

ANNEX 4.2 Sampling Methodology for RAP Survey

1 THE SURVEY POPULATION

The survey population is owners and users of the land on the pipeline of over 1000 kms. It covers 10 provinces of the country which are Adana, Ardahan, Erzincan, Erzurum, Gümüşhane, Kahramanmaraş, Kars, Kayseri, Osmaniye and Sivas. In the survey population (target population) approximately 10.000 (10.066) units (landowners and users) are included.

1.1 SAMPLE UNIT

Land owners and users whose land will be expropriated for the construction and operation of the pipeline.

1.2 STRATIFICATION OF POPULATION

Only one stratification variable is used on the target population. This is geographic regions (sub-regions, provinces).

1.3 SAMPLING METHOD

The survey population is very heterogeneous, to get a sufficiently precise estimate by taking a simple random sample from the entire population is very difficult. So, to divide this population into parts (or strata) on the basis of provinces (districts) and a random sample of landowner (user) taken from each stratum, will give us a better estimate of the strata averages, which in turn should help in producing a better estimate of the population averages (to achieve higher precision).

1.4 SAMPLE DESIGN

Determination of Sample Size: It is well known that too large a sample implies a waste of resources and too small a sample diminishes the utility of the results. So the statement of precision desired may be made by giving the amount of error that we are willing to tolerate in the sample estimates.

The following procedures will be used to determine the sample size:

S.E(p): Standard error

N: Total population

n: Final sample size (adjusted or corrected)

n*: Temporary sample size (approximated)

f:n/N: Sampling fraction

α : Level of statistical significance (2(S.E(p), two-way)

t: Students t-statistic (for $\alpha=0.05$, $t_{\alpha} \cong 2.00$)

d: Tolerance level (0.037)

Q= P=0.5: Probability of selection.

$$V = \frac{d^2}{t^2}$$
: desired variance of the sample proportion

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$$\frac{d^2}{t^2} = \left(\frac{0.037}{2} \right)^2$$

$$V=(S.E(p))^2 \Rightarrow (S.E(p))^2 = 0.000342$$

$$S.E.(p)=0.0185$$

$$S.E.(p) = \sqrt{\frac{P.Q}{n^*}} \Rightarrow n^* = \frac{P.Q}{(S.E(p))^2} = \frac{(0.5)(0.5)}{(0.0185)^2} = 730$$

$$n = \frac{n^*}{1 + (n^* / N)} = \frac{730}{1 + (730/10.066)} \cong 681 (**)$$

(**): number of sample units were enlarged taking into account the parcels of access roads, storage units, pump stations and work camps (to achieve higher precision).

$$f=681/10.066=0,066 \cong 0,07$$

Table 1: Total Population and Number of Sample Units by Province

| Province | Total Population | | Sample Unit | | |
|--------------|----------------------------|---------------|----------------------------|---------------|--------------|
| | Frequency(N _h) | % | Frequency(n _h) | % | f(%) |
| Adana | 215 | 2.14 | 24 | 3.52 | 0.112 |
| Ardahan | 1458 | 14.48 | 89 | 13.07 | 0.061 |
| Erzincan | 1166 | 11.58 | 81 | 11.89 | 0.069 |
| Erzurum | 1654 | 16.43 | 119 | 17.47 | 0.072 |
| Gümüşhane | 129 | 1.28 | 21 | 3.08 | 0.163 |
| K.Maraş | 1093 | 10.86 | 74 | 10.87 | 0.068 |
| Kars | 760 | 7.55 | 43 | 6.31 | 0.057 |
| Kayseri | 1022 | 10.15 | 63 | 9.25 | 0.062 |
| Osmaniye | 438 | 4.35 | 34 | 4.99 | 0.078 |
| Sivas | 2131 | 21.18 | 133 | 19.5 | 0.062 |
| Total | 10.066 | 100.00 | 681 | 100.00 | 0.068 |

Sample Selection and Allocation: The sample design is based on probability selection. For the sample design selection and allocation into strata, a probability proportional to size selection (PPS) is used. For each strata (province and also district), sample allocation is based on the corresponding total population proportions which are given in Table 1. And also for pump stations, access roads, storage units and work camps, some sample units are selected taking into account of the numbers of such parcels in the provinces (allocation into provinces and districts PPS selection).

And shown sample units are selected from each sub-strata (province - district - village) by using a simple random sampling (systematic sampling) method as given below.

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Table 2: Population Distribution of Landowners and Users According to Provinces and Districts

| District | Adana | Ardahan | Erzincan | Erzurum | Gümüşhane | K.Maraş | Kars | Kayseri | Osmaniye | Sivas |
|--------------|------------|-------------|-------------|-------------|------------|-------------|------------|-------------|------------|-------------|
| Altınyayla | | | | | | | | | | 309 |
| Andırın | | | | | | 375 | | | | |
| Aşkale | | | | 290 | | | | | | |
| Çayırlı | | | 402 | | | | | | | |
| Ceyhan | 215 | | | | | | | | | |
| Damal | | 145 | | | | | | | | |
| Göksun | | | | | | 718 | | | | |
| Hafik | | | | | | | | | | 135 |
| Hanak | | 360 | | | | | | | | |
| Horasan | | | | 252 | | | | | | |
| Ilıca | | | | 248 | | | | | | |
| İmranlı | | | | | | | | | | 477 |
| Kadirli | | | | | | | | | 363 | |
| Kelkit | | | | | 129 | | | | | |
| Köprüköy | | | | 139 | | | | | | |
| Merkez | | 534 | | 230 | | | 88 | | 75 | 430 |
| Pasinler | | | | 344 | | | | | | |
| Pınarbaşı | | | | | | | | 522 | | |
| Posof | | 419 | | | | | | | | |
| Refahiye | | | 402 | | | | | | | |
| Sarıkamış | | | | | | | 173 | | | |
| Sarız | | | | | | | | 500 | | |
| Selim | | | | | | | 491 | | | |
| Şenkaya | | | | 151 | | | | | | |
| Susuz | | | | | | | 8 | | | |
| Tercan | | | 362 | | | | | | | |
| Ulaş | | | | | | | | | | 220 |
| Zara | | | | | | | | | | 560 |
| <i>Total</i> | <i>215</i> | <i>1458</i> | <i>1166</i> | <i>1654</i> | <i>129</i> | <i>1093</i> | <i>760</i> | <i>1022</i> | <i>438</i> | <i>2131</i> |

Table 3: Sample Distribution of Landowners and Users According to Provinces and Districts

| District | Adana | Ardahan | Erzincan | Erzurum | Gümüşhane | K.Maraş | Kars | Kayseri | Osmaniye | Sivas |
|------------|-------|---------|----------|---------|-----------|---------|------|---------|----------|-------|
| Altınyayla | | | | | | | | | | 25 |
| Andırın | | | | | | 27 | | | | |
| Aşkale | | | | 15 | | | | | | |
| Çayırlı | | | 32 | | | | | | | |
| Ceyhan | 24 | | | | | | | | | |
| Damal | | 11 | | | | | | | | |
| Göksun | | | | | | 47 | | | | |
| Hafik | | | | | | | | | | 18 |
| Hanak | | 18 | | | | | | | | |
| Horasan | | | | 23 | | | | | | |
| Ilıca | | | | 15 | | | | | | |
| İmranlı | | | | | | | | | | 14 |
| Kadirli | | | | | | | | | 29 | |
| Kelkit | | | | | 21 | | | | | |
| Köprüköy | | | | 12 | | | | | | |

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|-----------|----|----|----|-----|----|----|------|----|----|-----|
| Merkez | | 26 | | 14 | | | ---- | | 5 | 26 |
| Pasinler | | | | 33 | | | | | | |
| Pınarbaşı | | | | | | | | 32 | | |
| Posof | | 34 | | | | | | | | |
| Refahiye | | | 26 | | | | | | | |
| Sarıkamış | | | | | | | 11 | | | |
| Sarız | | | | | | | | 31 | | |
| Selim | | | | | | | 32 | | | |
| Şenkaya | | | | 7 | | | | | | |
| Susuz | | | | | | | ---- | | | |
| Tercan | | | 23 | | | | | | | |
| Ulaş | | | | | | | | | | 21 |
| Zara | | | | | | | | | | 29 |
| Total | 24 | 89 | 81 | 119 | 21 | 74 | 43 | 63 | 34 | 133 |

Table 4: Sample Distribution of Landowners and Users According to Provinces, Districts and Villages

| Province | f | District | f | Village | f |
|--------------------|----|----------|----|------------------------|---|
| Adana | 24 | Ceyhan | 24 | Haliliye(21) | 5 |
| | | | | İmren (36) | 7 |
| | | | | Kurtkulağı(38) | 7 |
| | | | | Sevkiye(25) | 5 |
| | | | | | |
| Ardahan | 75 | Damal | 11 | Burmadere Köyü(75) | 5 |
| | | | | Dereköy(49) | 5 |
| | | Hanak | 18 | Avcılar Köyü(96) | 6 |
| | | | | Çamlıçayır Köyü(97) | 7 |
| | | | | Koyunpınar Köyü(88) | 5 |
| | | Merkez | 26 | Dağcı Köyü(50) | 5 |
| | | | | Hasköy(69) | 6 |
| | | | | Kartalpınar Köyü(89) | 8 |
| | | | | Tepesuyu Köyü(61) | 6 |
| | | Posof | 34 | Çakıkoç Köyü(51) | 5 |
| Kayınlı Köyü(53) | 5 | | | | |
| Kırköy(40) | 5 | | | | |
| Taşkıran Köyü(109) | 7 | | | | |
| Erzincan | 60 | Çayırılı | 32 | Balıkli(66) | 7 |
| | | | | Başköy(68) | 7 |
| | | | | Harmantepe(63) | 7 |
| | | Refahiye | 26 | Alacaatlı(51) | 5 |
| | | | | Tekrecik(100) | 9 |
| | | | | Yurtbaşı(71) | 7 |
| | | Tercan | 23 | Beğendik(55) | 6 |
| | | | | Çadırkaya(161) | 7 |
| | | | | Karacaören(34) | 5 |
| Erzurum | 85 | Aşkale | 15 | Hacıhamza(38) | 5 |
| | | | | Yeniköy(52) | 8 |
| | | Horasan | 23 | Horum(46) | 6 |
| | | | | Kırkdikme(49) | 7 |
| | | İlica | 15 | Beypınarı(52) | 7 |
| | | | | Kahramanlar(45) | 6 |
| | | Köprüköy | 12 | Aşağıçakmak(37) | 5 |
| | | | | Merkez(84) | 5 |
| | | Merkez | 14 | Müdürge(Çayırtepe)(57) | 6 |
| | | | | Ortadüzü(63) | 6 |
| | | Pasinler | 33 | Altınbaşak(46) | 6 |

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|-----------|-----|------------|-----|------------------------------|----|
| | | | | Çakırtaş(61) | 8 |
| | | Şenkaya | 7 | Akçataş(36) | 5 |
| | | | | Kaynak Köyü(46) | 5 |
| Gümüşhane | 16 | Kelkit | 21 | Güllüce(25) | 5 |
| | | | | Güzyurdu(23) | 5 |
| | | | | Yeni yol(62) | 6 |
| K.Maraş | 57 | Andırın | 27 | Akifiye(61) | 8 |
| | | | | Kesim(49) | 6 |
| | | | | Orhaniye(56) | 8 |
| | | Göksun | 47 | Çağlayan(58) | 5 |
| | | | | Ç+++ak(67) | 5 |
| | | | | Doğankonak Köyü(51) | 5 |
| | | | | Geben(111) | 7 |
| | | | | Mehmetbey(113) | 7 |
| | | | | Taşoluk(104) | 6 |
| Kars | 43 | Merkez | --- | Büyükboğatepe Köyü(86) | 10 |
| | | Sarıkamış | 11 | Karaorgan Nah.Kötek Mah.(34) | 5 |
| | | | | Yeniköy(63) | 6 |
| | | Selim | 32 | Akçakale Köyü(93) | 6 |
| | | | | Başköy(90) | 6 |
| | | | | Darboğaz Köyü(67) | 5 |
| | | | | Hasbey Köyü(62) | 5 |
| Kayseri | 53 | Pınarbaşı | 32 | Altıkese Köyü(69) | 5 |
| | | | | Hilmiye Köyü(85) | 6 |
| | | | | Kırkeçit Köyü(66) | 5 |
| | | | | Örenşehir Köyü(68) | 5 |
| | | | | Y.Borandere Köyü(81) | 6 |
| | | Sarız | 31 | Kemerköy(44) | 5 |
| | | | | Kurudere Köyü(48) | 5 |
| | | | | Tekneli Köyü(66) | 5 |
| | | | | Yaylacı Köyü(51) | 5 |
| | | | | Yeşilkent Köyü(85) | 6 |
| Osmaniye | 32 | Kadirli | 29 | Kayasuyu(52) | 5 |
| | | | | Kesim(50) | 5 |
| | | | | Yeniğün(70) | 5 |
| | | | | Yukarıçıyanlı(86) | 7 |
| | | Merkez | 5 | Hemite(18) | 5 |
| | | | | Sakarçalık(37) | 5 |
| Sivas | 105 | Altınyayla | 25 | Başören Köyü(56) | 6 |
| | | | | Taşlıhöyük Köyü(100) | 9 |
| | | Hafik | 18 | Alçıören(46) | 5 |
| | | | | Bakımlı(48) | 5 |
| | | İmranlı | 14 | Çukuryurt(62) | 6 |
| | | | | Kevenli(46) | 5 |
| | | | | Kılıçköy(70) | 7 |
| | | | | Koyunkaya(52) | 5 |
| | | Merkez | 26 | Beştepe(64) | 5 |
| | | | | Karayün(93) | 8 |
| | | | | Tahtikement(89) | 7 |
| | | Ulaş | 21 | Karasar(37) | 6 |
| | | | | Kurtlukaya Köyü(33) | 6 |
| | | Zara | 29 | Ekinli(117) | 7 |
| | | | | Nasır(163) | 8 |
| | | | | Tekkeköy(94) | 5 |
| | | | | Topçuyeniköy(76) | 5 |

1.5 LANDOWNERS / USERS SELECTION PROCEDURE

Within the selected villages, the sampled landowners/ users were determined according to the weights the villages were assigned as per above. For each village primary sample list and also substitution sample list were determined which will be used if they will be necessary are given in Appendix 1-10.

When the team arrives at the village, first of all team leader conducts a personal interview with the village head (muhtar) about the village general information and inform him about the survey. Then the selected landowners/users are visited by the interviewers to achieve face to face interview.

Appendix 1: Primary and substitution lists of sample units selected from each stratum (province-district-village)

| Province | f | District | f | Village | f | List of sample units(order numbers) |
|----------|----|----------|----|----------------|---|--|
| Adana | 24 | Ceyhan | 24 | Haliliye(21) | 5 | 1 (2) 2 (4) 3 (6) 4 (8) 5 (10) 6(12) 7 (14) 8 (16) 9 (18) 10 (20) |
| | | | | İmren(36) | 7 | 1 (2) 2 (4) 3 (6) 4 (8) 5 (10) 6 (12) 7 (14) 8 (16) 9 (18) 10 (20) 11 (22) 12 (24) 13 (26) 14 (28) |
| | | | | Kurtkulağı(38) | 7 | 1 (3) 2 (6) 3 (9) 4 (12) 5 (15) 6 (18) 7 (21) 8 (23) 9 (25) 10 (27) 11 (29) 12 (31) 13 (33) 14 (35) |
| | | | | Sevkiye(25) | 5 | 1 (1) 2 (3) 3 (5) 4 (7) 5 (9) 6 (15) 7 (17) 8 (19) 9 (21) 10 (23) |

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Appendix 2: Primary and substitution lists of sample units selected from each stratum (province-district-village)

| Province | f | District | f | Village | f | List of sample units(order numbers) |
|----------|----|----------|----|---------------------|---|--|
| Ardahan | 75 | Damal | 10 | Burmadere Köyü(75) | 5 | 1 (5) 2 (10) 3 (15) 4 (20) 5 (25) 6 (30) 7 (35) 8 (40) 9 (45) 10 (50) |
| | | | | Dereköy(49) | 5 | 1 (4) 2 (8) 3 (12) 4 (16) 5 (20) 6 (24) 7 (28) 8 (32) 9 (36) 10 (40) |
| | | Hanak | 18 | Avcılar Köyü(96) | 6 | 1 (1) 2 (9) 3 (17) 4 (25) 5 (33) 6 (41) 7 (49) 8 (57) 9 (65) 10 (73) 11 (81) 12 (89) |
| | | | | Çamlıçayır Köyü(97) | 7 | 1 (5) 2 (11) 3 (17) 4 (23) 5 (29) 6 (36) 7 (41) 8 (47) 9 (53) 10 (60) 11 (66) 12 (73) 13 (80) 14 (86) |
| | | | | Koyunpınar Köyü(88) | 5 | 1 (2) 2 (10) 3 (18) 4 (26) 5 (34) 6 (42) 7 (50) 8 (58) |

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|--|--|--------|----|---|---|---|
| | | | | | | 9 (66) 10 (74) |
| | | Merkez | 25 | Dağcı Köyü(50) Primary list Substitution list | 5 | 1 (5) 2 (10) 3 (15) 4 (20) 5 (25) 6 (30) 7 (35) 8 (40) 9 (45) 10 (50) |
| | | | | Hasköy Köyü(69) Primary list Substitution list | 6 | 1 (5) 2 (10) 3 (15) 4 (20) 5 (25) 6 (30) 7 (35) 8 (40) 9 (45) 10 (50) 11 (55) 12 (60) |
| | | | | Kartalpınar Köyü(89) Primary list Substitution list | 8 | 1 (4) 2 (8) 3 (12) 4 (16) 5 (20) 6 (24) 7 (28) 8 (32) 9 (36) 10 (40) 11 (44) 12 (48) 13 (52) 14 (56) 15 (60) 16 (64) |
| | | | | Tepesuyu Köyü(61) Primary list Substitution list | 6 | 1 (1) 2 (6) 3 (11) 4 (16) 5 (21) 6 (26) 7 (31) 8 (36) 9 (41) 10 (46) 11 (51) 12 (56) |
| | | Posof | 22 | Çakıkoç Köyü(51) Primary list Substitution list | 5 | 1 (5) 2 (10) 3 (15) 4 (20) 5 (25) 6 (30) 7 (35) 8 (40) |

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|--|--|--|------------------------------------|---|---|-------------------|
| | | | | | | 9 (45) 10 (50) |
| | | | Kayınlı Köyü(53) Primary list | 5 | 1 (2) 2 (7) 3 (12) 4 (17) 5 (22) | |
| | | | Substitution list | | 6 (27) 7 (32) 8 (37) 9 (42) 10 (47) | |
| | | | Kırköy(40) Primary list | 5 | 1 (2) 2 (6) 3 (10) 4 (14) 5 (18) | |
| | | | Substitution list | | 6 (22) 7 (24) 8 (28) 9 (32) 10 (36) | |
| | | | Taşkıran Köyü(109) Primary list | 7 | 1 (5) 2 (12) 3 (19) 4 (26) 5 (33) 6 (40) 7 (47) | |
| | | | Substitution list | | 8 (53) 9 (60) 10 (67) 11 (73) 12 (80) 13 (87) 14 (93) | |

Appendix 3: Primary and substitution lists of sample units selected from each stratum (province-district-village)

| Province | f | District | f | Village | f | List of sample units(order numbers) |
|----------|----|----------|----|----------------|---|---|
| Erzincan | 60 | Çayırılı | 21 | Balıklı(66) | 7 | 1 (4) 2 (8) 3 (12) 4 (16) 5 (20) 6 (24) 7 (28) 8 (32) 9 (36) 10 (40) 11 (44) 12 (48) 13 (52) 14 (56) |
| | | | | Başköy(68) | 7 | 1 (4) 2 (8) 3 (12) 4 (16) 5 (20) 6 (24) 7 (28) 8 (32) 9 (36) 10 (40) 11 (44) 12 (48) 13 (52) 14 (56) |
| | | | | Harmantepe(63) | 7 | 1 (3) 2 (7) 3 (11) 4 (15) 5 (19) 6 (23) 7 (27) 8 (31) 9 (35) 10 (39) 11 (43) 12 (47) 13 (51) 14 (55) |
| | | Refahiye | 21 | Alacaatlı(51) | 5 | 1 (5) 2 (10) 3 (15) 4 (20) 5 (25) 6 (30) 7 (35) 8 (40) 9 (45) 10 (50) |
| | | | | Tekrecik(100) | 9 | 1 (2) 2 (7) 3 (12) |

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|--|--|--------|----|-------------------|---|---|
| | | | | Primary list | | 4 (17) 5 (22) 6 (27) 7 (32) 8 (37) 9 (42) |
| | | | | Substitution list | | 10 (47) 11 (52) 12 (57) 13 (62) 14 (67) 15 (72) 16 (77) 17 (82) 18 (87) |
| | | | | Yurtbaşı(71) | 7 | 1 (4) 2 (8) 3 (12) 4 (16) 5 (20) 6 (24) 7 (28) |
| | | | | Primary list | | 8 (32) 9 (36) 10 (40) 12 (44) 13 (48) 14 (52) |
| | | Tercan | 18 | Beğendik(55) | 6 | 1 (4) 2 (8) 3 (12) 4 (16) 5 (20) 6 (24) |
| | | | | Primary list | | 7 (28) 8 (32) 9 (36) 10 (40) 11 (44) 12 (48) |
| | | | | Substitution list | | |
| | | | | Çadırkaya(161) | 7 | 1 (5) 2 (15) 3 (25) 4 (35) 5 (45) 6 (55) 7 (65) |
| | | | | Primary list | | 8 (75) 9 (85) 10 (95) 11 (105) 12 (115) 13 (125) 14 (135) |
| | | | | Substitution list | | |
| | | | | Karacaören(34) | 5 | 1 (2) 2 (5) 3 (8) 4 (11) 5 (14) |
| | | | | Primary list | | 6 (17) |

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| | | | | | |
|--|--|--|--|-------------------|---------------------------------------|
| | | | | Substitution list | 7 (20) 8 (23) 9 (26) 10 (29) |
|--|--|--|--|-------------------|---------------------------------------|

Appendix 4: Primary and substitution lists of sample units selected from each stratum (province-district-village)

| Province | f | District | f | Village | f | List of sample units(order numbers) |
|----------|----|----------|----|----------------|---|---|
| Erzurum | 85 | Aşkale | 13 | Hacıhamza(38) | 5 | 1 (4) 2 (8) 3 (12) 4 (16) 5 (20) 6 (24) 7 (28) 8 (32) 9 (36) 10 (38) |
| | | | | Yeniköy(52) | 8 | 1 (3) 2 (6) 3 (6) 4 (9) 5 (12) 6 (15) 7 (18) 8 (21) 9 (24) 10 (27) 11 (30) 12 (33) 13 (36) 14 (39) 15 (42) 16 (45) |
| | | Horasan | 13 | Horum(46) | 6 | 1 (1) 2 (4) 3 (7) 4 (10) 5 (13) 6 (16) 7 (19) 8 (22) 9 (25) 10 (28) 11 (31) 12 (34) |
| | | | | Kırıkdikme(49) | 7 | 1 (2) 2 (6) 3 (10) 4 (14) 5 (18) 6 (22) 7 (26) 8 (29) 9 (32) 10 (35) 11 (38) 12 (41) 13 (44) 14 (47) |
| | | Ilica | 13 | Beypınarı(52) | 7 | 1 (2) 2 (6) 3 (10) |

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| | | | | | |
|--|--|----------|----------------------------|---|---|
| | | | Primary list | | 4 (14) 5 (18) 6 (22) 7 (26) |
| | | | Substitution list | | 8 (30) 9 (34) 10 (38) 11 (42) 12 (46) 13 (49) 14 (52) |
| | | | Kahramanlar(45) | 6 | 1 (3) 2 (6) 3 (9) 4 (12) 5 (15) 6 (18) |
| | | | Primary list | | 7 (21) 8 (24) 9 (27) 10 (30) 11 (33) 12 (36) |
| | | Köprüköy | Aşağıçakmak(37) | 5 | 1 (2) 2 (5) 3 (8) 4 (11) 5 (14) |
| | | | Primary list | | 6 (17) 7 (20) 8 (23) 9 (26) 10 (29) |
| | | | Substitution list | | |
| | | | Merkez(84) | 5 | 1 (5) 2 (10) 3 (15) 4 (20) 5 (25) |
| | | | Primary list | | 6 (30) 7 (35) 8 (40) 9 (45) 10 (50) |
| | | | Substitution list | | |
| | | Merkez | Müdüрге(57) (Çayırtepe) | 6 | 1 (3) 2 (7) 3 (11) 4 (15) 5 (19) 6 (23) |
| | | | Primary list | | 7 (27) 8 (31) 9 (35) 10 (39) 11 (43) 12 (45) |
| | | | Substitution list | | |
| | | | Ortaüzü(63) | 6 | 1 (4) 2 (8) 3 (12) 4 (16) 5 (20) |
| | | | Primary list | | |

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|--|--|----------|----|--|---|
| | | | | Substitution list | 6 (24) 7 (28) 8 (32) 9 (36) 10 (40) 11 (44) 12 (48) |
| | | Pasinler | 14 | Altınbaşak(46) Primary list Substitution list | 6 1 (2) 2 (6) 3 (10) 4 (14) 5 (18) 6 (22) 7 (26) 8 (30) 9 (34) 10 (38) 11 (42) 12 (46) |
| | | | | Çakırtaş(61) Primary list Substitution list | 8 1 (3) 2 (6) 3 (9) 4 (12) 5 (15) 6 (18) 7 (21) 8 (24) 9 (27) 10 (30) 11 (33) 12 (36) 13 (39) 14 (42) 15 (45) 16 (48) |
| | | Şenkaya | 10 | Akçataş(36) Primary list Substitution list | 5 1 (3) 2 (6) 3 (9) 4 (12) 5 (15) 6 (18) 7 (21) 8 (24) 9 (27) 10(30) |
| | | | | Kaynak Köyü(46) Primary list Substitution list | 5 1 (1) 2(6) 3 (11) 4 (16) 5 (21) 6 (26) 7 (31) 8 (36) 9 (41) 10 (46) |

Appendix 5: Primary and substitution lists of sample units selected from each stratum (province-district-village)

| Province | f | District | f | Village | f | List of sample units(order numbers) |
|-----------|----|----------|----|--------------|---|---|
| Gümüşhane | 16 | Kelkit | 16 | Güllüce(25) | 5 | 1 (2) 2 (4) 3 (6) 4 (8) 5 (10) 6 (12) 7 (14) 8 (16) 9 (18) 10 (20) |
| | | | | Güzyurdu(23) | 5 | 1 (1) 2 (3) 3 (5) 4 (7) 5 (9) 6 (11) 7 (13) 8 (15) 9 (17) 10 (19) |
| | | | | Yeniyol(62) | 6 | 1 (2) 2 (6) 3 (10) 4 (14) 5 (18) 6 (22) 7 (26) 8 (30) 9 (34) 10 (38) 11 (42) 12 (46) |

Appendix 6: Primary and substitution lists of sample units selected from each stratum (province-district-village)

| Province | f | District | f | Village | f | List of sample units(order numbers) |
|----------|----|----------|----|--------------|---|--|
| K.Maraş | 57 | Andırın | 22 | Akifiye(61) | 8 | 1 (3) 2 (6) 3 (9) 4 (12) 5 (15) 6 (18) 7 (21) 8 (24) 9 (27) 10 (30) 11 (33) 12 (36) 13 (39) 14 (42) 15 (45) 16 (48) |
| | | | | Kesim(49) | 6 | 1 (2) 2 (5) 3 (8) 4 (11) 5 (14) 6 (17) 7 (20) 8 (23) 9 (26) 10 (29) 11 (32) 12 (35) |
| | | | | Orhaniye(56) | 8 | 1 (1) 2 (4) 3 (7) 4 (10) 5 (13) 6 (16) 7 (19) 8 (22) 9 (25) 10 (28) 11 (31) 12 (34) 13 (37) 14 (40) 15 (43) 16 (46) |
| | | Göksun | 35 | Çağlayan(58) | 5 | 1 (5) 2 (10) 3 (15) 4 (20) 5 (25) 6 (30) 7 (35) 8 (40) 9 (45) 10 (50) |
| | | | | Çokak(67) | 5 | 1 (3) |

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|--|--|--|---------------------|---|---|
| | | | Primary list | | 2 (9) 3 (15) 4 (21) 5 (27) |
| | | | Substitution list | | 6 (33) 7 (39) 8 (45) 9 (51) 10 (57) |
| | | | Doğankonak Köyü(51) | 5 | 1 (2) 2 (7) 3 (12) 4 (17) 5 (22) |
| | | | Primary list | | 6 (27) 7 (32) 8 (37) 9 (42) 10 (47) |
| | | | Geben(111) | 7 | 1 (5) 2 (11) 3 (17) 4 (23) 5 (29) 6 (35) 7 (41) |
| | | | Primary list | | 8 (47) 9 (53) 10 (59) 11 (65) 12 (71) 13 (77) 14 (83) |
| | | | Substitution list | | |
| | | | Mehmetbey(113) | 7 | 1 (2) 2 (8) 3 (14) 4 (20) 5 (26) 6 (32) 7 (38) |
| | | | Primary list | | 8 (44) 9 (50) 10 (56) 11 (62) 12 (68) 13 (74) 14 (80) |
| | | | Substitution list | | |
| | | | Taşoluk(104) | 6 | 1 (2) 2 (10) 3 (18) 4 (26) 5 (34) 6 (42) |
| | | | Primary list | | 7 (50) 8 (58) 9 (66) 10 (74) 11 (82) 12 (90) |
| | | | Substitution list | | |

Appendix 7: Primary and substitution lists of sample units selected from each stratum (province-district-village)

| Province | f | District | f | Village | f | List of sample units(order numbers) |
|----------|----|----------|----|---|----|---|
| Kars | 43 | Merkez | 10 | Büyükboğatepe Köyü(86) Primary list Substitution list | 10 | 1 (4) 2 (8) 3 (12) 4 (16) 5 (20) 6 (24) 7 (28) 8 (32) 9 (36) 10 (40) 11 (44) 12 (48) 13 (52) 14 (56) 15 (60) 16 (64) 17 (68) 18 (72) 19 (76) 20 (80) |
| | | Sarkamış | 11 | Karaorgan Nah. Kötek Mah (34) Primary list Substitution list | 5 | 1 (2) 2 (5) 3 (8) 4 (11) 5 (14) 6 (17) 7 (20) 8 (23) 9 (26) 10 (29) |
| | | | | Yeniköy (63) Primary list Substitution list | 6 | 1 (1) 2 (6) 3 (11) 4 (16) 5 (21) 6 (26) 7 (31) 8 (36) 9 (41) 10 (46) 11 (51) 12 (56) |
| | | Selim | 22 | Akçakale Köyü (93) Primary list Substitution list | 6 | 1 (5) 2 (13) 3 (21) 4 (29) 5 (37) 6 (45) 7 (53) 8 (61) 9 (69) 10 (77) 11 (85) 12 (93) |

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|--|--|--|--|---|---|
| | | | <p>Başköy (90)</p> <p>Primary list</p> <p>Substitution list</p> | 6 | <p>1 (7)</p> <p>2 (14)</p> <p>3 (21)</p> <p>4 (28)</p> <p>5 (35)</p> <p>6 (42)</p> <p>7 (49)</p> <p>8 (56)</p> <p>9 (63)</p> <p>10 (70)</p> <p>11 (77)</p> <p>12 (84)</p> |
| | | | <p>Darboğaz Köyü (67)</p> <p>Primary list</p> <p>Substitution list</p> | 5 | <p>1 (2)</p> <p>2 (8)</p> <p>3 (14)</p> <p>4 (20)</p> <p>5 (26)</p> <p>6 (32)</p> <p>7 (38)</p> <p>8 (44)</p> <p>9 (50)</p> <p>10 (56)</p> |
| | | | <p>Hasbey Köyü(62)</p> <p>Primary list</p> <p>Substitution list</p> | 5 | <p>1 (3)</p> <p>2 (9)</p> <p>3 (15)</p> <p>4 (21)</p> <p>5 (27)</p> <p>6 (33)</p> <p>7 (39)</p> <p>8 (45)</p> <p>9 (51)</p> <p>10 (57)</p> |

Appendix 8: Primary and substitution lists of sample units selected from each stratum (province-district-village)

| Province | f | District | f | Village | f | List of sample units(order numbers) |
|----------|----|-----------|----|----------------------|---|--|
| Kayseri | 53 | Pınarbaşı | 27 | Altıkesekek Köyü(69) | 5 | 1 (2) 2 (9) 3 (16) 4 (23) 5 (30) 6 (37) 7 (44) 8 (51) 9 (58) 10 (65) |
| | | | | Primary list | | |
| | | | | Substitution list | | |
| | | | | Hilmiye Köyü(85) | 6 | 1 (3) 2 (10) 3 (17) 4 (24) 5 (31) 6 (38) 7 (45) 8 (52) 9 (59) 10 (66) 11 (73) 12 (80) |
| | | | | Primary list | | |
| | | | | Substitution list | | |
| | | | | Kırkgeçit Köyü(66) | 5 | 1 (1) 2 (7) 3 (13) 4 (19) 5 (25) 6 (31) 7 (37) 8 (43) 9 (49) 10 (55) |
| | | | | Primary list | | |
| | | | | Substitution list | | |
| | | | | Örenşehir Köyü(68) | 5 | 1 (2) 2 (9) 3 (16) 4 (23) 5 (30) 6 (37) 7 (44) 8 (51) 9 (58) 10 (65) |
| | | | | Primary list | | |
| | | | | Substitution list | | |
| | | | | Y.Borandere Köyü(81) | 6 | 1 (3) 2 (10) 3 (17) 4 (24) 5 (31) 6 (38) 7 (45) 8 (52) 9 (59) 10 (66) 11 (73) 12 (80) |
| | | | | Primary list | | |
| | | | | Substitution list | | |

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| | | Sarız | 26 | Kemerköy(44) | 5 | 1 (2) 2 (6) 3 (10) 4 (14) 5 (18) 6 (22) 7 (26) 8 (30) 9 (34) 10 (38) |
| | | | | Primary list | | |
| | | | | Substitution list | | |
| | | | | Kurudere Köyü(48) | 5 | 1 (3) 2 (8) 3 (13) 4 (18) 5 (23) 6 (28) 7 (33) 8 (38) 9 (43) 10 (48) |
| | | | | Primary list | | |
| | | | | Substitution list | | |
| | | | | Tekneli Köyü(66) | 5 | 1 (4) 2 (10) 3 (16) 4 (22) 5 (28) 6 (34) 7 (40) 8 (46) 9 (52) 10 (58) |
| | | | | Primary list | | |
| | | | | Substitution list | | |
| | | | | Yaylacı Köyü(51) | 5 | 1 (4) 2 (9) 3 (14) 4 (19) 5 (24) 6 (29) 7 (34) 8 (39) 9 (44) 10 (49) |
| | | | | Primary list | | |
| | | | | Substitution list | | |
| | | | | Yeşilkent Köyü(85) | 6 | 1 (7) 2 (14) 3 (21) 4 (28) 5 (35) 6 (42) 7 (49) 8 (56) 9 (63) 10 (70) 11 (77) 12 (84) |
| | | | | Primary list | | |
| | | | | Substitution list | | |

Appendix 9: Primary and substitution lists of sample units selected from each stratum (province-district-village)

| Province | f | District | f | Village | f | List of sample units(order numbers) |
|----------|----|----------|----|-------------------|---|--|
| Osmaniye | 32 | Kadirli | 22 | Kayasuyu(52) | 5 | 1 (5) 2 (10) 3 (15) 4 (20) 5 (25) 6 (30) 7 (35) 8 (40) 9 (45) 10 (50) |
| | | | | Kesim(50) | 5 | 1 (4) 2 (9) 3 (14) 4 (19) 5 (24) 6 (29) 7 (34) 8 (39) 9 (44) 10 (49) |
| | | | | Yenigün(70) | 5 | 1 (7) 2 (14) 3 (21) 4 (28) 5 (35) 6 (42) 7 (49) 8 (56) 9 (63) 10 (70) |
| | | | | Yukarıçıyanlı(86) | 7 | 1 (1) 2 (8) 3 (15) 4 (22) 5 (29) 6 (36) 7 (43) 8 (50) 9 (57) 11 (64) 12 (71) 13 (78) 14 (85) |
| | | Merkez | 10 | Hemite(18) | 5 | 1 (1) 2 (3) 3 (5) 4 (7) 5 (9) 6 (11) 7 (13) 8 (15) 9 (17) 10 (18) |
| | | | | Sakarçalık(37) | 5 | 1 (1) |

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| | | | | | |
|--|--|--|--|-------------------|---|
| | | | | Primary list | 2 (5) 3 (9) 4 (13) 5 (17) |
| | | | | Substitution list | 6 (21) 7 (25) 8 (29) 9 (33) 10 (37) |

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Appendix 10: Primary and substitution lists of sample units selected from each stratum (province-district-village)

| Province | f | District | f | Village | f | List of sample units(order numbers) |
|----------|-----|------------|----|----------------------|---|---|
| Sivas | 105 | Altınyayla | 15 | Başören Köyü(56) | 6 | 1 (1) 2 (6) 3 (11) 4 (16) 5 (21) 6 (26) 7 (31) 8 (36) 9 (41) 10 (46) 11 (51) 12 (56) |
| | | | | Taşlıhöyük Köyü(100) | 9 | 1 (3) 2 (8) 3 (13) 3 (18) 4 (23) 5 (28) 6 (33) 7 (38) 8 (43) 9 (48) 10 (53) 11 (58) 12 (63) 13 (68) 14 (73) 15 (78) 16 (83) 17 (88) 18 (93) |
| | | Hafik | 10 | Alçıören(46) | 5 | 1 (1) 2 (6) 3 (11) 4 (16) 5 (21) 6 (26) 7 (31) 8 (36) 9 (41) 10 (46) |
| | | | | Bakımlı(48) | 5 | 1 (2) 2 (7) 3 (12) 4 (17) 5 (22) 6 (27) 7 (32) 8 (37) 9 (42) 10 (47) |
| | | İmranlı | 23 | Çukuryurt(62) | 6 | 1 (3) 2 (8) 3 (13) 4 (18) |

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|--|--|--------|----|--|--|
| | | | | | 5 (23) 6 (28) 7 (33) 8 (38) 9 (43) 10 (48) 11 (53) 12 (58) |
| | | | | Kevenli(46) Primary list Substitution list | 5 1 (1) 2 (6) 3 (11) 4 (16) 5 (21) 6 (26) 7 (31) 8 (36) 9 (41) 10 (46) |
| | | | | Kılıçköy(70) Primary list Substitution list | 7 1 (4) 2 (9) 3 (14) 4 (19) 5 (24) 6 (29) 7 (34) 8 (39) 9 (44) 10 (49) 11 (54) 12 (59) 13 (64) 14 (69) |
| | | | | Koyunkaya(52) Primary list Substitution list | 5 1 (3) 2 (8) 3 (13) 4 (18) 5 (23) 6 (28) 7 (33) 8 (38) 9 (43) 10 (48) |
| | | Merkez | 20 | Beştepe(64) Primary list Substitution list | 5 1 (4) 2 (10) 3 (16) 4 (22) 5 (28) 6 (34) 7 (40) 8 (46) 9 (52) 10 (58) |
| | | | | Karayün(93) Primary list | 8 1 (2) 2 (8) 3 (14) 4 (20) 5 (26) 6 (32) 7 (38) 8 (44) |

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| | | | | | | |
|--|--|------|----|--|---|--|
| | | | | Substitution list | | 9 (50) 10 (56) 11 (62) 12 (68) 13 (74) 14 (80) 15 (86) 16 (92) |
| | | | | Tahtikement(89) Primary list Substitution list | 7 | 1 (5) 2 (11) 3 (17) 4 (23) 5 (29) 6 (35) 7 (41) 8 (47) 9 (53) 10 (59) 11 (65) 12 (71) 13 (77) 14 (83) |
| | | Ulaş | 12 | Karasar(37) Primary list Substitution list | 6 | 1 (3) 2 (6) 3 (9) 4 (12) 5 (15) 6 (18) 7 (21) 8 (24) 9 (27) 10 (30) 11 (33) 12 (36) |
| | | | | Kurtlukaya Köyü(33) Primary list Substitution list | 6 | 1 (2) 2 (4) 3 (6) 4 (8) 5 (10) 6 (12) 7 (14) 8 (16) 9 (18) 10 (20) 11 (22) 12 (24) |
| | | Zara | 25 | Ekinli(117) Primary list Substitution list | 7 | 1 (5) 2 (13) 3 (21) 4 (29) 5 (37) 6 (45) 7 (53) 8 (61) 9 (69) 10 (77) 11 (85) 12 (93) 13 (101) 14 (109) |

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|--|--|--|--|-------------------|---|---|
| | | | | Nasır(163) | 8 | 1 (1) 2 (11) 3 (21) 4 (31) 5 (41) 6 (51) 7 (61) 8 (71) |
| | | | | Primary list | | |
| | | | | Substitution list | | 9 (81) 10 (91) 11 (101) 12 (111) 13 (121) 14 (131) 15 (141) 16 (151) |
| | | | | Tekkeköy(94) | 5 | 1 (3) 2 (12) 3 (21) 4 (30) 5 (39) |
| | | | | Primary list | | |
| | | | | Substitution list | | 6 (48) 7 (57) 8 (66) 9 (75) 10 (84) |
| | | | | Topcuyeniköy(76) | 5 | 1 (6) 2 (13) 3 (20) 4 (27) 5 (34) |
| | | | | Primary list | | |
| | | | | Substitution list | | 6 (41) 7 (48) 8 (55) 9 (62) 10 (69) |