

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
MINISTRY OF FOOD AND AGRICULTURE, MONGOLIA (MOFA)

THE MASTER PLAN STUDY
ON INTEGRATED AGRICULTURAL
AND RURAL DEVELOPMENT
IN CENTRAL REGION
IN
THE MONGOLIA

FINAL REPORT
(SUPPLEMENTARY MATERIALS)

MARCH 1996

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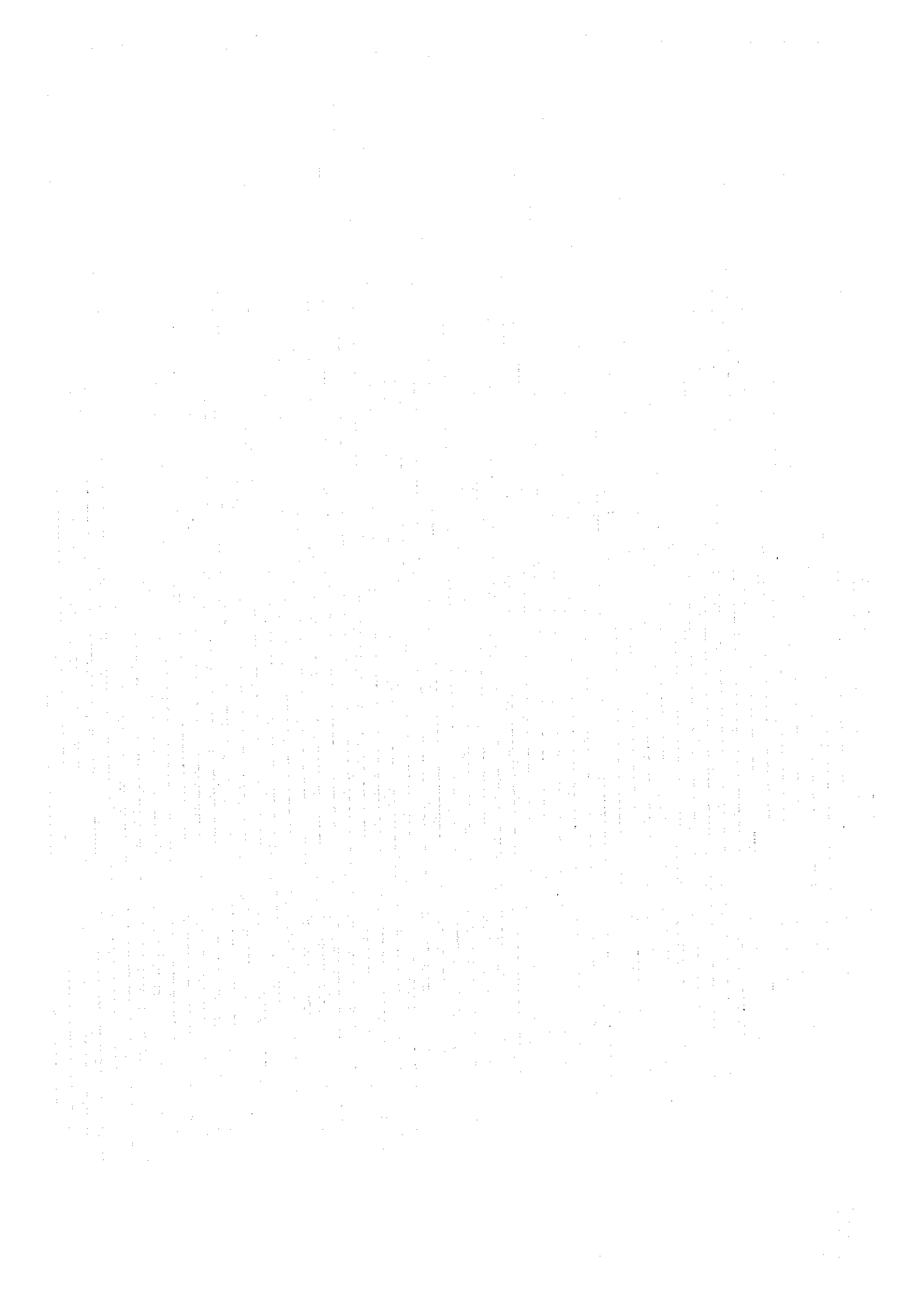


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JAPAN AGRICULTURAL LAND DEVELOPMENT AGENCY (JALDA)



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CHAPTER 1 INTRODUCTION

CHAPTER 2 BACKGROUND

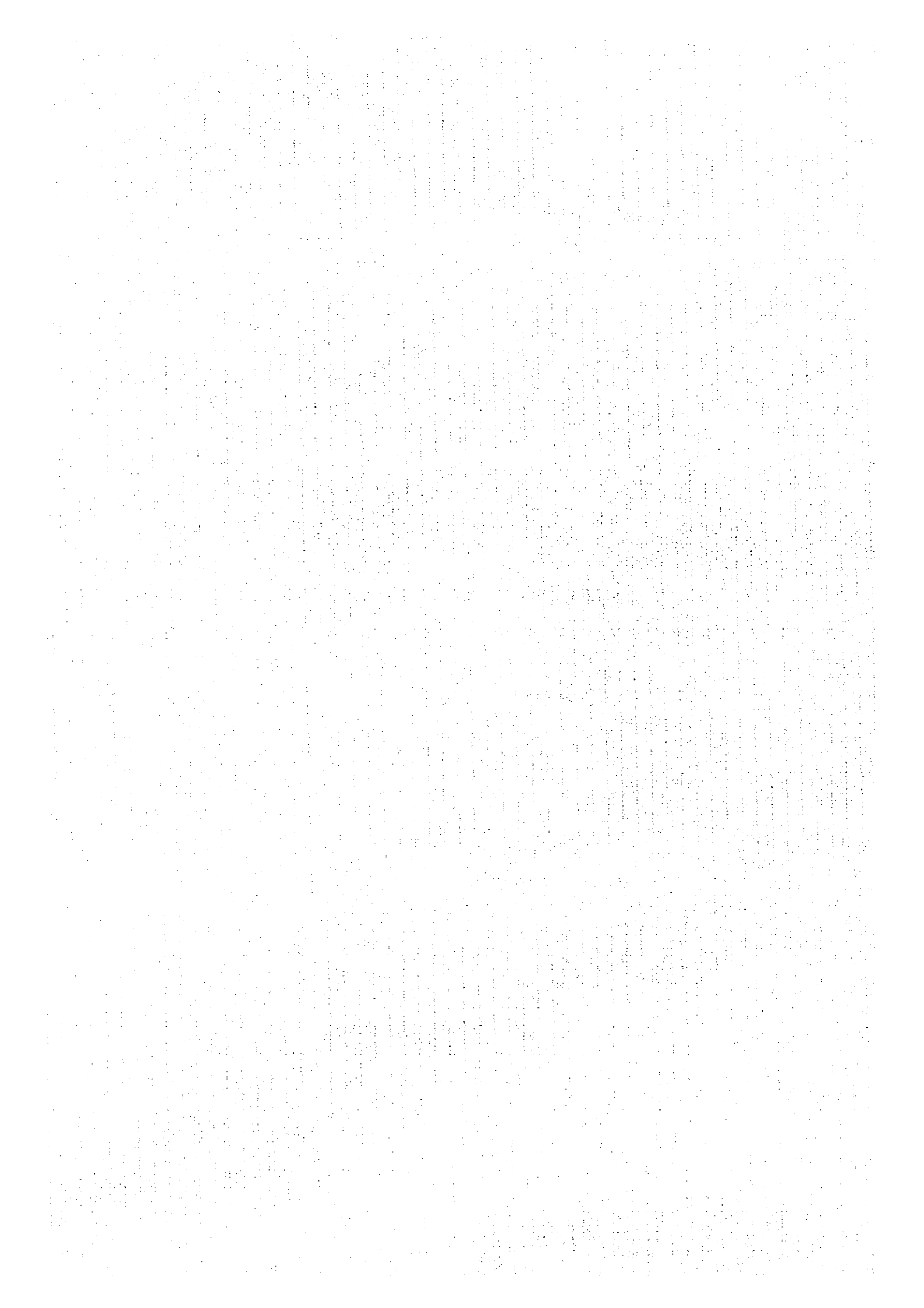


Table 2.2.1 Movement of Exchange Rate

Year	Month	ExchangeRate	Remarks
1986	12	3.18	
1987	12	2.89	
1988	12	2.89	
1989	12	3.00	
1990	12	4.60	chang reat to us\$=5.63Tg on July
1991	12	25.86	chang reat to us\$=40.0Tg on June
1992	12	40.00	
1993	1	40.00	chang reat to us\$=150Tg on January
	1	150.00	(Public Announcement
	5	150.00	(the above mentioned)
	5	394.00	Free macket trade from May 28th
	6	398.00	The folloeing is in free macket
	7	400.00	and published by Mongolian Bank
	8	392.00	
	9	390.00	
	10	389.80	
	11	395.00	
	12	395.00	
	1994	1	400.00
2		403.00	
3		408.80	
4		409.32	
5		410.48	
6		411.58	
7		413.67	
8		415.90	
9		415.80	
10		410.43	
11		411.96	
12		414.09	
1995	2	424.00	
	3	432.75	
	4	446.45	
	5	448.44	

Source: Mongolian Bank

Table 2.2.2 Movement of GDP and Exchange Rate

	1989	1990	1991	1992	1993
GDP(mli.Tg, Estimate by SOOM*)	9,544	8,295	17,924	45,699	162,192
GDP per capita (us\$)	522	N.A.	N.A.	310	N.A.
GDP Growth rate(% , Estimate by IMF)	4.2	-2.0	-9.9	-7.6	-1.3
details					
Industry	11.4	-0.3	-12.7	-14.8	N.A.
Agriculture	13.8	-2.0	-5.1	-6.2	N.A.
Constraction	9.6	-25.1	-16.5	-10.4	N.A.
Transport	-1.5	-9.1	-43.3	-34.8	N.A.
Communication	8.3	6.3	-23.5	-14.5	N.A.
Exchange Rate(per one US dollar)	3	4.67	25.86	40.00	150.00

* SOOM; Statistic Office of Mongolia

Table 2.2.3 Produced National Income, by economical sectors /at 1986 prices,

	Industry	Agriculture	Construction	Transportation	Communication	Trade & Procurement	Other	Total
1989	2,902.3	1,556.3	617.2	774.3	129.5	2,327.4	154.9	8,461.9
1990	2,892.3	1,525.6	462.3	703.7	137.6	2,280.5	141.4	8,143.4
1991	2,514.7	1,448.0	383.4	397.1	105.3	1,987.6	152.8	6,988.9
1992	2,226.4	1,390.5	204.8	323.9	82.0	1,507.0	175.8	5,910.4
1993	1,990.0	1,292.0	164.0	278.0	90.0	1,515.0	180.0	5,509.0

Source: SOOM(Statistic Office Of Mongolia)

Table 2.2.4 Produced National Income, by economical sectors /at current prices,

	Industry	Agriculture	Construction	Transportation	Communication	Trade & Procurement	Other	Total
1989	2,919.8	1,722.9	617.2	774.3	129.5	2,327.4	154.9	8,646.0
1990	2,915.1	1,686.9	462.3	703.7	137.6	2,280.5	141.4	8,327.5
1991	4,924.9	2,973.7	708.7	758.2	199.0	5,349.1	226.0	15,139.6
1992	13,857.7	13,777.2	920.9	1,475.6	396.6	7,615.1	1,092.1	39,135.2
1993	59,520.0	54,527.0	2,060.0	3,450.0	1,130.0	25,500.0	4,320.0	150,507.0

Source: SOOM

Table 2.2.5 Price Inflation and Salary Growth, 1989-1993

	1989	1990	1991	1992	1993
1 Consumer price index	100	100	154	650	1839
2 Trend of PNI* per capita	100	93	171	432	1715
3 Trend of Salary per capita	100	102	167	385	1297
4 (Culcation data)					
5 (a) PNI* (mli.Tg)	8646	8328	15140	39135	150507
6 (b) Employers(thous.Pers.)	548	569	561	574	556
7 (c) PNI per capita(a/b)	15.8	14.6	27.0	68.2	270.8
8 (thous.Tg)					
9 Anunual salary(thous.TG) of					
10 Administrator in Company	6.2	6.3	10.4	24.0	80.6
11 (Reference data)					
12 Gross domestic product	100	97	87	91	96
13 GDP per capita	100	95	84	39	94
14 GNP per capita	100	95	84	77	75

Notes: * PNI; Produced National Income*

: The consumer price index in the table and
 Rows 6,7 and 12 are data in statistical yearbook of SOOM.
 Row 10 is Suervey data in Tob Aimag by The Study Team.
 Rows 13 and 14 are estimates prepared by the IMF.

Table 2.2.6 Price Variation of Agricultural Products by Region

	Average of Mongolia	Bulgan	Ovorhan- gai	Selenge	Tov	Ulaan- baatar	Darhan	Orhon
(Livestock Products)	%	%	%	%	%	%	%	%
Horse	100.0	89.3	89.3	98.2	164.3	125.0	125.0	...
Cattle	100.0	76.9	69.9	146.9	144.1	125.9	167.8	74.8
Sheep	100.0	71.0	71.0	125.8	134.2	116.1	161.3	70.3
Goat	100.0	80.4	80.4	93.8	138.4	142.9	187.5	85.7
Eggs	100.0	113.2	132.1	94.3	84.9	103.8	94.3	94.3
Milk	100.0	64.9	94.6	87.8	110.8	121.6	108.1	67.6
Batter	100.0	107.6	97.8	0.0	110.2	146.8	107.6	68.5
Sheep wool(big hair)	100.0	92.5	92.5	99.4	101.7	144.5	86.7	92.5
(short hair)	100.0	76.9	115.4	115.4	92.3	...	61.5	...
Cashmere	100.0	73.3	96.5	78.2	84.5	152.8	72.4	115.8
(Farm Products)								
Wheat	100.0	80.5	107.3	85.4	109.8	...	97.6	90.2
Potatoes	100.0	78.9	105.3	63.2	115.8	189.5	105.3	63.2
Cabbage	100.0	94.9	160.6	73.0	110.9	175.2	109.5	87.6
Turnip	100.0	66.7	139.5	58.9	127.1	248.1	116.3	108.5

Source: National Program for the Food and Agriculture in 1995

Table 2.2.7 Household Average Income per Month and Composition
(as of November of the year)

Item	1992				1993			
	Urban		Rural		Urban		Rural	
	(Tg)	(%)	(Tg)	(%)	(Tg)	(%)	(Tg)	(%)
Salaries	3,315	60.0	1,374	35.2	7,549	62.2	2,626	23.9
Pension	416	7.5	343	8.8	1,848	15.2	1,284	11.7
Products*	141	2.6	1,627	41.6	297	2.4	4,851	44.1
Others	1,655	29.9	566	14.5	2,439	20.1	2,235	20.3
Total	5,526	100.0	3,909	100.0	12,132	100.0	10,995	100.0

Source : SOOM

Note * Including income from individual farm, commercial income, sale of own products

Table 2.2.8 Household Average Monetary Expenditure per Month and Composition
(as of November of the year)

Item	1992				1993			
	Urban		Rural		Urban		Rural	
	(Tg)	(%)	(Tg)	(%)	(Tg)	(%)	(Tg)	(%)
Food	3,423	60.0	1,494	41.0	7,879	60.3	5,691	51.4
Non-food*	1,594	28.0	1,844	50.6	3,099	23.7	4,422	39.9
Services	672	11.8	225	6.2	1,955	15.0	763	6.9
Saving	15	0.3	78	2.1	127	1.0	200	1.8
Total	5,704	100.0	3,640	100.0	13,060	100.0	11,075	100.0

Source : SOOM

Note * Including Clothes, Foot-wear, Cultural items, Furniture & equipment medical care, Fuel and others

Table 2.2.9 Wages and Salaries per capita in Aimag City

a. ULAANBAATAR

(Tg/ month)

Item	1989	1990	1991	1992	1993	1994
Farm Company	546	581	1,146	2,124	3,859	10,515
Alcoholic Company	513	541	1,138	2,039	6,726	13,567
Fur Processing Co.	598	653	1,580	3,203	5,600	8,900
Food Transport Co.	571	762	1,152	2,211	7,462	11,534
Administrator of Co	625	781	1,796	2,694	4,849	13,400

Source : Study data by The Team through the Aimag

b. TOV

(Tg/ month)

Item	1989	1990	1991	1992	1993	1994
Farm Company	489	472	938	1,150	4,439	8,362
Food Processing Co.	350	388	788	1,629	6,194	9,417
Feed Processing Co.	363	375	788	2,758	5,679	6,915
Hotel & Service Co.	438	452	753	1,255	3,728	8,960
Administrator of Co	518	526	863	1,996	6,719	10,813
Others	267	450	800	1,369	3,559	6,558

Source : Same as the above

c. SELENGE

(Tg/ month)

Item	1989	1990	1991	1992	1993	1994
Farm Company		550	788	778	7,017	8,942
Food Processing Co.		850	1,050	1,208	9,500	11,500
Cemical Co.		933	1,033	1,175	8,042	11,000
Non-Food Proce. Co.		1,100	1,625	2,667	11,033	14,000
Alcoholic Company		1,183	1,556	2,638	10,704	14,103
Hotel & Service Co.		400	542	592	3,000	5,000
Administrator of Co.		400	542	592	3,000	5,000
Aimag Officer		750	758	917	6,000	8,600
Others		450	633	683	3,217	5,417

Source : Same as the above

Table 2.2.10 Number of Unemployed Person by Region

Aimag	Unemployment(man)			Femel	Chang Worker
	1992-1-1	1993-1-1	1994-1-1		Total
Bulgan	1,079	1,065	2,962	1,230	360
Ovorhangai	2,591	3,660	3,806	2,320	265
Selenge	1,714	1,841	1,689	775	739
Tov	2,381	2,844	6,491	3,223	912
Darhan	2,990	1,246	1,220	657	293
Ulaanbaatar	13,766	8,405	9,673	4,507	4,664
Erdenet	1,220	1,629	1,168	659	490
Total	29,666	33,352	44,903	25,044	10,972
Total of Mongol	55,407	54,042	71,912	38,415	18,695

Source; NDP

Table 2.2.11 Number of Poor Houshold

Item	Household 1993	Rate
Total	81,575	100.0
Single	5,827	7.1
2-5members	36,072	44.2
6-8members	26,957	33.0
8 and over memb.	12,719	15.7

Source ;Statistical Office of Mongolia
(SOOM)Table 2.2.12 Monthly Income of
Poor Houshold Group

Item	1993	Rate	Remarks
Total	81,575	100.0	
600TG	33,380	40.9	
601~	16,684	20.5	
901~1	14,267	17.5	
1301~1	7,042	8.6	
1501~1	4,151	5.1	
1801~2	2,491	3.1	
2001TG	3,560	4.3	

Source; SOOM

Table 2.2.13 Official Estimates of
Poverty, March 1994

Item	Number of Poor	As a % of P.
Poor	449,859	20.3
Very Poor	137,423	6.2
Total	587,282	26.5

Source;Poverty and the transition to a
market economy in Mongolia(Jun 1994)Table 2.2.14 Number of Households
Led by Widows

Item	1993	Rate	Remarks
Houshold	35,649	100.0	
3Children	14,125	39.6	
3-5 Chi.	12,928	36.3	
6 over C.	8,596	24.1	

Source;Poverty and the transition to
a market economy in Mongoria.
(Jun 1994)

Table 2.2.15 Annual Average Number of workers

Year	Total	Capable Numb. to Work	Unit; thous.	
			Worker of Children	Worker of Pensions
1989	899.3	879.4	2.8	17.1
1990	946.2	927.4	2.5	16.3
1991	1,001.6	976.4	5.2	20.0
1992	1,059.9	1,027.7	7.4	24.8
1993	1,080.9	1,049.7	6.0	25.2

Source ; Poverty and the transition to a
market economy in Mongolia(Jun 1994)

Table 2.2.16 Answers for Question related to Privatization

		No. of Ansswerof	As a % of Total
Survey ; Soun Head man	Merit & Demerit Under Privatization		
	1 To get Private Property	36	52.17
	2 To be no-privatization	1	1.45
	3 Doing unnecessary privatization	3	4.35
	4 Misconduct on going privatizat.	29	42.03
	6 Trouble of inspection	25	36.23
Survey ; Agricul. Company Head man	Merit & Demerit Under Privatization		
	1 To get Private Property	45	39.47
	2 To be no-privatization	4	3.51
	3 Doing unnecessary privatization	0	0.00
	4 Misconduct on going privatizat.	58	50.88
	6 Trouble of inspection	32	28.07
Survey ; Partner- ship Company Head man	Merit & Demerit Under Privatization		
	1 To get Private Property	32	76.19
	2 To be no-privatization	0	0.00
	3 Doing unnecessary privatization	1	2.38
	4 Misconduct on going privatizat.	6	14.29
	6 Trouble of inspection	21	50.00
	7	1	2.38
Survey ; Herder	Merit & Demerit Under Privatization		
	1 To get Private Property	54	61.36
	2 To be no-privatization	2	2.27
	4 Misconduct on going privatizat.	26	29.55
	6 Trouble of inspection	18	20.45

Source; Study team

Table 2.2.17 External trade,

Foreign Exchange Reserves(mli.US\$)

	1989	1990	1991	1992	1993
Total Turnover	1,684.5	1,584.8	708.9	806.8	722.4
Export	721.5	660.8	348.0	388.5	360.9
Import	963.0	924.0	360.9	418.3	361.5
Trade Balance	-241.5	-263.2	-12.9	-29.8	-0.6
Foriegn E.R.	103	49.3	20.5	14.4	27.1

Source; NDP

Table 2.2.18 Price of Main Import Item

	Unit	1990年	1991年	1992年	1993年
Total of Impor	mli.US\$	924.0	360.9	418.3	361.5
Producers' Good	mli.US\$	720.0	283.7	349.1	272.6
(Oil, Fuels)	mli.US\$	(156.3)	(130.1)	(88.3)	(87)
Consumption G.	mli.US\$	204.0	77.2	69.2	88.9

Source; NDP and Others

Table 2.2.19 Main Trading Countries
(a) The Movement of Countries on Export

	1990	1991	1992	1993
1	U.S.S.R (78.3%)	Russian (67.6%)	Russian (57.1%)	Russian (37.5%)
2	Czechoslovakia (4.5%)	China (15.2%)	China (16.8%)	China (30.9%)
3	Bulgaria (2.5%)	Jpan (3.2%)	Jpan (5.1%)	Kazakstan (15.3%)
4	Hungary (2.1%)	Germany (2.9%)	Switzerland (4.6%)	Jpan (2.9%)
5	Germany (2.1%)	Hungary (2.6%)	Germany (3%)	Switzerland (2.6%)
6	China (1.7%)	Italy (1.4%)	Italy (2.2%)	Italy (2.6%)
7	Poland (1.7%)	Czechoslovakia (1.2%)	Bulgaria (1.8%)	U.S.A (1.1%)
8	Romania (1.5%)	Hong kong (1.1%)	Belgium (1.3%)	Germany (0.8%)
9	Japan (1.2%)	Afganistain (0.9%)	Czechoslovakia (1.1%)	Belgium (0.7%)
10	Italy (0.8%)	England (0.5%)	U.S.A (1.1%)	Finland (0.5%)
	Other (3.6%)	Other (3.4%)	Other (5.9%)	Other (3.0%)

(b) The Movement of Countries on Import

	1990	1991	1992	1993
1	U.S.S.R (77.5%)	Russian (73.8%)	Russian (52.4%)	Russian (59.7%)
2	Germany (4.1%)	Austraria (4.8%)	Chaina (12.2%)	Chaina (16.7%)
3	Czechoslovakia (3.7%)	Chaina (4.5%)	Jpan (10%)	Jpan (5.1%)
4	Chaina (2.4%)	Germany (3.5%)	Germany (5.4%)	U.S.A (4.7%)
5	Hungary (2.2%)	Czechoslovakia (2.7%)	Austraria (4.8%)	Hong Kong (2.7%)
6	Roumania (1.8%)	Korea (2.0%)	Hong Kong (2.3%)	Germany (1.7%)
7	Poland (1.4%)	Switzerland (1.8%)	Korea (2.0%)	France (1.2%)
8	Austraria (1.1%)	Hungry (0.9%)	France (1.8%)	Denmark (1.0%)
9	Japan (1.1%)	Japan (0.8%)	Singapore (1.4%)	Singapore (0.9%)
10	Yugoslavia (0.9%)	Italy (0.6%)	Czechoslovakia (1.3%)	India (0.9%)
	Other (3.8%)	Other (5.6%)	Other (6.4%)	Other (5.2%)

Source: Ministry of Trade and Industry in Mongolia
() : i as a % of Externar Trade Turnover

Table 2.2.20 Main Export Item

Item	Unit	1990	1991	1992	1993
Copper Concentrate	thu.ton	347.5	243.5	346.0	394.5
Molibdenium concent.	ton	3,990.4	3,167.2	2,975.1	2,908.7
Fluor spar concent.	thu.ton	111.6	120.2	97.2	77.2
Sawn Wood	thu.m3	42.5	90.2	87.6	68.1
Scorred sheep wool	ton	2,840.0	2,212.5	7,320.6	5,568.6
Spun woolen thread	ton	273.6	203.7	108.4	94.5
Manufactured goat down	ton	53.4	33.0	1,690.4	1,453.9
Camel wool	ton	1,913.7	101.4	1,735.1	2,913.3
Cashimere	ton	376.3	617.8	26.4	28.6
Leather jaket	thous.	(n.a.)	113.3	108.6	68.0
Leather coat	thous.	(n.a.)	2.5	19.6	17.4
Sheepskin coat	thous.	106.8	(n.a.)	38.7	12.3
Carpet	thu.m2	1,672.5	67.6	405.7	425.2
Down goods	thous.	275.7	(n.a.)	132.7	77.1
Camel woolen blanket	thous.	23.2	(n.a.)	44.9	12.2
Intestine	thous.	2,163.8	495.6	3,523.8	1,301.8
Horse hide	thous.	105.2	78.5	13.5	154.5
Sheep skin	thous.	130.0	(n.a.)	1,633.3	3,300.7
Goat skin	thous.	113.2	(n.a.)	265.0	509.4
Cattle hide	thous.	30.6	(n.a.)	68.9	393.3
Horn(horn antler)	ton	42.3	(n.a.)	347.3	272.7
Cast-iron waste	thu.ton	26.9	(n.a.)	23.9	36.3
Aluminium waste	ton	821.7	(n.a.)	2,241.6	3,284.1
Coper waste	ton	485.3	(n.a.)	2,166.4	522.2
Born waste	ton	957.1	1,032.9	3,233.0	1,620.6
Metal waste	ton	(n.a.)	(n.a.)	8,218.6	5,309.1

Table 2.2.21 Main Import Item

Item	Unit	1990	1991	1992	1993
Suger	thu.ton	34.7	32.0	17.6	19.4
butter	ton	2.2	1.7	1.6	7.0
Flour	thu.ton	27.7	39.0	20.3	84.7
Green tea	thu.ton	6.9	4.1	3.7	8.9
Rice	thu.ton	19.1	14.7	4.6	30.2
Vegetable oil	thu.ton	4.7	1.1	0.9	0.8
Printed cotton fabric	thu.m	5,845.4	1,408.0	6,380.1	4,909.4
Synthetic fablics	thu.m	1,721.0	(n.a.)	3,747.6	1,475.3
Silk	thu.m	5,174.5	667.5	444.7	1,078.8
Footwear	thous.	1,112.2	193.9	212.5	209.8
Tarpaulin	thu.m	2,252.7	80.0	738.7	1,624.0
Electric Battery	thu.USS	1,291.0	223.1	2,348.5	841.8
Tabacco/sigarettes	ton	964.0	486.6	722.2	235.1
Candle	thu.USS	1,069.0	164.3	706.4	91.2
swing machins	pli.cas	2.3	(n.a.)	37.7	8.4
Sewing mathine	stand	1,099.0	2,000.0	335.0	7,448.0
Fridge	stand	3,500.0	6,700.0	19.0	1,391.0
Vacum cleaner	stand	2,000.0	4,000.0	29.0	1,674.0
TV	stand	24,500.0		6,250.0	7,991.0
Motor cycle	stand	3,510.0	1,050.0	775.0	2,533.0
Soap	ton	218.9	58.4	4,078.3	2,288.2
Cake	ton	1,503.7	282.2	462.9	798.1
Fluit	ton	3,894.4	3,070.0	529.2	812.6
Yeast	ton	192.0	82.9	464.0	148.2
Cotton wool	thu.m	(n.a.)	(n.a.)	267.6	544.8

Source: Ministry of Trade and Industry in Mongolia and othre

Note: data of 1993 is prompt reports by SOOM

CHAPTER 3
PRESENT STATE IN THE STUDY AREA

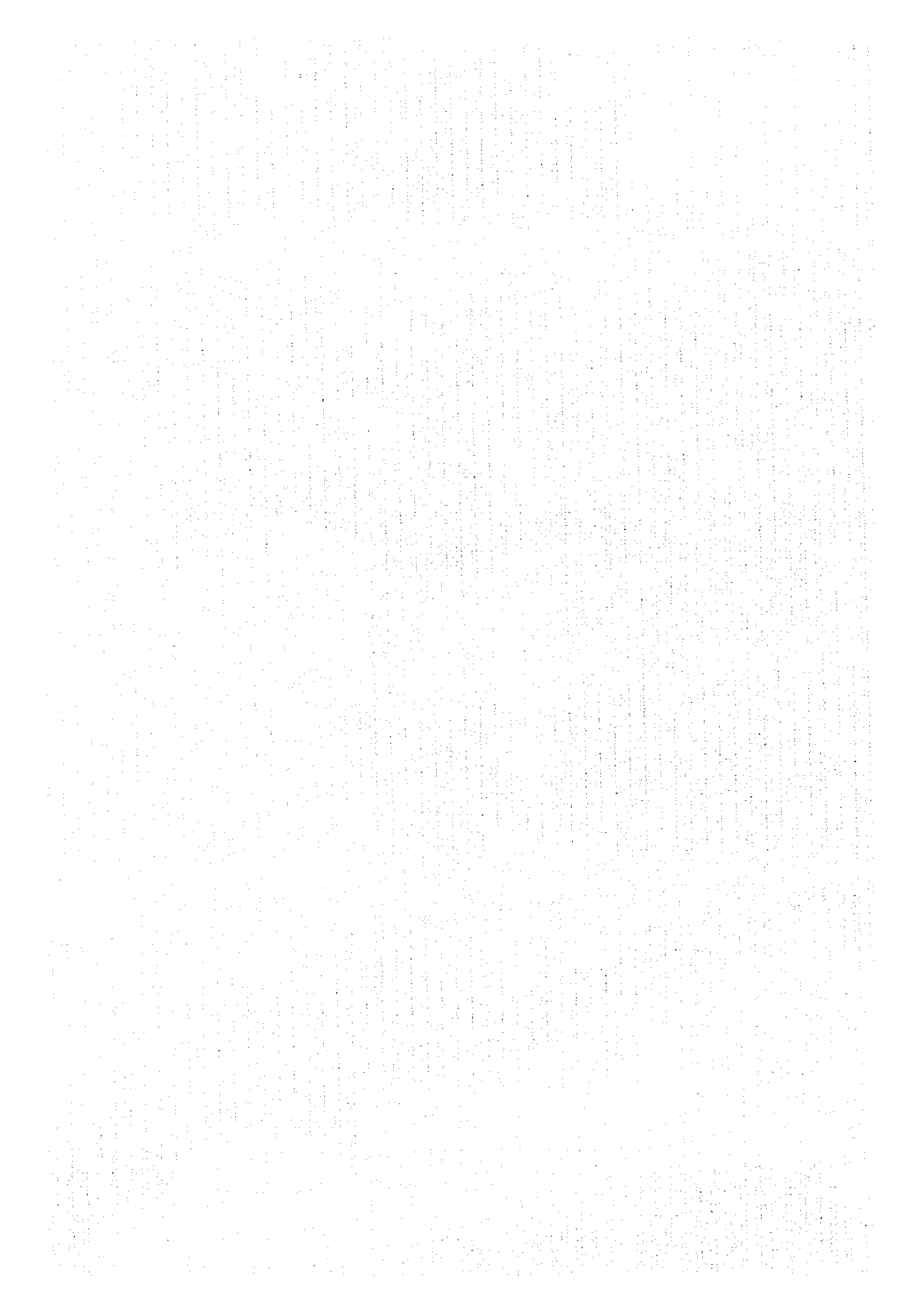


Table 2.1.2.1 Average monthly temperature in MONGOLIA (°C) (1961-1992)

Station	Aimag	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Average
Altai	Govi altai	-18.1	-16.6	-9.5	-0.6	7.3	12.6	13.7	12.4	6.5	-1.4	-10.6	-15.9	-1.7
Arvalheer	Ovorkhangai	-14.7	-13.2	-6.8	1.5	9.2	14.1	15.4	13.9	8.5	1.6	-7.3	-12.6	0.8
Baitag	Hovd	-20.6	-16.7	-4.9	5.9	13.7	19.2	20.4	18.6	12.0	3.2	-8.3	-17.9	2.1
Bayandelger	Suhbaatar	-20.6	-17.2	-7.5	3.8	12.1	18.1	20.5	18.6	11.4	3.0	-9.3	-17.5	1.3
Baynhongor	Baynhongor	-18.3	-16.2	-8.3	1.3	9.5	14.9	16.2	14.5	8.4	0.0	-10.5	-16.6	-0.4
Bayn-Ovoo	Hentii	-21.0	-18.2	-8.6	2.2	10.7	16.6	18.7	16.7	9.7	1.2	-10.8	-18.0	-0.1
Bayn uul	Zavhan	-31.8	-29.1	-18.3	-2.6	8.1	14.1	15.4	13.3	6.4	-3.1	-17.9	-28.3	-6.2
Barunbharaa	Selenge	-24.9	-21.3	-8.5	2.7	10.7	16.5	18.5	16.5	9.4	0.7	-11.2	-20.9	-1.0
Baruunturuun	Uvg	-31.3	-29.5	-18.5	-1.4	10.1	15.9	17.1	15.4	8.9	-0.5	-14.3	-26.4	-4.5
Baruun-urt	Sukhbaatar	-21.5	-18.0	-8.3	3.0	11.3	17.5	19.9	17.9	10.7	2.1	10.2	-18.5	2.2
Binder	Hentii	-21.1	-17.9	-8.8	1.0	9.3	14.8	17.1	14.9	8.1	-0.3	-11.8	-18.8	-1.1
Bulgan	Bulgan	-20.4	-18.1	-8.7	1.1	9.0	14.2	16.0	13.9	7.2	1.1	-11.0	-16.6	-1.2
Tsetserlg	Arhangai	-14.9	-13.6	-7.0	1.1	8.8	13.2	14.4	12.9	7.6	0.7	-7.7	-13.0	0.2
Choi balsan	Dornod	-20.5	-17.8	-8.3	2.7	11.3	17.7	20.0	18.0	10.8	1.8	-9.8	-17.7	0.7
Choir	Dornod	-20.5	-17.3	-8.1	2.5	10.9	16.7	18.7	16.9	10.0	1.3	-10.4	-18.3	0.2
Tsogt-Ovoo	Umnegovi	-16.1	-12.6	-4.1	5.3	13.8	19.7	21.4	19.8	12.9	4.3	-6.4	-14.2	3.7
Dadal	Hentii	-19.7	-16.9	-8.3	1.2	9.2	14.8	16.8	14.6	8.1	0.1	-10.6	-17.3	-0.7
Dalanzadgad	Umnegovi	-14.9	-11.3	-3.3	6.2	14.2	19.5	21.0	19.4	13.3	5.0	-5.2	-12.6	4.3
Dorvoljin	Zavhan	-24.4	-20.2	-7.7	3.2	11.6	17.6	19.1	17.2	10.5	1.7	-10.5	-20.6	-0.2
Erdensagaan	Sukhbaatar	-19.3	-17.0	-8.8	2.4	10.5	16.4	19.2	17.2	10.2	2.1	-8.8	-16.6	0.6
Erdene Mandal	Arhangai	-18.5	-16.5	-8.4	0.6	8.5	13.3	14.6	12.8	7.2	-0.3	-9.5	-16.3	-1.0
Eroo	Selenge	-27.1	-23.2	-9.5	1.7	9.8	16.0	18.2	15.9	8.4	-0.7	-13.1	-23.3	-2.2
Galuut	Baynhongor	-25.2	-22.4	-13.3	-1.9	6.5	11.8	13.1	11.3	5.1	-3.4	-15.4	-22.4	-4.7
Gash gol	Dornod	-23.9	-21.3	-10.9	2.2	10.7	17.5	20.0	17.7	10.3	1.3	-11.0	-20.2	-0.6
Har us	Uvs	-22.6	-19.4	-9.0	1.0	9.2	15.0	16.3	14.4	8.0	-0.5	-10.8	-19.7	-1.5
Hatgal	Hovsgul	-23.1	-20.9	-12.9	-3.2	4.6	9.9	11.7	10.2	4.2	-3.9	-13.7	-20.3	-4.8
Hovd	Hovd	-24.5	-20.3	-7.6	3.5	12.0	17.3	18.6	16.9	10.7	1.6	-9.9	-20.1	-0.1
Hujirt	Ovorkhangai	-21.1	-18.1	-9.0	0.7	8.2	17.3	14.6	12.9	7.0	-0.7	-11.2	-18.4	-1.5
Hutag	Bulgan	-23.8	-19.2	-7.2	2.9	11.1	16.0	17.5	15.3	8.8	0.3	-11.3	-20.4	-0.8
Maanit	Tov	-21.9	-19.6	-10.6	-0.1	8.6	14.5	16.3	14.4	7.2	-1.7	-13.1	-20.2	-2.2
Mandalgovi	Dundgovi	-17.8	-14.8	-6.8	2.9	11.2	16.8	18.8	17.0	10.3	1.9	-8.9	-15.9	1.2
Moron	Hovsgul	-22.7	-18.3	-8.2	1.6	9.7	15.3	16.6	14.5	9.0	-0.9	-11.6	-19.7	-1.3
Olgii	Baynulgii	-22.4	-19.3	-9.0	2.1	10.4	16.5	18.6	16.6	9.5	0.6	-11.5	-19.8	-0.6
Ondorhaan	Hentii	-17.2	-14.8	-6.9	1.9	9.4	14.7	16.4	14.7	8.7	0.5	-8.7	-15.1	0.3
Saihan	Umnegovi	-13.7	-10.7	-2.5	7.0	15.1	20.5	22.1	20.5	14.2	5.8	-4.6	-11.6	5.2
Saishand	Dornogovi	-17.9	-13.8	-4.4	6.1	14.5	20.1	22.9	21.0	13.7	4.6	-7.1	-15.6	3.7
Erdenesant	Tov	-18.1	-16.2	-7.7	1.6	10.0	15.0	16.7	15.0	8.7	1.1	-8.9	-15.5	0.1
Tarialan	Hovsgul	-20.0	-16.8	-7.7	1.6	9.8	14.8	16.0	14.0	7.9	0.0	-9.8	-17.7	-0.7
Toorol	Govi Altai	-17.9	-12.5	-1.8	7.9	16.4	21.9	23.5	21.6	14.9	5.2	-6.2	-14.8	4.9
Toosontsengel	Zavhan	-31.9	-29.0	-18.3	-2.5	6.9	12.5	13.8	11.8	5.4	-3.8	-18.7	-28.0	-6.8
Ulaanbaatar	Ulaanbaatar	-20.2	-17.9	-10.0	-0.3	8.2	13.7	15.6	13.8	7.4	-0.5	-11.2	-18.1	-1.6
Ulaangom	Uvs	32.2	-30.1	-18.7	0.1	11.5	17.6	19.0	16.8	10.0	0.5	-10.8	-25.8	1.9
Uliastai	Zavhan	-22.7	-20.0	-10.5	0.5	8.5	14.1	15.0	13.4	7.3	-1.3	-13.2	-20.2	-2.4
Zamiin uud	Dornogovi	-18.7	-14.6	-4.6	6.1	14.5	20.4	22.9	20.8	13.5	4.7	-6.7	-15.9	3.5
Zuunmod	Tov	-20.2	-17.9	-10.0	-0.3	8.2	13.7	15.6	13.7	7.4	-0.5	-13.2	-18.1	-1.6
Average														-0.3

Source: MONGOLIA Hydrometeorological Research Institute

Table 3.1.2.2 Rainfall Probability Calculation Table

Arvaiheer		Year	Precipitation	Probable Year	Probability Precipitation
1	1978	108.1	1/100	110.8	
2	1970	124.8	1/30	119.2	
3	1986	139.9	1/10	126.4	
4	1988	153.6	1/7	133.0	
5	1980	158.9	1/7	146.5	
6	1979	159.6	1/7	155.0	

Bulgan		Year	Precipitation	Probable year	Probability Precipitation
1	1980	181.2	1/50	179.6	
2	1969	189.7	1/30	189.6	
3	1977	192.6	1/20	198.6	
4	1981	218.1	1/10	217.2	
5	1978	230.3	1/7	228.9	
6	1986	238.1	1/5	242.0	

Barumbaraa

Ranking	Year	Precipitation	Probable year	Probability Precipitation
1	1980	107.6	1/200	110.4
2	1979	126.7	1/75	124.0
3	1986	137.2	1/30	130.6
4	1977	153.8	1/10	140.2
5	1981	195.1	1/5	167.6
				193.1

Ulaanbaatar

Ranking	Year	Precipitation	Probable year	Probability Precipitation
1	1979	119.6	1/50	114.8
2	1972	134.8	1/20	122.8
3	1980	139.3	1/20	130.1
4	1989	145.1	1/10	145.4
5	1977	159.7	1/7	155.3

Table 3.1.2.3 Monthly average number of days of rain in the growing season (Day)

Station	May	June	July	Aug.	Sept.	Total
Erdenesant	7	13	16	14	8	58
Eroo	10	13	15	14	10	62
Hutag	7	14	17	14	8	60
Hujirt	9	13	18	15	9	64
Maant	7	12	15	13	7	54
Arvaikheer	7	12	15	14	8	56
Barumkharaa	10	13	16	14	10	63
Bulgan	10	16	20	17	11	74
Bogd	4	8	13	10	5	40
Average	8	13	16	14	8	59

Table 3.1.2.4 Monthly average temperature (°C)

Station	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov	Dec.	Average
Erdenesant	-18.1	-16.2	-7.7	1.6	10.0	15.0	16.7	15.0	8.7	1.1	-8.9	-15.5	0.1
Maanit	-21.9	-19.5	-10.6	-0.1	8.6	14.5	16.3	14.4	7.2	-1.7	-13.1	-20.2	-2.2
Baruunkharaa	-24.9	-21.3	-8.5	2.7	10.7	16.5	18.5	16.5	9.4	0.7	-11.2	-20.9	-1.0
Ulaanbaatar	-20.2	-17.9	-10.0	-0.3	8.2	13.7	15.6	13.8	7.4	-0.5	-11.2	-18.1	-1.6
Eroo	-27.1	-23.2	-9.5	1.7	9.8	16.0	18.2	15.9	8.4	-0.7	-13.1	-23.3	-2.2
Hutag	-23.8	-19.2	-7.2	2.9	11.1	16.0	17.5	15.3	8.8	0.3	-11.3	-20.4	-0.8
Bulgan	-20.4	-18.1	-8.7	1.1	9.0	14.2	16.0	13.9	7.2	-1.1	-11.0	-16.6	-1.2
Hujirt	-21.1	-18.1	-9.0	0.7	8.2	17.3	14.6	12.9	7.0	-0.7	-11.2	-18.4	-1.5
Arvaikheer	-14.7	-13.2	-6.8	1.5	9.2	14.1	15.4	13.9	8.5	1.6	-7.3	-12.6	0.8

Table 3.1.2.5 Average monthly Maximum temperature(°C)

Station	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov	Dec.	Average
Erdenesant	-5.4	-2.7	6.5	17.4	24.1	28.0	28.1	27.3	22.4	16.1	5.3	-2.9	13.7
Maanit	-9.5	-5.7	3.8	16.2	24.1	27.6	27.7	26.4	21.5	13.9	0.7	-7.2	11.6
Baruunkharaa	-7.3	-3.0	6.6	16.5	25.8	28.7	28.2	27.0	22.3	15.4	4.1	-4.6	13.3
Ulaanbaatar	-8.4	-5.4	2.6	14.4	22.8	25.7	26.7	24.7	20.1	12.9	1.8	-6.2	11.0
Eroo	-12.3	-6.8	6.2	18.9	27.5	30.5	30.4	28.9	23.8	15.9	2.1	-8.7	13.0
Hutag	-7.9	-3.7	8.6	19.4	27.4	30.4	29.1	27.8	23.0	15.4	4.0	-5.4	14.0
Bulgan	-5.7	-2.0	6.7	17.3	25.2	27.9	27.2	25.9	21.6	15.0	4.3	-3.3	13.3
Hujirt	-6.3	-2.7	6.4	16.2	23.1	26.3	25.9	25.1	21.1	15.1	4.1	-2.9	12.6
Arvaikheer	-1.7	-0.1	6.6	15.7	22.8	26.3	25.7	25.1	20.7	14.2	5.6	0.4	13.4

Table 3.1.2.6 Average monthly Minimum temperature(°C)

Station	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov	Dec.	Average
Erdenesant	-29.9	-26.1	-20.7	-11.9	-4.0	3.4	6.8	4.8	-2.6	-11.4	-21.0	-27.1	-11.6
Maanit	-35.1	-31.1	-25.2	-14.9	-6.3	1.2	5.1	3.0	-5.4	-14.9	-26.7	-32.9	-15.3
Baruunkharaa	-35.8	-33.4	-22.6	-10.5	-0.6	3.9	8.1	5.7	0.2	-11.7	-24.1	-32.8	-12.8
Ulaanbaatar	-30.7	-29.2	-22.0	-13.4	-4.7	2.2	5.7	3.5	-3.9	-12.0	-22.8	-28.8	-13.0
Eroo	-39.4	-37.5	-24.3	-13.6	-6.4	1.9	6.5	4.0	-4.4	-13.9	-26.8	-35.6	-15.8
Hutag	-35.6	-32.6	-22.1	-11.1	-3.6	3.5	9.1	5.0	-2.7	-11.9	-24.4	-42.8	-14.1
Bulgan	-31.8	-30.6	-22.9	-12.5	-5.5	1.7	5.4	3.0	-4.7	-13.0	-23.8	-29.7	-13.7
Hujirt	-33.1	-31.5	-23.3	-12.9	-5.4	0.9	3.9	1.9	-5.1	-13.8	-24.7	-30.8	-14.5
Arvaikheer	-22.8	-24.1	-18.2	-11.1	-3.4	3.5	6.8	4.9	-1.9	-10.2	-18.8	-24.1	-10.0

Table 3.1.2.7 Average monthly temperature in the growing season(°C)

Station	May	June	July	Aug.	Sept.	Average
Erdenesant	10.0	15.0	16.7	15.0	8.7	13.1
Maanit	8.6	14.5	16.3	14.4	7.2	12.2
Baruunkharaa	10.7	16.5	18.5	16.5	9.4	14.3
Ulaanbaatar	8.2	13.7	15.6	13.8	7.4	11.7
Eroo	9.8	16.0	18.2	15.9	8.4	13.7
Hutag	11.1	16.0	17.5	15.3	8.8	13.7
Bulgan	9.0	14.2	16.0	13.9	7.2	12.1
Hujirt	8.2	17.3	14.6	12.9	7.0	12.0
Arvaikheer	9.2	14.1	15.4	13.9	8.5	12.2

Table 3.1.2.8 Average monthly Maximum temperature in the growing season(°C)

Station	May	June	July	Aug.	Sept.	Average
Erdenesant	24.1	28.0	28.1	27.3	22.4	26.0
Maanit	24.1	27.6	27.7	26.4	21.5	25.5
Baruunkharaa	25.8	28.7	28.2	27.0	22.3	26.4
Ulaanbaatar	22.8	25.7	26.7	24.7	20.1	24.0
Eroo	27.5	30.5	30.4	28.9	23.8	28.2
Hutag	27.4	30.4	29.1	27.8	23.0	27.5
Bulgan	25.2	27.9	27.2	25.9	21.6	25.6
Hujirt	23.1	26.3	25.9	25.1	21.1	24.3
Arvaikheer	22.8	26.3	25.7	25.1	20.7	24.1

Table 3.1.2.9 Average monthly Minimum temperature in the growing season(°C)

Station	May	June	July	Aug.	Sept.	Average
Erdenesant	-4.0	3.4	6.8	4.8	-2.6	1.7
Maanit	-6.3	1.2	5.1	3.0	-5.4	-0.5
Baruunkharaa	-0.6	3.9	8.1	5.7	0.2	3.5
Ulaanbaatar	-4.7	2.2	5.7	3.5	-3.9	0.6
Eroo	-6.4	1.9	6.5	4.0	-4.4	0.3
Hutag	-3.6	3.5	9.1	5.0	-2.7	2.3
Bulgan	-5.5	1.7	5.4	3.0	-4.7	0.0
Hujirt	-5.4	0.9	3.9	1.9	-5.1	-0.8
Arvaikheer	-3.4	3.5	6.8	4.9	-1.9	2.0

Table 3.1.2.10 Annual Average Wind vane (%) (1982-1992)

Station	N	NE	E	SE	S	SW	W	NW
Hujirt	19.1	12.7	4.2	16.6	10.1	3.2	4.6	29.5
Eroo	32.5	16.8	8.1	5.1	7.6	6.9	6.0	17.1
Maanit	32.1	7.0	8.0	6.5	6.4	5.0	5.3	29.7
Bogd	17.0	7.4	5.5	5.7	8.5	19.1	21.8	15.0
Arvaikheer	29.1	5.0	2.6	4.4	6.3	8.2	13.1	31.1
Baruunkharaa	20.4	6.1	5.1	24.7	16.7	4.7	3.7	18.7
Suhbaatar	26.4	5.8	10.7	22.5	11.4	3.0	2.7	17.6
Buyan-uhaa	26.3	5.9	1.7	7.5	16.2	9.6	8.5	23.9
Morin uul	7.5	3.4	1.5	8.4	2.6	2.2	6.8	67.7
Ulaanbaatar	18.4	1.9	0.9	2.4	8.1	10.5	39.9	22.6
Average	22.9	7.2	4.8	10.4	9.4	7.2	11.2	27.3

Table 3.1.2.11 Maximum Wind speed probability (m/sec)

Station	Ones for Five	Ones for Ten	Ones for Twenty
Hutag	19	20	22
Bulgan	21	22	26
Hujirt	23	23	27
Arvaikheer	24	25	28
Erdenesant	28	29	30
Ulaanbaatar	23	25	28
Baruunkharaa	24	25	27
Eroo	19	20	23
Bogd	32	34	38
Maanit	24	25	29

Table 3.1.2.12 Humidity during the growing season (%) (1961-1992)

Station	May	June	July	Aug.	Sept.	Average
Arvaikheer	46	53	64	64	55	56.4
Baruunkharaa	47	55	66	68	64	60.0
Bulgan	50	59	70	72	67	63.6
Eroo	54	61	73	76	71	67.0
Maant	55	62	71	72	67	65.4
Hutag	53	63	74	76	70	67.2
Erdenesant	52	60	71	72	65	64.0
Hujirt	55	61	71	72	65	64.8
Bogd	40	44	49	52	51	47.2
Average	50.2	57.6	67.7	69.3	63.9	61.7

Table 3.1.2.13 Hours of Sunlight (Hour) (1961-1992)

Station	Aimag	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Hutag	Bulgan	183.2	203.7	255.3	249.9	291.2	283.7	263.0	261.7	245.8	222.0	173.2	157.4	2790.1
Bulgan	Bulgan	183.2	203.7	255.3	249.9	291.2	283.7	263.0	261.7	245.8	222.0	173.2	157.4	2790.1
Hujirt	Ovorhangai	196.4	210.7	261.5	252.9	283.0	272.8	260.2	250.0	250.3	238.5	196.0	176.3	2848.6
Arvaikheer	Ovorhangai	196.4	210.7	261.5	252.9	283.0	272.8	260.2	250.0	250.3	238.5	196.0	176.3	2848.6
Erdenesant	Tov	164.4	195.5	257.3	256.8	281.8	268.6	259.2	257.8	228.1	215.0	160.4	143.8	2688.7
Ulaanbaatar	Ulaanbaatar	176.1	204.6	265.2	262.5	299.3	269.0	249.3	258.3	245.7	227.5	177.4	156.4	2791.3
Baruunkharaa	Selenge	203.1	204.8	267.1	269.4	309.6	295.0	277.7	268.6	256.4	235.7	197.1	175.2	2959.7
Eroo	Selenge	176.1	204.8	265.2	262.5	299.3	269.0	249.3	258.3	245.7	227.5	177.4	156.4	2791.5
Bogd	Ovorhangai	196.4	210.7	261.5	252.9	283.0	272.8	260.2	250.0	250.3	238.5	196.0	176.3	2848.6
Maant	Tov	203.1	204.8	267.1	269.4	309.6	295.0	277.7	268.6	256.4	235.7	197.1	175.2	2959.7
Average		187.8	205.4	261.7	257.9	293.1	278.2	262.0	258.5	247.5	230.1	184.4	165.1	2831.7

Table 3.1.2.14 Hours of Sunlight in the growing season (Hour) (1961-1992)

Station	Aimag	May	June	July	Aug.	Sept.	Total
Hutag	Bulgan	291.2	283.7	263.0	261.7	245.8	1345.4
Bulgan	Bulgan	291.2	283.7	263.0	261.7	245.8	1345.4
Hujirt	Ovorhangai	283.0	272.8	260.2	250.0	250.3	1316.3
Arvaikheer	Ovorhangai	283.0	272.8	260.2	250.0	250.3	1316.3
Erdenesant	Tov	281.8	268.6	259.2	257.8	228.1	1295.5
Ulaanbaatar	Ulaanbaatar	299.3	269.0	249.3	258.3	245.7	1321.6
Baruunkharaa	Selenge	309.6	295.0	277.7	268.6	256.4	1407.3
Eroo	Selenge	299.3	269.0	249.3	258.3	245.7	1321.6
Bogd	Ovorhangai	283.0	272.8	260.2	250.0	250.3	1316.3
Maant	Tov	309.6	295.0	277.7	268.6	256.4	1407.3
Average		293.1	278.2	262.0	258.5	247.5	1339.3

Table 3.1.2.15 Days of Snowfall (Day) (1961-1992)

Station	Aimag	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	Total
Arvaikheer	Ovorhangai	1.5	4.7	18.0	18.2	14.2	7.3	7.6	7.4	3.2	1.0	83.1
Hujirt	Ovorhangai	1.6	7.6	17.4	25.4	28.6	24.1	15.0	6.8	3.0	0.3	129.8
Bogd	Ovorhangai	0.2	2.9	10.6	14.8	8.0	7.0	4.7	3.0	0.8	0.1	52.1
Baruunkharaa	Selenge	1.0	7.0	18.0	31.0	31.0	28.0	20.0	5.0	2.0		143.0
Eroo	Selenge		5.0	15.0	26.0	31.0	28.0	14.0	2.0			121.0
Bulgan	Bulgan	1.0	8.0	17.0	27.0	29.0	25.0	19.0	7.0	1.0		134.0
Hurtag	Bulgan	0.3	4.7	14.2	24.6	27.1	23.6	10.9	2.5			107.9
Maant	Tov	3.0	5.0	15.0	22.0	31.0	24.0	13.0	5.0	2.0		120.0
Erdenesant	Tov	3.0	7.0	16.0	27.0	31.0	26.0	16.0	9.0	3.0		138.0
Average		1.3	5.8	15.7	24.0	25.7	21.4	13.4	5.3	2.1	0.5	115.1

Table 3.1.2.16 Evaporation Volume (mm) (April~Oct.)

Name of River	Station	Aimag	Height(m)	①Evaporation	②Precipitation	③=①÷②
Eroo	Eroo	Selenge	676.00	500.0	288.1	1.74
Ongi	Uyanga	Ovorhangai	1,680.00	800.0	233.4	3.43
Eroo	Dulaanhaan	Selenge	665.70	780.0	288.1	2.71
Egin-gol	Hatgal	Bulgan	1,668.40	478.3	319.1	1.50
Selenge	Zuumburen	Selenge	781.89	750.0	288.1	2.60
Egin-gol	Hantai	Bulgan	1,706.00	370.0	319.1	1.16
Orhon	Harhorin	Ovorhangai	1,560.00	800.0	286.3	2.79
Orhon	Orhon	Orhon	747.90	638.2	319.1	2.00
Tuul	Ulaanbaatar	Ulaanbaatar	1,963.80	598.0	241.1	2.48
Haraa	Barunharaa	Selenge	807.00	627.1	284.6	2.20
Ruder	Ruder	Selenge	1,025.00	640.0	288.1	2.22
Seibe	Dambadarjaa	Tov	1,263.80	571.8	241.1	2.37
Tuul	Ondorshireet	Tov	1,357.50	830.0	268.7	3.09
Terelj	Terelj	Tov	1,540.00	383.8	241.1	1.59
Ongi	Arvaikheer	Ovorhangai	1,813.10	735.7	233.4	3.15
Haraa	Darkhan	Darkhan uul	705.50	735.0	284.6	2.58
Bulgan	Bulgan	Bulgan	1,209.60	524.1	319.1	1.64
Bulgan	Baitag	Bulgan	1,186.00	540.0	319.1	1.69
Tes	Bayan-uul	Ovorhangai	1,419.70	419.4	233.4	1.80
Taats	Narinteel	Ovorhangai	1,600.00	930.0	233.4	3.98
Tuul	Bosginguur	Tov	1,600.00	320.0	241.1	1.33
Tuul	Zaamar	Tov	1,052.70	610.0	241.1	2.53
Uliastai	ulaanbaatar	ulaanbaatar	1,963.00	598.0	241.1	2.48
Selenge	Hutagt	Bulgan	937.88	588.9	321.8	1.83
Selenge	Sukhbaatar	Selenge	625.90	730.9	288.1	2.54
Orkhon	Sukhbaatar	Selenge	625.90	730.0	288.1	2.53
Average				624.2		2.31

SOURCE: Institute of Water Policy

Table 3.1.2.17 Monthly average Minimum temperature at the Eroo Meteorological observatory (°C)

Year	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1961	-41.0	-32.0	-26.0	-15.0	-8.0	-1.0	9.0	3.0	-5.0	-15.0	-34.0	-39.0	-17.0
1962	-40.0	-42.0	-27.0	-14.0	-7.0	1.0	8.0	5.0	-4.0	-15.0	-31.0	-33.0	-16.6
1963	-39.0	-36.0	-21.0	-15.0	-11.0	2.0	5.0	5.0	-4.0	-14.0	-25.0	-33.0	-15.5
1964	-35.0	-42.0	-26.0	-15.0	-4.0	2.0	7.0	9.0	-4.0	-19.0	-24.0	-36.0	-15.6
1965	-40.0	-39.0	-25.0	-15.0	-7.0	3.0	4.0	4.0	-6.0	-13.0	-31.0	-42.0	-17.3
1966	-43.0	-41.0	-33.0	-14.0	-6.0	1.0	6.0	3.0	-4.0	-13.0	-31.0	-40.0	-17.9
1967	-42.0	-37.0	-23.0	-13.0	-4.0	4.0	6.0	1.0	-6.0	-15.0	-31.0	-40.0	-16.7
1968	-41.0	-40.0	-21.0	-12.0	-5.0	1.0	5.0	2.0	-7.0	-13.0	-30.0	-39.0	-16.7
1969	-46.0	-43.0	-30.0	-15.0	-8.0	2.0	7.0	4.0	-5.0	-13.0	-25.0	-36.0	-17.3
1970	-39.0	-36.0	-31.0	-14.0	-3.0	3.0	7.0	5.0	-5.0	-15.0	-29.0	-39.0	-16.3
1971	-37.0	-38.0	-30.0	-17.0	-8.0	4.0	6.0	4.0	-5.0	-14.0	-22.0	-37.0	-16.2
1972	-39.0	-40.0	24.0	-13.0	-7.0	2.0	6.0	0.0	-5.0	-14.0	-28.0	-33.0	-12.3
1973	-37.0	-37.0	-21.0	-15.0	-6.0	4.0	6.0	5.0	0.0	-12.0	-20.0	-29.0	-13.5
1974	-36.0	-39.0	-31.0	-11.0	-7.0	-2.0	7.0	8.0	-3.0	-17.0	-29.0	-37.0	-16.4
1975	-33.0	-33.0	-22.0	-13.0	-6.0	2.0	6.0	6.0	-3.0	-11.0	-20.0	-36.0	-13.6
1976	-39.0	-34.0	-26.0	-13.0	-9.0	2.0	8.0	0.0	-2.0	-14.0	-25.0	-30.0	-15.2
1977	-41.0	-36.0	-25.0	-13.0	-8.0	1.0	6.0	2.0	-8.0	-16.0	-23.0	-33.0	-16.2
1978	-37.0	-37.0	-28.0	-15.0	-9.0	2.0	5.0	2.0	-3.0	-15.0	-25.0	-38.0	-16.5
1979	-41.0	-35.0	-21.0	-16.0	-5.0	4.0	6.0	3.0	-5.0	-13.0	-31.0	-39.0	-16.1
1980	-44.0	-39.0	-36.0	-13.0	-8.0	1.0	7.0	3.0	-6.0	-16.0	-29.0	-39.0	-18.3
1981	-41.0	-37.0	-23.0	-9.0	-5.0	1.0	7.0	2.0	-5.0	-19.0	-31.0	-40.0	-16.7
1982	-40.0	-35.0	-25.0	-13.0	-6.0	5.0	8.0	5.0	-4.0	-13.0	-21.0	-31.0	-14.2
1983	-38.0	-38.0	-26.0	-13.0	-6.0	2.0	5.0	3.0	-4.0	-13.0	-23.0	-31.0	-15.2
1984	-40.0	-39.0	-25.0	-18.0	-4.0	3.0	5.0	3.0	-2.0	-10.0	-30.0		-14.3
1985			-30.0	-10.0	-6.0	4.0	7.0	4.0	-7.0	-16.0	-27.0	-35.0	-11.6
1986	-39.0	-37.0	-24.0	-12.0	-4.0	3.0	8.0	5.0	-5.0	-10.0	-27.0	-37.0	-14.9
1987	-40.0	-40.0	-30.0	-12.0	-7.0	-2.0	5.0	9.0	-3.0	-14.0	-27.0	-32.0	-16.1
1988	-36.0	-37.0	-29.0	-15.0	-7.0	3.0	5.0	6.0	-3.0	-13.0	-22.0	-32.0	-15.0
1989	-38.0	-35.0	-22.0	-11.0	-4.0	-1.0	6.0	2.0	-6.0	-11.0	-27.0	-36.0	-15.3
1990	-41.0	-34.0	-17.0	-15.0	-6.0	0.0	11.0	8.0	-3.0	-10.0	-26.0	-31.0	-13.7
Average	-39.4	-37.5	-24.3	-13.6	-6.4	1.9	6.5	4.0	-4.4	-13.9	-26.8	-35.6	-15.6

Table 3.1.2.18 Monthly average Maximum temperature at the Eroo Meteorological observatory (°C)

Year	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1961	-11.0	-5.0	10.0	23.0	26.0	30.0	31.0	28.0	23.0	15.0	-1.0	-13.0	13.0
1962	-15.0	-5.0	5.0	17.0	25.0	31.0	30.0	29.0	22.0	18.0	-3.0	-5.0	12.4
1963	-11.0	-6.0	10.0	17.0	27.0	30.0	29.0	31.0	24.0	15.0	5.0	-9.0	13.5
1964	-11.0	-11.0	7.0	20.0	28.0	31.0	33.0	29.0	22.0	14.0	6.0	-10.0	13.2
1965	-13.0	-7.0	9.0	17.0	26.0	32.0	29.0	28.0	22.0	19.0	3.0	-11.0	12.8
1966	-6.0	-2.0	1.0	15.0	27.0	30.0	29.0	28.0	28.0	16.0	3.0	-17.0	12.7
1967	-11.0	-6.0	9.0	13.0	28.0	30.0	29.0	29.0	23.0	17.0	-3.0	-12.0	12.2
1968	-16.0	-11.0	8.0	20.0	28.0	32.0	34.0	30.0	25.0	13.0	4.0	-7.0	13.3
1969	-19.0	-9.0	8.0	22.0	25.0	35.0	32.0	27.0	23.0	14.0	7.0	-6.0	13.3
1970	-11.0	-5.0	5.0	20.0	25.0	33.0	32.0	29.0	20.0	17.0	2.0	-9.0	13.2
1971	-9.0	-9.0	5.0	23.0	29.0	30.0	27.0	29.0	21.0	18.0	5.0	-7.0	13.5
1972	-9.0	-10.0	9.0	22.0	28.0	31.0	30.0	30.0	25.0	12.0	1.0	-9.0	13.3
1973	-14.0	-6.0	5.0	19.0	26.0	32.0	28.0	27.0	23.0	13.0	8.0	-7.0	12.8
1974	-10.0	-4.0	2.0	17.0	30.0	29.0	30.0	33.0	22.0	13.0	3.0	-9.0	13.0
1975	-9.0	-1.0	10.0	16.0	28.0	30.0	29.0	28.0	25.0	12.0	3.0	-12.0	13.3
1976	-9.0	-5.0	1.0	17.0	29.0	30.0	29.0	27.0	25.0	19.0	1.0	-7.0	13.1
1977	-15.0	-2.0	11.0	20.0	25.0	31.0	35.0	32.0	27.0	21.0	6.0	-6.0	15.4
1978	-10.0	-1.0	8.0	22.0	26.0	31.0	30.0	31.0	26.0	16.0	5.0	-7.0	14.8
1979	-8.0	-4.0	6.0	16.0	30.0	32.0	29.0	28.0	22.0	19.0	-4.0	-10.0	13.0
1980	-18.0	-12.0	-2.0	15.0	28.0	34.0	32.0	31.0	25.0	9.0	0.0	-13.0	10.8
1981	-20.0	-10.0	6.0	23.0	26.0	28.0	32.0	27.0	25.0	12.0	-2.0	-11.0	11.3
1982	-12.0	-8.0	9.0	24.0	27.0	29.0	30.0	29.0	24.0	16.0	2.0	-7.0	13.6
1983	-13.0	-12.0	5.0	16.0	28.0	25.0	29.0	30.0	24.0	17.0	5.0	-6.0	12.3
1984	-10.0	-9.0	4.0	21.0	29.0	31.0	31.0	27.0	24.0	16.0	-5.0	-11.0	12.3
1985	-13.0	-12.0	-2.0	16.0	31.0	28.0	28.0	27.0	21.0	17.0	1.0	-10.0	10.6
1986	-14.0	-9.0	5.0	17.0	28.0	30.0	30.0	32.0	26.0	18.0	2.0	-9.0	13.0
1987	-11.0	-6.0	2.0	20.0	27.0	33.0	32.0	30.0	25.0	15.0	0.0	-1.0	13.8
1988	-13.0	-8.0	5.0	21.0	24.0	27.0	30.0	29.0	25.0	16.0	7.0	-8.0	12.9
1989	-11.0	-6.0	12.0	21.0	29.0	30.0	32.0	27.0	23.0	19.0	-1.0	-6.0	14.1
1990	-12.0	-3.0	12.0	17.0	31.0	30.0	30.0	26.0	23.0	21.0	4.0	-5.0	14.5
Average	-12.3	-6.8	6.2	18.9	27.5	30.5	30.4	28.9	23.8	15.9	2.1	-8.7	13.0

Table 3.1.2.19 (1) Arvaikheer Monthly average Soile Temperature (°C)

Depth	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0.0 m	Average		-6.0	3.8	13.1	18.3	18.6	16.2	10.2	1.1	-8.7	
	Maximum		-1.0	8.0	18.0	20.9	23.0	18.7	13.0	5.0	-13.4	
	Minimum		-12.0	0.0	10.0	15.0	14.0	13.5	7.2	-2.0	-5.0	
-0.2 m	Average		-5.3	1.6	9.1	14.5	16.4	15.5	11.3	4.7	-3.3	
	Maximum		-2.7	5.0	11.3	15.7	18.9	17.8	13.0	7.3	-0.5	
	Minimum		-10.2	-0.5	6.2	12.1	14.0	12.9	9.1	1.8	-6.3	
-0.4 m	Average		-5.3	0.0	6.3	11.8	14.4	14.4	11.2	5.7	-0.9	
	Maximum		-0.7	3.6	8.3	15.2	16.1	16.4	13.0	7.6	1.1	
	Minimum		-9.6	-1.8	3.5	9.4	12.6	12.3	9.2	3.5	-2.6	
-0.8 m	Average	-5.8	-6.9	-5.1	-1.9	2.0	7.1	10.9	12.6	10.9	7.2	2.5
	Maximum	-2.7	-4.5	-2.9	-0.5	4.0	9.0	12.3	14.3	12.4	8.5	3.9
	Minimum	-8.5	-9.1	-10.0	-6.3	-1.4	3.1	7.2	11.2	10.2	6.1	1.5
-1.6 m	Average	-1.5	-3.8	-3.8	-2.0	-0.4	2.9	6.8	10.0	9.7	7.7	4.5
	Maximum	0.1	-1.7	-1.2	-0.2	0.3	4.8	8.7	13.5	10.6	8.9	7.8
	Minimum	-3.4	-6.3	-6.5	-3.3	-0.9	1.2	1.0	7.9	8.7	6.7	3.2
-3.2 m	Average	2.6	1.1	0.2	-0.1	0.0	0.4	2.7	5.3	6.4	6.8	5.9
	Maximum	5.2	2.6	0.9	0.7	0.7	3.7	6.1	8.6	7.2	10.1	9.5
	Minimum	1.8	0.2	-0.4	-0.6	-0.6	-0.2	0.3	4.2	5.5	5.8	5.0

Table 3.1.2.19 (2) Arvaikheer Monthly average Soile Temperature (°C)

Depth	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
0.0 m	Average		-7.0	5.6	15.7	21.9	23.2	20.3	12.0	1.9	-11.0		
	Maximum		-2.0	10.0	19.0	25.0	26.0	24.0	15.5	6.0	-7.0		
	Minimum		-14.0	3.0	13.0	17.0	20.0	17.0	9.8	-1.0	-17.0		
-0.2 m	Average		-6.4	3.2	11.6	17.5	19.7	18.4	12.4	4.2	-4.3		
	Maximum		-3.5	6.7	13.8	20.4	22.7	22.1	14.7	7.4	1.6		
	Minimum		-11.9	0.1	7.5	14.0	17.5	16.4	10.1	2.4	-8.9		
-0.4 m	Average		-6.9	1.3	8.9	14.6	16.9	17.1	12.4	5.7	-1.4		
	Maximum		-4.0	5.3	11.7	17.8	19.6	21.2	16.0	12.0	1.2		
	Minimum		-12.0	-1.0	4.4	12.1	10.7	15.3	10.5	3.9	4.8		
-0.8 m	Average	-8.9	-10.6	-6.4	-0.9	4.6	10.1	13.4	14.6	12.0	7.1	1.4	
	Maximum	-5.3	-7.9	-4.3	0.8	6.4	11.5	15.0	16.2	13.8	9.2	2.7	
	Minimum	-14.1	-14.0	-8.6	-2.6	1.0	8.2	11.6	12.9	10.7	5.3	0.2	
-1.6 m	Average	-3.2	-5.5	-4.6	-1.8	0.8	4.5	8.4	10.9	10.6	8.1	4.5	
	Maximum	-0.4	-2.7	-1.0	-0.2	2.0	6.4	10.2	13.2	12.4	9.6	6.4	
	Minimum	-5.6	-7.3	-7.5	-3.7	-0.7	2.3	6.5	9.6	9.4	6.9	3.4	
-3.2 m	Average	2.2	0.9	0.1	-0.1	0.2	0.8	3.6	6.2	7.3	7.2	5.9	
	Maximum	3.6	2.7	1.6	2.0	2.8	3.4	6.4	9.2	10.2	8.2	7.4	
	Minimum	0.7	-0.7	-2.2	-1.7	-0.5	-0.9	1.3	4.4	6.4	5.8	4.7	
												4.0	
													5.5
													2.8

Table 3.1.2.19 (3) Arvaikheer Monthly average Soile Temperature (°C)

Depth	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0.0 m	Average		-6.6	3.3	12.5	18.9	19.2	16.9	9.0	-0.2	-10.9	
	Maximum		-2.7	7.3	15.0	22.0	23.8	20.0	12.0	1.0	-7.7	
	Minimum		-11.8	0.6	8.4	14.8	16.7	14.6	6.7	-2.0	-15.2	
-0.2 m	Average		-6.0	1.3	8.4	13.9	15.9	15.1	10.1	3.0	-4.9	
	Maximum		-2.6	4.0	10.8	16.5	18.3	18.6	13.9	5.2	-2.8	
	Minimum		-10.5	-1.5	7.3	12.1	13.3	13.2	8.2	0.9	-8.5	
-0.4 m	Average		-4.8	0.1	5.2	10.9	13.7	13.1	10.2	3.9	-1.5	
	Maximum		-3.0	1.1	7.6	12.5	16.0	16.8	12.0	5.4	-0.4	
	Minimum		-6.7	-0.6	3.5	9.0	10.8	11.2	9.1	2.0	-2.8	
-0.8 m	Average	-7.0	-7.9	-5.2	-1.4	1.8	6.5	10.1	11.5	9.6	5.2	3.1
	Maximum	-3.3	-4.8	-3.1	-0.3	3.3	8.0	13.1	13.7	12.5	7.6	17.0
	Minimum	-10.3	-10.9	-7.6	-4.6	0.6	1.4	6.2	9.8	8.0	3.6	-9.0
-1.6 m	Average	-1.1	-3.0	-3.0	-1.4	-0.2	1.2	4.5	7.2	7.5	5.9	3.1
	Maximum	0.3	-0.9	-1.3	-0.7	0.4	1.8	8.1	9.9	9.5	8.2	4.0
	Minimum	-2.6	-4.8	-4.4	-2.5	-0.7	0.4	2.8	5.0	6.0	4.6	2.1
-3.2 m	Average	1.6	0.8	0.3	0.1	0.0	0.1	0.3	2.2	4.3	4.7	4.1
	Maximum	2.3	1.5	1.0	0.6	0.4	0.8	1.9	4.4	6.1	6.5	5.0
	Minimum	0.9	0.4	-0.3	-0.5	-0.2	-0.1	0.0	0.2	2.2	3.3	2.9
												2.7
												3.8
												1.8

Table 3.1.2.19 (4) Arvaikheer Monthly average Soile Temperature (°C)

Depth	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0.0 m	Average		-7.3	3.4	13.8	19.7	20.9	18.6	11.1	0.8	-9.8	
	Maximum		-2.0	7.0	17.0	22.4	25.0	21.0	14.5	4.0	-6.0	
	Minimum		-16.4	-1.0	11.0	15.6	18.0	15.6	8.0	-3.5	-13.3	
-0.2 m	Average		-4.8	2.5	10.5	16.5	18.5	17.5	11.8	4.4	-3.1	
	Maximum		-1.0	5.9	15.0	18.5	20.8	19.9	13.4	8.9	0.7	
	Minimum		-9.9	0.0	7.1	14.1	16.4	15.4	9.8	1.1	-6.2	
-0.4 m	Average		-5.0	0.4	7.6	13.4	16.3	16.1	11.9	5.5	-0.8	
	Maximum		-1.6	3.7	9.0	16.1	18.9	17.7	13.6	7.7	1.8	
	Minimum		-8.9	-9.0	4.6	11.2	14.8	14.5	10.2	2.3	-4.0	
-0.8 m	Average	-5.0	-6.1	-4.7	-1.1	3.0	8.3	12.1	13.5	11.6	7.2	2.3
	Maximum	-2.5	-0.5	-1.9	0.7	5.3	10.5	13.7	14.8	13.8	9.3	4.7
	Minimum	-8.2	-9.6	-8.1	-2.2	0.4	6.3	10.8	12.1	10.0	5.3	0.5
-1.6 m	Average	-0.7	-2.3	-2.9	-1.5	-0.3	2.9	7.0	9.7	9.9	7.8	4.7
	Maximum	0.6	-0.3	-1.0	-0.5	0.7	6.5	9.2	12.4	11.3	9.1	6.9
	Minimum	-2.3	-4.2	-4.5	-2.8	-1.2	0.4	4.8	8.0	8.2	6.6	3.5
-3.2 m	Average	3.0	1.9	1.2	0.7	0.6	0.8	2.4	4.6	6.1	6.3	5.7
	Maximum	3.8	2.7	2.7	1.3	1.1	2.1	4.3	6.6	7.7	7.1	6.8
	Minimum	1.8	1.1	0.3	-0.1	-0.1	0.0	1.1	2.3	4.2	4.8	4.5

Table 3.1.2.19 (5) Arvaikheer Monthly average Soile Temperature (°C)

Depth	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0.0 m	Average		-8.1	2.9	13.5	19.0	20.5	17.9	10.4	0.7	-12.2	
	Maximum		-1.0	-8.0	16.0	22.0	24.0	20.0	12.4	5.0	-8.0	
	Minimum		-12.0	-1.0	9.0	15.0	18.0	15.0	8.4	-2.0	-18.0	
-0.2 m	Average		-7.4	1.3	9.8	15.5	17.8	16.4	11.0	3.7	-5.4	
	Maximum		-3.9	4.4	11.0	17.3	20.5	18.1	12.7	6.2	-1.8	
	Minimum		-11.3	-2.5	8.3	13.4	15.0	14.4	9.5	1.0	-8.4	
-0.4 m	Average		-7.5	-0.3	7.3	13.2	15.8	15.4	11.1	4.8	-2.8	
	Maximum		-4.7	2.1	8.6	14.9	18.1	16.5	12.4	6.9	0.0	
	Minimum		-11.7	-2.5	5.6	11.5	13.7	13.6	9.5	2.3	-5.6	
-0.8 m	Average	-9.8	-10.9	-7.5	-2.2	3.5	9.2	13.0	10.7	6.2	0.5	-5.4
	Maximum	-6.4	-8.5	-5.3	-0.9	4.9	10.6	13.9	12.2	7.8	2.6	-3.2
	Minimum	-13.9	-13.7	-11.4	-4.0	1.4	8.3	10.9	11.4	9.1	3.5	-2.2
-1.6 m	Average	-3.6	-5.7	-5.4	-2.7	0.0	4.0	7.3	8.9	6.9	3.6	-0.2
	Maximum	-1.2	-3.0	-3.4	-1.6	1.5	5.7	9.1	10.6	8.3	5.2	1.9
	Minimum	-6.2	-8.5	-8.6	-4.7	-1.4	2.7	6.1	7.4	7.5	4.9	1.7
-3.2 m	Average	1.8	0.4	-0.3	-0.5	-0.3	0.1	1.1	4.7	5.3	4.7	3.1
	Maximum	2.9	1.5	0.3	0.1	0.5	0.7	2.9	6.6	6.7	5.9	4.8
	Minimum	-0.8	-0.3	-1.0	-1.3	-1.0	-0.3	0.0	1.2	3.0	3.3	2.7

Table 3.1.2.19 (6) Arvaikheer Monthly average Soile Temperature (°C)

Depth	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
-0.2 m	Average	-16.4	-15.0	-4.9	3.9	12.5	18.0	19.8	17.9	12.7	5.1	-4.1	-13.1
	Maximum	-11.0	-10.7	-3.5	6.6	15.9	22.5	25.2	20.4	15.9	8.4	-2.1	-9.0
	Minimum	-19.8	-19.1	-6.8	1.2	8.0	14.8	17.4	15.9	7.6	2.5	-6.9	-17.5
-0.4 m	Average	-14.2	-13.4	-6.3	0.8	8.2	13.9	16.9	16.1	12.3	5.8	-1.3	-9.2
	Maximum	-12.5	-9.2	-4.3	3.8	11.1	16.6	21.1	17.5	13.7	7.2	0.7	-5.3
	Minimum	-17.5	-17.5	-9.9	-1.4	5.1	11.5	15.0	14.3	10.8	4.6	-3.0	-12.6
-0.6 m	Average	-11	-12	-7	-1.0	5.3	10.9	14.0	14.7	11.7	6.7	0.9	-6.8
	Maximum	-8	-8	-4	0.3	7.1	14.2	16.5	17.0	13.4	7.1	6.0	-3.0
	Minimum	-17	-17	-10	-2.2	3.1	8.9	12.3	13.2	9.2	5.3	-1.4	-10.8
-0.8 m	Average	-9.5	-10.2	-6.4	-1.4	4.2	9.6	12.9	14.0	11.6	7.1	1.3	-4.9
	Maximum	-7.4	-6.6	-3.6	0.3	6.3	12.3	15.0	15.8	13.2	7.9	2.6	-7.7
	Minimum	-13.9	-14.4	-9.5	-3.0	2.3	7.2	11.0	12.4	9.0	6.4	0.4	-1.8
-1.6 m	Average	-1.9	-4.1	-4.0	-2.1	0.1	4.0	7.8	10.3	10.1	8.0	4.7	1.1
	Maximum	-1.2	-1.9	-2.2	-1.3	1.1	6.2	9.4	11.4	10.9	8.6	5.2	1.7
	Minimum	-3.8	-6.6	-6.0	-3.2	-0.9	1.5	5.8	9.1	9.6	7.6	4.2	0.6
-2.4 m	Average	1.4	-0.2	-1.1	-0.9	-0.3	1.2	4.2	6.8	7.9	7.6	5.8	3.6
	Maximum	2.5	0.8	-0.3	-0.3	0.5	2.8	5.8	7.8	8.7	8.1	6.5	4.8
	Minimum	0.7	-1.0	-2.2	-1.5	-0.8	-0.9	2.4	5.8	6.4	7.1	4.9	2.7
-3.2 m	Average	2.7	1.5	0.5	0.1	0.2	0.7	2.5	4.8	6.1	6.6	5.8	4.4
	Maximum	3.3	2.0	0.9	0.5	0.7	1.8	4.7	5.8	6.9	8.5	6.9	4.9
	Minimum	2.0	0.9	-0.1	-0.3	-0.4	-0.4	0.4	3.6	5.5	5.8	5.4	3.8

Table 3.1.2.19 (7) Arvaikheer Monthly average Soile Temperature (°C)

Depth	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
-0.2 m	Average	-16.9	-14.9	-7.1	2.2	10.9	19.8	18.4	12.2	4.4	-5.4	-13.1
	Maximum	-13.8	-8.5	2.3	8.5	15.5	24.7	24.2	17.2	12.0	2.1	-5.4
	Minimum	-19.9	-18.3	-11.6	-0.9	8.1	17.0	16.6	6.9	1.2	-9.2	-17.1
-0.4 m	Average	-14.9	-14.1	-8.0	-0.1	8.0	17.0	16.4	11.8	4.9	-3.5	-10.8
	Maximum	-12.7	-11.1	-5.4	2.6	9.8	21.0	18.4	13.6	6.9	-1.8	-7.7
	Minimum	-18.7	-16.2	-12.0	-1.7	6.6	16.0	14.8	11.1	2.6	-6.6	-14.9
-0.8 m	Average	-10.7	-11.6	-8.4	-2.6	3.6	13.3	14.2	11.2	6.9	0.0	-6.1
	Maximum	-8.9	-10.1	-6.5	-0.9	5.3	14.9	15.2	12.5	11.2	1.2	-4.5
	Minimum	-15.4	-13.7	-12.4	-4.2	2.3	8.4	12.7	8.5	5.1	-1.5	-9.7
-1.5 m	Average	-4.6	-7.2	-6.5	-3.2	0.0	8.8	11.0	10.6	8.0	3.7	-0.4
	Maximum	-3.4	-5.3	-4.7	-1.2	1.6	10.1	12.5	10.8	10.0	5.0	1.0
	Minimum	-7.4	-9.0	-8.8	-4.7	-2.2	3.0	7.5	9.5	9.2	2.3	-1.8
-3.2 m	Average	1.0	-0.4	-1.4	-1.6	-1.0	1.5	3.9	5.3	5.4	4.4	2.7
	Maximum	1.3	0.2	1.1	0.1	-0.5	2.4	4.7	5.7	5.9	4.9	3.5
	Minimum	0.4	-1.5	-2.7	-2.9	-3.1	-0.3	0.8	2.8	4.7	3.9	2.2

Table 3.1.2.20 Central region Meteorological observatory table

Name of Station	Aimag	Latitude	Longitude	Land Height	Start of observation year
Arvaikheer	Ovorhangai (Darhan Uul)	N 46° 26'	E 102° 47'	H=1,813m	1940.1
Baruunkharaa	selenge (Orhon)	N 48° 55'	E 106° 06'	H=807m	1939.12
Bulgan	Bulgan	N 48° 44'	E 103° 54'	H=1,210m	1940.1
Erdenesant	Tov	N 47° 17'	E 104° 14'	H=1,363m	1961.1
Ulaanbaatar	Ulaanbaatar	N 47° 56'	E 106° 59'	H=1,338m	1947.10
Hutag	Bulgan	N 49° 38'	E 102° 41'	H=933m	1961.3
Maanit	Tov	N 47° 29'	E 107° 48'	H=1,427	1955.1
Eroo	Selenge	N 49° 45'	E 106° 40'	H=677m	1960.9
Hujirt	Ovorhangai	N 46° 53'	E 102° 46'	H=1,655m	1947.10
Bogd	Ovorhangai	N 44° 41'	E 102° 16'	H=1,521m	1974.12

Source: MONGOLIA Hydrometeorological Research Institute

Table 3.1.2.21. Meteorological data collection table

Name of Station	Aimags	Precipitation	Rainy days	Temperature	Soil Temperature	Humidity	Wind Vane	Wind Speed	Solar Radiation	Snowfall days
Arvaikheer	Ovorhangai	1961-1990	1961-1992	1961-1990	1966-1990	1961-1990	1979-1990	1982-1992	1982-1992	1982-1992
Barunkharaa	(Darhan Uul) Selenge	1961-1990	1961-1992	1961-1990	1960-1990	1961-1990	1979-1990	1982-1992	1982-1992	1982-1992
Bulgan	(Orhon) Bulgan	1961-1990	1961-1992	1961-1990	1954-1977	1961-1990	1979-1990	1982-1992	1982-1992	1982-1992
Erdenesant	Tov	1962-1990	1962-1992	1962-1990	1962-1990	1962-1990	1979-1990	1982-1992	1982-1992	1982-1992
Ulaanbaatar	Ulaanbaatar	1961-1993	1961-1993	1965-1990	1959-1991	1961-1990	1979-1990	1982-1992	1982-1992	1982-1992
Hutag	Bulgan	1961-1990	1961-1992	1961-1990	1975-1990	1961-1990	1979-1990	1982-1992	1982-1992	1982-1992
Maanit	Tov	1961-1990	1961-1992	1961-1990	1975-1990	1961-1990	1979-1990	1982-1992	1982-1992	1982-1992
Eroo	Selenge	1961-1990	1961-1992	1961-1990		1961-1990	1979-1990	1982-1992	1982-1992	1982-1992
Hujirt	Ovorhangai	1961-1990	1961-1992	1961-1990		1961-1990	1979-1990	1982-1992	1982-1992	1982-1992
Bogd	Ovorhangai	1975-1992	1975-1992	1975-1992		1977-1992	1979-1990	1982-1992	1982-1992	1982-1992

Figure 3.1.2.1 Average Annual Rainfall at Barumbhara

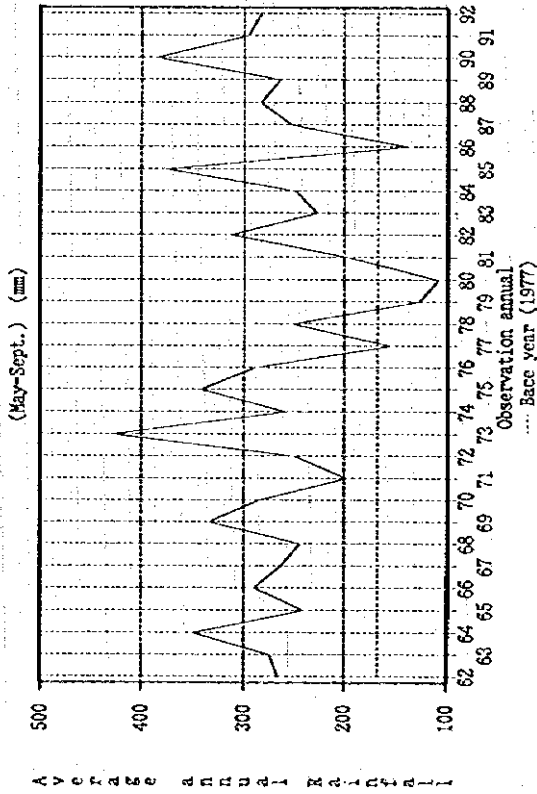


Figure 3.1.2.2 Average Annual Rainfall at Bulgan

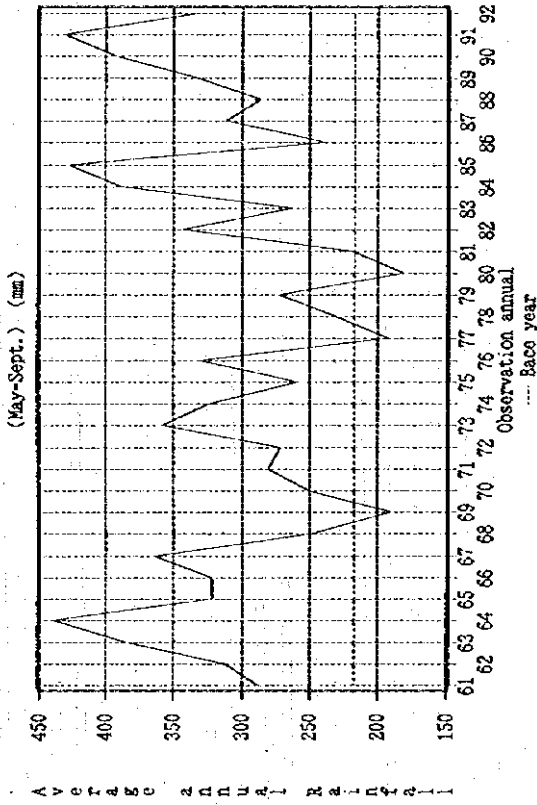


Figure 3.1.2.3 Average Annual Rainfall at Ulaanbaatar

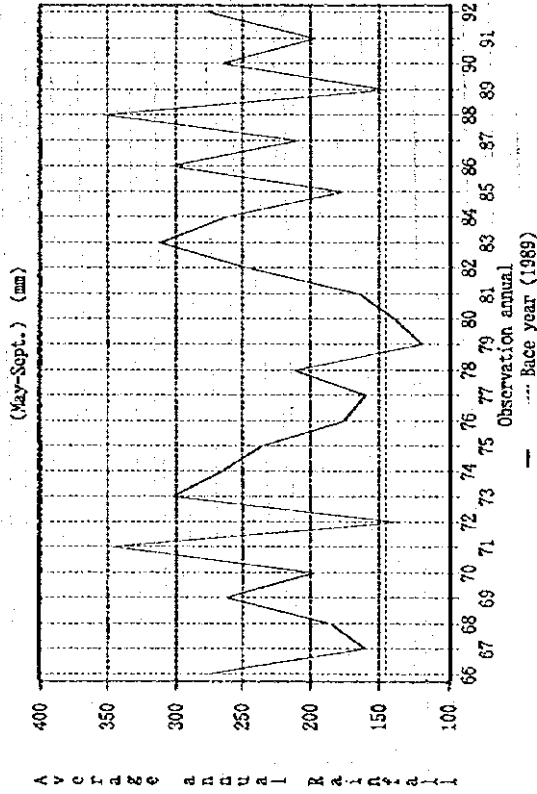


Figure 3.1.2.4 Average Annual Rainfall at Arvalkheer

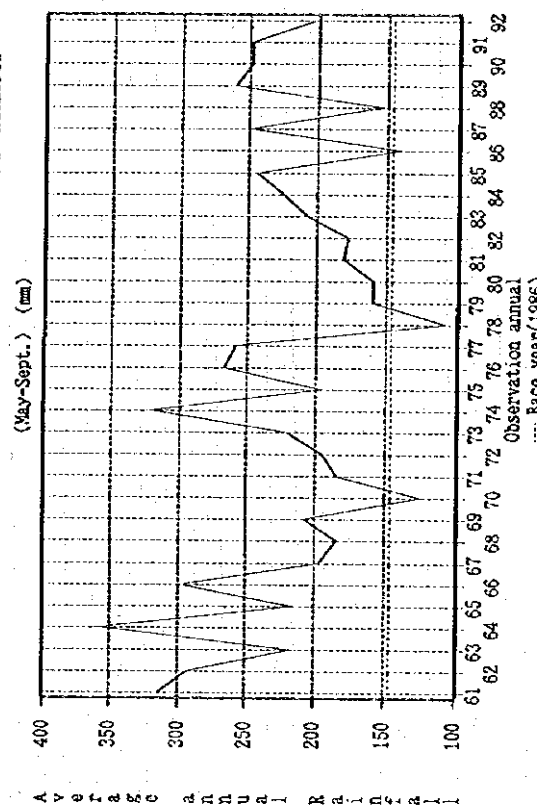


Figure 3.1.2.5 Temperatures at Barunharaa
(1961-1992)

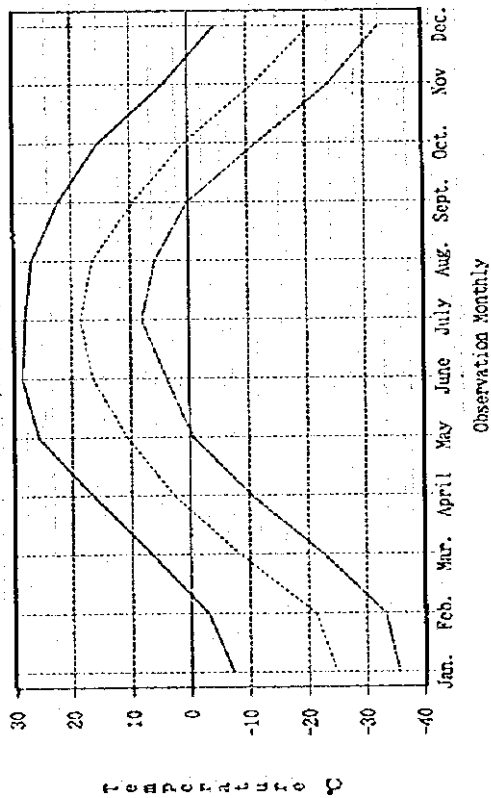


Figure 3.1.2.7 Temperatures at Arvaikheer
(1961-1992)

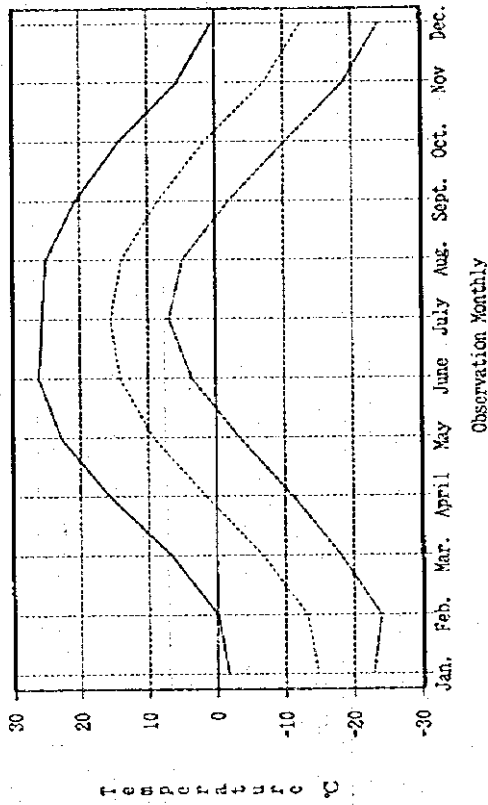


Figure 3.1.2.6 Temperatures at Ulaanbaatar
(1961-1992)

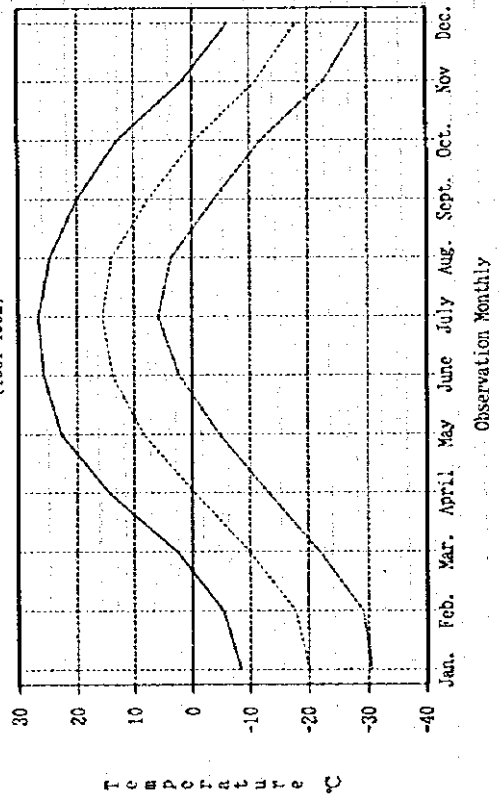


Figure 3.1.2.8 Temperatures at Bulgan
(1961-1992)

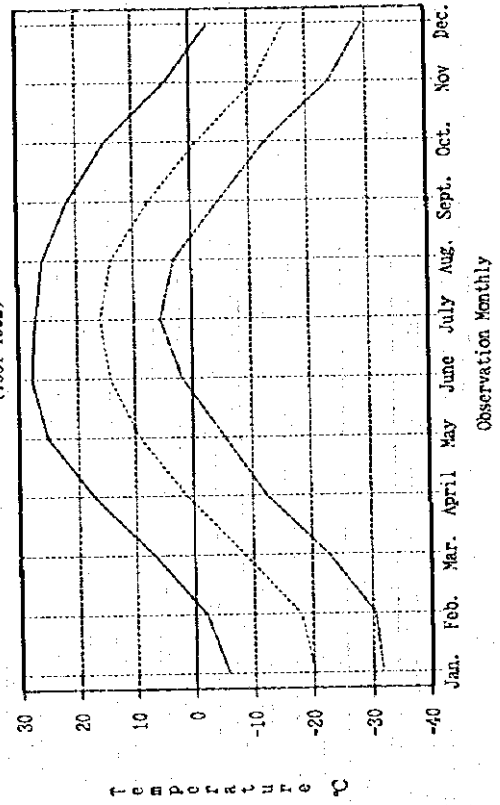


Figure 3.1.2.9 Monthly Average Temperature

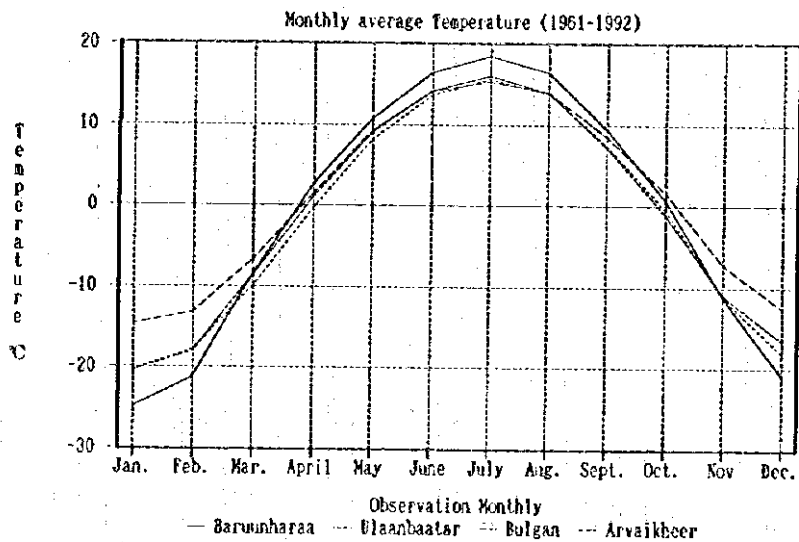


Fig. 3.1.2.10 (1) Monthly Average
Soil Temperature at Arvaikheer (°C)

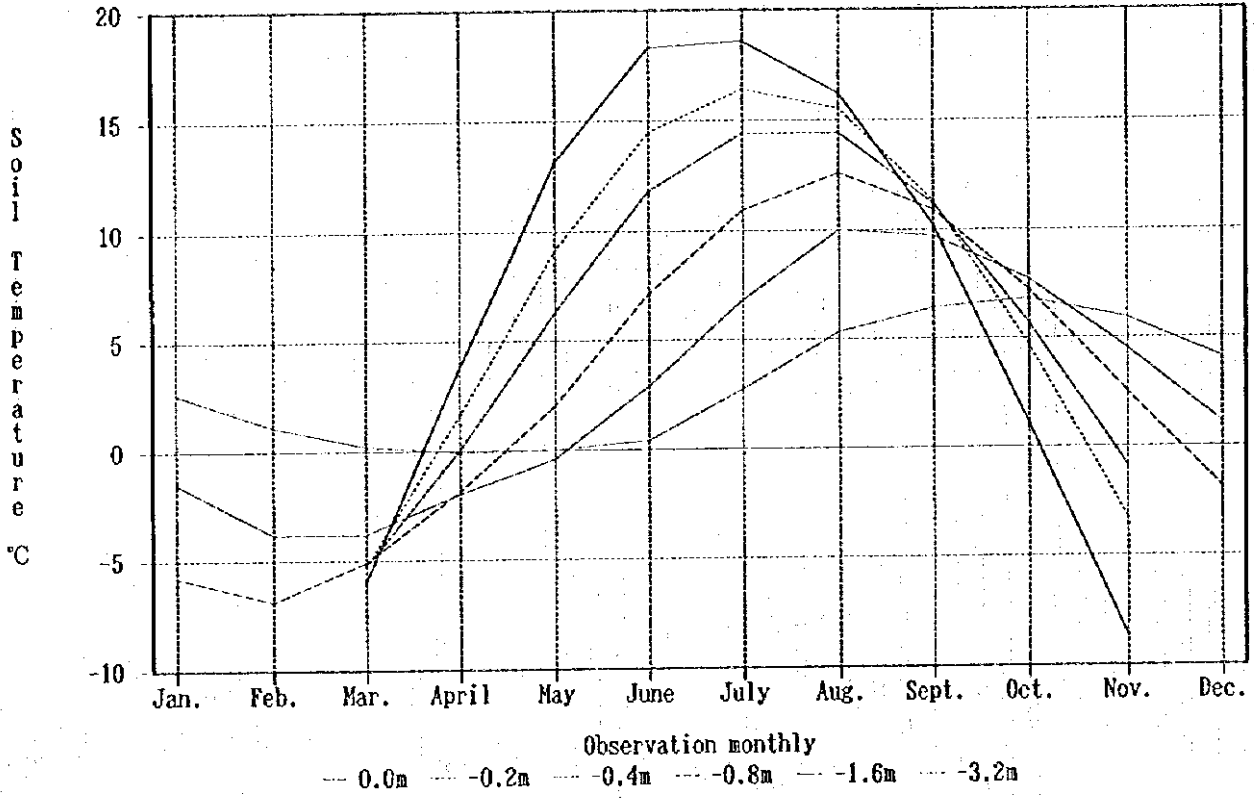


Fig. 3.1.2.10 (2) Monthly Average
Soil Temperature at Baruunkharaa (°C)

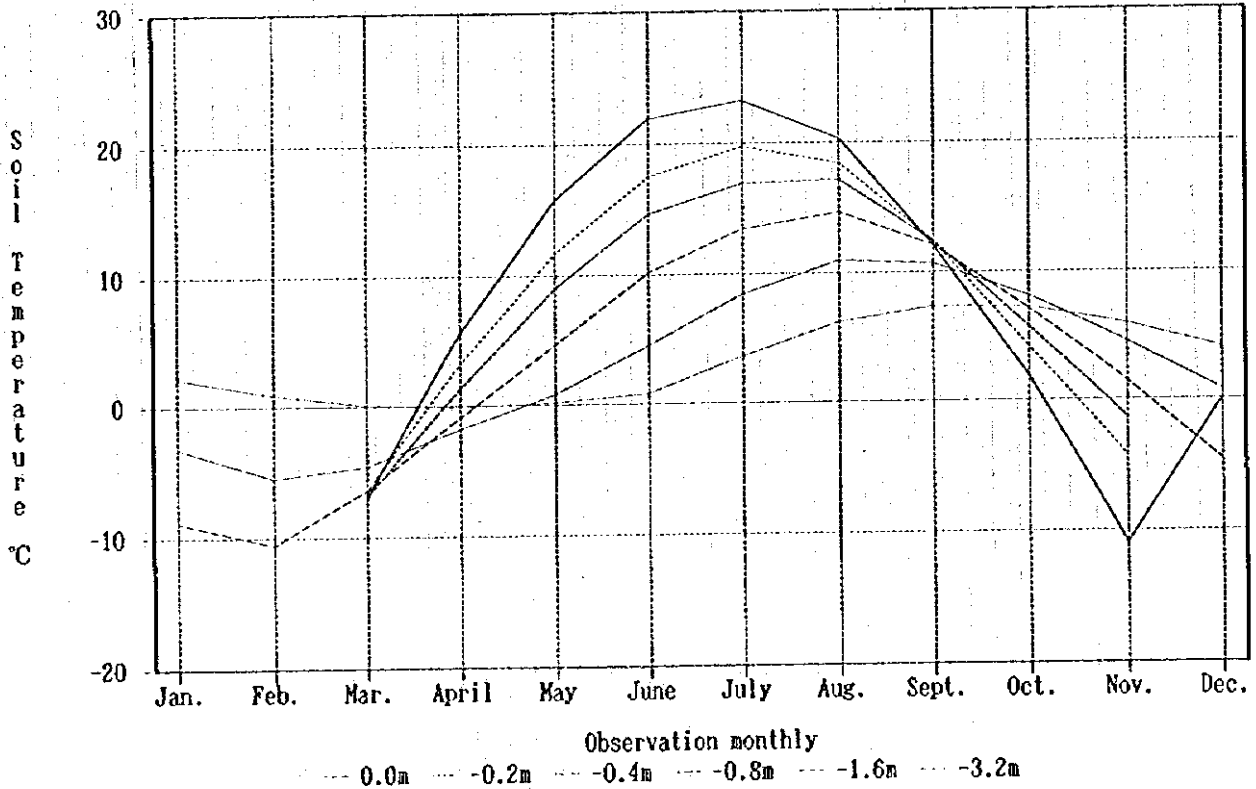


Fig. 3.1.2.10 (3) Monthly Average
Soil Temperature at Bulgan (°C)

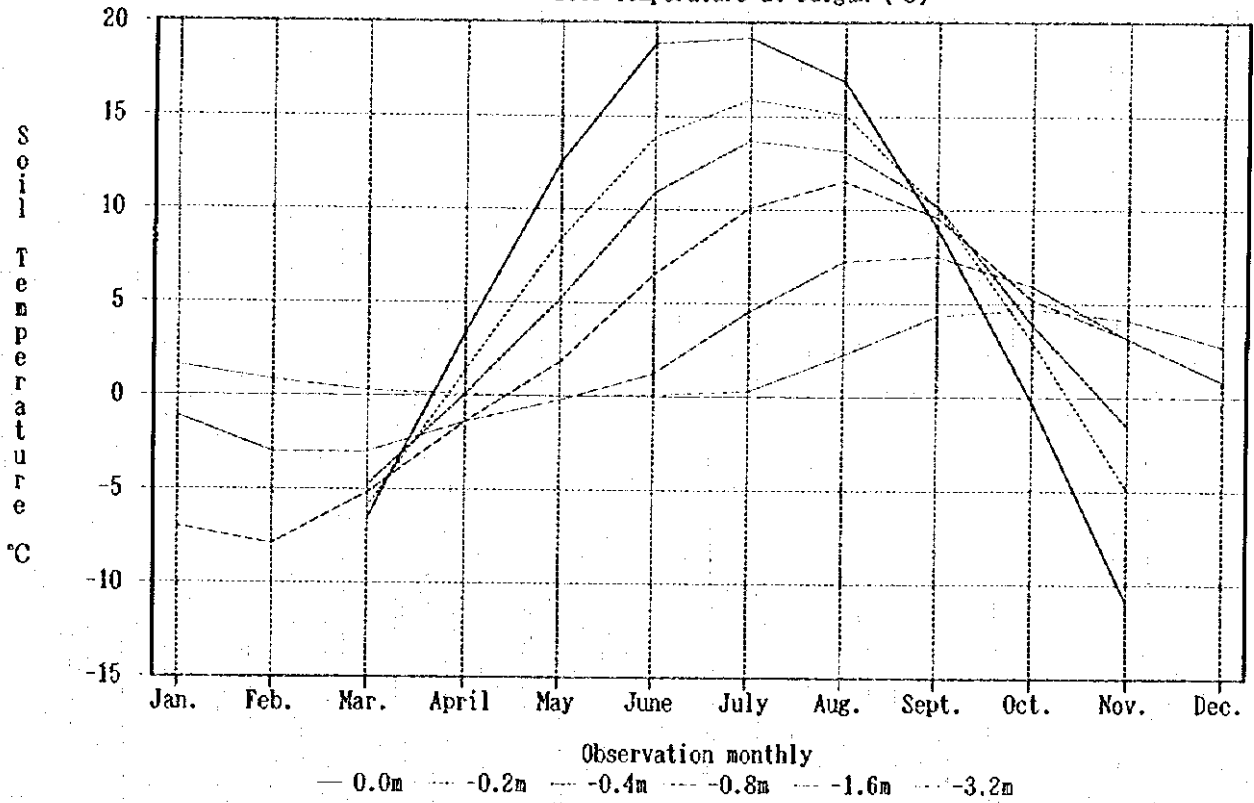


Fig. 3.1.2.10 (4) Monthly Average
Soil Temperature at Erdenesant (°C)

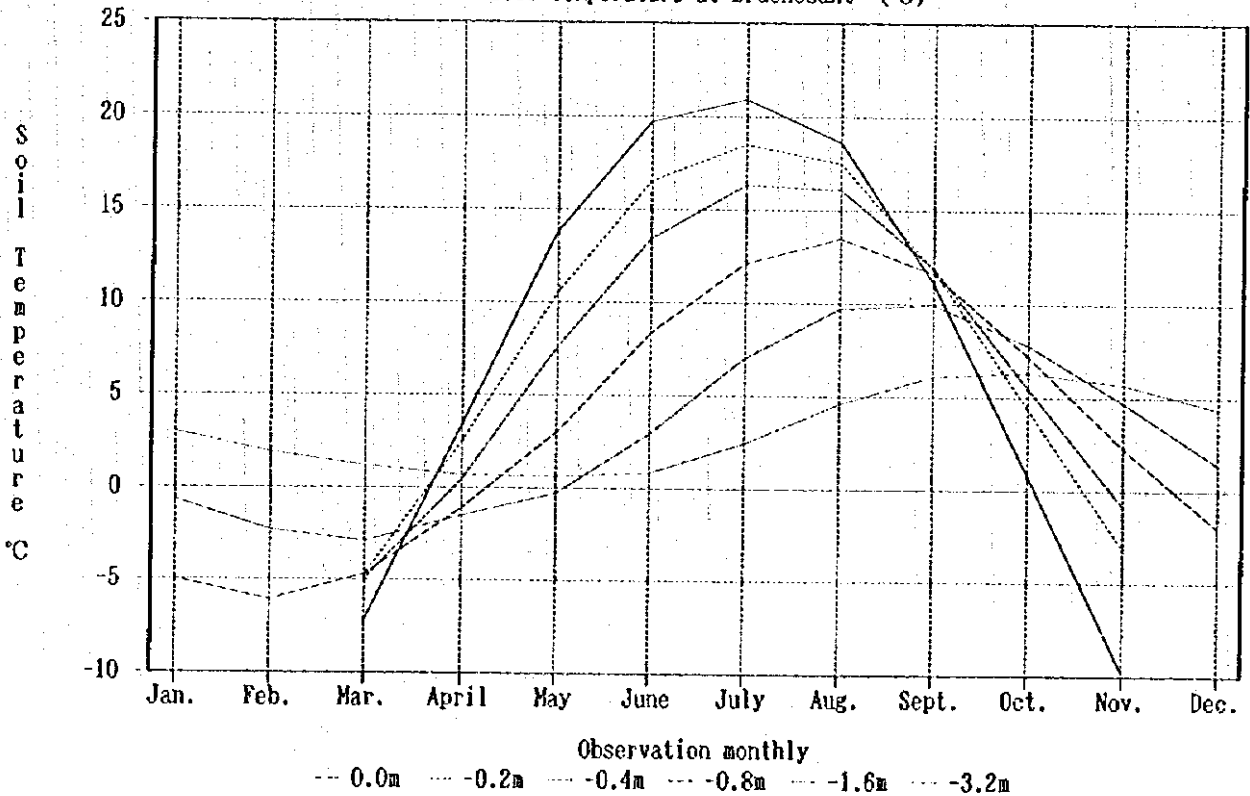


Fig. 3.1.2.10 (5) Monthly Average
Soil Temperature at Ulaanbaatar(°C)

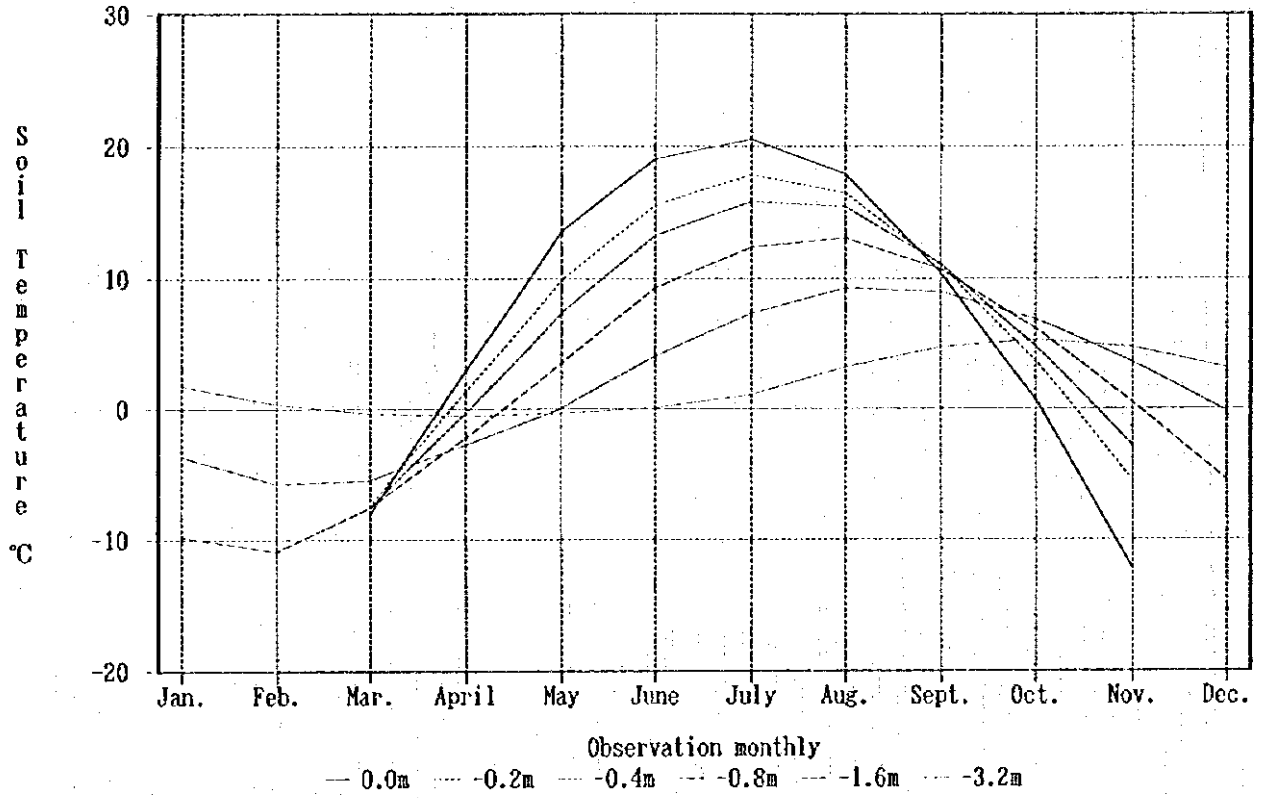


Fig. 3.1.2.10 (6) Monthly Average
Soil Temperature at Hutag (°C)

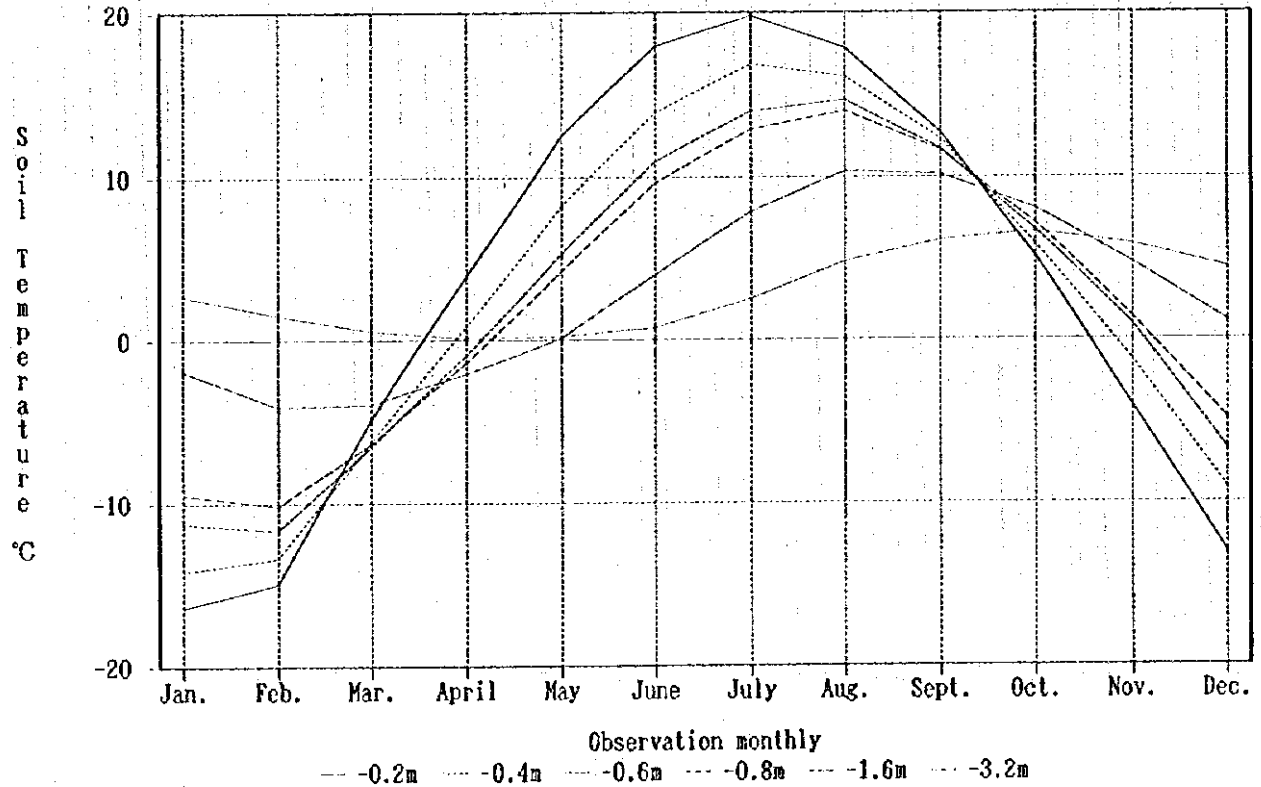
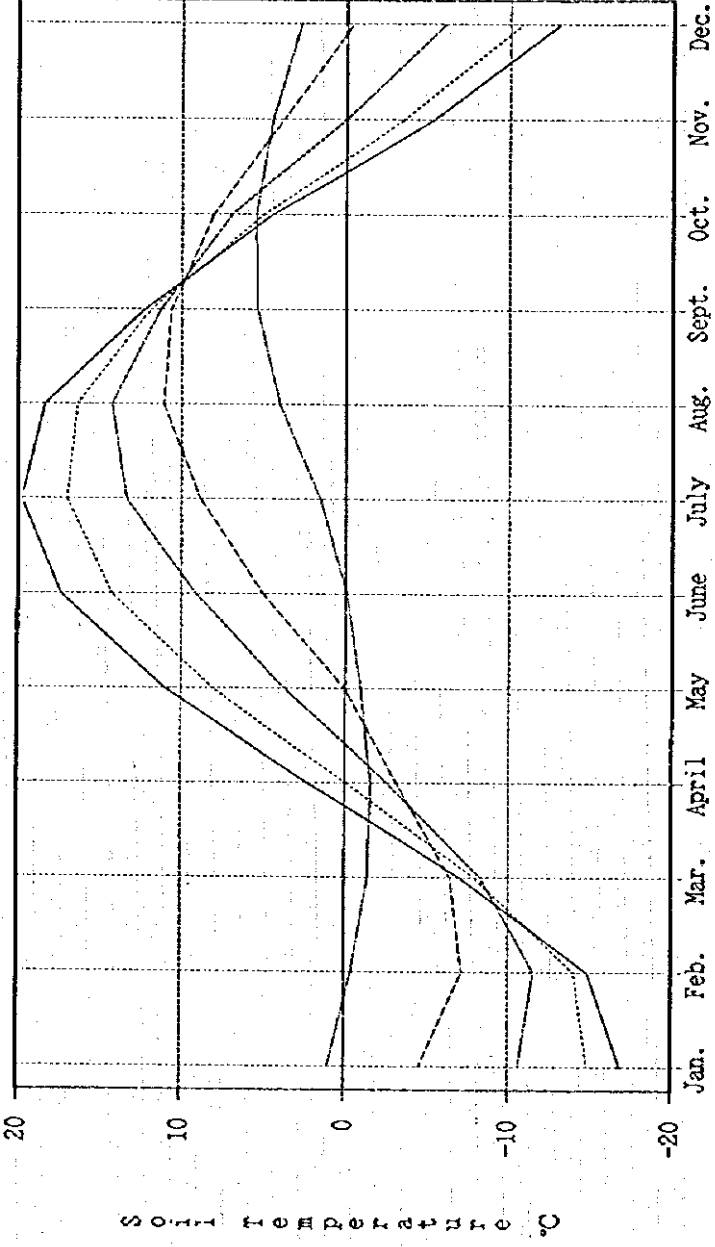
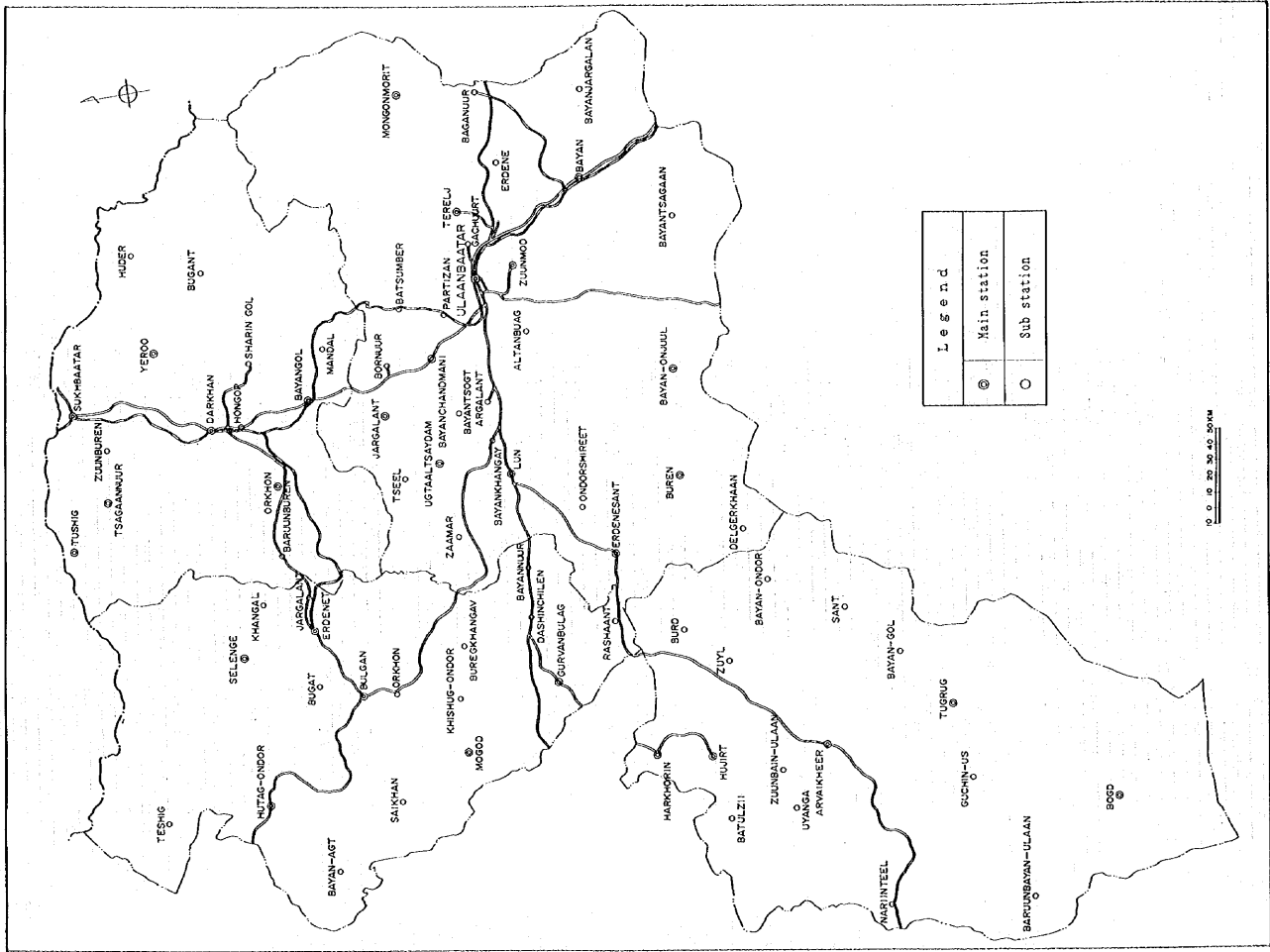


Fig. 3.1.2.10 (7) Monthly Average
Soil Temperature at Maanit (°C)



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Figure 3.1.2.11 Location of Meteorological Observation stations





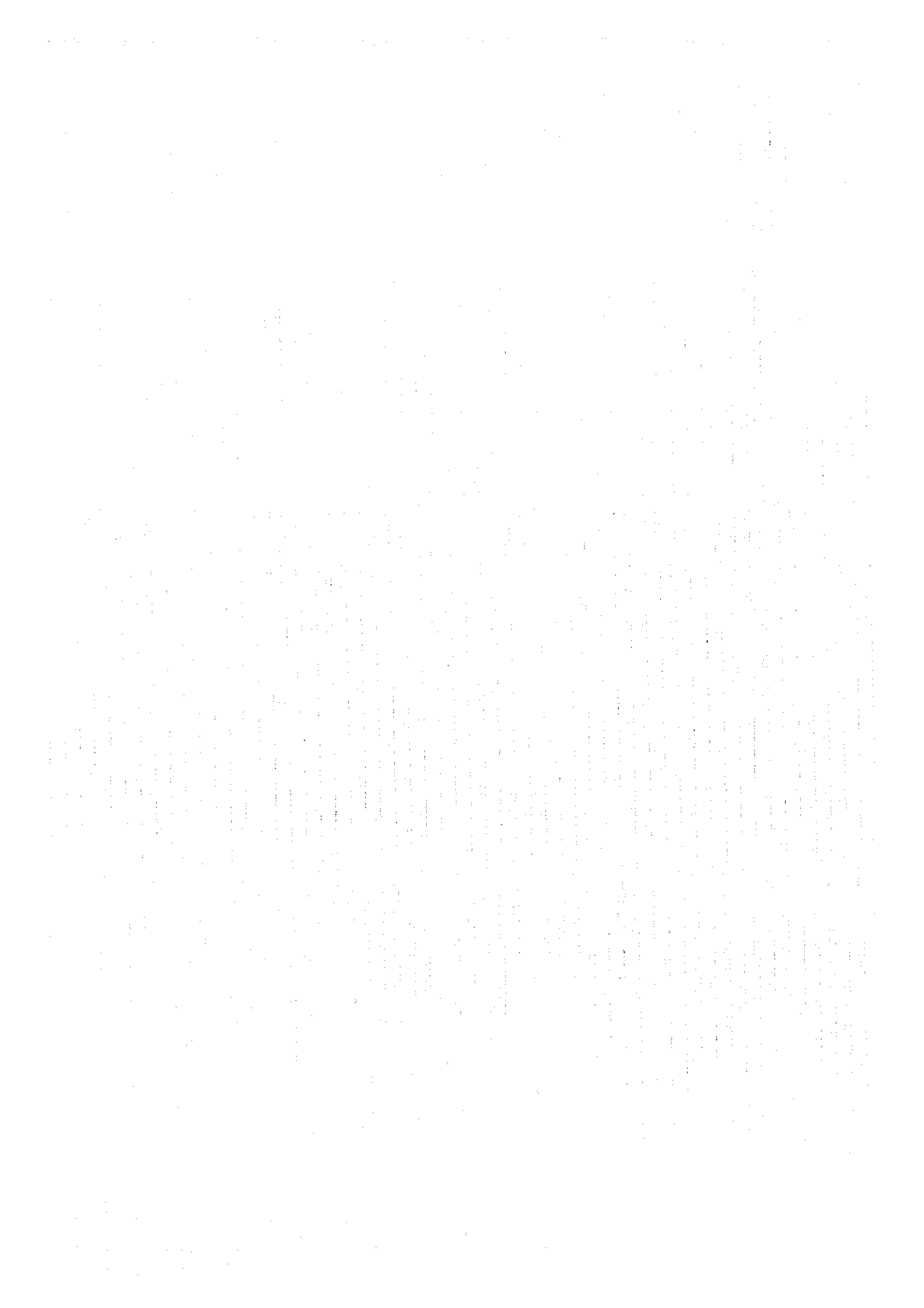


Table 3.1.3.1 Numbers of Rivers, Lakes, and Springs in Mongolia

No.	Aimag	Rivers		Lakes	Springs	Include
		(Pieces)	(Km)	(Place)	(Place)	
1	Arhangai	856	9,404	188	576	
2	Bayan Olgii	109	3,728	67	199	
3	Bayanhongor (Orhon)	169	3,559	34	459	
4	Bulgan	388	5,501	71	369	Study Area(1)
5	Gobi Altai	86	1,242	28	630	
6	Dornogobi	2	320	-	115	
7	Dornod	128	3,060	179	300	
8	Dundgobi	1	54	10	128	
9	Zavhan	189	3,139	91	408	
10	Ovorkhangai	220	2,789	35	558	Study Area(2)
11	Omnogobi	-	-	-	319	
12	Sukhbaatar (Darhan Uul)	13	130	29	261	
13	Selenge (Ulaanbaatar)	170	2,962	23	137	Study Area(1)
14	Tov	192	3,120	26	316	Study Area(1)
15	Uvs	76	2,397	45	280	
16	Hovd	93	1,973	23	321	
17	Hovsgol	846	16,800	181	687	
18	Hentii	259	7,202	164	837	
Total		3,799	67,380	1,194	6,900	①
North of study area(1)		750 (20%)	11,583 (17%)	120	822	② ③=②/①
South of study area(2)		220 (6%)	2,789 (4%)	35	558	④ ⑤=④/①

Source: Institute of Water Policy

Table 3.1.3.2 Monthly average discharge in the study area (m³/s) (1973-1992)

Station	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
No.45 Eroo	5.23	3.68	4.62	43.83	84.00	109.26	129.90	148.72	127.61	70.83	29.49	10.19	767.36
No.61 Uyanga			0.18	0.40	2.00	2.53	2.98	4.18	3.89	2.41	0.40	0.03	
No.46 Dulaanbaan	1.59	0.91	3.35	19.37	47.41	62.98	85.74	97.41	77.07	34.51	15.44	5.50	451.28
No. 2 Hutagt	32.48	28.62	37.24	129.40	241.55	219.01	241.45	257.23	198.24	113.64	68.06	36.70	1603.62
No. 4 Zuumburen	40.48	35.03	47.21	173.72	359.39	355.50	492.67	538.61	500.17	297.89	150.91	60.79	3052.37
No.20 Hantai	24.48	19.05	25.84	96.73	94.46	161.66	250.76	227.00	170.94	90.63	61.24	36.85	1259.64
No.28 Harhorin	2.03	1.66	2.14	15.52	16.10	24.83	35.65	32.03	25.48	15.16	8.44	3.12	182.16
No.29 Orhon sum	2.22	1.46	6.97	47.01	47.13	58.88	101.98	107.29	84.43	51.56	24.87	7.58	541.38
No.30 Orhon tuul	7.99	7.02	14.10	84.36	96.13	113.36	203.35	212.37	180.86	107.98	43.73	15.11	1086.36
No.32 Orhon harhorin			0.13	1.48	0.66	0.76	0.98	1.21	0.88	0.63	0.14	0.31	
No.38 Ulaanbaatar	0.06	0.27	1.40	9.64	43.44	57.57	94.06	94.63	65.92	19.59	4.00	3.13	393.71
No.43 Barunbaraa	1.19	0.94	1.72	6.92	9.67	12.94	18.15	19.72	19.06	10.64	5.54	2.38	108.87
No.47 Huder	0.62	0.44	0.38	2.48	6.58	6.01	8.96	9.74	8.06	5.49	2.75	1.11	52.62
No.41 Dambadarjaa	0.05	1.00	1.23	1.17	1.07	0.72	0.71	0.34	0.02		0.70		
No.39 Ondrshireet	0.28	0.21	0.58	11.09	28.87	34.65	49.99	66.42	57.84	27.56	11.24	1.27	290
No.40 Terelej	0.09	0.05	0.12	2.70	14.77	19.44	26.55	29.39	17.53	6.04	0.95	0.16	117.79
No.62 Arvalbeer	0.02	1.50	3.36	4.09	3.08	3.02	2.33	1.35	0.33		2.12		
No.44 Darhan	1.16	1.24	2.74	15.95	31.90	21.80	31.10	36.45	43.15	33.75	11.96	2.70	233.9
No.21 Teshig	1.13	0.91	3.21	12.80	6.27	12.80	17.74	39.00	30.60	12.23	3.65	2.15	142.49
No.33 Bulgan						0.60	0.25	0.23	0.26				
No.34 Bulgan	0.03	0.02	0.04	0.11	0.36	0.37	0.38	0.42	0.45	0.27	0.12	0.06	2.63
No.64 Narinteel			0.07	1.05	1.05	0.70	1.39	2.54	1.25	0.79	0.27	0.02	

Source: Institute of Water Policy

Table 3.1.3.3 Monthly average discharge in the study area during the growing season (m³/s)

Station	May	June	July	Aug.	Sept.	Average	Total
No.45 Eroo	84.00	109.26	129.90	148.72	127.61	119.90	599.49
No.61 Uyanga	2.00	2.53	2.98	4.18	3.89	3.12	15.58
No.46 Dulaanhaan	47.41	62.98	85.74	97.41	77.07	74.12	370.61
No. 2 Hutagt	241.55	219.01	241.45	257.23	198.24	231.50	1157.48
No. 4 Zuunburen	359.39	355.50	492.67	538.61	500.17	449.27	2246.34
No.20 Hantai	94.46	161.66	250.76	227.00	170.94	180.96	904.82
No.28 Harhorin	16.10	24.83	35.65	32.03	25.48	26.82	134.09
No.29 Orhon sum	47.13	58.88	101.98	107.29	84.43	79.94	399.71
No.30 Orhon tuul	96.13	113.36	203.35	212.37	180.86	161.21	806.07
No.32 Orhon harhorin	0.66	0.76	0.98	1.21	0.88	0.90	4.49
No.38 Ulaanbaatar	43.44	57.57	94.06	94.63	65.92	71.12	355.62
No.43 Beruunharaa	9.67	12.94	18.15	19.72	19.06	15.91	79.54
No.47 Huder	6.58	6.01	8.96	9.74	8.06	7.87	39.35
No.41 Dambadarjaa	1.07	0.72	0.71	0.34	0.02	0.57	2.86
No.39 Ondrshireet	28.87	34.65	49.99	66.42	57.84	47.55	237.77
No.40 Terelj	14.77	19.44	26.55	29.39	17.53	21.54	107.68
No.62 Arvaiheer	3.08	3.02	2.33	1.35	0.33	2.02	10.11
No.44 Darhan	31.90	21.80	31.10	36.45	43.15	32.88	164.4
No.21 Teshig	6.27	12.80	17.74	39.00	30.60	21.28	106.41
No.33 Bulgan		0.60	0.25	0.23	0.26	0.34	1.34
No.34 Bulgan	0.36	0.37	0.38	0.42	0.45	0.40	1.98
No.64 Nariinteei	1.05	0.70	1.39	2.54	1.25	1.39	6.93

Source: Institute of Water Policy

Table 3.1.3.4 (1) Flood/drought probability and discharge calculation table
(NO.2) Hutagt (May-Sep.) (m3/s)

Flood					Drought				
Ranking	Year	Flow	Probable year	Probable flow	Ranking	Year	Flow	Probable year	Probable flow
1	1986	421.20	1/20	1/50=496	1	1978	85.98	1/75	1/50=92
2	1984	379.00	1/10	1/30=453	2	1980	140.60	1/7	1/30=101
3	1985	373.80	1/10	1/20=420	3	1979	152.02	1/5	1/20=109
4	1990	346.60	1/7	1/10=362	4	1974	154.00	1/5	1/10=127
5	1973	315.20	1/5	1/5=302	5	1975	157.72	1/5	1/5=152
6	1976	310.20	1/5		6	1989	166.40	1/3	

(No.20)Hantai

Flood					Drought				
Ranking	Year	Flow	Probable year	Probable flow	Ranking	Year	Flow	Probable year	Probable flow
1	1986	271.86	1/20	1/50=331	1	1985	101.66	1/20	1/50=91
2	1990	235.20	1/7	1/30=309	2	1987	114.96	1/10	1/30=98
3	1991	207.20	1/3	1/20=291	3	1989	168.96	1/2	1/20=104
4	1983	181.52		1/10=259	4	1984	172.62		1/10=116
5	1988	175.20		1/5=226	5	1988	175.20		1/5=133
6	1984	172.62							

(NO.28)Harhorin

Flood					Drought				
Ranking	Year	Flow	Probable year	Probable flow	Ranking	Year	Flow	Probable year	Probable flow
1	1976	51.94	1/20	1/50=68	1	1980	71.90	1/100	1/50=8
2	1977	47.22	1/10	1/30=61	2	1988	12.73	1/10	1/30=9
3	1982	45.97	1/10	1/20=55	3	1978	14.48	1/7	1/20=10
4	1990	37.90	1/5	1/10=96	4	1989	14.94	1/5	1/10=13
5	1983	37.04	1/5	1/5=37	5	1974	15.48	1/5	1/5=16

(No.29)Orhon sum

Flood					Drought				
Ranking	Year	Flow	Probable year	Probable flow	Ranking	Year	Flow	Probable year	Probable flow
1	1976	170.52	1/50	1/50=178	1	1980	27.42	1/75	1/50=30
2	1990	138.48	1/20	1/30=162	2	1978	38.52	1/20	1/30=33
3	1977	119.88	1/7	1/20=149	3	1979	40.74	1/10	1/20=36
4	1973	116.74	1/7	1/10=128	4	1988	55.16	1/5	1/10=42
5	1982	93.18	1/3	1/5=106	5	1989	58.60	1/3	1/5=51

(No.30)Orhon tuul

Flood					Drought				
Ranking	Year	Flow	Probable year	Probable flow	Ranking	Year	Flow	Probable year	Probable flow
1	1982	265.50	1/20	1/50=326	1	1981	76.78	1/30	1/50=70.00
2	1976	230.80	1/7	1/30=301	2	1987	78.68	1/20	1/30=76.00
3	1977	215.44	1/5	1/20=280	3	1989	80.30	1/20	1/20=82.00
4	1990	213.62	1/5	1/10=245	4	1979	117.00	1/5	1/10=94.00
5	1984	211.60	1/5	1/5=208	5	1988	119.18	1/5	1/5=111.0
					6	1973	120.74	1/3	

Table 3.1.3.4 (2) Flood/drought probability and discharge calculation table
(No.38)Ulaanbaatar (May-Sep.) (m³/s)

Flood					Drought				
Ranking	Year	Flow	Probable year	Probable flow	Ranking	Year	Flow	Probable year	Probable flow
1	1973	131.60	1/10	1/50=193	1	1980	20.98	1/50	1/50=20.00
2	1990	120.46	1/10	1/30=171	2	1978	27.84	1/20	1/30=23.00
3	1991	110.00	1/7	1/20=155	3	1989	28.40	1/10	1/20=25.00
4	1988	104.96	1/7	1/10=127	4	1981	35.58	1/7	1/10=31.00
5	1992	101.76	1/5	1/5=99	5	1979	38.38	1/5	1/5=39.0

(No.4) Zuunburen

Flood					Drought				
Ranking	Year	Flow	Probable year	Probable flow	Ranking	Year	Flow	Probable year	Probable flow
1	1984	731.60	1/20	1/50=863	1	1978	1973.20	1/75	1/50=211
2	1985	670.20	1/10	1/30=800	2	1980	229.60	1/30	1/30=227
3	1990	594.40	1/7	1/20=750	3	1981	300.40	1/7	1/20=243
4	1976	576.60	1/5	1/10=662	4	1979	333.40	1/5	1/10=275
5	1986	575.60	1/5	1/5=568	5	1982	366.80	1/3	1/5=320

(No.45)Eroo

Flood					Drought				
Ranking	Year	Flow	Probable year	Probable flow	Ranking	Year	Flow	Probable year	Probable flow
1	1985	198.20	1/10	1/50=258	1	1989	58.14	1/20	1/50=48
2	1991	163.04	1/5	1/30=236	2	1987	63.36	1/10	1/30=53
3	1988	159.80	1/5	1/20=219	3	1992	81.84	1/5	1/20=57
				1/10=188					1/10=66
				1/5=157					1/5=79

(No.46)Dulaanhaan

Flood					Drought				
Ranking	Year	Flow	Probable year	Probable flow	Ranking	Year	Flow	Probable year	Probable flow
1	1985	98.28	1/7	1/50=143	1	1987	40.42	1/20	1/50=35
2	1983	98.22	1/7	1/30=133	2	1992	43.46	1/10	1/30=38
3	1986	95.40	1/5	1/20=124	3	1989	49.54	1/7	1/20=40
4	1984	89.68	1/5	1/10=110					1/10=45
				1/5=94					1/5=53

(No.61)Uyanga

Flood					Drought				
Ranking	Year	Flow	Probable year	Probable flow	Ranking	Year	Flow	Probable year	Probable flow
1	1984	4.26	1/10	1/50=5.22	1	1986	2.01	1/20	1/50=1.76
2	1987	4.19	1/10	1/30=4.92	2	1985	2.44	1/5	1/30=1.86
3	1990	4.02	1/7	1/20=4.68	3	1989	2.53	1/5	1/20=1.96
4	1992	3.51	1/3	1/10=4.25	4	1991	2.54		1/10=2.15
5				1/5=3.78					1/5=2.42

Table 3.1.3.5 Water data collection table

No.	Name of River	Name of station	Aimag	Term
45	Eroo	Eroo	Selenge	1983-1992
61	Ongi	Uyanga	Ovorkhangai	1983-1992
46	Eroo	Dulaanhaan	Selenge	1983-1992
2	Selenge	Hutagt	Bulgan	1983-1992
4	Selenge	Zuunburen	Selenge	1983-1992
20	Egiin gol	Hantai	Bulgan	1983-1991
28	Orkhon	Harhorin	Orkhon Uul	1983-1992
29	Orkhon	Orkhon sum	Orkhon Uul	1983-1992
30	Orkhon	Orkhon tuul	Orkhon Uul	1983-1991
32	Hogshin	Orkhon harhorin	Orkhon Uul	1983-1992
38	Tuul	Ulaanbaatar	Ulaanbaatar	1983-1992
43	Haraa	Baruunharaa	Selenge	1983-1992
47	Huder	Huder	Selenge	1983-1992
41	Selbe	Dambadarjaa	Tov	1985-1992
39	Tuul	Ondorshireet	Tov	1983-1992
40	Terelj	Terelj	Tov	1983-1992
62	Ongi	Arvaiheer	Ovorkhangai	1990-1992
44	Haraa	Darkhan	Orkhon Uul	1991-1992
21	Erin	Teshig	Bulgan	1991-1992
33	Achuut	Bulgan	Bulgan	1991-1992
34	Zuunturuu	Bulgan	Bulgan	1991-1992
64	Taats	Nariinteer	Ovorkhangai	1983-1992
5	Selenge	Sukhbaatar	Selenge	1992

Source: Institute of Water Policy

Table 3.1.3.6 Volume of Water consumed (million m³/Year)

Year	1988	1989	1990	① 1993	②1993 Study area	③=②/① Ratio(%)
Population	113.2	85.6	93.7	85.4	60.6	71.0
Industries	143.9	121.2	120.0	115.6	96.6	83.6
Livestock Farming	103.1	136.9	149.0	155.6	38.2	24.6
Irrigation	123.9	293.5	302.7	68.6	16.1	23.5
Others	6.2	14.7	14.0	15.6	11.4	73.1
Circulation	13.5	17.3	24.1	68.0	67.7	99.6
Total ①	503.8	669.2	703.5	508.8	290.6	57.1
Surface Water Resources ②	38,856.0	38,856.0	38,856.0	38,856.0	38,856.0	
③=②-① Water Balance	38,352.2	38,186.8	38,152.5	38,347.2	38,565.4	
④=①/③ Demand/ Resources(%)	1.3	1.7	1.8	1.3	0.1	

Source: Institute of Water Policy

Table 3.1.3.7 Volume of water required for irrigation in Land improvement regions by crop

(Artai, Hangai)

Crops	Reference volume (m ³ /ha)	Number of time	Term
1. Grain	2,100-2,400	5	15/05-25/08
2. Corn	2,600-2,900	6	20/05-20/08
3. Fodder(1)	1,800-2,200	3	15/05-15/08
4. Potato	1,500-3,000	6	15/05-01/09
5. Vegetables	2,600-3,200	8	06/06-01/08
6. Fodder(2)	3,000-3,300	7	05/05-01/09

(Tov)

Crops	Reference volume (m ³ /ha)	Number of time	Term
1. Grain	1,800-2,000	5	11/05-26/08
2. Corn	1,800-2,200	4	10/05-15/08
3. Fodder(1)	1,500-1,800	3	10/05-20/08
4. Potato	2,000-2,400	6	15/05-01/09
5. Vegetables	2,200-2,500	7-8	20/05-30/08
6. Fodder(2)	2,400-2,900	4	10/05-10/09

Table 3.1.3.8 (1) Water quality Study Sampling Location List

No.	Aimags	Sum	Source	Drinking water
1	Ovorhangai	Bayan-ondor	Well	Use
2	Ovorhangai	Bayan-ondor	Well	Use
3	Ovorhangai	Bayan-ondor	Well	Use
4	Ovorhangai	Sant	Well	Use
5	Ovorhangai	Sant	Well	Use
6	Ovorhangai	Sant	Well	Use
7	Ovorhangai	Sant	Well	Use
8	Ovorhangai	Sant	Well	Use
9	Ovorhangai	Bayangol	Well	Use
10	Ovorhangai	Bayangol(ongi)	River	Use
11	Ovorhangai	Bayangol	Lake	Use
12	Ovorhangai	Tugrug	Well	Use
13	Ovorhangai	Tugrug	Well	Use
14	Ovorhangai	Tugrug	Well	Use
15	Ovorhangai	Tugrug(mazar)	River	Use
16	Ovorhangai	Guchin-us	Well	Use
17	Ovorhangai	Guchin-us	Well	Use
18	Ovorhangai	Guchin-us	Well	Use
19	Ovorhangai	Guchin-us	Well	Use
20	Ovorhangai	Guchin-us(aldart)	River	Use
21	Ovorhangai	Guchin-us	Well	Use
22	Ovorhangai	Bolonbayn-ulaan	Well	Use
23	Ovorhangai	Bolonbayn-ulaan	Well	Use
24	Ovorhangai	Bolonbayn-ulaan	Well	Use
25	Ovorhangai	Sariin-teel(taatu)	River	Use
26	Ovorhangai	Sariin-teel	Well	
27	Ovorhangai	Sariin-teel(taatu)	River	Use
28	Ovorhangai	Sariin-teel	River	Use
29	Ovorhangai	Sariin-teel(shalga)	River	Use
30	Ovorhangai	Hairhan-dulaan	Well	Use
31	Ovorhangai	Hairhan-dulaan	River	Use
32	Ovorhangai	Taragt	Well	Use
33	Ovorhangai	Taragt	Well	Use
34	Ovorhangai	Taragt	Well	Use
35	Ovorhangai	Taragt	Well	Use
36	Ovorhangai	Taragt	Well	Use
37	Ovorhangai	Taragt(hurent)	River	Use
38	Ovorhangai	Taragt	Fountain	Use
39	Ovorhangai	Uyanga	Well	Use
40	Ovorhangai	Uyanga(ongi)	River	Use
41	Ovorhangai	Uyanga	Well	Use
42	Ovorhangai	Uyanga(tarimd)	River	Use
43	Ovorhangai	Arvaikheer	Well	Use

Table 3.1.3.8 (2) Water quality Study Sampling Location List

No.	Aimag	Sun	Source	Drinking water
44	Ovorhangai	Arvaikheer	Well	Use
45	Ovorhangai	Arvaikheer	Fountain	Use
46	Ovorhangai	Arvaikheer	Well	Use
47	Ovorhangai	Arvaikheer	Well	Use
48	Ovorhangai	Zuunbayn-ulaan	Well	Use
49	Ovorhangai	Zuunbayn-ulaan	Fountain	Use
50	Ovorhangai	Zuunbayn-ulaan	Well	Use
51	Ovorhangai	Zuunbayn-ulaan	Well	Use
52	Ovorhangai	Zuunbayn-ulaan	Fountain	Use
53	Ovorhangai	Olziit(fis)	River	Use
54	Ovorhangai	Olziit	Spring	Use
55	Ovorhangai	Olziit(golhi)	River	Use
56	Ovorhangai	Olziit	Well	
57	Ovorhangai	Olziit	Well	Use
58	Ovorhangai	Esonzui(havthgoit)	River	Use
59	Ovorhangai	Esonzui	Well	Use
60	Ovorhangai	Esonzui(malzat)	Well	Use
61	Ovorhangai	Burd	Well	Use
62	Ovorhangai	Burd	Spring	Use
63	Ovorhangai	Burd	Well	Use
64	Ovorhangai	Burd	Well	Use
65	Ovorhangai	Burd	Well	Use
66	Ovorhangai	Burd	Well	Use
67	Ovorhangai	Bat-olzii	Well	Use
68	Ovorhangai	Bat-olzii	River	Use
69	Ovorhangai	Bat-olzii	Spring	Use
70	Ovorhangai	Hujirt	Well	Use
71	Ovorhangai	Hujirt	Well	
72	Ovorhangai	Hujirt	Well	Use
73	Ovorhangai	Hujirt	River	Use
74	Ovorhangai	Hujirt	Spring	Use
75	Ovorhangai	Hujirt	Spring	Use
76	Ovorhangai	Hujirt	Spring	Use
77	Ovorhangai	Hujirt	Well	Use
78	Ovorhangai	Harhorin	Well	Use
79	Ovorhangai	Harhorin(orhon)	River	Use
80	Ovorhangai	Harhorin	Channel	Use
81	Ovorhangai	Harhorin	Well	Use
82	Ovorhangai	Harhorin	Well	Use
83	Ovorhangai	Harhorin(hougshin-orhon)	River	Use
84	Bulgan	Gurvan-bulag	Well	
85	Bulgan	Gurvan-bulag	Well	Use
86	Bulgan	Gurvan-bulag	Well	Use
87	Bulgan	Gurvan-bulag(talni)	River	Use
88	Bulgan	Gurvan-bulag	Well	Use

Table 3.1.3.8 (3) Water quality Study Sampling Location List

No.	Aimag	Sum	Source	Drinking water
89	Bulgan	Dashinchiren	Well	Use
90	Bulgan	Baynnuur	Well	Use
91	Bulgan	Rashaant	Well	Use
92	Tov	Bayntsogt	Well	Use
93	Tov	Argalant	Well	Use
94	Tov	Argalant	Well	Use
95	Tov	Argalant	Well	Use
96	Tov	Baynhangai	Well	Use
97	Tov	Lun	Well	Use
98	Tov	Lun(tuul)	River	Use
99	Tov	Erdenesant	Well	Use
100	Tov	Erdenesant	Well	Use
101	Tov	Erdenesant	Well	Use
102	Tov	Erdenesant	Well	Use
103	Tov	Ondorshireet	Well	
104	Tov	Ondorshireet	Well	Use
105	Tov	Delgereh	Well	Use
106	Tov	Delgereh	Well	Use
107	Tov	Delgereh	River	Use
108	Tov	Buren	Well	Use
109	Tov	Buren	Well	Use
110	Tov	Buren	Well	Use
111	Tov	Buren	Well	Use
112	Tov	Buren	Well	Use
113	Tov	Bayanonjuul	Well	Use
114	Tov	Bayanonjuul	Well	Use
115	Tov	Bayanonjuul	Well	Use
116	Tov	Bayantsagaan	Well	Use
117	Tov	Bayantsagaan	Well	Use
118	Tov	Bayantsagaan	Well	Use
119	Tov	Bayantsagaan	Well	Use
120	Tov	Bayantsagaan	Well	Use
121	Tov	Sergelen	Well	Use
122	Tov	Zuunmod	Well	Use
123	Tov	Zuunmod	Well	Use
124	Tov	Zuunmod	Well	Use
125	Tov	Zuunmod	Well	Use
126	Tov	Zuunmod	Well	Use
127	Tov	Bayan	Well	Use
128	Tov	Bayan	Well	Use
129	Tov	Bayan	Well	Use
130	Tov	Bayanjargalan	Well	Use
131	Tov	Bayanjargalan	Well	Use
132	Tov	Bayanjargalan	Well	Use
133	Tov	Arhust	Well	Use

Table 3.1.3.8 (4) Water quality Study Sampling Location List

No.	Aimag	Sum	Source	Drinking water
134	Tov	Arhust	Well	Use
135	Tov	Arhust	Well	
136	Tov	Arhust	Well	Use
137	Tov	Arhust	Well	Use
138	Tov	Erdene	Well	Use
139	Tov	Erdene	Well	Use
140	Tov	Erdene	Fountain	Use
141	Tov	Bayandelger	Well	Use
142	Tov	Bayandelger	Fountain	Use
143	Tov	Bayandelger	Fountain	Use
144	Tov	Bayandelger(bayan)	River	Use
145	Tov	Mongonmorit(vorga)	River	Use
146	Tov	Mongonmorit	Fountain	Use
147	Tov	Mongonmorit(suji)	River	Use
148	Ulaanbaatar	Voghande	Well	Use
149	Ulaanbaatar	Voghande	Well	Use
150	Ulaanbaatar	Voghande	Well	Use
151	Ulaanbaatar	Voghande	Well	Use
152	Ulaanbaatar	Vognouul	Well	Use
153	Ulaanbaatar	Vognouul	Well	Use
154	Ulaanbaatar	Vognouul	River	Use
155	Ulaanbaatar	Vognouul	Fountain	Use
156	Ulaanbaatar	Ovorjanchibran	Well	Use
157	Ulaanbaatar	Arjanchibran	Fountain	Use
158	Ulaanbaatar	Nareef	Well	Use
159	Ulaanbaatar	Nareef	Well	Use
160	Ulaanbaatar	Nareef	Well	Use
161	Tov	Baynchandmani	Well	Use
162	Tov	Bornuul	Well	Use
163	Tov	Bornuul(boroo)	River	Use
164	Tov	Jargalant	Well	Use
165	Tov	Jargalant	Well	Use
166	Selenge	Mandal	Well	Use
167	Selenge	Tuunhel	Stream	Use
168	Selenge	Zuunharaa(haraa)	River	Use
169	Selenge	Zuunharaa	Well	Use
170	Selenge	Zuunharaa	Well	Use
171	Tov	Oktbayar	Well	Use
172	Tov	Oktbayar(hara-erge)	River	Use
173	Selenge	Baruunharaa	Well	Use
174	Selenge	Baruunharaa(haraa)	River	Use
175	Selenge	Baruunharaa(bayn)	River	Use
176	Darhan uul	Sharigor	River	
177	Darhan uul	Sharigor	Reservoir	Use
178	Darhan uul	Sarhito(erhe)	Well	Use

Table 3.1.3.8 (5) Water quality Study Sampling Location List

No.	Aimag	Sum	Source	Drinking water
179	Darhan uul	Hongor	Well	Use
180	Darhan uul	Hongor	Well	Use
181	Darhan uul	Hongor	Well	Use
182	Darhan uul	Sarhito	Reservoir	Use
183	Selenge	Bayanharaato	Reservoir	Use
184	Selenge	Eroo	River	Use
185	Selenge	Eroo	Well	Use
186	Selenge	Eroo	Well	Use
187	Selenge	Dulaanhan	Well	Use
188	Selenge	Altanbulag	Fountain	Use
189	Selenge	Altanbulag	Well	Use
190	Selenge	Sukhbaatar	Well	Use
191	Selenge	Sukhbaatar	Reservoir	Use
192	Selenge	Shaamar	Well	Use
193	Selenge	Zuunburen	Well	Use
194	Selenge	Zuunburen(selenge)	River	
195	Selenge	Tsagaannuur	Well	Use
196	Selenge	Tushig	Stream	Use
197	Selenge	Tushig	Well	Use
198	Selenge	Tushig	Well	Use
199	Selenge	Shaamar(orhon)	River	
200	Selenge	Sharigor	Reservoir	Use
201	Selenge	Sharigor	Reservoir	Use
202	Selenge	Sharigor	River	Use
203	Orhon uul	Nongan	Well	Use
204	Orhon uul	Futol	Reservoir	Use
205	Orhon uul	Orhon	Well	Use
206	Orhon uul	Orhon(orhon)	River	
207	Orhon uul	Sant	Reservoir	Use
208	Orhon uul	Sant(yebun)	River	Use
209	Orhon uul	Baruun-breen	Well	Use
210	Orhon uul	Baruun-breen(vorgartai)	River	Use
211	Bulgan	Jargalant	Reservoir	Use
212	Bulgan	Hangal(zuuhi)	River	Use
213	Bulgan	Hangal	Reservoir	Use
214	Bulgan	Hangal	Well	Use
215	Bulgan	Hangal	Well	Use
216	Bulgan	Selenge(inget)	River	Use
217	Bulgan	Selenge	Well	Use
218	Bulgan	Selenge(bog)	River	Use
219	Bulgan	Bogt(hojil)	River	Use
220	Bulgan	Bogt	Well	Use
221	Bulgan	Bulgan(achit)	River	Use
222	Bulgan	Bulgan(achit)	River	Use
223	Bulgan	Bogt(onit)	River	Use

Table 3.1.3.8 (6) Water quality Study Sampling Location List

No.	Aimag	Sum	Source	Drinking water
224	Bulgan	Hutog-ondor	Well	Use
225	Bulgan	Teshig(eg)	River	Use
226	Bulgan	Teshig	Well	Use
227	Bulgan	Teshig	Lake	Use
228	Bulgan	Hutag-ondor	Well	Use
229	Bulgan	Hante	Well	Use
230	Bulgan	Hante	Well	Use
231	Bulgan	Hante	Stream	Use
232	Bulgan	Hutag-ondor(selenge)	River	
233	Bulgan	Hutag-ondor	Stream	Use
234	Bulgan	Bayan-agt(hanaoi)	River	Use
235	Bulgan	Bayan-agt(shalag)	Lake	Use
236	Bulgan	Bayan-agt	Well	Use
237	Bulgan	Bayanagt(hunui)	River	Use
238	Bulgan	Shaihan	Stream	Use
239	Bulgan	Bulgan(shiuut)	River	Use
240	Bulgan	Orhon	Stream	Use
241	Bulgan	Orhon	Well	Use
242	Bulgan	Orhon(orhon)	River	
243	Bulgan	Orhon	Stream	Use
244	Bulgan	Bulgan	Well	Use
245	Bulgan	Hishig-ondor(teeg)	River	Use
246	Bulgan	Hishig-ondor	Well	Use
247	Bulgan	Mogod	Well	Use
248	Bulgan	Mogod	Well	Use
249	Bulgan	Mogod(haruun-lash)	Fountain	Use
250	Bulgan	Mogod(nalash)	River	Use
251	Bulgan	Mogod(bayn)	River	Use
252	Bulgan	Hishig-ondor(fushuut)	River	Use
253	Bulgan	Hishig-ondor	Well	Use
254	Bulgan	Bureghangai	Stream	Use
255	Bulgan	Bureghangai(bombat)	River	Use
256	Bulgan	Bureghangai(shibert)	River	Use
257	Bulgan	Bureghangai	Well	Use
258	Bulgan	Bureghangai	Stream	Use
259	Bulgan	Tuulin-guul(tuul)	River	Use
260	Tov	Zaamar	Reservoir	Use
261	Tov	Ogtaar	Well	Use
262	Tov	Atar	Reservoir	Use
263	Tov	Atar	Well	Use
264	Tov	Emeert	Stream	Use
265	Ulaanbaatar	Alshaant	Well	Use
266	Ulaanbaatar	Partizan	Well	Use
267	Tov	Nogoon-turgee(mohar)	River	Use
268	Tov	Batsumber(harzan)	River	Use

Table 3.1.3.8 (7) Water quality Study Sampling Location List

No.	Aimag	Sum	Source	Drinking water
269	Tov	Batsumber	Well	Use
270	Tov	Batsumber(huin)	River	Use
271	Tov	Batsumber	Well	Use
272	Tov	Batsumber(odorg)	River	Use
273	Tov	Batsumber	Well	Use
274	Tov	Nogoon-turgee((bayn)	River	Use
275	Ulaanbaatar	2-Veoodar	Stream	
276	Ulaanbaatar	Bayanhoshio	Well	Use
277	Ulaanbaatar	Dandabarji	Fountain	Use
278	Ulaanbaatar	Uyrdebur-24	Well	Use
279	Ulaanbaatar	Uyrdebur-18	Well	Use
280	Tov	Altanbulag(tuul)	River	
281	Bulgan	Bulgan	Well	Use
282	Bulgan	Hishig-ondor	Well	Use
283	Selenge	Sharingol	Well	Use
284	Darhan uul	Sarhit	Well	Use
285	Orhon uul	Orhon uul	Well	Use
286	Orhon uul	Bayanbuular	Well	Use
287	Selenge	Zuunharaa	Well	Use
288	Selenge	Mandal	Well	Use
289	Selenge	Belendare	Well	Use
290	Selenge	Ulaantorge	Well	Use
291	Orhon uul	Orhon	Well	Use
292	Orhon uul	Erhet	Well	Use
293	Orhon uul	Nongan	Well	Use
294	Selenge	Baruunharaa	Well	Use
295	Orhon uul	Berhe	Well	Use
296	Orhon uul	Tsuedam	Well	Use
297	Selenge	Dulaan	Well	Use
298	Selenge	Eroo	Well	Use
299	Selenge	Enhtal	Well	Use
300	Ulaanbaatar	Arshant	Well	Use
301	Tov	Artanbulag(tuul)	Well	Use

Table 3.1.3.9 (1) Drinking Water Analysis Results

No.	Alamag	Sum	Source	PH	Co. t. al. Co. i.	Na+k	Ca	Mg	Cl	SO ₄	Fe	CO ₃ -HCO ₃	Hardness	Mineraliz.	1	2	3. Livestock	4	
1	Overhangai	Bayan ondor	Well	7.91	111.0	223.6	50.1	90.0	117.1	383.6		475.7	9.9	853.5					
2	Overhangai	Bayan ondor	Well	7.90		37.9	86.2	54.7	81.6	210.7		225.7	8.8	700.9					
3	Overhangai	Bayan ondor	Well	8.23		65.8	80.2	8.5	28.4	126.2	0.3	237.7	4.7	553.2	1				
4	Overhangai	Sant	Well	7.97		146.5	56.1	51.7	88.7	218.1		396.4	7.3	962.6	2				
5	Overhangai	Sant	Well	8.25		144.0	46.1	37.7	53.2	191.5	0.3	359.7	5.4	841.6	2				
6	Overhangai	Sant	Well	8.17		97.7	62.1	37.7	42.6	163.7		329.2	6.2	749.1	2				
7	Overhangai	Sant	Well	8.13	111.0	39.3	64.1	24.3	31.9	84.5	1.5	256.1	5.2	501.8	1				
8	Overhangai	Sant	Well	7.78		398.1	64.1	51.1	340.8	488.8	2.0	305.0	7.4	1650.0					
9	Overhangai	Bayangol	Well	7.49	22.0	17.9	66.1	13.4	35.5	56.7		183.0	4.4	372.7	1				
11	Overhangai	Bayangol	Lake	8.16		846.4	122.2	69.3	1001.1	816.1		195.0	11.8	3050.2					
12	Overhangai	Tugrug	Well	7.72	111.0	318.3	26.0	15.8	138.4	328.4		347.7	2.6	1174.7					
13	Overhangai	Tugrug	Well	8.20	111.0	216.0	26.0	28.0	85.8	280.0		320.0	3.6	915.9	1				
14	Overhangai	Tugrug	Well	7.86		225.6	68.1	25.5	120.7	288.7		317.2	4.9	1089.9					
15	Overhangai	Guchin-us	Well	7.87		554.5	58.1	25.5	479.2	471.6		390.4	5.5	1991.3	1				
17	Overhangai	Guchin-us	Well	7.85	12.0	172.7	58.1	23.1	117.1	173.3		329.4	4.8	873.8	1				
18	Overhangai	Guchin-us	Well	7.70	111.0	232.5	54.1	28.0	145.5	320.1		317.2	5.0	1117.5					
19	Overhangai	Guchin-us	Well	8.00	111.0	94.1	76.1	2.4	46.1	101.7	0.5	283.6	4.0	604.6	1				
21	Overhangai	Guchin-us	Well	8.12		240.1	34.1	10.9	106.5	218.1		323.1	2.6	932.9	1				
22	Overhangai	Guchin-us	Well	7.98	111.0	281.7	42.1	15.8	158.2	352.9		225.5	3.4	1074.3					
23	Overhangai	Bolonbayn-ulaan	Well	7.73	111.0	99.1	72.1	30.4	106.5	151.8	1.0	282.3	6.1	723.3	1				
24	Overhangai	Bolonbayn-ulaan	Well	7.61		118.9	60.1	12.2	85.2	139.1	0.5	237.9	4.0	654.0	1				
26	Overhangai	Sariin-teel	Well	7.65		42.3	50.1	3.6	14.2	54.6		189.1	2.8	354.0	1				
30	Overhangai	Hairhan-dulaan	Well	7.68	111.0	45.8	56.1	12.2	14.2	37.4		201.3	3.8	336.9	1				
32	Overhangai	Taragt	Well	7.78		105.8	46.1	17.0	21.8	116.6		237.9	4.6	485.5	1				
33	Overhangai	Taragt	Well	7.95	111.0	28.7	50.1	10.9	14.2	42.8		288.9	3.7	626.3	1				
34	Overhangai	Taragt	Well	7.00		29.9	58.1	8.7	10.5	64.2		195.2	7.0	293.0	1				
35	Overhangai	Taragt	Well	7.99	13.0	25.5	72.1	10.9	17.7	48.1		237.8	4.5	422.2	1				
36	Overhangai	Taragt	Well	7.20	111.0	32.9	42.1	10.9	12.4	37.4		201.3	3.0	337.1	1				
38	Overhangai	Taragt	Fountain	7.96		66.5	42.1	2.4	21.3	54.6		207.3	2.3	394.3	1				
39	Overhangai	Taragt	Well	7.50	111.0	30.8	74.1	3.6	21.3	47.1		219.6	4.0	406.6	1				
41	Overhangai	Tyanga	Well	7.10		20.9	74.1	3.6	17.7	54.6		185.9	4.0	363.4	1				
43	Overhangai	Arvaikheer	Well	7.13	111.0	33.6	62.1	3.6	7.1	51.3		176.9	3.4	368.6	1				
44	Overhangai	Arvaikheer	Well	7.78	111.0	34.5	46.1	4.9	7.1	51.3		173.8	2.7	319.8	1				
45	Overhangai	Arvaikheer	Fountain	7.50	111.0	20.9	74.1	10.9	14.2	68.4		207.4	4.6	414.0	1				
46	Overhangai	Arvaikheer	Well	7.35	111.0	34.7	38.1	3.6	7.1	42.8		158.6	2.2	286.0	1				
47	Overhangai	Arvaikheer	Well	7.85	111.0	75.2	56.1	25.2	45.1	128.3		274.5	5.2	609.7	2				
48	Overhangai	Zaunbayn-ulaan	Well	7.55		27.1	126.2	6.1	35.5	124.0		250.1	6.5	563.1	1				
49	Overhangai	Zaunbayn-ulaan	Fountain	7.55	111.0	25.8	48.1	2.4	17.7	39.5		146.4	2.6	280.0	1				
50	Overhangai	Zaunbayn-ulaan	Well	7.43		20.9	38.1	4.9	7.1	34.2		137.2	2.3	242.5	1				
51	Overhangai	Zaunbayn-ulaan	Well	7.90	111.0	34.0	62.1	22.5	8.9	28.9		332.3	5.0	489.1	1				
52	Overhangai	Zaunbayn-ulaan	Fountain	8.15		142.8	24.0	8.5	42.6	160.4		201.0	1.9	580.4	1				
56	Overhangai	Olzhit	Well	8.50	2.8	351.0	142.8	24.0	56.8	214.0		250.0	2.7	741.8	1				
57	Overhangai	Olzhit	Well	8.30	111.0	173.9	36.1	10.9	56.8	214.0		280.6	5.3	465.6	1				
59	Overhangai	Esongul	Well	7.78	111.0	19.8	70.1	21.9	10.6	61.0	0.5	280.6	5.3	465.6	1				
															TOTAL	31	0	3	4

DECISION: 1=FINE 2=GOOD (BOL) 3=LIVESTOCK USE

Table 3.1.3.9 (2) Drinking Water Analysis Result

No.	Aling	Sum	Source	PH	Co.t.ml	Co.i.	Na+k	Ca	Mg	Cl	SO4	Fo	CO3+HCO3	Hardness	Mineraliz.	Decision
63	Ovorhangai	Burd	Well	7.68	3.2	315.0	52.2	54.1	21.9	21.3	56.7		286.7	4.3	511.0	1
64	Ovorhangai	Burd	Well	7.70			40.7	72.1	24.3	31.9	70.6		311.1	5.6	553.2	1
65	Ovorhangai	Burd	Well	7.60	111.0	9.0	49.9	46.1	8.5	10.6	52.4		225.7	3.0	398.3	1
66	Ovorhangai	Burd	Well	7.54			34.3	30.1	6.1	10.6	31.1	1.1	140.3	2.0	271.6	1
67	Ovorhangai	Bat-olzi	Well	7.00	111.0	9.0	13.3	18.0	1.2	7.1	19.2		120.3	1.0	120.3	1
70	Ovorhangai	Hujirt	Well	7.76	111.0	9.0	20.0	42.1	10.9	7.1	27.8		188.0	3.0	287.1	1
71	Ovorhangai	Hujirt	Well	7.91			42.3	48.1	10.9	7.1	49.1		204.1	3.3	290.5	1
72	Ovorhangai	Hujirt	Well	7.80	111.0	9.0	26.7	48.1	17.0	7.1	35.2		244.0	3.8	390.3	1
77	Ovorhangai	Hujirt	Well	7.56			35.0	42.1	14.6	10.6	49.1	1.5	213.5	3.3	365.0	1
78	Ovorhangai	Harhorin	Well	7.68	111.0	9.0	8.5	34.1	13.4	7.1	23.6		146.4	2.8	243.3	1
81	Ovorhangai	Harhorin	Well	7.70	111.0	9.0	24.1	30.1	9.1	3.5	25.9		158.6	2.3	254.4	1
82	Ovorhangai	Harhorin	Well	7.77	111.0	9.0	43.9	38.1	10.9	7.1	43.8		213.4	2.8	357.3	1
84	Bulgan	Gurvan-bulag	Well	7.60	111.0	9.0	151.8	38.1	39.5	55.0	170.2		372.1	5.2	860.7	2
85	Bulgan	Gurvan-bulag	Well	8.13	111.0	9.0	318.3	28.0	52.9	88.7	331.9		603.6	5.8	1423.8	2
86	Bulgan	Gurvan-bulag	Well	7.95	111.0	9.0	95.0	40.1	37.7	27.8	98.7		378.2	5.1	892.7	2
88	Bulgan	Gurvan-bulag	Well	7.10			26.4	34.1	7.3	8.9	38.2		140.3	2.3	261.2	1
89	Bulgan	Dashinchiren	Well	8.00			96.8	60.1	35.3	31.9	174.0		335.4	5.9	521.8	2
90	Bulgan	Bayannur	Well	7.63	111.0	9.0	90.8	48.1	24.9	25.6	114.7		305.0	4.5	626.2	2
91	Bulgan	Rashaant	Well	7.57	111.0	9.0	55.4	38.1	20.7	28.4	72.2		225.7	3.6	441.1	1
92	Tov	Bayantsogt	Well	7.60	111.0	9.0	79.1	44.1	35.3	42.6	114.7		286.7	5.1	618.7	2
93	Tov	Argalant	Well	7.71	111.0	9.0	49.9	68.1	18.8	26.6	88.8		274.5	5.0	527.7	1
94	Tov	Argalant	Well	7.86	55.0	18.0	37.3	20.0	15.8	10.6	55.5	2.0	152.4	2.3	294.9	1
95	Tov	Argalant	Well	7.64			27.6	29.0	19.4	12.4	48.1		176.9	3.1	313.4	1
96	Tov	Bayanhangai	Well	7.53	217.0	360.0	44.6	41.1	18.2	16.0	64.2		284.7	3.6	409.9	1
97	Tov	Lun	Well	7.88	2.2	450.0	89.7	46.1	45.6	47.9	148.0		317.1	6.1	708.5	2
99	Tov	Erdnesant	Well	7.53	111.0	9.0	46.1	46.1	37.1	35.5	121.9		333.5	5.4	962.6	2
100	Tov	Erdnesant	Well	7.49	111.0	9.0	45.3	44.1	18.8	31.9	65.3		201.3	3.8	416.8	2
101	Tov	Erdnesant	Well	7.60	111.0	9.0	104.4	53.1	32.8	42.6	146.5		329.4	5.4	724.0	2
102	Tov	Erdnesant	Well	7.40			32.9	29.0	1.8	7.1	59.2		97.6	1.6	227.6	1
103	Tov	Ondorshirect	Well	7.53	2.2	450.0	46.5	58.1	15.2	28.4	80.2		225.7	4.2	207.4	1
104	Tov	Ondorshirect	Well	7.47	1.9	720.0	63.0	34.1	14.6	24.8	74.1		207.4	2.9	418.0	1
105	Tov	Deigereh	Well	7.87	37.0	27.0	30.4	70.1	15.8	21.3	65.3		250.1	4.8	459.7	1
106	Tov	Deigereh	Well	7.89	111.0	9.0	37.7	54.1	26.7	28.4	88.8		213.6	4.9	473.4	1
108	Tov	Buren	Well	7.95	111.0	9.0	191.1	44.1	87.5	149.1	384.0		311.0	9.4	1185.9	3
109	Tov	Buren	Well	7.90	13.0	72.0	274.6	54.1	170.2	294.6	721.0		208.8	16.7	1833.2	3
110	Tov	Buren	Well	7.55	111.0	9.0	125.6	64.1	28.0	53.2	195.8		323.3	5.5	795.1	1
111	Tov	Buren	Well	7.65	111.0	9.0	151.9	50.1	25.5	88.7	198.9		305.0	4.6	830.2	1
112	Tov	Buren	Well	7.61			108.3	66.1	34.0	35.5	188.2		341.6	6.1	791.8	1
113	Tov	Bayanoniul	Well	7.91	111.0	9.0	48.0	48.1	18.2	10.6	49.1	0.3	274.5	3.8	444.9	1
114	Tov	Bayanoniul	Well	7.83			55.9	46.1	18.2	17.7	50.3	0.3	280.6	3.8	475.2	1
115	Tov	Bayanoniul	Well	7.96			48.3	46.1	3.6	14.2	49.1	0.3	189.0	2.6	356.7	1
116	Tov	Bayantsagaan	Well	7.93			238.5	124.2	155.6	365.6	587.2	0.5	402.4	19.0	1879.2	3
117	Tov	Bayantsagaan	Well	7.57	111.0	9.0	33.3	70.1	13.4	14.2	97.4		225.7	4.6	455.6	1
118	Tov	Bayantsagaan	Well	7.64	111.0	9.0	37.9	68.1	13.4	14.2	105.8		213.5	4.5	311.4	1
119	Tov	Bayantsagaan	Well	7.81			56.3	64.1	21.9	14.2	137.9	1.0	282.3	5.0	561.7	4

Table 3.1.3.9 (3) Drinking Water Analysis Result

No.	Aimeag	Sum	Source	pH	Co. t. ml	Co. i.	Na+k	Ca	Mg	Cl	SO4	Fe	CO3+HCO3	Hardness Mineraliz.	Decision													
120	Tov	Bayantsagaan	Well	7.60	111.0	9.0	69.5	96.2	18.2	14.2	176.5		317.2	6.3	700.0													
121	Tov	Sergelen	Well	7.64	111.0	9.0	34.7	46.1	15.8	8.9	42.8		237.9	3.6	393.9													
122	Tov	Zuunmod	Well	7.80	111.0	9.0	35.4	141.3	29.2	102.9	121.9		295.7	9.5	760.5													
123	Tov	Zuunmod	Well	7.60	27.0	36.0	22.8	60.1	23.1	28.4	46.0		231.8	4.9	429.2													
124	Tov	Zuunmod	Well	7.40	111.0	9.0	51.1	21.9	17.1	17.1	54.6		196.0	4.4	375.1													
125	Tov	Zuunmod	Well	7.78	111.0	9.0	9.0	58.1	30.4	14.2	64.2		240.8	5.4	418.2													
126	Tov	Zuunmod	Well	7.79	58.0	18.0	15.6	31.1	10.9	10.6	36.4		118.8	2.5	224.4													
127	Tov	Bayan	Well	7.95	111.0	9.0	144.4	44.1	36.5	56.8	224.6		289.2	5.2	485.2													
128	Tov	Bayan	Well	7.90	111.0	9.0	178.7	58.1	51.1	113.6	230.9		317.0	7.1	1025.5													
129	Tov	Bayan	Well	7.93	175.7	94.2	175.7	94.2	62.0	202.3	326.2		286.4	9.8	1146.9													
130	Tov	Bayanjargalan	Well	7.91	111.0	9.0	22.8	62.1	22.5	14.2	90.9		210.2	5.0	422.8													
131	Tov	Bayanjargalan	Well	7.89	27.0	26.0	24.1	61.1	21.9	10.6	93.1		198.1	4.9	424.9													
132	Tov	Bayanjargalan	Well	7.70	5.0	198.0	22.3	35.1	4.9	7.1	41.7		125.0	2.2	236.1													
133	Tov	Arhust	Well	7.86	111.0	9.0	42.3	56.1	11.5	10.6	73.8		216.7	3.8	410.7													
134	Tov	Arhust	Well	7.60	111.0	9.0	22.1	100.2	18.2	14.2	64.2		347.7	6.5	568.7													
135	Tov	Arhust	Well	7.90	111.0	9.0	38.5	100.2	24.3	14.2	68.4		399.2	7.0	646.0													
136	Tov	Arhust	Well	8.00	111.0	9.0	207.5	78.1	47.4	99.4	310.2		455.8	7.8	1185.3													
137	Tov	Erdene	Well	8.39	111.0	9.0	330.7	62.1	22.5	131.3	118.7		755.6	5.0	1421.7													
138	Tov	Erdene	Well	7.20	14.6	17.7	38.2	84.2	14.6	14.2	104.8		288.4	5.0	524.3													
139	Tov	Erdene	Well	7.23	111.0	9.0	46.0	74.1	15.8	14.2	104.8		170.8	3.0	332.7													
140	Tov	Erdene	Well	7.02	111.0	9.0	32.4	46.1	8.5	7.1	67.8		178.0	3.0	332.7													
141	Tov	Bayandelger	Fountain	7.45	2.2	450.0	49.4	102.2	32.8	35.5	28.4		384.3	7.8	733.0													
142	Tov	Bayandelger	Fountain	7.36	111.0	9.0	36.6	58.1	10.9	7.1	52.4		213.5	3.8	415.3													
143	Tov	Mongonorit	Fountain	7.79	12.3	81.0	17.0	45.1	10.3	7.1	56.7		197.5	3.1	282.7													
146	Tov	Voghande	Well	7.88	111.0	9.0	74.5	70.1	38.9	17.5	296.3		265.2	6.7	703.5													
148	Tov	Voghande	Well	7.89	111.0	9.0	82.6	74.1	42.6	39.0	248.2		268.3	7.2	755.8													
149	Tov	Voghande	Well	7.89	111.0	9.0	89.5	73.1	32.2	17.7	246.0		271.3	6.3	730.8													
150	Tov	Voghande	Well	7.91	111.0	9.0	61.9	68.1	46.2	21.3	221.4		274.3	7.2	394.9													
151	Tov	Voghande	Well	7.11	111.0	9.0	34.7	18.0	2.4	7.1	34.2		103.7	1.1	200.1													
152	Tov	Voghande	Well	7.10	111.0	9.0	29.9	22.0	3.6	7.1	38.5		103.7	1.4	204.8													
153	Tov	Voghande	Well	7.12	1.9	540.0	32.2	50.1	15.8	10.6	68.4		213.5	3.8	381.0													
155	Tov	Voghande	Fountain	6.98	111.0	9.0	29.4	34.1	4.9	7.1	65.4	0.5	204.3	2.9	353.5													
157	Tov	Ovorjanchibran	Fountain	7.01	111.0	9.0	38.6	48.1	6.1	7.1	49.3		45.7	1.0	115.3													
158	Tov	Arjanchibran	Well	7.00	111.0	9.0	14.3	10.0	6.1	7.1	32.1		45.7	1.0	115.3													
159	Tov	Nareef	Well	7.60	111.0	9.0	63.5	94.2	43.8	71.0	123.4		378.2	8.3	792.1													
160	Tov	Nareef	Well	7.42	111.0	9.0	29.9	28.0	12.2	10.6	51.7		140.3	2.4	273.7													
161	Tov	Bayanchandmani	Well	6.90	333.0	3.0	19.1	51.1	24.3	10.6	17.3	0.2	289.7	4.6	412.7													
162	Tov	Bornuul	Well	7.32	333.0	3.0	26.2	54.1	25.5	21.2	34.6	0.3	283.6	4.8	445.9													
164	Tov	Jargalant	Well	7.49	333.0	3.0	37.9	40.1	11.5	17.7	31.3	0.3	210.4	3.0	350.4													
165	Tov	Jargalant	Well	7.42	333.0	3.0	44.4	47.1	38.3	24.8	72.4	0.1	317.2	5.5	546.4													
166	Seienge	Mandal	Well	7.13	11.0	93.0	28.5	96.2	88.2	120.7	93.8	0.4	451.4	12.1	915.7													
167	Seienge	Tuunhei	Stream	7.49	0.0	3800.0	9.9	23.0	21.3	10.6	10.7		170.8	2.9	247.7													
169	Seienge	Zuunharaa	Well	7.16	333.0	3.0	6.0	47.1	27.4	5.3	34.6	0.2	244.0	4.6	364.8													
170	Seienge	Zuunharaa	Well	7.04	333.0	3.0	15.6	45.1	10.3	7.1	18.1	0.2	195.2	3.1	291.7													
171	Tov	Okhayar	Well	7.20	4.3	230.0	26.4	45.1	15.8	12.4	26.3		231.8	3.6	357.9													
														Total	31	8	1	1	1	1	1	1	1	1	1	1	1	1

Table 3.1.3.9 (4) Drinking Water Analysis Result

No.	Airag	Sum	Source	pH	Co. t. ml	Co. l.	Nask	Ca	Mg	Cl	SO4	Fe	CO3+HCO3	Hardness Mineraliz.	Decision
173	Selenge	Barunharaa	Well	7.41	333.0	3.0	13.1	35.1	12.2	10.5	19.7	138.5	250.4	2.8	1
178	Bartha uul	Sarhito(ernhe)	Well	7.47	333.0	3.0	104.4	40.1	42.5	42.5	88.0	298.9	298.9	3.4	1
179	Bartha uul	Hongor	Well	7.38	333.0	3.0	284.0	77.1	29.8	205.9	427.0	0.2	240.9	5.3	1
180	Bartha uul	Hongor	Well	7.46			91.1	34.1	20.7	56.8	103.7	0.2	231.8	3.4	1
181	Bartha uul	Hongor	Well	7.32			22.1	39.1	49.8	39.0	159.4	0.4	414.8	6.1	2
185	Selenge	Eroo	Well	7.00			22.2	118.2	13.4	88.7	39.5		283.6	7.0	1
186	Selenge	Eroo	Well	7.32	333.0	3.0	45.3	52.1	32.8	10.6	37.0	0.1	378.2	5.2	1
187	Selenge	Dalaanhan	Well	7.30	333.0	3.0	18.6	48.1	9.1	10.5	17.3		201.3	3.2	1
188	Selenge	Altanbulag	Fountain	7.28	11.1	90.0	29.0	59.1	20.7	14.2	60.8	0.1	259.2	4.7	1
189	Selenge	Altanbulag	Well	7.32	333.0	3.0	29.9	113.2	39.0	99.4	88.9	0.2	311.1	8.5	1
190	Selenge	Sukhbatar	Well	7.30			137.1	79.2	31.6	35.5	175.3		439.2	6.6	1
192	Selenge	Shaamar	Well	7.33			17.7	48.1	11.5	8.9	9.9		216.5	3.5	1
193	Selenge	Zumburen	Well	7.21	333.0	3.0	8.7	72.1	13.4	12.4	15.6	0.2	271.4	4.7	1
195	Selenge	Tsagaannuur	Well	7.32	333.0	3.0	32.2	52.1	12.2	8.9	30.4		250.1	3.6	1
197	Selenge	Tushig	Stream	7.41	11.1	90.0	12.9	62.1	15.2	8.9	9.0	0.3	274.5	4.4	1
198	Selenge	Tushig	Well	7.00	11.0	93.0	1.6	46.1	9.1	10.6	14.0	0.1	198.6	3.1	1
203	Orhon uul	Nomgan	Well	7.03	11.0	93.0	9.2	38.1	9.1	8.9	5.7	0.3	154.7	2.7	1
205	Orhon uul	Orhon	Well	7.12	333.0	3.0	155.1	39.1	14.0	97.6	212.3	0.3	183.0	3.1	1
209	Orhon uul	Orhon	Well	7.37	333.0	3.0	40.2	46.1	12.8	16.0	28.8	0.3	231.8	3.4	1
214	Bulgan	Kargal	Well	7.38	333.0	3.0	38.9	35.1	14.0	10.6	27.1	0.1	225.7	2.9	1
215	Bulgan	Hangai	Well	7.28	333.0	3.0	12.4	60.1	14.0	12.4	34.6		219.6	4.2	1
217	Bulgan	Selenge	Well	7.23	333.0	3.0	41.6	44.1	12.2	12.4	22.2	0.1	253.1	3.2	1
220	Bulgan	Kort	Well	7.33	333.0	3.0	15.4	47.1	9.7	8.9	9.0	0.2	204.3	3.2	1
224	Bulgan	Huvog-ondor	Well	7.49	250.0	4.0	23.9	56.1	17.0	10.6	14.0	0.1	283.6	4.2	1
226	Bulgan	Teshig	Well	7.50	23.0	43.0	99.8	30.1	73.0	39.0	54.4	0.2	570.3	7.5	1
228	Bulgan	Hutag-ondor	Well	7.70	333.0	3.0	6.2	47.1	10.3	5.3	15.6	0.1	183.0	3.2	1
229	Bulgan	Hante	Well	7.80	333.0	3.0	20.7	48.1	17.6	10.6	26.3		237.9	3.9	1
230	Bulgan	Hante	Well	7.68	333.0	3.0	13.5	39.1	10.3	7.1	18.9	0.1	170.8	2.8	1
231	Bulgan	Hante	Well	7.45	333.0	3.0	36.3	39.1	18.2	7.1	30.4	0.1	255.2	3.5	1
233	Bulgan	Hutag-ondor	Stream	7.52			7.6	55.1	9.1	7.1	19.7		195.2	3.5	1
235	Bulgan	Bayan-agt(shalag)	Lake	7.60			101.0	65.1	41.3	24.3	55.1		549.0	6.7	2
236	Bulgan	Bayan-agt	Well	7.89	333.0	3.0	32.9	19.0	53.5	14.2	30.4		484.2	5.4	1
238	Bulgan	Shaihan	Stream	7.78	4.3	230.0	47.8	44.1	16.4	10.6	33.7		253.1	3.8	1
240	Bulgan	Orhon	Stream	7.63	0.4	2300.0	29.2	45.1	12.2	10.5	47.7		219.6	3.2	2
241	Bulgan	Orhon	Well	7.58	333.0	3.0	32.4	61.1	16.4	5.3	11.5		213.3	3.0	2
243	Bulgan	Orhon	Stream	7.42	0.4	2300.0	37.0	48.1	11.5	24.8	45.2		231.8	4.4	2
244	Bulgan	Bulgan	Well	7.74			51.3	47.1	11.5	7.1	41.1		237.9	3.4	2
245	Bulgan	Hishig-ondor	Well	7.43	333.0	3.0	28.3	47.1	11.5	14.2	88.9	0.1	198.2	3.3	1
247	Bulgan	Nogod	Well	7.47	333.0	3.0	35.6	138.3	76.0	10.6	28.0	0.2	222.6	3.3	1
248	Bulgan	Nogod	Well	7.38	333.0	3.0	42.8	52.1	24.3	11.7	182.7	0.1	445.3	13.2	2
249	Bulgan	Nogod(haruun-lash)	Fountain	7.57	333.0	3.0	42.8	52.1	24.3	28.0	92.1		219.6	4.6	2
253	Bulgan	Hishig-ondor	Well	8.22	333.0	3.0	14.8	42.1	0.6	53.2	440.2		788.4	2.2	1
254	Bulgan	Bureghannai	Stream	7.18	333.0	3.0	40.5	141.3	48.6	95.8	72.4	1.2	509.3	11.1	1
				7.59			45.3	60.1	10.9	10.6	21.4		292.8	3.9	1
Total														34	8
														0	2

Table 3.1.3.9 (5) Drinking Water Analysis Result

No.	Аймаг	Сум	Source	pH	Co.t.al Co.i.	Na+k	Ca	Mg	Cl	SO4	Fe	CO3+HCO3	Hardness	Mineraliz.	Decision			
257	Булган	Бурганагай	Well	7.51	333.0	3.0	58.1	15.3	16.0	17.3	17.3	271.4	4.2	407.2	4			
258	Булган	Бурганагай	Stream	7.68	333.0	47.4	62.1	21.3	14.2	19.7	19.7	341.6	4.4	496.4	1			
261	Төв	Огтаар	Well	7.07	333.0	29.0	41.1	10.9	17.7	22.2	22.2	198.2	3.0	319.2	1			
263	Төв	Атар	Well	7.55	333.0	3.0	21.4	28.1	14.2	19.7	19.7	179.8	3.0	283.1	1			
264	Төв	Амсаат	Stream	7.49	11.1	28.1	64.1	29.2	21.3	49.4	49.4	387.7	5.6	503.2	1			
265	Улаанбаатар	Алшаат	Well	7.39	333.0	3.0	36.3	34.0	23.1	54.3	54.3	326.3	5.6	526.0	1			
266	Улаанбаатар	Партизан	Well	7.32	333.0	3.0	21.8	14.6	12.4	30.4	30.4	236.2	4.3	397.5	1			
269	Төв	Батсумбер	Well	7.32	333.0	3.0	40.2	31.0	16.0	60.1	60.1	332.4	5.4	537.0	1			
271	Төв	Батсумбер	Well	7.15	23.0	43.0	14.5	30.1	8.9	23.0	23.0	131.1	2.8	216.8	1			
273	Төв	Батсумбер	Well	7.27	333.0	3.0	17.0	20.1	8.9	27.1	27.1	277.5	4.7	411.8	1			
275	Улаанбаатар	2-Вөөдөр	Stream	7.20		24.8	178.4	35.3	143.8	164.6	164.6	314.1	11.8	878.3	2			
276	Улаанбаатар	Баянхөшиг	Well	7.10		16.3	22.0	5.5	7.1	19.7	19.7	109.6	2.6	171.7	1			
277	Улаанбаатар	Дамдбаржи	Well	7.20		13.3	56.1	11.5	16.0	22.2	22.2	207.4	3.8	327.5	1			
278	Улаанбаатар	Гурдубур-24	Mountain	6.93		22.3	20.0	2.4	8.9	41.0	41.0	64.0	1.2	159.7	1			
279	Улаанбаатар	Гурдубур-18	Well	7.50		13.3	16.0	3.6	8.9	15.6	15.6	67.1	1.1	124.6	1			
281	Булган	Булган	Well	6.90		28.0	58.1	14.6	19.5	40.0	40.0	219.5	4.1	385.5	1			
282	Булган	Хишиг-ондор	Well	6.90		43.9	50.1	27.9	19.5	6.0	6.0	97.6	4.8	516.7	1			
283	Сэлэнгэ	Шарингол	Well	7.20			24.0	19.2	9.3			189.1	2.8		1			
284	Дархан уул	Сархит	Well	7.00	333.0	3.0	44.0	10.8	10.6			219.6	3.1		1			
285	Орхон уул	Орхон уул	Well	7.00	333.0	3.0	42.0	20.4	10.6			256.2	3.7		1			
286	Орхон уул	Баянбулар	Well	6.90			64.0	21.6	10.7			298.9	5.0		1			
287	Сэлэнгэ	Замхаргаа	Well	7.00			64.0	26.4	18.7			414.8	5.4		1			
288	Сэлэнгэ	Мандаг	Well	7.00	333.0	3.0	64.0	26.4	36.0			175.7	3.6		1			
289	Сэлэнгэ	Белендарт	Well	7.00	333.0	3.0	40.1	19.2	19.4			274.5	6.6		1			
290	Сэлэнгэ	Улаанторго	Well	7.00	333.0	3.0	40.1	14.0	18.7			182.0	3.2		1			
291	Орхон уул	Орхон	Well	7.00			54.0	27.6	18.8			237.9	5.0		1			
292	Орхон уул	Эрхет	Well	7.00	260.0	4.0	46.0	22.8	22.0			213.5	4.2		1			
293	Орхон уул	Номгун	Well	6.80			46.0	14.4	19.8			207.4	3.5		1			
294	Сэлэнгэ	Баруунхараа	Well	7.00			44.0	10.8	16.3			195.2	3.1		1			
295	Орхон уул	Бөрхө	Well	7.00			24.0	31.2	63.9			244.0	3.7		1			
296	Орхон уул	Туседан	Well	6.90			18.0	15.2	10.6			134.2	2.5		1			
297	Сэлэнгэ	Дулаан	Well	7.00			38.0	1.2	8.5			115.9	2.0		1			
298	Сэлэнгэ	Сроо	Well	6.80	333.0	3.0	48.0	1.2	17.5			189.1	2.5		1			
299	Сэлэнгэ	Энхтай	Well	7.00			52.0	28.8	24.8			183.0	5.0		1			
300	Улаанбаатар	Аршант	Well	7.00	333.0	3.0	46.4	19.2	24.8	60.8	60.8	219.6	3.7	422.8	1			
301	Төв	Аршанбулаг(туул)	Well	7.50			42.0	19.2								1		
														Total	35	1	0	0
														G.Total	161	30	7	17
														%	75	14	3	8

Table 3.1.3.10 (1) EC,PH Analysis Results

No.	Aimag	Sum	Source	EC Measured value		EC Standard value (25°C)	PH	Decision		
				°C	m s/cm			1	2	3
10	Ovorhangai	Bayngol(ongi)	River	5.00	0.25	0.65	8.17	1		
15	Ovorhangai	Tugrug(mazar)	River	7.00	0.64	1.00	8.32		2	
20	Ovorhangai	Guchin-us(aldart)	River	5.00	0.45	0.85	8.21		2	
25	Ovorhangai	Sariin-teel(taatu)	River	6.00	0.36	0.74	8.25	1		
27	Ovorhangai	Sariin-teel(taatu)	River	3.00	0.32	0.76	8.10		2	
28	Ovorhangai	Sariin-teel	River	3.00	0.54	0.98	7.70		2	
29	Ovorhangai	Sariin-teel(shalga)	River	1.00	0.47	0.95	8.28		2	
31	Ovorhangai	Hairhan-dulaan	River	1.00	0.38	0.86	8.23		2	
37	Ovorhangai	Taragt(huremt)	River	3.00	0.44	0.88	7.89		2	
40	Ovorhangai	Uyanga(ongi)	River	3.00	0.18	0.62	7.74	1		
42	Ovorhangai	Uyanga(tarimd)	River	2.00	0.48	0.94	8.01		2	
53	Ovorhangai	Olziit(fis)	River	1.00	0.36	0.84	7.48		2	
55	Ovorhangai	Olziit(golhi)	River	1.00	0.19	0.67	7.20	1		
58	Ovorhangai	Esonzui(havthgoit)	River	1.00	0.38	0.86	7.80		2	
60	Ovorhangai	Esonzui(malzat)	River	1.00	0.41	0.89	7.97		2	
61	Ovorhangai	Burd	River	2.00	0.51	0.97	7.83		2	
62	Ovorhangai	Burd	Fountain	2.00	0.40	0.86	7.57		2	
68	Ovorhangai	Bat-olzii	River	1.00	0.55	1.03	7.00		2	
69	Ovorhangai	Bat-olzii	Fountain	3.00	0.90	1.34	6.80		2	
73	Ovorhangai	Hujirt	River	3.00	0.54	0.98	7.69		2	
74	Ovorhangai	Hujirt	Fountain	5.00	0.36	0.76	7.71		2	
75	Ovorhangai	Hujirt	Fountain	4.00	0.39	0.81	7.50		2	
76	Ovorhangai	Hujirt	Fountain	3.00	0.35	0.79	7.51		2	
79	Ovorhangai	Harhorin(orhon)	River	3.00	0.19	0.63	7.80	1		
80	Ovorhangai	Harhorin	Channel	3.00	0.20	0.64	7.86	1		
83	Ovorhangai	Harhorin(hougshin-o)	River	3.00	0.62	1.06	7.96		2	
87	Bulgan	Gurvan-bulag(talni)	River	3.00	0.77	1.21	8.19		2	
98	Tov	Lun(tuul)	River	4.00	0.86	1.28	7.32		2	
107	Tov	Delgereh	River	11.60	0.81	1.08	8.13		2	
144	Tov	Bayndelger(bayn)	River	2.00	0.52	0.98	7.30		2	
145	Tov	Mongonmorit(vorga)	River	1.80	0.14	0.60	6.98	1		
147	Tov	Mongonmorit(suji)	River	1.70	0.29	0.76	7.30		2	
154	Ulaanbaatar	Vognouul	River	2.00	0.15	0.61	7.00	1		
163	Tov	Bornuul(boroo)	River	0.60	0.38	0.87	7.67		2	
168	Selenge	Zuunharaa(haraa)	River	1.90	0.21	0.67	7.41	1		
172	Tov	Oktbayar(hara-erge)	River	0.00	0.47	0.97	7.36		2	
174	Selenge	Baruunharaa(haraa)	River	2.80	0.27	0.71	7.36	1		
175	Selenge	Baruunharaa(bayn)	River	3.00	0.25	0.69	7.01	1		
176	Darhan uul	Sharingor	River	3.40	0.30	0.73	7.33	1		
177	Darhan uul	Sharingor	Veservoir	10.10	0.50	0.80	7.37		2	
182	Darhan uul	Sarhito	Veservoir	10.00	0.69	0.99	7.17		2	
183	Selenge	Baynharaato	Veservoir	8.40	0.47	0.80	6.96		2	
							Total	12	30	0

Decision ; 1=Fine(0.25-0.75) 2=Good(0.75~3) 3=Bad(3 Over)

Table 3.1.3.10 (2) EC,PH Analysis Results

No.	Aimag	Sum	Source	EC Measured value		EC Standard value (25°C)	PH	Decision		
				°C	m s/cm			1	2	3
184	Selenge	Eroo	River	0.00	0.22	0.72	7.09	1		
191	Selenge	Sukhbaatar	Veservoir	5.10	0.42	0.82	7.41		2	
194	Selenge	Zuunburen(selenge)	River	4.80	0.29	0.69	7.41	1		
199	Selenge	Shaamar(orhon)	River	2.40	0.43	0.88	7.31		2	
200	Selenge	Sharingor	Veservoir	11.50	0.49	0.76	7.11		2	
201	Selenge	Sharingor	Veservoir	8.20	0.46	0.80	7.09		2	
202	Selenge	Sharingor	River	8.30	0.34	0.67	7.40	1		
204	Orhon uul	Futol	Veservoir	7.80	0.51	0.85	7.31		2	
206	Orhon uul	Futol(orhon)	River	1.60	0.31	0.78	7.52		2	
207	Orhon uul	Sant	Veservoir	11.40	0.40	0.67	7.39	1		
208	Orhon uul	Sant(yebun)	River	1.60	0.36	0.83	7.42		2	
210	Orhon uul	Baruun-breen(vorgar)	River	2.80	0.31	0.75	7.54	1		
211	Bulgan	Jargalant	Veservoir	10.90	0.41	0.69	7.44		2	
212	Bulgan	Hangal(zuuhi)	River	2.40	0.49	0.94	7.42		2	
213	Bulgan	Hangal	Veservoir	13.20	0.28	0.52	7.21	1		
216	Bulgan	Selenge(inget)	River	1.40	0.37	0.84	7.49		2	
218	Bulgan	Selenge(bog)	River	3.40	0.25	0.68	7.34		2	
219	Bulgan	Bogt(hojil)	River	2.00	0.33	0.79	7.12		2	
221	Bulgan	Bulgan(achit)	River	2.60	0.46	0.91	7.68		2	
222	Bulgan	Bulgan(achit)	River	1.90	0.38	0.84	7.61		2	
223	Bulgan	Bogt(onit)	River	3.90	0.39	0.81	7.70		2	
225	Bulgan	Teshig(eg)	River	1.00	0.31	0.79	7.65		2	
227	Bulgan	Teshig	Lake	7.50	0.24	0.59	8.19	1		
232	Bulgan	Hutag-ondor(selenge)	River	3.50	0.25	0.68	7.52	1		
234	Bulgan	Bayn-agt(hanaoi)	River	4.10	0.37	0.79	7.73		2	
235	Bulgan	Bayn-agt(shalag)	Lake	3.20	0.68	1.12	7.89		2	
237	Bulgan	Baynagt(hunui)	River	1.50	0.32	0.79	7.63		2	
239	Bulgan	Bulgan(shiuut)	River	1.40	0.36	0.83	7.62		2	
242	Bulgan	Orhon(orhon)	River	2.70	0.23	0.68	7.66		2	
245	Bulgan	Hishig-ondor(teeg)	River	2.90	0.33	0.77	7.57		2	
250	Bulgan	Mogod(nalash)	River	1.20	0.43	0.91	7.79		2	
251	Bulgan	Mogod(bayn)	River	2.50	0.38	0.83	7.66		2	
252	Bulgan	Hishig-ondor(fushuu)	River	1.10	0.33	0.81	7.73		2	
255	Bulgan	Bureghangai(bombat)	River	4.70	0.53	0.94	7.62		2	
256	Bulgan	Bureghangai(shibert)	River	3.80	0.31	0.73	7.68	1		
259	Bulgan	Toulin-guul(tuul)	River	2.90	0.33	0.77	7.60		2	
260	Tov	Zaamar	Veservoir	11.10	0.48	0.76	7.49		2	
262	Tov	Atar	Veservoir	4.70	0.37	0.78	7.66		2	
267	Tov	Nogoon-turgee(mohar)	River	0.10	0.58	1.08	7.47		2	
268	Tov	Batsumber(harzan)	River	0.20	0.61	1.11	7.51		2	
270	Tov	Batsumber(huin)	River	0.60	0.46	0.95	7.48		2	
272	Tov	Batsumber(odorg)	River	3.10	0.23	0.67	7.32	1		
274	Tov	Nogoon-turgee(bayn)	River	0.40	0.56	1.05	7.30		2	
280	Tov	Altanbulag(tuul)	River	3.00	0.50	0.94	7.30		2	
Total								10	34	0
h.Total								22	64	0
%								26	74	0

Table 3.1.3.11 (1) Comparison With Results of Past Water Quality Studies

No.	Aimag	Sum	Source	Year	PH	Na+K	Ca	Mg	Cl	S04	Fe	CO3+HC03	Hardness	Mineraliz.	Decision (%)
13	Ovorhangai	Tugrug	Lake	12.10.94	8.20	216.0	26.0	28.0	95.8	230.0		320.0	3.6	915.9	+4
				05.04.87	7.50	225.9	28.1	25.5	101.2	246.8		323.3	3.5	845.5	
26	Ovorhangai	Sariin-teel	Well	13.10.94	7.65	42.3	50.1	3.6	14.2	54.6		189.1	2.8	354.0	-7
				07.07.89	7.65	58.9	52.1	2.4	14.2	94.6		183.0	2.8	405.3	
30	Ovorhangai	Hairhan-dulaan	Well	14.10.94	7.68	15.6	56.1	12.2	14.2	37.4		201.3	3.8	336.9	-2
				10.11.79	7.10	14.7	58.1	12.8	14.2	31.3		216.6	4.0	347.7	
36	Ovorhangai	Taragt	Well	17.10.94	7.99	25.5	72.1	10.9	17.7	48.1		237.8	4.5	422.2	+1
				27.07.75	6.70	36.1	56.1	17.0	14.2	77.3		207.2	4.2	414.6	
44	Ovorhangai	Arvaikheer	Well	01.10.94	7.13	33.6	62.1	3.6	17.7	54.6		176.9	3.4	368.6	+8
				18.06.86	7.05	12.2	64.1	7.3	21.3	48.5		158.6	3.8	312.0	
50	Ovorhangai	Zumbayn-ulaan	Well	22.10.94	7.43	25.8	48.1	2.4	17.7	39.5		146.4	2.6	280.0	+3
				25.04.71	7.20	30.8	36.1	9.7	10.5	32.9		146.3	2.2	266.3	
59	Ovorhangai	Esonzui	Well	19.10.94	7.78	19.8	70.1	21.9	10.6	61.0	0.5	280.6	5.3	465.6	+5
				14.05.81	7.00	18.2	70.1	14.6	10.6	33.7		274.5	4.7	422.2	
67	Ovorhangai	Bat-olzii	Well	19.10.94	7.00	13.8	18.0	1.2	7.1	19.2		61.0	1.0	120.3	-8
				24.09.71	7.20	16.8	14.0	4.9	7.1	6.6	0.3	91.5	1.1	141.2	
70	Ovorhangai	Hujirt	Well	23.10.94	7.76	20.0	42.1	10.9	7.1	27.8		183.0	3.0	297.1	-4
				20.05.72	6.80	29.7	40.0	11.0	14.2	27.2	0.2	201.3	2.9	323.6	
72	Ovorhangai	Hujirt	Well	23.10.94	7.80	26.7	48.1	17.0	7.1	35.2		244.0	3.8	380.3	+4
				14.04.86	7.15	42.0	42.0	8.4	17.7	37.0		201.3	2.8	348.4	
93	Tov	Argalant	Well	27.10.94	7.71	49.9	68.1	18.8	26.6	88.8		274.5	5.0	527.7	+6
				28.09.87	7.50	31.1	54.1	27.9	17.8	61.7		274.5	5.0	467.3	
124	Tov	Zuunmod	Well	03.11.94	7.80	22.8	51.1	21.9	17.7	54.6		186.0	4.4	375.1	+2
				06.04.83	7.10	14.0	52.1	20.6	17.7	39.5		219.6	4.3	363.6	
187	Selenge	Dulaanhan	Well	22.10.94	7.30	18.6	48.1	9.1	10.6	17.3		201.3	3.2	305.1	+3
				07.09.75	6.80	6.9	45.1	10.9	10.6	6.0		189.2	3.2	290.0	
191	Selenge	Sukhbaatar	Reservoir	23.10.94	7.41	29.2	38.1	17.6	14.2	14.8	1.5	244.0	3.4	359.6	+4
				25.02.74	7.00	31.1	38.0	13.4	14.2	60.0		170.8	3.0	334.9	
192	Selenge	Shaamar	Well	23.10.94	7.33	17.7	48.1	11.5	8.9	9.9		216.5	3.6	319.7	+13
				25.02.74	6.70	18.8	47.1	14.0	17.7	16.0		228.8	3.5	246.0	
194	Selenge	Zumburen (selenge)	River	24.10.94	7.41	19.8	41.1	6.1	7.1	14.8		176.9	2.6	265.9	-4
				25.02.74	7.00	14.5	46.0	8.5	7.1	24.0		183.0	3.0	288.2	
200	Selenge	Sharngor	Reservoir	25.10.94	7.11	20.0	62.1	21.3	23.1	27.1		254.5	4.9	428.2	+9
				1974	7.00	18.0	60.1	20.7	15.1	18.0	0.3	244.0	3.3	360.2	
225	Bulgan	Teshig(eg)	River	01.11.94	7.65	16.1	46.1	11.5	7.1	28.8	0.1	192.1	3.3	301.9	+5
				02.10.83	7.60	3.4	52.1	12.2	7.1	57.6		140.3	3.6	275.1	

Table 3.1.3.11 (2) Comparison With Results of Past Water Quality Studies

No.	Aimags	Sum	Source	Year	PH	Na+K	Ca	Mg	Cl	SO4	Fe	CO3+HCO3	Hardness	Mineraliz.	Decision
226	Bulgan	Teshig	Well	01.11.94	7.70	6.2	47.1	10.3	5.3	15.6	0.1	183.0	3.2	267.8	
				06.09.84	7.40	12.2	47.1	14.6	7.1	24.7		179.8	3.6	286.5	-3
229	Bulgan	Hante	Well	02.11.94	7.68	13.6	39.1	10.3	7.1	18.9	0.1	170.8	2.8	260.0	
				16.04.74	6.90	38.1	38.1	10.9	7.8		0.3	305.1	2.8	424.4	-9
232	Bulgan	Hutag-ondor (selenge)	River	02.11.94	7.52	17.5	39.1	9.1	7.1	24.7	0.1	167.7	2.7	265.4	
				23.12.86		27.1	43.1	10.2	10.6	37.8		167.4	3.0	296.6	-6
236	Bulgan	Bayan-agt	Well	02.11.94	7.78	32.9	48.1	16.4	10.6	33.7		253.1	3.8	396.9	
				13.04.74	6.90	14.2	48.1	15.8	7.8	40.0		244.1	3.7	376.2	+3
237	Bulgan	Bayanagt(hunui)	River	02.11.94	7.63	19.8	40.1	10.9	8.9	14.8		195.2	2.9	289.9	
				07.12.85	7.81	8.3	20.0	14.0	8.9	14.8		118.9	2.2	184.9	+22
238	Bulgan	Shaihan	Stream	02.11.94	7.63	47.8	44.1	12.2	10.6	47.7		219.6	3.2	407.2	
				16.04.74		40.1	40.1	15.8	11.7			219.7		310.0	+14
242	Bulgan	Orhon(orbhon)	River	06.11.94	7.66	23.9	29.1	9.1	8.9	18.9		158.6	2.2	248.5	
				08.10.83		29.9	22.0	8.5	7.1	43.6		122.0		233.1	+3
244	Bulgan	Bulgan	Well	06.11.94	7.43	51.3	47.1	11.5	14.2	88.9	0.1	198.2	3.3	413.4	
				11.04.74	6.90	7.4	46.1	12.2	11.7	35.0		170.8	3.3	287.0	+4
261	Tov	Ogtaar	Well	09.11.94	7.07	29.0	41.1	10.9	17.7	22.2		198.2	3.0	319.2	
				02.03.73	7.00	2.6	45.1	8.5	9.8	25.5		198.2	3.0	315.0	+1
27 Place														Total	0
															+70%
															-30%

Figure 3.1.3.1 Average Monthly Discharge
 (1) Selenge River
 No.2 Hutagt (m³/s)

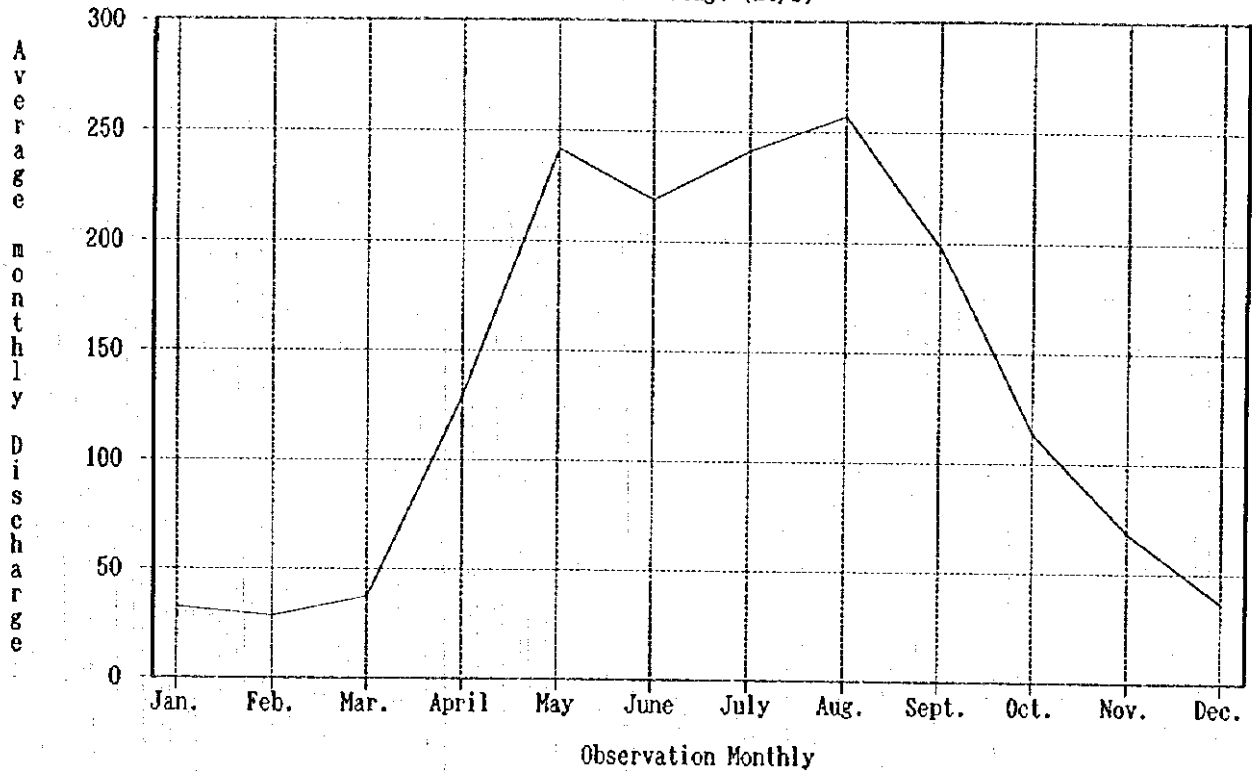


Figure 3.1.3.1 Average Monthly Discharge
 (2) Selenge River
 No.4 Zuunburen (m³/s)

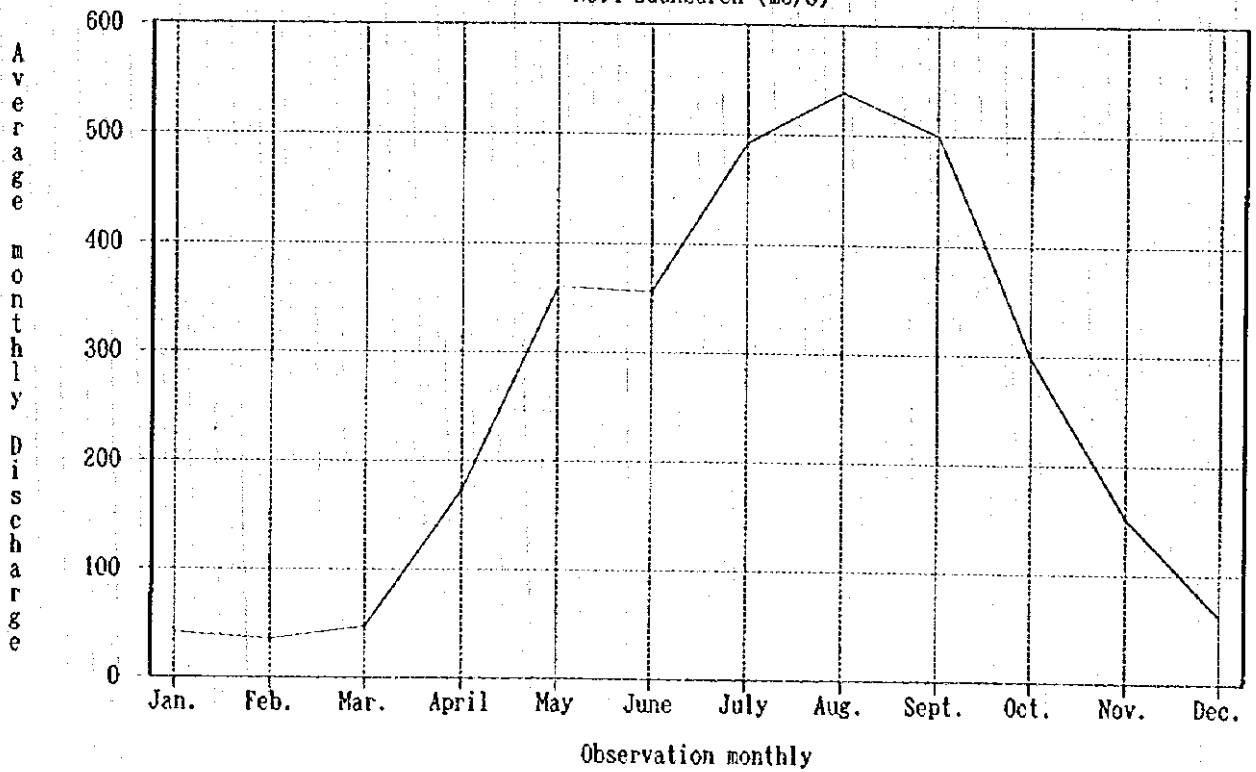


Figure 3.1.3.1 Average Monthly Discharge

(3) Orkhon river
No.28 Harhorin (m3/s)

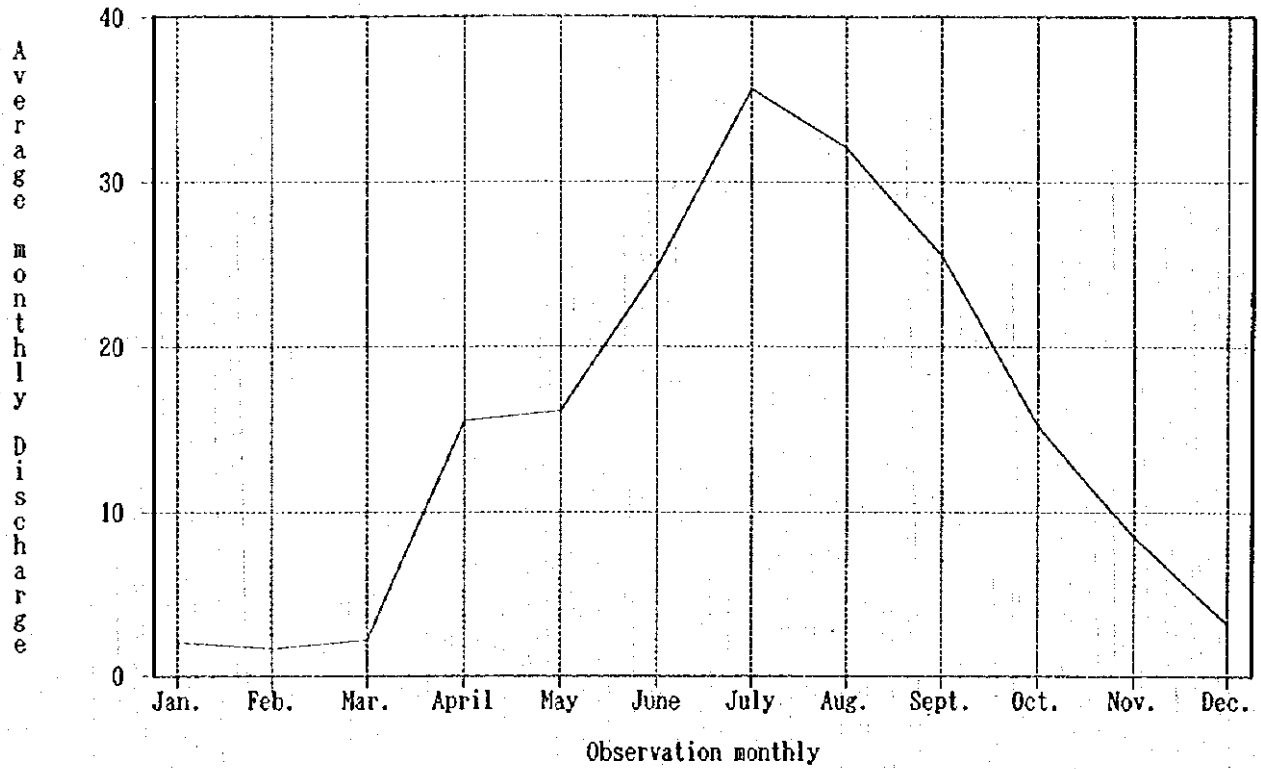


Figure 3.1.3.1 Average Monthly Discharge

(4) Orkhon river
No.29 Orhon sum (m3/s)

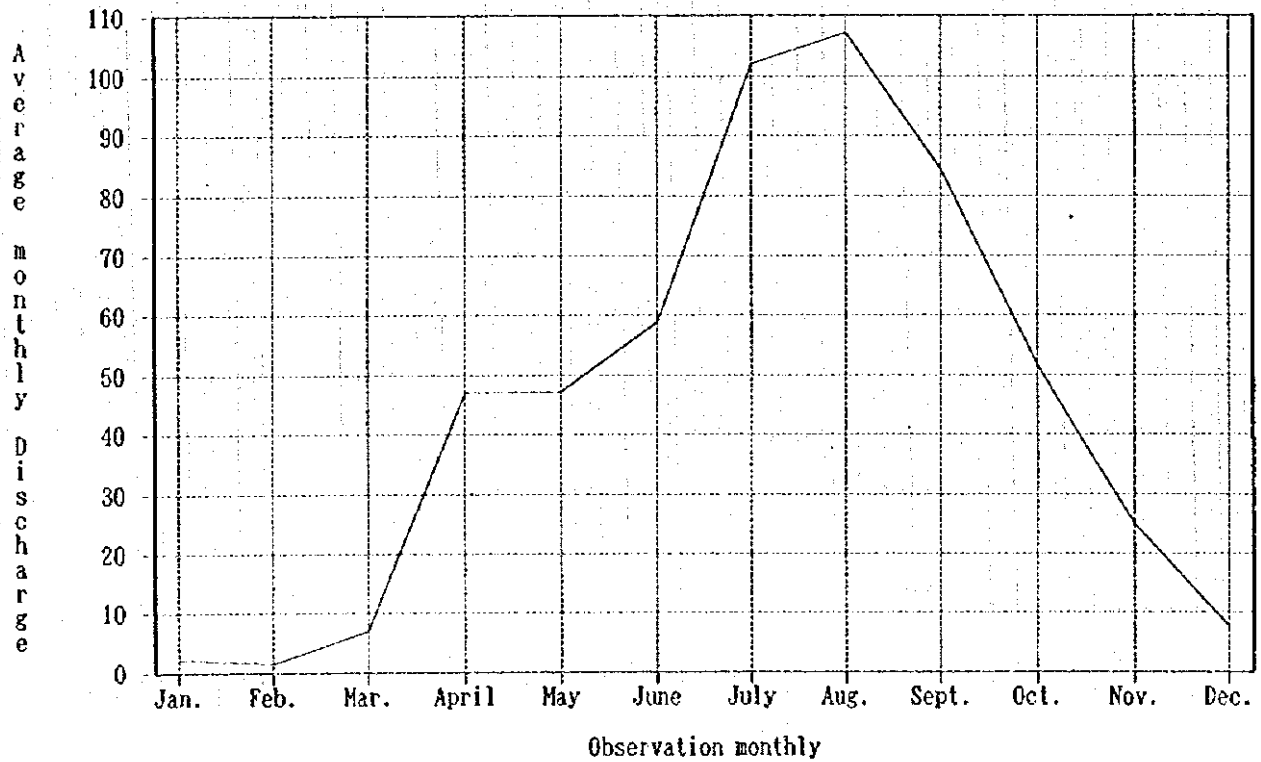


Figure 3.1.3.1 Average Monthly Discharge
 (5) Tuul river
 No.38 Ulanbaatar (m3/s)

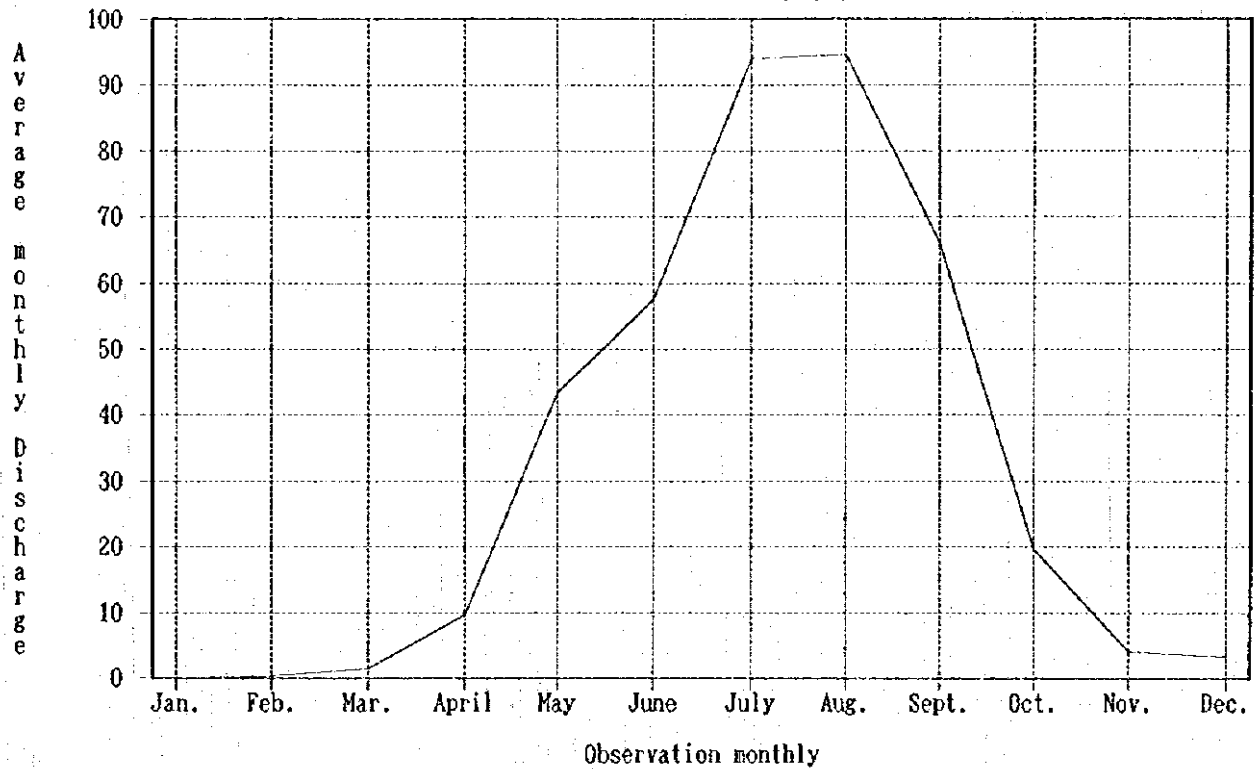


Figure 3.1.3.1 Average Annual Discharge
 (6) Selenge river
 No.2 Hutagt (m3/s)

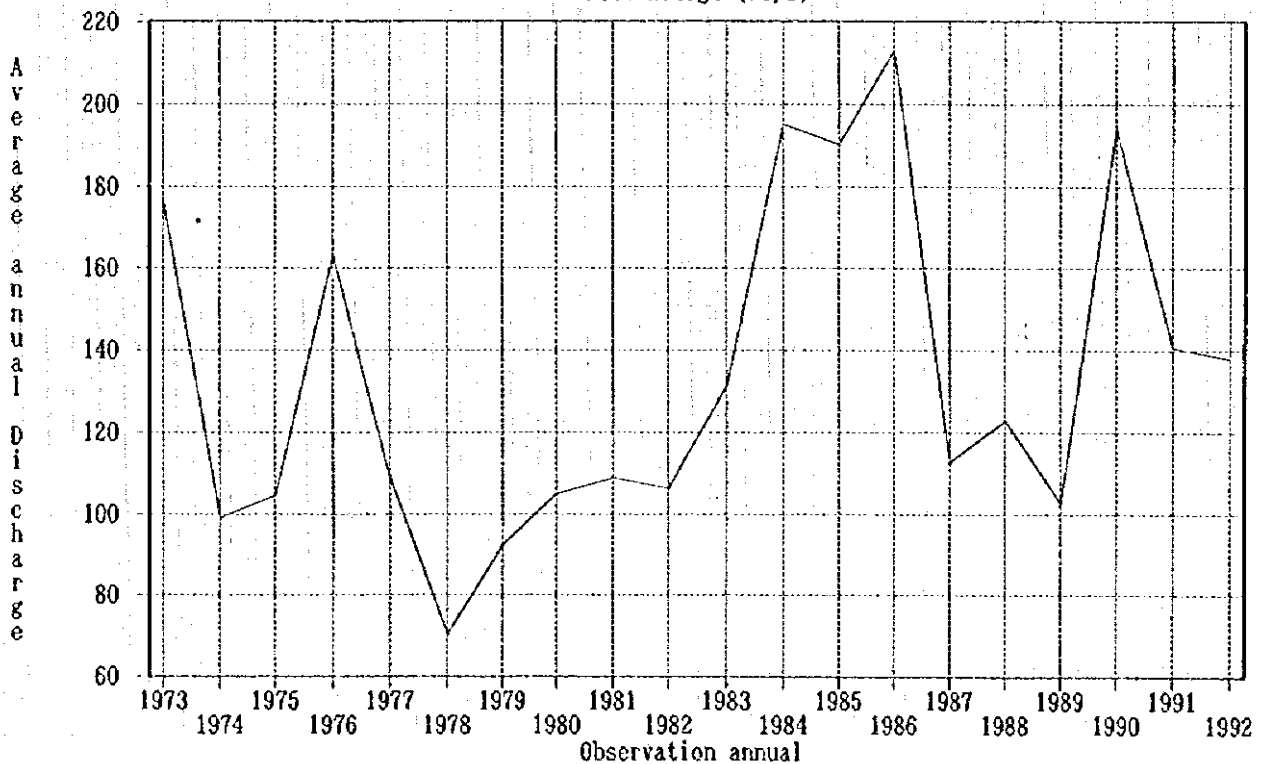


Figure 3.1.3.1 Average Annual Discharge
 (7) Selenge river
 No.4 Zuunburen (m3/s)

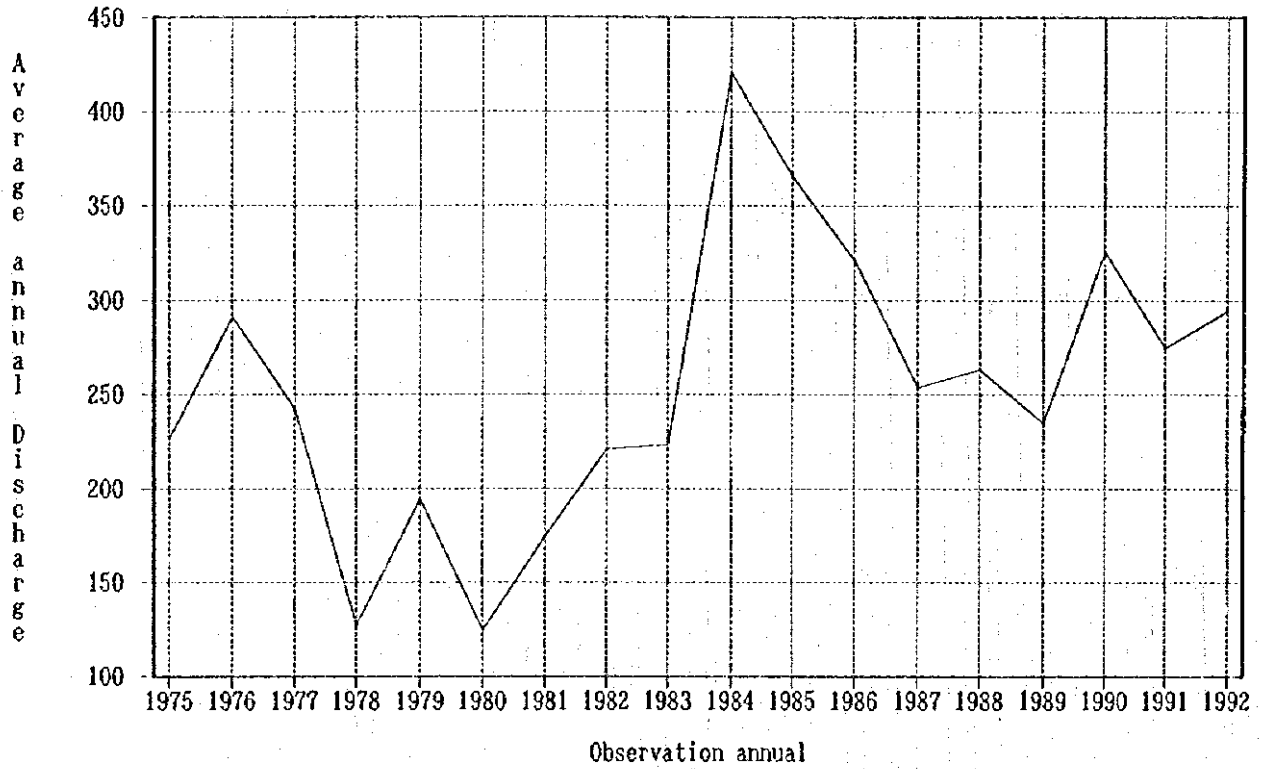


Figure 3.1.3.1 Average Annual Discharge
 (8) Orkhon river
 No.28 Harhorin (m3/s)

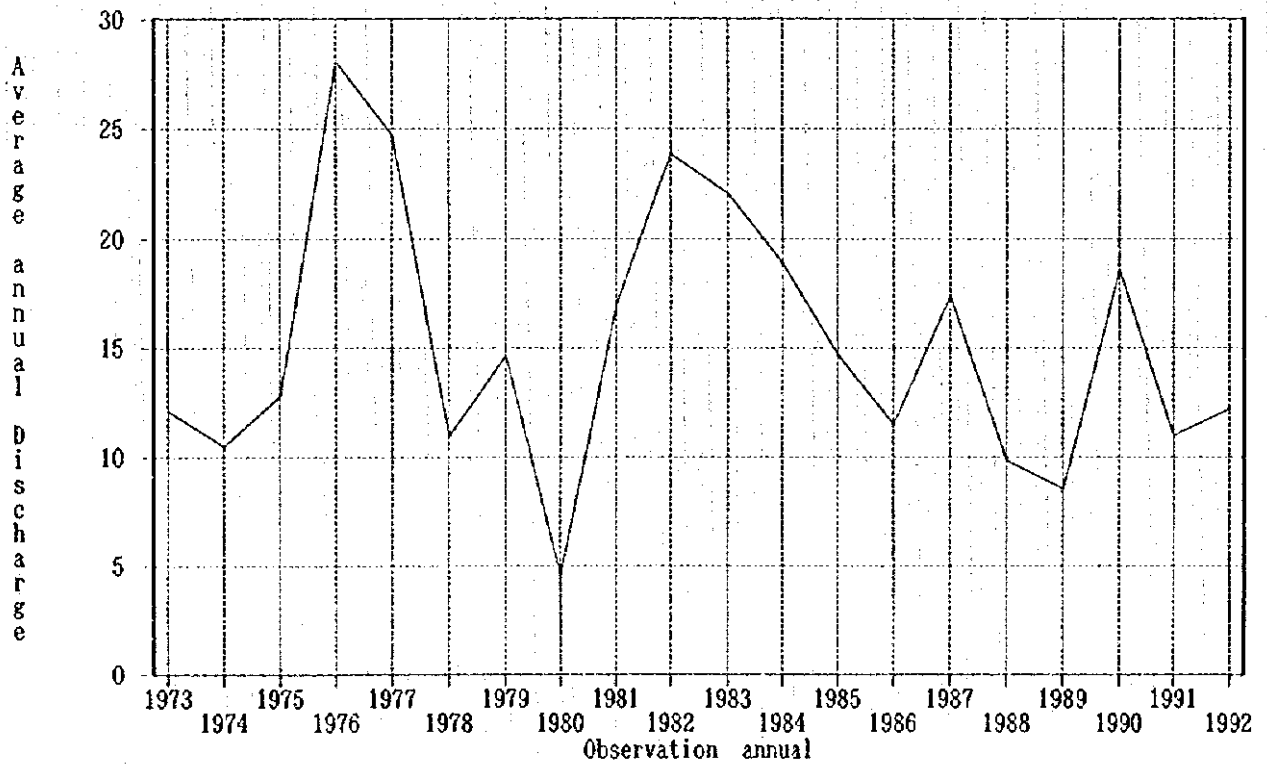


Figure 3.1.3.1 Average Annual Discharge
 (9) Orkhon river
 No.29 Orhon sum (m3/s)

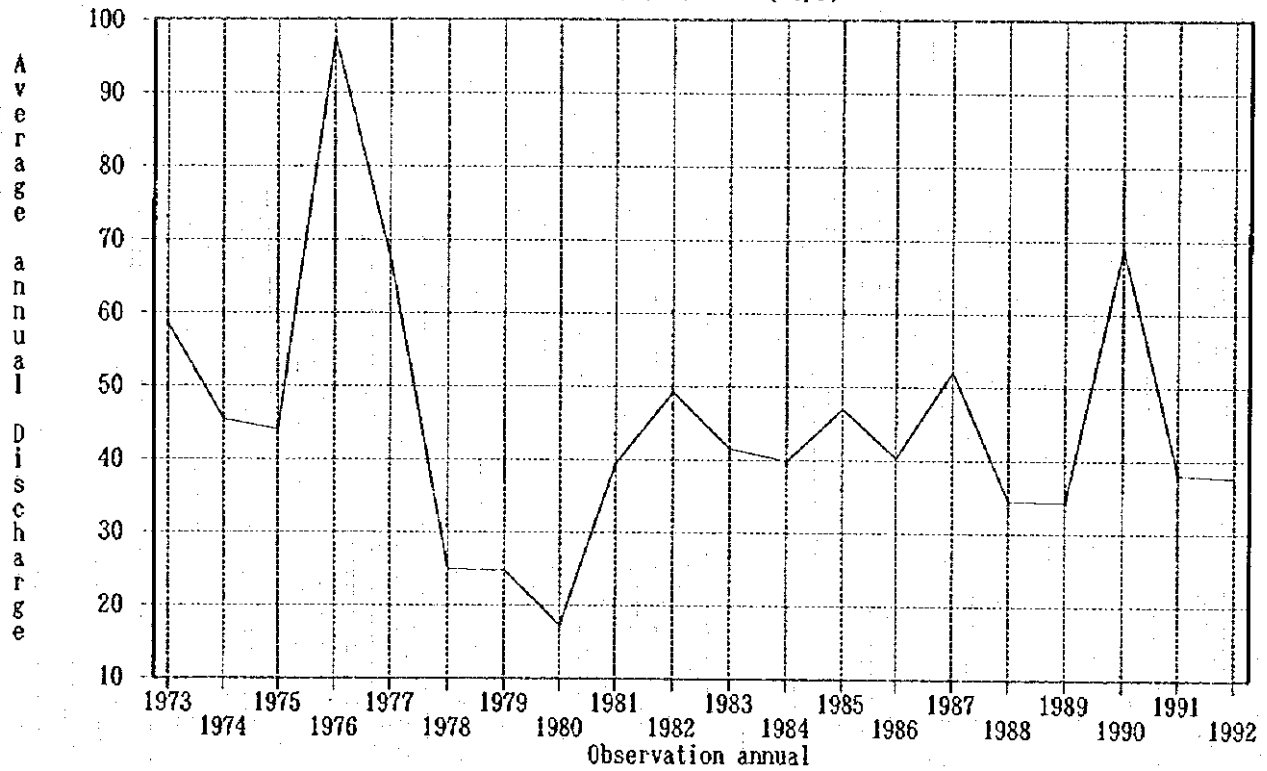


Figure 3.1.3.1 Average Annual Discharge
 (10) Tuul river
 No.38 Ulaanbaatar (m3/s)

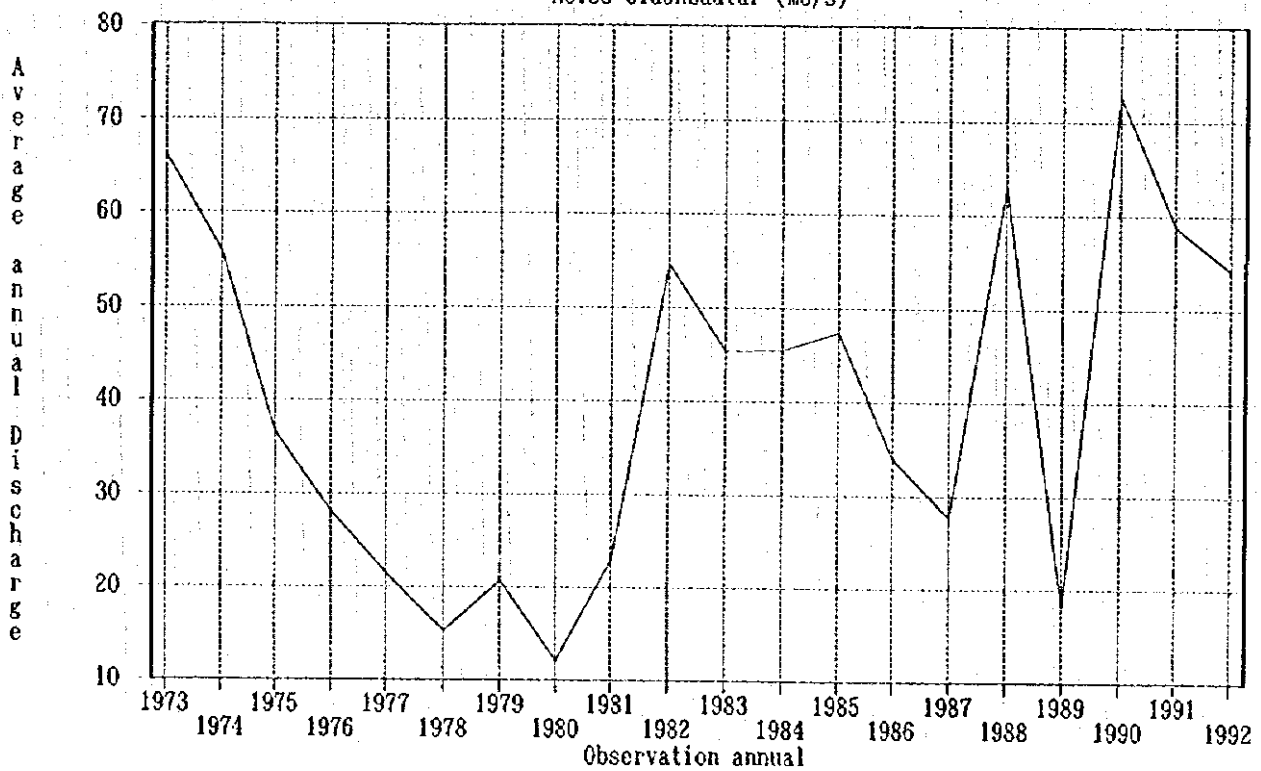


Figure 3.1.3.2 Average Discharge (+)Average Rainfall

(1) Selenge River
No.2 ,Hutag Station

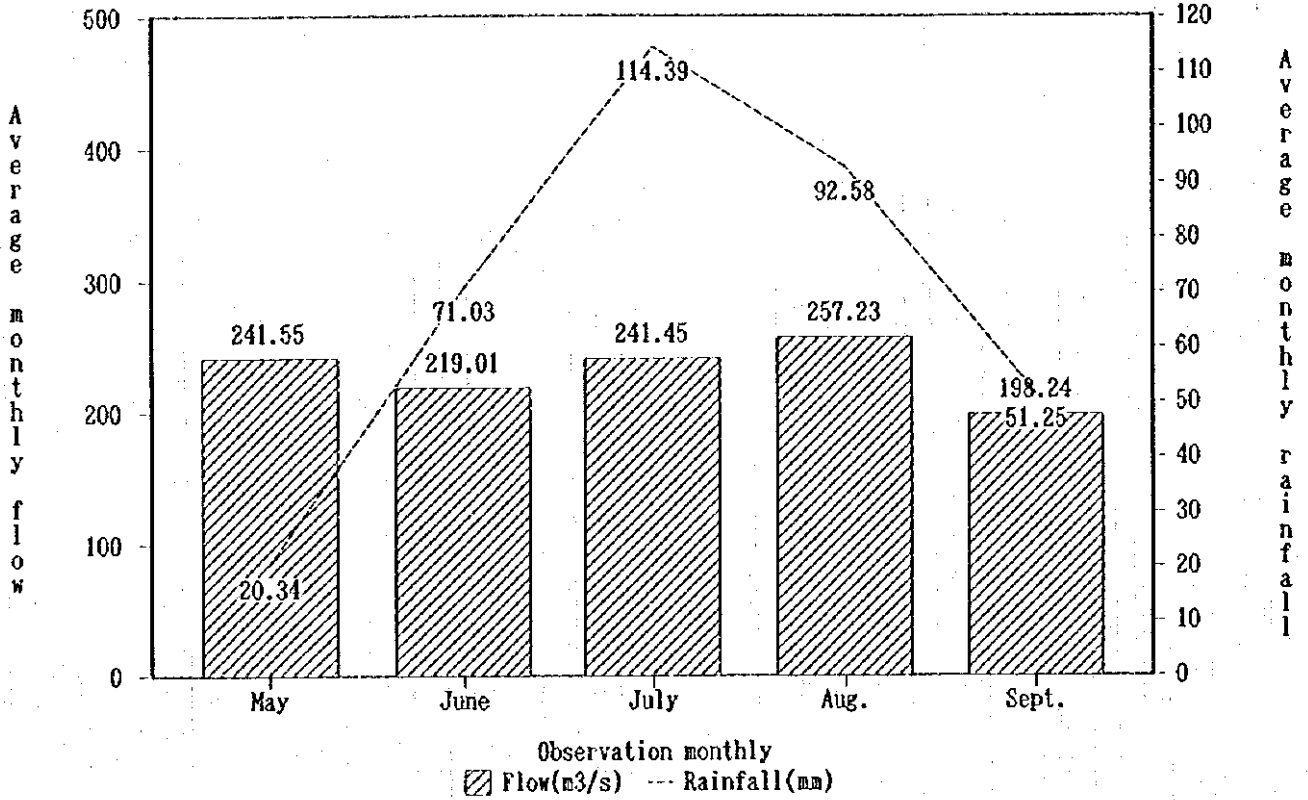


Figure 3.1.3.2 Average Discharge (+)Average Rainfall

(2) Selenge River
No.4 ,Eroo Station

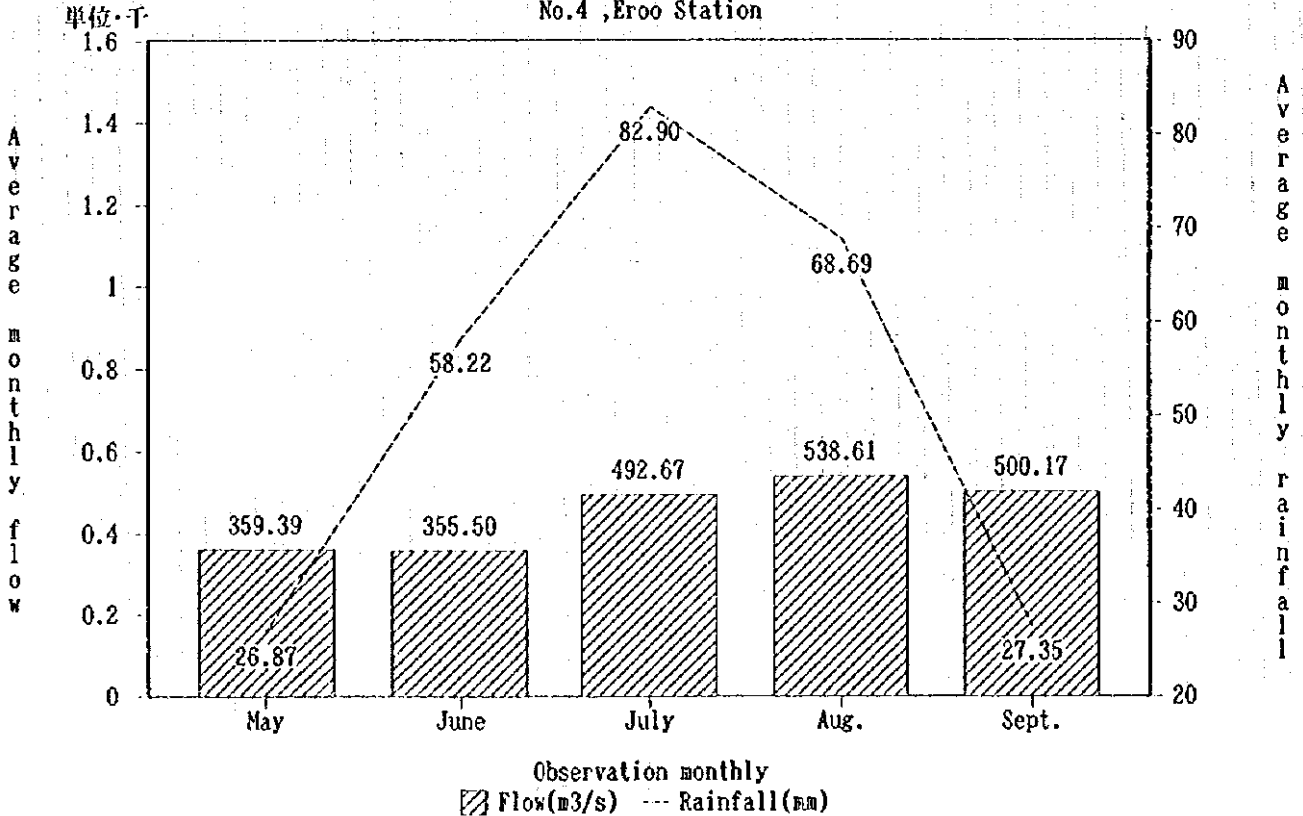


Figure 3.1.3.2 Average Discharge (+)Average Rainfall

(3) Orhon(harhorin) River
No.28,Hujirt Station

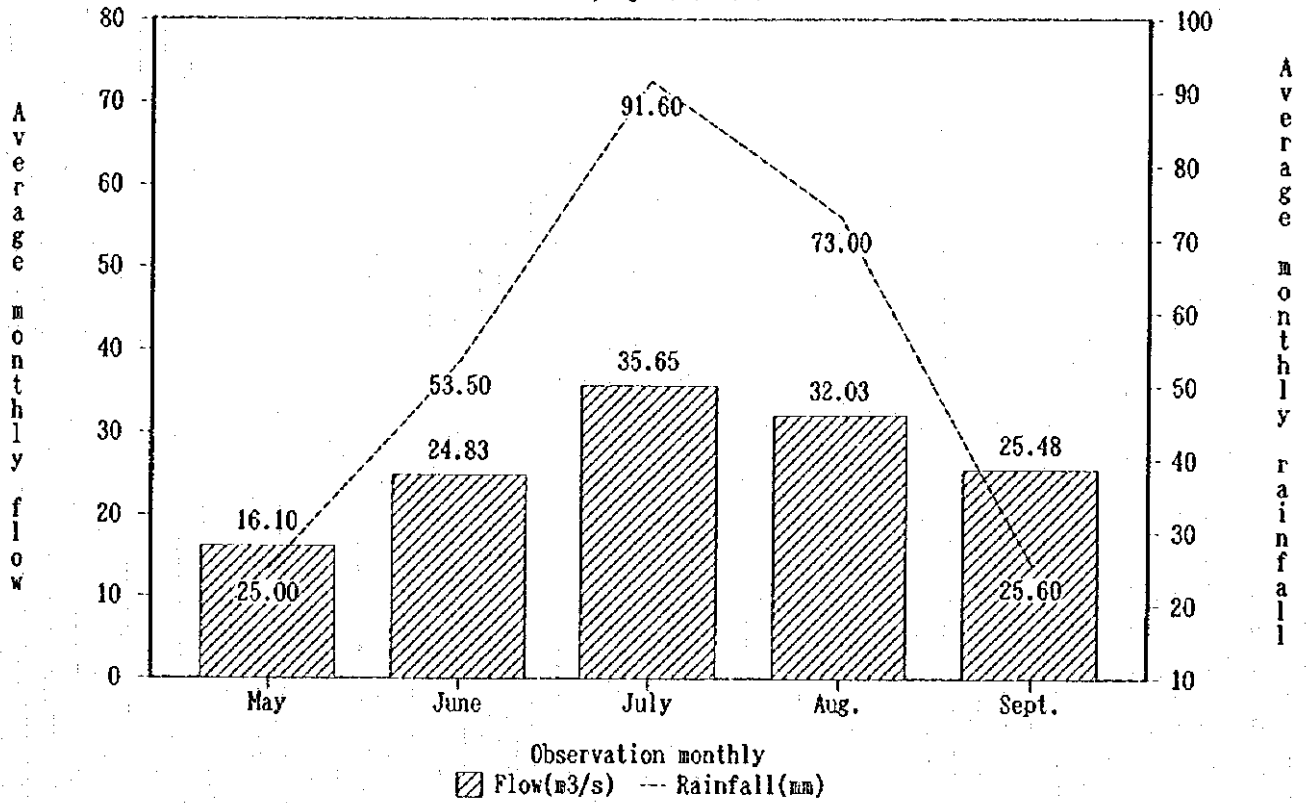


Figure 3.1.3.2 Average Discharge (+)Average Rainfall

(4) Orhon(Orhon sum) River
No.29,Bulgan Station

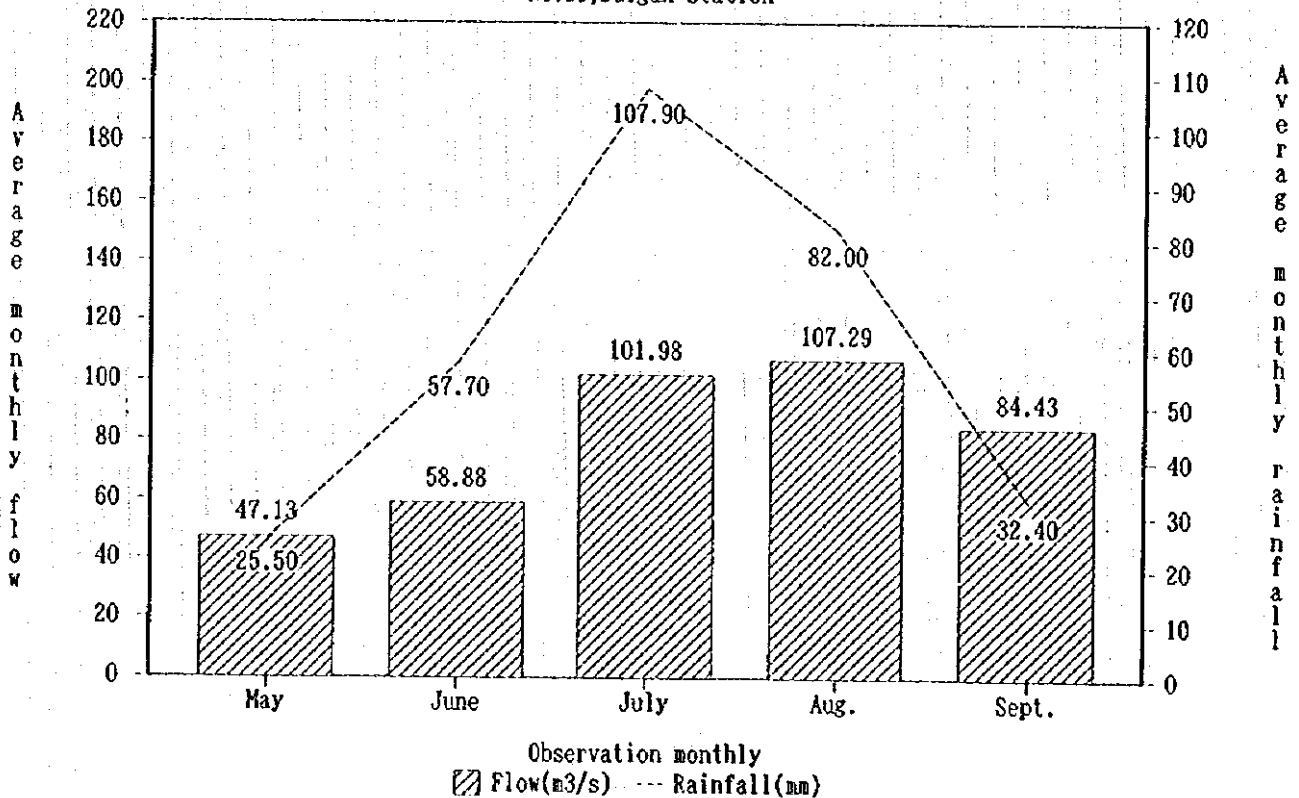


Figure 3.1.3.2 Average Discharge (+)Average Rainfall
 (5) Tuul River
 No.38 ,Ulaanbaatar Station

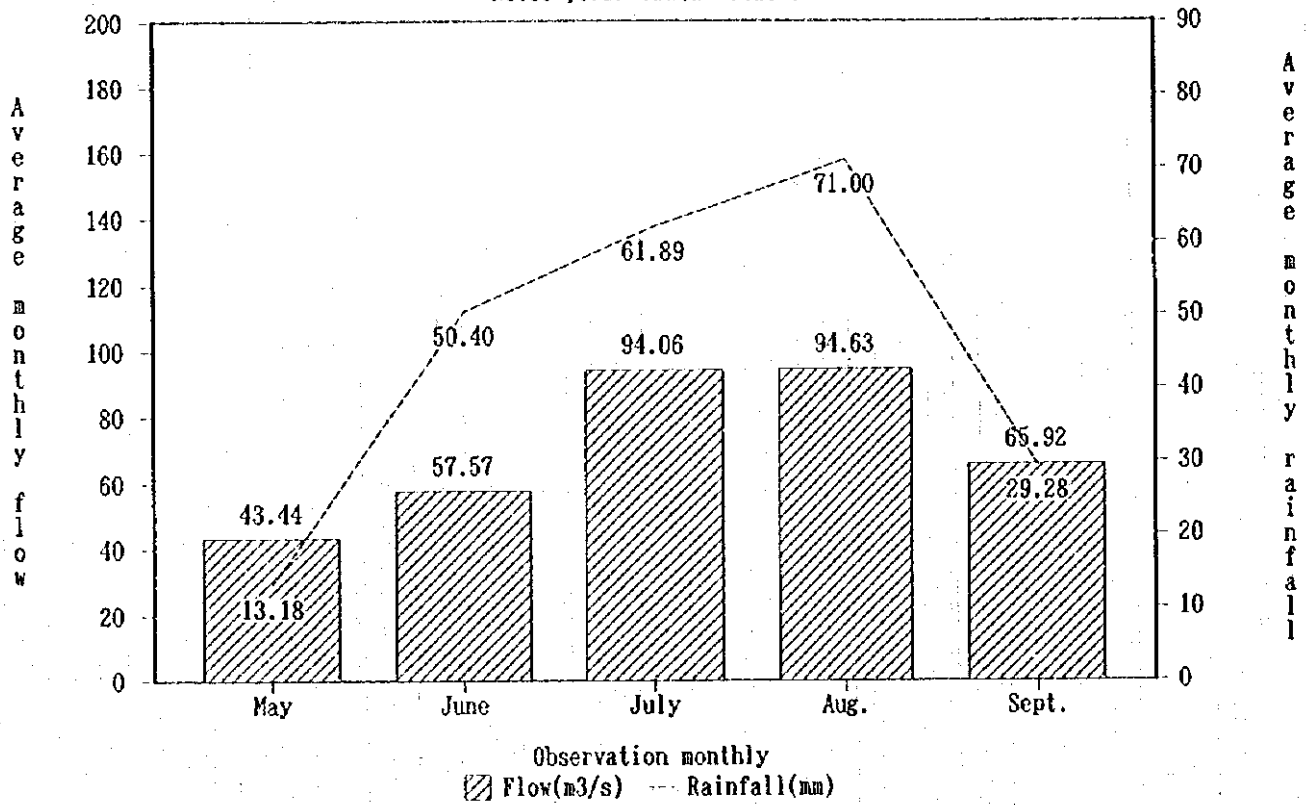
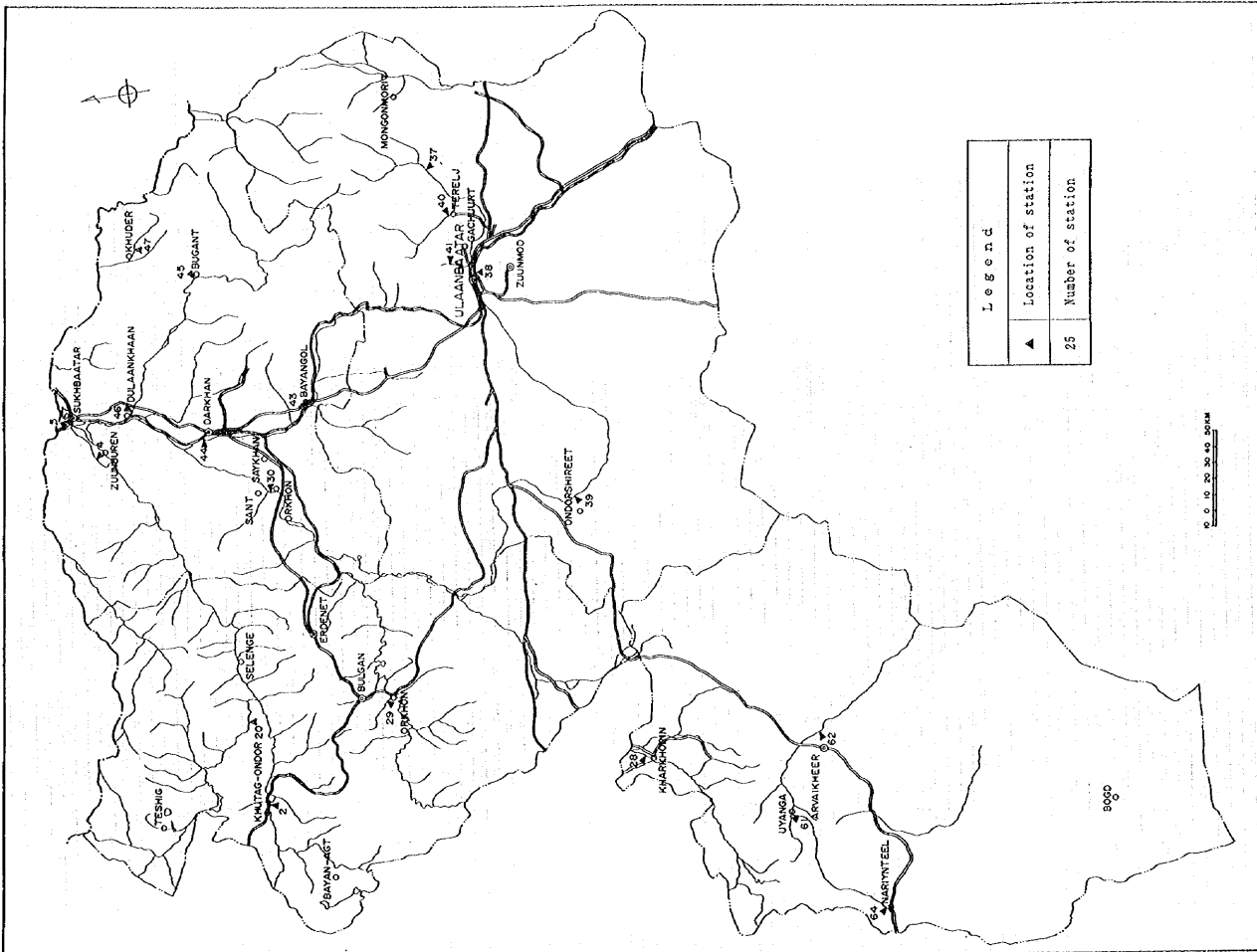


Figure 3. 1. 3. 3 Water Content Observation Location Map



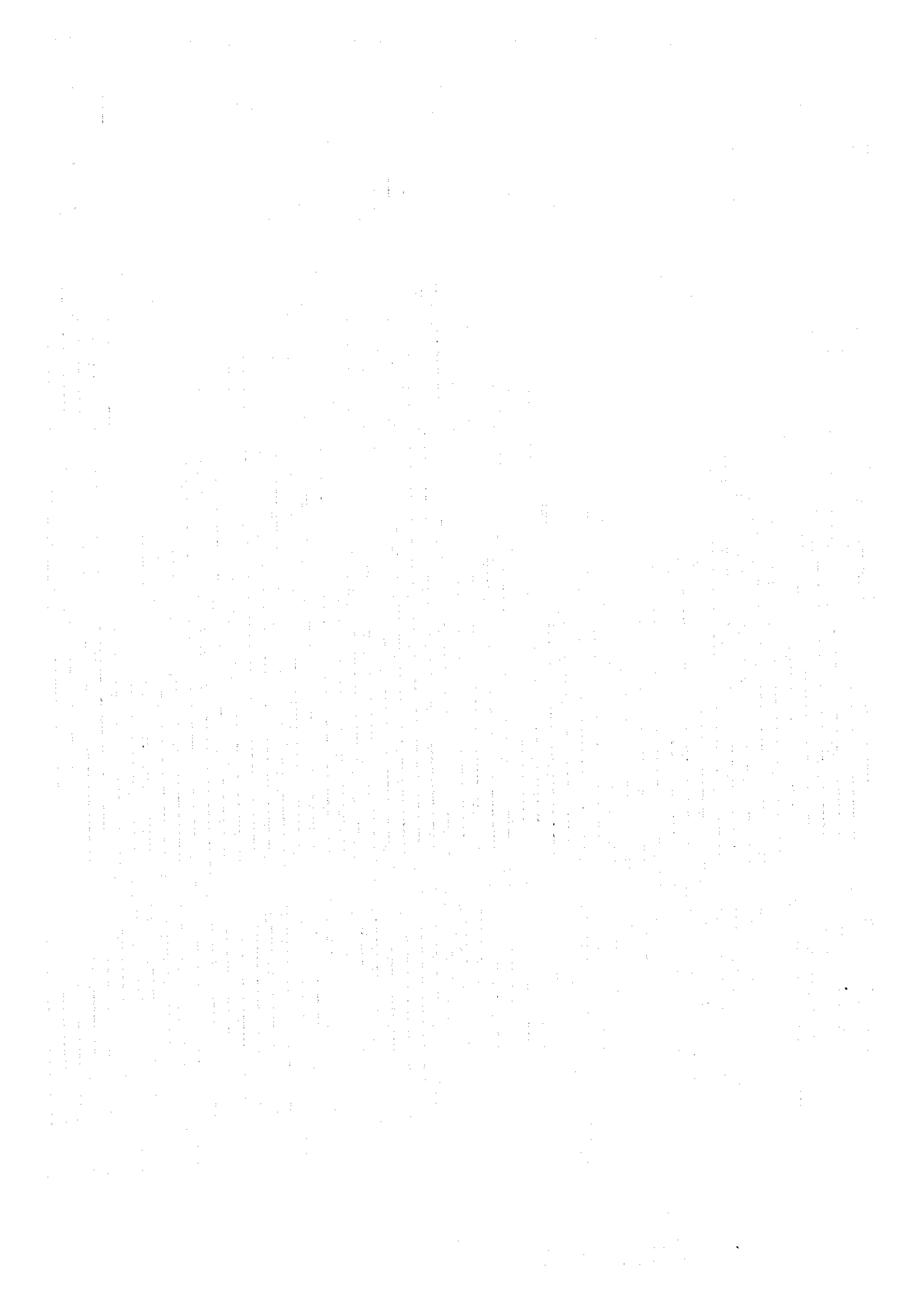


Figure 3.1.3.4 River System Map

