Appendix I

Mongolia Socioeconomic Survey – 2007 Sampling design and implementation

Introduction

This appendix describes the sampling strategy adopted by the 2007 Mongolia Socioeconomic Survey (SES) and the details of its practical implementation until immediately before the survey was fielded, on July 1st 2007. It supersedes another two documents on sampling prepared in the course of the past six months¹, reproducing the parts of them that do not deserve amendments as a result of recent circumstances.

Outline of the design

Sample sizes and strata

A total sample of 11,232 households was allocated into three major strata as follows:

The sample was implicitly allocated by districts and horoos² in Ulaanbaatar, and by aimags in the Rural Area. Each aimag center was an explicit sub-stratum, with 240 households allocated to Darhan-Uul and Orhon, and 120 households to each of the other aimag centers. The Govisumber aimag was an explicitly excluded stratum.

Sampling stages

The selection strategy was different in each of the three major strata:

In Ulaanbaatar the sample was selected in two stages:

- First, 360 khesegs.
- Second, 10 households in each kheseg.

Muñoz, J. Sampling design of the Mongolia Integrated Household Income and Expenditure Survey and Living Standards Measurement Survey. Mission reports (December 2006 and April 2007.)

Mongolia is divided into 22 aimags. The largest of them – Ulaanbaatar – is subdivided into 9 districts, 121 horoos and 1,035 khesegs. Each kheseg has approximately 200 households. The rest of the country is divided into soums and bags. One of the soums in each aimag is normatively considered as the Aimag Center and the others as the Rural Area.

In The Aimag Capitals, in two stages:

- First, 12 or 24 bags in each aimag center.
- Second, 10 households in each bag.

In the Rural Areas, in three stages:

- First, 52 soums,³
- Second, 12 bags in each soum.
- Third, 8 households in each bag.

In the first sampling stage, area units (khesegs, bags or soums) were selected with probability proportional to size (PPS,) using as a measure of size the number of households at the time of the 2005 administrative registration.

Subsequent sampling stages used as sample frame updated lists of households compiled and computerized by the NSO aimag or district offices. In rural soums, administrative records generally sort the *suurin* (sedentary population) and the *malchid* (nomadic herders,) into separate bags, but even when that was not the case (that is, when a bag contained both *suurin* and *malchid*,) each category was still considered separately for sampling purposes (in other words, each mixed bag was conceptually split into a suurin sub-bag and a malchid sub-bag.) This was also done in the few aimag centers that also reported the presence of herders.

The household lists contain the address, size, and name of the head of each household, and whether any of its members is known to work as a non-agricultural self-employed. The group of 8 (or 10) households to be visited by the survey in each kneseg or bag (hereafter referred to as a *cluster*) was selected from these lists as follows:

- In non-herder units, by systematic, <u>unequal probability</u> sampling, giving the households assumed to contain self-employed twice as many chances of being selected than the rest of the households in the unit.
- In herder bags, by equal probability, circular cluster sampling.

Reserve households

In addition to the 8 (or 10) households targeted by the survey, three extra households were selected for each cluster, with the intention of being used as a reserve for eventual nonresponse among the target households. This was done in practice by selecting 11 (or 13)-household clusters first, and then three among them by systematic equal probability sampling to make the reserve.

Multiple clusters in large area units

In large knesegs or bags that were selected more that once by the standard PPS procedure, the corresponding number of clusters were selected in the final stage. (For instance, if a unit was selected twice in the first stage, two clusters were selected in the

³ This resulted in the allocation of 1 to 4 soums per aimag.

unit in the second stage.) This happened seldom in Ulaanbaatar but often in the rest of the country. The selection procedure was as follows:

- In non-herder units, all households in all required clusters were selected in a single step with unequal probabilities as described above and then allocated to specific clusters by systematic, equal probability sampling.
- In herder bags, the starting points of the required clusters were equally spaced in the list of households.

Allocation of the sample in time

The 360 clusters selected in Ulaanbaatar, and the 12 or 24 clusters selected in each aimag center or rural soum were randomly allocated into the 12 months of survey fieldwork. The survey will thus visit a random sub-sample of 104 clusters (936 households) each month.

Description of the sample

Figure 1 below gives the total number of households in the population, the number of area units and the number of households of the proposed design, by stratum and by aimag.

Figure 1: Mongolia Socioeconomic Survey 2007
Number of households in the population,
and number of soums, clusters and households in the sample
by major stratum and by aimag.

		Total No. of households			Selected	Selected clusters				Selected households				
Aimag		Ulaan	Aimag	Rural	Total	rural	Ulaan	Aimag	Rural	Total	Ulaan	Aimag	Rural	T-4-1
		baatar	Centers	Areas	Iotai	soums	baatar	Centers	Areas	Iotai	baatar	Centers	Areas	Total
1 Arhangai	Àðőàí ãàé		4,399	19,877	24,276	4		12	48	60		120	384	504
2 Bayan-Ulgii	Áàÿí-ªëãèé		6,289	15,039	21,328	3		12	36	48		120	288	408
3 Bayanhongor	Áàÿíõîíãîð		6,433	14,502	20,935	3		12	36	48		120	288	408
4 Bulgan	Áóëãàí		3,081	11,935	15,016	2		12	24	36		120	192	312
5 Govi-Altai	Ãî âü-Àëòàé		4,666	10,807	15,473	2		12	24	36		120	192	312
6 Dornogovi	Ăî ðí î ã i âü		5,121	8,847	13,968	2		12	24	36		120	192	312
7 Dornod	Äî ðí î ä		9,603	8,484	18,087	2		12	24	36		120	192	312
8 Dundgovi	Äóí äãi âü		3,429	9,199	12,628	2		12	24	36		120	192	312
9 Zavhan	Çàâõàí		4,074	15,855	19,929	3		12	36	48		120	288	408
10 Uvurhangai	^a â⁰ ðõàí ãàé		5,566	23,227	28,793	5		12	60	72		120	480	600
11 Umnugovi	^a ìíºãîâü		4,358	8,440	12,798	2		12	24	36		120	192	312
12 Suhbaatar	Ñ¿õáààòàð		3,510	9,829	13,339	2		12	24	36		120	192	312
13 Selenge	Ñýëýí ãý		4,691	17,502	22,193	3		12	36	48		120	288	408
14 Tuv	Oº â		3,657	19,652	23,309	4		12	48	60		120	384	504
15 Uvs	<u>Ó</u> âñ		6,345	13,455	19,800	3		12	36	48		120	288	408
16 Hovd	Õî âä		6,675	12,803	19,478	2		12	24	36		120	192	312
17 Huvsgul	Õ⁰ âñ㺠ë		8,672	22,111	30,783	4		12	48	60		120	384	504
18 Hentii	Öýí òèé		4,545	13,396	17,941	3		12	36	48		120	288	408
19 Darhan-Uul	Äàðõàí -Óóë		18,666	4,075	22,741	1		24	12	36		240	96	336
20 Ulaanbaatar	Óëààí áààòàð	216,342			216,342		360			360	3,600			3,600
21 Orhon	Ĭ ðőî í		20,059	811	20,870	0		24	0	24		240	0	240
22 Govisumber	Ãî âüñ¿ì áýð		2,301	944	3,245	0		0	0	0		0	0	0
Total		216,342	136,140	260,790	613,272	52	360	264	624	1,248	3,600	2,640	4,992	11,232

Justification of the sampling design

The SES sampling strategy updates the design adopted by the Household Income and Expenditure Survey (HIES) in 2001, on the basis of the 2000 census. ⁴ The amendments take three major factors into consideration:

- The availability of a more recent sample frame, developed by the NSO on the basis of 2005 population figures from the local registration agencies. These figures show major changes in the population distribution over the past five years (Ulaanbaatar, for instance, has grown from to 755,000 to 912,000 in the period,) revealing that progressively larger parts of the population were escaping from the scope of the surveys based on the 2001 census.
- A raising concern for measuring and understanding the economic importance of the self-employed (often but wrongly referred to as "the informal sector.") The SES design responds to this challenge by selecting households known to contain self-employed preferentially in the final sampling stage, and by marginally increasing the portion of the sample allocated to Ulaanbaatar, where most of the self-employment activities are known to be concentrated.
- The fact that the Socioeconomic Survey will need to be fielded with an operational strategy that is significantly different from the one used by the HIES so far. The proposed design recognizes that the integrated survey will need well-trained interviewers, organized into teams and devoted to the survey on a full-time basis, and that it will also need a decentralized data management component that integrates computer-based quality controls to fieldwork. Several teams will operate in Ulaanbaatar and one or two teams in each of the other aimags.

The SES sample conserves many features of the HIES, particularly a total sample size of 11,232 households per year. However, while the HIES recognized only four explicit strata ([1] Ulaanbaatar, [2] Aimag Capitals and Small Towns, [3a] Soum Centers and [3b] Countryside,) the SES collapses the small towns with the rural areas, and explicitly recognizes many more aimag-level strata. These enhancements are justified by various reasons:

- Neither the HIES nor the SES will be able to produce reliable aimag-level estimations. The only way of achieving this would be to significantly increase the total sample size, to around a thousand households per aimag something that cannot be recommended at this moment. However, the allocation of at least a minimum sample to each aimag and the decentralization of fieldwork and data management are significant first steps in the direction of this ambitious goal.
- Small towns are indeed very small (most of them have less than 2,000 households) and collectively represent only about 10 percent of the population. Under these conditions their presence as partners of aimag

For a description of the HIES design, see Levinson, A. Mongolia Income and Expenditure Survey. Ulaanbaatar, October 2000; and Muñoz, J. Mongolia Household Survey System: Sampling Implementation and Survey Integration. Ulaanbaatar, February 2001.

capitals in an explicit stratum was not compatible with a minimum urban size in each aimag, and with the deployment of at least one interviewer in each aimag capital. It is important to underline that the SES design does not exclude small towns from the sample – they are just transferred to another stratum. This may require some care at the analytic stage, but does not engage the comparability of the SES with the HIES series.

Another deviation of the SES relative to HIES is that, although the total size of the rural sample (4,992 households) remains unchanged, it will now consist of 96 households (12 bags) in each of 52 soums, rather than of 64 households (8 bags) in each of 78 soums. This probably will bring about slightly higher cluster effects, but it will also improve the capture of seasonal variations, and will keep rural interviewers busy year round at a marginal cost.

A final difference between the SES and HIES samples is in the selection technique adopted for the herder communities: whereas the HIES selected both herder and sedentary clusters by systematic sampling within their respective bags, the SES will try to facilitate fieldwork selecting herders by circular cluster sampling instead – the underlying assumption being that households that appear close to each other in the lists are also likely to be neighbors in the field. Cluster sampling may bring about larger sampling errors than systematic sampling, but it is also expected to be less vulnerable to nonresponse and to the selection biases that have affected the recent rounds of the HIES.

Implementation of the sampling stages

Initial sampling stages

In December 2006, the 2005 population registration figures were organized into adequate sample frames for the three major strata, and the first sampling stage was conducted in Ulaanbaatar and the rural areas. This resulted in the selection of 357 khesegs in the capital (three of them selected twice,) and 52 rural soums (allocated into aimags as shown in Figure 1.) A household listing operation was conducted in all of these khesegs and soums.

The first sampling stage was also conducted in the aimag centers, but the relatively small total number of bags per center resulted in almost all of them being chosen. Under these conditions, it would have been easier and better to ignore this preliminary exercise and simply conduct the household listing operation in all urban centers, leaving the actual allocation of clusters into bags for a later moment, when updated figures would be available for all of them. This was actually done in all but four of the aimags: Bayan-Ulgii, Govi-Altai, Tuv and Uvs. In each of these aimags, the listing operation took place in all but one of the bags, thus making the December exercise a *de facto* zero-th sampling stage that will require a very small adjustment in one of the estimation formulas presented below (Formula 2.)

⁵ There are 168 bags in total in all aimag centers (Ulaanbaatar and Govisumber excluded.) All but seven of them were selected in December, and one half of those selected were selected more than once.

Household listing operation

The household listing operation was conducted in May and June of 2007 in all selected khesegs of Ulaanbaatar, all 52 selected rural soums, and almost all aimag centers, as explained above. The final database contains over 275,000 households in total and, beyond its immediate utilization for the SES, has a high potential value as a master sample frame for other household surveys conducted by the NSO in future years.

A sudden rescheduling of the survey launching date prevented the implementation of uniform practices for the computerization of the household lists, and resulted in a wide variety of heterogeneous spreadsheets demanding considerable data management effort in order to build from them a reliable frame for the subsequent sampling stages. One of the aimags (Hentii) delivered its files only days before the launching of the survey, and in some of its bags the lists consisted of simple sequences of serial numbers, without household addresses or names.

The operation was also confused in one of the Ulaanbaatar districts (Baianzurj,) where the maps of four horoos had been redrawn and local staff had trouble identifying the boundaries of the twenty "old" khesegs that had been selected in these horoos. This was solved by taking a sample of twenty "new" khesegs in the affected horoos, using the most recent population figures for the PPS selection. The December 2006 exercise can also be considered in this case as a *de facto* zero-th sampling stage demanding a small adjustment in Formula 1 below.

Some aimags or districts delivered lists of a few extra khesegs or bags, in addition to those they had been asked for. These additional units were ignored in the subsequent sampling stages.

Selection of clusters

The final allocation of clusters into bags and the selection of the target and reserve households in each cluster were conducted with a special-purpose program (an Excel macro.) Additional programs were responsible for the production of the two associated survey instruments:

- The *Cluster Tracking Sheets* will be used by fieldworkers to identify the selected households. They give the name of the household head, the household size and the address of the 8 (or 10) target households and 3 reserve households in a cluster.
- The Household Listing Printouts reproduce the list of all households in the
 area, flagging the selected households among them. These lists will facilitate
 the identification of the selected households when precise addresses are not
 available.

Figures 2 and 3 below reproduce one Cluster Tracking Sheet and a page of the corresponding Household Listing Printout. Notice that although in sedentary areas households known to contain self-employed are preferentially chosen, neither of these instruments reveal this information to the fieldworkers. They have been instructed to probe for <u>all</u> self-employment activities of <u>all</u> members in <u>all</u> households, not just in some of them.

Figure 2: A Cluster Tracking Sheet (50 percent of actual size)

01	3	М.Жрэлбаатар	4	Я-37-151
02	16	С.Дулам	3	Я-37-142
03	41	Д.Энх-Амгалан	4	Я-37-573
04	55	Д.Ганбаатар	4	Я-38-580
05	66	М.Дашням	5	Я-38-588
06	92	Л.Гантайван	3	Я-42-692
07	103	Г. Дофин	3	Я-42-702
08	118	Ш. Ы нхбаатар	7	Я-40-603б
09	147	Г.Цэрэннадмид	7	Я-40-624
10	160	Ю.Тосмаа	5	Я-43-709
	100		Ŭ	10.100

Í	° ö ° ðő	¯NA-ûi ì ýðäyæbebýi í °° ö °ðöbéäàø bæääö ýðöbéāî ëæîíî. Í °° ö °ðöbéäàø bæääö áî ënîi ø àĕbæäài û ãi àðbéi ôi äî ðöi éēiî.					
		Г.Цэрэндолгор		4	Я-37-563		
11	29	-íäñýí °őőèéí äóãààð:	Øàëòãààí				
		М.Далантай		1	Я-38-598		
12	79	- í anýí ° đôèéí aóãàað:	Øàĕòãààí				
	133	Ю. үйэрг		7	Я-40-615		
13		- í anýí ° đôèéí a óãà à đ:	Øàëòãààí				

Figure 3: Page of a Household Listing Printout (50 percent of actual size)

2 4 П.Борис 9-37-162 3 1143 01 4 М.Болибантар 9-37-151 4 13 Л.Нация 9-37-150 9-37-151 6 4 Л.Нараннул 9-37-149 9-37-144 7 5 Д.Равим 9-37-146 9-37-146 10 3 В.Мюбавтар 9-37-146 9-37-146 11 4 Б.Орабат 9-37-145 9-37-145 12 6 П.Сергей 9-37-142 9-37-142 12 6 П.Сергей 9-37-142 9-37-142 14 3 П.Валентина 9-37-142 9-37-142 15 3 О. Висер-варо 9-37-142 9-37-142 16 1143 02 3 О. Висер-варо 9-37-142 17 7 Н. Вазава 9-37-142 9-37-144 18 2 Т.Мы-сал 9-37-144 9-37-144 19 3 О. Васара 9-37-144 9-37-	ÆA	OI A	вΑ	Aì á¿	ë lýð	Oàÿã	Oàéēáàő
2 4 M.Liomon	1			4	П Борис	Q.37-152	
3 1143 01 4 Мфолбаатар 9.37-151 4 1 3 1 Hagar 9.37-150 5 6 7 1 Hagar 9.37-150 7 6 7 6 7 1 Hagar 9.37-147 8 3 7 1-147 8 3 3 0 Aвирмад 9.37-148 9 9 3 C Hagarap 9.37-146 10 3 8 Modgarap 9.37-146 10 3 8 Modgarap 9.37-146 11 4 6 Kipsedan 9.37-143 12 1 4 6 Kipsedan 9.37-143 13 3 1 Il.Baneruwa 9.37-143 14 8 6 Eardaap 9.37-143 14 8 6 Eardaap 9.37-143 15 1143 02 3 C.Llynam 9.37-142 15 1143 02 3 C.Llynam 9.37-144 16 17 7 18 7 1 T.Baneruwa 9.37-144 17 17 18 2 7 T.Maucan 9.37-140 19 5 T.Farkong 9.37-142 10 3 4 F.Farkong 9.37-142 10 3 5 C.Llynam 9.37-140 10 3 5 C.Llynam 9.37-140 10 4 5 C.Llynam 9.37-140 10 5 T.Farkong 9.37-140 10 7 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8							***************************************
4 3 Д.Нацат 9.37-150 5 5 H.Паранфап 9.37-140 6 7 4 П.Наранфап 9.37-147 8 8 3 7.14		1112	01				
5 5 H Lipan-Man R 37-149 6 4 Л. Наранзул 8-37-147 7 5 Д. Равния 8-37-147 9 3 С. Нарангарал 8-37-146 10 3 В. Мюбавтар 8-37-146 11 4 Б. Орабат 8-37-145 12 6 П. Серген 8-37-144 13 6 П. Серген 8-37-144 14 8 Б. Багбавр 9-37-142 15 13 0. Эмер-мара 9-37-142 16 1143 0. З. С. Дупам 9-37-142 16 1143 0. З. С. Дупам 9-37-142 17 7 Н. Давава 9-37-142 18 1. Б. Т. С.		1143	UI				
6 4 Л.Нарансулт 9.37.147 7 5 Д. Руавиок 9.37.147 8 3 3 О.Авирмар 9.37.146 8 3 3 О.Авирмар 9.37.146 10 3 С.Нарангарал 9.37.146 11 4 8 Барабат 9.37.146 11 4 8 Барабат 9.37.145 12 6 П.Сергей 9.37.145 13 3 П.Валентина 9.37.143 9.37.143 13 3 П.Валентина 9.37.142 14 8 Барабар 9.37.142 15 14 8 Барабар 9.37.142 16 1143 02 3 С.Дулам 9.37.142 17 7 Н. Идавас 9.37.141 18 2 Т.Мэнсэл 9.37.141 18 2 Т.Мэнсэл 9.37.140 19 5 Т.Ганболд 9.37.140 19 5 Т.Ганболд 9.37.139 21 4 Б.Ганбалар 9.37.139 22 4 Б.Ганбалар 9.37.139 23 5 Д.Отгон 9.37.139 24 5 Ч.Ганболд 9.37.139 25 4 Д.Барабатар 9.37.139 26 4 Д.Барабатар 9.37.139 27 2 Д.Барабатар 9.37.139 28 4 Ч.Кола 9.37.563 29 1143 11 4 Г.Цэрэндолгор 9.37.563 30 6 Ч.Мкова 9.37.563 31 5 Г.Аруараваниц 9.37.563 32 1 Д.Бараба 9.37.563 33 6 Н.Жамъянбаатар 9.37.563 34 3 Х.Экобаатар 9.37.563 35 6 Ч.Мковар 9.37.563 36 6 Ч.Мковар 9.37.563 37 7 О.Халируаваниц 9.37.563 38 3 Я.Далгармар 9.37.565 39 4 Д.Тогок 9.37.563 30 6 Ч.Мковар 9.37.565 31 1143 03 4 Г.Карараваринд 9.37.563 32 1 Д.Барабар 9.37.565 33 3 Я.Далгармар 9.37.565 34 3 Х.Экобаатар 9.37.565 35 4 Д.Тогок 9.37.577 37 7 О.Халируава 9.37.565 38 3 Я.Далгармар 9.37.565 39 4 Д.Тогок 9.37.577 40 1143 03 4 Г.Барасаран 9.37.565 41 1143 03 4 Г.Барасаран 9.37.577 42 1143 03 4 Г.Барасаран 9.37.565 43 4 Х.Уокураван 9.37.577 44 1143 03 4 Г.Барасаран 9.37.577 45 4 К.Чугууневм 9.37.577 46 1143 03 4 Г.Барасаран 9.37.577 47 1143 03 4 Г.Барасаран 9.37.577 48 1143 03 4 Г.Барасаран 9.37.577 49 1143 03 4 Г.Барасаран 9.37.577 40 1143 03 4 Г.Барасаран 9.37.577 41 1143 03 4 Г.Барасаран 9.37.577 42 1143 03 4 Г.Барасаран 9.37.577 43 1144 1145 03 4 Г.Барасаран 9.37.577 44 1143 03 4 Г.Барасаран 9.37.577 45 1143 03 4 Г.Барасаран 9.37.577 46 1143 03 4 Г.Барасаран 9.37.577 47 1143 03 4 Г.Барасаран 9.37.577 48 1143 03 4 Г.Барасаран 9.37.577 49 1143 03 4 Г.Барасаран 9.37.577 40 1143 03 4 Г.Барасаран 9.37.577 41 1143 03 4 Г.Барасаран 9.37.577 42 1143 03 4 Г.Барасаран 9.37.577 43 1144 04 144 04 144 044 044 044 044 044							
7 5 ДРавиях ЯЗТ-147 8 3 3 О Авирмад ЯЗТ-146 9 3 3 С. Нарыгэрал ЯЗТ-146 11 3 В Мибаатар ЯЗТ-146 12 6 П.Сергей ЯЗТ-143 13 3 П.Валентина ЯЗТ-143 14 8 Б.Батбаяр ЯЗТ-142 15 13 0 Мер-Рейдер ЯЗТ-142 16 1143 02 3 С.Дулам ЯЗТ-142 17 18 1 143 02 3 С.Дулам ЯЗТ-142 18 1 144 02 3 С.Дулам ЯЗТ-144 19 5 Т.Ганболд ЯЗТ-141 19 5 Т.Ганболд ЯЗТ-139 20 3 Ч.Гарима ЯЗТ-149 21 4 Б.Ганбатар ЯЗТ-139 21 4 Б.Ганбатар ЯЗТ-139 22 4 Б.Ганболд ЯЗТ-139 23 4 Б.Ганболд ЯЗТ-139 24 5 Ч.Ганболд ЯЗТ-139 25 4 Б.Ганболд ЯЗТ-139 26 3 Ч.Ганболд ЯЗТ-139 27 4 Б.Ганболд ЯЗТ-139 28 4 Б.Ганболд ЯЗТ-139 29 1 143 1 4 Б.Ганболд ЯЗТ-1558 20 3 Ч.Ганболд ЯЗТ-1558 20 3 Ч.Ганболд ЯЗТ-159 21 4 Б.Ганболд ЯЗТ-1558 22 4 Б.Ганболд ЯЗТ-1558 23 4 Б.Ганболд ЯЗТ-5559 24 5 Ч.Ганболд ЯЗТ-5559 25 4 Х.З-унбаатар ЯЗТ-5559 26 3 Ц.Донид ЯЗТ-5559 27 4 Б.Ганбан ЯЗТ-5559 28 1 143 11 4 Ч.Коли ЯЗТ-5559 39 1 143 11 4 Ч.Коли ЯЗТ-5563 30 1 5 Г.Асуозана ЯЗТ-563 31 3 Ш.Гарэнадмид ЯЗТ-563 31 3 Ш.Гарэнадмид ЯЗТ-563 31 4 Т.Ганболд ЯЗТ-563 32 5 Б.Ганболд ЯЗТ-565 33 4 Д.Гангола ЯЗТ-576 34 7 С.Тарарана ЯЗТ-565 35 7 С.Тарарана ЯЗТ-565 36 7 О.Халиухай ЯЗТ-567 37 6 Г.Заранацог ЯЗТ-577 38 7 7 О.Халиухай ЯЗТ-577 41 1143 03 4 П.Маска ЯЗТ-577 42 1 Т.Ганбола ЯЗТ-577 43 2 Ц.Экгуха ЯЗТ-575 44 3 5 Багсайхан ЯЗТ-575 45 4 К.Чугуунам ЯЗТ-575 46 4 К.Чугуунам ЯЗТ-575 47 7 С.Оаранзо ЯЗТ-575 48 3 Д.Наранацыя ЯЗТ-576 49 9 У.Ооунамия ЯЗТ-576 40 1 Д.Нарами ЯЗТ-577 41 1 1143 03 4 Д.Нарамидыя ЯЗТ-576 40 1 Д.Нарами ЯЗТ-577 41 1 143 03 4 Д.Нарамидыя ЯЗТ-576 41 1 143 03 4 Д.Нарамидыя ЯЗТ-576 42 1 Д.Нарамидыя ЯЗТ-576 43 2 Д.Оксууа ЯЗТ-575 44 3 3 Д.Нарамидыя ЯЗТ-576 45 4 М.Чугуунам ЯЗТ-576 46 4 М.Чугуунам ЯЗТ-577 47 1 1143 03 4 Д.Нарамидыя ЯЗТ-577 48 3 3 Д.Нарамидыя ЯЗТ-577 49 3 4 Д.Нарамидыя ЯЗТ-577 40 4 1 1143 03 4 Д.Нарамидыя ЯЗТ-577 41 1143 03 4 Д.Нарамидыя ЯЗТ-579 43 5 4 Д.Нарамидыя ЯЗТ-579 44 5 4 Д.Нарамидыя ЯЗТ-579 45 4 1 144 144 144 144 144 144 144 144 1	- 2				п.цэдэноал	71-37-149	
8 3 О. Авирмад 9.37.146 10 3 B. McQarara 9.37.146 10 3 B. McQarara 9.37.146 11 3 C. Asia 9.37.146 11 3 C. Asia 9.37.146 11 3 C. Asia 9.37.147 11 3 C. Asia 9.37.148 11 3 C. Asia 9.37.149 12 C. Asi				4			
9 3 C. Нервияграл 9.37-146 10 3. В. Мибодатар 9.37-146 11 4 6 Кузебат 9.37-146 11 2 4 6 Кузебат 9.37-147 13 3 3				5			
10				3			
111 4 Б. Фравбат Я.37.143 12 6 П. Сергей Я.37.143 13 3 П. Валентина Я.37.143 14 3 1. Валентина Я.37.142 15 3 О. Вмереварар Я.37.142 16 1143 02 3 С. Дугам 17 7 Н. Вравеас Я.37.142 18 2 Т. Менсал Я.37.143 18 2 Т. Менсал Я.37.143 20 3 Т. Т. Некол Я.37.139 21 4 Б. Ганболд Я.37.139 22 4 Б. Ганболд Я.37.139 23 5 Д. Отгон Я.37.139 24 4 Б. Данбалар Я.37.139 25 5 Ч. Танболд Я.37.589 26 3 Т. Донова Я.37.589 27 2 Д. Баврав Я.37.580 28 1. Т. Донова Я.37.586 29 <td></td> <td></td> <td></td> <td>3</td> <td></td> <td></td> <td>***************************************</td>				3			***************************************
12 6 П. Сергей 9.37-143 13 3 П. Валентина 9.37-143 14 8 Б. Батбакр 9.37-142 16 1143 02 3 Овисремдер 9.37-142 16 1143 02 3 Овисремдер 9.37-142 17 Н. Ватемас 9.37-141 18 2 Т. Мансас 9.37-141 19 5 Т. Ганболд 9.37-139 20 3 Ч. Гарима 9.37-139 21 4 Б. Ганбактар 9.37-139 22 4 Б. Ганбактар 9.37-139 23 5 С. Готгон 9.37-139 24 5 Ч. Ганболд 9.37-139 25 4 Т. Ганболд 9.37-139 26 5 Ч. Ганболд 9.37-139 27 6 С. Ганболд 9.37-139 28 1 Ч. Ганболд 9.37-558 29 1 Ч. Ганболд 9.37-558 20 2 Д. Банраа 9.37-559 20 3 Ц. Донид 9.37-559 21 4 Г. Ганболд 9.37-559 22 1 Д. Ганболд 9.37-559 23 1 Ц. Донид 9.37-559 24 5 Ч. Ганболд 9.37-559 25 1 Ц. Ганболд 9.37-559 26 1 Т. Ганболд 9.37-559 27 2 Д. Банраа 9.37-559 28 1 Ц. Ганболд 9.37-559 29 1 143 11 4 Г. Ц. Г.							
13 3 П.Валентина 9.37.142 14 8 Бъзговар 9.37.142 16 1143 02 Бъография 17 17 Н. Ваваес 9.37.144 18 2 Т.Мансал 9.37.140 19 5 Т. Ганболд 9.37.140 20 3 Ч. Гармай 9.37.139 20 3 Ч. Гармай 9.37.139 21 4 Г. Ганболд 9.37.139 22 4 Б. Ганболд 9.37.139 23 5 Д.Отгон 9.37.139 24 5 Ч. Ганболд 9.37.559 25 4 Х. Зиобазтар 9.37.559 26 4 Х. Зиобазтар 9.37.569 27 2 3 Д. Пома 9.37.569 28 3 4. Црэрандолгор 9.37.563 29 1143 1 4. Г. Црэрандолгор 9.37.563 30 3 Ж. Драндолгор 9.37.				4			
14 8 Б. Батбавар Я. 37.142 16 143 02 3 С. Дулам Я. 37.142 18 2 С. Дулам Я. 37.14 Н. 4 18 2 Я. 37.14 Н. 4 19 3 У. Ганболд Я. 37.139 20 3 У. Ганболд Я. 37.139 21 4 Б. Ганболд Я. 37.139 22 4 Б. Ганболд Я. 37.139 23 4 Б. Ганболд Я. 37.139 24 5 Д. Отгон Я. 37.533 25 4 У. уюбаатар Я. 37.533 26 3 Ц. Дюни Я. 37.563 27 2 Д. Бавраа Я. 37.569 28 1143 11 Ч. Коля Я. 37.563 31 3 И. Ц. Барана Я. 37.563 32 14 К. Бандара Я. 37.563 33 3 14 Ч. Коля Я. 37.563 33				6			
15 3 О Вмерчавор Я.37.142 16 1143 02 3 Сургам Я.37.142 17 7 Н. Вязава Я.37.141 9 18 2 7 Н. Балава Я.37.139 20 3 Ч. Ганкоп Я.37.139 21 4 Б. Ганбопп Я.37.139 22 4 Б. Ганбопп Я.37.139 23 4 Б. Ганбопп Я.37.139 24 5 Ч. Ганкоп Я.37.583 25 4 Х. Энобазата Я.37.583 26 3 Ц. Донкц Я.37.583 26 3 Ц. Донкц Я.37.563 27 2 Д. Баврав Я.37.603 28 1143 1 4 Г. Царонаритор Я.37.563 30 5 Г. Амуразан Я.37.563 В.37.564 31 3 3 Б. Царонаритор Я.37.563 33 5 С. Донаритор				3			
16 1143 02 3 С.Лулам 9.37-142 17 7 Н. Верваес 9.37-141 18 2 T.Mohean 9.37-149 20 3 Ч. Гармая 9.37-139 21 4 Б. Ганболд 9.37-139 22 4 Б. Ганболд 9.37-139 23 5 Д. Ганболд 9.37-139 23 5 Д. Ганболд 9.37-139 23 5 Д. Ганболд 9.37-539 24 Д. Баврав 9.37-559 25 5 Ч. Данболд 9.37-559 26 3 Ц. Дони 9.37-563 27 2 Д. Баврав 9.37-563 29 1143 1 4 К. Г. Брандарьав 31 3 1 Д. Г. Брандарьав 9.37-563 32 3 1 Д. Брандарьав 9.37-566 33 6 Н. Жамъянбаатар 9.37-566 34 3							
17 7 Нфжваес 9-37-141 18 2 Т.Мансал 9-37-140 19 5 Т.Ганболд 9-37-139 21 4 Б. Раббагар 9-37-139 22 4 Б. Раббагар 9-37-139 23 5 Д.Отгон 9-37-139 24 5 Ч. Ганболд 9-37-558 25 4 Х. Экобаагар 9-37-558 26 4 Х. Экобаагар 9-37-569 27 3 Ц. Дона 9-37-563 28 4 Ч. Клоя 9-37-563 29 1143 11 4 Г. Цэрондолгор 9-37-563 29 1143 11 4 Г. Цэрондолгор 9-37-563 31 3 Ш. Цэрэннадмиц 9-37-563 9-37-563 31 3 Ш. Цэрэннадмиц 9-37-563 9-37-563 33 4 3 Х. Экобаар 9-37-565 34 3 Х. Экобаар 9	15			3	О, бмерчедер	Я-37-142	
17 7 Нфжваес 9-37-141 18 2 Т.Мансал 9-37-140 19 5 Т.Ганболд 9-37-139 21 4 Б. Раббагар 9-37-139 22 4 Б. Раббагар 9-37-139 23 5 Д.Отгон 9-37-139 24 5 Ч. Ганболд 9-37-558 25 4 Х. Экобаагар 9-37-558 26 4 Х. Экобаагар 9-37-569 27 3 Ц. Дона 9-37-563 28 4 Ч. Клоя 9-37-563 29 1143 11 4 Г. Цэрондолгор 9-37-563 29 1143 11 4 Г. Цэрондолгор 9-37-563 31 3 Ш. Цэрэннадмиц 9-37-563 9-37-563 31 3 Ш. Цэрэннадмиц 9-37-563 9-37-563 33 4 3 Х. Экобаар 9-37-565 34 3 Х. Экобаар 9	16	1143	02	3	С.Дулам	Я-37-142	
18 2 Т.Мансал 9.37-140 19 5 Т.Ганболд 9.37-139 20 3 Ч.Гармай 9.37-139 21 4 Б.Ганболд 9.37-139 23 5 Д.Отгон 9.37-139 24 5 Ч.Ганболд 9.37-559 25 4 Х.Знобавтар 9.37-559 27 3 Д.Помид 9.37-560 28 3 Д.Пома 9.37-560 29 1143 1 4 Църрандолгор 9.37-563 30 3 3 Д.Паррандолгор 9.37-563 9.37-563 31 3 3 Д.Паррандолгор 9.37-563 9.37-563 9.37-563 32 3 3 Д.Паррандолгор 9.37-563 9.37-563 9.37-563 9.37-563 9.37-563 9.37-563 9.37-563 9.37-563 9.37-563 9.37-563 9.37-563 9.37-563 9.37-563 9.37-563 9.37-563 9.37-563 9.37-563	17			7	Н Ижмаас	9-37-141	***************************************
19 5 Т.Ганболд 9.37.139 20 3 Ч.Гармая 9.37.139 21 4 6 Ганбоатар 9.37.139 22 4 6 Ганболд 9.37.139 23 6 Ганболд 9.37.139 24 5 Ч.Ганболд 9.37.139 25 4 7. 130.139 26 7 1. 130.139 27 7 2 1. 130.139 28 7 2 1. 130.139 29 1143 11 4 Ч.Коли 9.37.559 29 1143 11 4 Ч.Коли 9.37.563 30 5 Г. Ганболд 9.37.563 31 3 Ш.Гарянадмид 9.37.563 31 3 Ш.Гарянадмид 9.37.563 32 5 Ц.Ганболд 9.37.563 33 6 К.Ганболд 9.37.563 33 6 К.Ганболд 9.37.563 33 6 К.Ганболд 9.37.563 34 7 1. 130.139.139.139.139.139.139.139.139.139.139	18						
20 3 ЦГармав				5			
21 4 Б. Ганболар 9-37-139 22 4 Б. Ганболар 9-37-139 23 5 Д. Отгон 9-37-139 24 5 Ч. Ганболар 9-37-539 25 3 1. Длемолар 9-37-539 26 3 1. Длемолар 9-37-560 27 2 Д. Бавраа 9-37-563 28 4 Ч. Коля 9-37-563 29 1143 1 Г. Църочдолгор 9-37-563 30 1143 1 Г. Църочдолгор 9-37-563 31 1. Църочдолгор 9-37-563 9-37-563 32 1. Църочдолгор 9-37-563 9-37-563 33 6 Н. Жамъябаатар 9-37-565 9-37-565 34 3 3. Ужобаво 9-37-566 9-37-566 35 6 Ч. Мискаво 9-37-567 9-37-567 36 6 1. Долонача 9-37-569 9-37-569 37 6 1. Долона				3			
22 4 Б.Ганболд Я.37.139 2 23 5 Д.Отгон Я.37.139 3 24 5 Ч.Ганболд Я.37.585 3 25 4 Х. Уэкбаатар Я.37.585 3 26 27 2 2 Д.Баяраа Я.37.580 3 27 2 2 Д.Баяраа Я.37.580 3 28 4 Ч.Коля Я.37.580 3 29 1143 11 4 Г.Цэрэндэлгор Я.37.583 3 30 5 Г.Ануураана Я.37.583 3 31 3 Ш.Цэрэннадмид Я.37.583 3 32 3 Ц.Цэрэнадмид Я.37.583 3 33 3 Ш.Цэрэнадмид Я.37.584 4 34 3 Х.Экбаар Я.37.586 3 35 6 Ч.Мьбаар Я.37.586 3 36 7 О.Хальуураа Я.37.586 3 37 6 Г. Эраранцогт Я.37.586 3 38 3 Я.Дылгармаа Я.37.586 3 39 3 Я.Дылгармаа Я.37.586 3 39 3 Я.Дылгарма Я.37.587 3 40 1 Дера К. С.							
23 5 Д.Отгон 9.37.139 24 4 5 Ч.Ганболд 9.37.558 25 4 X.Знобавтар 9.37.558 26 3 П.Помид 9.37.558 27 2 3 П.Помид 9.37.558 28 3 П.Помид 9.37.569 29 1143 11 4 Г.Царэндолгор 9.37.563 30 5 Г.Акуузава 9.37.563 31 3 П.Пырэннадмид 9.37.563 32 3 П.Пырэннадмид 9.37.563 33 6 Н.Жаильянбавтар 9.37.565 34 3 Х.Знобавар 9.37.565 35 6 Ч.Мисбавр 9.37.566 35 6 Ч.Мисбавр 9.37.567 38 3 П.Пырэннадмид 9.37.567 39 7 О.Халяузан 9.37.567 39 39 Д.Потох 9.37.571 39 4 Д.Тотох 9.37.571 40 1143 03 4 П.Знок Амгалан 9.37.573 40 1143 03 4 П.Знок Амгалан 9.37.574 41 1143 03 4 П.Знок Амгалан 9.37.575 42 1 Д.Зногузав 9.37.575 43 2 1 Д.Зногузав 9.37.575 44 1 145 03 4 П.Банс 9.37.575 45 4 Х.Чуунуневм 9.37.576 46 4 П.Пат-Эрдэма 9.37.576 47 1 Д.Зногуза 9.37.576 48 1 Нага-Эрдэма 9.37.576 49 1 Д.Зногуза 9.37.576 40 1 П.Марох 9.37.576 41 145 03 4 П.Банс 9.38.98 9.37.576 42 1 Д.Зногуза 9.37.576 43 1 Д.Зногуза 9.37.576 44 2 1 Д.Зногуза 9.37.576 45 4 Х.Чугуневм 9.37.01 46 1 П.Банс 9.39.99 9.37.676 47 1 П.Довори 9.33.579 48 3 У.Окуневми 9.37.01 49 3 1 Д.Новори 9.33.579 50 2 У.Окуневцег 9.33.579 51 1 П.Повори 9.33.579 52 2 1 П.Новори 9.33.579							
24 5 ЦТанболд 9-37-558 25 4 Х. унобратар 9-37-558 26 7 3 ЦПонид 9-37-559 27 2 Д. Банраа 9-37-559 28 143 11 4 Г. Цронартор 9-37-563 29 1143 11 4 Г. Цронартор 9-37-563 30 1 5 Г. Акуураана 9-37-563 31 3 ШЦараннадмид 9-37-563 32 5 Ц. Банцарьва 9-37-564 33 6 Н. Жамыжабаатар 9-37-564 33 6 Н. Жамыжабаатар 9-37-566 34 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				7			
25 4 X-3vxбаагар R-37-558 26 3 ЦДиони R-37-559 27 2 Д.Баврав R-37-559 28 1143 11 4 Г.Царонаритор R-37-563 30 5 Г. Акуураана R-37-563 R-37-563 31 3 Ш.Цароннадмиц R-37-563 33 5 Ц.Бинцарьбая R-37-563 34 3 X.Уамбаар R-37-564 35 6 Ч.Мюбаар R-37-566 36 7 О.Халиулай R-37-567 37 6 Г. Эаранцог R-37-569 38 6 Г. Эаранцог R-37-569 39 4 Д.Тогтох R-37-572 40 1 И. Wao R-37-574 41 1143 0 4 R-37-575 42 1 J. Wao R-37-575 43 2 Б. Баскайхан R-37-576 44 1 Д.				5	д.опон		
26 3 ЦЛония Я-37-559 27 2 Д.Бавраа Я-37-560 28 1143 11 4 Г.Царачдалогор Я-37-560 29 1143 11 4 Г.Царачдалогор Я-37-563 30 1 3 Ц.Царачалогор Я-37-563 31 3 Ц.Царачалогор Я-37-563 32 5 Ц.Биндаръва Я-37-564 33 6 Н.Жанъянбаятар Я-37-565 33 7 6 Г.Зарачалогор Я-37-565 34 7 Ч.Масбалог Я-37-566 35 7 1 Д.Зарачалогор Я-37-566 36 7 1 Д.Зарачалогор Я-37-567 37 6 Г.Зарачалогор Я-37-576 38 3 3 Д.Зарачалогор Я-37-571 39 4 Д.Тотох Я-37-571 40 1143 03 4 Д.Масталогор Я-37-575 41 143 03 4 Д.Зарачалогор Я-37-575 42 1 Д.Зарачалогор Я-37-575 43 7 С.Саранов Я-37-575 44 1 П. Маск Я-37-576 45 4 Д.Зарачалогор Я-37-575 46 4 Д.Зарачалогор Я-37-575 47 4 1 П.Зарачалогор Я-37-575 48 3 Д.Зарачалогор Я-37-575 49 40 1 143 03 4 Д.Зарачалогор Я-37-575 40 1 144 03 1 Д.Зарачалогор Я-37-575 41 145 1 145						71-37-338	***************************************
27 2 Д.Баяраа Я.37-560 28 4 Ч.Коля Я.37-563 3 1143 11 4 Г.Цэрэндолгор Я.37-563 3 12 13 1 4 Г.Цэрэндолгор Я.37-563 3 13 13 1 4 Г.Цэрэндолгор Я.37-563 3 13 1 5 Г.Дэрэндолар Я.37-563 3 13 1 5 Г.Дэрэндолар Я.37-564 3 1 5 Г.Дэрэндолар Я.37-566 3 1 5 Г.Дэрэндол Я.37-567 1 1 7 Г.Дэрэндол Я.37-569 3 1 5 Г.Дэрэндол Я.37-569 3 1 5 Г.Дэрэндол Я.37-572 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				4			
28 4 ЦКоля Я.37-563 3 3 3 9 1143 11 4 Г.Църандолгор Я.37-563 3 3 3 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				3			
29 1143 11 4 Г.Цэромдолгор 9.37563 3 30 5 Г.Амурдана 9.37563 3 31 3 Ш.Цэрэнчадмиц 9.37563 3 32 6 Ц.Бенцарьма 9.37563 4 33 6 Н.Маминоватар 9.37566 3 34 7 О.Карудана 9.37566 3 35 6 Ч.Мискара 9.37566 3 36 7 О.Халуузан 9.37566 3 37 6 Г.Эрдэнцогт 9.37569 3 38 3 7 Г.Отох 9.37569 3 38 3 7 Г.Отох 9.37569 3 38 3 7 Г.Отох 9.37569 3 39 4 Г.Тотох 9.37567 4 41 1143 03 4 Г.Энк-Амгавн 9.37577 4 42 7 С.Эрдэна 9.3757 5 43 2 Ц.Энкгуза 9.37575 3 43 2 Ц.Энкгуза 9.37575 3 44 4 Х.Чугуунавм 9.37576 3 45 4 Х.Чугуунавм 9.37576 3 46 4 Х.Чугуунавм 9.37576 3 47 4 Д.Энк-Амгавн 9.37576 3 48 3 Б.Багсайхан 9.37576 3 49 4 Х.Чугуунавм 9.37576 3 40 4 Х.Чугуунавм 9.37576 3 41 4 Х.Чугуунавм 9.37576 3 42 4 Х.Чугуунавм 9.37576 3 43 4 Х.Чугуунавм 9.37576 3 44 4 Х.Чугуунавм 9.37576 3 45 4 Х.Чугуунавм 9.37576 3 46 4 Х.Чугуунавм 9.37576 3 47 4 Х.Чугуунавм 9.37577 3 48 3 Д.Наранцацаг 9.3707 3 48 3 Д.Наранцацаг 9.3707 3 49 9 У.Окуунамм 9.3707 7 50 2 У.Окуунамм 9.3579 3 51 4 П.Пыражд 9.38579 3 52 4 Н.Дашавм 9.38579 3							
30 5 Г. Ауураян Я.37-563 31 3 Ш. Цэрэннадмид Я.37-563 32 5 Ц. Бендэрьйя Я.37-563 33 5 Ц. Бендэрьйя Я.37-564 34 3 Х. Энибаяр Я.37-566 35 6 Ч. Мибаяр Я.37-567 36 7 О. Халиулай Я.37-567 37 6 Г. Эдранцог Я.37-569 38 6 Г. Эдранцог Я.37-569 39 4 Д. Тогтох Я.37-569 40 1143 03 4 Д. Бендарий Я.37-574 41 1143 03 4 Д. Бендарий Я.37-574 42 43 С. Эдрано Я.37-575 44 1 1143 03 4 Д. Бендарий Я.37-575 45 46 4 Х. Чупууневм Я.37-576 46 4 К. Чупууневм Я.37-576 47 4 2 Ч. Фидэрагимай Я.37-576 48 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							
31 3 Ш.Ізрэннадмид Я-37-563 32 5 Ц.Биндаръва Я-37-564 33 6 Н.Жаньянбаятар Я-37-565 33 7 6 Г. Зумбавар Я-37-565 36 7 О.Ханууай Я-37-569 37 6 Г. Зуранацог Я-37-569 38 3 Я.Дягэрмаа Я-37-571 39 4 Г. Тогтох Я-37-571 40 1143 03 4 Лево Я-37-571 41 1143 03 4 Лево Я-37-571 42 7 С. Оэранэо Я-37-575 43 2 Ц.Энктука Я-37-575 44 3 Б. Батсайхан Я-37-575 45 4 Ж.Чутуунем Я-37-576 46 4 Ж.Чутуунем Я-37-576 47 4 П. Батсайхан Я-37-576 48 3 Д.Наранцацаг Я-37-07 50 2 У.Оюунецког Я-37-07 50 2 У.Оюунецког Я-37-07 50 2 У.Оюунецког Я-37-07 50 2 У.Оюунецког Я-37-07 51 Д.Пыовид Я-38-579 52 4 Ц.Пыовид Я-38-579 53 4 Ц.Пыовид Я-38-579		1143	11				
32 5 ЦБиндарова Я-37-564 33 6 НЖамъянбаятар Я-37-566 34 3 Х.Экобаяр Я-37-566 9 35 6 Ч Мьобаяр Я-37-566 9 36 7 ОХапууант Я-37-567 9 37 7 ОХапууант Я-37-567 9 38 3 Я.Дапгармая Я-37-571 39 4 ДТоггох Я-37-572 9 40 1 Л Марох Я-37-572 9 41 1143 03 4 ДЭкк-Амгалан Я-37-573 9 42 7 С.Эрданээ Я-37-575 9 43 2 ЦЭкхууан Я-37-575 9 44 2 1 Дэкхуман Я-37-575 9 45 4 2 ЦЭкхууан Я-37-575 9 46 4 ДТоггох Я-37-575 9 47 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							
33 6 Н.Жамъяйсватар Я.37-565 3 34 3 Х.Элкобаво Я.37-565 3 35 6 Ч.Мхбаво Я.37-567 3 37 6 Г.Зорамацотт Я.37-567 3 38 3 Я.Допторма Я.37-571 3 39 4 Г.Тогтох Я.37-571 3 40 1143 03 4 Л.Зоно-Маналан Я.37-572 4 41 1143 03 4 Л.Зоно-Маналан Я.37-573 4 42 1 Л. Webox Я.37-575 4 43 2 Ц.Энстука Я.37-575 4 44 3 Б. Багсайхан Я.37-576 4 45 4 Ж.Чугууневм Я.37-576 4 46 4 П.Баг-Ордэна Я.37-576 4 47 4 П.Баг-Ордэна Я.37-576 4 48 3 Д.Наронцацаг Я.37-01 4 48 3 Д.Наронцацаг Я.37-01 4 48 3 Д.Наронцацаг Я.37-07 5 50 2 У.Окумеция Я.37-07 5 50 2 У.Окумеция Я.37-07 5 51 1 П.Поновид Я.33-579 5 52 4 Ц.Наронцар Я.33-579 5 53 2 4 Ц.Наронцар Я.33-579 5 54 3 1 Д.Нонеркарта Я.33-579 5				3			
34 3 X.9кобавр R-37-566 35 6 Ч. Мибовар R-37-567 36 7 О.Халиулан R-37-567 37 6 С. Тордонцогт R-37-568 38 9 С. Тордонцогт R-37-568 39 4 Л. Тогток R-37-572 40 1 Л. Маюх R-37-572 41 1143 03 4 Д.Экк-Хиагавн R-37-573 42 7 С. Эрданзар R-37-575 43 2 Ц.Эккгука R-37-575 43 2 Ц.Эккгука R-37-575 43 2 Ц.Эккгука R-37-575 44 3 5. Багсайхай R-37-576 45 4 1 П. Тогток R-37-576 46 4 1 П.Бат-Зрдан R-37-576 47 2 Ч. Мараролима R-37-576 48 3 Д.Наранцацаг R-37-06 49 8 У. Окуунемия R-37-07 50 2 У. Окуунемия R-37-07 50 3 4 П.Доновид R-35-79 51 3 4 Н.Доновид R-35-79 52 4 1.Доновида R-38-579 53 4 Н.Доновид R-38-579 54 3 Д.Норокурага R-38-579				5	Ц.Биндэръяа		
35 6 Ublodaap R37-567 36 7 Охапурай R37-568 37 6 7 Охапурай R37-568 38 6 7 Охапурай R37-569 39 6 7 Эдранцог R37-569 39 4 1 Готок R37-572 40 1 1 Ublock R37-574 41 1143 03 4 Д-Янк-Амгалан R37-573 42 7 С.Эрданоз R37-573 43 9 8 10 1 1 Ublock R37-575 44 1 1143 03 4 Д-Янк-Амгалан R37-575 45 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				6			
36 7 ОХапиулай Я-37-568 37 6 Г. Эрдэнцогт Я-37-569 38 3 Я. Дэлгэрмаа Я-37-571 39 4 ПОТОК Я-37-571 41 1143 03 4 Д. Эм. Амагавн Я-37-572 42 7 С. Эрдэна Я-37-575 43 2 Ц. Эм. Сура Я-37-575 44 3 Б. Батсайхан Я-37-575 44 4 З. Батсайхан Я-37-576 46 4 Ж. Чутуунавм Я-37-576 47 2 Ч. Фидъралима Я-37-576 48 3 Д. Наранцацаг Я-37-576 49 9 У. Окумнамия Я-37-01 49 9 У. Окумнамия Я-37-01 50 2 У. Окумнамия Я-37-07 50 3 4 Н. Привовий Я-38-579 51 4 Н. Привовий Я-38-579 52 3 4 Н. Дашевм Я-38-579 53 54 П. Привовий Я-38-579	34			3	Х.Энхбаяр	Я-37-566	
36 7 О.Хапиухай Я-37-568 37	35			6	Ч. М нхбаяр	Я-37-567	
38 3 Я.Дялгэрмаа Я.Зг.571 39 4 Доггох Я.Зг.572 107 107 107 107 107 107 107 107 107 107	36			7	О.Халиухай	Я-37-568	
38 3 Я.Дялгэрмаа Я.Зг.571 39 4 Доггох Я.Зг.572 107 107 107 107 107 107 107 107 107 107	37			6	Г.Эрдэнэцогт	9-37-569	***************************************
39 4 Д.Тогох Я.37.572 40 1 Л. Waox Я.37.574 41 1143 03 4 Д.Энг-Ангалан Я.37.573 42 2 7 С. Эрдэнээ Я.37.575 43 2 Ц.Энхгуяан Я.37.575 44 2 Ц.Энхгуяан Я.37.575 45 4 4 2 Ц.Энхгуяан Я.37.575 46 4 Д.Ч.Унулунаны Я.37.01 47 2 Ч. Фидэрэлмая Я.37.02 48 3 Д.Наранцзцэг Я.37.02 48 3 Д.Наранцзцэг Я.37.06 50 2 У.Окунцзаг Я.37.07 50 2 У.Окунцзаг Я.37.07 50 2 У.Окунцзаг Я.37.07 51 Д.Поновод Я.37.07 52 3 4 Н.Дашем Я.35.79 53 4 Н.Дашем Я.35.79 54 3 Д.Нерокарта Я.38.579 55 4 Л.Поновод Я.37.07					Я.Дэлгэрмаа		
40 1 Л. Waox 9.37:574 41 1143 03 4 Д. Экк-Амгалан 9.37:573 42 7 С.Эрдэнээ 9.37:575 43 2 Ц. Экктура 9.37:575 44 3 Б. Багсайхан 9.37:576 45 4 Ж. Чүлүүнөн 9.37:01 46 4 П.Бат-Эрдэнэ 9.37:02 47 2 Ч. Фидэрэлмаа 9.37:02 48 3 Д. Наранцэцэг 9.37:01 49 3 Д. Наранцэцэг 9.37:07 51 1 Д. Поноко 9.37:01 51 1 Д. Поноко 9.37:01 52 2 Ш. Начазад 9.38:579 53 4 Н. Дашням 9.38:579 54 3 Д. Наранцэг 9.38:579 55 4 1 Д. Данам 9.38:579 55 4 1 Д. Данам 9.38:579							
41 1143 03 4 Д.Зик-Амгаган Я-37-573 42 7 С.Эрдэнээ Я-37-575 43 2 Ц.Зиклука Я-37-575 43 3 Б.Белгсайхай Я-37-576 45 4 3 Б.Белгсайхай Я-37-576 46 4 П.Бат-Зрдэн Я-37-02 47 2 Ч. Фидэраливая Я-37-02 48 3 Д.Наранцацаг Я-37-06 49 8 У. Окумения Я-37-07 50 2 У. Окумения Я-37-07 50 3 4 П.Понямд Я-38-579 51 3 4 Н.Дашем Я-38-579 53 4 Н.Дашем Я-38-579							
42 7 С.Эрдэнээ Я.ЭТ.575 4 43 2 Ц.Энктуэа Я.ЭТ.575 4 44 3 Б.Багсайхан Я.ЭТ.576 4 45 4 Ж.Чулгуунан Я.ЭТ.01 1 46 4 П.БатЭрдэнэ Я.ЭТ.02 4 47 2 Ч.Фидэрэлмаа Я.ЭТ.03 3 3 3 4 48 3 Д.Наранцэцэг Я.ЭТ.00 7 48 3 Д.Наранцэцэг Я.ЭТ.00 7 51 1 Д.Пониц Я.ЭТ.07 7 51 1 Д.Пониц Я.ЭТ.676 5 52 2 Ш.Начаад Я.ЭТ.676 5 53 4 Н.Дашням Я.ЭТ.579 5 54 3 Д.Наранцэг Я.ЭТ.09 5 54 3 Д.Нарандэг Я.ЭТ.09 5 55 4 Н.Дашням Я.ЭТ.579 5 56 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		1143	03		Л Энх-Амгалан		
43 2 Ц.Экктука Я.37-575 44 3 Б.Багсайхан Я.37-576 45 4 Ж.Чутуунам Я.37-576 45 4 К.Чутуунам Я.37-01 47 47 47 15 15 15 15 15 15 15 15 15 15 15 15 15			33	7			
45 4 Ж.Чупууневм Я.37-01 46 4 Пьят-Эрдэнэ Я.37-02 47 2 Ч.Фидэрликая Я.37-02 48 2 Ч.Фидэрликая Я.37-08 49 8 У.Оуоуневияг Я.37-07 50 2 У.Оуоуневияг Я.37-07 51 1 Л.Повица Я.38-579 52 2 Ш.Наная Я.38-579 53 2 Ш.Наная Я.38-579				2			
45 4 Ж.Чупууневм Я.37-01 46 4 Пьят-Эрдэнэ Я.37-02 47 2 Ч.Фидэрликая Я.37-02 48 2 Ч.Фидэрликая Я.37-08 49 8 У.Оуоуневияг Я.37-07 50 2 У.Оуоуневияг Я.37-07 51 1 Л.Повица Я.38-579 52 2 Ш.Наная Я.38-579 53 2 Ш.Наная Я.38-579				2	E Egregiyau		
46 4 П.Бат-Зразна Я-37-02 47 2 Ч. фидэралмаа Я-37-03 48 3 Д.Наранцзцаг Я-37-06 49 8 У.Окуменция Я-37-07 50 2 У. Окумецция Я-37-07 50 1 Д. Тоновод Я-37-07 50 2 Д. Тоновод Я-37-07 50 2 Д. Тоновод Я-37-07 50 3 4 Н.Дашням Я-38-579 50 4 3 Д.Өнөрхаргая Я-38-579				4			
47 2 Ч.Фидрольмаа Я.37.03 48 3. Д.Наранцэцыя Я.37.06 49 8 У.Окумчимог Я.37.07 50 2 У.Окумчимог Я.37.07 51 1 Д.Лоновид Я.38.578 52 2 Ш.Накзад Я.38.579 53 4 Н.Дашиям Я.38.579 54 3 Д.Өнөрхаргал Я.38.579							
48 3 Д.Наранцяцаг Я-37-06 4 49 8 У.Окунемия Я-37-07 7 50 2 У.Окунецаг Я-37-07 7 50 1 П.Поняма Я-35-57 5 51 Д.Поняма Я-35-57 5 52 4 Н.Дашем Я-36-579 5 53 4 Н.Дашем Я-36-579 5 54 3 Д.Өнөрхаргая Я-36-579				4			
49 8 У.Оюунчимог Я.37-07 50 У.Оюунчимог Я.37-07 51 1 ДЛоновид Я.38-578 52 2 Ш.Нанзад Я.38-579 53 4 Н.Дашиям Я.38-579 54 3 Д.Өнөрхаргал Я.38-579				2			
50 2 У.Окунцацог Я-37-07 51 1 Д.Понжид Я-38-578 52 2 Ш.Наквад Я-38-579 53 4 Н.Дашиям Я-38-579 54 3 Д.Онерожаргал Я-38-579				3			
51 1 Д.Лоновид Я-38-578 52 2 Ш.Нанзад Я-38-579 53 4 Н.Дашням Я-38-579 54 3 Д.Онерхжаргал Я-38-579				8			
52 2 Ш.Нанзай Я-38-579 53 4 Н.Дашням Я-38-579 54 3 Д.Өнөржаргал Я-38-679							
53 4 Н.Дашням Я-38-579 54 3 Д.Өнөржаргал Я-38-579							
54 3 Д.Өнөржаргал Я-38-579							
	55	1143	04	4	Д.Ганбаатар	Я-38-580	

Selection probabilities and sampling weights

Ulaanbaatar

In Ulaanbaatar, the selection probability of household ij in kheseg i is given by

$$p_{ij} = \frac{360 \, n_i}{216,342} \times \frac{10 \mu_{ij}}{\sum_{\alpha=1}^{n_i'} \mu_{i\alpha}} = \frac{3,600 \, n_i \mu_{ij}}{216,342 \sum_{\alpha=1}^{n_i'} \mu_{i\alpha}} \dots (1)$$

where

- is the number of clusters selected in Ulaanbaatar;
- n_i is the number of households in kheseg i, as recorded in the 2005 administrative registration files used as a sample frame for the first sampling stage;
- is the number of households in Ulaanbaatar, as recorded in the first stage sample frame (see Figure 1;)
- is the number of households per cluster;
- n'_i is the number of households in kneseg i, as reported by the 2007 household listing operation;
- $\mu_{i\alpha}$ is the measure of size assigned to household $i\alpha$ in the second sampling stage: $\mu_{i\alpha}=2$ for households assumed to contain self-employed and $\mu_{i\alpha}=1$ for the rest of the households.

Aimag Centers

In the aimag centers, the selection probability of household hij in bag (or sub-bag) hi of aimag h is given by

$$p_{hij} = \frac{b_h n_{hi}}{N_h} \times \frac{10\mu_{hij}}{\sum_{\alpha=1}^{n_{hi}} \mu_{hi\alpha}}$$
 (2)

where

- b_h is the number of clusters selected in the aimag center: $b_h = 24$ in Darhan-Uul and Orhon and $b_h = 12$ in the other aimag centers;
- n_{hi} is the number of households in bag hi, as recorded in the 2007 household listing operation;
- N_h is the number of households in the aimag center, as reported by the household listing operation;

is the number of households per cluster;

 $\mu_{i\alpha}$ is the measure of size assigned to household $i\alpha$ in the second sampling stage: $\mu_{i\alpha}=2$ for households assumed to contain self-employed and $\mu_{i\alpha}=1$ for the rest of the households.

Rural Areas

In rural areas, the selection probability of household hij in bag (or sub-bag) hi of soum h is given by

$$p_{hij} = \frac{52 N_h}{260,790} \times \frac{12 n'_{hi}}{N'_h} \times \frac{8}{n'_{hi}} = \frac{4,992}{260,790} \times \frac{N_h}{N'_h} \dots (3)$$

where

is the total number of rural soums selected;

 N_h is the number of households in soum h, as recorded in the 2005 administrative registration files used as a sample frame for the first sampling stage;

260,790 is the total number of rural households, as recorded in the first stage sample frame (see Figure 1;)

is the number of clusters selected in soum h;

 n'_{hi} is the number of households in bag hi, as recorded in the 2007 household listing operation;

 N'_h is the number of households in soum h, as reported by the household listing operation; and

8 is the number of households per cluster.