

**ANNEX I:**  
**WELL INVENTORY SURVEY IN ERDENE,  
ULAANBADRAKH AND KHUVSGUL SOUM**

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- I.1 OBJECTIVE OF THE WELL INVENTORY SURVEY
- I.2 PREPARATIONS FOR THE STUDY
- I.3 PROCESS AND RESULTS OF THE STUDY
- I.4 CONCLUSION

Final Report  
The Study for Improvement Plan of  
Livestock Farming System in Rural Area

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## ANNEX I Well Inventory Survey in Erdene, Ulaanbadrakh and Khuvsgul

The well database is existed but its coordination is not so correct to find the well in the field. Thus, it is necessary to modify the coordination with GPS measurement in the future.

The well inventory survey was carried out by sub-contracted company in the Pilot Study Area. In this part the detail of the survey is described.

### I.1 OBJECTIVE OF THE WELL INVENTORY SURVEY

The objectives of this survey are to determine the location of engineering wells and traditional wells which are currently used in urban areas and for water supply for livestock in Erdene, Ulaanbadrakh and Khuvsgul *Soums* of Dornogobi *Aimag* accurately, define their utilization, photograph their presence, check and measure their location and the change of well's name at the site and develop a full set of information on their utilization.

### I.2 PREPARATIONS FOR THE SURVEY

The preparations for the survey required many professionals and much time. For instance, the technical indexes, geographical intersection, height, name and number of the dug wells and wells with engineering facility were indicated respectively on basic illustrations with the scale of 1 : 100000.

As well as, the interviews with *Aimag* and *Soum* administrations and comparison between the first research results with the illustrations and materials in *Soums* were held.

3 teams were prepared to execute surveys to define the utilization of wells at the site. The environmental inspector of Ulaanbadrakh *Soum*, the agricultural officer of Erdene *Soum* and the resident of Khuvsgul *Soum* participated as guide and advisor in the survey.

### I.3 PROCESS AND RESULTS OF THE SURVEY

According to preliminary data (shown in Table I.3.1), it is reported that 69 production, 18 shallow, 279 shaft and 420 traditional wells have been registered. In addition, it had been found out that some of this first information was wrong. (shown in Table I.3.2)

Table I.3.1 Registered Data in Preliminary Database

Soum name	Data	Well type				
		Production	Shaft	Shallow	Traditional	Sub-Total
Erdene	Number of Data : Total	22	2	92	217	333
	Number of Data : Old Coordination	17	2	70	146	235
	Number of Data : New Coordination	13	2	65	124	204
	Data without New Coordination	4	0	5	22	31
	New Additional Data	5	0	22	71	98
Ulaanbadrakh	Number of Data : Total	23	0	88	167	278
	Number of Data : Old Coordination	23	0	83	148	254
	Number of Data : New Coordination	21	0	73	117	211
	Data without New Coordination	2	0	10	31	43
	New Additional Data	0	0	5	19	24
Khuvsgul	Number of Data : Total	32	16	131	136	315
	Number of Data : Old Coordination	29	16	126	126	297
	Number of Data : New Coordination	23	14	106	93	236
	Data without New Coordination	6	2	20	33	61
	New Additional Data	3	0	5	10	18
Total	TOTAL:	77	18	311	520	926
	Number of Data : Old Coordination	69	18	279	420	786
	Number of Data : New Coordination	57	16	244	334	651
	Data without New Coordination	12	2	35	86	135
	New Additional Data	8	0	32	100	140

Table I.3.2 Coordinate Difference Some Wells

id	Well type	Well No	Well name or owner	Well coordinate before study							Well coordinate by study							Distance
				Latitude			Longitude			Height	Latitude			Longitude			Height1	
				grad	min	sec	grad	min	sec		grad	min	sec	grad	min	sec		
1	Production	1688	Bor teeg usan	43	27	40	110	10	25	1050	43	27	30	110	12	20	1042	2603.68
2	Production	3173	Tajin dov	43	29	48	109	49	18	1000	43	30	1	109	49	0	983	569.66
3	Production	1408	Zeeg	44	30	25	110	41	40	975	44	32	46	110	48	43	1035	10304.89
4	Production	2834	Buurit	43	49	0	111	25	20	943	43	48	57	111	25	28	954	201.34
5	shaft	2928	Khulsan	43	39	40	110	35	45	1045	43	39	36	110	35	40	1011	166.71
6	shaft	2941	Bayan sain, Tsagaan del	43	28	0	111	11	20	1150	43	28	33	111	14	2.5	1151	3791.81
7	shaft	2947	Undurin gashuun	43	29	15	110	30	30	1170	43	29	12.8	110	50	29	1158	71.52
8	shaft	2976	Khoibooгийн Khooloi	43	41	40	110	9	20	1000	43	38	38.4	110	8	32	985	5707.0

For instance, of the total of 926 Traditional wells and engineering wells which were included in the 3 *Soums*, the geographical coordinate and height of 791 wells were defined by GPS. However, the remaining 135 wells left undefined. Among them are 12 production, 2 shallow, 35 shaft and 86 traditional wells. 35 of them were transferred to the ownership of other *Soums* while 4 terminated, 26 disappeared in sand, 16 changed or differed their first names, 21 unreachable and 33 not found because of the wrong record of their former coordinates.

It was also carried out in the survey to define utilization of wells in 3 *Soums*. As a result of examining the utilization of wells, the engineering facilities on wells have broken mostly. In other hand, the shaft wells can be used by hand drawing with well bucket.

In the following parts, the results of research are explained to define and count engineering facility on wells in details for every *Soum*.

#### (1) ERDENE SOUM

The *Soum* has the total of 333 wells including 22 production wells, 2 shallow wells, 92 shaft wells and 217 traditional wells. During the study, 31 wells couldn't be defined its coordination. Moreover, 99 well's intersections could be defined and registered at renewed registration.

##### 1) Production wells in the *Soum*

Of the 22 registered wells, *Hoyor Zaanii Hondii* (1692) of 1969 and *Hoyor Zaanii Hondii* (2833) of 1974 could not be found due to the wrong coordinate, *Bayan sain* ( 6878 ) were unable to penetrate due to its location in restricted border military area and *Homutin Hondii's* (3181) coordinate could not be defined that it belongs to *Zamiin Uud Soum*.

Today, *Butiin hooloi* (6936), *Borhon chomogt hooloi* (7006), *Buhel - 2* (5051) and *Tumur zamin* wells are available for utilization. As well as, it is informed to local administrations that they can be repaired *Buhel -1* (3175), *Zuun hur* (5082) and *Yzyyriin Bor hoshuu* (6920). The availability level of the wells is 17.4 %.

##### 2) Shallow well

There are only 2 shallow wells throughout the *Soum*. Even though they are not utilized now, hole of *Tsatsiin bulag* (No. 35) is considered to be able to be repaired.

##### 3) Shaft wells

92 shaft wells are registered in preliminary tables. However, it should be noted that the names and number of shaft wells in *Erdene Soum* was quite complicated. Especially, no one knew the names of the wells drilled in 1960s, so they were registered by present names which the locals call them.

Therefore, 22 additional wells were newly registered which did not match the names of well in preliminary tables. But 5 of the 70 wells in the table were unable to locate at the site. During the survey, 60 of 87 wells which included in the census had problems as broken equipment and

herders use well bucket. 14 of 27 unused wells have disappeared in the sand, 6 have no water and 7 are not used for other reasons (too salty water and unable to pull water with well bucket). The availability level of the wells is 65.2 %.

#### 4) Traditional wells /hand wells/

During the survey, it has known that *Erdene Soum* has more traditional wells than other 2 *Soums* with its 217 hand wells.

In the last decade, the locals and herders have discovered 71 wells and registered them after defining their coordinates by themselves.

But the coordinates of 124 of 146 wells in the preliminary table were defined newly and some of them couldn't be registered. For example, 8 were located in the sand dune and unable to reach, 8 have wrong direction notes and 6 were transferred to the other *Soums*.

Currently, 163 wells are being used as a water resource of residents and livestock and their availability level is 75.1 %. In the other hand, 32 wells are unavailable including 6 have flooded or sanded, 14 have no water and 12 are unable to be used for other reasons.

#### (2) ULAANBADRAKH SOUM

From the preliminary information, it have been recognized that there were 254 wells including 23 bored, 83 shaft and 148 public. But the following differences were found at the site:

- number of the wells
- types of the wells
- wells with engineering facility are not used anymore because of the former system which provides maintenance service to them, have disappeared.

According to the results of the survey, *Ulaanbadrakh Soum* has 23 production, 88 shaft and 167 traditional wells. 5 shaft and 19 traditional wells have added to the first registration. It's clear that the number of traditional wells is increasing permanently in accordance with the worsening quality of maintenance services of engineering wells.

##### 1) Production wells

23 production wells exist in the *Soum*. However, 2 of them couldn't be included in the results because they are located in *Zuunbayan bag* of *Sainshand Soum*. Currently, 4 of the wells are used and they are: *Orion khar* (5072), *Tsagaan Ereg* (1687), *Luugariin khushuu* (5124) and *Nuden* of the *Soum* center. Also, *Davsan Gogtsoo* (5076) and *Shuvuumii* (5069) can be repaired. Remaining 15 wells have left their basements and water tank only. The availability level of wells is 17.4 % which is extremely low.

##### 2) Shaft wells

88 shaft wells are registered with the help of table and research which were prepared in advance. 5 wells are registered newly and 4 of them have no reducers. But they can be used with well bucket. Among 10 wells which were unable to define intersections, 2 were located in the territory of *Zuunbayan* and the geographical coordinate of other 7 didn't match with local landscape and 1 (*Tsast Khushuu* 2926) is not marked throughout the *Soum* and they couldn't include in the research.

According to the definition of wells' utilizations, it can be inferred that 58 wells are available and 20 wells are unavailable to usage. But all of them didn't have reducer. In addition, the feed water tanks of wells are broken and metal tanks are installed instead of concrete tanks. 17 of unavailable wells are necessarily required to repair water holes; because of they have been filled with sand. The availability level of wells is 65.9 %. /Table2.5/

### 3) Traditional well /hand wells/

According to the tables and researches, the *Soum* is reported to have 167 traditional wells. 31 of registered wells have transferred to other *Soums*, 22 have been owned by *Zuumbayan*, 3 are unreachable in the sand dunes, and other 3 are disappeared in the sand. Also, some has changed their names and impossible to found the olds who knows them. /Table2.3/

However, the residents of the *Soum* have dug 19 new traditional wells which are not referred in the registration, by themselves in the last years. Currently, 123 traditional wells are available for utilization. 10 of 13 unavailable wells have sunk in the sand and 3 have no water. The availability for utilization of these wells is 73.7 %.

### (3) KHUVSGUL SOUM

According to the preliminary information, 29 production, 16 shallow, 126 shaft and 126 traditional wells and totally 297 wells are reported. During the research, the number and type of the wells changed very much.

#### 1) Production wells

According to the preliminary tables and information, the *Soum* is reported to have 32 production wells. Among there are *Altan shiree* (3838), *Bor teeg* (3844), *Golin Manhan* (5108) and *Golin Manhan* (3179) are acted. Also, a well named *Sul tolgoi* (1686) were totally unknown. (possible to changed its name in the first record). *Maant* (3171) well's coordinate was unable to define because of the coincident with shallow well.

Currently, 2 well from the center of *Soum* and *Gun hooloin* wells from the pasture wells are available for utilization. There are 23 unavailable wells including 16 repairable one. But, the wells of *Har tsaviin tsagaan ereg* (6914) and *Bor hooloin* (5059) are required to be repaired relatively smaller. Other wells have required having additional holes beside them. The availability level of the wells is 9.4 % which is extremely low level.

#### 2) Shallow wells

According to the tables and information, the *Soum* is reported to have 16 shallow wells. During the research, 2 wells couldn't find because of the one's name is unclear and other's coordinate did not match. Only *Togrogiin dovtsogiin* well is currently used among these wells. Other wells have broken and thieved and required to be repaired. The availability level of them is 6.3 %.

#### 3) Shaft wells

According to the preliminary reports, the *Soum* had 131 shaft wells and 5 wells were added to registration during the research. But these wells have no reductor and the herders use well bucket for watering their livestock. Also, some wells were not included in our survey. For example, geographical coordinate of 20 wells could not be determined because 5 wells' first coordinate were noted wrong and not found, 7 wells became unable to locate due to the changes of name and 8 wells disappeared in the sand.

As a result of defining utilization of all the wells, 52 shaft wells are available. Among them, only one shaft well (*Chandmani* - 567) is equipped completely with reductor and water lifting equipment (NV-3). Concrete feed water tanks of all wells were broken and changed by iron tanks. 21 of currently unavailable wells are sank in the sand and required to repair holes, 23 have run out of water and other 15 have other problems. The availability level of these wells is 39.7 %.

### 4) Traditional wells /Hand wells/

The *Soum* is registered to have 136 traditional wells. 33 of registered wells are transferred to other *Soums*, 23 were disappeared in the sand, 3 became unable to locate because of the changes

of names and other 3 were unable to locate because of the coordinate was given wrongly. That's why these wells are not included in registration.

10 traditional wells which were dig by herders have been measured in coordinate and registered in new registration. Currently, 86 traditional wells are available for utilization besides 17 unavailable which are 9 flooded or sank in sand, 5 run out of their water and 3 are not used for other reasons. The availability level of these wells is 63.3 %.











Id by saum	Id by type	Well admin number	Stand in using	Well information before study											Well information by study																		
				Well name or owner	Lat.grad	Lat.min	Lat.sec	Long.grad	Long.min	Long.sec	Height	Well depth,m	Compression type	Lat1.grad	Lat1.min	Lat1.sec	Long1.grad	Long1.min	Long1.sec	Height1	Now using	Need repair	Hole view	Building	Chamber	Well major compress	Repair year	Invest					
202	177	new		Sevkhuut-1								2.5						44	32	3	111	21	14.3	907	+								
203	178	new		Sevkhuut-2								2.5						44	32	2.6	111	21	13.9	966	+								
204	179	new		Zuun zavag-1								2.7						44	28	23.8	111	18	16.2	998	+								
205	180	new		Erdene ovooni shand								1.8						44	29	51.1	111	14	45.3	953	+								
206	181	new		Dalain shand								2.5						44	33	55.8	111	13	43.0	968	+								
207	182	17 new		Khavkhaslai khudag								2.3						44	13	38.4	111	21	21.8	1149	+								
208	183	new		Suukhur														44	17	16.1	111	20	15	1149	-								
209	184	new		Rnshoanl								2.5						44	10	14.6	111	10	23.0	1127	+								
210	185	new		Avgain gol								2.0						44	8	38	111	24	24.2	1002	+								
211	188	new		Khar sair								1.5						43	56	27.9	111	23	37.2	1050	+								
212	187	new		Bor elgeri-1								3						43	58	23.9	111	26	18.2	1037	+								
213	188	new		Elgenin eman us								1.5						43	59	60.3	111	25	6.0	1050	-		+						
214	189	new		Boytshan kheshaat								2.2						43	58	60.2	111	18	39.6	1057	-		+						
215	190	new		Toimnin ehand								1.5						43	56	0.6	111	19	24.7	1085	+		+						
216	191	01 new		Duul														43	55	30.3	111	17	54.0	1089	+								
217	192	new		Tugrug								1.0						44	2	36.9	111	20	10.7	1060	+								
218	193	new		Zalna								2						44	4	30.5	111	20	41.1	1113	+								
219	194	new		Jargalantlin adag us-1								1.8						43	53	1.3	110	51	48	1003	+								
220	195	new		Khuuvur-1														43	50	64.2	110	58	6.0	975	+								
221	196	new		Ulaan tsavin shand								1.0						43	51	67.9	111	0	55.5	1035	+								
222	197	new		Dukhum-1														44	0	38.4	111	7	22.3	1084	-								
223	198	new		Khorkhor us								1.8						44	15	61.6	111	5	34.9	996	+								
224	199	new		Zavag								2.5						44	13	13.6	111	1	21.9	1121	+								
225	200	new		Khar del														44	10	53	111	2	35.2	1141	+								
226	201	new		Tsaidam								2.5						44	0	17.2	110	58	57.2	1160	+								
227	202	new		Mongol								1						44	9	42.2	110	59	45.6	1160	-								
228	203	new		Daragvai														44	10	17.7	110	59	43.7	1153	+								
229	204	new		Tsagaan del														44	5	10.9	111	0	37.6	1220	-								
230	205	new		Dund shand								1.8						44	8	40.8	110	59	8.9	1200	+								
231	206	new		Tuulailin khar ovoo								3.5						43	58	25	110	59	30.3	1078	+								
232	207	new		Ovoon toikom-1														43	53	53	111	2	21.7	1055	+								
233	208	new		Buleen bulag								2						43	55	6.5	111	7	40.8	1061	+								
234	209	new		Khun ovool								8						43	54	7	111	21	7.8	1027	+								
235	210	new		Duul								10						43	52	26.3	111	20	33.6	1005	+								
236	211	new		Zaglin shand														43	47	41.7	111	37	1.1	927	+								
237	212	new		Khamar								4						43	57	10.3	111	34	10.3	1032	+								
238	213	new		Toodoglin-1								2						43	55	44.7	111	28	57.2	970	+								
239	214	new		Orcin khudag								6						44	14	56.3	110	44	62	088	+								
240	215	new		Shar mod														44	20	6.1	110	42	40.6	089	+	+							
241	216	new		Suul														44	24	1.7	111	2	19	1008	+	+							
242	217	new		Bulag shand								30						44	26	35.1	110	39	13.8		+								

+ yes  
- no

Soum name: Ulaanbadrah

Well type: Production

Id by soum	Id by type	Well information before study											Well information by study																
		Well admr number	Stand in using	Well name or owner	Lat,grad	Lat,min	Lat,sec	Long,grad	Long,min	Long,sec	Height	Well depth,m	Compression type	Lat,grad	Lat,min	Lat,sec	Long,grad	Long,min	Long,sec	Height	Now using	Need repair	Hole view	Building	Chamber	Well motor,compress	Repair year	invest	
1	1	1687	68	Tsaagan ereg	43	50	10	110	17	0	975	164		44	7	6.5	110	19	34	855	+	+	+	+	+	3LIB	-	-	
2	2	1689	69	Khori tsav	43	59	5.2	110	16	22	970	178	ВЛ-3А,Т-62	43	59	5.2	110	16	22	970	-	-	-	-	-	-	-	-	
3	3	2829	73	Elsen doloon	43	29	46	111	3	30	1046	112	ВЛ-3	43	30	3.9	111	3	31	1046	-	-	-	-	-	-	-	-	
4	4	3180	74	Khokh am	43	51	52	110	20	5	995	91.5	ВЛ-3М	43	51	55	110	20	15	988	-	-	-	-	-	-	-	-	
5	5	3183	74	Khonkh	43	44	0	110	20	13	975	90	ВЛ-3М	43	44	41	110	20	39	976	-	-	-	-	-	-	-	-	
6	6	3185	74	Shuvuun	43	43	0	110	27	0	930	93	ВЛ-3М	43	43	1.1	110	27	30	932	-	-	-	-	-	-	-	-	
7	7	3840	77	Nuden	43	52	0	110	26	0	980	88	ВЛ-3М	43	52	44	110	25	23	985	+	-	+	+	-	Handpump	-	-	
8	8	5100	80	Khatlin golin	44	31	0	110	5	20	750	90	ВЛ-3	well of Zuun bayan's															
9	9	5124	81	Luugarlin khushuu	43	43	50	110	25	8	1068	90	ВЛ-3	43	32	27	111	3	9.2	1059	+	+	+	-	+	-	-	-	
10	10	5158	82	Shuvuun	43	50	15	110	53	55	895	125	ВЛ-3	43	58	41	109	54	37	805	-	-	-	-	-	-	-	-	
11	11	5154	83	Tsaklam	44	5	2	110	30	40		120	ВЛ-3М,Т-62	44	5	15	110	30	43	1008	-	-	+	+	-	-	-	-	
12	12	5160	83	Nuden	43	51	32	110	23	50	970	103	ВЛ-3М,Т-62-1	43	51	22	110	23	58	962	-	-	-	-	-	-	-	-	
13	13	6897	86		43	51	37	110	26	50	972	90	ВЛ-3М,Т-62-1	43	51	24	110	26	8.3	962	-	-	-	-	-	-	-	-	
14	14	6912	86	Sukhain bor dov	43	48	26	110	35	11	918	80	ВЛ-3М,Т-62-1	43	48	24	110	35	14	914	-	-	-	-	-	-	-	-	
15	15	8917	80	Khuilsin bor овоо	43	53	52	109	59	6	960	130	ВЛ-3М,Т-62-1	43	53	50	110	0	27	1004	-	-	-	-	-	-	-	-	
16	16	6031	87	Zurkh	43	30	0	110	36	45	1020	100	ВЛ-3М	43	35	57	110	38	48	1032	-	-	-	-	-	-	-	-	
17	17	6933	87	Bayan talgal	43	52	0	110	39	0	938	83	ВЛ-3М	43	52	0.1	110	38	48	940	-	-	-	-	-	-	-	-	
18	18	8952	88	Nuudgain gol	44	30	53	110	17	8	738	117	ВЛ-3М	well of Zuun bayan's															
19	19	5076	78	Darsan gogtsoo	43	32	55	110	16	10		120		43	32	58	110	16	5.7	972	-	+	+	+	+	-	-	-	
20	20	5072	78	Oron khar	44	18	45	110	21	0		67		44	17	33	110	20	14	791	+	+	+	+	+	3LIB	-	-	
21	21	3077	78	Ulaan teeg	43	33	20	110	11	45		104		43	51	32	110	44	52	942	-	-	+	+	+	+	-	-	
22	22	5089	78	Shuvuun	44	23	15	110	17	0		120		44	24	9.6	110	17	48	752	-	+	+	-	+	-	-	-	
23	23	5081	78	Bydargant	43	33	20	110	11	45		104		43	33	21	110	11	48	978	-	-	-	-	-	-	-	-	-

+ yes

- no

Well type: Shaft

Id by soum	Id by type	Well information before study											Well information by study																
		Well admr number	Stand in using	Well name or owner	Lat,grad	Lat,min	Lat,sec	Long,grad	Long,min	Long,sec	Height	Well depth,m	Compression type	Lat,grad	Lat,min	Lat,sec	Long,grad	Long,min	Long,sec	Height	Now using	Need repair	Hole view	Building	Chamber	Well motor,compress	Repair year	invest	
24	1	2918	68	Gun stand	44	1	35	110	12	15	910	7.0	HB-3	44	1	31	110	10	58	890	+	-	+	-	+	by hand			
25	2	2921	68	Ulaan tolom	43	46	35	110	12	15	1075	7.7	HB-3	43	42	2	110	11	52	995	+	-	+	-	+	by hand			
26	3	2926	68	Tsast khushuu	43	46	0	110	39	0	975	9.5	HB-3	There are not well Tsastkhushuu named															
27	4	2928	68	Khuilsan	43	39	40	110	35	45	1045	9.0		43	39	36	110	35	40	1011	-	-	-	-	-	-	-	-	-
28	5	2941	68	Bayan sain, Tsagaan dal	43	28	0	111	11	20	1160	6.0		43	28	33	111	14	2.5	1151	-	-	-	-	-	-	-	-	-
29	6	2947	68	Undurlin gashuun	43	29	15	110	60	30	1170	7.7		43	29	12.8	110	50	20	1158	-	-	-	-	-	-	-	-	-
30	7	2955	68	Khavirga darvolj	44	0	55	110	40	10	1015	10		44	0	21.5	110	38	55	1001	-	-	-	-	-	-	-	-	-
31	8	2958	68	Bayan talgal	43	51	50	110	42	40	950	13		43	50	55	110	40	27	917	+	+	+	-	+	by hand			
32	9	2959	68	Khurlin buuts	43	51	48	110	36	55	930	21	HB-3	43	51	4.6	110	37	3.2	910	+	-	+	-	+	by hand			
33	10	2960	68	Buural khaalol	43	51	40	110	31	55	945	12		43	51	15.5	110	33	31	948	-	-	-	-	-	-	-	-	-
34	11	2976	68	Kholbooglin khaalol	43	41	40	110	9	20	1000	12		43	38	38	110	8	32	985	+	-	+	-	+	by hand			
35	12	3076	68	Ulaan tsavlin Bayandors	44	0	30	110	28	50	940	16		43	59	43	110	25	53	998	+	+	+	-	+	by hand			
36	13	3113	68	Nogoon dovlin angar	43	33	35	110	32	10	1050	11		43	35	9.6	110	32	7.7	1011	+	+	+	-	+	by hand			
37	14	3117	69	Dersnii khaalol	44	11	35	110	13	25		22		44	12	17.3	110	17	20	787	+	-	+	-	+	by hand			
38	15	3119	68	Khuirai sairlin gol	44	13	10	110	13	15	770	15.8		44	13	31	110	16	19	789	+	-	+	-	+	by hand			
39	16	3126	69	Bayan Mongol	44	7	45	109	52	45	745	12		44	11	18.7	109	50	34	702	+	+	+	-	+	by hand			
40	17	3145	68	Zamlin zurkh	43	34	38	110	38	30	1080	10		43	36	11.6	110	37	5.9	1021	-	-	-	-	-	-	-	-	-
41	18	3158	68	Bar khaalol	44	13	13	109	52	18		16		44	12	68.6	109	55	60	707	-	-	-	-	-	-	-	-	-
42	19	3163	68	Kholgorlin gun sukhdal	44	17	24	109	31	40		16		44	17	14.1	109	32	42	782	+	-	+	-	+	by hand			
43	20	3168	69	Ejst khoshuu	44	12	0	109	41	42		12.0		not obtained															
44	21	3168	69	Zag ovoо	44	16	47	109	45	13		14.0		not obtained															
45	22	3172	69	Gurvan sukhal	44	20	20	109	39	18		14.0		44	21	23	109	38	48	794	-	-	-	-	-	-	-	-	-











Soum name: Huvsgul  
Well type: Production

Id by soum	Id by type	Well information before study										Well information by study																
		Well admr number	Stand in using	Well name or owner	Lat.grad	Lat.min	Lat.sec	Long.grad	Long.min	Long.sec	Height	Well depth,m	Compression type	Lat1.grad	Lat1.min	Lat1.sec	Long1.grad	Long1.min	Long1.sec	Height1	Now using	Need repair	Hole view	Building	Chamber	Well motor,compress	Repair year	Invest
1	1	1686	68	Sul tolgoi	43	42	40	109	32	5	950	133		There are not well Sul tolgoi named														
2	2	1686	68	Bor teeg usan	43	27	40	110	10	25	1050	121		43	27	30	110	12	20	1042	-	+	-	-	-	-	-	-
3	3	3171	74	Maanit	43	13	15	110	7	35	1194	30		Coincident shallow well														
4	4	3173	74	Tallin dov	43	29	48	109	49	18	1000	150	ВЛ-3М	43	30	1	109	49	0	983	-	+	+	-	-	-	-	-
5	5	3177	74	Gai	43	43	50	109	30	0	920	142	ВЛ-3М	43	44	2	109	30	33	901	-	+	+	-	-	-	-	-
6	6	3179	74	Golin mankhan	43	41	7	109	22	12	960	170	ВЛ-3М	extermination														
7	7	3828	77	Zeeg	43	43	16	109	43	12	960	109	ВЛ-3М	43	43	29	109	42	26	966	-	+	+	-	-	-	-	-
8	8	3837	77	Shuvuunil tohom	43	37	7	109	20	0	864	170	ВЛ-3М	43	37	4	109	20	11	857	-	+	-	-	-	-	1999	1
9	9	3838	77	Altan shree	43	37	7	109	25	45	923	120	устуй	extermination														
10	10	3839	77	Govin bor	43	30	7	109	37	0	978	128	ВЛ-3М	43	29	49	109	37	16	986	-	-	-	-	-	-	-	-
11	11	3842	77	Khuyagt	43	22	40	110	13	7	1095	40	НВ-3	43	22	48	110	13	49	1090	-	+	+	-	-	+	-	-
12	12	3843	77	Khyars	43	27	35	110	3	0	1039	60.6	ВЛ-3М	43	27	48	110	2	38	1035	-	+	+	-	-	-	-	-
13	13	3844	77	Bor teeg	43	31	15	109	43	25	986	120		extermination														
14	14	3846	77	Yast	43	44	44	109	36	58	945	108	ВЛ-3М	43	44	41	109	36	58	941	-	-	-	-	-	-	-	-
15	15	5108	80	Golin mankhan	43	41	7	109	22	12	960	160	ВЛ-3	extermination														
16	16	5148	82	Shar am	43	40	30	109	38	46	982	100	ВЛ-3	43	42	18	109	39	46	970	-	+	+	-	-	-	-	-
17	17	5149	82	Tallin tsagaan	43	58	12	109	45	6	882	94	ВЛ-3	43	57	20	109	45	18	871	-	+	+	-	-	-	-	-
18	18	5150	82	Khoroolin tsagaan tsav	43	36	30	109	57	46	986	110	ВЛ-3	43	36	47	109	50	29	880	-	+	-	-	-	-	-	-
19	19	5151	82	Tataalin gol	43	30	52	109	32	0	952	120	ВЛ-3	43	30	41	109	33	9	954	-	+	-	-	-	-	-	-
20	20	5184	83	Sain suuj	43	11	40	110	38	40	1044	40	ВЛ-3М, T-62-1	43	11	44	110	38	15	1035	-	+	-	-	-	-	-	-
21	21	8886	85	Shuvuun	43	30	42	109	21	56	938	115	ВЛ-3М, ДШ-12	43	30	51	109	22	26	916	-	+	-	-	-	-	-	-
22	22	8887	85	Ulaan tsav	43	31	40	109	25	4	918	110	ВЛ-3М, ДШ-12	43	31	44	109	25	16	914	-	-	-	-	-	-	1998	1
23	23	8889	85	Toosgont	43	50	27	109	29	46	826	108	ВЛ-3М, T-62-1	43	49	51	109	29	2	827	-	+	-	-	-	-	-	-
24	24	8893	85	Bor khushuunil khashaata	43	39	40	109	6	6	765	95	ВЛ-3М, ДШ-12	43	39	44	109	6	11	780	-	+	-	-	-	-	-	-
25	25	8895	85	Tsavchir/Ulaan khudag	43	46	0	109	10	11	766	80	ВЛ-3М, T-62-1	43	45	43	109	10	25	762	-	-	-	-	-	-	2000	1
26	26	8910	86	Chandmani	43	33	42	109	55	14	990	75	ВЛ-3М, T-62-1	43	33	43	109	55	30	998	-	-	-	-	-	-	-	-
27	27	8914	86	Khar tsavlin tsagaan ereg	43	30	7	109	51	13	1004	109	ВЛ-3М, T-62-1	43	29	48	109	51	22	1004	-	+	+	-	+	+	1998	1
28	28	5089	88	Bor khoool	43	50	17	109	35	7	850	115	ВЛ-3М	43	50	23	109	33	32	847	-	+	+	-	+	-	-	-
29	29	7002	89	Gun khoool	43	11	33	110	41	0	1016	67	ВЛ-3М	43	11	35	110	40	0	1013	+	-	+	+	-	+	2000	1
30	30	new		Tsavgarin ulaan tsav										43	47	57	109	25	39	813	-	+	-	-	-	-	-	-
31	31	new		Sumlin tov-02										43	38	37	109	38	5	992								
32	32	new		Sumlin tov-01										43	36	42	109	38	50	992								

+ yes  
- no

Soum name: Huvsgul  
Well type: Shallow

Id by soum	Id by type	Well information before study										Well information by study																	
		Well admr number	Stand in using	Well name or owner	Lat.grad	Lat.min	Lat.sec	Long.grad	Long.min	Long.sec	Height	Well depth,m	Compression type	Lat1.grad	Lat1.min	Lat1.sec	Long1.grad	Long1.min	Long1.sec	Height1	Now using	Need repair	Hole view	Building	Chamber	Well motor,compress	Repair year	Invest	
33	1	87	81	Barvun gashuun	42	51	48	110	14	32	1060	15	НВ-3	43	9	29	110	27	42	1057	-	+	-	-	-	-	-	-	-
34	2	88	81	Ulaan bulag	43	52	2	109	49	0	1095	13.5	НВ-3	43	52	13	109	40	55	988	-	+	-	-	-	-	-	-	-
35	3	89	81	Bag mod	43	59	28	109	39	58	837	13.5	НВ-3	44	2	59	109	39	3	782	-	+	-	-	-	-	-	-	-
36	4	90	81	Адгийн khulwur	43	53	26	109	46	28	965	13.5	НВ-3	43	53	6	109	43	46	918	-	+	-	-	-	-	-	-	-
37	5	91	81	Ergen us	44	9	58	100	43	0	810	14.5	НВ-3	There are not well Ergen us named															
38	6	92	81	Zadgall	43	12	41	110	21	12	1165	18	НВ-3	43	15	3	110	19	45	1135	-	+	+	-	-	-	НВ-3	-	
39	7	93	81	Shar zaglin buuts	44	10	30	109	37	57	852	12.5	НВ-3	Not obtained															
40	8	94	82	Shar khad	43	25	32	109	47	54	1070	18	НВ-3	43	48	55	109	40	37	990	-	+	-	-	-	-	-	-	
41	9	95	82	Olon ovoo	43	36	0	109	15	32	700	11	НВ-3	43	36	19	109	12	1	880	-	+	-	-	-	-	-	-	
42	10	96	82	Tugruglin dovtsoг	43	31	20	110	8	50	1025	17	НВ-3	43	40	14	109	67	56	977	+	-	+	+	+	+	1999	1	
43	11	97	82	Zanguut	43	28	32	109	46	14	1020	18	НВ-3	43	25	47	109	40	47	1052	-	+	-	-	-	-	-	-	
44	12	98	82	Maanit	43	10	12	110	2	26	1250	18	НВ-3	43	12	35	110	0	1	1159	-	+	-	-	-	-	-	-	
45	13	99	82	Uam	43	12	42	110	24	20	1100	18	НВ-3	43	21	40	110	21	20	1178	-	+	+	-	+	-	-	-	
46	14	105	62	Govin tsagaan ovoo	43	20	21	110	30	10		18	НВ-3	43	22	30	110	37	29	1120	-	+	+	-	+	НВ-3	-	-	
47	15	106	82	Bayan khor	43	38	15	110	5	41		18	НВ-3	43	38	7	109	3	11	1019	-	+	-	-	-	-	-	-	
48	16	52		Tsuural	43	48	55	109	38	26				43	59	8	109	38	25	808	-	+	+	-	-	-	-	-	

+ yes  
- no









**ANNEX J:**  
**RESULTS OF PASTURE SURVEY**

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Final Report  
The Study for Improvement Plan of  
Livestock Farming System in Rural Area

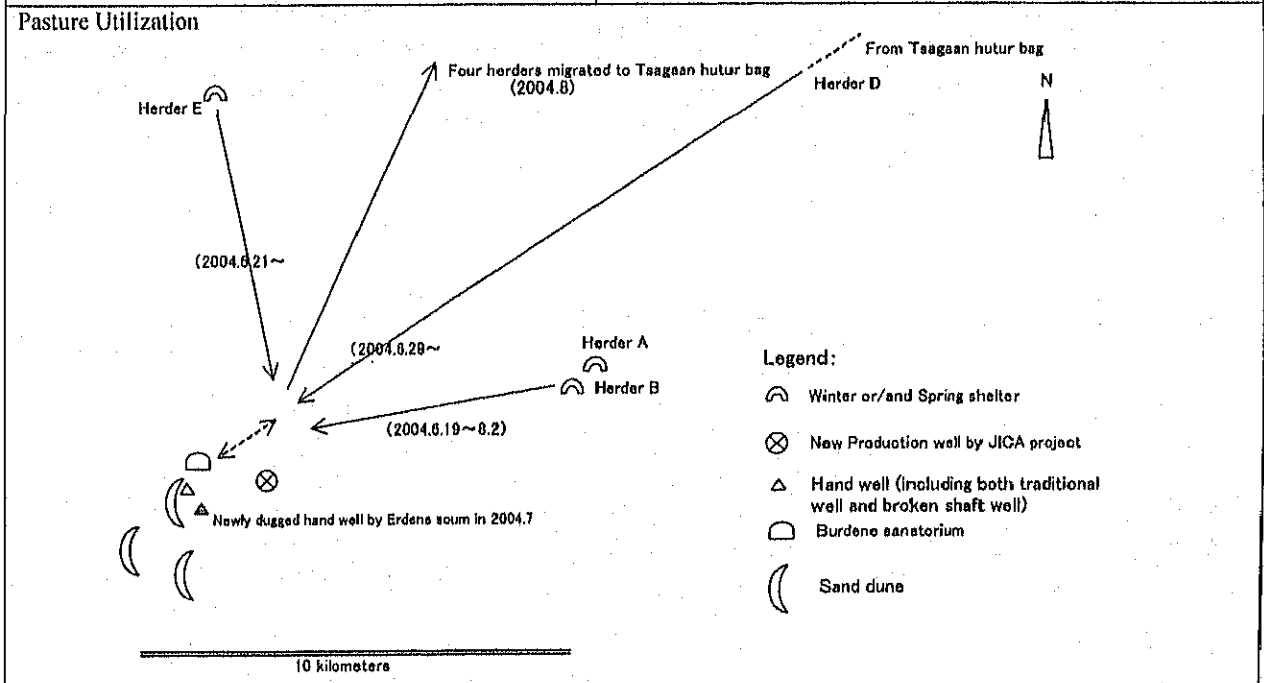
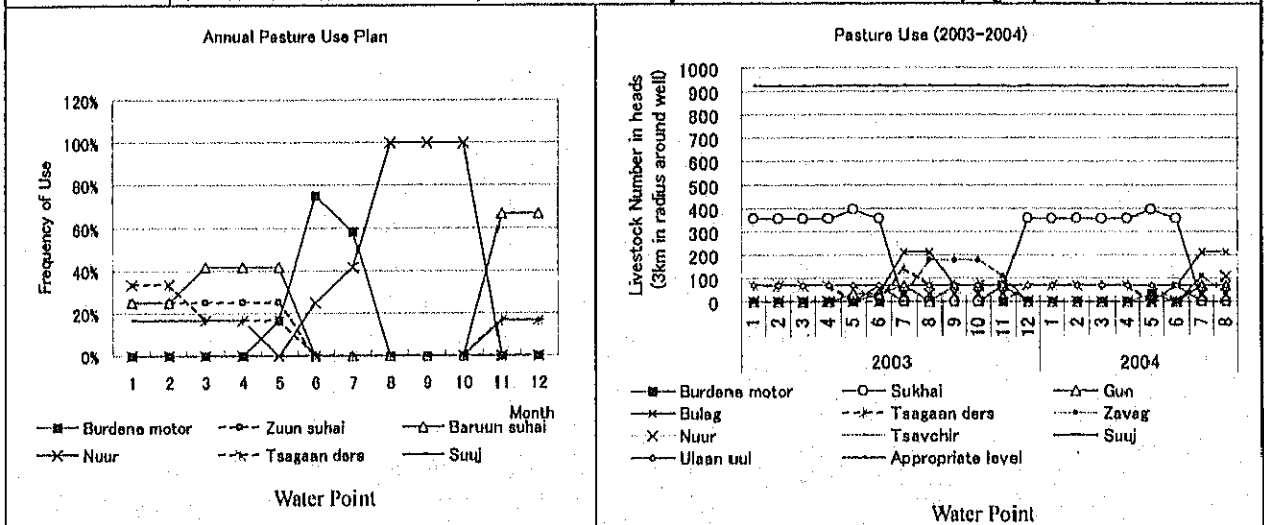
March, 2006

# ANNEX J Results of Pasture Survey

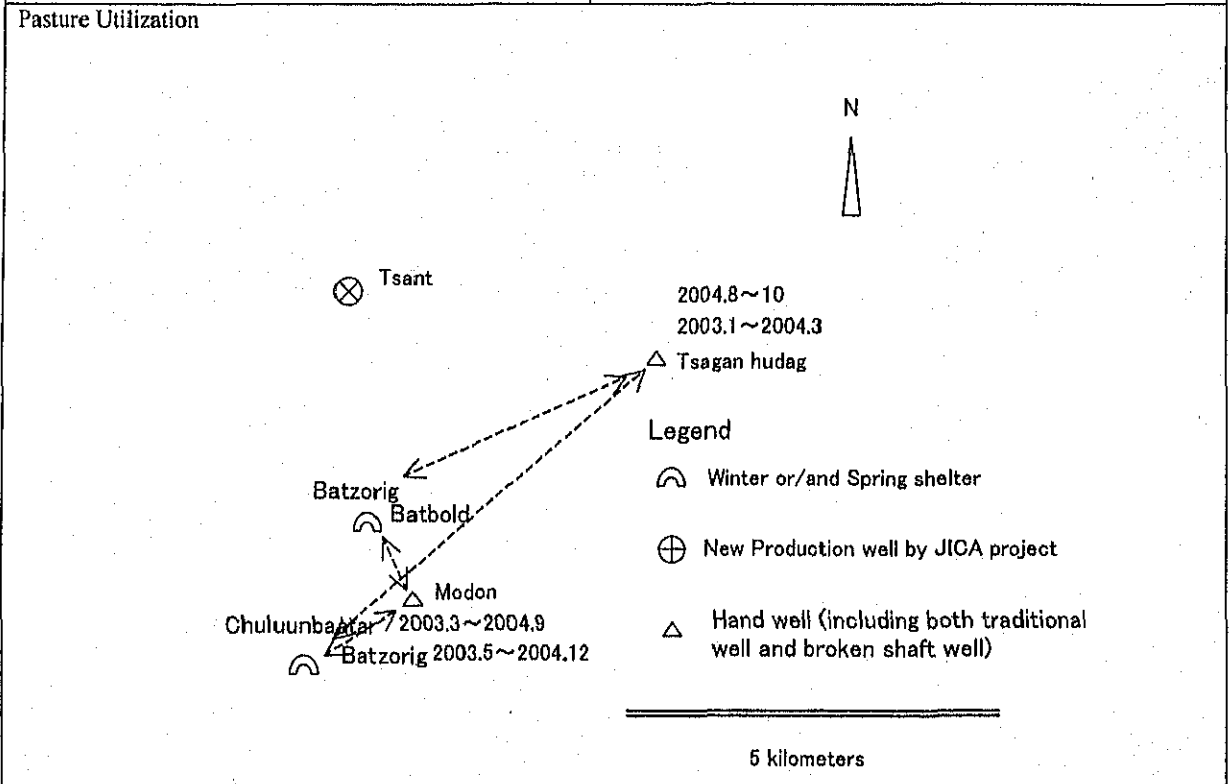
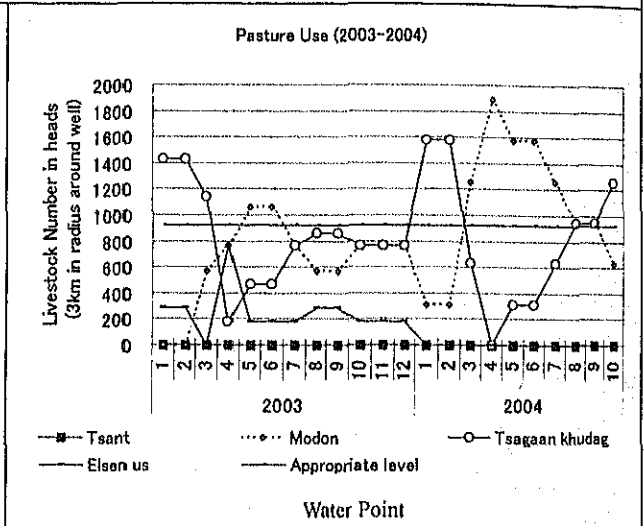
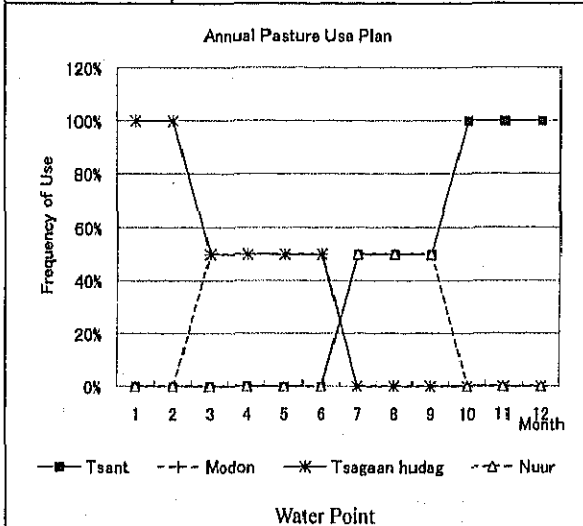
## (1) Outline of Pasture Use and Water Sources in Each Group

### 1) Erdene Soum

Location	Burdene	Soum	Erdene
Outline	Although the group initially included seven families, the leader herder migrated to Zamiin uud and left the group. Bag governor became a new leader and the group restarted with eight families. But since the water turned red due to oxidized iron element after June, the herder group refused to share costs of the well with the bad quality of water and gave up to use the well.		
Plan and Usage Style in 2003 and 2004	The herders tried to use the well in December of 2003, but gave up because of its bad water quality. Furthermore, the herders also tried to use the Burdene well after installing the water purifier machine but the well did not work due to the contained iron element. Out of seven families, four families joined to sell milk and dairy products by using puddles to water livestock and carrying drinking water from the traditional well. They used the pasture near the well to sell milk and dairy products until August 1 and migrated to look for other puddles.		
Problems and Solutions in Monitoring	In this summer, about three hundred livestock (equivalent six hundred sheep) including seventeen camels and goats gathered near the Sanatorium. The number was not so big. But it is estimated that the number of the livestock to sell the products to the Sanatorium would increase if the condition of the pasture could be good. It is required to gather the proper number of necessary minimum livestock. Also, it is examined that the area near Burdene could be used as supplemental winter camp for emergent shelter. If the pasture could be used in winter and summer, it must be carefully examined based on the carrying capability.		

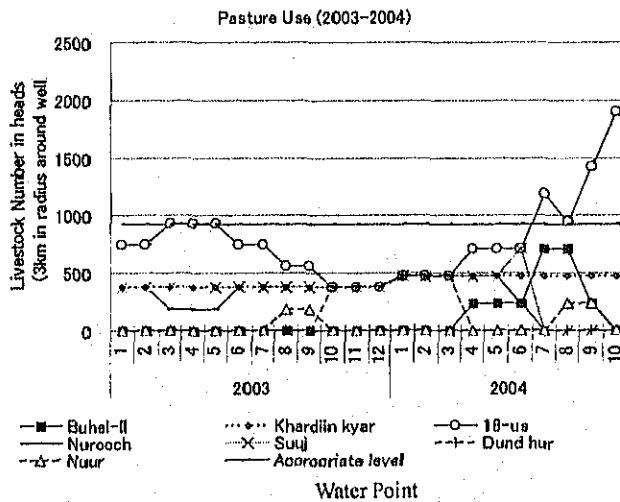
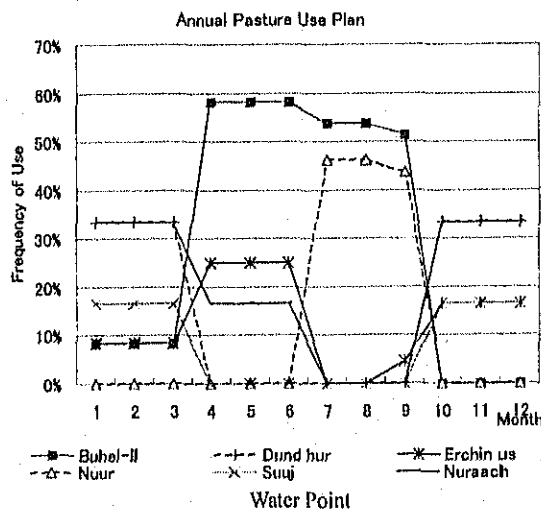


Location	Tsant	Soum	Erdene
Outline	This is a non-seasonal well. To develop low or non-used pasture in the northeast part of Erdene, three herder families proposed to construct a new well. It is estimated that the pasture in the northeast area would be watered and used stably by constructing the well. The small number of families relatively owns many livestock (792 heads that is equivalent to 1,892 sheep).		
Plan and Usage Style in 2003 and 2004	The group would use from July to December, especially in fall, in this year's plan. However, herder group considered that the condition of the pasture was not so good due to little rain and preserved it as the pasture for winter camp. Another water source that was 5 km away was substituted in this summer. The group started to use Tsant well from October 24.		
Problems and Solutions in Monitoring	Herders in Urgan that had serious drought in this summer requested to use Tsant well. The herder leader refused the request. Since the group plans to use Tsant in winter and the condition of its pasture is not so good, it is considered that this decision was appropriate. However, it would be possible for non-group herders to ask to use the well. It is recommended to specially consider that the usage of the well should not be limited to particular herders (or specific group).		

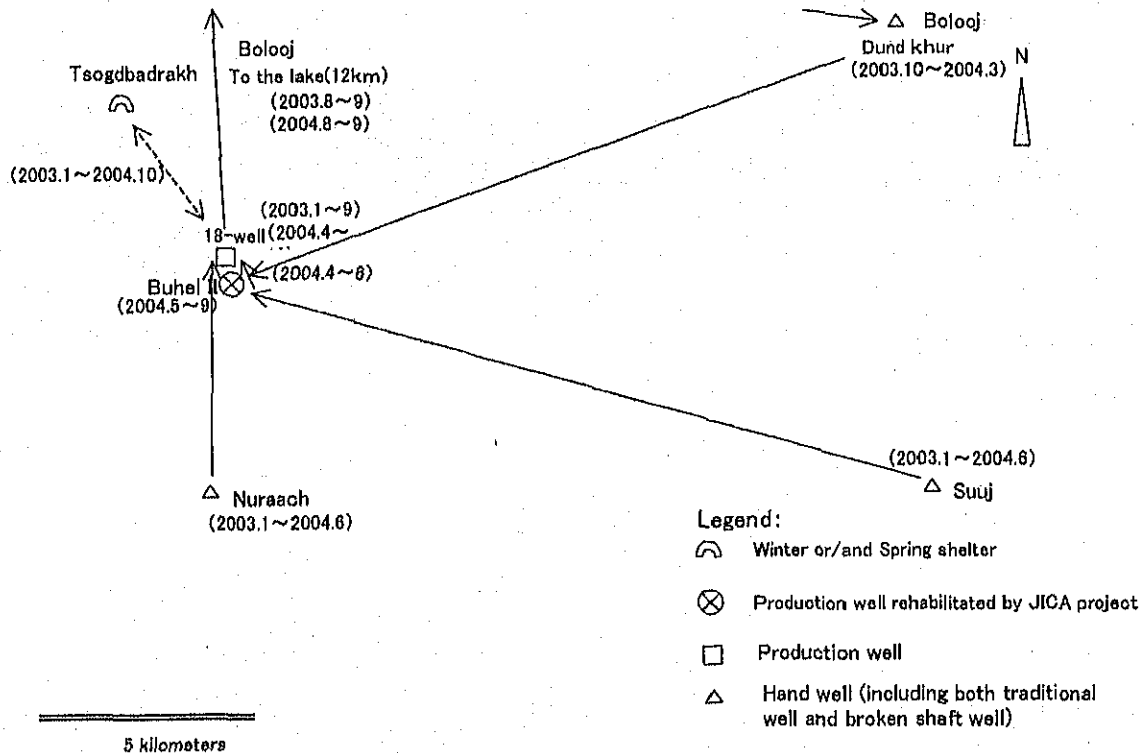




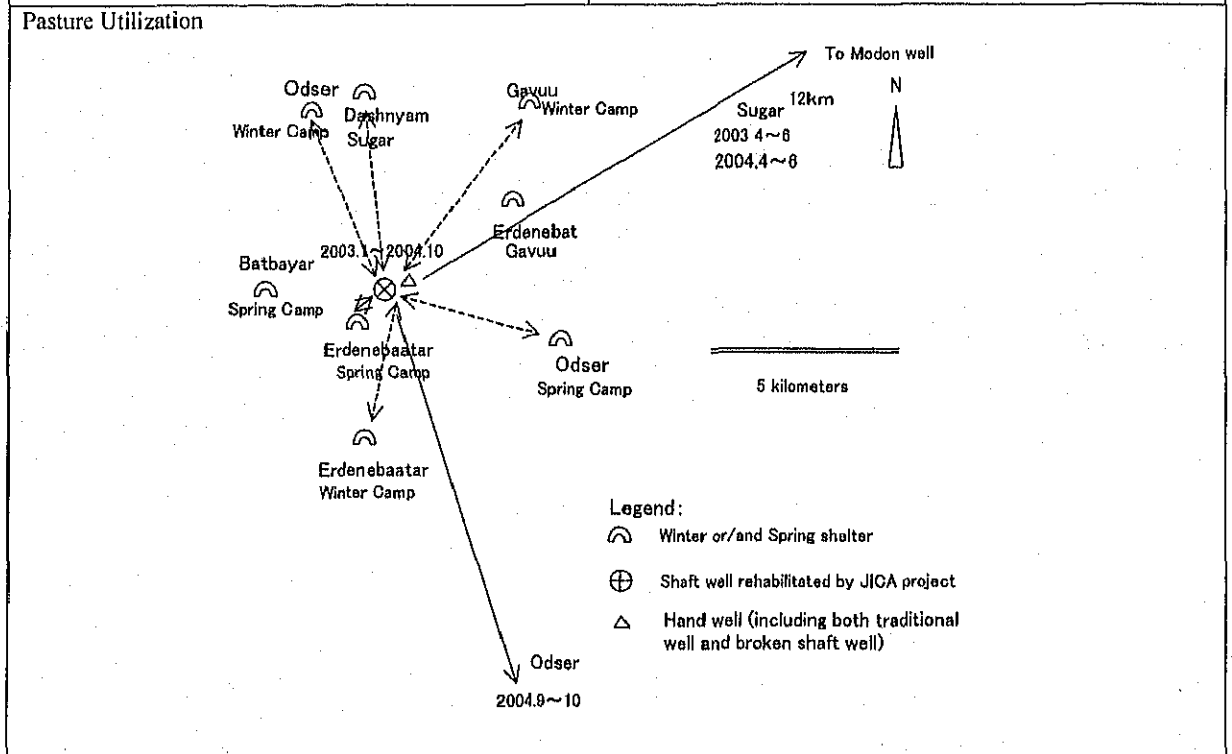
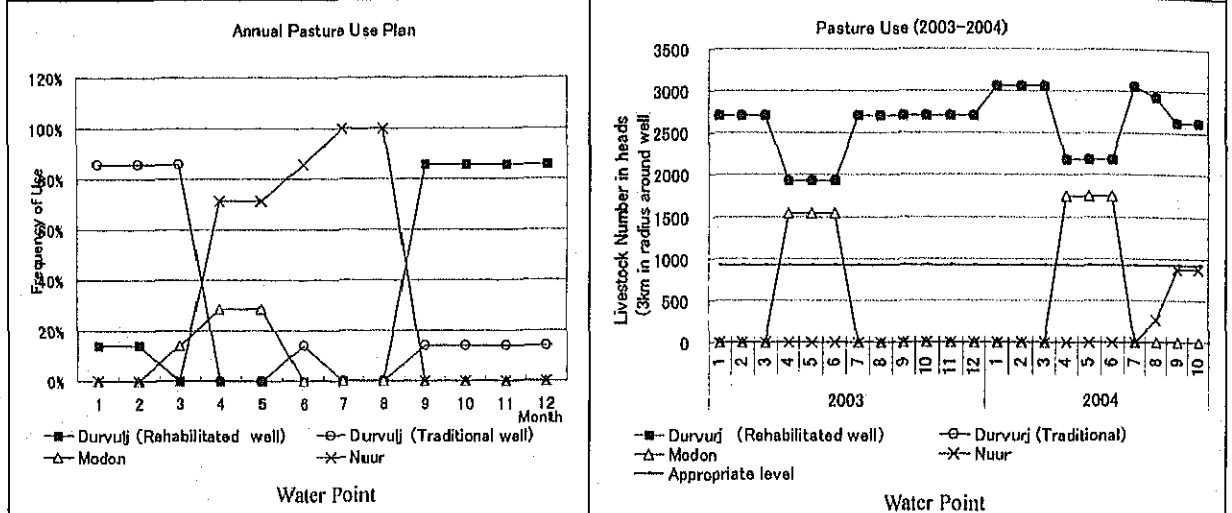
Location	Bukhel-II	Soum	Erdene
Outline	The herders group initially consisted of 7 families but three of them did not agree to share the costs and quit the group. Since another family joined, five families currently use the pasture. Because it is located in an important traffic point within 1km from the Bag center and also close to the 18th main well, the pasture near the well is relatively overused. The rehabilitation of the production well was considered in order for the herder group to obtain the well. The number of livestock owned by five families is 1,284 that is equivalent to 2,381 sheep.		
Plan and Usage Style in 2003 and 2004	Instead of the 18th well, the group planned to use Bukhel-II well from April to June. It was operated from May to October in 2004. However, although the 18th well was supposed to stop, it was also operated at the same time. Since one operator runs two wells, the usage of the Bukhel-II is fewer.		
Problems and Solutions in Monitoring	Although some herders migrate more than 10km, the number of livestock (equivalent to sheep) owned by the group increased from 1,872 sheep to 2,381 sheep. Moreover, it is necessary to pay attention for non-member herders who came from other Soums and Aimag due to the drought.		



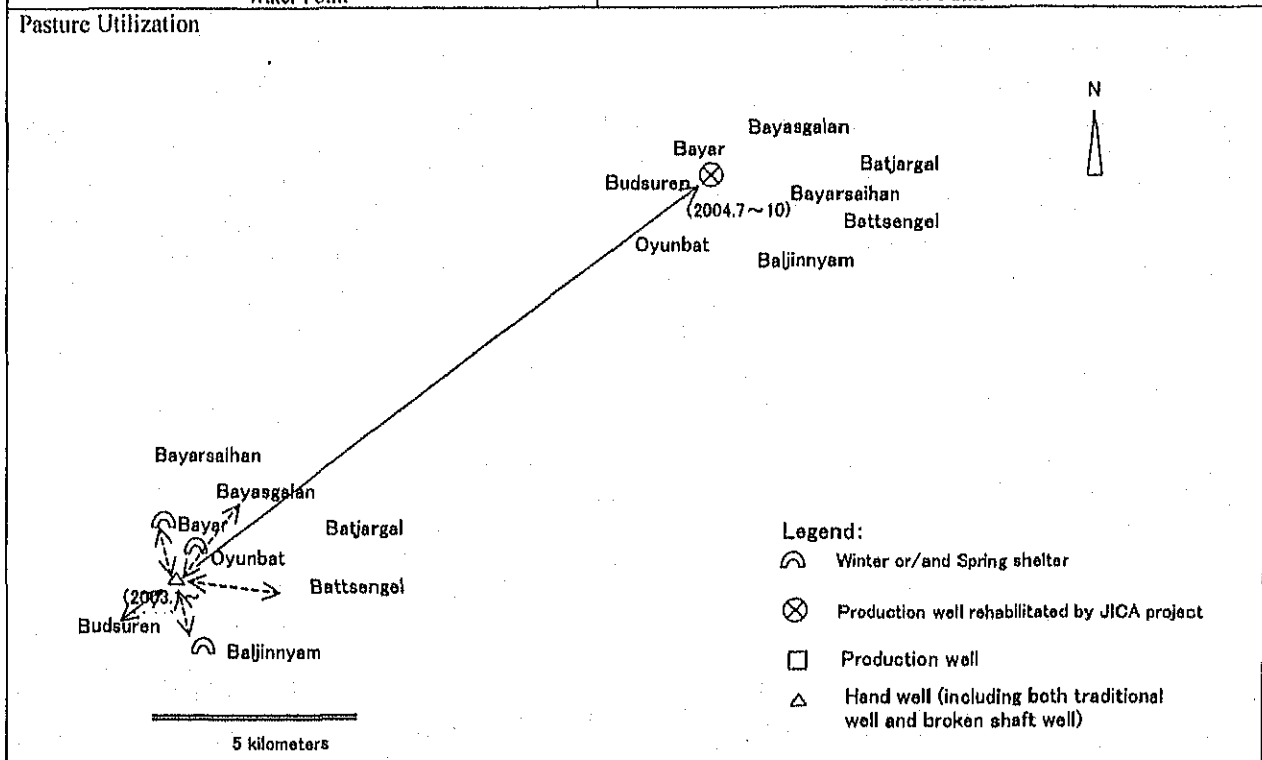
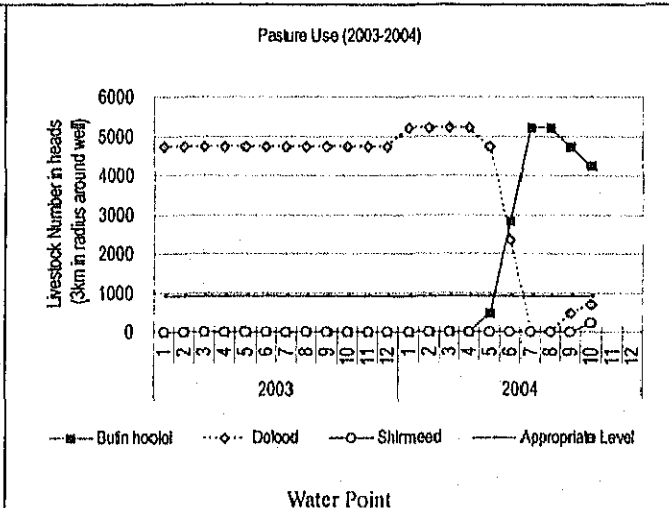
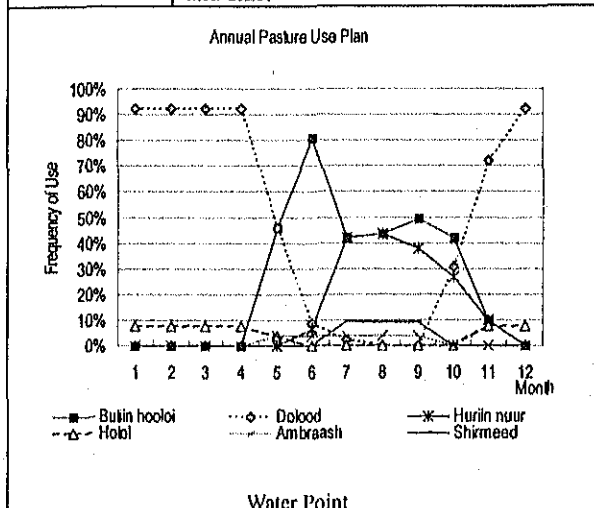
Pasture Utilization



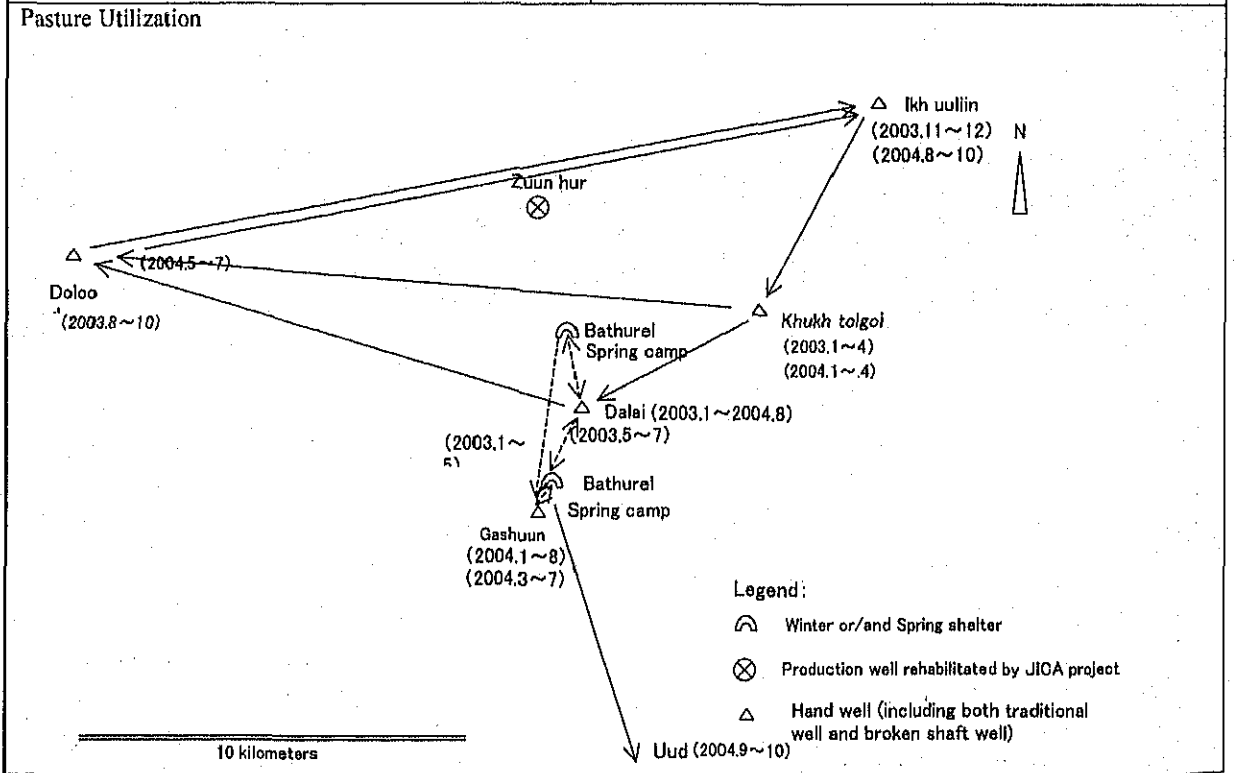
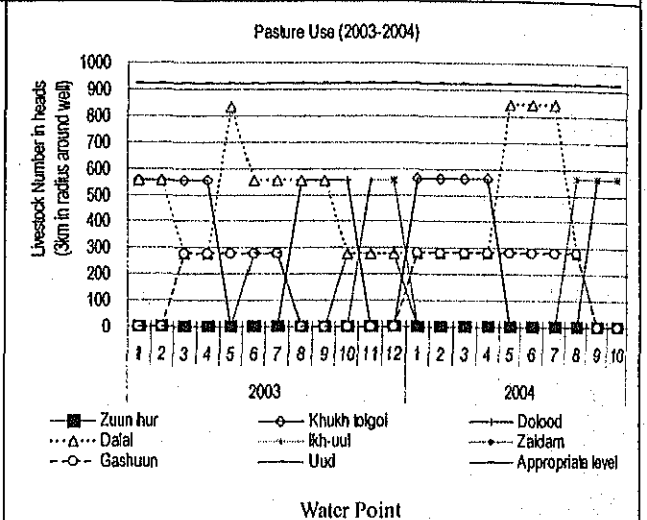
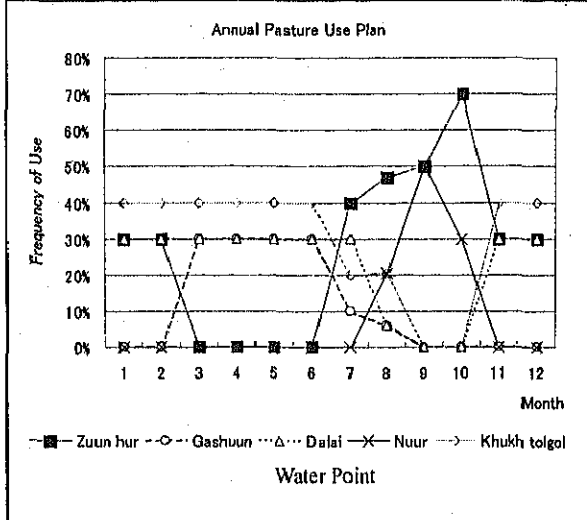
Location	Durvulji	Soum	Erdene
Outline	This is a well for winter and spring camp but the group tends to use it yearly. The herders used a broken shaft well that was utilized as hand- drawn well and a traditional well together. This project rehabilitated the shaft well that had low water level. The water can be pumped and the water supply improved. However, they still use a convenient traditional well. After two families left the group due to cost sharing problem and two other families joined, the group currently consists of seven families.		
Plan and Usage Style in 2003 and 2004	In the plan, in addition to puddles from April to August, two wells in Durvulj would be used in January and February and in September and October. In this summer, the pasture near Durvulj was poor due to the drought. A family out of seven families migrated to remote place that was about 30 km away. However, even though the condition of the pasture was bad, the remaining families stayed near Durvulj since the puddles was not formed in the surrounding area.		
Problems and Solutions in Monitoring	The group plans to change the place for winter camp this year. But the number of the livestock owned by seven families is 2,685 (equivalent to 6,126 sheep) and is extremely big. Also, since the group tends to use the same water source yearly, the overused pasture is worried. It is recommended to advise herders to migrate positively.		



Location	Buttiin Hooloi	Soum	Erdene
Outline	This well is for summer and fall. The area within 10 km of Buttiin hooloi well does not have any effective wells. It is typical low or unused pasture. The group using Dolood well for winter camp located in about 12 km southwest from the well decided to use this low used pasture as stable migration place in summer. It is about 7 km to the border with Urgan and unstable social relation on water use with herders in Urgan also concerns. But there is no conflict until now.		
Plan and Usage Style in 2003 and 2004	As planned, Buttiin hooloi well would be used from May to October in 2004. Although the condition of pasture in the northeast part of Erdene was generally poor, the area near Buttiin hooloi was so far so good. (Refer to evaluation of carrying capability by herders. P2-25) However, since there were no useful puddles, all eleven families gathered the area near Buttiin hooloi well.		
Problems and Solutions in Monitoring	<p>The winter camp near Dolood well is congested camp gathered by group members and several non-group families. The number livestock owned by eleven group families is large and 2,988 (equivalent to 5,207 sheep).</p> <p>The pasture near Dolood well is chronically overused due to the year-round usage, but the usage of Buttiin hooloi well reduces the congestion. However, compared with carrying capability, the number still tends to be congested. It could be necessary that they place their ger apart from the well, and burden of the pasture should be reduced by shortening livestock stay hours with improving watering tank and trough in shape and size.</p>		

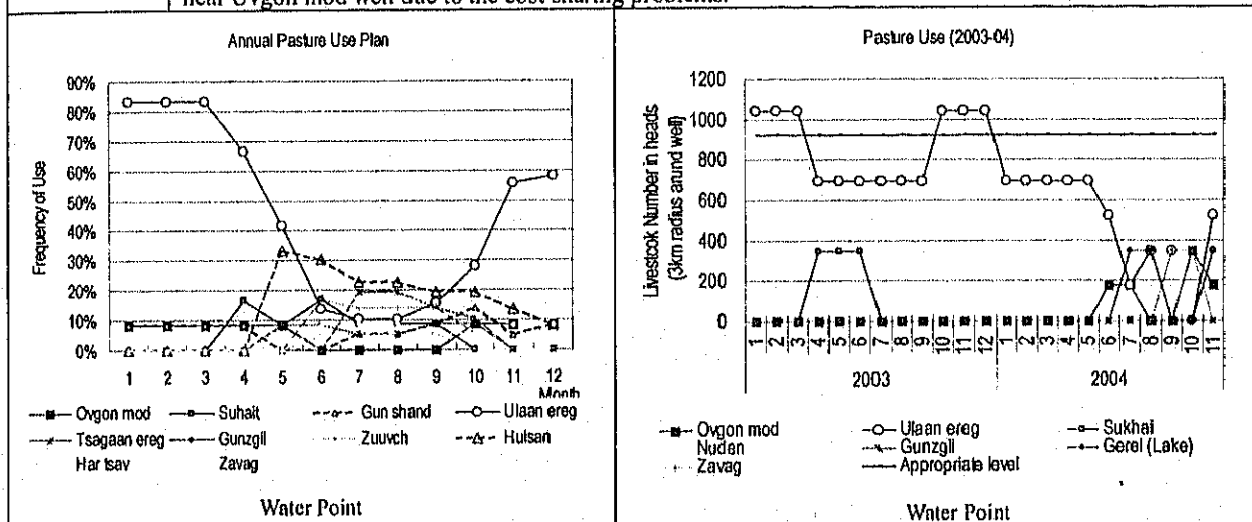


Location	Zuun hur	Soum	Erdene
Outline	This is a well for summer and fall. The Zuun hur well is located in basin and puddles are often formed due to the rainfall. However, since the pasture usage was unstable and not so often, the rehabilitation was requested. The group consisted of five families but three of them quit because they did not want to share the costs. In the future, the remaining two families will use the well. The well was not used in this summer because the condition of the pasture near the well was bad and the herders migrated to farther places.		
Plan and Usage Style in 2003 and 2004	Initially, five families planned to use the pastures near five wells seasonally. The group planned to use Zuun hur well from July to October. However, in fact, two families migrated to the places within 20 km and used seven water sources in 2003 and 2004.		
Problems and Solutions in Monitoring	The number of the livestock owned by two families is 567 (equivalent to 1,127 sheep) in June 2004. The number of the group's livestock is not so many compared with the proper number standard per well in Dornogobi that is 923 sheep (equivalent to sheep) within 3km of the well. But the well for summer and fall would attract other groups and it is necessary to monitor the number of livestock from next year.		

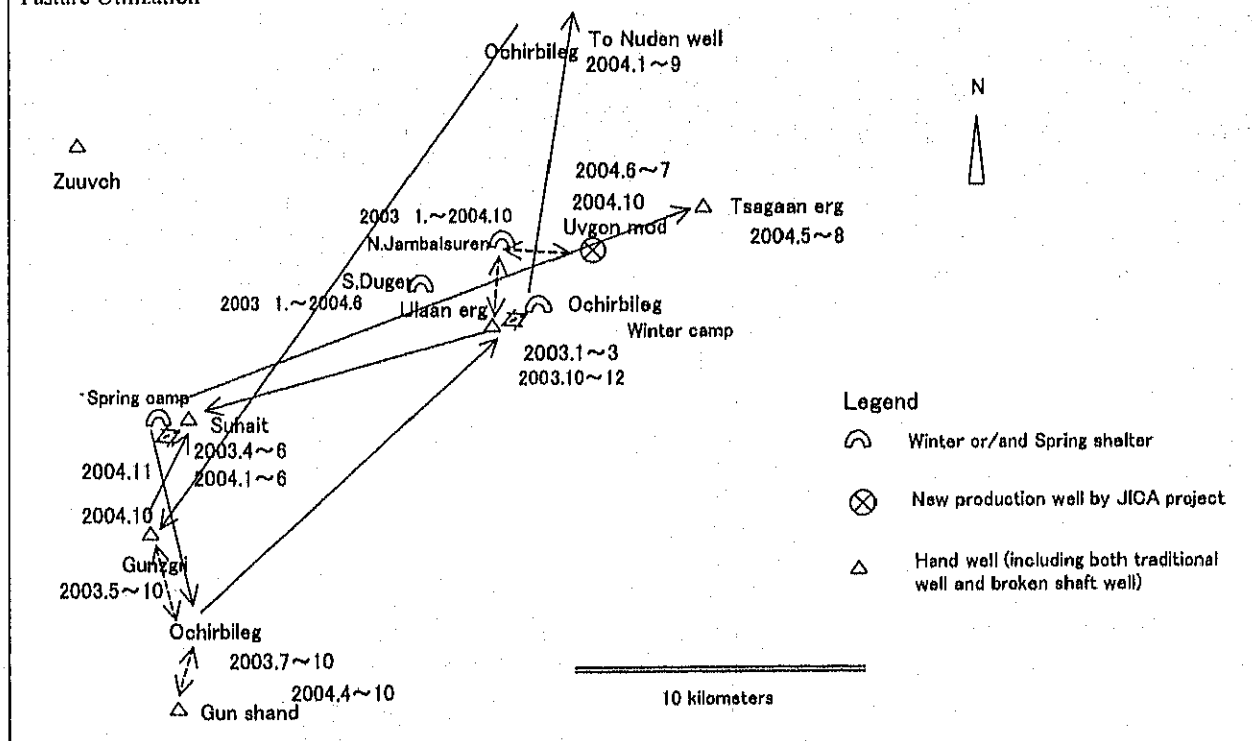


## 2) Ulaanbadrakh Soum

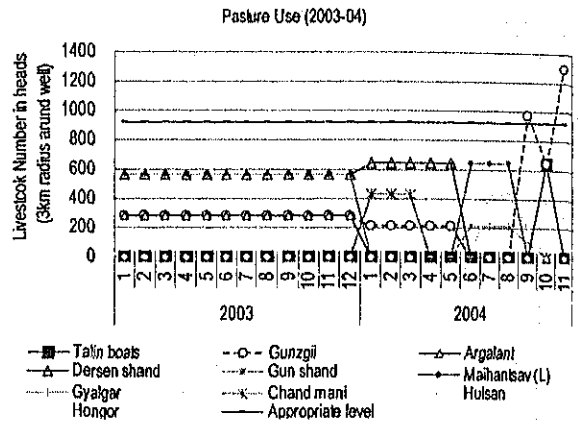
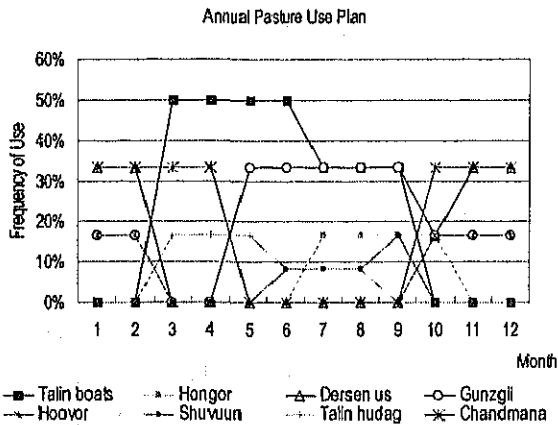
Location	Uvgon mod	Soum	Ulaanbadrakh
Outline	The Uvgon mod well is located in 4km northeast from the Ulaan ereg well that is used as winter camp. The group proposed to develop low usage pasture. However, it cannot be the main well and its pasture usage does not have any clear seasonal difference. Depending on the situation of other water sources, it is expected to flexibly use as supplemental pasture. Although six families initially planned to use the Uvgon mod well, three of them dropped out due to the cost sharing for well maintenance and management. Another family is wondering to join the group.		
Plan and Usage Style in 2003 and 2004	Three water sources in 2003 and seven water sources in 2004 were used. (Ten water sources were initially planned.) The Uvgon mod well was built in June 2004 and used in June and July and in October and November. Even though the pasture in the surrounding area was not bad, the group moved for puddles from July to September.		
Problems and Solutions in Monitoring	Because the number of the livestock owned by three families was 602 heads (Equivalent to 1,046 sheep) in June 2004 is not so many and they move to several summer camps (more than 10km), it is regarded that there are few problems of the pasture usage. Also, it is considered that few families will use the pasture near Uvgon mod well due to the cost sharing problems.		



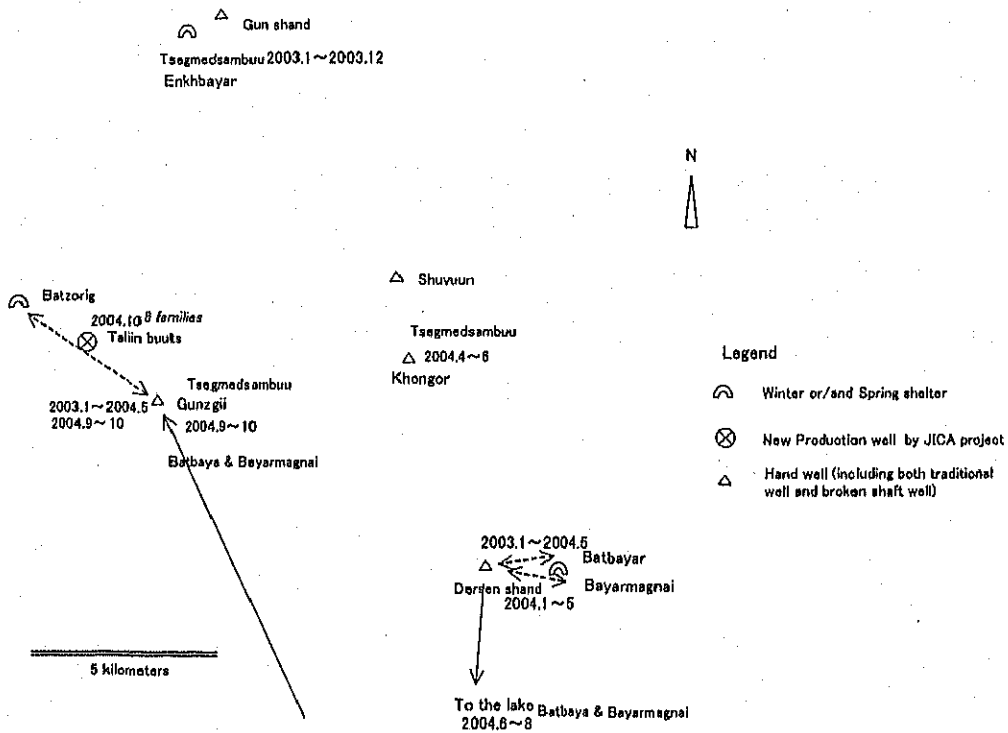
### Pasture Utilization



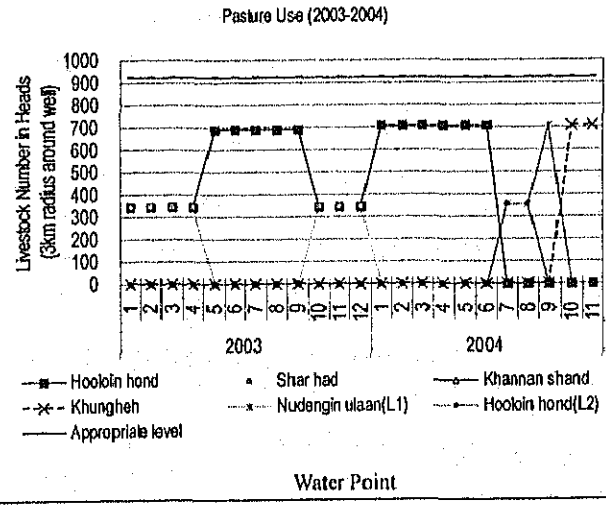
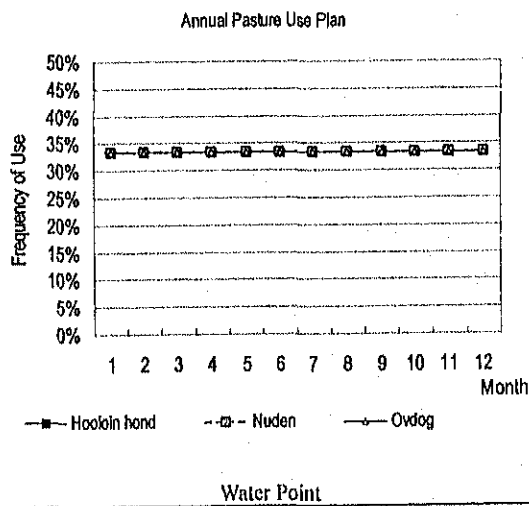
Location	Taliin buuts	Soum	Ujaanbadrakh
Outline	The pasture near Taliin buut well does not have any clear seasonal usage pattern and is categorized as non-seasonal supplemental pasture. Herders decide how to use the pasture every year based on the situation of the pasture near other water sources that are used together. The group currently consists of six families after two families quit and two new families joined. It is assumed that the families that quit the group would not want to continuously share the costs.		
Plan and Usage Style in 2003 and 2004	In the pasture usage plan made by herders, the group planned to use the pasture from spring to fall. However, because of the drought-like, the herders judged the growth of grass near Taliin buuts was not good. In this summer, two families moved to the farther place (more than 20 to 30 km) to look for better pasture. If puddles appear and the condition of pasture is good, they move to the farther place. On the other hand, the herders do not want pay costs to use the production well even if it is closer.		
Problems and Solutions in Monitoring	The herders tend to use various water sources together (eight sources in 2004) to response to the condition of the pasture. The number of the group's livestock was 700 to 800 in June 2004 (equivalent to 1,300 to 1,500 sheep). There is no problem if they use various sources simultaneously.		



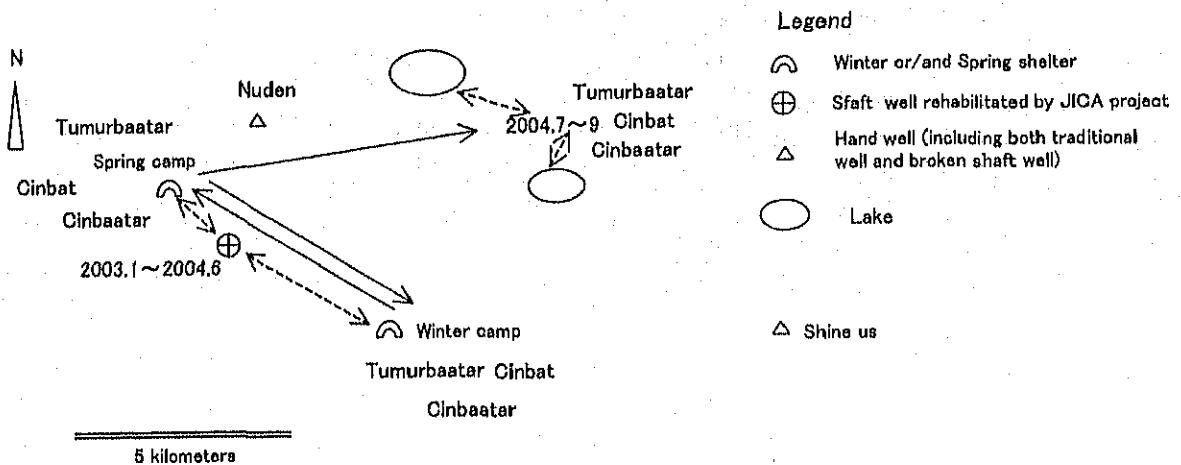
Pasture Utilization



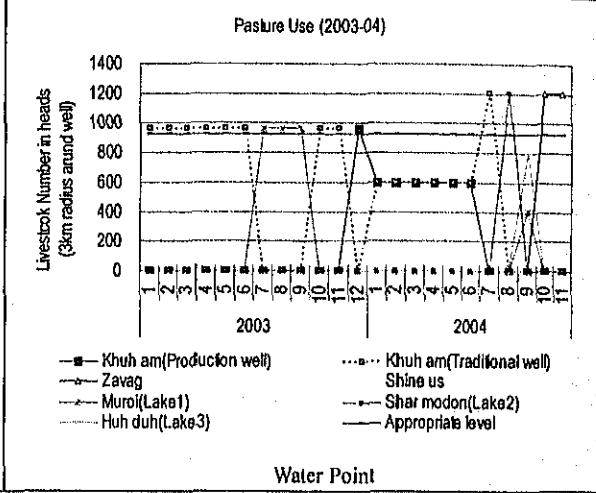
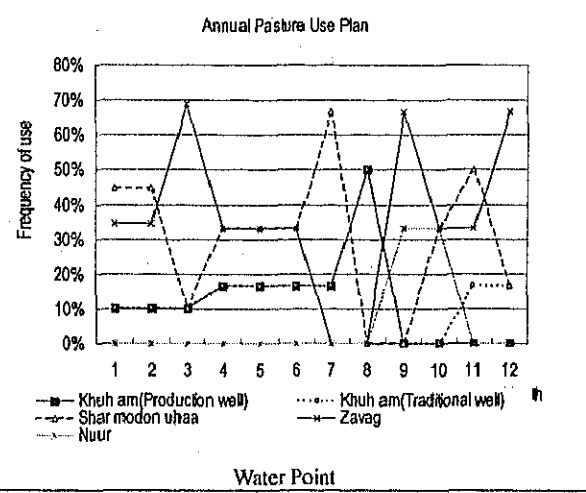
Location	Hooloin hond	Soum	Ulaanbadrakh
Outline	The pasture near Hooloin hond well is mainly used in winter and spring. But, because the number of the families is three with the small number of their livestock, they tend to use it yearly. Before the rehabilitation of the well, the shaft well was broken and used as hand-drawn well. Therefore, it took longer time (two to three hours) to water because of the low water level. It was concluded that the rehabilitation of the well could shorten the watering time (thirty to forty minutes) and reduce the livestock congestion near the well.		
Plan and Usage Style in 2003 and 2004	In the usage plan after the rehabilitation, herders planned to use three water sources. In addition to Hooloin hond well, one water source in 2003 and two water sources in 2004 were used together. The pasture tended to be drought this year, but the area near the Hooloin hond well had rain and good pasture. Moreover, since puddles formed from July to September, herders stooped to use the area near Hooloin hond well.		
Problems and Solutions in Monitoring	Since three families basically use the pasture with the small number of their livestock (464 heads (equivalent to 711 sheep) in June 2004), it is considered that the usage was proper. But it is recommended that herders move in each season if water sources like puddles in this year are secured.		



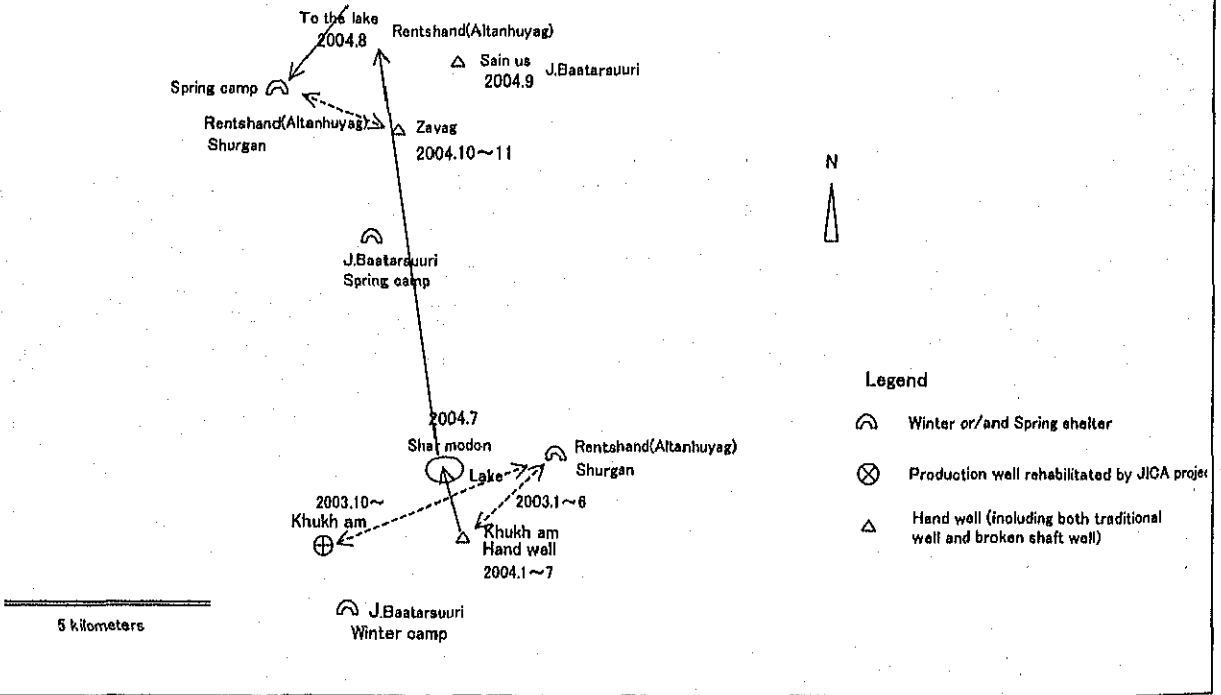
Pasture Utilization



Location	Khukh Am	Soum	Ulaanbadrakh
Outline	The well is for winter and spring camp and used year-round, in general. The group has three families. After the rehabilitation, the usage of the production well that is 6km away from the winter camp started. Watering became easier but the herders said that it is difficult for women and children to water without an operator. A traditional well that has same name in 3km away from the winter camp was also used. The number of the group's livestock was 675 in June 2004 (equivalent to 1,202 sheep).		
Plan and Usage Style in 2003 and 2004	In the plan, the group planned to use two wells in Khukh am and four water sources in Shar modon uhaa and Zavag and also to move if the puddles appear from summer to fall. In 2003 and 2004, the group moved. From the early December of 2003 to June 2004, the group had used the production well. Since the pasture near two wells in Khukh am has low carrying capability due to the drought in summer, the group uses spring camp in winter (with Zavag well). The group does not use the production well for a while.		
Problems and Solutions in Monitoring	Since the group is small and moves from summer to fall (more than 10 km) with the small number of livestock, it is considered that the pasture usage does not have problems. But it is necessary to pay attention for the non-member herders.		

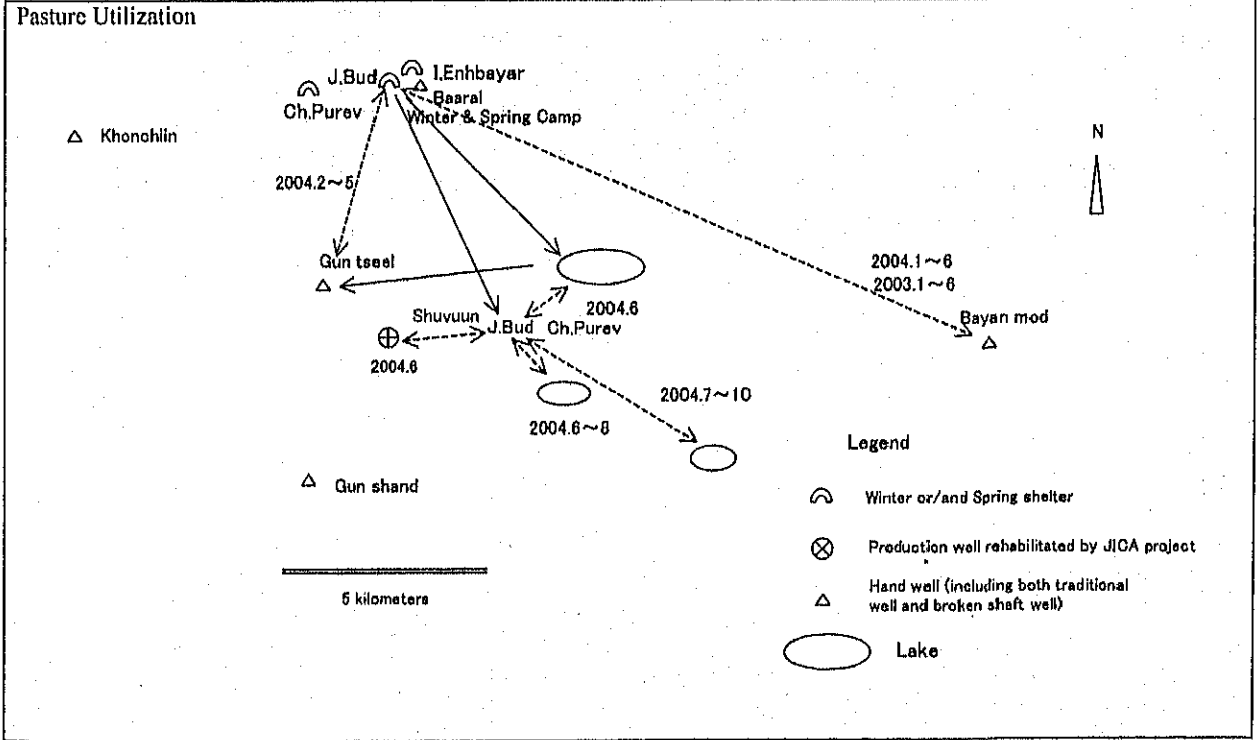
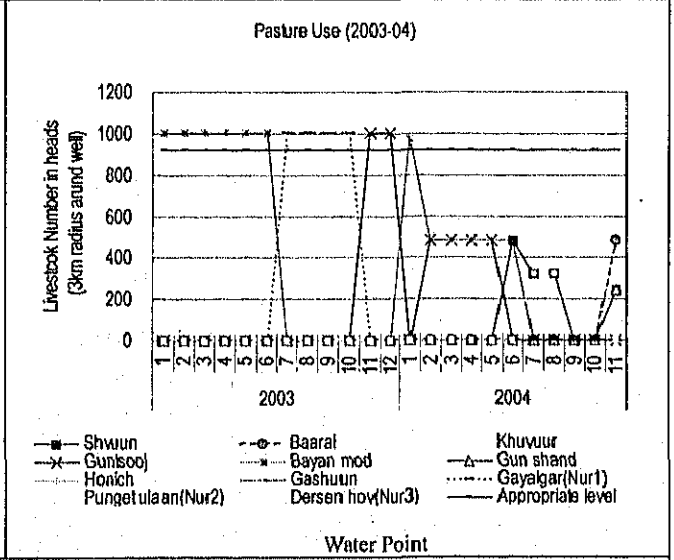
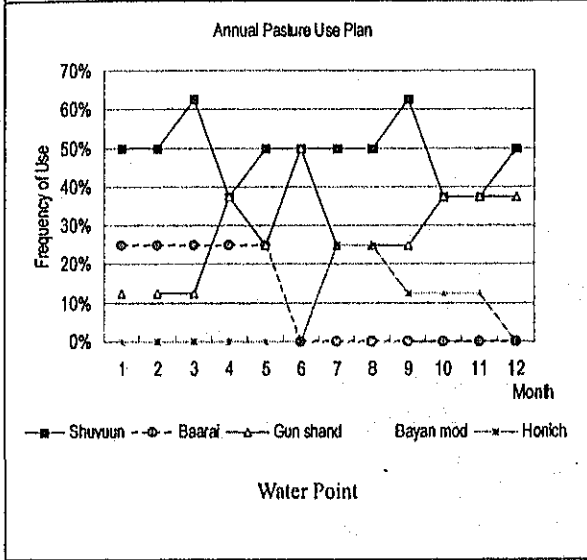


Pasture Utilization

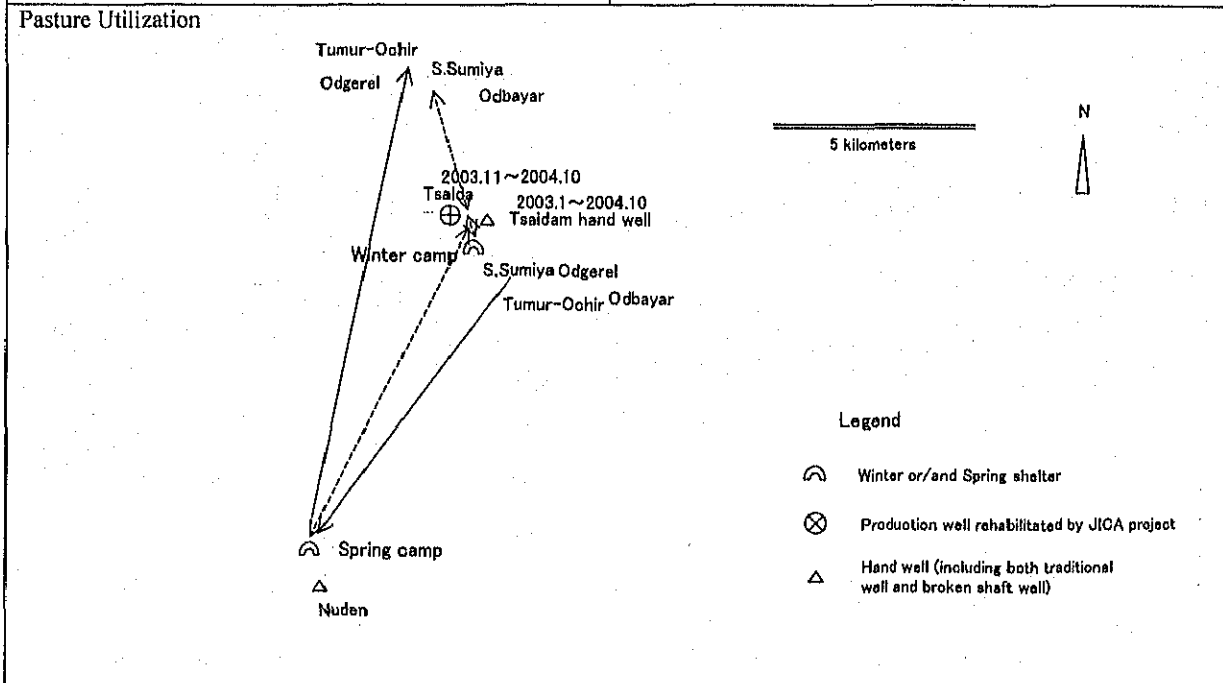
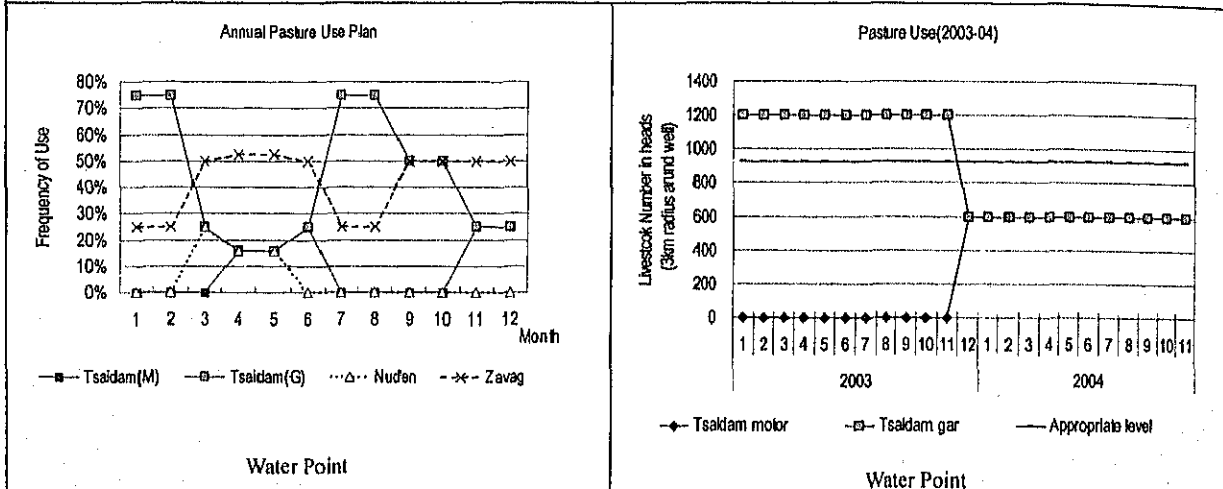




Location	Shvuun	Soum	Ulaanbadrakh
Outline	Because Baarai well near winter and spring camp is short of drained water and has to be used together with Bayan mod well that is 15km away, the rehabilitation of Shvuun well was proposed. Although four families were supposed to use the well, two of them did not agree the cost sharing and left. New family joined and three families currently use the well. Another family is now considering joining the group. The number of the livestock owned by the group is 454 heads (Equivalent to 974 sheep) in June 2004 and relatively small. In this year, the condition of the pasture was good due to the rain in this area.		
Plan and Usage Style in 2003 and 2004	The group basically considers improving to water in winter and spring camps. Since the camp is about 7km away from the Shvuun well, it is expected to decrease the job for watering. Although the Shvuun well was examined with year-round usage in pasture usage plan, the several puddles by the rain from June to October 2004 were used as water sources. In the future, Bayan mod will not be used in winter and spring, and Baarai and Shvuun wells will be used together.		
Problems and Solutions in Monitoring	Because the number of livestock owned by the group is small, it is possible to use Shvuun well expect for winter and spring. It is necessary to consider the neighboring herders and the relation with them even though currently the group does not have any problems.		

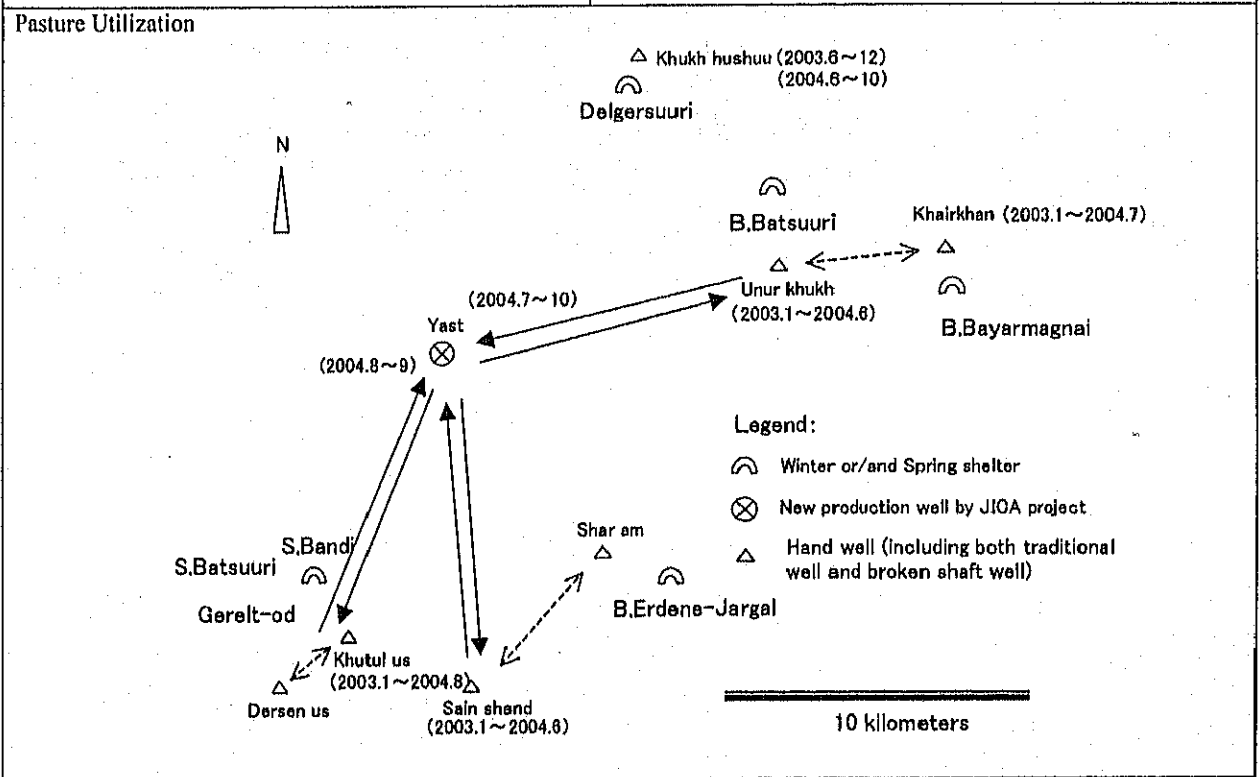
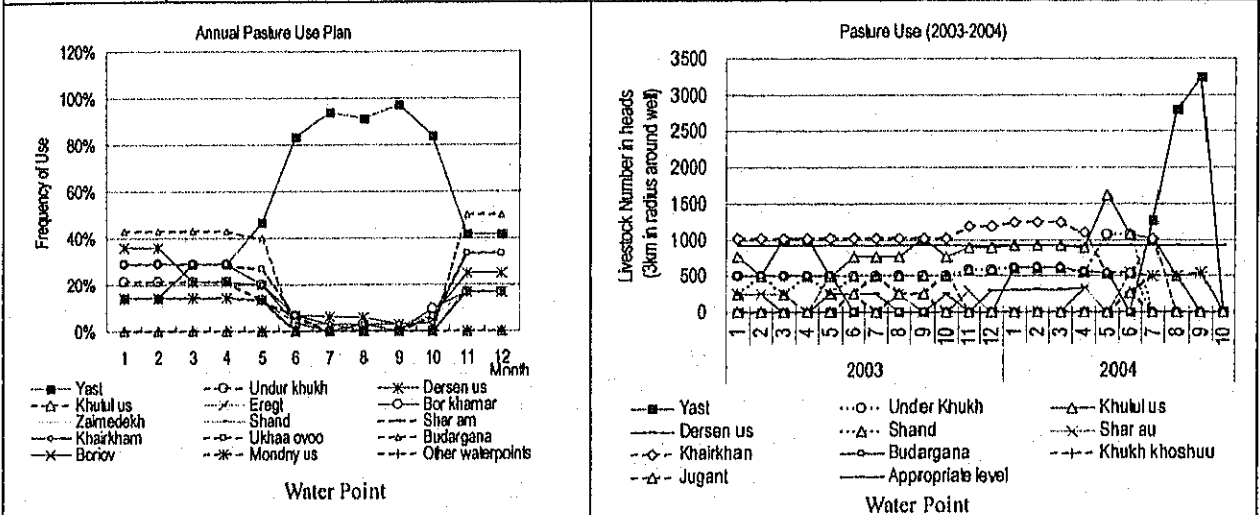


Location	Tsaidam	Soum	Ulaanbadrakh
Outline	This is the mail well for winter and spring camp. Before the rehabilitation in November 2003, a traditional well that has same name and is 2km away from the winter camp was used. However, due to the shortage of drained water, it took time to water. Also, the water was sometimes dried up and it took several hours to recover the water level. The rehabilitation of the production well (within 1km from winter camp) reduces watering work and livestock congestion near the well so that the group can use more time for pasturage.		
Plan and Usage Style in 2003 and 2004	The usage of two water sources in addition to two wells in Tsaidam was planned. However, like 2003, moving camps for each season, they used pasture near the 2 wells in Tsaidam year-round. As stated above, although the pasturage technology improved due to the progress of watering capability, the pasture area is basically same as that of last year.		
Problems and Solutions in Monitoring	The group currently consists of three families and the number of livestock is just above the standard of the proper size. (December 2002: 600 heads that is equivalent to 1,200 sheep) But some herders come to the area from summer to fall, and the Soum needs to know the condition of the carrying capacity.		

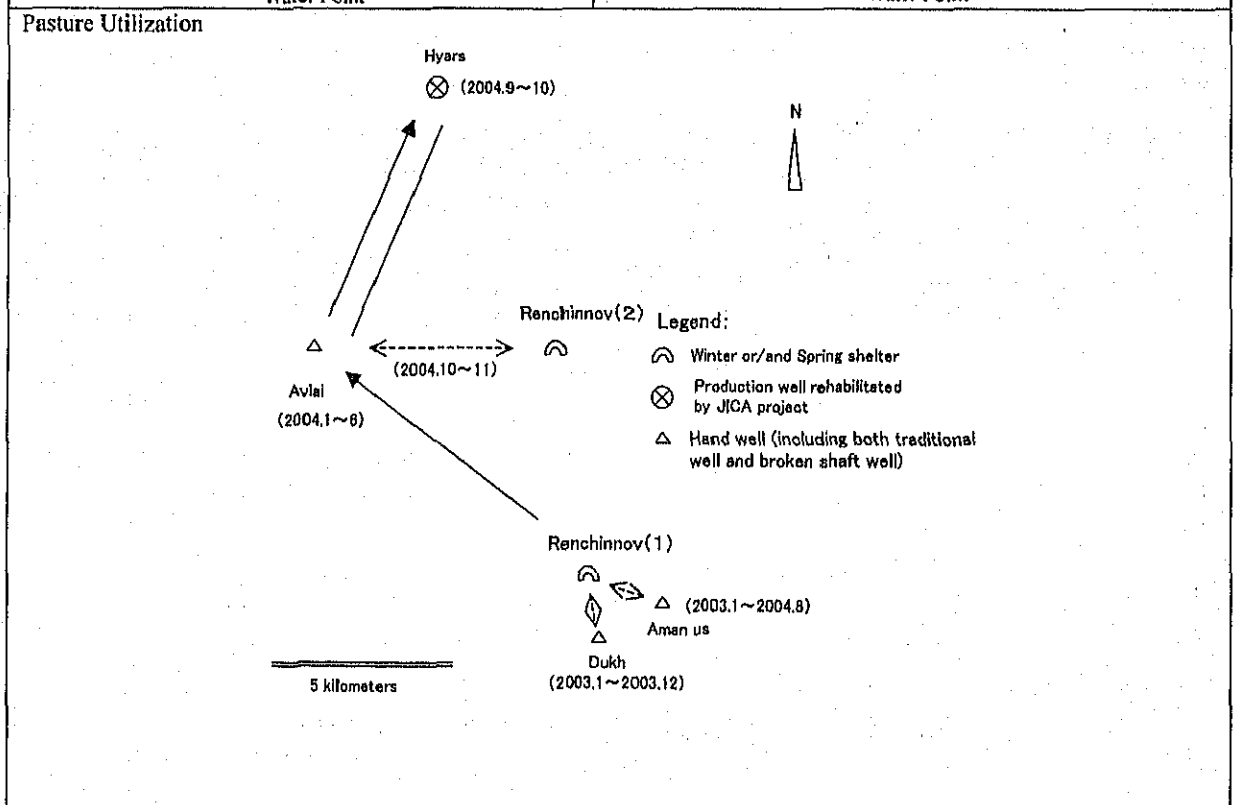
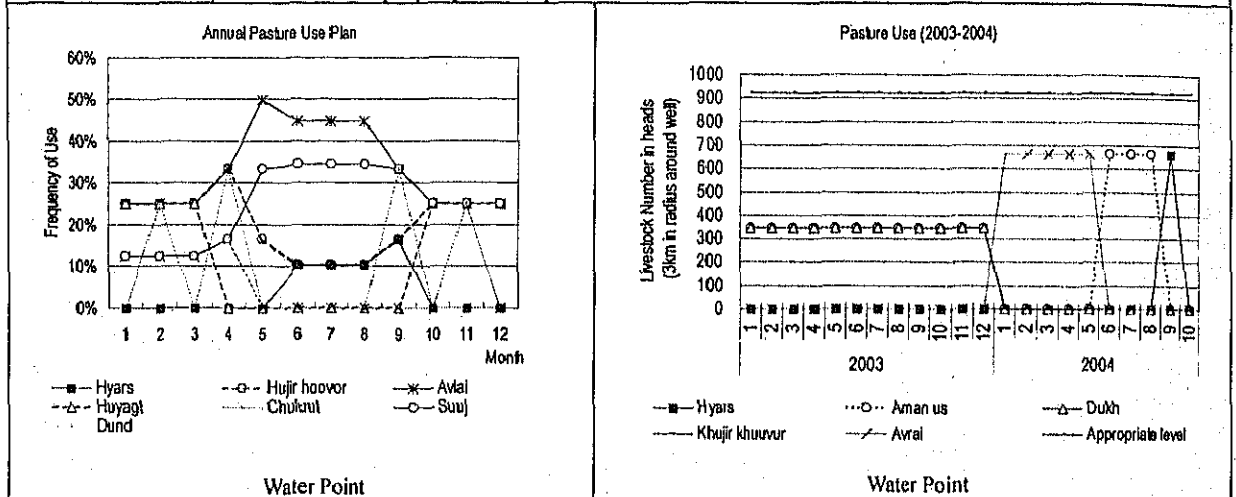


### 3) Khuvsugul Soum

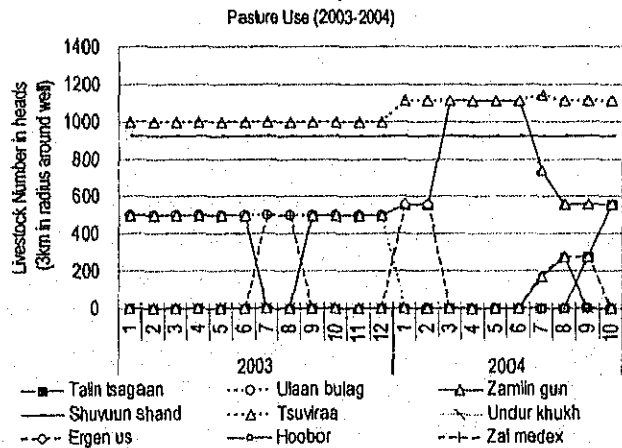
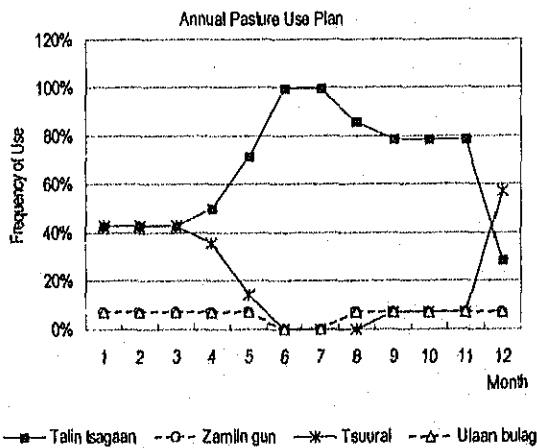
Location	Yast	Soum	Khuvsugul
Outline	Use for summer and fall. The center pasture surrounded by winter camps was not used or low usage because the production well in the area was collapsed. Initially, twenty four families hoped to construct a new well. However, only seven of them agreed to share the costs and use the well. At present, another family joined and there are eight families in the group.		
Plan and Usage Style in 2003 and 2004	The group has concrete plan to use the pasture near Yast well from summer to fall. As the plan shows, to combine with traditional well in winter and spring camp, the group used pastures for each season.		
Problems and Solutions in Monitoring	The number of the livestock owned by eight families is 2,276 (equivalent to 4,609 sheep). Although the utilization hours are limited, the number of the livestock is relatively many to gather for a well. It is recommended that the group build their ger in the removed area from the well. Also, to enhance the watering ability, the group should try to reduce the wasted time (ex. The time to call upon an operator) for watering and decrease the time for livestock to stay near the well.		



Location	Hyars	Soum	Khuvsgul
Outline	Hyars is located in plain area and used in summer and fall. There were no water sources within 8 km of the area and the area was low or unused pasture. Although five families initially wanted to use, the group could not be formed because they did not share the costs for the usage. At present, a herder tries to use the area even though he is not an original member.		
Plan and Usage Style in 2003 and 2004	In the initial plan, five families planned to use seven water sources and use Hyars well from May to August. In 2004, only one family used the well in September and October. It used three water sources in the year.		
Problems and Solutions in Monitoring	The number of livestock owned by the herder family that used Hyars well is 294 (equivalent to 661 sheep) in December 2003. The condition of the pasture in 2004 was not so good. According to the carrying capability data of the pasture near Kyars well provided by the herder, the carrying capability in the area within 3km is 499 heads (Refer to P.2-25) Therefore, it was considered that the number of the livestock was proper. However, this herder built the ger within 30 km of the well this year. It is assumed to reduce the work for watering. But, if the number of livestock would increase in accordance with the increased number of families, the camp should be located far from (ex. one to two km) the well in order to properly use the pasture.		



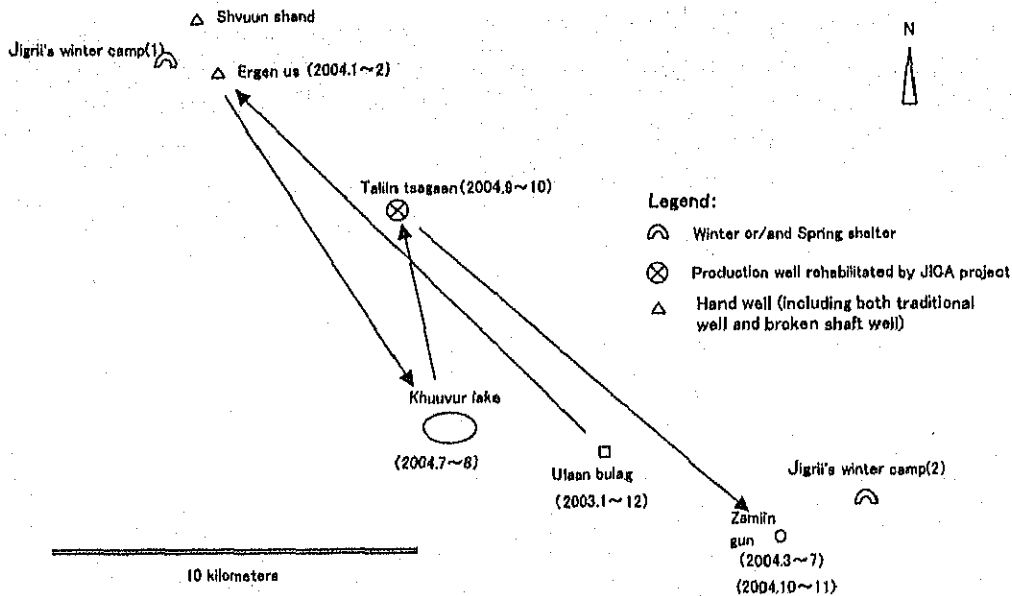
Location	Taliin Tsagaan	Soum	Khuvsugul
Outline	Use for summer and fall. It is 8 km away from the nearest well and the rehabilitation of Taliin tsagaan well expanded the watering area. Although the initial seven families wanted to use the well, four of them left due to the cost sharing. After another family joined the group, there are currently four families in the group.		
Plan and Usage Style in 2003 and 2004	The group originally planned to use Taliin tsagaan in summer. After the rehabilitation of June 2004, the group used puddles in July and August and one family in the group used the well in September and October. Due to the drought, evacuated three herder families from Altanshiree Soum watered for a month by paying with a sheep and two goats.		
Problems and Solutions in Monitoring	<ul style="list-style-type: none"> <li>The number of the livestock owned by four families is 1,122 (Equivalent to 2,229 sheep) in December 2003. If the puddles are formed due to the rainfall in summer, the pasture near the puddles are used. If there are puddles, the four families in the group do not want to share the cost to use Taliin tsagaan well. The group is thinking the production well as emergent well. However, if there are no puddles at all in the area and Taliin tsagaan well does not exist, the area would not be used even if there are pasture. The herders understood the importance of risk management like this situation. Therefore, the herders proposed to rehabilitate the well. But, it is not so sure whether they pay maintenance fee for the risk that might be happened once several years. Due to the cost sharing, the group also might be dissolved.</li> </ul>		



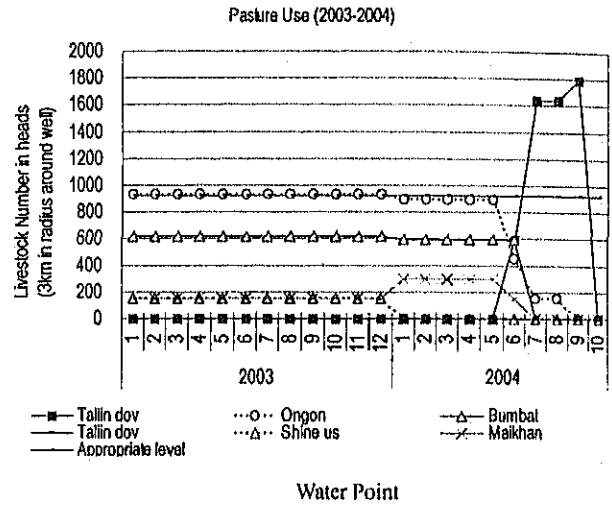
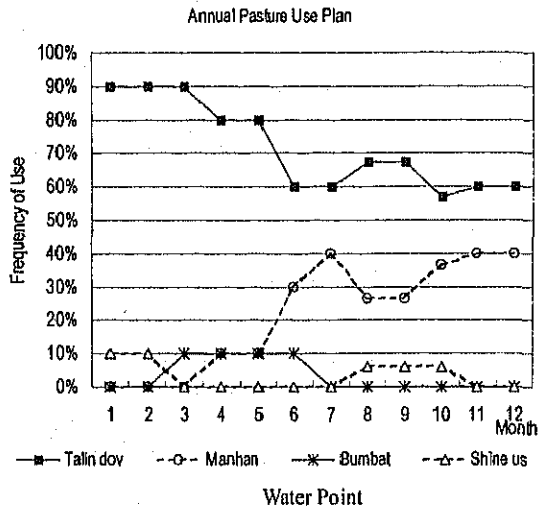
Water Point

Water Point

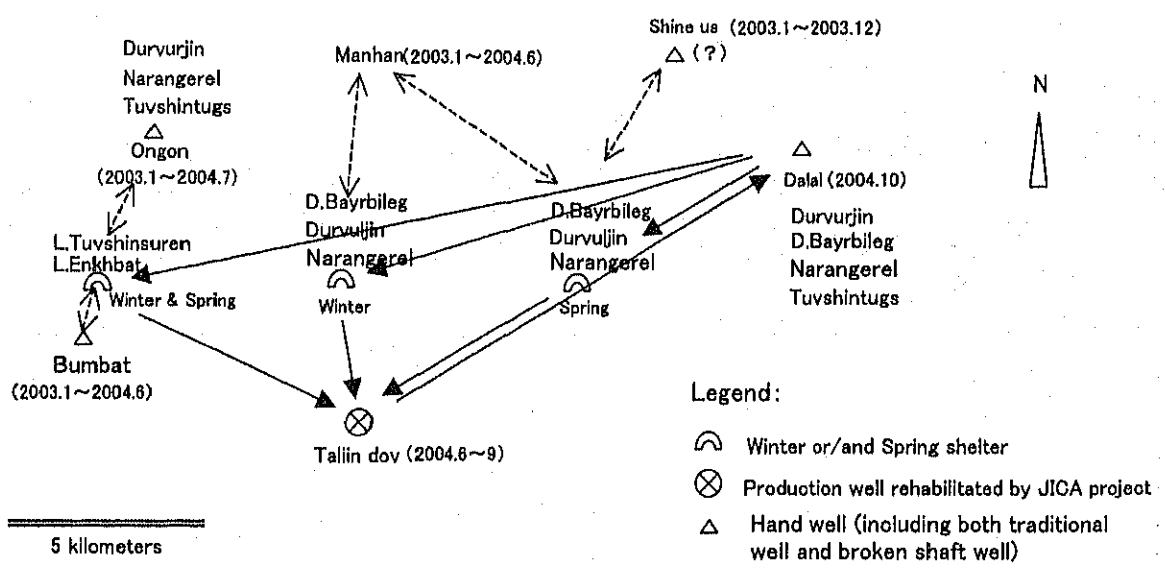
Pasture Utilization



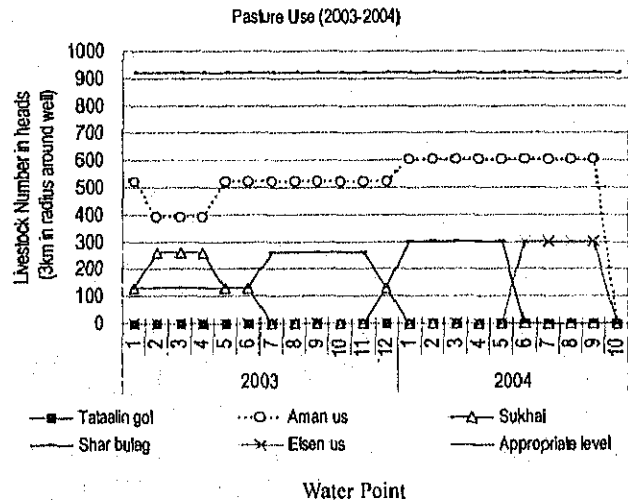
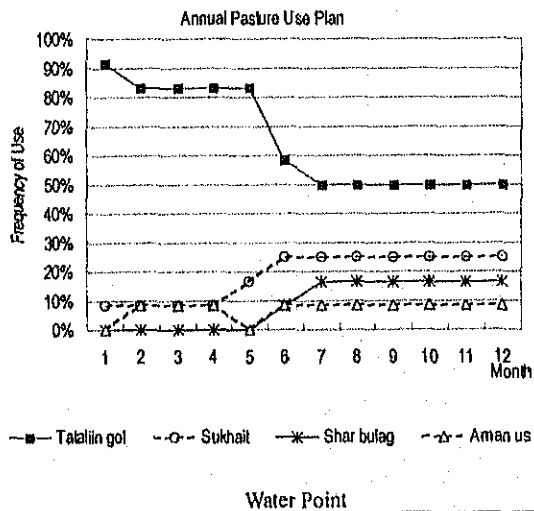
Location	Taliin Dov	Soum	Khuvsgul
Outline	Taliin dov is considered as a non-seasonal well that is flexibly used with other wells seasonally. The group consists of six families. But, since the group had shortage of male herders, the rehabilitation of the well contributed to reduce the watering work.		
Plan and Usage Style in 2003 and 2004	In the initial plan, the group planned to use the well mainly from January to May. However, it was used from June to the end of September in 2004 after the rehabilitation. The group migrated to more than 10 km from October. It currently returned to winter camp and uses the wells in Ongon and Bumbat. The group will start to use Taliin dov well from next spring again.		
Problems and Solutions in Monitoring	The number of livestock owned by six families is 904 (equivalent to 1,792 sheep) as of December 2003. But the group considers that changing main water sources one after the other are the proper usage of the pastures.		



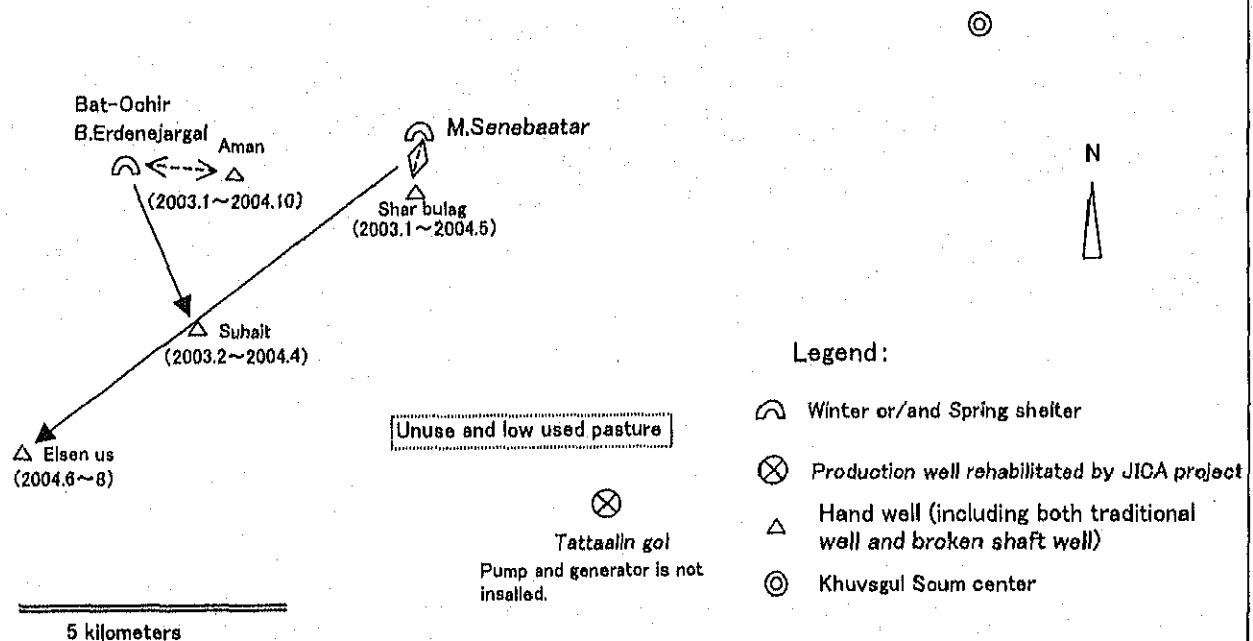
Pasture Utilization



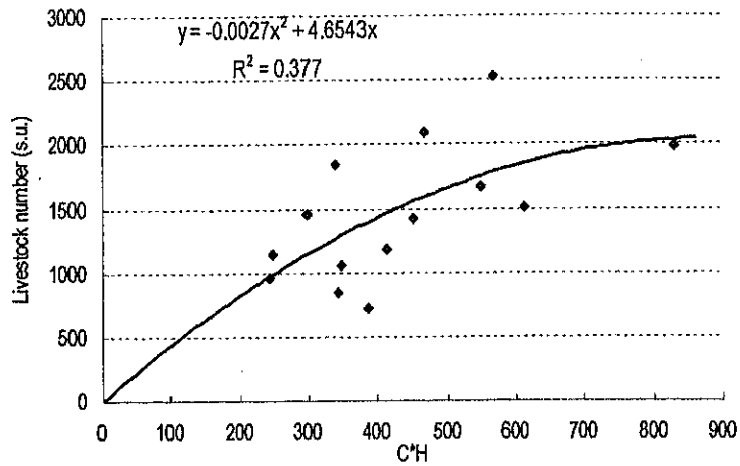
Location	Tattaalin Gol	Soum	Khuvsgul
Outline	The group started with six families. But, since three families did not want to share the costs and left the group, there are currently three families in the group. However, because the current three families in the group cannot afford to share the costs, the Soum postponed installing the pump. The pasture near Tattaalin gol does not have effective water sources and is low or no usage. It is expected to non-seasonally and flexibly use the pasture.		
Plan and Usage Style in 2003 and 2004	In this year's plan, the group would yearly use Tattaalin gol combining to use with four water sources. In 2003 and 2004, the pastures near these four water sources were used.		
Problems and Solutions in Monitoring	The number of livestock owned by three families was 394 (equivalent to 785 sheep) as of December 2002 and 465 (907 sheep) as of December 2003. Despite the small number of livestock owned by the group, the pasture development would be encouraged to reduce the risk of livestock herding, if it is possible to water in the low or unused pasture. It is necessary to find the condition of the well utilization by understanding the situation of the livestock number in the regional level.		



Pasture Utilization



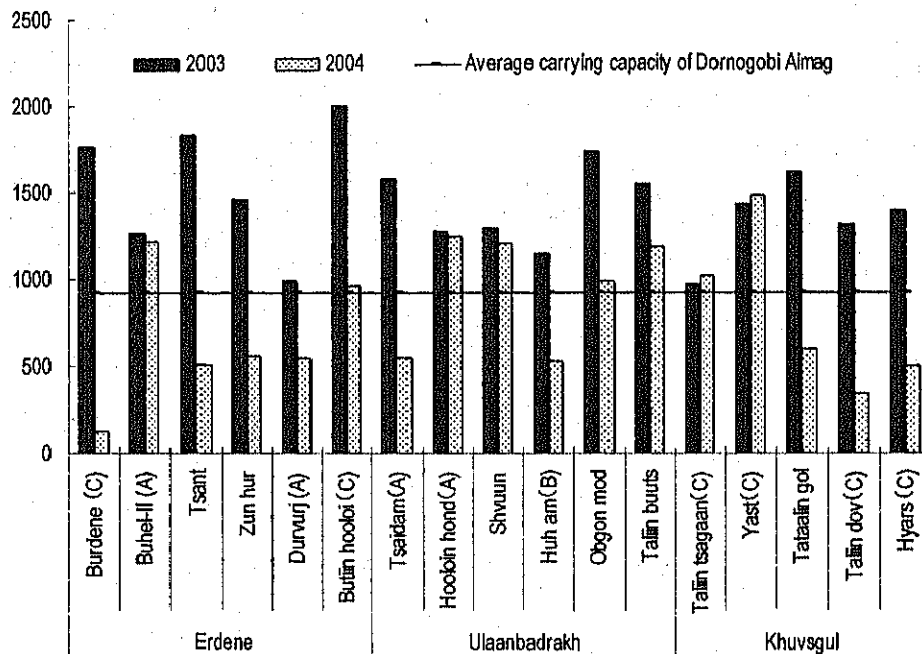
## (2) Relation between C\*H and Carrying Capacity



Relation between C\*H and Carrying Capacity

Note: C: Coverage (%) , H: Hight(cm)  
Livestock number (s.u.) is shown within 3km in radius

## (3) Comparison of Carrying Capacity in 2003 and 2004



Comparison of Carrying Capacity in 2003 and 2004

Carrying capacity was measured: (A) after grazing in both 2003 and 2004, (B) after grazing in 2003 and before grazing in 2004, (C) before grazing in 2003 and after grazing in 2004. \*With no marks: Carrying capacity was measured before grazing in both 2003 and 2004. Livestock number (s.u.) is shown within 3 km in radius from the well