										
Size	1727	3.73	1.65	1	18	1138	4.57	2.32	1	20
Dependency ratio	1619	0.45	0.52	0	4	1124	0.95	0.89	0	7
% Income from wages	1726	47%	46%	0	1	1119	71%	38%	0	1
% Income from business earnings	1726	34%	44%	0	1	1119	6%	22%	0	1
% Income from assistance	1726	1%	9%	0	1	1119	14%	23%	0	1
Any new member since 2010 or since household formation	1727	0.09	0.28	0	1	1138	0.24	0.43	0	1
Old members left since 2010 or since household formation	1660	0.24	0.43	0	1	1074	0.26	0.44	0	1
Rents dwelling currently	1727	0.26	0.44	0	1	1138	1.00	0.07	0	1
Panel B: Household head										
Male	1727	0.87	0.33	0	1	1138	0.90	0.30	0	1
Age	1727	47.83	14.45	18	95	1138	39.48	12.09	15	94
Never attended school, illiterate	1727	0.07	0.25	0	1	1138	0.15	0.36	0	1
Secondary schooling or more	1727	0.39	0.49	0	1	1138	0.14	0.35	0	1
Panel C: Labor market respondents (ages 20-60)										
Male	2498	0.47	0.50	0	1	1742	0.50	0.50	0	1
Age	2498	37.78	11.73	20	60	1742	34.10	10.25	20	60
Never attended school, illiterate	2498	0.04	0.19	0	1	1742	0.16	0.37	0	1
Secondary schooling or more	2498	0.45	0.50	0	1	1742	0.14	0.35	0	1
Participated in the labor force	2498	0.52	0.50	0	1	1742	0.51	0.50	0	1
Employed	2498	0.47	0.50	0	1	1742	0.44	0.50	0	1
Wage worker (if employed)	1210	0.63	0.48	0	1	761	0.93	0.26	0	1
Contract (if wage worker)	738	0.45	0.50	0	1	705	0.01	0.07	0	1

Notes: Author's own tabulation from SRHCS. All descriptives are computed using sampling weights.

Table K1. SRHCS (Kurdistan) - Household and household head's characteristics, per refugee status

	Host Community					*Syrian Refugees (Camp + Non-camp)*					*Internally Displaced (IDPs, Camp + Non-camp)*				
	N	Mean	SD	Min.	Max.	*N*	Mean	SD	Min.	Max.	*N*	Mean	SD	Min.	Max.
Panel A: Households															
Size	736	5.40	2.51	1	16	733	4.90	1.90	1	15	810	7.44	3.85	1	20
Dependency ratio	722	0.87	0.71	0	4	728	0.91	0.78	0	4.5	798	1.12	0.89	0	5
% Income from wages	730	55%	45%	0	1	715	56%	46%	0	1	797	47%	44%	0	1
% Income from business earnings	730	26%	41%	0	1	715	17%	35%	0	1	797	16%	32%	0	1
% Income from assistance	730	4%	17%	0	1	715	9%	25%	0	1	797	9%	21%	0	1
Any new member since 2010 or since household formation	736	0.09	0.28	0	1	733	0.12	0.32	0	1	810	0.06	0.24	0	1
Old members left since 2010 or since household formation	736	0.33	0.47	0	1	733	0.21	0.41	0	1	810	0.15	0.35	0	1
Rents dwelling currently	732	0.15	0.36	0	1	246	0.97	0.18	0	1	312	0.68	0.47	0	1
Panel B: Household head															
Male	736	0.93	0.25	0	1	733	0.90	0.30	0	1	810	0.90	0.30	0	1
Age	720	46.85	14.91	16	98	728	39.73	12.50	18	89	801	43.05	13.38	17	99
Never attended school, illiterate	720	0.22	0.42	0	1	728	0.19	0.40	0	1	801	0.22	0.41	0	1
Secondary schooling or more	736	0.24	0.42	0	1	733	0.15	0.35	0	1	810	0.13	0.33	0	1
Panel C: Labor market respondents (ages 20-60)															
Male	1155	0.44	0.50	0	1	1255	0.46	0.50	0	1	1219	0.54	0.50	0	1
Age	1155	34.56	10.21	20	60	1255	33.80	9.96	20	60	1219	34.84	10.65	20	60
Never attended school, illiterate	1155	0.22	0.41	0	1	1255	0.20	0.40	0	1	1219	0.23	0.42	0	1
Secondary schooling or more	1155	0.28	0.45	0	1	1255	0.21	0.41	0	1	1219	0.12	0.32	0	1
Participated in the labor force	1155	0.46	0.50	0	1	1255	0.51	0.50	0	1	1219	0.50	0.50	0	1
Employed	1155	0.39	0.49	0	1	1255	0.34	0.47	0	1	1219	0.33	0.47	0	1
Wage worker (if employed)	520	0.79	0.41	0	1	435	0.81	0.39	0	1	397	0.76	0.42	0	1
Contract (if wage worker)	404	0.55	0.50	0	1	375	0.08	0.27	0	1	349	0.23	0.42	0	1

Notes: Author's own tabulation from SRHCS. All descriptives are computed using sampling weights.

Table K2. SRHCS (Kurdistan) - Household and household head's characteristics, per refugee status, within camps

	Host Community					*Syrian Refugees (Camps)*					*Internally Displaced (IDPs, Camps)*				
	N	Mean	SD	Min.	Max.	*N*	Mean	SD	Min.	Max.	*N*	Mean	SD	Min.	Max.
Panel A: Households															
Size	736	5.40	2.51	1	16	485	4.85	1.82	1	11	497	6.05	2.92	1	16
Dependency ratio	722	0.87	0.71	0	4	480	1.00	0.81	0	4	488	1.11	0.96	0	5
% Income from wages	730	55%	45%	0	1	470	47%	47%	0	1	485	47%	47%	0	1
% Income from business earnings	730	26%	41%	0	1	470	17%	35%	0	1	485	11%	30%	0	1
% Income from assistance	730	4%	17%	0	1	470	15%	30%	0	1	485	13%	30%	0	1
Any new member since 2010 or since household formation	736	0.09	0.28	0	1	485	0.06	0.25	0	1	497	0.08	0.27	0	1
Old members left since 2010 or since household formation	736	0.33	0.47	0	1	485	0.16	0.36	0	1	497	0.22	0.42	0	1
Rents dwelling currently	732	0.15	0.36	0	1	-	-	-	-	-	-	-	-	-	-
Panel B: Household head															
Male	736	0.93	0.25	0	1	485	0.89	0.32	0	1	497	0.84	0.37	0	1
Age	720	46.85	14.91	16	98	481	40.66	13.05	18	89	491	40.83	14.63	17	99
Never attended school, illiterate	720	0.22	0.42	0	1	481	0.25	0.44	0	1	491	0.42	0.49	0	1
Secondary schooling or more	736	0.24	0.42	0	1	485	0.12	0.32	0	1	497	0.10	0.31	0	1
Panel C: Labor market respondents (ages 20-60)															
Male	1155	0.44	0.50	0	1	829	0.48	0.50	0	1	732	0.47	0.50	0	1
Age	1155	34.56	10.21	20	60	829	34.73	9.75	20	60	732	33.38	10.21	20	60
Never attended school, illiterate	1155	0.22	0.41	0	1	829	0.24	0.42	0	1	732	0.44	0.50	0	1
Secondary schooling or more	1155	0.28	0.45	0	1	829	0.15	0.35	0	1	732	0.10	0.30	0	1
Participated in the labor force	1155	0.46	0.50	0	1	829	0.50	0.50	0	1	732	0.41	0.49	0	1
Employed	1155	0.39	0.49	0	1	829	0.30	0.46	0	1	732	0.28	0.45	0	1
Wage worker (if employed)	520	0.79	0.41	0	1	256	0.84	0.37	0	1	217	0.83	0.37	0	1
Contract (if wage worker)	404	0.55	0.50	0	1	223	0.12	0.32	0	1	182	0.27	0.45	0	1

Notes: Author's own tabulation from SRHCS. All descriptives are computed using sampling weights.

Table K3. SRHCS (Kurdistan) - Household and household head's characteristics, per refugee status, ouside camps

	Host Community					*Syrian Refugees (Outside camps)*					*Internally Displaced (IDPs, Outside camps)*				
	N	Mean	SD	Min.	Max.	*N*	Mean	SD	Min.	Max.	*N*	Mean	SD	Min.	Max.
Panel A: Households															
Size	736	5.40	2.51	1	16	248	4.97	2.01	1	15	313	8.18	4.08	1	20
Dependency ratio	722	0.87	0.71	0	4	248	0.78	0.72	0	4.5	310	1.12	0.85	0	4
% Income from wages	730	55%	45%	0	1	245	69%	42%	0	1	312	47%	42%	0	1
% Income from business earnings	730	26%	41%	0	1	245	18%	35%	0	1	312	19%	33%	0	1
% Income from assistance	730	4%	17%	0	1	245	1%	8%	0	1	312	7%	14%	0	1
Any new member since 2010 or since household formation	736	0.09	0.28	0	1	248	0.19	0.39	0	1	313	0.06	0.23	0	1
Old members left since 2010 or since household formation	736	0.33	0.47	0	1	248	0.28	0.45	0	1	313	0.10	0.31	0	1
Rents dwelling currently	732	0.15	0.36	0	1	246	0.97	0.18	0	1	312	0.68	0.47	0	1
Panel B: Household head															
Male	736	0.93	0.25	0	1	248	0.93	0.26	0	1	313	0.94	0.24	0	1
Age	720	46.85	14.91	16	98	247	38.35	11.51	20	71	310	44.23	12.53	20	91
Never attended school, illiterate	720	0.22	0.42	0	1	247	0.10	0.31	0	1	310	0.11	0.32	0	1
Secondary schooling or more	736	0.24	0.42	0	1	248	0.19	0.40	0	1	313	0.14	0.34	0	1
Panel C: Labor market respondents (ages 20-60)															
Male	1155	0.44	0.50	0	1	426	0.42	0.49	0	1	487	0.58	0.49	0	1
Age	1155	34.56	10.21	20	60	426	32.55	10.11	20	60	487	35.53	10.79	20	60
Never attended school, illiterate	1155	0.22	0.41	0	1	426	0.15	0.36	0	1	487	0.13	0.34	0	1
Secondary schooling or more	1155	0.28	0.45	0	1	426	0.29	0.46	0	1	487	0.13	0.34	0	1
Participated in the labor force	1155	0.46	0.50	0	1	426	0.52	0.50	0	1	487	0.54	0.50	0	1
Employed	1155	0.39	0.49	0	1	426	0.40	0.49	0	1	487	0.36	0.48	0	1
Wage worker (if employed)	520	0.79	0.41	0	1	179	0.78	0.41	0	1	180	0.74	0.44	0	1
Contract (if wage worker)	404	0.55	0.50	0	1	152	0.04	0.19	0	1	167	0.22	0.41	0	1

Notes: Author's own tabulation from SRHCS. All descriptives are computed using sampling weights.

Table J2. SRHCS (Jordan) - Household and household head's characteristics, per refugee status (Zarqaa)

	Host Community					Syrian Refugees (Zarqaa)				
	N	Mean	SD	Min.	Max.	*N*	Mean	SD	Min.	Max.
Panel A: Households										
Size	208	5.21	2.24	1	13	357	5.45	2.38	1	14
Dependency ratio	201	0.87	0.82	0	5	354	1.24	0.96	0	6
% Income from wages	204	57%	46%	0	1	356	35%	35%	0	1
% Income from business earnings	204	12%	31%	0	1	356	2%	9%	0	0.9
% Income from assistance	204	6%	23%	0	1	356	77%	34%	0	1
Any new member since 2010 or since household formation	208	0.08	0.27	0	1	357	0.11	0.31	0	1
Old members left since 2010 or since household formation	208	0.20	0.40	0	1	357	0.35	0.48	0	1
Rents dwelling currently	207	0.27	0.45	0	1	138	0.99	0.12	0	1
	208	0.02	0.15	0	1	357	0.62	0.49	0	1
Panel B: Household head										
Male	209	0.85	0.36	0	1	357	0.87	0.34	0	1
Age	205	50.14	14.26	21	89	346	39.45	11.42	16	81
Never attended school, illiterate	204	0.10	0.30	0	1	346	0.12	0.32	0	1
Secondary schooling or more	209	0.40	0.49	0	1	357	0.18	0.38	0	1
Panel C: Labor market respondents (ages 20-60)										
Male	319	0.46	0.50	0	1	519	0.46	0.50	0	1
Age	319	36.91	10.51	20	60	519	34.34	9.04	20	60
Never attended school, illiterate	319	0.04	0.19	0	1	519	0.12	0.32	0	1
Secondary schooling or more	319	0.50	0.50	0	1	519	0.13	0.34	0	1
Participated in the labor force	319	0.39	0.49	0	1	519	0.50	0.50	0	1
Employed	319	0.30	0.46	0	1	519	0.19	0.40	0	1
Wage worker (if employed)	94	0.89	0.31	0	1	84	0.94	0.24	0	1
Contract (if wage worker)	84	0.31	0.47	0	1	79	0.22	0.41	0	1

Notes: Author's own tabulation from SRHCS. All descriptives are computed using sampling weights.

Table J3. SRHCS (Jordan) - Household and household head's characteristics, per refugee status (Mafraq)

	Host Community					*Syrian Refugees (Mafraq)*				
	N	Mean	SD	Min.	Max.	*N*	Mean	SD	Min.	Max.
Panel A: Households										
Size	346	5.55	2.21	1	12	721	5.69	2.60	1	18
Dependency ratio	342	0.89	0.78	0	5	712	1.20	1.05	0	8
% Income from wages	345	60%	44%	0	1	714	26%	32%	0	1
% Income from business earnings	345	4%	18%	0	1	714	2%	11%	0	1
% Income from assistance	345	4%	18%	0	1	714	77%	33%	0	1
Any new member since 2010 or since household formation	346	0.04	0.20	0	1	721	0.12	0.33	0	1
Old members left since 2010 or since household formation	346	0.20	0.40	0	1	721	0.31	0.46	0	1
Rents dwelling currently	346	0.08	0.27	0	1	240	0.95	0.23	0	1
	346	0.00	0.05	0	1	717	0.67	0.47	0	1
Panel B: Household head										
Male	347	0.90	0.30	0	1	722	0.79	0.41	0	1
Age	342	46.09	13.76	20	91	712	40.88	13.57	19	87
Never attended school, illiterate	342	0.12	0.33	0	1	712	0.13	0.33	0	1
Secondary schooling or more	347	0.36	0.48	0	1	722	0.15	0.35	0	1
Panel C: Labor market respondents (ages 20-60)										
Male	562	0.49	0.50	0	1	1025	0.46	0.50	0	1
Age	562	34.52	9.62	20	60	1025	33.58	9.56	20	60
Never attended school, illiterate	562	0.04	0.19	0	1	1025	0.07	0.26	0	1
Secondary schooling or more	562	0.50	0.50	0	1	1025	0.14	0.35	0	1
Participated in the labor force	562	0.51	0.50	0	1	1025	0.46	0.50	0	1
Employed	562	0.38	0.49	0	1	1025	0.21	0.40	0	1
Wage worker (if employed)	211	0.94	0.24	0	1	182	0.93	0.25	0	1
Contract (if wage worker)	198	0.48	0.50	0	1	170	0.20	0.40	0	1

Notes: Author's own tabulation from SRHCS. All descriptives are computed using sampling weights.

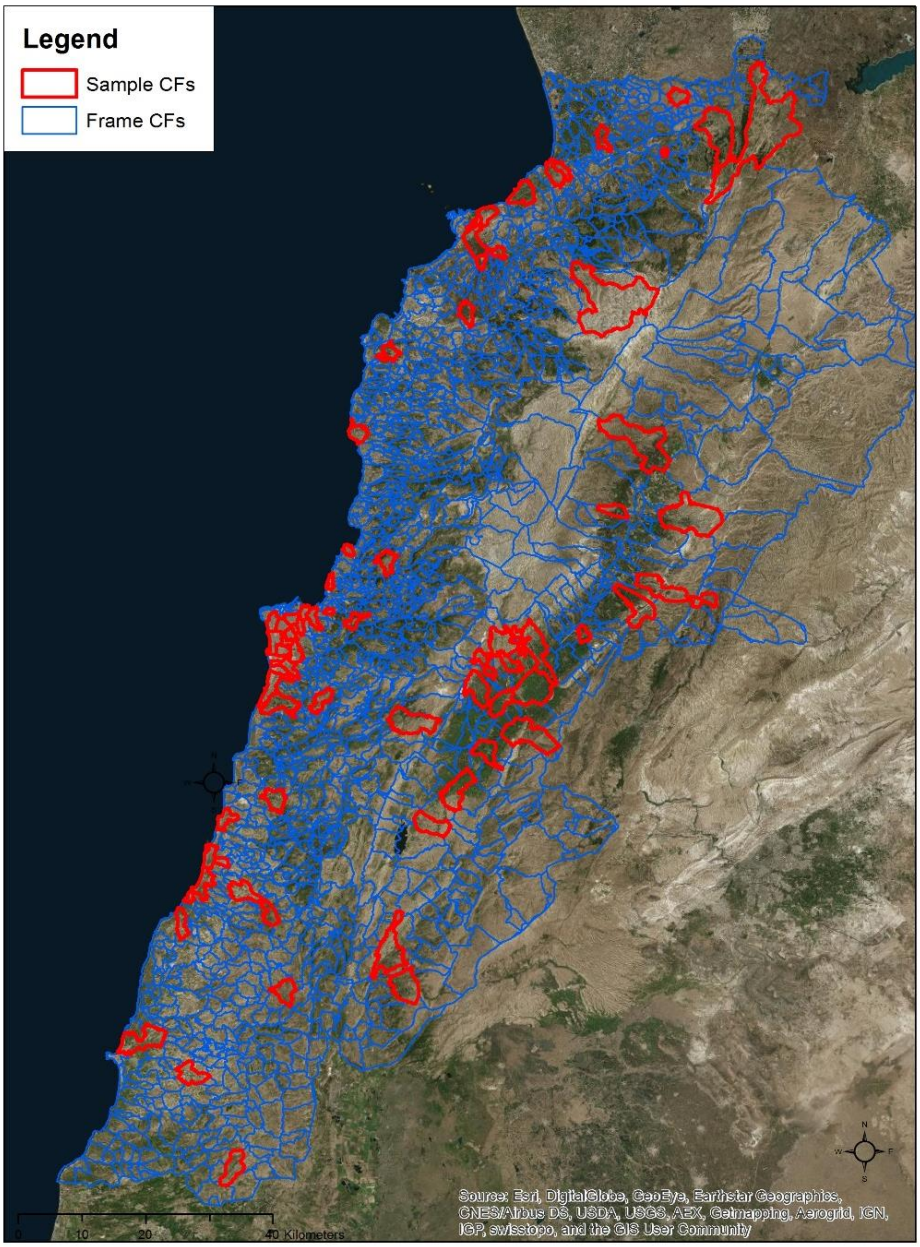
Table 1. Syrian Refugee and Host Community Survey: Sampling Strata						
		Sample Frame		Syrian Refugee and Host Community Survey 2015		
Stratum	Prevalence	No. of CFs	Population	No. of selections	Sample size (HHs)	Margin of error
1. Low prevalence	<= 0.20	946	3,003,958	34	1,360	3.76%
2. Medium prevalence	0.21 – 0.50	273	1,039,171	24	960	4.47%
3. High prevalence	0.51 – 1.00	82	465,867	17	680	5.31%
Total		1,301	4,508,995	75	3,000	2.53%

Annex Table 1. List of Selected Segments (Enumeration Areas)

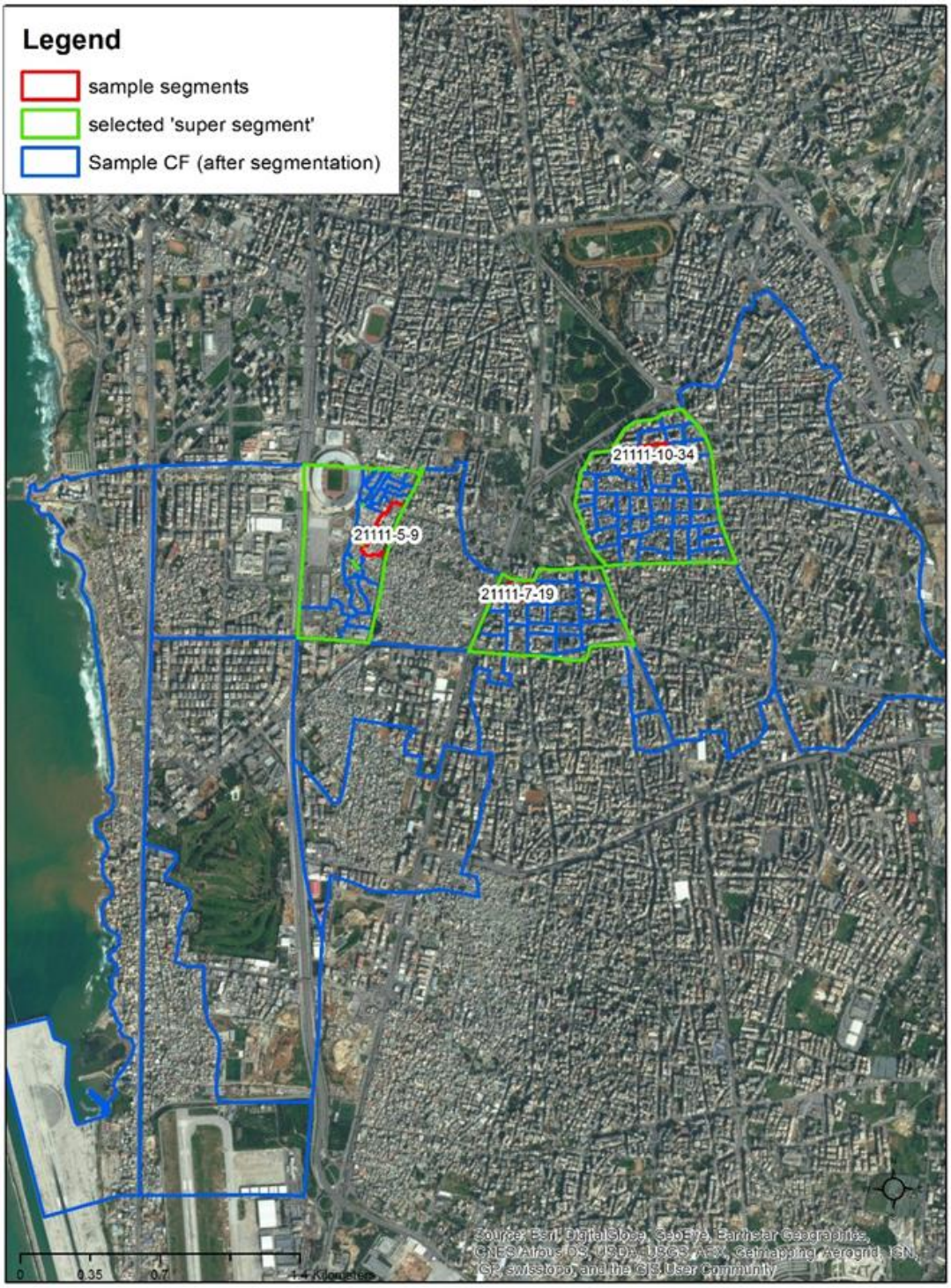
Segment serial number	CF CAS code	CF name	Qadha name	Mohafza Name	Total Syrian population (combined CF)	Total population (combined CF)	No. of Polygons	Prevalence of Syrians	Stratum 1-3	Prob 1	Times associated CF selected
1	10210	Msaitbé foncière	Beirut	Beirut	3,508	93,838	1	0.04	1	0.98263	1
2	10310	Mazraa foncière	Beirut	Beirut	12,410	125,792	1	0.10	1	1.31724	2
3	10310	Mazraa foncière	Beirut	Beirut	12,410	125,792	1	0.10	1	1.31724	2
4	10650	Achrafieh foncière	Beirut	Beirut	3,108	71,541	1	0.04	1	0.74915	1
5	21111	Chiyah	Baabda	Mount Lebanon	50,085	251,061	1	0.20	1	2.62901	3
6	21111	Chiyah	Baabda	Mount Lebanon	50,085	251,061	1	0.20	1	2.62901	3
7	21111	Chiyah	Baabda	Mount Lebanon	50,085	251,061	1	0.20	1	2.62901	3
8	21177	Bourj El-Brajneh	Baabda	Mount Lebanon	24,065	139,404	1	0.17	1	1.45978	2
9	21177	Bourj El-Brajneh	Baabda	Mount Lebanon	24,065	139,404	1	0.17	1	1.45978	2
10	21219	Hadath Beyrouth	Baabda	Mount Lebanon	2,702	26,829	1	0.10	1	0.28094	1
11	22111	Bourj Hammoud	El Metn	Mount Lebanon	18,456	94,232	1	0.20	1	0.98676	1
12	22155	Sinn El-Fil	El Metn	Mount Lebanon	3,498	38,208	1	0.09	1	0.40010	1
13	22228	Baouchriyé	El Metn	Mount Lebanon	7,317	72,611	1	0.10	1	0.76035	1
14	22359	Byaqout	El Metn	Mount Lebanon	346	3,753	1	0.09	1	0.03930	1
15	22611	Broummana El-Matn	El Metn	Mount Lebanon	980	8,844	1	0.11	1	0.09261	1
16	23469	Aain Zhalta	Chouf	Mount Lebanon	164	1,910	1	0.09	1	0.02000	1
17	25111	Jounié Sarba	Kasrouane	Mount Lebanon	775	15,489	1	0.05	1	0.16219	1
18	25211	Aajaltoun	Kasrouane	Mount Lebanon	401	4,554	1	0.09	1	0.04769	1
19	26141	Aamchit	Jubail	Mount Lebanon	791	14,288	1	0.06	1	0.14962	1
20	31116	Trablous El-Haddadine	Tripoli	North	1,703	53,893	1	0.03	1	0.56435	1
21	31151	Trablous El-Qobbe	Tripoli	North	10,079	65,830	1	0.15	1	0.68935	1
22	32189	Bkeftine	Koura	North	77	881	1	0.09	1	0.00923	1
23	35179	Qboula	Akkar	North	4	616	1	0.01	1	0.00645	1
24	35487	Qbaiyat Aakkar	Akkar	North	568	6,973	1	0.08	1	0.07302	1
25	51131	Zahlé Haouch El-Oumara	Zahle	Bekaa	29	5,757	1	0.01	1	0.06028	1
26	53451	Haour Taala	Baalbek	Bekaa	198	3,478	1	0.06	1	0.03642	1
27	61119	Saida Ed-Dekermane	Saida	South	3	60,366	1	0.00	1	0.63213	1
28	61183	Miyé ou Miyé	Saida	South	2,453	25,610	1	0.10	1	0.26818	1
29	61489	Aanqoun	Saida	South	645	5,386	1	0.12	1	0.05640	1
30	62211	Jouaiya	Sour	South	467	7,364	1	0.06	1	0.07711	1
31	62276	Aabbassiyet Sour	Sour	South	2,171	14,082	1	0.15	1	0.14746	1
32	71236	Sarba En-Nabatieh	Nabatiye	Nabatiye	68	799	1	0.09	1	0.00837	1
33	72143	Aain Ibl	Bint Jubail	Nabatiye	153	2,734	1	0.06	1	0.02863	1

34	74111	Hasbaiya	Hasbaiya	Nabatiye	575	8,310	1	0.07	1	0.08702	1
35	22375	Dbayé	El Metn	Mount Lebanon	784	3,268	1	0.24	2	0.05969	1
36	23211	Chhim	Chouf	Mount Lebanon	6,067	19,616	1	0.31	2	0.35826	1
37	23321	Rmeilet Ech-Chouf	Chouf	Mount Lebanon	2,351	4,734	1	0.50	2	0.08646	1
38	24111	Choueifat El-Aamrousiyé	Aley	Mount Lebanon	19,572	73,031	1	0.27	2	1.33381	1
39	24133	Choueifat El-Quoubbé	Aley	Mount Lebanon	5,843	26,791	1	0.22	2	0.48930	1
40	24343	Bayssour Aaley	Aley	Mount Lebanon	1,706	8,019	1	0.21	2	0.14646	1
41	31161	Trablous et Tabbaneh	Tripoli	North	6,404	26,311	1	0.24	2	0.48053	1
42	32113	Kfar Aaqqa	Koura	North	923	3,778	1	0.24	2	0.06900	1
43	33111	Zgharta	Zgharta	North	3,218	15,813	1	0.20	2	0.28880	1
44	34269	Aabrine	Batroun	North	447	1,753	1	0.25	2	0.03202	1
45	35275	Bebnine	Akkar	North	5,301	18,073	1	0.29	2	0.33008	1
46	35364	Ouadi El-Jamous	Akkar	North	1,619	5,924	1	0.27	2	0.10819	1
47	37231	Beddaoui	Minieh-Danieh	North	16,976	44,404	1	0.38	2	0.81098	1
48	37271	Minie	Minieh-Danieh	North	17,610	38,905	1	0.45	2	0.71054	1
49	51133	Zahlé Aradi	Zahle	Bekaa	1,232	6,151	1	0.20	2	0.11234	1
50	51224	Jdita	Zahle	Bekaa	2,990	9,242	1	0.32	2	0.16879	1
51	52224	Baaloul BG	West Bekaa	Bekaa	871	2,089	1	0.42	2	0.03815	1
52	53111	Baalbek	Baalbek	Bekaa	22,898	71,504	1	0.32	2	1.30592	1
53	53167	Saaidé	Baalbek	Bekaa	761	1,647	1	0.46	2	0.03008	1
54	53311	Deir El-Ahmar	Baalbek	Bekaa	2,924	7,442	1	0.39	2	0.13592	1
55	53445	Nabi Chit	Baalbek	Bekaa	3,094	9,603	1	0.32	2	0.17539	1
56	61311	Ghaziyé	Saida	South	5,163	18,290	1	0.28	2	0.33404	1
57	71113	Nabatiyeh El-Faouka	Nabatiye	Nabatiye	2,568	6,905	1	0.37	2	0.12611	1
58	74122	Hebbariyé	Hasbaiya	Nabatiye	780	2,484	1	0.31	2	0.04537	1
59	24211	Aaramoun Aaley	Aley	Mount Lebanon	9,827	15,666	1	0.63	3	0.50870	1
60	31111	Trablous Ez-Zeitoun	Tripoli	North	18,633	23,529	1	0.79	3	0.76402	1
61	35111	Halba	Akkar	North	10,842	16,668	1	0.65	3	0.54123	1
62	35429	Kouachra	Akkar	North	1,958	3,177	1	0.62	3	0.10316	1
63	35516	Mazareaa Jabal Akroum	Akkar	North	5,965	11,487	1	0.52	3	0.37300	1
64	37317	Bqaa Sefrine	Minieh-Danieh	North	2,224	4,271	1	0.52	3	0.13869	1
65	51125	Zahlé Maallaqa Aradi	Zahle	Bekaa	6,171	10,097	1	0.61	3	0.32786	1
66	51231	Saadnayel	Zahle	Bekaa	16,293	23,393	1	0.70	3	0.75961	1
67	51234	Qabb Elias	Zahle	Bekaa	27,951	39,206	1	0.71	3	1.27308	1
68	51267	Barr Elias	Zahle	Bekaa	34,688	45,306	1	0.77	3	1.47115	1
69	51284	Majdel Aanjar	Zahle	Bekaa	16,722	24,653	1	0.68	3	0.80052	1
70	51311	Riyaq	Zahle	Bekaa	6,921	10,808	1	0.64	3	0.35095	1
71	52211	Joubb Jannine	West Bekaa	Bekaa	7,833	13,478	1	0.58	3	0.43765	1
72	52234	Khiara	West Bekaa	Bekaa	1,577	2,004	1	0.79	3	0.06507	1
73	52277	Marj BG	West Bekaa	Bekaa	15,071	18,366	1	0.82	3	0.59637	1
74	61115	Saida El-Qadimeh	Saida	South	14,641	23,658	1	0.62	3	0.76821	1
75	61453	Bissariye	Saida	South	4,931	8,661	1	0.57	3	0.28124	1

Annex Figure 1. Geographical Distribution of Selected Sample CFs



Annex Figure 2. Example of Segmentation and ‘Super Segmentation’ of CFs



Annex Table 2. List of Sample Super Segments (for CFs divided into super-segments or secondary sampling units)[14]

SN	CAS_code	CF_name	Qadha_name	Mohafza_Na	Total_popu	New-seg-ID	Times selected	No. super segments selected	No. of super segments	Prob 2	Rand
1	10210	Msaitb ├⌐ fonci ├¿re	Beirut	Beirut	93838	10210-7	1	1	12	0.08333	0.02948
2	10310	Mazraa fonci ├¿re	Beirut	Beirut	125792	10310-1	1	2	9	0.22222	0.12337
2	10310	Mazraa fonci ├¿re	Beirut	Beirut	125792	10310-7	1	2	2	0.22222	0.15268
5	21111	Chiyah	Baabda	Mount Lebanon	251061	21111-10	1	3	13	0.23077	0.02589
5	21111	Chiyah	Baabda	Mount Lebanon	251061	21111-7	1	3	3	0.23077	0.06889
5	21111	Chiyah	Baabda	Mount Lebanon	251061	21111-5	1	3	3	0.23077	0.23505
8	21177	Bourj El-Brajneh	Baabda	Mount Lebanon	139404	21177-2	1	2	12	0.16667	0.03625
8	21177	Bourj El-Brajneh	Baabda	Mount Lebanon	139404	21177-11	1	2	2	0.16667	0.07765
11	22111	Bourj Hammoud	El Metn	Mount Lebanon	94232	22111-6	1	1	10	0.10000	0.01439

Annex Table 3. List of Sample Segments (Tertiary Sampling Units)

SN	CAS_code	CF_name	Qadha_name	Mohafza_Na	Total_popu	Super segment ID	Segment ID	n_segments per SSU	n_segments to draw	Rand (TSU)	Prob 3
1	10210	Msaitbé foncière	Beirut	Beirut	93838	10210-7	10210-7-13	18	1	0.02851	0.05556
2	10310	Mazraa foncière	Beirut	Beirut	125792	10310-1	10310-1-18	26	1	0.01869	0.03846
2	10310	Mazraa foncière	Beirut	Beirut	125792	10310-7	10310-7-6	17	1	0.08653	0.05882
4	10650	Achrafieh foncière	Beirut	Beirut	71541	10650-0	10650-0-66	93	1	0.00334	0.01075
5	21111	Chiyah	Baabda	Mount Lebanon	251061	21111-10	21111-10-34	41	1	0.02708	0.02439
5	21111	Chiyah	Baabda	Mount Lebanon	251061	21111-5	21111-5-9	23	1	0.04097	0.04348
5	21111	Chiyah	Baabda	Mount Lebanon	251061	21111-7	21111-7-19	22	1	0.08325	0.04545
8	21177	Bourj El-Brajneh	Baabda	Mount Lebanon	139404	21177-11	21177-11-1	14	1	0.03035	0.07143
8	21177	Bourj El-Brajneh	Baabda	Mount Lebanon	139404	21177-2	21177-2-9	23	1	0.00106	0.04348
10	21219	Hadath Beyrouth	Baabda	Mount Lebanon	26829	21219-0	21219-0-6	28	1	0.10421	0.03571
11	22111	Bourj Hammoud	El Metn	Mount Lebanon	94232	22111-6	22111-6-3	21	1	0.00019	0.04762
12	22155	Sinn El-Fil	El Metn	Mount Lebanon	38208	22155-0	22155-0-66	68	1	0.00901	0.01471
13	22228	Baouchriyé	El Metn	Mount Lebanon	72611	22228-0	22228-0-49	83	1	0.02951	0.01205
14	22359	Byaqout	El Metn	Mount Lebanon	3753	22359-0	22359-0-2	6	1	0.07392	0.16667
35	22375	Dbayé	El Metn	Mount Lebanon	3268	22375-0	22375-0-4	4	1	0.21483	0.25000
15	22611	Broummana El-Matn	El Metn	Mount Lebanon	8844	22611-0	22611-0-2	10	1	0.22362	0.10000
36	23211	Chhim	Chouf	Mount Lebanon	19616	23211-0	23211-0-5	21	1	0.09593	0.04762
37	23321	Rmeilet Ech-Chouf	Chouf	Mount Lebanon	4734	23321-0	23321-0-2	5	1	0.67365	0.20000
16	23469	Aain Zhalta	Chouf	Mount Lebanon	1910	23469-0	23469-0-1	2	1	0.47936	0.50000

[14] In all other CFs, the CF was the super-segment

38	24111	Choueifat El-Aamrousiyé	Aley	Mount Lebanon	73031	24111-0	24111-0-101	102	1	0.00238	0.00980
39	24133	Choueifat El-Quoubbé	Aley	Mount Lebanon	26791	24133-0	24133-0-11	29	1	0.09931	0.03448
59	24211	Aaramoun Aaley	Aley	Mount Lebanon	15666	24211-0	24211-0-11	18	1	0.06641	0.05556
40	24343	Bayssour Aaley	Aley	Mount Lebanon	8019	24343-0	24343-0-7	10	1	0.02895	0.10000
17	25111	Jounié Sarba	Kasrouane	Mount Lebanon	15489	25111-0	25111-0-20	22	1	0.05377	0.04545
18	25211	Aajaltoun	Kasrouane	Mount Lebanon	4554	25211-0	25211-0-1	5	1	0.09509	0.20000
19	26141	Aamchit	Jubail	Mount Lebanon	14288	26141-0	26141-0-9	14	1	0.10108	0.07143
60	31111	Trablous Ez-Zeitoun	Tripoli	North	23529	31111-0	31111-0-13	48	1	0.01400	0.02083
20	31116	Trablous El-Haddadine	Tripoli	North	53893	31116-0	31116-0-11	54	1	0.01494	0.01852
21	31151	Trablous El-Qobbe	Tripoli	North	65830	31151-0	31151-0-42	44	1	0.00794	0.02273
41	31161	Trablous et Tabbaneh	Tripoli	North	26311	31161-0	31161-0-16	27	1	0.08705	0.03704
42	32113	Kfar Aaqqa	Koura	North	3778	32113-0	32113-0-1	4	1	0.10281	0.25000
22	32189	Bkeftine	Koura	North	881	32189-0	32189-0-1	1	1	0.45403	1.00000
43	33111	Zgharta	Zgharta	North	15813	33111-0	33111-0-9	18	1	0.06386	0.05556
44	34269	Aabrine	Batroun	North	1753	34269-0	34269-0-1	3	1	0.08812	0.33333
61	35111	Halba	Akkar	North	16668	35111-0	35111-0-15	19	1	0.02170	0.05263
23	35179	Qboula	Akkar	North	616	35179-0	35179-0-1	1	1	0.81850	1.00000
45	35275	Bebnine	Akkar	North	18073	35275-0	35275-0-3	21	1	0.04383	0.04762
46	35364	Ouadi El-Jamous	Akkar	North	5924	35364-0	35364-0-9	9	1	0.35237	0.11111
62	35429	Kouachra	Akkar	North	3177	35429-0	35429-0-3	3	1	0.22822	0.33333
24	35487	Qbaiyat Aakkar	Akkar	North	6973	35487-0	35487-0-4	7	1	0.01762	0.14286
63	35516	Mazareaa Jabal Akroum	Akkar	North	11487	35516-0	35516-0-5	11	1	0.18676	0.09091
47	37231	Beddaoui	Minieh-Danieh	North	44404	37231-0	37231-0-50	57	1	0.02521	0.01754
48	37271	Minie	Minieh-Danieh	North	38905	37271-0	37271-0-20	40	1	0.01934	0.02500
64	37317	Bqaa Sefrine	Minieh-Danieh	North	4271	37317-0	37317-0-4	4	1	0.44794	0.25000
65	51125	Zahlé Maallaqa Aradi	Zahle	Bekaa	10097	51125-0	51125-0-4	15	1	0.19174	0.06667
25	51131	Zahlé Haouch El-Oumara	Zahle	Bekaa	5757	51131-0	51131-0-4	6	1	0.12081	0.16667
49	51133	Zahlé Aradi	Zahle	Bekaa	6151	51133-0	51133-0-5	7	1	0.01805	0.14286
50	51224	Jdita	Zahle	Bekaa	9242	51224-0	51224-0-3	11	1	0.01322	0.09091
66	51231	Saadnayel	Zahle	Bekaa	23393	51231-0	51231-0-16	26	1	0.10708	0.03846
67	51234	Qabb Elias	Zahle	Bekaa	39206	51234-0	51234-0-26	35	1	0.00073	0.02857
68	51267	Barr Elias	Zahle	Bekaa	45306	51267-0	51267-0-14	48	1	0.01760	0.02083
69	51284	Majdel Aanjar	Zahle	Bekaa	24653	51284-0	51284-0-13	25	1	0.01400	0.04000
70	51311	Riyaq	Zahle	Bekaa	10808	51311-0	51311-0-2	11	1	0.07445	0.09091
71	52211	Joubb Jannine	West Bekaa	Bekaa	13478	52211-0	52211-0-1	14	1	0.01374	0.07143
51	52224	Baaloul BG	West Bekaa	Bekaa	2089	52224-0	52224-0-1	2	1	0.19555	0.50000
72	52234	Khiara	West Bekaa	Bekaa	2004	52234-0	52234-0-2	2	1	0.61762	0.50000
73	52277	Marj BG	West Bekaa	Bekaa	18366	52277-0	52277-0-8	20	1	0.13774	0.05000
52	53111	Baalbek	Baalbek	Bekaa	71504	53111-0	53111-0-70	80	1	0.01073	0.01250
53	53167	Saaidé	Baalbek	Bekaa	1647	53167-0	53167-0-1	2	1	0.57735	0.50000
54	53311	Deir El-Ahmar	Baalbek	Bekaa	7442	53311-0	53311-0-5	9	1	0.16490	0.11111
55	53445	Nabi Chit	Baalbek	Bekaa	9603	53445-0	53445-0-10	10	1	0.24514	0.10000
26	53451	Haour Taala	Baalbek	Bekaa	3478	53451-0	53451-0-2	3	1	0.23547	0.33333
74	61115	Saida El-Qadimeh	Saida	South	23658	61115-0	61115-0-16	25	1	0.08783	0.04000
27	61119	Saida Ed-Dekermane	Saida	South	60366	61119-0	61119-0-26	69	1	0.01328	0.01449
28	61183	Miyé ou Miyé	Saida	South	25610	61183-0	61183-0-1	29	1	0.10490	0.03448
56	61311	Ghaziyé	Saida	South	18290	61311-0	61311-0-5	19	1	0.00795	0.05263
75	61453	Bissariye	Saida	South	8661	61453-0	61453-0-6	9	1	0.10027	0.11111
29	61489	Aanqoun	Saida	South	5386	61489-0	61489-0-3	5	1	0.19827	0.20000
30	62211	Jouaiya	Sour	South	7364	62211-0	62211-0-4	9	1	0.20830	0.11111
31	62276	Aabbassiyet Sour	Sour	South	14082	62276-0	62276-0-1	18	1	0.00890	0.05556
57	71113	Nabatiyeh El-Faouka	Nabatiye	Nabatiye	6905	71113-0	71113-0-2	9	1	0.18614	0.11111

32	71236	Sarba En-Nabatieh	Nabatiye	Nabatiye	799	71236-0	71236-0-1	1	1	0.59953	1.00000
33	72143	Aain Ibl	Bint Jubail	Nabatiye	2734	72143-0	72143-0-1	3	1	0.32534	0.33333
34	74111	Hasbaiya	Hasbaiya	Nabatiye	8310	74111-0	74111-0-2	8	1	0.04804	0.12500
58	74122	Hebbariyé	Hasbaiya	Nabatiye	2484	74122-0	74122-0-1	3	1	0.06554	0.33333