社会開発調査部報告書

No. 22

JICA

WATERSHED MANAGEMENT DEPUTY (WMD)
MINISTRY OF JIHAD AGRICULTURE
ISLAMIC REPUBLIC OF IRAN

THE STUDY ON WATERSHED MANAGEMENT PLAN FOR KAROON RIVER IN THE ISLAMIC REPUBLIC OF IRAN

FINAL REPORT

ANNEX

APRIL 2002

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INA CORPORATION

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MINISTRY OF JIHAD AGRICULTURE
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JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
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MINISTRY OF JIHAD AGRICULTURE
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THE STUDY ON WATERSHED MANAGEMENT PLAN FOR KAROON RIVER IN THE ISLAMIC REPUBLIC OF IRAN

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ANNEX A

LANDFORM CLASSIFICATION/ GEOLOGY/ SABO

ANNEX - A

LANDFORM CLASSIFICATION / GEOLOGY / SABO

Table A - 1 Legend of Basic Landslide Data

① Data No. 14 / Esfahan, 18 / Chaharmahal va Bakhtiyari, 20 / Khuzestan, 30 / Kohkiluyeh va Boyerahmad

② Codes of land use

11	garden
12	refinery
13	natural forest
14	artificial forest
15	rail way
16	community
17	rural way
18	forest road
19	water farm
20	dry farm
21	channel with cover
22	channel without cover
23	pipe of water transmission
24	pipe of gas transmission
25	pipe of oil transmission
26	reservoir of natural lake
27	reservoir of artificial lake
28	reservoir of natural dam
29	reservoir of artificial dam
30	natural grassland without shrubs
31	artificial grassland without shrubs
32	natural grassland with shrubs
33	artificial grassland with shrubs
34	mine
35	village and town
36	without cover
37	power transmission

③

State of activity
1-active
2-reactive
3-suspended
4-unactive | dormant
–abondant-stablised-fossil

④

Velocity
1-very rapid
2-rapid
3-medium
4-slow
5-very slow

⑤

Distribution of activity
1-retrogreossive
2-advancing
3-widening
4-confined
5-diminishing
6-enlarging

⑥

Condition of activity
1-single
2-succesive
3-multiple
4-composite
5-complex

⑦ Numerical value of shape of landslip(Details are omitted.)

⑧ Main Cause

Code	Factor	Code	Factor	Code	Factor
1	earthquake	21	levee	41	fault
2	shaking by eruption	22	mine	42	lamination level
3	shaking by machinery	23		43	foliation in schist
4	shaking by traffic	24	construction	44	cleavage
5	interruption in skirt by some reasons	25	weight of water due to leakage	45	shear zone
6	erosion by rivers and streams	26	channels and reservoir	46	massive thickness bed with clay mineral
7	waves	27	agriculture and irrigation over skirt	47	
8	tidal current	28	pressure water in joint and caves	48	direction of skirt slope
9	rain fall	29	water congregation in spill	49	rain
10	weathering and wetting	30	clay swelling	50	melt of snow
11	solving and transportation	31	stimulate of remained stress	51	inclination of stream
12	old movement	32	smoothing of silted clay	52	pond
13	subsidence	33	physical decay	53	water resource
14	big fault	34	clay mineral	54	irrigation
15	trouble of trasit, mine	35	effect ions exchange	55	destroy of plant cover
16	destruction of protect wall	36	dehydration in clay mineral	56	slope
17	erosion of specifies lake	37	de cementation in rock		
18	weight of snow	38	mineral and chemical composite		
19	stove of debris	39	texture		
20	plant cover	40	fracture		

⑨ Damage from Disaster

Code	Type	Unit	Code	Type	Unit	Code	Type	Unit
A	The dead	head	G	main road	km	M	Water pipeline	km
B	House	no.	H	Village road	km	N	Gas pipeline	km
C	Farm	ha	I	Forest road	km	O	Oil pipeline	km
D	Forest	ha	J	Railway	km	P	Electric transmission line	km
E	Rangeland	ha	K	Bridge	km	Q	Mine	million Rial
F	Garden	ha	L	Irrigation cannel	km	R	Oil re-fine factory	million Rial

Table A-2 Basic Landslide Data

Table A-2
Basic Landslide Data

① Data No.			Latitude Longitude				② Codes of landuse											③	④	⑤
	PROVINCE	DISTRICT	LONGI 1	LONGI 2	LATTI 1	LATTI 2	LANDUSE_EF	LANDUSE11	LANDUSE12	LANDUSE13	LANDUSE21	LANDUSE22	LANDUSE23	LANDUSE31	LANDUSE32	LANDUSE33	MATERIALS	STATE_ACTI	VELOSI_ACT	DISTRIBACT
1400002	Isfahan	Markazi	51 34 50		31 25 30		1	30			30	20	16	30	20	16	Soil	3	2	3
1400003	Isfahan	Hana	51 31 10		31 05 03		1	30			17	30		17			Soil	4	2	1
1400004	Isfahan	Padana_Olia	51 30 30		34 04 40		0	30			30			30			Soil	4	3	1
1400005	Isfahan	Hana	51 30 50		31 04 05		1	30			17	30		17	30		Soil	4	3	1
1400006	Isfahan	Padana_Olia	51 31 30		31 04 00		0	30			30			30			Soil	4	2	1
1400007	Isfahan	Padna	51 30 03		31 00 30		1	17	30		30	16	37	30	16	37	Soil	4	2	1
1400008	Isfahan	Padna	51 29 30		31 29 10		1	30	16		30	16		30	16		Rock/Soil	1	2	1
1400009	Isfahan	Padna	51 30 50	51 31 30	30 59 30	31 00 10	0	30			30	35	17	30	35	17	Soil	1	2	3
1400010	Isfahan	Padna	51 31 55		30 59 00		0	30			30			30			Soil	3	3	1
1400011	Isfahan	Padna	51 32 01		30 59 50		0	30			30	17		30	17		Rock	3	2	1
1400012	Isfahan	Padna	51 33 30	51 34 00	30 54 00	30 55 15	1	35	20	31	35	20	31	35	20	31	Soil	1	3	3
1400013	Isfahan	Padna	51 34 16		30 59 00		0	30			30			30			Soil	1	1	1
1400014	Isfahan	Padna	51 34 15		30 58 55		0	30			17	30		17	30		Soil/Debris	1	1	6
1400015	Isfahan	Padna	51 34 17		30 58 45		0	30			30	16		17	30		Soil+Debris	1	2	6
1400016	Isfahan	Padna	51 35 45		30 58 46		0	30			30			30			Soil	1	2	2
1400017	Isfahan	Padna	51 34 16		30 59 00		0	30			30			30			Soil	1	2	1
1400018	Isfahan	Padna	51 35 00		30 58 45		0	30			30			30			Soil	1	1	1
1400019	Isfahan	Padna	51 35 30		30 58 31		0	30			30			30			Soil	1	1	1
1400020	Isfahan	Padna	51 36 00		30 59 00		0	30			30			30			Soil	1	2	1
1400021	Isfahan	Padna	51 36 05		30 58 15		0	30			30			30			Soil	1	2	1
1400022	Isfahan	Padna	51 36 30		30 57 35		0	30			30			30			Soil	4	2	1
1400023	Isfahan	Padna	51 36 40	51 36 59	30 56 40	30 56 55	1	17	30		17	30		17	30		Soil	1	1	3
1400024	Isfahan	Padana_Olia	51 44 05		30 50 30		1	30	20		17	20	30	17	19	30	Soil	1	2	1
1400025	Isfahan	Padna	51 45 30		30 47 40		0	30			30			30			Soil/Rock	4	2	1
1400026	Isfahan	Padna	51 45 55		30 48 50		1	30			30			30			Soil/Rock	3	2	1
1400027	Isfahan	Padna	51 47 30		30 47 30		1	30			17	30		17	30		Soil	1	2	3
1400028	Isfahan	Padna	51 48 30		30 47 20		0	30			30			30			Rock/Soil	1	2	1
1400033	Isfahan	Padna	51 36 05		30 57 50		1	30			30	37		30	37	17	Soil	4	2	1
1400034	Isfahan	Padna	51 36 02		30 57 50		1	30			30	16		30	16		Debris+Soil	4	2	1
1400035	Isfahan	Padna	51 36 30	00 00 00	30 56 25	30 57 15	1	30			30	35		30	35		Soil	1	1	3
1400036	Isfahan	Padna	51 32 50		30 53 55		0	30			30			30			Debris+Soil	4	2	7
1400037	Isfahan	Padna	51 33 05		30 53 50		0	30			17	30		17	30		Debris+Soil	1	1	2
1400038	Isfahan	Padna	51 35 50		30 55 40		1	30			30			30			Rock/Soil	1	2	2
1400039	Isfahan	Padna	51 37 10		30 56 05		1	30			30	22		30	22	16	Soil	1	2	1
1400040	Isfahan	Padna	51 37 15		30 56 05		1	30			30	20		30	20		Soil	1	1	2
1400041	Isfahan	Padna	51 37 01		30 55 10		0	30			30			30			Rock/Soil	1	1	3
1400042	Isfahan	Padna	51 36 45		30 55 20		0	30			30			30			Rock/Soil	1	2	1
1400043	Isfahan	Padna	51 37 15		30 55 45		0	30			30			30			Rock/Soil	4	2	1
1400044	Isfahan	Padna	51 37 05		30 55 30		0	30			30			30			Rock/Soil	1	1	3
1400045	Isfahan	Padna	51 36 00	51 37 03	30 54 35	30 55 30	1	30			30	17	35	30	17	35	Rock/Soil	1	1	3
1400046	Isfahan	Padna	51 39 10		30 52 30		1	30			30	21		30	21		Soil	3	3	2
1400047	Isfahan	Padna	51 45 15		30 49 15		0	30			30			30			Soil	4	2	1
1400048	Isfahan	Padna	51 45 20		30 49 20		0	30			30			30			Soil	4	1	2
1400049	Isfahan	Padna	51 48 10		30 47 40		0	30			30			30			Rock/Soil	4	2	1
1400050	Isfahan	Padna	51 47 50		30 45 10		0	30			30			30			Soil	4	2	1
1400051	Isfahan	Padna	51 48 35	51 49 00	30 45 50	30 46 20	1	30			30			30			Soil	1	2	3
1400052	Isfahan	Padna	51 47 02	51 50 06	30 47 30	30 48 30	0	30			30			30			Rock/Soil	1	2	3
1400053	Isfahan	Padna	51 49 00		30 46 00		0	30			30			30	35		Soil	1	2	2
1400054	Isfahan	Padna	51 48 55		30 45 50		0	30			30			30	16		Soil	4	2	1
1400055	Isfahan	Padna	51 48 40		30 45 45		0	30			30			30			Soil	3	2	1

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Basic Landslide Data

① Data No.			Latitude Longitude				② Codes of landuse											③	④	⑤
	PROVINCE	DISTRICT	LONGI_1	LONGI_2	LATTI_1	LATTI_2	LANDUSE_EF	LANDUSE11	LANDUSE12	LANDUSE13	LANDUSE21	LANDUSE22	LANDUSE23	LANDUSE31	LANDUSE32	LANDUSE33	MATERIALS	STATE_ACTI	VELOSI_ACT	DISTRIBACT
1400056	Isfahan	Padna	51 48 36		30 45 50		0	30			30			17	30		Soil	4	2	1
1400057	Isfahan	Padna	51 48 30		30 46 45		0	17	30		17	30		17	30		Soil	4	2	1
1800001	ChaharMaha	Markazi	50 37 22		32 02 37		1	20	32		20	32	17	32	17		Soil	1	2	3
1800002	ChaharMaha	Markazi	50 37 34	00 00 00	32 02 36	00 00 00	1	32	20		32	17		17	32		Soil	1	2	3
1800003	ChaharMaha	Markazi	50 37 55	00 00 00	32 01 44	00 00 00	0	32			32	17		32	17		Soil	1	1	3
1800004	ChaharMaha	Markazi	50 37 20	00 00 00	32 00 26	00 00 00	0	20			20	32		20	32		Soil	1	3	2
1800005	ChaharMaha	Markazi	50 37 39	00 00 00	32 00 56	00 00 00	1	20			20	17		20	17		Soil	1	2	3
1800006	ChaharMaha	Markazi	50 37 55	00 00 00	32 01 43	00 00 00	0	20	32		20	17	32	20	32	17	Soil	1	2	3
1800007	ChaharMaha	Markazi	50 37 53		32 01 55		1	20			20	17		32	17		Soil	1	2	3
1800008	ChaharMaha	Markazi	50 38 18		32 01 44		1	32	20		32	20	17	17	32		Soil	1	1	6
1800009	ChaharMaha	Markazi	50 41 52		31 54 36		1	20			32	20	17	17	32		Rock/Soil	1	1	3
1800010	ChaharMaha	Markazi	50 41 44		31 54 41		1	20			32	20	17	17	32		Soil	1	2	6
1800011	ChaharMaha	Markazi	50 41 40		31 54 45		1	30			30	17		30	17		Soil	1	3	2
1800012	ChaharMaha	Markazi	50 41 23		31 54 55		1	30			30	17		30	17		Soil	1	2	2
1800013	ChaharMaha	Markazi	50 41 07		31 54 52		1	32			32	20	17	32	17		Rock/Soil	1	2	1
1800014	ChaharMaha	Markazi	50 41 36		31 57 28		0	20			20			20			Soil	1	3	3
1800015	ChaharMaha	Markazi	50 41 37		31 57 30		0				20			20			Soil	1	4	6
1800016	ChaharMaha	Markazi	50 41 38		31 57 31		0	30			20	30		30			Soil	1	4	6
1800017	ChaharMaha	Markazi	50 41 38		31 57 30		0	30			20	30		30	36		Soil	1	4	3
1800018	ChaharMaha	Markazi	50 41 36		31 57 30		0	30			20	30		30	36		Soil	1	2	3
1800019	ChaharMaha	Markazi	50 40 30		31 58 00		0	30			20	30		30	36		Soil	1	2	3
1800020	ChaharMaha	Markazi	50 38 49		31 57 26		0	30			20			20			Soil	1	2	2
1800021	ChaharMaha	Markazi	50 38 20		31 58 31		1	20			20			20			Soil	1	2	2
1800022	ChaharMaha	Markazi	50 38 27		31 58 30		1	20			20	30		30			Soil	1	2	2
1800023	ChaharMaha	Markazi	50 38 40		31 58 11		0	30			20	30		30			Soil	1	2	2
1800024	ChaharMaha	Markazi	50 38 43		31 58 10		0	20			20	30		20	30		Soil	1	2	2
1800025	ChaharMaha	Markazi	50 38 02		31 58 10		0	20			20	30		20	30		Soil	1	2	2
1800026	ChaharMaha	Markazi	50 38 49		31 58 18		0	20			20	30		20	30		Soil	1	2	2
1800027	ChaharMaha	Markazi	50 43 22		31 55 35		1	20			20	16		30	16		Rock/Soil	1	2	1
1800028	ChaharMaha	Markazi	50 43 21		31 55 34		1	20			20	16	30	20	16	30	Soil	1	3	1
1800029	ChaharMaha	Markazi	50 43 19		31 55 32		1	20			20	16	30	20	16	30	Soil	1	3	3
1800030	ChaharMaha	Markazi	50 43 18		31 55 32		1	20			20	16		20	30	16	Rock/Soil	1	2	6
1800031	ChaharMaha	Markazi	50 43 29		31 55 32		0	30			30	20	22	30			Soil	1	3	2
1800032	ChaharMaha	Markazi	50 43 28		31 55 31		1	20			19	30		19	30		Soil	1	3	2
1800033	ChaharMaha	Markazi	50 42 24		31 55 08		1	20			20	16		30	16		Rock/Soil	1	2	2
1800034	ChaharMaha	Markazi	50 49 12		31 50 29		1	32			32	22		32	22		Soil/Debris	1	2	3
1800035	ChaharMaha	Markazi	50 50 30		31 50 20		1	32			32	17		32	17		Soil/Debris	1	2	2
1800036	ChaharMaha	Markazi	50 50 09		31 50 01		1	32			32	17		32	17		Soil	1	2	2
1800037	ChaharMaha	Markazi	50 51 07		31 49 26		1	13			32	13		32	13		Soil/Debris	1	2	2
1800038	ChaharMaha	Markazi	50 50 07		31 50 04		1	13			13	30		13	30		Soil	1	3	2
1800039	ChaharMaha	Markazi	50 50 00		31 50 32		1	13			13	32		13	32		Rock/Soil	1	1	1
1800040	ChaharMaha	Markazi	50 50 06		31 50 03		1	13			13	32	17	13	32	17	Soil	1	2	2
1800041	ChaharMaha	Markazi	50 33 42		31 59 00		0	35			35	30		35	30		Soil	1	4	2
1800042	ChaharMaha	Markazi	50 42 00		31 56 00		0	20	30		19	20	30	19	20	30	Rock/Soil	1	2	6
1800043	ChaharMaha	Markazi	50 38 47		31 55 23		1	32			32	17		32	17		Soil/Debris	1	3	2
1800044	ChaharMaha	Markazi	50 37 07		31 56 29		0				32			32			Soil/Debris	1	3	3
1800045	ChaharMaha	Markazi	50 37 07		31 56 29		0				20	32		20	32		Soil/Debris	3	3	0
1800046	ChaharMaha	Markazi	50 38 55		31 56 45		0				20	32		20	32		Soil/Debris	3	3	2
1800047	ChaharMaha	Markazi	50 39 40		31 56 54		1	20			20	30	17	30	17		Soil/Debris	1	2	2

Table A - 2
Basic Landslide Data

① Data No.			Latitude Longitude				② Codes of landuse											③	④	⑤
	PROVINCE	DISTRICT	LONGI_1	LONGI_2	LATTI_1	LATTI_2	LANDUSE_EF	LANDUSE11	LANDUSE12	LANDUSE13	LANDUSE21	LANDUSE22	LANDUSE23	LANDUSE31	LANDUSE32	LANDUSE33	MATERIALS	STATE_ACTI	VELOSI_ACT	DISTRIBACT
1800048	ChaharMaha	Markazi	50 39 30		31 56 49		1	20	30		20	30		30			Soil/Debris	1	2	3
1800049	ChaharMaha	Markazi	50 30 47		31 55 33		1	13	20		13	20		20			Soil	1	2	3
1800050	ChaharMaha	Markazi	50 31 48		31 51 45		0	20			20	35		30			Rock/Soil	1	1	6
1800051	ChaharMaha	ShorAb	50 25 51		32 09 03		1				17	30		17	30		Soil	1	2	3
1800052	ChaharMaha	ShorAb	50 25 44		32 08 56		0				30			30			Soil	1	3	3
1800053	ChaharMaha	ShorAb	50 25 44		32 08 56		0				30			30			Soil	1	3	4
1800054	ChaharMaha	ShorAb	50 25 40		32 09 13		1				17	30		17	30		Rock*Soil	1	2	1
1800055	ChaharMaha	ShorAb	50 25 10		32 09 03		0				17	20		17	36		Debris	1	2	1
1800056	ChaharMaha	ShorAb	50 24 42		32 09 03		1				32			32			Rock/Soil	1	2	2
1800057	ChaharMaha	ShorAb	50 24 41		32 09 11		1				20	17		32	17		Soil	1	2	1
1800058	ChaharMaha	ShorAb	50 24 23		32 09 09		1				32	17		32	17		Soil	1	2	2
1800059	ChaharMaha	ShorAb	50 24 19		32 09 11		1	32			20	17		20	17		Soil	1	2	2
1800060	ChaharMaha	ShorAb	50 24 14		32 09 13		1				17	32		17	32		Soil	1	2	2
1800061	ChaharMaha	ShorAb	50 24 09		32 09 16		1				17	11		17	11		Soil	1	2	2
1800062	ChaharMaha	ShorAb	50 24 07		32 09 17		1				17	32		17	32		Soil	1	2	1
1800063	ChaharMaha	ShorAb	50 24 04		32 09 17		1				17	32	16	17	32		Soil	1	1	2
1800064	ChaharMaha	Markazi	51 07 43		31 18 01		1				16	32		16	32		Soil	3	4	3
1800065	ChaharMaha	Markazi	51 05 17		31 20 44		1	32			16	32		16	32		Soil	1	3	2
1800066	ChaharMaha	Gandoman	51 11 55		31 38 35		1	32			36			36			Rock/Soil	1	2	3
1800067	ChaharMaha	Gandoman	51 13 00		31 39 00		0	32			32			30			Soil	1	2	6
1800068	ChaharMaha	Gandoman	51 12 30		31 35 00		1	32			30			36			Rock/Soil	1	2	3
1800069	ChaharMaha	Gandoman	51 11 24		31 36 31		0	32			32			30			Soil	1	3	2
1800070	ChaharMaha	Gandoman	51 13 00		31 39 00		0	32			32			30			Soil	4	3	3
1800071	ChaharMaha	Gandoman	51 12 19		31 32 12		1	13			32			32			Soil	1	4	4
1800072	ChaharMaha	Gandoman	51 12 17		31 32 21		1	13			32			32			Rock/Soil	1	1	1
1800073	ChaharMaha	Gandoman	51 12 16		31 34 42		1	32			32			36			Rock/Soil	1	2	1
1800074	ChaharMaha	Poshtakoh	50 33 46		32 05 20		1				17	32		17	32		Soil	1	3	3
1800075	ChaharMaha	Poshtakoh	50 32 04		32 06 45		1				32	20	17	32	20	17	Soil	1	2	3
1800076	ChaharMaha	Poshtakoh	50 32 41		32 06 05		0				20	32		20	32		Soil	1	2	2
1800077	ChaharMaha	Poshtakoh	50 34 03		32 04 43		1				20						Soil	1	2	1
1800078	ChaharMaha	Poshtakoh	50 34 23		32 04 19		1				20			36			Soil	1	2	1
1800079	ChaharMaha	Poshtakoh	50 34 22		32 04 16		1				36	31		36	32		Soil	1	2	1
1800080	ChaharMaha	Poshtakoh	50 34 23		32 04 14		1	20			20			36	32		Soil	1	4	1
1800081	ChaharMaha	Poshtakoh	50 36 02		32 03 14		1	32			20	32	17	20	32	17	Soil	1	3	1
1800082	ChaharMaha	Poshtakoh	50 36 39		32 09 15		1				32			32			Soil/Debris	1	4	1
1800083	ChaharMaha	Poshtakoh	50 36 26		32 09 45		1	32			32	17		32	17		Soil	1	2	2
1800084	ChaharMaha	Markazi	50 33 25		32 39 21		1	32			20	30	17	31	17		Soil	1	3	2
1800085	ChaharMaha	Markazi	50 33 32		32 39 20		1				20	17	30	20	17	30	Soil	1	2	1
1800086	ChaharMaha	Markazi	50 33 36		32 39 15		1				17	30	20	17	30	20	Soil	1	3	1
1800087	ChaharMaha	Markazi	50 33 36		32 39 08		1				16	30	20	16	30	20	Soil	1	4	1
1800088	ChaharMaha	Markazi	50 33 46		32 38 55		0				30	20		30	20		Soil	1	2	1
1800089	ChaharMaha	Markazi	50 33 38		32 38 50		1				16	30	20	16	30	20	Soil	1	3	1
1800090	ChaharMaha	Markazi	50 37 31		31 58 12		1	32			20	32		20	30		Soil	1	3	2
1800091	ChaharMaha	Markazi	50 33 37		31 53 40		1	32			20	32		20	30		Soil	1	4	1
1800092	ChaharMaha	Markazi	50 32 00		31 53 50		1	32			20	32		20	30		Soil	1	3	1
1800093	ChaharMaha	Markazi	50 37 48		31 57 50		1	32			20	32		20	30		Soil	1	2	1
1800094	ChaharMaha	Markazi	50 37 40		31 57 35		0				20	32		20	30		Soil	1	2	1
1800095	ChaharMaha	Markazi	50 37 55		31 57 55		0	30	20		20	32		20	30		Soil	1	3	1
1800096	ChaharMaha	Markazi	50 37 55		31 57 30		0				20	32		20	30		Soil	1	2	1
1800097	ChaharMaha	Markazi	50 38 15		31 58 14		0				20	32		20	30		Soil	1	2	1

Table A - 2
Basic Landslide Data

① Data No.			Latitude Longitude				② Codes of landuse											③	④	⑤
	PROVINCE	DISTRICT	LONGI 1	LONGI 2	LATTI 1	LATTI 2	LANDUSE_EF	LANDUSE11	LANDUSE12	LANDUSE13	LANDUSE21	LANDUSE22	LANDUSE23	LANDUSE31	LANDUSE32	LANDUSE33	MATERIALS	STATE_ACTI	VELOSI_ACT	DISTRIBACT
1800098	ChaharMaha	Markazi	50 38 15		31 58 30		1	32			20	32		20	30		Soil	1	0	1
1800099	ChaharMaha	Markazi	50 38 30		31 58 40		0				20	32		20	30		Soil	1	3	5
1800100	ChaharMaha	Markazi	50 38 16		31 57 33		0	30	20		20	32		20	30		Soil	1	3	5
1800101	ChaharMaha	Samsami	50 17 56		32 10 11		1	30	11	17	30	11	17	30	11	17	Soil	1	4	2
1800102	ChaharMaha	Samsami	50 18 04		32 09 52		0				30			30			Soil/Debris	1	2	2
1800103	ChaharMaha	Samsami	50 18 23		32 09 45		1	30	32		30			30			Soil	1	3	3
1800104	ChaharMaha	Samsami	50 18 31		32 09 38		1	30	32		30			30			Soil	1	2	3
1800105	ChaharMaha	Samsami	50 18 37		32 09 38		1	30	32		30			30			Soil	1	3	1
1800106	ChaharMaha	Samsami	50 18 41		32 09 38		1				33			33			Soil	1	3	2
1800107	ChaharMaha	Samsami	50 18 46		32 09 38		1	30	32		33			33			Soil	1	3	1
1800108	ChaharMaha	Samsami	50 21 19		32 09 48		1	19	36		32			32			Soil	1	2	1
1800109	ChaharMaha	Samsami	50 21 27		32 09 48		0				32			32			Soil	1	2	1
1800110	ChaharMaha	Samsami	50 21 32		32 09 48		1				32			32			Soil	1	2	1
1800111	ChaharMaha	Samsami	50 21 33		32 09 56		0				32			32			Soil	1	2	1
1800112	ChaharMaha	DoAbSamsami	50 22 46		32 09 36		1	17	30		17	30		17	30		Soil	1	2	1
1800113	ChaharMaha	DoAbSamsami	50 22 48		32 09 35		1	17	30		17	30		17	30		Soil	1	2	1
1800114	ChaharMaha	DoAbSamsami	50 22 41		32 09 30		1	17	30		17	30		17	30		Soil/Debris	1	2	1
1800115	ChaharMaha	DoAbSamsami	50 22 30		32 09 46		1	17	30		17	30		17	30		Soil	1	3	1
1800116	ChaharMaha	DoAbSamsami	50 22 27		32 09 46		0				30			30			Soil+Debris	1	2	1
1800117	ChaharMaha	DoAbSamsami	50 22 23		32 09 45		1	17	30		17	30		17	30		Rock/Soil	3	2	3
1800118	ChaharMaha	DoAbSamsami	50 22 13		32 09 50		1	17	30		17	30		17	30		Rock/Soil	1	2	1
1800119	ChaharMaha	DoAbSamsami	50 22 12		32 09 27		0				30			30			Soil	1	2	2
1800120	ChaharMaha	DoAbSamsami	50 22 16		32 09 22		0				30			30			Soil	1	2	1
1800121	ChaharMaha	DoAbSamsami	50 22 00		32 09 32		0				30			30			Soil	1	2	1
1800122	ChaharMaha	Miankoh	50 32 44		31 44 56		1	32	17	20	32	17		32	17		Soil	1	2	1
1800123	ChaharMaha	Miankoh	50 32 48		31 44 51		1	32	20		32			32			Soil	1	2	1
1800124	ChaharMaha	Miankoh	50 32 44		31 44 51		1	17	20	32	17	20	32	17	20	32	Soil	1	2	1
1800125	ChaharMaha	Miankoh	50 32 46		31 44 30		1	17	20	32	17	20	32	17	20	32	Soil	1	2	1
1800126	ChaharMaha	Miankoh	50 32 32		31 43 46		1	32	17		32	17		32	17		Soil	1	2	1
1800127	ChaharMaha	Miankoh	50 32 30		31 43 28		1	32	17		32	17		32	17		Soil	1	2	3
1800128	ChaharMaha	Miankoh	50 32 29		31 43 20		1	32	17		32	17		32	17		Rock/Soil	1	2	3
1800129	ChaharMaha	Miankoh	50 32 17		31 43 07		1	32	17		32	17		32	17		Soil	1	2	1
1800130	ChaharMaha	Miankoh	50 32 06		31 42 52		1	32	17		32	17		32	17		Soil	1	2	1
1800131	ChaharMaha	Miankoh	50 32 00		31 42 43		1	32	17		32	17		32	17		Soil	1	2	1
1800132	ChaharMaha	Miankoh	50 32 15		31 42 57		1	32	17		19			19			Soil	1	2	1
1800133	ChaharMaha	Miankoh	50 32 13		31 45 21		1	32	17		17	32		17	32		Rock/Debris	1	2	3
1800134	ChaharMaha	Miankoh	50 32 06		31 45 32		1	32	17		17	32		17	32		Soil*Debris	1	2	2
1800135	ChaharMaha	Miankoh	50 32 04		31 45 37		0	32	17		17	32		17	32		Soil*Debris	1	2	2
1800136	ChaharMaha	Miankoh	50 32 06		31 45 40		1	32	17		17	32		17	32		Soil*Debris	1	2	1
1800137	ChaharMaha	Miankoh	50 32 21		31 47 49		0				32			32			Soil*Debris	1	2	1
1800138	ChaharMaha	Miankoh	50 33 03		31 47 54		1	17	32		17	32		17	32		Soil	1	2	1
1800139	ChaharMaha	Miankoh	50 34 08		31 48 23		1	17	32		17	32		17	32		Soil/Debris	1	2	3
1800140	ChaharMaha	Miankoh	50 34 00		31 48 27		0	32			30			30			Soil	1	2	1
1800141	ChaharMaha	Miankoh	50 34 12		31 48 30		1	17	32		17	32		17	32		Soil	1	2	1
1800142	ChaharMaha	Miankoh	50 34 17		31 48 40		1	36	32		36			36			Soil*Debris	1	2	4
1800143	ChaharMaha	Miankoh	50 34 21		31 49 02		1	17	32		17	36		17	36		Soil*Debris	1	2	1
1800144	ChaharMaha	Miankoh	50 34 21		31 49 02		1	36	32		36			36			Soil	1	2	1
1800145	ChaharMaha	Miankoh	50 34 08		31 49 04		1	17	36	32	17	36		17	36		Soil*Debris	1	2	1
1800146	ChaharMaha	Miankoh	50 33 49		31 49 04		1	17	32		17	30		17	30		Soil*Debris	1	2	1
1800147	ChaharMaha	Miankoh	50 33 28		31 48 59		1	17	32		17	36		17	36		Soil*Debris	1	2	1

Table A-2
Basic Landslide Data

① Data No.			Latitude Longitude				② Codes of landuse											③	④	⑤
	PROVINCE	DISTRICT	LONGI_1	LONGI_2	LATTI_1	LATTI_2	LANDUSE_EF	LANDUSE11	LANDUSE12	LANDUSE13	LANDUSE21	LANDUSE22	LANDUSE23	LANDUSE31	LANDUSE32	LANDUSE33	MATERIALS	STATE_ACTI	VELOSI_ACT	DISTRIBACT
1800148	Chahar Maha	Miankoh	50 33 59		31 48 58		1	17	32		17	36		17	36		Soil*Debris	1	1	1
1800149	Chahar Maha	Miankoh	50 33 11		31 49 02		1	32	36		30			30			Soil	1	2	1
1800150	Chahar Maha	Miankoh	50 33 03		31 48 56		1	17	32		17	30		17	30		Soil	1	2	1
1800151	Chahar Maha	Poshtakoh	50 35 09		32 04 12		0				30			30			Soil	1	2	1
1800152	Chahar Maha	Poshtakoh	50 35 04		32 04 08		0				30			30			Soil	1	2	1
1800153	Chahar Maha	Poshtakoh	50 35 05		32 03 57		0				30			30			Soil	1	2	3
1800154	Chahar Maha	Poshtakoh	50 34 55		32 03 56		0				30			30			Soil	1	2	1
1800155	Chahar Maha	Mshaikh	50 36 59		31 54 17		1	30			30	16		30	16		Soil	1	2	1
1800156	Chahar Maha	Mshaikh	50 36 55		31 54 16		1	30			30	16		30	16		Soil	1	2	1
1800157	Chahar Maha	Mshaikh	50 36 48		31 54 16		1	30			30	16		30	16		Soil	1	2	1
1800158	Chahar Maha	Mshaikh	50 36 39		31 54 24		1	30			30	16		30	16		Soil	1	2	3
1800159	Chahar Maha	Mshaikh	50 36 43		31 54 01		1	30			30	16		30	16		Soil	1	2	1
1800160	Chahar Maha	Miankoh	50 34 15		31 44 28		1	32			30			30			Rock	1	2	1
1800161	Chahar Maha	Miankoh	50 34 33		31 44 32		1	32			32			32			Soil	1	2	1
1800162	Chahar Maha	Miankoh	50 34 29		31 44 22		1	32			32			32			Soil	1	2	1
1800163	Chahar Maha	Miankoh	50 34 25		31 44 15		1	32			32			32			Soil	1	2	1
1800164	Chahar Maha	Miankoh	50 34 25		31 44 25		1	32			32			32			Soil	1	2	1
1800165	Chahar Maha	Miankoh	50 34 23		31 44 10		1	32			32			32			Soil	1	2	1
1800166	Chahar Maha	Miankoh	50 33 50		31 44 25		1	32			32			32			Soil	1	2	1
1800167	Chahar Maha	Miankoh	50 33 45		31 44 19		1	32			32			32			Soil	1	1	1
1800168	Chahar Maha	Miankoh	50 33 25		31 44 35		1	32			32			32			Soil	1	2	1
1800169	Chahar Maha	Miankoh	50 33 16		31 44 37		1	32			32			32			Soil	1	2	1
1800170	Chahar Maha	Miankoh	50 33 08		31 44 28		1	32			16	32		16	32		Soil	1	2	1
1800171	Chahar Maha	Miankoh	50 32 41		31 45 12		1	32			33	16		32	16		Soil	1	2	1
1800172	Chahar Maha	Miankoh	50 32 33		31 45 11		1	32			32	16		32	16		Soil	1	2	1
1800173	Chahar Maha	Miankoh	50 32 28		31 45 11		1	32			32			32			Soil	1	2	1
1800174	Chahar Maha	Miankoh	50 33 00		31 45 18		1	32			32			32			Soil	1	2	1
1800175	Chahar Maha	Miankoh	50 33 16		31 45 19		1										Soil	1	2	1
1800176	Chahar Maha	Miankoh	50 32 01		31 49 09		1	32			32			32			Soil	1	2	1
1800177	Chahar Maha	Miankoh	50 32 09		31 49 12		1	32			16	32		16	32		Soil	1	2	1
1800178	Chahar Maha	Miankoh	50 32 18		31 49 41		1	32			32	16		32	16		Soil	1	2	1
1800179	Chahar Maha	Miankoh	50 32 22		31 49 53		1	32			32	16		32	16		Soil	1	2	1
1800180	Chahar Maha	Miankoh	50 32 18		31 50 04		1	32			32	16		32	16		Soil	1	2	1
1800181	Chahar Maha	Miankoh	50 32 18		31 50 27		1	32	16		32	16		32	16		Rock/Soil	1	0	1
1800182	Chahar Maha	Miankoh	50 30 00		31 43 00		1	32	16		32	16		32	16		Soil	1	2	1
1800183	Chahar Maha	Miankoh	50 29 29		31 41 49		1	32	16		32	16		32	16		Soil	1	2	1
1800184	Chahar Maha	Miankoh	50 29 13		31 41 44		1	32			16	36		16	32		Soil	1	2	1
1800185	Chahar Maha	Miankoh	50 27 10		31 41 57		1	32			32	16		32	16		Soil	1	2	1
1800186	Chahar Maha	Miankoh	50 28 08		31 39 40		1	32			16	36		16	36		Soil	1	2	1
1800187	Chahar Maha	Miankoh	50 28 35		31 39 20		1	32			16	36		16	36		Soil/Debris	1	2	1
1800188	Chahar Maha	Miankoh	50 28 41		31 39 15		1	32			16			16			Soil/Debris	1	2	1
1800189	Chahar Maha	Markazi	50 40 00		32 05 11		1	30			16	30	20	16	30	20	Soil	1	3	1
1800190	Chahar Maha	Markazi	50 39 57		32 03 33		1	30			16			16			Rock	1	2	2
1800191	Chahar Maha	Markazi	50 39 50		32 02 54		1	30			16	30		16	30		Soil	1	2	1
1800192	Chahar Maha	Markazi	50 39 49		32 02 51		1	30			16	30		16	30		Soil	1	2	1
1800193	Chahar Maha	Markazi	50 36 48		32 02 49		1	30			16	30		16	30		Soil	1	2	1
1800194	Chahar Maha	Markazi	50 39 47		32 02 47		1	30			16	30		16	30		Soil	1	2	1
1800195	Chahar Maha	Markazi	50 39 46		32 02 47		0	30			16	30		16	30		Soil	1	2	1
1800196	Chahar Maha	Markazi	50 39 45		32 02 52		0				30			30			Soil	1	2	1
1800197	Chahar Maha	Markazi	50 39 44		32 02 51		1	30			30			30			Soil	1	2	1

Table A-2
Basic Landslide Data

① Data No.			Latitude Longitude				② Codes of landuse											③	④	⑤
	PROVINCE	DISTRICT	LONGI 1	LONGI 2	LATTI 1	LATTI 2	LANDUSE EF	LANDUSE11	LANDUSE12	LANDUSE13	LANDUSE21	LANDUSE22	LANDUSE23	LANDUSE31	LANDUSE32	LANDUSE33	MATERIALS	STATE_ACTI	VELOSI_ACT	DISTRIBACT
1800198	ChaharMaha	Markazi	50 39 43		32 02 33		1	30			30	16	20	30	16	20	Soil	1	2	1
1800199	ChaharMaha	Markazi	50 39 44		32 02 23		1	30			30	16		30	16		Soil	1	2	1
1800200	ChaharMaha	Markazi	50 39 49		32 02 00		0	30			31			30			Soil	1	2	1
2000001	Khozestan	Dahdz	50 21 41		31 43 48		1	13			13	32		13	32		Soil	4	4	1
2000002	Khozestan	Dahdz	50 21 26		31 44 01		1	13			13	20	32	13	20	32	Soil	1	4	1
2000003	Khozestan	Dahdz	50 21 07		31 43 48		1	13	32		20	32		32			Soil	6	4	1
2000004	Khozestan	Dahdz	50 20 57		31 44 06		1	13	20	32	13	20	17	13	20	17	Debris	3	4	1
2000005	Khozestan	Dahdz	50 20 38		31 44 11		1	13	17	30	17	13	30	17	30	36	Debris	4	4	1
2000006	Khozestan	Dahdz	50 20 38		31 43 56		1	13	20	30	13	20	30	13	20	30	Soil	6	4	0
2000007	Khozestan	Dahdz	50 20 19		31 44 12		1	13	32	16	13	32	16	13	32	16	Debris	3	3	0
2000008	Khozestan	Honai_Shargh	50 02 51		31 49 27		1	13	32	16	13	32	16	13	32	16	Rock	2	2	2
2000009	Khozestan	Honai_Shargh	50 02 54		31 49 25		1	13	30	16	13	30	16	16	36		Debris	3	4	1
2000010	Khozestan	Dahdz	50 15 27		30 40 09		1	13	30		13	30	17	13	30	17	Soil	4	4	1
2000014	Khozestan	Dahdz	50 04 05		31 48 56		1	13	16		13	16	30	13	16	30	Debris	4	4	0
2000022	Khozestan	Honai_Shargh	50 03 05		31 49 12		1	13	32		13	32	16	13	32	16	Debris	4	2	1
2000023	Khozestan	Dahdz	50 05 00		31 48 04		1	13	32		13	32	16	13	32	16	Debris	4	2	1
2000024	Khozestan	Dahdz	50 05 13		31 47 48		1	13	32		13	32	16	16	13	32	Debris	4	2	1
2000025	Khozestan	Dahdz	50 05 15		31 47 45		1	13	32		13	32	16	13	32	16	Debris	4	3	1
2000026	Khozestan	Dahdz	50 05 17		31 47 43		1	13	32		13	32	16	13	32	16	Debris	4	3	1
2000027	Khozestan	Dahdz	50 05 20		31 47 40		1	13	32		13	32	16	13	32	16	Debris	4	4	1
2000028	Khozestan	Dahdz	50 05 27		31 47 35		1	13	32		13	32	16	13	32	16	Debris	4	2	1
2000029	Khozestan	Dahdz	50 05 44		31 47 30		1	13	32		13	32	16	13	32	16	Debris	6	4	0
2000030	Khozestan	Dahdz	50 05 55		31 47 26		1	13	32		13	32	16	13	32	16	Debris	4	4	1
2000031	Khozestan	Dahdz	50 06 05		31 47 18		1	13	32		13	32	16	13	32	16	Debris	4	3	6
2000032	Khozestan	Dahdz	50 10 58		31 44 57		1	13	32	16	13	32	16	13	32	36	Soil	4	3	1
2000033	Khozestan	Dahdz	50 17 57		31 41 46		1	13	32		13	32	35	36	32	13	Soil	4	3	1
2000034	Khozestan	Dahdz	50 19 14		31 40 57		1	13	32	16	13	32	16	13	32	36	Debris	4	3	1
2000035	Khozestan	Dahdz	50 19 14		31 41 00		1	13	32	16	13	32	16	13	32	36	Soil	4	3	1
2000036	Khozestan	Dahdz	50 19 15		31 40 55		1	13	32		13	32		36	13	32	Debris	4	4	1
2000037	Khozestan	Dahdz	50 19 15		31 40 57		1	13	32		13	32		36	13	32	Debris	4	3	1
2000038	Khozestan	Dahdz	50 19 16		31 40 58		1	13	32		13	32		36	13	32	Debris	4	4	1
2000039	Khozestan	Dahdz	50 19 16		31 40 59		1	13	32		13	32		36	13	32	Debris	4	4	1
2000040	Khozestan	Dahdz	50 19 17		31 41 00		1	13	32		13	32		36	13	32	Debris	4	4	1
2000041	Khozestan	Dahdz	50 19 18		31 41 01		1	13	32		13	32		36	13	32	Debris	4	4	1
2000042	Khozestan	Dahdz	50 20 19		31 38 25		1	14	16		14	16	32	16	32	14	Rock	1	2	1
2000043	Khozestan	Dahdz	50 20 28		31 38 15		1	14	32	16	14	16	32	16	32	14	Rock	1	2	1
2000044	Khozestan	Dahdz	50 20 43		31 37 59		0	14	32	16	14	16	32	16	32	14	Rock	1	2	1
2000045	Khozestan	Dahdz	50 20 24		31 38 07		1	14	32	16	20	32		20			Soil	4	3	1
2000046	Khozestan	Dahdz	50 20 43		31 37 49		1	13	32		20	32		13	32		Debris	4	3	1
2000047	Khozestan	Dahdz	50 20 55		31 37 39		1	13	32	16	13	32	16	16	32	13	Rock	1	2	1
2000048	Khozestan	Dahdz	50 21 20		31 37 12		1	13	32	16	13	32	16	16	32	13	Rock	6	3	0
2000049	Khozestan	Dahdz	50 21 35		31 37 02		1	13	32	16	13	32	16	16	32	13	Rock	4	3	1
2000050	Khozestan	Dahdz	50 21 39		31 36 39		1	13	32		13	32		13	32		Debris	4	4	1
2000051	Khozestan	Dahdz	50 22 02		31 36 44		1	13	32	16	13	32	16	13	32	16	Rock	4	3	1
2000052	Khozestan	Dahdz	50 22 19		31 36 32		1	13	32	16	13	32	16	13	32	16	Soil	4	3	1
2000053	Khozestan	Dahdz	50 23 49		31 36 34		1	20	32	16	32	20	16	32	20	16	Rock	1	1	1
2000054	Khozestan	Dahdz	50 06 31		31 46 39		1	13	32		13	32	17	13	32	17	Debris	4	4	1
2000055	Khozestan	Dahdz	50 06 39		31 46 29		1	13	32		13	32	17	13	32	17	Debris	4	3	1
2000056	Khozestan	Dahdz	50 06 48		31 46 21		1	13	32		13	32	17	13	32	17	Rock	4	3	1

Table A-2
Basic Landslide Data

① Data No.			Latitude Longitude				② Codes of landuse											③	④	⑤
	PROVINCE	DISTRICT	LONGI_1	LONGI_2	LATTI_1	LATTI_2	LANDUSE_EF	LANDUSE11	LANDUSE12	LANDUSE13	LANDUSE21	LANDUSE22	LANDUSE23	LANDUSE31	LANDUSE32	LANDUSE33	MATERIALS	STATE_ACTI	VELOSI_ACT	DISTRIBACT
2000057	Khozestan	Dahdz	50 07 14		31 45 45		1	13	32		13	32	24	13	32	24	Rock	6	3	0
2000058	Khozestan	Dahdz	50 07 30		31 45 41		1	13	32		32	13	17	32	13	17	Debris	4	0	1
2000059	Khozestan	Dahdz	50 07 49		31 45 16		1	13	30		20			20			Debris	4	3	3
2000060	Khozestan	Dahdz	50 07 24		31 45 22		1	13	32		34			34			Rock	4	2	1
2000061	Khozestan	Dahdz	50 07 33		31 45 00		0	13	32		13	32		13	32	36	Rock	6	1	0
2000062	Khozestan	Dahdz	50 08 48		31 42 16		0	13	32		13	32	17	13	32	17	Debris	4	4	1
2000063	Khozestan	Dahdz	50 09 36		31 41 51		1							36	32	13	Debris	7	2	0
2000064	Khozestan	Dahdz	50 09 37		31 41 35		1							36	32	13	Debris	4	3	1
2000065	Khozestan	Dahdz	50 09 46		31 41 30		1				13	32		13	32	17	Debris	2	4	1
2000066	Khozestan	Dahdz	50 10 40		31 40 04		1	13	32		13	32	17	13	32	36	Debris	4	2	1
2000067	Khozestan	Dahdz	50 11 04		31 39 41		1	13	32		13	32	17	13	32	36	Debris	4	4	1
2000068	Khozestan	Dahdz	50 11 49		31 38 54		1	13	32		13	32	17	36	32	13	Rock/Debris	1	2	6
2000069	Khozestan	Dahdz	50 14 04		31 37 22		1	13	32		13	32		36	32	13	Rock	1	2	1
2000070	Khozestan	Dahdz	50 13 34		31 37 40		1	13	32		13	32		36	32	13	Debris	4	4	6
2000071	Khozestan	Dahdz	50 13 30		31 37 19		1	13	32		13	32		36	32	13	Rock	4	2	3
2000072	Khozestan	Dahdz	50 14 46		31 37 06		1	13	32		13	32		36	32	13	Rock	4	2	3
2000073	Khozestan	Dahdz	50 14 42		31 37 14		1	13	32	17	13	32	17	13	32	17	Rock	4	3	1
2000074	Khozestan	Dahdz	50 14 31		31 37 11		1	13	32	17	13	32	17	13	32	17	Rock	4	3	3
2000075	Khozestan	Dahdz	50 15 00		31 36 42		1	13	32		13	32	20	13	32	20	Debris	1	4	3
2000076	Khozestan	Dahdz	50 14 40		31 36 38		1	13			32	36		32	36		Rock	3	4	3
2000077	Khozestan	Dahdz	50 14 16		31 36 26		1	32			13	20	36	13	32	36	Rock	6	3	0
2000080	Khozestan	Dahdz	50 17 17		31 35 27		1	13	20	36	13	32	20	36	32	13	Rock	4	3	3
2000081	Khozestan	Dahdz	50 16 24		31 35 37		0	32			36	32		36	32		Rock/Soil	3	3	6
2000085	Khozestan	Dahdz	50 17 58		31 44 06		1	13	20	32	11	13	32	36	30		Rock	4	3	1
2000086	Khozestan	Dahdz	50 18 41		31 43 58		0	13	32	36	13	32	36	13	32	36	Rock	4	2	1
2000087	Khozestan	Dahdz	50 18 20		31 44 18		1	13	32		32	36		30	36		Rock	4	3	1
2000088	Khozestan	Markazi	49 07 15		32 01 33		0	30			30			30			Rock	3	3	1
2000089	Khozestan	Markazi	49 07 06		32 01 34		0	30			30			30			Rock	3	3	1
2000090	Khozestan	Markazi	49 08 27		32 02 28		0	16	13	30	16	13	30	16	30		Rock	4	4	1
2000091	Khozestan	Markazi	49 08 18		32 02 15		0	13	32		32			31	36		Rock	3	3	1
2000092	Khozestan	Markazi	49 08 32		32 02 44		1	16	32	13	16	32		16	32	36	Rock	3	3	1
2000093	Khozestan	Markazi	49 08 38		32 02 20		1	16	32	13	16	32		16	32	36	Rock	3	3	1
2000094	Khozestan	Markazi	49 07 54		32 02 05		1	16	30		16	30		36			Rock	3	2	6
2000095	Khozestan	Markazi	49 07 56		29 02 40		0	13	32		36	32		36	30	16	Rock	5	3	6
2000096	Khozestan	Markazi	49 08 10		32 02 41		0	13	32		32			30	36		Rock	3	3	1
2000097	Khozestan	Markazi	49 08 34		32 02 17		0	30	13		32	36		36	30		Rock*Debris	3	3	1
2000098	Khozestan	Markazi	48 08 36		32 01 17		0	30	36		30	36		30	36		Rock	3	3	1
2000099	Khozestan	Markazi	48 08 45		32 01 17		0	30	36		30	36		30	36		Rock	3	3	1
2000100	Khozestan	Markazi	48 08 45		32 01 07		0	30	36		30	36		30	36		Rock	3	3	1
2000122	Khozestan	Markazi	49 10 32		32 03 36		0	13	30		30			30			Rock	3	2	1
2000123	Khozestan	Markazi	49 08 32		32 02 44		0	13	32		36	32		36	30		Rock	3	3	6
2000124	Khozestan	Markazi	49 09 30		32 03 26		0	13	32		36	32		36	30		Rock	3	2	1
2000125	Khozestan	Markazi	49 07 56		32 03 36		0	13	32		36	32		36	30		Rock	2	3	1
2000126	Khozestan	Markazi	49 09 22		32 03 31		0	13	32		36	32		36	30		Rock	3	3	1
2000127	Khozestan	Markazi	49 08 09		32 03 24		0	13	32		36	32		36	30		Rock	3	3	1
2000128	Khozestan	Markazi	49 08 10		32 03 01		0	13	32		36	32		36	30		Rock	3	3	1
2000129	Khozestan	Markazi	49 07 58		32 03 16		1	13	16	32	16	36	32	16	36		Rock	3	3	6
2000130	Khozestan	Tl_bazan	49 20 05		31 56 32		1	16	13	32	16	36	32	16	36	30	Rock	3	3	1
2000131	Khozestan	Tl_bazan	49 20 18		31 56 30		1	16	13	32	16	36	32	16	36	30	Rock	3	3	1
2000132	Khozestan	Gazstan	49 10 45		32 15 00		0	32	13		32	36		30	36		Rock	3	3	1

Table A-2
Basic Landslide Data

① Data No.			Latitude Longitude				② Codes of landuse											③	④	⑤
	PROVINCE	DISTRICT	LONGI_1	LONGI_2	LATTI_1	LATTI_2	LANDUSE_EF	LANDUSE11	LANDUSE12	LANDUSE13	LANDUSE21	LANDUSE22	LANDUSE23	LANDUSE31	LANDUSE32	LANDUSE33	MATERIALS	STATE_ACTI	VELOSI_ACT	DISTRIBACT
2000133	Khozestan	Gazstan	49 10 45		32 15 08		0	32	13		32	36		30	36		Rock	3	3	1
2000134	Khozestan	Gazstan	49 11 03		32 14 50		0	32	13		32	36		30	36		Rock*Debris	3	3	1
2000135	Khozestan	Gazstan	49 10 00		32 12 34		0	32	13		32	36		36			Rock	3	3	1
2000136	Khozestan	Gazstan	49 10 29		32 12 24		0	32	13		32	36		36			Rock	3	2	1
2000137	Khozestan	Gazstan	49 10 36		32 12 37		0	32	13		32	36		36			Rock	3	2	1
2000138	Khozestan	Gazstan	49 10 45		32 13 04		0	32	13		32	36		36	30		Rock*Debris	3	3	1
2000139	Khozestan	Gazstan	49 10 12		32 13 09		0	32	13		13	36	32	13	36	32	Rock*Debris	3	3	1
2000140	Khozestan	Gazstan	49 11 21		32 14 40		0	32	13		36	32		36			Rock*Debris	3	3	1
2000141	Khozestan	Gazstan	49 11 30		32 14 38		0	32	13		36	32		36			Rock*Debris	3	3	1
2000142	Khozestan	Gazstan	49 11 46		32 14 14		0	32	13		36	32		36	30		Rock*Debris	3	3	1
2000143	Khozestan	Gazstan	49 11 41		32 14 06		0	32	13		36	32		36			Rock*Debris	3	3	1
2000144	Khozestan	Gazstan	49 11 34		32 13 58		0	32	13		36	32		36			Rock*Debris	3	3	1
2000145	Khozestan	Gazstan	49 11 04		32 13 50		0	32	13		36	32		36			Rock	3	2	1
2000146	Khozestan	Gazstan	49 10 58		32 13 41		0	32	13		36	32		36			Rock	3	3	1
2000147	Khozestan	Gazstan	49 11 19		32 13 06		0	32	13		36	32		36			Rock	3	3	1
2000149	Khozestan	Dahdz	50 13 36		31 42 32		1	13	32		13	32		30	36		Rock+Soil	3	2	1
2000150	Khozestan	Dahdz	50 12 31		31 42 40		1	13	32	16	17	20		17	36		Rock*Soil	3	4	1
2000151	Khozestan	Dahdz	50 12 21		31 42 40		1	13	32	17	17	32		17	30	36	Rock*Soil	3	3	1
2000152	Khozestan	Dahdz	50 11 57		31 42 35		1	13	16	20	17	20	32	36	17		Debris	3	3	1
2000153	Khozestan	Dahdz	50 12 00		31 42 28		1	13	16	20	16	20	32	16	36		Soil*Debris	3	3	1
2000154	Khozestan	Dahdz	50 11 40		31 42 26		1	13	32		20	32		36			Soil+Debris	3	2	1
2000155	Khozestan	Dahdz	50 11 53		31 42 15		1	13	32		20	32		36			Soil+Debris	3	3	1
2000156	Khozestan	Dahdz	50 12 02		31 42 11		1	13	32	17	17	32		36	17		Rock*Soil	3	3	1
2000157	Khozestan	HaftShhidan	49 09 17		32 10 41		0							36	30		Rock	7	2	1
2000158	Khozestan	HaftShhidan	49 06 24		32 10 03		0	30			30			36	30		Rock	3	3	1
2000173	Khozestan	Tl_bazan	49 23 40		31 55 42		0	30			30			30	36		Rock	3	3	1
2000174	Khozestan	Tl_bazan	49 20 50		31 55 43		0	30			30	36		30	36		Rock	3	3	1
2000175	Khozestan	Tl_bazan	49 20 36		31 55 43		0	30			30	36		30	36		Rock	3	3	1
2000176	Khozestan	Tl_bazan	49 23 30		31 53 36		0	32			32	36		36			Rock	3	3	1
2000177	Khozestan	Tl_bazan	49 23 20		31 53 19		0	30			30	36		30	36		Rock	3	3	1
2000178	Khozestan	Tl_bazan	49 23 34		31 54 34		0	30			30	36		30	36		Rock	3	3	1
2000179	Khozestan	Tl_bazan	49 23 24		31 54 39		0	30			30	36		30	36		Rock	3	3	1
2000180	Khozestan	Tl_bazan	49 23 32		31 54 44		0	30			30	36		36			Rock	3	3	1
2000181	Khozestan	Tl_bazan	49 23 40		31 54 26		0	30			30			30			Rock	3	3	1
2000182	Khozestan	Tl_bazan	49 23 44		31 54 14		0	30			30			30			Rock	3	3	1
2000183	Khozestan	Tl_bazan	49 23 46		31 53 40		0	30			30	36		30	36		Rock	3	3	1
2000184	Khozestan	Tl_bazan	49 23 44		31 53 41		0	30			30	36					Rock	3	3	1
2000185	Khozestan	Markazi	49 13 56		31 55 53		0	30			30			30	36		Rock	3	3	3
2000186	Khozestan	Markazi	49 13 40		31 56 06		0	30			30	36		30	36		Rock	3	3	1
2000187	Khozestan	Markazi	49 13 30		31 56 00		0	30			30	36		36	30		Rock	3	3	1
2000188	Khozestan	Markazi	49 13 20		31 56 45		0	30			30	36		30	36		Rock	3	3	6
2000189	Khozestan	Markazi	49 13 10		31 56 53		0	30			30	36		30	36		Rock	3	3	1
2000190	Khozestan	Markazi	49 13 30		31 57 26		0	30			30	36		36			Rock	3	3	1
2000191	Khozestan	Markazi	49 14 10		31 56 56		0	30			30	36		36			Rock	3	3	1
2000192	Khozestan	Markazi	49 13 44		31 56 20		0	30			30	36		36			Rock	3	3	1
2000193	Khozestan	Markazi	49 14 36		31 54 50		0	30			30			30			Rock	3	3	0
2000194	Khozestan	Markazi	49 14 22		31 55 00		0	30			30			30			Rock	3	3	1
2000195	Khozestan	Markazi	49 12 56		31 55 37		0	30			30			30	36		Rock	3	3	1
2000196	Khozestan	Markazi	49 13 04		31 55 17		0	30			30	36		30	36		Rock	3	3	1
2000197	Khozestan	Markazi	49 12 46		31 55 12		0	30			30			36	30		Rock	3	3	1

Table A-2
Basic Landslide Data

① Data No.			Latitude Longitude				② Codes of landuse											③	④	⑤
	PROVINCE	DISTRICT	LONGI_1	LONGI_2	LATTI_1	LATTI_2	LANDUSE_EF	LANDUSE11	LANDUSE12	LANDUSE13	LANDUSE21	LANDUSE22	LANDUSE23	LANDUSE31	LANDUSE32	LANDUSE33	MATERIALS	STATE_ACTI	VELOSI_ACT	DISTRIBACT
2000198	Khozestan	Markazi	49 12 36		31 55 10		0	30			30	36		36	30		Rock	3	3	1
2000199	Khozestan	Markazi	49 09 20		31 57 33		0	30			30	36		36	30		Rock	3	3	1
2000200	Khozestan	Markazi	49 07 23		31 57 51		0	30			30	36		30	36		Rock	3	3	1
2000201	Khozestan	Markazi	49 14 12		31 53 46		0	30			30			36	30		Rock	3	3	1
2000202	Khozestan	Markazi	49 14 22		31 53 36		0	30			30	36		36			Rock	3	3	1
2000203	Khozestan	Markazi	49 14 32		31 53 13		0	30			30	36		36			Rock	3	3	1
3000001	Kohkiloyh&	Margon	51 10 30		30 58 42		0				13			13	36		Soil	3	3	2
3000002	Kohkiloyh&	Margon	51 10 26		30 58 44		0				13			13	36		Soil	3	2	3
3000003	Kohkiloyh&	Margon	51 10 23		30 58 48		1				13			13	36		Soil	1	1	6
3000004	Kohkiloyh&	Margon	51 10 19		30 58 48		0				13	35		13	35	36	Soil	3	0	2
3000005	Kohkiloyh&	Margon	51 10 17		30 58 50		0				13			13	36		Soil	3	1	2
3000006	Kohkiloyh&	Margon	51 10 04		30 58 54		1	13			19			19	36		Soil	3	2	6
3000007	Kohkiloyh&	Margon	51 10 01		30 58 55		1	13			19			19	36		Soil	3	2	6
3000008	Kohkiloyh&	Margon	51 10 00		30 58 56		1	13			19	21		19	36		Soil	3	2	6
3000009	Kohkiloyh&	Margon	51 09 56		30 58 38		1	13			20			20	36		Soil	3	3	6
3000010	Kohkiloyh&	Margon	51 10 02		30 58 32		1	13			20			20	36		Soil	3	2	1
3000011	Kohkiloyh&	Margon	51 10 00		30 58 31		1	13			20			20	36		Soil	3	3	0
3000012	Kohkiloyh&	Margon	51 10 04		30 58 27		0	13			13	20		13	20	36	Soil	3	2	6
3000013	Kohkiloyh&	Margon	51 10 03		30 58 34		1	13			20			20	36		Soil	3	2	1
3000014	Kohkiloyh&	Margon	51 10 09		30 58 30		1	13			13	20		13	20	36	Soil*Debris	3	2	2
3000015	Kohkiloyh&	Margon	51 08 07		30 59 10		0				32			32	36		Soil	1	2	3
3000016	Kohkiloyh&	Margon	51 08 01		30 59 10		0				32			32	36		Soil	3	2	3
3000017	Kohkiloyh&	Margon	51 08 34		30 59 38		1	13			20			20	36		Soil	4	2	1
3000018	Kohkiloyh&	Margon	51 08 32		30 59 36		1	13			20			20	36	30	Soil	3	2	6
3000019	Kohkiloyh&	Margon	51 08 31		30 59 36		0	13			13			13	36		Soil	3	2	6
3000020	Kohkiloyh&	Margon	51 08 34		30 59 36		1	13			20			20	36		Soil	3	2	1
3000021	Kohkiloyh&	Margon	51 08 36		30 59 35		1	13			20			20	36		Soil	3	2	1
3000022	Kohkiloyh&	Margon	51 08 38		30 59 36		1	13			20			20	36	32	Soil	3	2	6
3000023	Kohkiloyh&	Margon	51 08 22		30 59 04		1	13			17	20		17	20	36	Soil	1	2	6
3000024	Kohkiloyh&	Margon	51 08 22		30 59 31		1	13			20			36	20	32	Soil	3	2	3
3000025	Kohkiloyh&	Margon	51 08 23		30 59 32		1	13			20			36	32		Soil	3	2	6
3000026	Kohkiloyh&	Margon	51 08 22		30 59 33		1	13			20			20	36	32	Soil	3	2	3
3000027	Kohkiloyh&	Margon	51 08 48		30 59 07		1	20			16	20		16	20	36	Soil	3	2	3
3000028	Kohkiloyh&	Margon	51 08 41		30 59 52		1	13			19			19	36		Soil	3	2	1
3000029	Kohkiloyh&	Margon	51 08 32		30 59 37		1	13			19			19	36		Soil	3	0	3
3000030	Kohkiloyh&	Margon	51 08 49		30 59 48		1	13			19			19	36		Soil	3	2	2
3000031	Kohkiloyh&	Margon	51 08 14		30 59 34		1	13			17	20		17	32	36	Soil	3	2	1
3000032	Kohkiloyh&	Margon	51 08 12		30 59 24		1	13			20			20	36		Soil	3	3	6
3000033	Kohkiloyh&	Margon	51 08 07		30 59 11		1	13			20	17		17	36		Soil	1	0	1
3000034	Kohkiloyh&	Margon	51 08 12		30 59 11		1	13			20			36	20	32	Soil	3	2	3
3000035	Kohkiloyh&	Margon	51 08 14		30 59 10		1	13			20			20	36	32	Soil	3	0	3
3000036	Kohkiloyh&	Margon	51 08 16		30 59 09		1	13			36	32	20	20	32	36	Soil	3	2	3
3000037	Kohkiloyh&	Margon	51 08 24		30 59 00		1	13			13	17	36	17	36	13	Soil	3	2	1
3000038	Kohkiloyh&	Margon	51 09 24		30 59 44		1	13	32		20	35	11	36	11	20	Soil/Debris	3	2	3
3000039	Kohkiloyh&	Margon	51 09 43		30 59 46		1	13			20	13		32	36	20	Soil	3	3	6
3000040	Kohkiloyh&	Margon	51 09 31		30 59 52		0	13			13	20		13	36	20	Soil/Debris	3	2	3
3000041	Kohkiloyh&	Margon	51 09 40		30 59 49		1	13			20			20	36		Soil	3	2	6
3000042	Kohkiloyh&	Margon	51 09 40		30 59 47		0				13			13	36		Soil	3	0	6
3000043	Kohkiloyh&	Margon	51 09 26		30 59 41		1	13			20			20	36	32	Soil	3	2	3

Table A - 2
Basic Landslide Data

① Data No.			Latitude Longitude				② Codes of landuse											③	④	⑤
	PROVINCE	DISTRICT	LONGI 1	LONGI 2	LATTI 1	LATTI 2	LANDUSE EF	LANDUSE11	LANDUSE12	LANDUSE13	LANDUSE21	LANDUSE22	LANDUSE23	LANDUSE31	LANDUSE32	LANDUSE33	MATERIALS	STATE_ACTI	VELOSI_ACT	DISTRIBACT
3000044	Kohkiloyh&	Margon	51 09 45		30 59 48		1	13			20	36		20	32	36	Soil	3	2	3
3000045	Kohkiloyh&	Margon	51 09 48		30 59 48		1	13			20			36	13	20	Soil	4	3	3
3000046	Kohkiloyh&	Margon	51 09 51		30 59 44		1	13			20			20	36	32	Soil	3	2	3
3000047	Kohkiloyh&	Margon	51 10 01		30 59 26		1	13			20	17		17	36	20	Soil	3	1	1
3000048	Kohkiloyh&	Margon	51 10 13		30 59 25		1	13			35	13		36	13		Soil	3	1	1
3000049	Kohkiloyh&	Margon	51 10 33		30 59 18		1	13			11			36	11	31	Soil	3	3	6
3000050	Kohkiloyh&	Margon	51 10 31		30 59 19		1	13			11	19		11	19	36	Soil	3	2	3
3000051	Kohkiloyh&	Drohan	51 17 54		30 41 38		0				13			13	36		Soil/Debris	1	1	3
3000052	Kohkiloyh&	Drohan	51 17 52		30 04 44		0				13			13	36		Soil/Debris	1	1	3
3000053	Kohkiloyh&	Drohan	51 17 54		30 41 49		1				22	13		13	22	36	Rock+Soil	1	1	3
3000054	Kohkiloyh&	Drohan	51 17 57		30 41 59		1				13	22	11	13	36	22	Rock+Soil	3	2	3
3000055	Kohkiloyh&	Drohan	51 17 56		30 42 09		0				13			13	36		Soil	3	2	6
3000056	Kohkiloyh&	Drohan	51 18 04		30 42 17		0				13			13	36		Soil/Debris	3	2	3
3000057	Kohkiloyh&	Drohan	51 17 54		30 42 19		1	13	20		13	20		36	13		Soil	0	2	3
3000058	Kohkiloyh&	Drohan	51 17 33		30 42 17		0				30			30	36		Rock+Soil	1	1	1
3000059	Kohkiloyh&	Drohan	51 17 42		30 42 33		0				13			13	36		Soil	3	2	3
3000060	Kohkiloyh&	Drohan	51 17 33		30 42 34		1	13	20		20	13		20	13	17	Soil	0	2	3
3000061	Kohkiloyh&	Drohan	51 17 30		30 42 38		0				13			13	20	11	Soil	3	2	3
3000062	Kohkiloyh&	Drohan	51 17 37		30 43 00		1	13	20		20			36	20		Soil	3	2	6
3000063	Kohkiloyh&	Drohan	51 17 39		30 43 03		0				13			13	36		Soil+Debris	3	2	3
3000064	Kohkiloyh&	Drohan	51 17 39		30 43 06		0				13			13	36		Soil+Debris	3	2	1
3000065	Kohkiloyh&	Drohan	51 17 37		30 43 09		0				13			13	36		Soil	3	2	3
3000066	Kohkiloyh&	Drohan	51 17 39		30 43 21		0				13			13	36		Soil/Debris	3	2	3
3000067	Kohkiloyh&	Drohan	51 17 36		30 43 20		0				13			13	36		Soil/Debris	3	2	6
3000068	Kohkiloyh&	Drohan	51 17 31		30 43 19		0				13			13	36		Soil/Debris	3	2	6
3000069	Kohkiloyh&	Drohan	51 16 12		30 42 18		1	13	22		13	22		36	13		Soil/Debris	1	1	1
3000070	Kohkiloyh&	Drohan	51 16 15		30 42 19		1	13	22		13	22		13	36		Soil/Debris	3	2	1
3000071	Kohkiloyh&	Drohan	51 16 45		30 42 33		1	13	11	22	11	22		36	22	11	Soil/Debris	3	2	1
3000072	Kohkiloyh&	Drohan	51 16 47		30 42 41		1	13	20	35	11	13	35	36	11	35	Soil/Debris	3	2	1
3000073	Kohkiloyh&	Drohan	51 16 24		30 42 44		1	13	20		20			36	20		Soil	3	2	6
3000074	Kohkiloyh&	Drohan	51 16 23		30 42 49		1	13	20		20			20	36		Soil	3	2	6
3000075	Kohkiloyh&	Drohan	51 16 24		30 42 49		1	13	20		20			36	32		Soil	3	2	6
3000076	Kohkiloyh&	Drohan	51 16 31		30 42 50		1	13	20		20			36	20		Soil	3	2	1
3000077	Kohkiloyh&	Drohan	51 16 27		30 42 54		1	13	20		20			20	36		Soil	3	2	2
3000078	Kohkiloyh&	Drohan	51 16 10		30 43 03		0				13			13	36		Soil/Debris	3	2	3
3000079	Kohkiloyh&	Drohan	51 16 10		30 43 02		0				13			13	36		Soil/Debris	3	0	6
3000080	Kohkiloyh&	Drohan	51 16 51		30 43 06		1	13	20	22	22	20	13	13	11	36	Soil/Debris	3	2	3
3000081	Kohkiloyh&	Drohan	51 16 03		30 41 59		1	13			13			36	32		Soil	3	2	6
3000082	Kohkiloyh&	Drohan	51 16 01		30 42 02		0				13			36	13		Soil	3	2	2
3000083	Kohkiloyh&	Drohan	51 16 06		30 42 02		1	13			13			13	36		Soil	3	2	6
3000084	Kohkiloyh&	Drohan	51 16 09		30 42 04		1	13			13			13	36		Soil	3	2	6
3000085	Kohkiloyh&	Drohan	51 16 11		30 42 06		1	13			13			13	36		Soil/Debris	3	2	1
3000086	Kohkiloyh&	Drohan	51 16 24		30 42 12		1	13			13			13	36		Soil/Debris	3	2	6
3000087	Kohkiloyh&	Drohan	51 16 22		30 42 09		0				13			13	36		Soil	3	2	3
3000088	Kohkiloyh&	Drohan	51 15 50		30 42 06		0				13			13	36		Soil/Debris	3	2	3
3000089	Kohkiloyh&	Drohan	51 16 04		30 42 07		0				13			36			Soil	3	1	1
3000090	Kohkiloyh&	Drohan	51 16 07		30 42 09		0				13			13	36		Soil	3	2	1
3000091	Kohkiloyh&	Drohan	51 16 06		30 42 08		1	13			13			13	36		Soil	3	2	1
3000092	Kohkiloyh&	Drohan	51 16 09		30 42 25		0				13	36		13	36		Soil/Debris	1	1	3
3000093	Kohkiloyh&	Drohan	51 16 12		30 42 27		0				13			13	36		Soil/Debris	1	1	3

Table A-2
Basic Landslide Data

① Data No.			Latitude Longitude				② Codes of landuse											③	④	⑤
	PROVINCE	DISTRICT	LONGI 1	LONGI 2	LATTI 1	LATTI 2	LANDUSE EF	LANDUSE11	LANDUSE12	LANDUSE13	LANDUSE21	LANDUSE22	LANDUSE23	LANDUSE31	LANDUSE32	LANDUSE33	MATERIALS	STATE_ACTI	VELOSI_ACT	DISTRIBACT
3000111	Kohkiloyh&	Margon	51 10 38		30 59 19		1	13			20			20	36		Soil	3	2	6
3000112	Kohkiloyh&	Margon	51 10 32		30 59 22		1	13			35	20	11	16	20	35	Soil/Debris	3	2	6
3000113	Kohkiloyh&	Margon	51 10 30		30 59 27		1	13			17	20	18	17	36		Soil/Debris	3	2	1
3000114	Kohkiloyh&	Margon	51 10 38		30 59 22		1	13			35	11	20	20	11	35	Soil	3	2	6
3000115	Kohkiloyh&	Margon	00 00 00		00 00 00		1	13			20			20	36		Soil	3	2	3
3000116	Kohkiloyh&	Margon	51 09 54		30 59 35		1	13			20			20	36		Soil+Debris	3	2	3
3000117	Kohkiloyh&	Margon	51 10 19		30 59 49		1	13			20			20	36		Soil	3	2	3
3000118	Kohkiloyh&	Margon	51 10 51		30 59 24		1	13	20		20	13		20	13	36	Soil/Debris	3	2	6
3000119	Kohkiloyh&	Margon	51 10 45		30 59 26		1	13	20		20	13		20	13	36	Soil/Debris	3	2	6
3000120	Kohkiloyh&	Margon	51 10 48		30 59 27		1	13	20		20	13		20	13	36	Soil	3	2	2
3000121	Kohkiloyh&	Margon	51 10 45		30 59 26		1	13	20		20			20	36		Soil/Debris	3	2	6
3000122	Kohkiloyh&	Margon	51 10 59		30 59 20		1	13	19		19			19	36		Soil	3	2	6
3000123	Kohkiloyh&	Margon	51 12 02		30 59 04		1	13	20	17	20	17		17	36	20	Soil	3	2	1
3000124	Kohkiloyh&	Margon	51 11 59		30 59 04		1	13	20	17	17	20	13	20	36	17	Soil/Debris	3	2	6
3000125	Kohkiloyh&	Margon	51 11 57		30 59 06		1	13	20	17	17	20	13	20	36	17	Soil	3	2	3
3000126	Kohkiloyh&	Margon	51 12 07		30 59 02		1	13	20		20			20	36		Soil	3	2	6
3000127	Kohkiloyh&	Margon	51 11 52		30 58 57		0	13			13			13	36		Soil/Debris	3	2	6
3000128	Kohkiloyh&	Margon	51 11 46		30 58 57		0	13			13			13	36		Soil/Debris	3	2	6
3000129	Kohkiloyh&	Margon	51 12 09		30 58 57		1	13			13			36			Soil/Debris	3	2	1
3000130	Kohkiloyh&	Margon	51 12 28		30 58 56		1	13	20		13	20		13	36		Soil	3	2	3
3000131	Kohkiloyh&	Margon	51 12 33		30 58 57		1	20			20			20	36		Soil	3	2	6
3000132	Kohkiloyh&	Margon	51 12 47		30 58 48		1	20			20			20	36		Soil	3	2	6
3000133	Kohkiloyh&	Margon	51 12 49		30 58 52		1	13			13			13	36		Soil	3	2	6
3000134	Kohkiloyh&	Margon	51 12 51		30 58 51		1	13			13			13	36		Soil	3	2	1
3000135	Kohkiloyh&	Margon	51 12 54		30 58 48		1	13			13			13	36		Rock/Debris	3	2	0
3000136	Kohkiloyh&	Margon	51 12 55		30 58 48		1	13			13			13	36		Soil	3	1	1
3000137	Kohkiloyh&	Margon	51 12 57		30 58 48		1	13			13			13	36		Soil/Debris	3	2	2
3000138	Kohkiloyh&	Margon	51 13 13		30 58 36		1	13			13	36		36	30		Soil+Debris	3	2	6
3000139	Kohkiloyh&	Margon	51 13 14		30 58 35		1	22			13	22		22	13	36	Soil	3	2	3
3000140	Kohkiloyh&	Margon	51 13 13		30 58 32		1	13			13			32	36		Soil/Debris	3	2	6
3000141	Kohkiloyh&	Margon	51 13 00		30 58 40		1	13			16	13		36	16		Soil	3	2	6
3000142	Kohkiloyh&	Margon	51 09 30		30 59 32		1	19			19	17		19	36	17	Soil	3	2	1
3000143	Kohkiloyh&	Margon	51 09 09	51 09 13	30 59 24	30 59 18	1	13			20	13		20	11	36	Soil/Debris	3	2	3
3000144	Kohkiloyh&	Margon	51 09 11	00 00 00	30 59 21		1	13			24	13	20	24	13	36	Soil/Debris	3	2	3
3000145	Kohkiloyh&	Margon	51 09 15	00 00 00	30 59 21		1	13			24	20		36	24	32	Soil/Debris	3	2	6
3000146	Kohkiloyh&	Margon	51 09 12	00 00 00	30 59 19		1	13			13	24		36	13	24	Soil	3	2	3
3000147	Kohkiloyh&	Margon	51 09 15	00 00 00	30 59 19		1	13			24	13		16	13	36	Soil/Debris	3	2	3
3000148	Kohkiloyh&	Margon	51 09 23	00 00 00	30 59 19		1	13			13	24		13	36	24	Soil/Debris	3	2	3
3000149	Kohkiloyh&	Margon	51 09 28	00 00 00	30 59 19		1	13			13			36	30		Soil/Debris	3	2	3
3000150	Kohkiloyh&	Margon	51 09 32	00 00 00	30 59 19		0	13			13			36	13		Soil/Debris	3	2	3
3000151	Kohkiloyh&	Margon	51 08 16	00 00 00	30 58 56		1	30			30	24		30	36	24	Soil	3	2	1
3000152	Kohkiloyh&	Margon	51 08 35	51 08 45	30 58 48	30 59 04	0	32			32			32	36		Soil/Debris	3	2	6
3000153	Kohkiloyh&	Margon	51 08 43	00 00 00	30 58 48	00 00 00	0	32			32			32	36		Soil	3	2	6
3000154	Kohkiloyh&	Margon	51 08 58	00 00 00	30 58 48	00 00 00	0	32			32			32	36		Soil/Debris	3	3	6
3000155	Kohkiloyh&	Margon	51 08 54	00 00 00	30 58 59	00 00 00	0	32			32			36	32		Soil	3	2	3
3000156	Kohkiloyh&	Margon	51 08 44	00 00 00	30 58 59	00 00 00	0	32			32			32	36		Soil	3	2	3
3000157	Kohkiloyh&	Margon	51 08 52	51 09 09	31 58 48	30 59 16	0	32			32			32	36		Soil/Debris	2	2	2
3000158	Kohkiloyh&	Margon	51 08 59	00 00 00	30 59 11	00 00 00	0	13			13			36			Soil	3	2	3
3000159	Kohkiloyh&	Margon	51 09 17	00 00 00	30 59 11	00 00 00	0	13			13			13	36		Soil/Debris	3	2	6
3000160	Kohkiloyh&	Margon	51 09 18	00 00 00	30 59 11	00 00 00	1	13			20			20	36		Soil/Debris	3	2	3

Table A - 2
Basic Landslide Data

① Data No.	⑥	⑦ Numerial value of shape						⑧ Main cause			Lithology			⑨ Damage from disaster							
	CONDIT_ ACT	LR	LD	LT	WR	WD	AREA M2	CAUSE 1	CAUSE 2	CAUSE 3	LITHO 11	LITHO 12	LITHO 21								
1400002	3	100	120	135	70	70	4398	15	18	38	Silt-Clay	Clay-Conglomerate		E	0.3	G	0.05				
1400003	3	80	90	105	100	100	4712	15	34	26	Clay-Marl*	Clay-Marl		E	0.4	G	0.1				
1400004	3	120	135	150	100	100	7069	34	18	9	Marl-Silt	Clay-Marl		E	0.5						
1400005	3	100	110	113	100	100	5760	15	34	49	Clay-Silt*	Clay-Conglo.		E	0.5	G	0.05				
1400006	1	100	120	125	50	50	3142	49	38		Silt-Mudstone*	Mudstone-Conglo.		E	0.3						
1400007	3	90	100	110	50	50	2618	34	38	41	Marl*	Marl-Shale	Shale	E	0.2	G	0.05	P	?		
1400008	3	100	125	135	100	100	6545	15	34	9	Silt-Marl-Shale	Silt-Marl-Shale	Lime	E	0.5	G	0.1				
1400009	3	1500	1550	1570	2000	2000	0	38	49	41	Marl-Clay	Marl-Clay	Lime	B	?	E	1	H	5		
1400010	1	80	90	100	180	180	8482	38	49		Silt-Clay*	Silt-Clay-lime		E	0.5	H	0.1				
1400011	3	500	600	610	200	190	59690	6	40	49	Silt-Clay*	Silt-Clay-lime		E	3						
1400012	3	900	950	980	1000	1000	497419	18	41	39	Silt-Clay*	Silt-Clay-lime	Lime	B	10	C	10	F	?	M	?
1400013	3	130	145	150	50	50	3796	6	41	19	Alluvial*	Alluvial-Lime		E	0.2						
1400014	3	650	690	700	0	700	252898	6	41	19	Alluvial*	Alluvial-Lime		E	7.5	G	0.3				
1400015	2	250	280	300	250	250	36652	6	41	19	Deposit Debris	Deposit Debris		E	1.5	H	0.1				
1400016	3	280	290	300	150	140	21258	6	41	19	Alluvial*	Alluvial-Lime		E	2						
1400017	1	180	190	200	80	80	7959	6	49	41	Alluvial*	Alluvial-Lime		E	0.2						
1400018	3	240	260	270	450	450	61261	6	49	41	Alluvial*	Alluvial-Lime									
1400019	1	180	190	200	80	80	7959	41	19	49	Alluvial*	Alluvial-Conglo.		E	0.2						
1400020	1	180	190	200	0	400	39794	6	41	19	Alluvial	Alluvial-Marl-Lime									
1400021	3	330	340	350	300	300	53407	6	41	19	Alluvial*	Alluvial-Marl-Lime									
1400022	3	270	290	300	300	330	50108	6	34	1	Silt-Clay-Sand	Clay-Sand-Marl									
1400023	3	700	950	1000	350	350	174097	14	6	34	Alluvial*	Alluvial-Marl-Lime		E	?	G	?				
1400024	3	120	140	150	100	100	7330	6	18	14	Silt*	Sikt-Marl-Lime		C	2	E	?	G	0.25	L	0.1
1400025	1	50	60	80	100	100	3142	49	14	41	Alluvial*	Alluvial-Conglo.									
1400026	3	110	120	120	75	75	4712	18	49	34	Alluvial*	Alluvial-Conglo.									
1400027	3	180	200	200	120	120	12566	6	14	34	Alluvial*	Alluvial-Lime		E	1	G	0.2				
1400028	1	180	200	200	100	100	10472	48	14	41	Alluvial*	Alluvial-Conglo.		E	0.5						
1400033	1	180	190	200	70	70	6964	6	34	41	Marl	Marl	Lime	E	0.5	G	0.05				
1400034	3	70	75	80	50	50	1963	6	15	19	Silt-Sand-Mudstone	Silt-Sand-Mudstone		E	1	G	0.1				
1400035	5	200	200	200	1500	1500	157080	34	41		Alluvial*	Conglo.-Marl	Marl	E	10						
1400036	1	260	290	300	300	300	45553	14	41		Debris*	Debris-Marl	Lime	E	0.35						
1400037	1	270	280	300	100	100	14661	14	34	49	Debris*	Debris-Marl		E	1	G	0.1				
1400038	1	350	380	400	300	300	59690	34	49	18	Alluvial*	Conglo.-Marl	Marl	E	2						
1400039	1	130	150	150	30	30	2356	6	34	41	Marl	Marl		E	0.1	H	0.1	L	?		
1400040	3	120	150	150	70	0	5498	6	34	38	Alluvial*	Alluvial-Marl		E	0.5						
1400041	5	480	500	500	750	750	196350	34	49	18	Alluvial*	Alluvial-Conglo.-Marl	Marl								
1400042	1	270	280	300	100	100	14662	6	34	41	Alluvial*	Alluvial-Conglo.-Marl	Marl								
1400043	1	280	300	300	200	200	31416	34	41		Alluvial*	Alluvial-Conglo.-Marl	Marl								
1400044	4	300	300	300	500	500	78540	9	34	41	Alluvial*	Alluvial-Conglo.-Marl	Marl	E	3						
1400045	3	1300	1000	1000	1500	1500	785398	49	34	41	Alluvial*	Alluvial-Conglo.-Marl	Marl								
1400046	4	250	270	280	200	200	28274	6	34	41	Alluvial*	Alluvial-Conglo.-Marl	Marl								
1400047	1	100	110	120	100	100	5760	34	49	18	Alluvial*	Alluvial-Marl		E	1.40						
1400048	1	100	100	100	50	50	2618	34	49	18	Alluvial*	Alluvial-Marl		E	0.20						
1400049	1	85	90	100	50	50	2356	40	41	14	Alluvial*	Alluvial-Conglo.									
1400050	1	140	145	150	150	150	11388	18	19	41	Alluvial*	Alluvial-Lime									
1400051	3	850	950	1000	2000	2000	994838	34	41	14	Alluvial*	Alluvial-Marl									
1400052	3	500	500	500	3500	3500	916298	41	34	6	Marl*	Marl	Lime								
1400053	5	110	120	120	70	70	4398	9	18	34	Marl	Marl									
1400054	1	70	80	80	80	80	3351	49	18	34	Silt-Marl*	Conglo.-Marl		E	?	G	0.05				
1400055	5	120	140	150	70	70	5131	41	34	49	Marl-Silt*	Conglo.-Marl									

Table A-2
Basic Landslide Data

① Data No.	⑥	⑦ Numerial value of shape						⑧ Main cause			Lithology			⑨ Damage from disaster			
	CONDIT_ACT	LR	LD	LT	WR	WD	AREA M2	CAUSE_1	CAUSE_2	CAUSE_3	LITHO_11	LITHO_12	LITHO_21				
1400056	5	80	100	100	70	70	3665	41	34	49	Alluvial- Clay -Silt	Conglo.-Marl		E	?	G	?
1400057	3	200	230	250	100	100	12043	41	49	34	Clay-Silt-Marl	Conglo.-Marl		E	?	G	?
								CAUSE_1	CAUSE_2	CAUSE_3	LITHO_11	LITHO_12	LITHO_21				
1800001	1	0	42	55	0	120	5000	15	39	38	Silt*	Marl					
1800002	1	0	75	80	0	200	1500	15	38	49	Silt*	Silt-Marl					
1800003	5	0	68	80	0	100	7000	15	49	38	Silt*	Silt-Marl					
1800004	1	0	57	60	0	30	1700	49	38	55	Silt*	Silt-Marl					
1800005	1	0	66	80	0	200	13200	15	49	38	Silt*	Silt-Marl					
1800006	1	0	108	120	0	50	6000	49	38	3	Silt*	Silt-Marl					
1800007	5	0	68	80	0	150	10200	15	39	18	Silt*	Silt-Marl					
1800008	5	0	230	250	0	30	7000	38	49	18	Silt*	Silt-Marl					
1800009	1	0	105	120	0	200	22000	15	49	38	Silt*	Silt-Marl		G	0/2		
1800010	1	0	145	150	0	100	14500	15	49	38	Silt*	Silt-Marl					
1800011	1	0	65	80	0	140	9500	15	49	38	Silt*	Silt-Marl					
1800012	1	0	45	50	0	80	3800	15	49	38	Silt*	Silt-Marl					
1800013	1	0	70	80	0	120	9600	15	49	38	Silt*	Silt-Marl	Marl				
1800014	3	0	395	400	0	450	180000	38	49	30	Silt*	Silt-Marl					
1800015	3	0	345	350	0	500	175000	38	49	30	Silt*	Silt-Marl		C	2		
1800016	3	100	80	110	120	120	14300	6	49	38	Silt*	Silt-Marl-Lime		C	0.5		
1800017	1	50	45	52	105	100	5000	6	38	30	Silt*	Silt-Marl		H	0.02		
1800018	3	0	280	300	0	700	190000	6	49	38	Silt*	Silt-Marl		C	2.1		
1800019	5	0	370	400	0	600	222000	6	38	49	Silt*	Silt-Marl		C	2.4		
1800020	1	0	37	40	0	50	1850	6	49	38	Silt*	Silt-Marl					
1800021	1	0	38	50	0	40	160	49	38	6	Upper Soil	Soil-Marl					
1800022	1	0	120	100	0	80	8000	6	39	38	Silt	Silt-Marl					
1800023	3	0	83	100	0	200	16600	49	38	6	Silt	Silt-Marl					
1800024	3	0	142	150	0	100	15000	49	38	6	Silt	Silt-Marl					
1800025	3	0	150	170	0	250	37500	49	38	6	Silt	Silt-Marl					
1800026	3	110	120	0	0	100	11000	49	38	6	Silt	Silt-Marl					
1800027	5	0	280	30	0	150	45000	15	6	49	Silt	Alluvial					
1800028	5	0	185	200	0	220	40700	15	49	6	Silt	Silt-Marl					
1800029	3	0	335	350	300	0	10500	15	49	38	Silt	Silt-Marl					
1800030	1	0	45	50	300	120	6000	15	49	38	Silt	Silt-Marl	Marl				
1800031	1	0	65	70	300	50	3300	6	49	38	Silt	Silt-Conglomerate					
1800032	1	0	55	60	0	50	3000	6	49	38	Upper Soil	Soil-Marl					
1800033	1	0	65	70	0	100	7000	15	49	38	Upper Soil	Soil-Conglomerate					
1800034	1	0	65	80	0	60	4000	15	38	49	Silt	Silt-Marl					
1800035	1	0	60	80	0	80	4800	15	38	49	Upper Soil	Soil-Marl-Lime	Lime				
1800036	1	0	60	80	0	20	1400	15	49	38	Silt	Silt-Marl	Lime				
1800037	4	0	145	150	0	250	3700	49	38	15	Silt	Debris-Lime	Lime				
1800038	1	0	85	100	0	40	3500	15	49	38	Silt	Silt-Marl					
1800039	5	0	134	150	0	100	14000	15	38	49	Silt	Silt-Marl-Gypsum					
1800040	1	0	150	165	0	220	3300	15	49	38	Silt	Silt-Marl					
1800041	4	0	112	120	0	150	1700	38	27		Silt	Alluvial					
1800042	4	0	1450	1500	0	2000	35000	28	38	49	Silt	Conglomerate-Shale	Shale				
1800043	1	0	47	60	0	40	1880	2	49	38	Silt	Debris		H	0.04		
1800044	5	0	186	200	0	60	11120	39	49	38	Silt	Debris					
1800045	5	0	185	200	0	250	46250	49	38		Silt	Silt-Marl					
1800046	1	0	57	60	0	40	2280	49	39	38	Silt	Silt-Marl					
1800047	5	0	180	200	0	200	36000	15	49	39	Silt	Silt-Marl					

Table A-2
Basic Landslide Data

① Data No.	⑥	⑦ Numerial value of shape						⑧ Main cause			Lithology			⑨ Damage from disaster							
	CONDIT_ ACT	LR	LD	LT	WR	WD	AREA M2	CAUSE 1	CAUSE 2	CAUSE 3	LITHO 11	LITHO 12	LITHO 21								
1800048	5	0	195	200	0	300	60000	49	38	39	Silt	Silt-Marl									
1800049	4	0	250	300	0	150	38000	38	49	18	Silt	Alluvial									
1800050	3	0	1940	2000	0	1000	1950000	6	38	49	Silt	Silt-Marl-Lime									
1800051	5	0	38	50	0	80	4000	15	39	38	Clay-Lime*	Clay-Lime									
1800052	1	0	140	150	0	38	5700	6	39	38	Clay-Lime*	Clay-Lime									
1800053	1	0	85	100	0	120	12000	48	38	39	clay*	Marl									
1800054	3	0	50	60	0	130	7800	15	38	48	Clay*	Conglomerate-Marl	Marl								
1800055	3	0	48	500	0	100	50000	6	38	48	Clay*	Marl									
1800056	5	50	55	60	0	30	1800	15	48	49	Upper Soil	Alluvial-Marl	Marl								
1800057	3	0	180	200	0	120	24000	15	38	48	Upper Soil	Alluvial		C	?						
1800058	1	0	12	15	0	30	450	15	28	48	Upper Soil	Soil-Marl									
1800059	1	0	35	40	0	30	1200	15	38	48	Upper Soil	Soil-Marl									
1800060	1	0	12	15	0	15	225	15	38	48	Upper Soil	Soil-Marl									
1800061	1	0	30	40	0	50	2000	15	28	48	Upper Soil	Soil-Marl		H	0/04						
1800062	3	0	11	15	0	40	600	15	28	48	Upper Soil	Soil-Marl									
1800063	3	0	420	450	0	100	45000	15	6	38	Upper Soil	Soil-Marl		C	?						
1800064	5	0	25	28	0	105	2900	15	28	55	Upper Soil	Soil-Marl									
1800065	2	0	40	50	155	0	6100	6	48	38	Upper Soil	Soil-Marl-Gypsum		H	0/12						
1800066	1	0	25	32	0	30	940	6	38	49	Upper Soil	Soil-Gray Marl									
1800067	1	25	20	30	0	15	430	9	10	13	Upper Soil	Alluvial									
1800068	1	0	25	30	20	0	600	38	49	55	Upper Soil	Soil-Marl									
1800069	1	0	55	62	42	0	2300	6	38	9	Upper Soil	Soil-Marl									
1800070	3	0	150	135	0	250	37500	38	49	50	Upper Soil	Soil-Marl-Lime									
1800071	1	0	70	75	0	80	5600	49	38	48	Upper Soil	Soil-Marl									
1800072	3	0	300	330	0	190	62700	6	49	48	Upper Soil	Soil-Marl-Lime	red Marl								
1800073	3	0	52	58	0	30	1700	6	38	48	Upper Soil	Soil-Marl	Lime								
1800074	1	0	20	25	0	120	3000	15	49	48	Upper Soil	Alluvial									
1800075	3	0	40	50	0	250	12500	15	49	48	Upper Soil	Soil-Marl		C	?						
1800076	1	0	165	180	0	100	18000	6	48	38	Upper Soil	Soil-Marl		C	?						
1800077	3	0	20	24	0	25	600	6	48	38	Upper Soil	Soil-Marl		C	?						
1800078	3	0	13	15	0	20	300	6	48	38	Upper Soil	Soil-Marl		C	?						
1800079	1	0	22	30	0	15	450	6	48	38	Upper Soil	Soil-Marl		C	?						
1800080	1	0	48	50	0	30	150	6	48	38	Upper Soil	Soil-Marl		C	?						
1800081	3	0	13	15	0	30	450	15	49	48	Upper Soil	Soil-Marl		C	?						
1800082	3	0	40	50	0	15	750	26	15	49	Upper Soil	Soil-Marl		C	?						
1800083	1	0	45	50	0	70	3500	15	49	48	Upper Soil	Soil-Marl		C	?						
1800084	5	0	135	150	0	400	60000	15	49	50	Upper Soil	Soil-Marl		C	?						
1800085	1	0	60	70	0	15	1050	15	49	38	Upper Soil	Soil-Marl		C	?						
1800086	1	0	105	120	0	20	230	15	49	38	Upper Soil	Soil-Marl		C	?						
1800087	1	0	58	60	0	30	1800	15	38	49	Upper Soil	Soil-Marl									
1800088	1	0	25	22	0	25	550	49	48	39	Silt*	Silt-Marl									
1800089	1	0	280	300	0	130	39000	15	49	48	Silt*	Silt-Marl									
1800090	1	0	80	85	0	30	2550	6	49	38	Clay*	Clay-Marl									
1800091	3	0	165	180	0	40	7200	6	49	38	Clay*	Clay-Marl									
1800092	5	0	120	140	0	60	8400	6	49	38	Clay*	Clay-Marl									
1800093	1	0	75	80	0	40	3200	6	49	38	Clay*	Clay-Marl									
1800094	1	0	105	120	0	40	4600	6	49	38	Clay*	Clay-Marl									
1800095	1	0	55	60	0	30	1800	6	49	38	Clay*	Clay-Marl									
1800096	1	0	35	40	0	25	1000	6	49	38	Clay*	Clay-Marl									
1800097	1	0	80	90	0	35	3150	6	49	38	Clay*	Clay-Marl									

Table A-2
Basic Landslide Data

① Data No.	⑥	⑦ Numerial value of shape						⑧ Main cause			Lithology			⑨ Damage from disaster			
	CONDIT_ ACT	LR	LD	LT	WR	WD	AREA M2	CAUSE 1	CAUSE 2	CAUSE 3	LITHO 11	LITHO 12	LITHO 21				
1800098	1	0	65	80	0	25	2000	6	49	38	Clay*	Clay-Marl					
1800099	1	0	90	100	0	35	3500	6	49	38	Clay*	Clay-Marl					
1800100	1	0	35	40	0	15	600	6	49	38	Clay*	Clay-Marl					
1800101	5	0	212	220	0	200	44000	15	3	18	Silt*	Silt-Marl		B	10	E	4.4
1800102	5	0	160	180	0	100	18000	6	38	48	Silt*	Alluvial-Marl	Marl	E	0.36		
1800103	3	0	42	45	0	80	3600	26	6	38	Silt*	Silt-Marl		E	0.1440		
1800104	3	0	38	40	0	56	2240	26	6	38	Silt*	Silt-Marl		E	0.0448		
1800105	3	0	8	10	0	15	150	6	38	48	Silt*	Silt-Marl		E	0.0075		
1800106	1	0	16	18	0	40	720	6	38	49	Silt*	Silt-Marl		E	0.0072		
1800107	1	0	36	40	0	70	2520	6	26	38	Silt*	Silt-Marl		E	0.0756		
1800108	5	0	230	250	0	85	21200	6	38	48	Silt*	Silt-Marl		C	0.212	E	0.424
1800109	3	0	270	290	0	110	31900	26	6	38	Silt*	Silt-Marl		E	1.6		
1800110	3	0	800	850	0	130	110500	6	38	48	Silt*	Silt-Marl		E	5.5		
1800111	1	0	112	120	0	95	11400	6	38	48	Silt*	Silt-Marl		E	0.114		
1800112	5	0	16	20	0	20	400	15	48	38	clay*	Alluvial-Marl	Marl	E	0.0240		
1800113	3	0	70	80	30	30	2400	15	39	48	clay*	Alluvial-Marl	Marl	E	0.1440		
1800114	5	0	22	30	70	70	2100	15	39	38	clay*	Alluvial-Marl	Marl	E	0.0840	H	0.07
1800115	3	0	35	40	0	150	6000	15	38	48	Silt*	Silt-Marl		E	0.1140		
1800116	3	0	102	120	0	185	20350	22	6	38	Silt*	Alluvial-Marl	Marl	E	0.36		
1800117	5	0	17	20	0	20	400	48	15	38	Silt*	Silt-Lime-Marl	Marl	E	0.0160		
1800118	5	0	10	14	0	30	460	15	48	41	Silt*	Silt-Lime-Marl		E	0.0184		
1800119	1	0	12	15	0	30	450	6	26	38	Silt*	Silt-Marl		E	0.0150		
1800120	5	0	19	22	0	10	220	48	38	39	Silt*	Silt-Marl		E	0.0110		
1800121	1	0	12	15	0	25	375	38	48	39	Silt*	Silt-Marl		E	0.0038		
1800122	1	0	30	35	0	25	875	6	38	48	clay*	Clay-Marl		C	0.03	E	0.0180
1800123	1	0	75	80	0	30	2400	15	38	48	clay*	Clay-Marl		C	0.02	E	0.0480
1800124	5	0	23	30	0	80	2400	15	38	55	clay*	Alluvial-Marl	Marl	C	0.06	E	0.02
1800125	1	0	85	100	0	100	8500	15	38	55	clay*	Alluvial-Marl	Marl	C	0.2550	E	0.02
1800126	5	0	48	60	0	100	6000	15	38	39	clay*	Alluvial-Marl	Marl	C	0.2400		
1800127	5	0	45	50	0	50	2500	15	38	39	clay*	Clay-Marl		C	0.0750		
1800128	5	0	20	25	0	100	2500	15	38	39	clay*	Clay-Conglomerate		C	0.0750		
1800129	1	0	8	11	0	42	460	15	38	55	clay*	Clay-Marl		C	0.0276		
1800130	1	0	15	20	0	25	375	15	48	38	Upper Soil	Soil-Marl		C	0.0150		
1800131	1	0	43	50	0	80	4000	15	48	38	clay*	Clay-Marl		C	0.16		
1800132	1	0	54	60	0	20	1200	6	38	55	clay*	Clay-Marl		C	0.006	E	0.024
1800133	5	0	110	125	0	160	20000	15	48	42	clay*	Clay-Lime		E	0.4		
1800134	1	0	60	75	0	70	5250	38	39	55	Silt*	Alluvial-Marl	Marl	E	0.1330		
1800135	1	0	50	60	0	170	10200	15	38	39	Silt*	Alluvial-Marl	Marl	E	0.3570	G	0.065
1800136	3	0	95	110	0	90	9900	15	6	38	Silt*	Alluvial-Marl	Marl	E	0.049	G	0.048
1800137	3	0	30	35	0	60	2100	6	38	48	Silt*	Alluvial-Marl		E	0.10		
1800138	1	0	50	60	0	125	7500	15	38	39	Silt*	Alluvial-Marl		E	0.3		
1800139	5	0	50	60	0	300	19500	15	38	48	Silt*	Alluvial-Marl	Marl	E	0.78		
1800140	1	0	28	32	0	10	320	6	38	39	Silt*	Silt-Marl		E	0.0064		
1800141	1	0	32	40	0	85	3400	15	38	39	Silt*	Alluvial-Marl	Marl	E	0.1360		
1800142	3	0	85	100	0	40	4000	6	38	55	Silt*	Alluvial-Marl	Marl	E	0.20		
1800143	1	0	30	35	0	77	2695	15	38	39	Silt*	Alluvial-Marl	Marl	E	0.1350		
1800144	1	0	8	10	0	10	100	6	38	39	Silt*	Alluvial-Marl	Marl	E	0.0050		
1800145	3	0	45	50	0	70	3500	15	38	48	clay*	Alluvial-Marl	Marl	E	0.175		
1800146	3	0	85	100	0	110	11000	15	38	39	Silt*	Alluvial-Marl	Marl	E	0.5		
1800147	1	0	21	25	0	36	900	15	38	39	Silt*	Alluvial-Marl	Marl	E	0.045		

Table A-2
Basic Landslide Data

① Data No.	⑥	⑦ Numerial value of shape						⑧ Main cause			Lithology			⑨ Damage from disaster							
	CONDIT_ ACT	LR	LD	LT	WR	WD	AREA M2	CAUSE 1	CAUSE 2	CAUSE 3	LITHO 11	LITHO 12	LITHO 21								
1800148	3	0	155	170	0	100	17000	15	38	39	Silt*	Alluvial-Marl	Marl	E	0.765						
1800149	1	0	12	15	0	30	450	6	38	39	Silt*	Alluvial-Marl	Marl	E	0.018						
1800150	3	0	50	55	0	48	2640	15	38	39	Clay-Silt*	Silt-Marl		E	0.0956						
1800151	3	0	16	60	0	60	1200	6	38	48	Silt*	Silt-Marl		E	0.12						
1800152	3	0	35	40	0	35	1400	6	38	48	Silt*	Silt-Marl		E	0.14						
1800153	3	0	20	25	0	175	4375	6	38	48	Silt*	Silt-Marl		E	0.44						
1800154	1	0	17	20	0	38	760	6	38	48	Silt*	Silt-Marl		E	0.08						
1800155	1	0	11	15	0	20	300	15	48	38	clay*	Alluvial-Marl	Marl	E	0.03						
1800156	1	0	48	53	0	70	3700	15	48	38	clay*	Alluvial-Marl	Marl	E	0.37						
1800157	3	0	90	94	0	100	9400	15	38	48	clay*	Alluvial-Marl	Marl	E	0.94						
1800158	3	0	115	130	0	250	32500	38	39	48	Silt*	Alluvial-Marl	Marl	E	3.25						
1800159	5	0	280	300	0	120	36000	15	39	38	Silt*	Alluvial-Marl	Marl	E	3.6						
1800160	5	0	125	130	0	65	84500	6	48	38	Clay*	Clay-Marl		E	8.45						
1800161	1	0	52	58	0	48	2784	38	48	39	Silt*	Silt-Marl		E	.278						
1800162	1	0	65	72	0	70	5040	6	38	39	Silt*	Silt-Marl		E	.504						
1800163	1	0	160	165	0	20	3300	38	39	48	Silt*	Silt-Marl		E	0.33						
1800164	1	0	20	25	0	10	250	38	48	39	Silt*	Silt-Marl		E	0.025						
1800165	1	0	160	175	0	90	15750	38	39	48	Silt-Clay*	Silt-Marl		E	1.58						
1800166	5	0	60	75	0	50	3750	38	39	48	Silt-Clay*	Silt-Marl		E	0.375						
1800167	1	0	75	90	0	135	12150	6	38	39	Silt-Clay*	Silt-Marl		E	1.22						
1800168	1	0	20	25	0	50	1250	6	38	39	Silt*	Alluvial		C	0.125	E	0.125				
1800169	3	0	45	50	0	35	1750	38	39	48	Silt*	Silt-Marl		E	0.175						
1800170	5	0	145	160	0	210	33600	15	38	39	Silt*	Silt-Marl		E	0.8	H	0.01				
1800171	1	0	12	16	0	16	256	15	38	48	Silt*	Silt-Marl		E	0.0256						
1800172	1	0	14	17	0	18	300	15	38	48	Silt*	Silt-Marl		E	0.03						
1800173	1	0	20	25	0	30	750	15	38	48	Silt*	Silt-Marl		E	0.075						
1800174	1	0	40	45	0	25	1125	38	39	48	Silt*	Silt-Marl		E	0.1125						
1800175	5	0	105	120	0	160	19200	38	48	39	Silt*	Alluvial-Marl	Marl	E	1.92						
1800176	1	0	65	70	0	100	7000	15	38	39	Silt*	Silt-Marl		E	0.7						
1800177	1	0	17	20	0	40	800	15	38	39	Silt*	Silt-Marl		E	0.08						
1800178	1	0	25	30	0	175	5250	15	38	39	Silt*	Alluvial-Marl	Marl	E	0.525						
1800179	1	0	25	30	0	82	2460	15	48	38	Silt-Clay	Alluvial-Marl	Marl	E	0.246						
1800180	1	0	35	40	0	275	110000	15	38	39	Silt*	Alluvial-Marl	Marl	E	11						
1800181	5	0	22	25	0	255	6375	15	38	39	Silt*	Silt-Lime-Marl	Marl	E	0.6375						
1800182	3	0	15	18	0	20	360	15	48	38	clay*	Clay-Marl		E	0.036						
1800183	3	0	12	15	0	75	1125	15	38	48	clay*	Alluvial-Marl	Marl	E	0.1125						
1800184	3	0	15	20	0	56	1120	15	48	38	clay*	Clay-Marl		E	0.112						
1800185	3	0	8	10	0	96	1120	15	38	48	clay*	Clay-Marl		E	0.096						
1800186	3	0	20	25	0	27	675	15	38	39	clay*	Clay-Marl		E	0.0675						
1800187	5	0	25	30	0	130	3900	15	48	38	Silt*	Alluvial-Marl	Marl	E	0.39						
1800188	1	0	15	20	0	20	400	15	38	48	Silt*	Alluvial-Marl	Marl	E	0.04						
1800189	3	0	115	120	0	180	21600	15	38	39	Silt*	Alluvial-Marl	Marl	C	2.16	E	0.22				
1800190	4	0	175	180	0	160	28800	6	2	3	Lime	Lime									
1800191	3	0	20	25	0	52	1300	15	38	48	Silt*	Silt-Marl		E	0.13						
1800192	1	0	17	20	0	135	2700	15	38	48	Silt*	Silt-Marl		E	0.27						
1800193	1	0	20	25	0	45	1125	15	38	48	Silt*	Silt-Marl		E	0.1125						
1800194	1	0	18	22	0	25	550	15	38	39	Silt*	Silt-Marl		C	0.055						
1800195	4	0	37	42	0	35	1470	15	38	39	Silt*	Silt-Marl		E	0.147						
1800196	3	0	30	35	0	40	1400	6	48	38	clay*	Silt-Marl		E	0.14						
1800197	4	0	55	60	0	19	1140	15	38	39	Silt	Silt-Marl		E	0.114						

Table A-2
Basic Landslide Data

① Date No.	⑤	⑦ Numerial value of shape						⑧ Main cause			Lithology			⑨ Damage from disaster							
	CONDIT_ ACT	LR	LD	LT	WR	WD	AREA M2	CAUSE 1	CAUSE 2	CAUSE 3	LITHO 11	LITHO 12	LITHO 21								
1800198	3	0	20	25	0	80	20000	15	38	39	Silt*	Silt-Marl		E	0.2						
1800199	3	0	105	110	0	240	26400	15	38	39	Silt*	Silt-Marl		E	2.64						
1800200	1	0	285	300	0	200	60000	6	48	38	Silt*	Silt-Marl		E	6						
2000001	1	50	45	60	70	50	4200	6	49	34	Clay-Marl*	Clay-Marl-Shale									
2000002	5	310	330	350	90	70	311500	34	49	55	Clay-Marl*	Clay-Marl-Shale		B	20	C	0.3				
2000003	1	60	70	80	35	30	2800	49	34	55	Clay-Marl*	Clay-Marl-Shale									
2000004	5	80	130	150	120	100	18000	49	34	19	Debris*	Clay-Marl-Shale									
2000005	3	20	40	50	30	25	1500	49	34	19	Debris*	Clay-Marl-Shale									
2000006	1	70	80	100	60	45	6000	49	34	19	Debris*	Clay-Marl-Shale									
2000007	5	60	80	100	300	250	30000	49	34	19	Debris*	Lime-Shale-Marl									
2000008	5	170	190	200	120	150	30000	49	47	15	Lime-Marl*	Lime-Marl									
2000009	1	40	45	50	40	50	2500	15	49	47	Lime-Clay-Marl	Lime-Shale-Marl									
2000010	1	40	60	70	100	120	8400	15	49	34	Marl	Mudstone		H	0.07						
2000014	1	18	17	20	13	14	280	15	19	49	Clay-Marl	Lime-Shale-Marl									
2000022	1	70	95	100	34	40	4000	15	49	55	Marl-Silt	Shale-Marl-Lime		G	0.03						
2000023	1	18	18	20	200	200	4000	15	49	55	Marl-Silt	Shale-Marl-Lime									
2000024	1	28	28	30	300	300	9000	15	49	55	Marl-Silt	Shale-Marl-Lime									
2000025	1	8	13	15	30	35	525	15	49	55	Marl-Silt	Shale-Marl-Lime									
2000026	1	100	115	120	37	40	4800	15	49	55	Marl-Silt	Shale-Marl-Lime									
2000027	1	50	45	50	57	60	3000	15	49	55	Marl-Silt	Shale-Marl-Lime									
2000028	1	20	25	30	33	35	1050	15	49	55	Marl-Silt	Shale-Marl-Lime									
2000029	1	15	18	20	25	30	600	15	49	55	Marl-Silt	Shale-Marl-Lime									
2000030	1	35	34	35	50	52	1820	15	49	55	Marl-Silt	Shale-Marl-Lime									
2000031	5	170	190	200	25	30	6000	15	4	49	Marl-Silt	Shale-Marl-Lime									
2000032	5	60	90	90	300	300	27000	15	19	4	Marl-Silt	Shale-Marl-Lime									
2000033	1	30	33	40	55	60	2400	15	34	3	Clay-Marl	Clay-Marl									
2000034	1	25	25	25	900	900	22500	15	34	4	Clay-Marl	Debris-Marl									
2000035	1	14	18	20	5	8	160	55	34	6	Clay-Marl	Debris-Marl									
2000036	5	8	12	14	4	5	70	6	34	55	Clay-Marl	Debris-Marl		M	.03						
2000037	5	30	45	50	15	15	750	6	34	55	Clay-Marl	Debris-Marl									
2000038	1	15	18	20	7	7	140	6	34	55	Clay-Marl	Debris-Marl									
2000039	1	45	43	45	10	10	450	6	34	55	Clay-Marl	Debris-Marl									
2000040	5	62	65	70	12	15	1050	6	34	55	Clay-Marl	Debris-Marl									
2000041	1	50	50	55	10	12	660	6	34	55	Clay-Marl	Debris-Marl									
2000042	1	50	50	50	200	200	10000	4	15	40	Mudstone	Marl									
2000043	1	50	50	50	100	100	5000	4	15	40	Mudstone	red Marl									
2000044	1	60	60	60	1800	1800	10800	4	15	40	Mudstone	red Marl									
2000045	5	150	240	250	68	70	17500	6	34	19	Clay-red Marl	Debris-Marl									
2000046	5	50	80	90	35	40	3600	6	34	19	Clay-red Marl	Debris-Marl									
2000047	1	65	65	65	500	500	32500	4	15	40	Mudstone	Mudstone									
2000048	1	20	20	20	140	140	2800	4	15	40	Marl-Mudstone	Marl-Mudstone									
2000049	1	35	30	35	120	120	4200	4	15	40	Marl-Mudstone	Marl-Mudstone									
2000050	1	50	70	80	40	40	3200	6	34	19	red Marl	red Marl									
2000051	1	25	25	25	200	200	5000	4	15	40	Clay-red Marl	Clay-red Marl									
2000052	1	30	40	45	370	370	16650	4	15	40	Clay-red Marl	Clay-red Marl									
2000053	1	40	40	40	550	550	22000	15	4	40	Marl-Chalk-Lime	Marl-Chalk-Lime									
2000054	1	30	28	30	70	70	2100	15	42	55	Clay-Mudstone										
2000055	1	15	12	20	35	40	800	15	42	55	Clay-Mudstone										
2000056	1	25	14	30	75	80	2400	15	42	55	Chalk-Clay										

Table A-2
Basic Landslide Data

① Data No.	⑥	⑦ Numerial value of shape						⑧ Main cause			Lithology			⑨ Damage from disaster							
	CONDIT_ ACT	LR	LD	LT	WR	WD	AREA M2	CAUSE_1	CAUSE_2	CAUSE_3	LITHO_11	LITHO_12	LITHO_21								
2000057	1	18	23	25	10	10	250	15	42	55	Lime-Chalk-Marl										
2000058	1	28	28	30	15	15	450	15	42	55	Marl-Mudstone			H	?						
2000059	1	17	21	23	15	13	345	6	49	34				C	?	D	?				
2000060	4	150	300	300	150	200	60000	15	2	5	Thick Layer Lime										
2000061	1	90	260	350	230	230	20700	40	49	28	Massive Lime										
2000062	1	8	8	10	10	12	0	15	42	55	Marl	Marl									
2000063	5	150	150	150	75	75	11250	6	19	49	Clay	Clay									
2000064	4	130	250	300	70	80	0	6	19	49	Clay	Clay		H	?						
2000065	4	140	230	250	55	60	0	6	19	49	Clay	Clay		H	?						
2000066	5	10	23	25	60	60	1500	15	19	40	Marl	Marl		H	?						
2000067	1	33	33	35	150	150	5250	15	19	40	Marl	Marl		H	?						
2000068	5	180	300	300	450	450	135000	15	3	40	Massive Lime	Massive Lime		H	?						
2000069	5	120	120	120	200	200	24000	6	55	49	Clay-Mudstone	Clay-Mudstone									
2000070	1	110	110	130	60	60	7800	6	55	34	Clay-Marl	Clay-Marl									
2000071	5	100	170	200	65	70	14000	6	1	28	Chalk-Lime-Marl	Chalk-Lime-Marl		E	?						
2000072	5	60	70	80	50	60	4800	6	55	40	Chalk-Lime-Marl	Chalk-Lime-Marl		D	?	E	?				
2000073	1	7	9	12	6	6	72	6	55	40	Chalk-Lime-Marl	Chalk-Lime-Marl		H	?						
2000074	5	47	48	50	200	200	10000	15	55	40	Chalk-Lime-Marl	Chalk-Lime-Marl									
2000075	4	380	390	400	610	700	280000	49	55	34	fine Sediment	fine Sediment		B	80						
2000076	1	15	15	18	12	12	216	55	28	34	Chalk-Mar	Chalk-Mar									
2000077	1	15	25	40	35	35	1400	28	55	47	Lime-Chalk	Lime-Chalk									
2000080	5	200	280	320	600	580	18560	6	37	49	Marl-Mudstone	Marl-Mudstone									
2000081	1	80	80	80	70	70	5600	6	55	47	Clay-Mudstone	Clay-Mudstone									
2000085	1	60	130	150	40	80	12000	55	47	34	Upper Soil	Soil-Shale-Marl									
2000086	1	45	120	130	30	40	5200	56	49	34	Upper Soil	Soil-Shale-Marl									
2000087	1	50	80	95	35	60	5700	49	56	55	Upper Soil	Soil-Shale-Marl									
2000088	1	70	70	90	45	25	4050	40	6	34	Chalk-Lime-Marl	Lime-Marl-Salt									
2000089	1	50	50	75	25	20	1875	40	6	34	Chalk-Lime-Marl	Lime-Marl-Salt									
2000090	1	140	90	160	100	80	9000	41	49	56	Chalk-Lime-Marl	Lime-Marl-Salt									
2000091	1	80	120	140	110	130	18200	6	40	49	Chalk-Lime-Marl	Lime-Marl-Salt									
2000092	1	40	35	60	70	45	4200	15	40	49	Chalk-Lime-Marl	Lime-Marl-Salt									
2000093	1	60	80	100	25	15	2500	6	49	40	Chalk-Lime-Marl	Lime-Marl-Salt									
2000094	1	45	70	85	50	60	5100	15	40	34	Chalk-Lime-Marl	Lime-Marl-Salt									
2000095	1	200	180	300	150	130	45000	6	49	56	Chalk-Lime-Marl	Lime-Marl-Salt									
2000096	1	30	40	50	70	60	3500	6	49	40	Chalk-Lime-Marl	Lime-Marl-Salt									
2000097	1	55	65	80	40	60	4800	49	47	56	Chalk-Lime-Marl	Lime-Marl-Salt									
2000098	1	35	60	65	25	40	2600	40	6	49	Chalk-Lime-Marl	Lime-Marl-Salt									
2000099	1	30	73	75	10	15	1125	40	49	56	Chalk-Lime-Marl	Lime-Marl-Salt									
2000100	1	70	75	100	40	35	4000	40	49	56	Chalk-Lime-Marl	Lime-Marl-Salt									
2000122	1	60	60	60	40	40	2400	40	48	49	Conglomerate	Conglomerate									
2000123	1	70	130	150	65	55	9750	40	49	48	Chalk-Lime-Marl	Lime-Marl-Salt									
2000124	1	60	60	80	45	40	3600	6	40	49	Chalk-Lime-Marl	Lime-Marl-Salt									
2000125	1	60	50	80	45	35	3600	6	42	56	Chalk-Lime-Marl	Lime-Marl-Salt									
2000126	1	30	40	80	90	70	7200	6	40	49	Chalk-Lime-Marl	Lime-Marl-Salt									
2000127	1	25	35	75	80	65	6000	6	40	49	Chalk-Lime-Marl	Lime-Marl-Salt									
2000128	1	60	80	110	100	80	8800	6	40	49	Chalk-Lime-Marl	Lime-Marl-Salt									
2000129	1	30	60	70	15	20	1400	15	34	49	Chalk-Lime-Marl	Lime-Marl-Salt									
2000130	1	35	35	50	90	90	4500	15	34	49	Chalk-Lime-Marl	Lime-Marl-Salt									
2000131	1	40	45	70	40	30	2800	15	34	49	Chalk-Lime-Marl	Lime-Marl-Salt									
2000132	1	80	110	130	45	35	5850	6	40	49	Chalk-Lime-Marl	Lime-Marl-Salt									

Table A・2
Basic Landslide Data

① Data No.	⑥	⑦ Numerial value of shape						⑧ Main cause			Lithology			⑨ Damage from disaster
	CONDIT_ ACT	LR	LD	LT	WR	WD	AREA M2	CAUSE 1	CAUSE 2	CAUSE 3	LITHO 11	LITHO 12	LITHO 21	
2000133	1	70	85	110	60	45	6600	6	40	49	Chalk-Lime-Marl	Lime-Marl-Salt		
2000134	1	12	10	15	11	13	195	6	40	49	Chalk-Lime-Marl	Lime-Marl-Salt		
2000135	1	95	100	110	75	70	7700	6	40	49	Lime-Marl	Lime-Marl		
2000136	1	50	40	65	30	45	2925	6	40	56	Lime-Marl-Chalk	Lime-Marl-Salt		
2000137	1	70	45	80	60	55	4800	6	40	56	Lime-Marl-Chalk	Lime-Marl-Salt		
2000138	1	150	180	200	80	70	16000	6	40	56	Lime-Marl-Chalk	Lime-Marl-Salt		
2000139	1	100	110	140	55	45	7700	6	40	56	Lime-Marl-Chalk	Lime-Marl-Salt		
2000140	1	18	20	25	18	20	500	6	40	56	Lime-Marl-Chalk	Lime-Marl-Salt		
2000141	1	6	10	12	9	10	120	6	40	56	Lime-Marl-Chalk	Lime-Marl-Salt		
2000142	1	70	80	100	40	30	4000	6	40	56	Lime-Marl-Chalk	Lime-Marl-Salt		
2000143	1	40	40	65	35	30	2275	6	40	56	Lime-Marl-Chalk	Lime-Marl-Salt		
2000144	1	45	75	80	110	100	8800	6	40	56	Lime-Marl-Chalk	Lime-Marl-Salt		
2000145	1	90	80	150	30	25	4500	40	49	56	Lime-Marl-Chalk	Lime-Marl-Salt		
2000146	1	45	45	65	80	80	5200	6	40	56	Lime-Marl-Chalk	Lime-Marl-Salt		
2000147	1	100	110	160	90	80	14400	6	40	56	Lime-Marl-Chalk	Lime-Marl-Salt		
2000149	4	300	480	520	400	370	208000	49	55	2	Conglomerate	Conglo.-Marl		
2000150	1	10	12	15	25	23	375	15	55	49	Upper Soil	Soil-Marl-Mudstone		
2000151	1	20	23	30	40	35	1200	6	15	55	Upper Soil	Soil-Marl-Mudstone		
2000152	1	13	15	18	11	9	198	15	49	19	Upper Soil	Debris		
2000153	1	13	16	18	46	50	900	15	49	19	Upper Soil	Debris		
2000154	4	4	6	9	60	75	675	6	49	55	Upper Soil	Debris		
2000155	1	30	30	35	73	80	2800	6	49	55	Upper Soil	Debris		
2000156	1	31	33	35	1200	1200	42000	15	49	19	Upper Soil	Debris		
2000157	4	300	300	300	100	100	30000	40	47	42	Mudstone	Marl		
2000158	1	40	50	80	20	30	2400	28	34	40	Marl-Lime-Chalk	Marl-Lime-Chalk		
2000173	1	40	40	50	40	41	2000	6	28	40	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000174	1	80	65	90	45	38	4050	6	28	40	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000175	1	65	68	75	30	25	1	6	28	40	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000176	1	75	70	95	86	82	8170	6	28	40	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000177	1	40	50	55	35	38	1925	6	28	40	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000178	1	80	130	150	60	45	9000	6	28	40	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000179	1	80	120	140	45	40	6300	6	28	40	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000180	1	50	60	65	60	55	3900	6	28	40	Marl-Lime-Chalk	Marl-Lime-Chalk		
2000181	1	90	110	120	80	70	9600	6	28	40	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000182	1	85	120	140	80	70	11200	6	28	40	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000183	1	75	80	90	60	50	5400	6	28	40	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000184	1	45	50	60	40	40	2400	6	28	40	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000185	1	30	35	45	20	15	900	49	34	56	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000186	1	40	65	70	45	60	4200	49	34	56	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000187	1	120	120	140	70	70	9800	49	34	56	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000188	5	170	170	190	140	120	26600	6	28	40	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000189	1	60	60	80	50	45	3000	6	28	40	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000190	1	70	135	170	65	90	15300	6	28	40	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000191	1	80	140	160	60	85	13600	47	56	49	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000192	5	65	65	90	70	80	7200	47	56	49	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000193	4	100	90	150	65	80	12000	47	49	56	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000194	4	70	95	130	43	35	5590	40	56	34	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000195	1	40	46	55	35	40	2200	6	28	40	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000196	1	140	120	180	250	230	45000	47	56	49	Lime-Marl-Chalk	Lime-Marl-Chalk		
2000197	5	73	70	85	130	118	11050	47	56	49	Lime-Marl-Chalk	Lime-Marl-Chalk		

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Basic Landslide Data

① Data No.	⑥	⑦ Numerial value of shape						⑧ Main cause			Lithology			⑨ Damage from disaster							
	CONDIT_ ACT	LR	LD	LT	WR	WD	AREA M2	CAUSE 1	CAUSE 2	CAUSE 3	LITHO 11	LITHO 12	LITHO 21								
2000198	1	50	68	75	25	19	1875	47	56	49	Lime-Marl-Chalk	Lime-Marl-Chalk									
2000199	5	80	90	120	105	90	12600	47	6	56	Lime-Marl-Chalk	Lime-Marl-Chalk									
2000200	1	60	60	90	55	55	4950	47	56	49	Lime-Marl-Chalk	Lime-Marl-Chalk									
2000201	5	140	150	180	200	220	39600	6	47	56	Lime-Marl-Chalk	Lime-Marl-Chalk									
2000202	1	120	135	160	180	190	30400	6	47	56	Lime-Marl-Chalk	Lime-Marl-Chalk									
2000203	1	135	150	170	200	215	36550	6	47	56	Lime-Marl-Chalk	Lime-Marl-Chalk									
3000001	3	80	85	90	60	55	4500	49	38	39	Clay-Silt*	Clay-Shale-Marl		C	0.05	D	?	H	0.11	N	0.03
3000002	3	80	85	90	50	42	4500	49	38	39	Clay-Silt*	Clay-Marl									
3000003	1	35	70	75	22	18	1500	49	38	50	Silt-Clay*	Clay-Marl									
3000004	1	25	28	30	11	8	220	49	38	39	Silt-Clay*	Clay-Marl									
3000005	1	75	85	95	25	20	2200	49	38	39	Silt-clay	Clay-Marl									
3000006	3	30	35	38	30	25	1100	55	38	39	Clay-Silt*	Clay-Marl		C	0.15						
3000007	3	65	70	74	35	32	2500	55	39	38	Clay-Silt*	Clay-Marl		C	0.25						
3000008	3	60	68	75	45	40	3300	55	54	39	Clay-Silt*	Clay-Marl		C	0.4						
3000009	3	150	160	170	65	60	9500	55	9	27	Silt-Clay*	Clay-Marl		C	1						
3000010	3	30	35	40	15	13	550	55	39	38	Clay-Silt*	Clay-Marl		C	5						
3000011	3	95	100	120	70	68	8400	55	38	39	Clay-Silt*	Clay-Marl		C	1						
3000012	3	195	210	220	65	60	0	55	27	49	Silt-Clay*	Clay-Marl		C	0.7						
3000013	3	30	35	38	25	20	900	49	55	39	Clay-Silt*	Clay-Marl		C	0.07						
3000014	3	185	200	210	125	117	25000	55	49	50	Clay-Silt*	Clay-Marl		C	2						
3000015	3	200	220	225	25	22	4500	49	18	38	Upper Soil	Soil-Marl		E	0.4						
3000016	3	100	115	120	32	20	3600	49	18	38	Upper Soil	Soil-Marl		E	0.4						
3000017	1	40	45	50	25	23	1200	49	55	39	Clay-Silt*	Clay-Marl		C	0.15						
3000018	3	45	55	60	32	30	2000	49	55	38	Clay-Silt*	Clay-Marl		C	0.2						
3000019	3	50	57	65	35	32	2800	49	38	39	Clay-Silt*	Clay-Marl									
3000020	3	80	85	90	30	28	2500	55	49	38	Clay-Silt*	Clay-Marl		C	0.25						
3000021	1	12	15	17	10	10	150	55	49	39	Clay-Silt*	Clay-Marl		C	0.02						
3000022	3	90	95	100	25	22	2200	55	49	38	Clay-Silt*	Clay-Marl		C	0.02						
3000023	3	120	125	138	85	80	10400	15	49	55	Silt-Clay*	Clay-Marl		C	0.7						
3000024	5	180	210	225	72	70	15000	9	55	49	Silt-Clay*	Clay-Marl		C	1.5						
3000025	3	20	23	25	11	10	250	6	9	49	Silt-Clay*	Clay-Marl		C	0.04						
3000026	5	200	250	270	22	20	5400	6	55	38	Silt-Clay*	Clay-Marl		C	0.5						
3000027	3	80	85	88	55	52	4400	15	55	49	Silt-Clay*	Clay-Marl		C	0.4						
3000028	3	32	35	40	20	20	800	27	55	49	Silt-Clay*	Clay-Marl		C	0.07						
3000029	3	80	85	88	72	70	6000	27	49	55	Silt-Clay*	Clay-Marl		C	0.4						
3000030	3	40	45	55	20	19	1000	27	49	55	Silt-Clay*	Clay-Marl		C	0.1						
3000031	3	80	85	90	50	48	4000	15	55	49	Silt-Clay*	Clay-Marl		C	0.4						
3000032	3	100	116	120	80	80	9000	55	49	27	Silt-Clay*	Clay-Marl		C	1						
3000033	3	30	35	48	25	25	900	15	55	49	Silt-Clay*	Clay-Marl		C	0.08						
3000034	4	100	105	115	70	70	8050	55	49	38	Clay-Silt*	Clay-Marl		C	0.8						
3000035	5	180	205	210	100	100	20000	55	49	27	Clay-Silt*	Clay-Marl		C	2						
3000036	4	70	85	93	50	50	4500	55	49	27	Silt-Clay*	Clay-Marl		C	0.5						
3000037	3	100	110	115	25	22	2400	15	49	38	Sand-Silt	Clay-Marl									
3000038	3	140	147	150	80	80	12000	55	18	38	Debris*	Clay-Marl		B	1	C	1				
3000039	3	75	81	85	54	50	4700	55	27	49	Silt-Clay*	Clay-Marl		C	0.4						
3000040	3	200	215	225	100	100	22500	49	27	38	Sand-Clay	Debris		C	0.2						
3000041	3	100	110	115	40	40	4600	55	49	27	Silt-Clay*	Clay-Marl		C	0.4						
3000042	3	90	96	100	42	40	4000	49	38	39	Silt-Clay*	Clay-Marl		C	0.3						
3000043	5	200	210	216	115	110	0	55	27	49	Silt-Clay*	Clay-Marl		C	2						

Table A-2
Basic Landslide Data

① Data No.	⑥	⑦ Numerial value of shape						⑧ Main cause			Lithology			⑨ Damage from disaster						
	CONDIT_ ACT	LR	LD	LT	WR	WD	AREA M2	CAUSE 1	CAUSE 2	CAUSE 3	LITHO 11	LITHO 12	LITHO 21							
3000044	3	130	140	148	70	70	9500	55	49	27	Silt-Clay*	Clay-Marl		C	0.7					
3000045	3	60	65	70	40	37	2800	55	49	38	Silt-Clay*	Clay-Marl		C	0.3					
3000046	3	200	225	230	100	100	23000	55	27	49	Clay-Silt*	Clay-Marl		C	2.3					
3000047	1	25	30	35	12	10	408	15	49	50	Silt-Clay*	Clay-Marl		C	0.04					
3000048	1	40	45	55	25	20	1375	49	24	38	Clay-Silt*	Clay-Marl								
3000049	3	25	30	34	21	20	700	27	38	9	Silt-Clay*	Clay-Marl								
3000050	3	230	235	242	85	82	20570	27	55	38	Silt-Clay*	Clay-Marl		C	1	F	0.2			
3000051	1	35	35	35	60	60	2100	6	9	19	Debris	Debris-Marl		D	2					
3000052	1	40	40	40	120	120	4800	6	9	19	Debris	Debris-Marl		D	5					
3000053	5	70	70	70	100	95	7000	6	9	19	Debris	Debris-Marl-Shale		D	17					
3000054	5	250	260	300	450	430	135000	6	9	19	Debris	Debris-Marl-Shale		D	13					
3000055	1	60	75	80	45	40	3600	9	50	38	Silt-Clay	Clay-Marl		D	36					
3000056	5	400	500	550	630	600	346500	9	19	20	Debris*	Debris-Marl		D	3.4					
3000057	5	100	130	140	70	65	9800	9	18	27	Silt-Clay	Clay-Marl		C	16					
3000058	1	170	170	170	120	120	20400	6	9	50	Debris	Debris-Marl-Shale		E	2					
3000059	5	130	145	150	130	125	19500	9	50	38	Silt-Clay	Clay-Marl		D	1.9					
3000060	5	70	90	95	100	95	9500	9	27	38	Silt-Clay	Clay-Marl		C	0.3	H	0.1			
3000061	5	200	210	240	120	120	2400	9	38	39	Silt-Clay	Clay-Marl		C	0.3	F	0.2	L	0.12	
3000062	3	80	89	95	32	30	3040	9	38	39	Silt-Clay	Clay-Marl		C	0.6					
3000063	4	180	200	210	172	170	36120	9	19	38	Silt-Clay	Clay-Marl								
3000064	3	90	110	125	180	176	22500	9	19	38	Debris	Debris-Marl								
3000065	4	92	105	110	100	100	11000	9	38	39	Silt-Clay	Clay-Marl								
3000066	5	100	117	122	80	76	9600	9	19	38	Debris	Debris-Marl								
3000067	3	88	95	100	32	30	3200	9	19	38	Debris	Debris-Marl								
3000068	3	25	30	34	22	20	748	9	19	38	Debris	Debris-Marl		D	1.8					
3000069	1	45	45	45	65	65	2925	6	9	15	Debris	Debris-Marl		L	0.065					
3000070	3	45	40	45	80	78	3600	6	9	15	Debris	Debris-Marl								
3000071	3	80	80	85	100	98	8500	6	9	19	Debris	Debris-Marl								
3000072	3	200	220	225	350	350	78750	6	9	19	Debris	Debris-Marl		B	6	L	0.2			
3000073	3	110	120	130	80	75	8800	9	27	50	Silt-Clay	Clay-Marl		C	0.88					
3000074	5	155	165	175	85	80	14875	9	27	50	Silt-Clay	Clay-Marl		C	1.1					
3000075	3	75	80	85	37	37	3145	9	27	50	Silt-Clay	Clay-Marl		C	0.3					
3000076	3	45	50	52	20	19	1040	9	27	50	Silt-Clay	Clay-Marl		C	0.1					
3000077	1	50	55	60	35	32	2100	9	27	50	Silt-Clay	Clay-Marl		C	0.2					
3000078	5	130	140	145	3200	315	46400	9	19	20	Debris	Debris-Marl								
3000079	5	140	150	165	84	82	13860	9	19	50	Debris	Debris-Marl		D	1					
3000080	3	225	220	235	135	125	31725	6	9	19	Debris	Debris-Marl		L	0.135					
3000081	3	15	20	22	10	9	220	9	18	50	Silt-Clay	Clay-Marl								
3000082	1	17	19	20	30	28	600	9	18	50	Silt-Clay	Clay-Marl								
3000083	3	55	70	73	40	37	2920	9	50	38	Silt-Clay	Clay-Marl								
3000084	2	120	135	140	20	18	2800	9	50	38	Silt-Clay	Clay-Marl								
3000085	3	30	35	37	25	22	925	9	50	38	Debris	Debris-Marl								
3000086	5	200	220	250	200	180	50000	9	50	19	Debris*	Debris-Marl								
3000087	5	130	180	220	250	220	55000	9	50	19	Silt-Clay	Clay-Marl								
3000088	3	200	220	225	180	175	40500	9	19	20	Debris	Debris-Marl								
3000089	1	25	35	40	18	16	720	9	50	38	Silt-Clay	Clay-Marl								
3000090	3	35	40	42	17	15	714	6	9	38	Silt-Clay	Clay-Marl								
3000091	3	95	100	105	25	24	2625	6	9	50	Silt-Clay	Clay-Marl								
3000092	5	140	140	155	300	280	46500	6	9	50	Debris	Debris-Marl								
3000093	5	50	60	65	22	20	1430	6	9	19	Debris	Debris-Marl								

Table A-2
Basic Landslide Data

① Data No.	⑥	⑦ Numerial value of shape						⑧ Main cause			Lithology			⑨ Damage from disaster							
	CONDIT_ ACT	LR	LD	LT	WR	WD	AREA M2	CAUSE 1	CAUSE 2	CAUSE 3	LITHO 11	LITHO 12	LITHO 21								
3000111	3	70	75	78	50	48	3000	49	50	56	Silt-Clay*	Clay-Marl		B	1	C	0.35				
3000112	5	200	235	240	180	176	35000	49	50	24	Debris	Debris-Marl		B	1	C	3	H	0.05		
3000113	3	17	17	20	57	55	1000				Debris	Debris-Marl		C	0.05	H	0.057				
3000114	5	230	240	250	250	250	50000	49	50	24	Silt-Clay*	Clay-Marl		B	1	C	4.5				
3000115	4	100	110	121	50	48	5000	49	9	50	Silt-clay	Clay-Marl		C	0.5						
3000116	4	140	150	155	75	70	9000	49	9	50	Debris	Debris-Marl		C	0.8						
3000117	3	55	60	62	33	30	1500	49	9	50	Silt-clay	Debris		C	0.2						
3000118	3	360	350	400	15	15	45000	49	50	55	Debris*	Debris-Marl		C	2	D	?				
3000119	3	235	240	250	100	100	19000	49	50	55	Debris*	Debris-Marl		C	1.2	D	?				
3000120	3	100	100	130	65	55	700	49	50	55	Silt-Clay*	Clay-Marl		C	0.5	D	?				
3000121	5	126	125	130	90	90	9800	49	50	55	Debris*	Debris-Marl		C	1	D	?				
3000122	3	35	40	43	60	58	2100	49	50	55	Silt-Clay*	Clay-Marl		C	0.25	D	?				
3000123	3	65	70	75	85	83	5700	49	15	50	Silt-Clay*	Clay-Marl		C	0.5	D	?				
3000124	3	60	65	68	45	42	2700	49	15	50	Debris*	Debris-Marl		C	0.3	D	?	H	0.045		
3000125	3	45	45	53	28	26	1100	49	15	50	Silt-Clay*	Clay-Marl		C	0.15	H	0.025				
3000126	5	40	45	48	100	98	3300	49	50	55	Silt-Clay*	Clay-Marl		C	0.5						
3000127	3	100	120	125	55	50	4800	49	19	50	Debris*	Debris-Marl									
3000128	3	110	115	125	100	80	10700	49	19	50	Debris*	Debris-Marl									
3000129	1	13	16	18	20	18	350	15	49	20	Silt-Clay*	Debris-Marl									
3000130	5	45	50	55	60	58	2600	49	15	50	Silt-Clay*	Clay-Marl		C	0.08						
3000131	3	70	75	80	51	50	3400	49	15	50	Silt-Clay*	Clay-Marl		C	0.35						
3000132	5	120	130	135	62	60	6500	49	50	55	Silt-Clay*	Clay-Marl		C	0.64						
3000133	5	40	45	51	161	160	7200	49	15	50	Silt-Clay*	Clay-Marl									
3000134	3	120	130	135	70	65	7300	49	15	50	Silt-Clay*	Clay-Marl									
3000135	1	12	14	16	40	38	560	49	15	50	Silt-Clay*	Clay-Marl		G	0.04						
3000136	1	29	30	32	30	27	800	49	15	50	Silt-Clay*	Clay-Marl									
3000137	1	13	15	17	30	28	400	49	15	50	Silt-Clay*	Clay-Marl									
3000138	3	40	45	50	250	248	10500	49	15	50	Debris*	Debris-Marl									
3000139	3	185	175	195	65	63	11000	49	50	21	Clay-Silt*	Clay-Marl		M	0.65	N	0.06				
3000140	3	85	89	96	58	56	4200	49	50	19	Debris*	Debris-Marl									
3000141	3	17	16	18	30	28	450	49	15	50	Debris*	Debris-Marl		H	0.02						
3000142	3	8	8	9	110	108	750	49	15	50	Debris*	Debris-Marl		C	0.1	H	0.11				
3000143	3	237	235	250	300	295	75000	49	55	50	Silt-Clay*	Debris		C	3	D	?	H	0.11	N	0.25
3000144	3	30	30	35	32	30	900	49	15	50	Silt-Clay*	Debris		C	0.05	N	0.03				
3000145	3	14	14	15	30	28	330	49	15	50	Silt-Clay*	Debris		C	0.1	N	0.025				
3000146	3	21	21	22	15	14	300	49	15	9	Silt-Clay*	Clay-Marl									
3000147	3	65	67	70	57	55	3100	49	15	9	Debris*	Debris-Marl		H	?						
3000148	3	31	30	35	32	28	950	49	6	9	Upper Soil	Debris		N	?						
3000149	5	20	12	22	20	12	400	49	6	9	Silt-Clay*	Debris									
3000150	5	12	20	22	45	35	800	49	6	9	Silt-Clay*	Debris									
3000151	3	90	80	100	40	39	3200	49	15	50	soil	Soil-Marl		E	0.5	N	0.04				
3000152	3	950	950	1000	350	345	270000	49	6	50	soil	Soil-Marl									
3000153	3	91	95	100	60	54	6000	49	9	50	soil	Soil-Marl		E	0.6						
3000154	3	105	105	120	65	60	7000	49	50	19	Debris*	Debris-Marl		E	0.7						
3000155	3	123	100	127	35	36	4000	49	9	50	soil	Soil-Marl		E	0.4						
3000156	3	95	91	100	60	54	5000	49	9	50	soil	Soil-Marl		E	0.5						
3000157	3	900	900	1000	600	550	490000	49	50	19	soil	Debris-Marl		E	40						
3000158	3	15	15	20	15	10	300	6	49	9	Clay-Silt*	Clay-Marl									
3000159	3	30	28	35	18	16	630	49	50	38	Forest Soil	Debris									
3000160	3	210	215	220	50	45	8500	49	50	19	Debris*	Debris-Marl		C	1						

A-1 Geological Description of VASTEGAN

1. The studies method and records

Along with the discovery of oil and its exploration in the Khuzestan region by foreign geologists , geological investigations were started in the different parts of Iran .
For the first time the geological map of Iran was published in 1975 with the scale of 1:250000 that in spite of having many mistakes . It is counted on as a valuable effort in the history of Geology in Iran . The Brojen sheet with the scale of 1:250000 was one of these maps . The only studies conducted on the area has been the comprehensive development studies of Chaharmahal va Bakhtiary with the scale of 1:250000. The present studies has been made by using the aerial photos of the area with the scale of 1:40000 , the geological maps of the Geological Organization of Iran and repeated field visits.

2. General geology of the region

As the studies basin is located in the folded Zagros structural zone, there fore this zone is briefly described. This structural zone is located in the south of Iran and its width is estimated to be about 150-250 kilometers. The general layout of the region in almost in the North west - South east direction and is probably been pulled under the overthrusted Zagros and its sediments lie confirmatively on each other . The sediments have diagnosed and folded during the Pliocene.

a) The initial or platform stage that extended from the Infracamberian era until the mid- Triassic era , and during it sediments similar with the central Iran and Alborz area were deposited , also the salty sediments of the infracamberian era are similar with the sediments. deposited in the east of Suidi Arabia . During this stage some regions were out of water , as Silurian to Permian sediments have not been found in some areas ever during the oil drillings. In the beginning of the Permian era the Zagros area was covered with evaporative sediments and then covered by shallow sea calcareous deposits and shale and lagoonar facieses until the mid - Triassic era.

b) The geosynclinal's stage in Triassic - Miocene era
In the late Triassic ere this part was separated from the other parts of Iran and changed into a submerged basin (The sedimentary basin of Zagros) and was continually submerging because of the sediments accumulated with a thickness over 10000 meter from the Mesozoic era until the Neogene's period. These sediments were basically made of carbonate materials and marl, sandstone and shale is observed among them more or less. The existence of evaporative sediments and the absence of some short term stratigraphic units are indications of vertical (land making movements in this sedimentary basin. All these sediments lie on the Paleozoic sediments with conformable stratification during the last phase of Alpine orgenesis (in the Mio -Paleocene) were folded and emerged out of water. After

this stage, a lake and river environment were created and the sediments due to the erosion of the high lands were deposited with disconformity's (and formed Bakhtyari conglomerates) no kind of magmatism or metamorphism is observed as the result of the Alpine orogenesis.

c) The new stage or the stage after orogenesis

Simultaneously with the sedimentation of Bakhtyiari conglomerate during the Miocene - Pliocene the Zagros and in some terms the whole of the Iranian plateau incurred the Pasadenien orogenesis and by this phenomena the Bakhtyari conglomerate and its equivalent the Hezar Darren of Alborz were folded and the present shape of Zagros was formed.

3. The stratigraphy of the area

The studied basin has 6 stratigraphic basins, the oldest are marls and Khamy group limestone and newest are the flood sediments of the basin. These formation lie on each other confirmatively and their arrangement from old to new includes Khamy group. Daria formation , Kazhdumi formation, Sarvak formation, Gurpi formation, Tarbur formation, Sachun formation, Jahrum formation and the last which is the Quaternary sediments. All of this formations are located in the south and west of the basin is the form of a syncline in the Northwest - South east direction and its slope is to the south. The north of the basin forms Vastegan plain. This ediments have been folded in the last phase of Alpine mountain forming and the present syncline shape has been resulted. Each of the stratigraphic units of the basin are described in the following and their location is marked on the enclosed maps.

3-1 Khami - Group

This group consists of Surmeh and Hith formations from the Jurassic era and Fahlian and Darian formations from the cretaceous era and are described as following.

3-1-1 Surmeh formation

That has a little outcrop consists of dolomitic limestones with thick to mass bedding , brown to greg clay limestones with little resistance, marl and also limestone and dolomitic limestones with low resistance, marl and also limestone and dolomitic limeston in the top . the lower border of this formation is Neyriz shales and the top border is Fahlian formation. These layers could be used for distinguishing the border of Jurrasic and Cretaceous era layers. The age of the surmeh formation has been estimated from Paleo - Jurrasic to Neo - Jurrasic .

3-1-2 Fahlian formation

This formation consists of brown to gray limestone and is observed , its lower border is, Surmeh formation and its top border is Gadvan formation. Its lower border is accompanied with a dissolution breccias. The age of this formation is considered Neocomian-Aptian era.

3-1-3 Gadvan formation

This formation lithologycalls is consists of dark-gray limestone with particles and gray to green marls. Overall this formation is consist of shale , marl and limestone between Darian hard limestone in above and Fahlian in beneath. This formations ago is considered late Neocomian to Aptian era.

3-2. Darian formation

The name of this formation has been derived from the Darian village in the south of the type section Formerly this formation was recognized under the name of Orbitolina limestone and Aptian-Albian limestone. Lithologicaly this formation consists of brown to grey limestone with thick to mass bedding, coarse and relief belonging to shallow sea environment that Orbitolina are abundant. The lower border of Darian limestone formation is gradual and compatible with shale, marls and thin layer limestone of Gadvan formation. This border is chosen on the top of the highest shale in line with shale and the limestone of Gadvan formation. The contact border of this formation with the highly eroded shales of Kajdom formation is conformative. The Darian formation is very rich in fossils of which could be named Conical Orbitolina, Discoid Orbitolina, Choffatella decipiens, Dictyoconus arabicus, pseudochrysalidina conica, and algae such as Hensonella cylindrical, and litho-odium aggregatim. The broken remains of Rodistae could be seen in the whole of the formation. The age of limestone Daryan formation is the Aptian era.

3-3 Kazhdumi formation

The name of this formation is derived from Kazhdumi fort in depressed Dezful area. This formation is distinguished by gray and sometimes black and Bitominoferous shales. Gloconite is observed at the lower part of the formation. The lower contact of Kazhdumi shales with Darian formation distinguished by red colored zones that contain ferric oxide. The upper boundary of this formation with Bangestan limestones (Sarvak formation) is gradual and some times is sharp and confirmative, and at the base is distinguished by carbonated column that located at the shale - limestone alternation of Kazhdumi. In the studied basin the Kazhdumi formation is changed to marl shale and its calcareous base distinguishes alternatively and as very clayey limestone with regular and soft erosion. The existant fossils in Kazhdumi formation mostly are Planktons that consist of: Globigerina, Ticinella and Radiolaria. Echinoides and Amonites are rarely observed. The age of this formation is from Albian to cenomanian. Ofcourse its calcareous base along to late Aptian.

3-4 Sarvak Formation

The name of this formation is derived from Sarvak pass in Bangestan mountain located at Northwest of Behbahan. This formation is consist of three calcareous unit. The base unit is consists of gray - black limestone with nodular bedding, fine grain size, clayey and along with signs of small. Ammonites and along with thin layers of gray - black marls as interbed. The middle unit is consists

of massive, coarse and light brown limestone and sometimes along with particles of Rodista, brown silica nodules and too existence of cross bedding. The upper unit is consists of very thin to thin limestone layers, along with irregular weathering mixed with ferric oxides and is brecciated. The lower boundary of this formation with Kazhdumi formation in type section is gradual and confirmative. The upper border of Sarvak limestone with Gurpi marls and shales is sharp. In this boundary Sarvak limestone is eroded and mixed by ferric compositions, that can be resulted from a disconformity's. The Sarvak limestone in Zagrus area distinguished by two shallow and deep facieses. The fossils that are founded in shallow faces consist of: Orbitolina, Trocollina, Alveolina, Discocyclina along with Algae and particles of Gchinoids. The fossils that are founded in deep faces are Planktons consist of: Ratalipora, Hedbergella, Lenti collina and Globigerina. A disconformities after Cenomanian - before Turonian. At top of the Sarvak formation and base of Gurpi formation a greet Hiatus is observable. This era is beginning from Cenomanian and continued to Turonian .

3-5 Gurpi formation

The name of this formation is derived from Gurpi mountain in the north of Masjed Soleyman city. Lithologicaly is consists of marl and gray-blue shales and sometimes along with clayey limestone thin layers . this formation is un-resistant against to erosion and make mild topography. Gurpi formation disco formatively. This border is associated with a weathered Zone that contains ferric components. The upper boundary of this formation in this area is Tarbur formation. The Gurpi formation contain foraminifers such as Globotruncana. The age of this formation is from Campanian to Paleocene. Because of sensitivity of this formations deposits, there are several landslide and erosions in this formation that is described in land slide section. Samples of basin formations in photo.

3-6 Tarbur formation

The type section of this formation has been measured and named in Gadvan mountain in the north of tarbur village and basically it includes massive limestone containing shells and sometimes "Anhydrite" with a cream to gray color. This formation is placed between the two weathered units of Gurpi and Sachun. Its contacts with the marls of Gurpi foundation is confirmative and sudden but in its top contact with the red and green - gray Sachun formation, some ferric nodules is observed that is itself a sign of sedimentation stop and erosional un conformity. There are abundant fossils in the Tarbur formation (Algae fragments, Rodista and molusca) that is an indication of shallow and stagnant waters and its age belongs from Campanian to Masstrichtian.

3-7 Sachun formation

This name has been derived from the name of Sachun village in the Fars area, an is very varied Lithologicaly and it could be said that it is equal consisted of red brick marl, white to gray gypsum and yellow dolomite. The gypsum is generally in the form of lens shaped layers that gets this is the side directions and disappears in the marls and dolomites. The age of this layer is from the late

Masstrichtian to Eocene and its bottom contact is gradual and confirmative with Tarbur formation, and its top contact is confirmative with Jahrum formation. The in conformation after cretaceous could by synchronous with the sediment ion of Sachun formation.

3-8 Jahrum formation

The name of this formation is derived from Jahrum mountain in the Fars region. The following parts could be distinguished in it Lithologicaly: The bottom part that is formed of brown colored massive dolomite and its base has been brecciated, its mid part consists of thin layered to medium layered dolomitic sand the top part consists of dolomitic limestone with microfossils, the bottom contact is confirmative with Sachun formation. Abundant fossils are found in Jahrum formation and based on them the age of Jahrum formation at the type section is determined from Paleocene to Mid – Eocene. In the places that Sachun formation does not exists the Jahrum formation is placed on the two formations of Pabdeh and Gurpi.

3-9 The Quaternary Sediments of the Basin

a) Qt2 (young terraces)

In the margin and in the boundary between the mountains and the plains special detritic sediments are observed that have different sizes and are resulted from the topography of the 4-10 region and the effect of erosion causing factors on them , gravity has also helped in this process, and has caused the formation of young terraces. Chero fault has had an effective role in creating the existing topography and finally the young terraces. The hardening degree of this sediments is low and they have a loose formation. These sediments are made up of mainly clay and limestone debris of Darian, Kazhdumi and Sarvak formations.

b) Qt3 (Plains)

In the north and west of the basin there is a vast and fertile plain that is 50 meter deep in some places. The sediments of this plain are hydrological big particled and angular and have formed a free water table.

c) Qal (Alluvial debris's or River sediments)

These detritus are transported from the heights of the basin to the Vastegan plain. These deposits are made up of mostly shale, and marl of Gurpi formation and also Tarbur, Sarvak and Jahrum limestone formations, and are transported with a high speed and are sedimented in low slope places. Strong rain falls after snow fall and the formation of flood currents is the main causative factor of these sediments.

4. The Basin,s Fault (Chero Fault)

The Chero fault is located in the northern direction of Dena fault, and its layout is north, north west and its slope is toward west, south west. In the north , north east of this fault Vastegan plain is located that has been created synchronously with Gandoman lagoon. The formation of this plain and lagoon has been because of the activity of Chero fault. This fault has a bout 40 kilometers length and from the middle of the basin has entered Bangeston Cretoceous group and the Khamy group.

The Chero fault in the studied basin (in the Nasirabad-Vastegan area) forms the boundary between the mountains and the plain and is easily observed as a straight line of young fault walls in the south of Vastegan. The Epi center of the 1922 earthquake was located near the Chero fault but their correlation is still not clear. There are no exact seismic or age data about the Chero fault in hand. If the fault has seismic potentials by applying the existing equitation's the magnitude of an earthquake that could happen in the length of the fault with a given %50 movement in the future is about Mb= 6.7