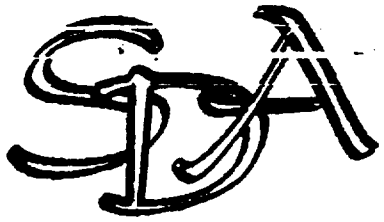

SAMPLE SELECTION FOR THE HOUSEHOLD SURVEY

Introduction

The Household or Priority Survey[1] is an important component of the Social Dimensions of Adjustment[SDA] program. It is designed to provide key social and economic indicators on the welfare of households following the introduction of World Bank programs for economic reconstruction. The World Bank Social Dimensions of Adjustment in Sub-Saharan Africa Working Paper 12 *The Social Dimensions of Adjustment Priority Survey* [Grootaert and Marchant,1991] discusses in detail the technical aspects of sampling for large scale surveys such as this in Chapter 4. This paper accepts the premises and arguments put forward in that publication and will not repeat them.

Objectives

The Household Survey has two main objectives [Grootaert and Marchant, 91:11]:

- The identification of policy target groups
- The production of key socioeconomic indicators describing the well-being of different groups of households

To meet these objectives the survey must cover a sufficiently large number of households selected in a statistically reliable manner. This paper will discuss the methodology of sample selection for the Gambian household survey.

Sampling and budgetary considerations suggested that a sample size of about 2000 households would be both statistically appropriate and financially feasible.

Sampling Considerations

It is technically possible to draw a simple random sample from all of the 82 000 households in Gambia. However it is

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1 Because the survey is based on household level information it will be referred to in this document as the Household Survey.

not economically feasible to conduct such a survey because of the large amount of travel that would be required to conduct the interviews in rural areas with a scattered population. Therefore some method of clustering the households is necessary to provide for a staged sampling procedure.

Geographical clustering already exists in the form of census Enumeration Areas [EAs]. These EAs are mapped to contain approximately 500 persons, and cover the entire country, conforming to the administrative boundaries[2].

The Divisional boundaries define to some extent urban and rural zones. Banjul and Kombo-St Mary Divisions are largely urban and the remainder are largely rural. However the administrative regions do not distinguish either the larger administrative towns such as Brikama or Basse-Sante-Su, nor the large villages such as Gunjur or Sanyang. It could be expected that the social and economic conditions of the populations in these towns and villages would differ from those households that were more dependent on agricultural production directly, either in subsistence or cash cropping modes.

Enumeration Areas are of approximately the same size [500 persons]. However in actuality they range from about 300 to 1000 persons. Some classification by size is desirable to maintain sampling probabilities.

The number of households selected per EA is a further factor in the sampling process. Maximising the number of households per EA has the advantage of reducing travel costs. It also increases sampling error by sharply reducing the number of EAs sampled. Minimising the number of households per EA greatly increases costs but does not effect sampling error to the same extent.

A constant take of households per EA has no effect on the sampling error over proportional probability sampling in stage one [Scott, 91:45]. Because urban populations are more likely to be residentially homogenous [poor people live in the same district; rich people similarly live in their own districts] the constant take for urban EAs is set at half of that for rural EAs. In villages the rich and the poor are more likely to be found within the same EA.

Taking all the above considerations into account it was

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2 In the Gambian system the largest administrative sub-unit is known as a Division. There are seven divisions plus the capital Banjul. Divisions are further divided into Districts. EA boundaries are all contained within Districts.

decided to use a multistage sampling approach using probability proportional to size as recommended in the Working Paper[Scott, 91:53]. The base cluster would be the Enumeration Areas defined in the 1983 Census. The stages would take into account administrative boundaries and population density.

One of the key objectives of the household survey is to provide indicators for different socio-economic categories of household defined as Socio Economic Groupings[SEG], particularly the poorer households. Random sampling of the type described so far may not produce sufficient respondents in particular SEGs for full analysis.

However stratification based on SEG depends on knowledge of the proportions of each SEG in the population and on knowledge of the identifying characteristics for each household. Given the limited knowledge of the first in the Gambia it was decided that the first sample would not be based on such stratification. Analysis of survey results would enable the identification of SEG characteristics for later ~~rounds of the~~ surveys.

Operationalising the sample

Classification of Enumeration Areas
All of the EAs from the 1983 Census were scrutinised and allocated to one of four population density categories:

- Category 1 - Greater Banjul
- Category 2 - Towns
- Category 3 - Large villages [multiple EAs]
- Category 4 - Strictly rural

Local knowledge and criteria such as population size, amount and type of administrative, service and other non agricultural employment and general economic activities formed the basis for allocation decisions

Following this allocation, small EAs [less than 250 persons] were identified and combined with neighbouring EAs so that the combined total population was less than 1000 persons and as close to 500 as possible.

EAs within each of the four density categories were further classified according to size. For example, Banjul EAs were classified into three classes and the strictly rural EAs were classified into five classes based on the size distribution of the respective sets of EAs. A summary of the categories and classes is found in Table 1.

Number of households selected per Enumeration Area
Given that there were to be three interviewers or

enumerators per team, logistics dictated that the number of households interviewed in each enumeration area, or the take, should be a multiple of three so that interviewers could travel together and move to new EAs simultaneously. The next consideration was the number of interviews to be completed per day by each interviewer.

TABLE 1 ABOUT HERE

Experience in Ghana suggested an average interview time of about one hour per interview [Scott, 91:48]. Allowing for travelling time this suggests about 18 interviews per team per day. The normal suggested approach for this survey is complete all interviews in one Enumeration Area in one day [Achikbache and Marchant, 91:86]. The target take per Enumeration Area was therefore set at 18; for the reasons given above it was set at half of this for EAs in Greater Banjul

Selection of the sample Enumeration Areas
All of the EAs were entered into a data base which included the administrative location by Division and District, the 1983 population and estimated number of households, and average household sizes were computed for each Enumeration Area.

A summary report of the population, number of households and average household size was produced by Division and population category [Table 2]. This enabled the sampling fraction to be calculated based on the proportion of households in each category [see Table 2].

The sample was selected according to the determined framework using a standard table of random numbers [Blalock, 60:437]. Table 3 gives the summary data of the sample chosen.

Listing households
The final process of selecting the 2000 households to be included in the survey was the listing of all households in the selected EAs. Using large scale maps of the sample EAs a team of enumerators listed all households in the chosen EA. They also collected some information on each household in the EA - gender and occupation of the household head, household size and the relative size of any agricultural land operated by the household. Each household was numbered and the random number tables were used to draw a sample of nine or eighteen households depending on the location of the EA. A further two spare households were drawn for each EA in case of the need for replacements.

TABLE 2 ABOUT HERE

Table 2: Summary of population by Division and Population Category

Type	Div	Number of EA's	Popn	Hholds	Av Size	Percent	Sample	Number of EAs	Pers
14		18	6019	1082	5.6	1.3%	26.5	3	147
15		35	18377	3320	5.5	4.1%	81.3	9	450
16		27	20612	3762	5.5	4.6%	92.1	10	505
Total	0	80		8164				22	
11		138	101210	16590	6.1	20.3%	406.2	45	2478
	1	138		16590				45	
20		51	25443	3012	8.4	3.7%	73.7	4	623
30		63	31797	3717	8.6	4.6%	91.0	5	778
41		19	5527	647	8.5	0.8%	15.8	1	135
42		37	13889	1564	8.9	1.9%	38.3	2	340
43		41	19601	2244	8.7	2.7%	54.9	3	480
44		53	31859	3506	9.1	4.3%	85.8	5	780
45		10	8467	927	9.1	1.1%	22.7	1	207
	2	274		15617				21	
20		10	4789	684	7.0	0.8%	16.7	1	117
41		34	10060	1209	8.3	1.5%	29.6	2	246
42		30	11093	1266	8.8	1.5%	31.0	2	272
43		31	15150	1805	8.4	2.2%	44.2	2	371
44		17	10423	1211	8.6	1.5%	29.6	2	255
45		4	3470	420	8.3	0.5%	10.3	1	85
	3	126		6595				9	
20		13	10168	1182	8.6	1.4%	28.9	2	249
30		21	11738	1433	8.2	1.8%	35.1	2	287
41		17	4800	564	8.5	0.7%	13.8	1	118
42		28	10339	1191	8.7	1.5%	29.2	2	253
43		63	31154	3480	9.0	4.3%	85.2	5	763
44		42	26678	3005	8.9	3.7%	73.6	4	653
45		21	17436	1935	9.0	2.4%	47.4	3	427
	4	205		12790				17	
20		13	7208	817	8.8	1.0%	20.0	1	176
41		9	2731	322	8.5	0.4%	7.9	0	67
42		18	6859	747	9.2	0.9%	18.3	1	168
43		38	18436	1917	9.6	2.3%	46.9	3	451
44		24	14857	1497	9.9	1.8%	36.7	2	364
45		9	7499	710	10.6	0.9%	17.4	1	184
	5	111		6010				8	
20		15	7032	839	8.4	1.0%	20.5	1	172
41		13	3753	416	9.0	0.5%	10.2	1	92
42		19	7119	753	9.5	0.9%	18.4	1	174
43		38	18656	1966	9.5	2.4%	48.1	3	457
44		35	21589	2236	9.7	2.7%	54.7	3	529
45		12	10261	1051	9.8	1.3%	25.7	1	251
	6	132		7261				10	
20		18	9241	770	12.0	0.9%	18.9	1	226
30		46	29440	2318	12.7	2.8%	56.8	3	721
41		21	5704	423	13.5	0.5%	10.4	1	140
42		18	6703	508	13.2	0.6%	12.4	1	164
43		36	17610	1387	12.7	1.7%	34.0	2	431
44		37	23635	1844	12.8	2.3%	45.1	3	579
45		23	18599	1451	12.8	1.8%	35.5	2	455
	7	199		8701				12	
		1266	687031	81728	8.4	100.0%	2001	144	16820

TABLE 3 ABOUT HERE

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Sample List by Division

Div	Dis	No.	Name	Type	Popn	Hholds	Size Av
0	0	1N	Banjul South 00 -- 001 No	15	511	88	5.8
0	0	3N	Banjul South	16	699	121	5.8
0	0	10	Banjul South	15	608	105	5.8
0	0	16	Banjul South 00-16+00-18	15	648	112	5.8
0	0	17	Banjul South	14	363	63	5.8
0	0	19	Banjul South	15	582	100	5.8
0	0	22	Banjul South	15	644	111	5.8
0	1	34N	Banjul Central	16	695	122	5.7
0	1	23	Banjul Central	14	250	44	5.7
0	1	26	Banjul Central	16	760	133	5.7
0	1	30	Banjul Central	15	492	86	5.7
0	1	37	Banjul Central	16	782	137	5.7
0	2	52N	Banjul North	16	664	128	5.2
0	2	48	Banjul North	16	735	141	5.2
0	2	49	Banjul North	16	684	132	5.2
0	2	53	Banjul North	16	750	144	5.2
0	2	57	Banjul North	15	494	95	5.2
0	2	60	Banjul North	15	499	96	5.2
0	2	61	Banjul North	16	746	143	5.2
0	3	63	New Campana Estate	14	343	64	5.4
0	3	65	New Campana Estate	16	819	152	5.4
0	3	73	New Campana Estate	15	501	93	5.4
		22	**Total**	15	13269	2410	5.5
1	10	2	Bakau - Camaloo KSM[Part	11	894	147	6.1
1	10	3	Bakau - KSM[Part A]	11	894	147	6.1
1	10	4	Bakau - KSM[Part A]	11	852	140	6.1

DivDis	No.	Name	Type	Popn	Hholds	Av
1 10	7	Bakau - KSM[Part A]	11	992	163	6.1
1 10	8	Bakau - KSM[Part A]	11	852	140	6.1
1 10	9	Bakau - KSM[Part A]	11	894	147	6.1
1 10	10	Bakau - KSM[Part A]	11	894	147	6.1
1 10	11	Bakau - KSM[Part A]	11	852	140	6.1
1 10	12	Bakau - KSM[Part A]	11	852	140	6.1
1 10	14	Bakau - KSM[Part A]	11	992	163	6.1
1 10	15	Bakau - KSM[Part A]	11	992	163	6.1
1 11	7	Fajara - KSM Dist 11	11	442	72	6.1
1 11	13	Fajara - KSM Dist 11	11	442	72	6.1
1 12	2	Old Jeshwang - KSM[Part A	11	633	104	6.1
1 12	5	Manjai Kunda & Kotu - KSM	11	633	104	6.1
1 12	12	Manjai Kunda - KSM[Part B	11	633	104	6.1
1 13	6	New Jeshwang - KSM[Part A	11	706	116	6.1
1 13	12	New Jeshwang - KSM[Part A	11	818	134	6.1
1 13	13	New Jeshwang - KSM[Part A	11	818	134	6.1
1 13	14	New Jeshwang - KSM[Part A	11	818	134	6.1
1 13	15	New Jeshwang - KSM[Part A	11	818	134	6.1
1 14	1	Latri Kunda - KSM[Part A]	11	700	115	6.1
1 14	17	Dippa Kunda - KSM[Part C]	11	709	116	6.1
1 14	18	Dippa Kunda - KSM[Part C]	11	709	116	6.1
1 14	19	Dippa Kunda - KSM[Part C]	11	709	116	6.1
1 15	2	Eboe Town - KSM[Part A]	11	849	139	6.1
1 15	3	Eboe Town - KSM[Part A]	11	849	139	6.1
1 15	4	Eboe Town - KSM[Part A]	11	965	158	6.1
1 15	6	Eboe Town - KSM[Part B]	11	797	131	6.1

Div	Dis	No.	Name	Type	Popn	Hholds	Av
1	15	7	Eboe Town - KSM[Part A]	11	965	158	6.1
1	15	9	Eboe Town - KSM[Part B]	11	797	131	6.1
1	15	10	Eboe Town - KSM[Part B]	11	797	131	6.1
1	16	5	Banunka Kunda - KSM[Part	11	757	124	6.1
1	16	6	Banunka Kunda - KSM[Part	11	626	103	6.1
1	17	3	Talinding Kunjang - KSM[P	11	876	144	6.1
1	17	7	Talinding Kunjang - KSM[P	11	876	144	6.1
1	17	9	Talinding Kunjang - KSM[P	11	876	144	6.1
1	17	14	Talinding Kunjang - KSM[P	11	752	123	6.1
1	17	16	Talinding Kunjang - KSM[P	11	752	123	6.1
1	17	17	Talinding Kunjang - KSM[P	11	752	123	6.1
1	18	1	Latri Kunda Sabiji - KSM[	11	882	145	6.1
1	18	3	Latri Kunda Sabiji - KSM[	11	803	132	6.1
1	18	5	Latri Kunda Sabiji - KSM[	11	882	145	6.1
1	18	7	Latri Kunda Sabiji - KSM[	11	803	132	6.1
1	18	9	Latri Kunda Sabiji - KSM[	11	882	145	6.1
		45	Total	11	36092	5916	6.1
2	21	2	Bijilo[Sch],Mbarra Kunku	45	896	104	8.6
2	21	10	Sukuta[Sch,H/C] B	30	855	99	8.6
2	21	12	Sukuta[Sch,H/C] C	30	598	70	8.6
2	21	44	Lamin	20	580	67	8.6
2	22	82	Gunjur[Sch,H/C] -- Taboto	30	537	63	8.5
2	22	88	Gunjur[Sch,H/C] -- Taboto	30	468	55	8.5
2	22	100	Jambur[Sch] 22-100+22-104	43	501	59	8.5
2	22	102	Jambur[Sch] 22-101+22-102	44	619	73	8.5
2	22	112	Siffoe[Sch] -- Sala	30	328	39	8.5
2	22	119	Farato[Madina Suwareh Kun	44	582	68	8.6

DivDis	No.	Name	Type	Popn	Hholds	Av
2 23	125	Kassa Kunda[Sch] - Mendy	44	565	67	8.4
2 23	132	Brikama North	20	546	65	8.4
2 23	146	Brikama South	20	400	48	8.4
2 23	159	Brikama North	20	546	65	8.4
2 25	237	Sutusinjang	43	521	64	8.1
2 25	243	Ndemban Jola,Maimeh,Jarju	41	285	35	8.1
2 25	248	Kaur,Kanjabina,Kanaw+	43	456	56	8.1
2 26	261	Sibanor[H/C,Sch]	42	389	39	10.0
2 27	283S	Sanajor [Sch]	44	572	61	9.4
2 27	275	Bwiam[Sch,H/C] - Kuri. 27	44	581	62	9.4
2 28	297	Bisari Bajonki, Bisari Ma	42	416	48	8.7
	21	**Total**	42	11241	1307	8.6
3 30	13	Santamba,Kuyang,Bantasu +	41	254	31	8.2
3 30	31	Jattaba[Sch] 30-031+30-03	45	866	104	8.3
3 31	51	Tabanani,Wellingara,Niori	41	285	34	8.4
3 33	91	Pahalinding[Sch]	44	685	98	7.0
3 33	101	Soma	20	479	68	7.0
3 34	127	Jappine Markoto	44	605	57	10.6
3 35	140	Madina,Njoba Kunda,Nema K	43	519	54	9.6
3 35	156	Sukuta[Sch],Dabally,Welli	43	522	54	9.7
	8	**Total**	43	4215	500	8.4
4 40	22	Busura,Ndofan	43	427	47	9.1
4 40	24	Fass Njaga Choi[Sch]	44	605	66	9.2
4 40	37	Medina Kanuma, Sami	43	432	47	9.2
4 42	80	Ker Omar Saine	44	619	61	10.1
4 42	82	Popn size missing -- 500	43	500	49	10.2

Div	Dis	No.	Name	Type	Popn	Hholds	Av
4	42	95	Dasilameh[Sch]	45	725	71	10.2
4	43	113	Saba[Sch]	41	283	37	7.6
4	43	118	Njawara	42	325	43	7.6
4	44	140	Salikene[Sch,H/C] -- Jamm	30	429	52	8.2
4	44	147	Njaba Kunda[Sch,MFC] -- B	30	645	79	8.2
4	45	159	No Kunda[Sch]	45	827	96	8.6
4	45	176	Ker Ally,Ker Sulay,Long S	44	578	67	8.6
4	45	180	Balingho, Ker Madi,Tankan	43	518	60	8.6
4	45	186	Farafeni North	20	825	96	8.6
4	45	192	Farafeni South	20	746	87	8.6
4	45	196	Sare Jamgido,Mbye Dara +	45	753	88	8.6
4	45	218	Kani Kunda Suba	43	524	61	8.6
4	45	219	Mbye Nyaka, Lumen,Ndowen	42	396	46	8.6
4	45	221	Polodi,Samba Soto,Dafa +	44	628	73	8.6
		19	**Total**	44	10784	1226	8.8
5	50	1	Missina Amadou Badjan, Ke	42	371	41	9.0
5	50	12	Jahawur Mandinka	44	679	75	9.1
5	50	23	Madina Njaien,Ker Lien +	45	961	107	9.0
5	51	28	Medina Manneh,Nioro Bamba	44	563	45	12.5
5	52	53	Chamer[MFC,Sch]	44	711	68	10.5
5	53	69	Sukuta	43	510	61	8.4
5	53	74	Kuntaur Wharf Town	20	686	82	8.4
5	53	75	53-75+53-76	43	435	52	8.4
5	54	127	Kunting	43	540	55	9.8
		9	**Total**	43	5456	586	9.3
6	65	5	Misira Ousman,Sari Moda K	41	320	38	8.4
6	67	36	Jareng[Sch]	44	616	60	10.3

DivDis	No.	Name	Type	Popn	Hholds	Av
6 68	60	Sare Samba,Sinchu Alagi +	44	597	62	9.6
6 68	79	Sinchu Dembel,Sinchu Yoro	43	492	51	9.6
6 68	86	Pacharr Sana	45	839	87	9.6
6 68	106	Ker Pateh Gai,Njallal Jam	42	372	39	9.5
6 68	114	Bansang	20	440	46	9.6
6 68	124	Madina Mbayen,Daru,Abeoku	43	464	48	9.7
6 68	132	Charjel,Sare Ngallen,Jaka	44	566	59	9.6
6 68	136	Sare Pateh Cassama +	43	482	50	9.6
	10	**Total**	43	5188	540	9.6
7 70	13	Sambal Kunda,Medina Sadda	44	598	50	12.0
7 70	21	Gambisera -- Jallow Kunda	30	720	60	12.0
7 70	29	Sotuma Samba Koi, Daba Ku	44	674	56	12.0
7 70	36	Nafugen Pateh,Nafugen Jaw	43	452	38	11.9
7 70	57	Basse East	20	527	44	12.0
7 70	71	Dampha Kunda	30	503	42	12.0
7 70	74	Sare Pirasu,Fass Bajon +	45	966	81	11.9
7 70	88	Kulara -- Konteh Kunda	30	572	48	12.0
7 71	126	Jidda,Tenkoli,Sotuma[Sch]	44	600	39	15.4
7 72	165	Limbanbulu Bambo	41	291	21	13.9
7 72	177	Sutukonding[1]	42	406	30	13.5
7 73	199	Kuwonku	45	733	61	12.0
7 73	207	Diabugu -- Diabugu Tenda	43	475	39	12.2
	13	**Total**	43	7517	609	12.4
	147	**Grand Total**		93763	13093	7.2