SUPPORTING REPORT K

QUESTIONNAIRE SURVEY

TABLE OF CONTENTS

LIST OF TABLES

SUPPORTING REPORT K QUESTIONNAIRE SURVEY

1. Questionnaire Survey

The questionnaire survey was conducted in the Study Area for the information on the flood condition, flood damages, agriculture and land use. The questionnaire survey was divided into 3 parts as follows:

- The survey on the flood condition,
- The survey on the flood damages,
- The survey on the agricultural and land use

2. Questionnaire Survey on the Flood Condition and Flood Damages

The questionnaire survey on the flood condition and flood damages was conducted during the field investigation period of the Study Team in the Chane – Pailon Area and the San Juan – Antofagasta Area from August to September 1998.

The main purpose of the survey was to obtain the information on the flood condition and flood damages after 1995 including the inundation area and depth, time duration, casualties, the loss of asset, agricultural products, etc. The number of the samples is as follows:

The Chane – Pailon Area	=	137	samples
The San Juan – Antofagasta Area	=	105	samples

The questionnaire form is enclosed herein. A summary of the result is shown in Table K.2.1. Detail and results of the survey are described in the Supporting Report A.

3. Questionnaire Survey on the Agricultural and Land Use

The questionnaire survey on the agricultural and land use was conducted during the field investigation period of the Study Team in the Chane – Pailon Area and the San Juan – Antofagasta Area from August to September 1998.

The main purpose of the survey was to obtain the information as the supplementary data and to identify the agricultural problems under the flood condition. The number of the samples is as follows:

The Chane – Pailon Area	=	39	samples
The San Juan – Antofagasta Area	=	37	samples

The questionnaire form is enclosed herein. A summary of the result is shown in the Supporting Report H.

TABLES

TABLE K.2.1(1) RESULTS OF FLOOD SURVEY IN CHANE-PAILON AREA

No.	Location of the Survey: Date	Place	Municipality	Canton	Community	Latitude D	Latitude M	Longitude D	Longitude M	at....km from	Building: Class	Type	Inundation depth (cm)	House: Elevation (cm)	Floor	Area (m2)	Year	Cons. Cost (US$)	Inundation Depth(cm)/Duration(dias): 95/96	96/97	97/98	Cause of Inundation	Remarks
1.-1	31-Aug	Saavedra	Warnes	-	Copacabana	17	6	63	4	0.1-asphalt way	R-B	C	80	10	1	48	1986	250	100cm/15days	100cm/15days	100cm/15days	Rio Pailon Cañadas	No exist drainage, close to the property.
1.-2	31-Aug	Saavedra	Warnes	-	Caimanes	17	5	63	5	2.5-highway	R-B	C	0	150	1	36	1995	250	120-200/30days	-	120-200/30days	Rio Pailon	-
1.-3	31-Aug	Saavedra	Warnes	-	Caimanes	17	5	63	5	25-highway	R-B	B	120	0	1	56	1995	500	60cm/15days	-	120cm/20days	Rio Pailon	Exist a creek to the south .
1.-4	31-Aug	Saavedra	Warnes	-	San Juan Amarillo	17	5	63	7	27-highway	R-B	B	40-100	0	1	-	1998	2000	70cm/10days	120cm/14days	40cm/7days	Rio Pailon	No exist drainage, close to the property.
1.-5	31-Aug	Saavedra	Warnes	-	Chane-Bedoia	17	3	63	7	28-Okinawa	R-B	B	0	0	1	182	1983	1500	120cm/8days	120cm/8days	100cm/7days	Rio Pailon	-
1.-6	31-Aug	Chane	Minero	-	Independencia	16	58	63	13	0.5-Bridge	T-C	B	0	0	1	30	1994	250	5cm/15days	5cm/15days	15cm/15days	Rio Chané	1995, the water level went up 2mts.
1.-7	31-Aug	Chane	Minero	-	Magallanes	16	57	63	14	1-Bridge	R-B	B	80	0	1	30	1986	1000	100cm/7days	80cm/3days	-	Rio Chané	-
1.-8	31-Aug	Chane	Minero	-	Motacusal	16	57	63	14	5-Bridge	Campamento	-	-	-	-	-	-	-	30cm/7days	30cm/7days	30cm/7days	Rio Chané	The water come from the south.
1.-9	31-Aug	Chane	Minero	-	Magallanes	16	57	63	15	4-Bridge	-	-	-	-	-	-	-	-	100cm/30-60days	100cm/30days	150cm/30-60days	Rio Chané	The river is located at 2 km of the property.
1.-10	31-Aug	Santiesteban	Minero	-	Porton Cotagaita	16	59	63	15	6-highway	R-B	C	0	20	1	20	1995	1500	20cm/15days	30cm/15days	50cm/15days	Rio Chané	The water come 15mts close to the house.
1.-11	31-Aug	-	Minero	-	Faja Churuquí	17	0	63	11	4-Puesto Fernandez	R-B	B	0	0	1	50	1996	1800	-	100cm/30days	-	Rio Churuquí	In 1992, the water come to the house, in 1997 the water come to the half of the house.
1.-12	31-Aug	-	Minero	-	Faja Bolivar	17	0	63	9	-	R-B	B	0	0	1	30	1978	-	-	50cm/30days	-	Rio Chané	In 1992, the water level was 60,70,150cm/45cm. afect half of the property (40Has).
1.-13	31-Aug	-	Minero	-	Faja California	17	2	63	9	-	R-B	B	35	0	1	120	1991	200	70cm/80days	100cm/80days	40cm/30days	Rio Pailon	Has no drainage.
1.-14	31-Aug	-	Minero	-	Puesto Arena	17	2	63	7	-	R-B	B	0	0	1	50	1993	500	-	100cm/3days	-	Rio Pirai and Rio Chane	In 1991-1992, was inundated(200cm/9dias)
1.-15	31-Aug	-	Minero	-	Faja California	17	2	63	8	-	R-B	B	50	0	1	120	1980	500	50cm/7days	50cm/7days	50cm/7days	Rio Chane	The water come 200mts close to the house from the west e south.
1.-16	31-Aug	-	Minero	-	La Porfia	17	3	63	8	-	R-B	C	0	20	1	32	1983	1600	20cm/7days	7cm/3days	10cm/7days	Rio Chane	-
1.-17	31-Aug	-	Minero	-	Cumala	17	1	63	11	-	R-B	C	40	10	1	20	-	-	50cm/21days	50cm/21days	50cm/21days	Rio Chane	The water come from the east e west.
1.-18	1-Sep	-	Minero	-	Cotoca	17	0	63	14	1-highway	R-M	B	0	10	1	250	1986	-	-	-	-	-	-
1.-19	1-Sep	-	Minero	-	Kumali	17	1	63	14	3-highway	R-B	C	0	60	1	120	1978	-	-	-	-	-	-
1.-20	1-Sep	-	Minero	-	Cotoca	17	0	63	17	0.05-River	-	-	30	0	-	-	-	-	-	30cm/14days	-	Rio Pirai	The interview was with a worker of the area, were no house.
1.-21	1-Sep	-	Minero	-	Cotoca	17	0	63	16	2-Pirai	R-B	C	50	100	1	5	1998	300	100cm/7days	-	-	Rio Pirai	-
1.-22	1-Sep	Santiesteban	Minero	-	Rocabado	17	1	63	16	2-Pirai	R-B	B	110	0	1	10	1995	500	-	18cm/20days	10cm/2dias	Rio Pirai	In 94-95,the water level was 100cm with duration of two days.
1.-23	1-Sep	Santiesteban	Minero	-	Turan	16	59	63	13	0.5-highway	R-B	C	140	10	1	40	1990	600	-	30cm/5dias	150cm/20days	Rio Chane	In 95-96,the water level was 80cm with duration of 7days at 10mts of the house. The water come from the west.
1.-24	1-Sep	-	Puesto Fernandez	-	Kumali	17	1	63	11	-	R-B	C	20	10	1	80	1998	270	30cm/2days	30cm/7days	30cm/15days	Rio Grande	The water come from the south, in 94-95 the water level was 30cm for 4days.
1.-25	1-Sep	Minero	Minero	-	Kumali	17	1	63	13	12.5-Minero	R-B	C	50	10	1	48	1988	1500	50cm/15days	50cm/15days	-	Rio Chane	Around the property the water level go up to 150cm. The water comes from to south by a creek, and from the north by river Chane.
1.-26	1-Sep	Minero	Minero	-	Porfia	17	3	63	10	-	R-M	B	0	0	1	200	1970	5000	60cm/15days	60-80cm/5days	-	Rio Chane Rio Grande	The water come 2km close to the house. From south to north, the water don't go in to house.
1.-27	1-Sep	Santiesteban	San Juan.	-	27 de Mayo	17	5	63	10	15-Minero	R-B	B	20	0	1	64	1995	220	20cm/4days	20cm/2days	20cm/2days	Rio Chane	The water come 1km close to property with 100cm high.
2-1	27-Aug	Okinawa	Warnes	-	-	17	8	62	59	13-highway	R-M	C	0	15	1	550	1979	19000	70cm/20days	100cm/30days	100cm/30days	Rio Grande Rio Chane	The water come 1km close to property from the south (pailon).
2.-2	27-Aug	Okinawa	Warnes	-	km 1 at north	17	10	62	60	8.5-highway	R-M	C	0	120	1	450	1976	70000	100cm/14days	100cm/14-21days	100cm/21days	Rio Grande Rio Chane	Exist drainages at 2km of the property (north-east) but that is not sufficient because the water come close to the house at 100mts, and the water afect their plantation.
2.-3	27-Aug	Okinawa	Warnes	-	Monte Verde	17	11	62	57	12- Okinawa	R-B	C	16	35	1	48	-	-	-	-	60cm/10days	Rio Grande	The inundation is because river (Rio Grande). Coming from the north.
2.-4	27-Aug	Okinawa	Warnes	-	-	17	11	62	57	6-highway	R-B	B	0	0	1	72	1993-1997	3000	150cm/10-14days	150cm/10-14days	150cm/10-14days	Rio Pailon	The water come at 1km to the south.
2.-5	26-Aug	Okinawa	Warnes	-	-	17	12	62	56	3-highway	R-M	C	0	30	1	121	1970	20000	10cm/10days	10cm/10days	10cm/10days	Rio Pailon Rio Grande	The water come from the west from Rio Grande.
2.-6	25-Aug	Okinawa	Warnes	-	-	17	13	62	56	0.1-highway	R-M	B	100	25	1	106	1993	-	-	-	100cm/15days	Rio Pailon	The person in charge live there only two years. The water come to the house.
2.-7	26-Aug	Okinawa	Warnes	-	-	17	14	62	56	0.3-highway	R-M	C	20	20	1	400	1993	30000	-	-	22cm/4days	Rio Pailon	The person in charge only 1 year a 3 months
2.-8	26-Aug	Okinawa	Warnes	-	Taitoo	17	15	63	0	-	R-M	B	0	60	1	50	1994	12000	100cm/7days	100cm/7days	100cm/7days	Rio Chane	The water come close to the house 150mts from the south (creek from Chane River)
2.-9	26-Aug	Okinawa	Warnes	-	Madreora	17	15	63	1	0.1-highway	R-B	C	80	30	1	40	1987	5000	100cm/15days	100cm/14days	-	Rio Chane	In 1996 the inundation destroy the house and them they build a new house
2.-10	26-Aug	Okinawa	Warnes	-	Taitoo	17	15	62	59	2.5- Taitoo	R-L	B	15	16	1	1500	1988	100000	-	-	-	-	-

TABLE K.2.1(2) RESULTS OF FLOOD SURVEY IN CHANE-PAILON AREA

No.	Location of the Survey: Date	Place	Municipality	Canton	Community	Latitude D	Latitude M	Longitude D	Longitude M	at...km from	Building: Class	Type	Inundation depth (cm)	Elevation (cm)	House: Floor	Area (m2)	Year	Cons. Cost (US$)	Inundation Depth(cm)/Duration(días): 95/96	96/97	97/98	Cause of Inundation	Remarks
2.-11	31-Aug	Okinawa	Warnes	-	Los Batos	17	6	63	3	20-highway	R-B	B	0	0	1	60	1980	500	-	-	30cm/30days	Rio Pailon and Rio Grande	In 1992 the water level was 100cm/45days from Rio Grande water come 100mts close to the house from the south.
2.-12	31-Aug	Okinawa	Warnes	-	Copaibo	17	11	63	1	8-highway	R-B	C	10	15	1	80	-	-	-	-	25cm/2days	Rio Pailon	-
2.-13	31-Aug	Okinawa	Warnes	-	La Victoria	17	7	63	2	15-highway	R-B	B	0	0	1	200	-	-	-	-	30cm/15days	Rio Pailon	Water come close 200mts from the house from the north.
2.-14	31-Aug	Okinawa	Warnes	-	Manchego	17	10	63	1	6-highway	R-B	B	0	0	1	250	-	-	-	30cm	-	Rio Pailon	Water come close 50mts from the house
2.-15	31-Aug	Okinawa	Warnes	-	Lotes Hoyos	17	12	63	6	0,5-highway	R-B	B	0	0	1	-	-	600	-	-	-	-	The dates are not trust worthy.
2.-16	31-Aug	Saavedra	Warnes	-	San Juan	17	9	63	9	15-highway	R-B	B	0	10	1	120	1978	1000	-	-	-	Rio Toro	The water come at 500mts, from the west.
2.-17	1-Sep	Okinawa	Warnes	-	San Miguelito	17	13	63	1	2-highway	R-B	B	0	0	1	48	1995		-	-	-	-	-
2.-18	1-Sep	Okinawa	Warnes	-	Copaibo	17	11	63	1	8-highway	R-B	B	20	0	1	30	1990	-	-	10cm/1day	20cm/2days	Rio Toro and Rio Chane	El agua viene por el sur-oeste.
2.-19	1-Sep	Okinawa	Warnes	-	Chaparral	17	12	63	1	5,7-asphaltway	R-B	B	50	0	1	12	1997	-	-	50cm/2days	-	Rio Chane	The material of the house the obtain from the jungle.
2.-20	1-Sep	Okinawa	Warnes	-	Sugar Refinery: Santa Cecilia	17	12	63	3	4-asphaltway	I-F	C	0	50	4	10Has	1980	1000000	-	50cm/3days	-	Rio Chane	The water come close 1km from the factory, from the west by Chane river, and from the east because the drainage.
2.-21	1-Sep	Santa Elena	-	-	Tajibo	17	14	62	58	2-highway	R-M	C	0	20	1	200	1988	5000	-	-	30cm/15days	Rio Pailon	The water get close to the house 100mts from west and east.
2.-22	1-Sep	Okinawa	Warnes	-	Mira Flores	17	12	62	60	5,5-highway	R-M	B	0	0	1	5000	1983	15000	-	-	120cm/30days	Rio Pailon	The drainages are not sufficient.
2.-23	1-Sep	Okinawa	Warnes	-	Tajibo	17	14	62	59	-	R-B	B	0	0	1	24	1988	-	-	-	50cm/15days	Cañada	-
2.-24	1-Sep	Okinawa	Warnes	-	Tajibo	17	14	62	59	-	R-B	B	0	0	1	255	-	2000	-	-	-	-	-
2.-25	1-Sep	Okinawa	Warnes	-	Country house Pailon	17	13	62	58	0,2-highway	R-M	B	0	0	1	110	1980	20000	-	150cm/60days	-	Rio Pailon	The water come 100mts close to the house
2.-26	3-Sep	Okinawa	Warnes	-	Azgiren	17	17	62	56	-	R-B	B	40	0	1	80	1978	2000	40cm/15days	40cm/15días	40cm/15days	Rio Pailon Cañada	The water direction is from south to north, in the years 95/96 e 96/97 the inundation was slow, and 97/98 was fast . The color of the water was dark.
2.-27	3-Sep	Okinawa	Warnes	-	Ranch Chico	17	14	62	57	-	R-B	B	50	0	1	50	1990	2000	50cm/15days	50cm/15days	50cm/15days	Rio Pailon Cañaveral	The water direction is from south to north. In 94/95 was slow, 95/96 fast, 96/97 slow, 97/98 fast. The color of the water was clear.
2.-28	3-Sep	Okinawa	Warnes	-	Okinawa 1	17	15	62	56	3-highway	-	-	-	-	-	-	-	-	50cm/30days	100cm/60days	-	Rio Pailon	In 95, water direction was north to south, 20cm/14days. In 96 water direction was north to south, 50cm/30days. In 97 water direction was west to south also from north, 97/98 speed of the water was slow, color was clear.
2.-29	3-Sep	Okinawa	Warnes	-	Okinawa 1	17	15	62	54	4-highway	R-M	C	0	25	1	200	1980	35000	70cm/60days	70cm/60days	70cm/30days	Rio Pailon	Water direction is from west to east and also north to south. In 97/98 was slow the speed of the water, the color of the water was semiturbit unclear. The water come close to the house from west at 200mts and from north 500mts also the water come from the south.
2.-30		Okinawa	Warnes	-	Okinawa	17	14	62	65	1-Okinawa	R-B	C	120	8	1	70	1988	-	120cm/14days	120cm/21days	120cm/14days	Rio Pailon Rebalse	Water direction is from west to east, the color is dark, the speed is slow.
2.-31	3-Sep	Okinawa	Warnes	-	Okinawa	17	14	62	66	2-highway	R-M	C	0	15	1	120	1982	-	20cm/2days	20cm/2days	100cm/7days	Rio Pailon Rebalse	Water direction is from west to north also water come from north and south. Water don't get to the house only around the house.
2.-32	3-Sep	Okinawa	Warnes	-	Okinawa					-	R-M	B	0	0	1	90	-	-	-	-	50cm/7days	Rio Pailon and Rio Toro	The water come around the house at 500mts. From the west, the speed of the water is fast and the color is brown
2.-33	3-Sep	Okinawa	Warnes	-	Madrecita	17	12	63	1	0,2-highway	R-B	C	50	20	1	70	1975	200	30cm/15days	60cm/7days	80cm/15days	Rio Chane	In 1994: The water direction was from west to northeast, the speed was fast, the water get to the house 50cm/15days. In 1995: The water direction was from to northeast, the speed was slow, the water came 100mts. Close to the house. In 1996: The water direction was from west to northeast, the speed was slow, the water came 100mts. close to the house. In 1997: The water direction was from west to northeast, the speed was fast, the water came 100mts. close to the house
2.-34	4-Sep	Okinawa	Warnes	-	San Marino	17	17	63	2	3-highway	R-B	C	60	20	1	50	1979	600	100cm/7días	100cm/7días	60cm/15days	Rio Chane	In 1994: water get to the house 10cm. /15 days, the color was clear. In 1995: water came up 2km, From the house, the color was dark, the direction was from the west, the speed was slow. In 1996: water came up 2km. From the house, the color was dark, the direction from south to north, the speed was medium. In 1997: water came up close to the house 60cm, because Pailon River, The direction was from south to north, the color of the water was brown-dark, the speed was fast
2.-35	4-Sep	Okinawa	Warnes	-	La Esperanza	17	13	63	2	4-highway	R-B	C	40	20	1	70	1983	450	20cm/3days	20cm/4días	45cm/3días	Rio Chane	In 1994: The color of the water was dark-brown, speed fast. In 1995: The color of the water was dark, speed fast. In 1996: The color of the water was colored, speed slown. In 1997: The color of the water was dark-brown, speed fast, coming from Chane River. The river over flood by the west, go to the north and go around to the west.

TABLE K.2.1(3) RESULTS OF FLOOD SURVEY IN CHANE-PAILON AREA

No.	Location of the Survey: Date	Place	Municipality	Canton	Community	Latitude D	Latitude M	Longitude D	Longitude M	at....km from	Building: Class	Type	Inundation depth (cm)	Elevation (cm)	House: Floor	Area (m2)	Year	Cons. Cost (US$)	Inundation Depth(cm)/Duration(days): 95/96	96/97	97/98	Cause of Inundation	Remarks
2-36	4-Sep	Okinawa	Warnes	-	La Esperanza	17	13	63	1	4-highway	R-B	B	100	0	1	60	1976	-	-	-	-	Rio Chane	In 1994: water level 40cm, /15 days, speed fast, color dark brown, direction south. In 1996: water level 100cm, /15 days, speed fast, color dark brown, direction south
2-37	4-Sep	Okinawa	Warnes	-	San Miguelito	17	15	63	2	3-highway	R-B	C	0	20	1	80	1985	1000	-	35cm/17days	-	Rio Pailon	The water came 1km, Close to the house, color dark-brown, speed fast, direction was from south to north
2-38	4-Sep	Okinawa	Warnes	-	La Esperanza	17	17	63	2	1.4-highway	R-M	C	0	65	1	250	1960	-	-	-	-	Rio Chane	In 1996: The water came 0.2km. Close to the house and the duration was for days, color was dark-brown, direction was was from south to north.
2-39	15-Sep	Okinawa	Warnes	-	Taibo	17	14	62	60	1-Taibo	R-M	C	0	20	1	24	1988	-	20cm/7days	50cm/15days	-	Rain	The water came close 15mts. Around the house, the color is clear and the speed is slow.
2-40	15-Sep	Okinawa	Warnes	-	Taibo	-	-	-	-	7.5-Taibo	R-L	B	20	0	1	2500	1986	45000	-	50cm/30days	50cm/30days	Rio Pailon	The water come close 20 mts. Around the house by the east the color is clear, speed is fast and the direction is south to north.
2-41	15-Sep	Okinawa	Warnes	-	Monte Carlos	17	12	62	60	4-Santa Fe	R-B	B	0	0	1	16	-	-	-	-	60-100cm/2-14days	Rio Pailon	The water come close 500 mts. From the house by the east, from Pailon River that is located at 2 km, to the east, the color is clear, speed east, direction is from east to west.
2-42	15-Sep	Okinawa	Warnes	-	Puesto Cabo	-	-	-	-	8-Taibo	R-B	B	0	0	1	15	-	-	100cm/8days	100cm/8days	100cm/8days	Rio Pailon	The water came from the east at 100mts. Close to the house, the color is turbid the speed is slow, the direction is from east to west. In the year 94/95 also they have inundation, the same 1996/1997.
3-1	27-Aug	el Carmen	Warnes	-	-	17	6	62	60	-	R-B	C	60	30	1	48	1994	600	90cm/12days	100cm/90days	90cm/90days	Rio Grande	In 1996 the inundation was for 3 months in the 3 month of inundation the water level was going up and down, all the time
3-2	27-Aug	el Carmen	Warnes	-	-	17	6	62	60	-	R-B	C	190	10	1	40	1997	2000	200cm/30days	200cm/30days	200cm/30days	Rio Grande Rio Pailon	Has some small drainage but affect the small population of the area.
3-3	27-Aug	el Carmen	Warnes	-	-	17	7	62	58	-	R-B	B	0	0	1	20	1992	-	20cm/6days	30cm/15days	-	Rio Grande	The water came close 1 km, from north-east.
3-4	27-Aug	el Carmen	Warnes	-	San Pedro	17	5	62	59	18-highway	R-B	C	0	30	1	200	1970	2000	200cm/45days	250cm/45days	150cm/20days	Rio Grande Rio Pailon	The water close 200 mts. From the south till the door (Pailon)
3-5	24-Aug	Mercedes	Warnes	-	Los Chacos	17	6	62	56	12-highway	R-B	B	80-150	10	1	16	1985	-	150cm/30days	150cm/30days	80cm/7days	Rio Grande	They don't have any drainage.
3-6	27-Aug	Okinawa	Warnes	-	-	17	9	62	57	-	R-M	B	5	45	1	120	1978	-	-	-	50cm/15days	Rio Grande	Water came close 100 mts. From north-east.
3-7	27-Aug	Okinawa	Warnes	-	San Pedro	17	10	62	56	7-Okinawa	R-0	B	40	30	1	1500	1990	15000	70cm/1day	70cm/1day	70cm/1day	Rio Grande	Okinawa drainages are not suficient.
3-8	26-Aug	Okinawa	Warnes	-	El tres	17	11	62	52	5-Okinawa	R-B	C	0	50	1	48	1997	2500	60cm/3days	50cm/3days	50cm/3days	Rio Grande	water came 100 mts. Close to the house from north.
3-9	26-Aug	Okinawa	Warnes	-	-	17	12	62	53	-	R-M	B	0	0	1	180	1976	3000	-	-	-	-	-
3-10	26-Aug	Okinawa	Warnes	-	5 de diciembre	17	12	62	53	1-Okinawa	R-B	B	50	20	1	32	1991	1300	-	50cm/12days	-	-	-
3-11	26-Aug	Okinawa	Warnes	-	-	17	12	62	54	0.70-Okinawa	R-M	B	0	10	1	40	1995	3500	-	-	-	-	In 1992: water level got 30cm. At the house.
3-12	24-Aug	Okinawa	Warnes	-	Okinawa 1	17	12	62	54	2-Okinawa	R-M	B	0	15	1	144	1981	40000	-	-	-	Drainage	They have a drainage not far away from the house.
3-13	26-Aug	Okinawa	Warnes	-	-	17	13	62	53	-	R-L	C	0	30	1	144	-	-	-	-	30cm/2days	Pailon	-
3-14	27-Aug	Okinawa	Warnes	-	Los Pericocos	17	13	62	54	0.15-highway	R-M	C	0	50	1	120	1980	15000	80cm/14days	80cm/14days	80cm/14days	Rio Grande Rio Pailon	Water came 80mts. To the house, from south.
3-15	-	Okinawa	Warnes	-	-	17	13	62	56	-	R-L	C	0	50	1	135	1979	-	100cm/2-3days	50cm/2-3days	-	Rio Pailon	The inundation came from the west side of the house.
3-16	25-Aug	Okinawa	Warnes	-	-	17	13	62	54	150-highway	T-C	C	100	50	1	60	1992	40000	100cm/21days	100cm/21days	100cm/21days	Rio Pailon	The water came into the house but they don't lose anything.
3-17	27-Aug	Okinawa	Warnes	-	-	17	14	62	53	-	R-B	B	0	10	1	230	1990	3000	-	10cm/3days	-	Rio Pailon	Is low zone.
3-18	27-Aug	Okinawa	Warnes	-	-	17	15	62	54	5-highway	R-L	B	0	10	1	300	1992	40000	-	-	-	-	In 1992: they got inundated because Pailon River
3-19	26-Aug	-	-	-	-	17	14	62	51	2.5-highway	R-M	C	0	15	1	64	1997	4000	-	-	-	-	-
3-20	4-Sep	Okinawa	Warnes	-	-	17	13	62	53	-	R-L	C	0	30	1	480	1987	80000	-	-	-	-	The water came from north and west at 1km. From the house, they don't know, the color, the direction or the speed of the water.
3-21	4-Sep	Okinawa	Warnes	-	El Carmen	17	6	63	1	-	R-B	B	50	0	1	48	1986	-	-	-	50cm/4days	Rio Grande Rio Pailon	In 1996: water came 100 mts. Close to the property by the north-east, the color of the water is dark-brown.
3-22	4-Sep	Okinawa	Warnes	-	Cupesi o Bato	17	3	63	1	25-highway	R-M	B	0	0	1	400	1995	32000	-	-	-	Rio Pailon	In 1997 water came 1 km. close to the property by the south-east
3-23	4-Sep	Okinawa	Warnes	-	Las Mercedes	17	8	62	55	8-highway	R-B	C	0	20	1	30	1976	-	100cm/30days	100cm/30days	100cm/30days	Rio Grande	Water came close to the house 300 mts. By the north and east the color of the water was colored.
3-24	4-Sep	Okinawa	Warnes	-	Okinawa 1	17	12	62	56	5-highway	R-B	B	0	0	1	100	-	-	50cm/2days	50cm/2days	50cm/2days	Rio Pailon	Water came close to the house 200 mts., by the east because a drainage, and from the south because Pailon River, the color of the water was dark.
3-25	4-Sep	Okinawa	Warnes	-	Okinawa 1	17	12	62	54	3-highway	R-B	B	50	0	1	80	1978	5000	-	-	50cm/5days	Rio Pailon	Water direction is from west, speed is slow, the color is dark

TABLE K.2.1(4) RESULTS OF FLOOD SURVEY IN CHANE-PAILON AREA

No.	Location of the Survey: Date	Place	Municipality	Canton	Community	Latitude D	Latitude M	Longitude D	Longitude M	at....km from	Building: Class	Type	Inundation depth (cm)	Elevation (cm)	House: Floor	Area (m2)	Year	Cons. Cost (US$)	Inundation Depth(cm)/Duration(dias): 95/96	96/97	97/98	Cause of Inundation	Remarks
3.-26	4-Sep	Okinawa	Warnes	-	Okinawa	17	13	62	57	10.5-highway	R-B	C	0	20	1	24	1980	3000	50cm	50cm	50cm	Rio Grande	water come 100 mts. Close to the house from Rio Grande by the was the water direction is from east to north, the speed is slow, the color was turbi.
3.-27	4-Sep	Okinawa	Warnes	-	Okinawa	17	13	62	58	9.5-highway	R-B	C	0	7	1	24	1980	-	-	-	-	-	Water doesn't get to his property.
3.-28	18-Sep	Okinawa	Warnes	-	-	17	8	62	55	12-Okinawa	R-M	C	0	15	1	70	1992	-	-	50-80cm/3days	-	Rio Grande	Water come close 200 mts., from the house by the north and also at 20 mts. from the west, in 1998 they have inundation (don't remember), the color is clear, speed fast, direction from north and east.
3.-29	18-Sep	Okinawa	Warnes	-	El Carmen	17	6	62	58	18-El Carmen	R-B	C	0	15	1	80	1995	3500	50cm/30-60days	100cm/90days	10cm/80days	Rio Grande Rio Pailon	The Pailon River over flood around 200 mts., to each side.
3.-30	18-Sep	Okinawa	Warnes	-	-	17	10	62	55	4-highway	R-B	C	30	40	1	1992	-	-	80cm/4days	30cm/2days	10cm/1days	Rio Grande	Near to the house exist two small lakes to the north east at 2 km., and to the south east at 500mts., from the house this two small lakes over flood when, the River over flood.
3.-31	18-Sep	Okinawa	Warnes	-	-					Okinawa	T-C		0	10	1	40	1982	-	5-7 cm./2-3days	5-7 cm./2-3 days	7 cm./2-3 days	Pailon	The inundation is around the house by the west also by the south.
4.-1	26-Aug	Okinawa	Warnes	-	-	17	8	62	59	8-highway	R-B	B	0	5	1	170	1989	-	-	-	100cm/30days	Rio Grande	Water 1 km., close to the house from the north.
4.-2	26-Aug	Okinawa	Warnes	-	-	17	10	62	52	3-highway	R-B	C	25	100	1	400	-	10000	-	-	25cm/15dias	Rio Grande	-
4.-3	25-Aug	Okinawa	Warnes	-	Okinawa 1	17	12	62	61	6-Okinawa	R-M	B	0	50	1	300	1994	15000	150cm/45days	100cm/15days	-	Rio Grande	Water come 100 mts., close to the from the east.
4.-4	26-Aug	Okinawa	Warnes	-	Puerto Nuevo	17	11	62	50	1-highway	R-B	C	0	20	1	15	1996	1500	-	-	-	-	-
4.-5	26-Aug	Okinawa	Warnes	-		17	10	62	60	6.5-highway	R-B	C	0	10	1	40	1966-1988	200	-	-	-	Rio Grande	The last inundation they have was 32 years ago.
4.-6	26-Aug	Okinawa	Warnes	-	Okinawa 1	17	9	62	50	7.5-highway	R-B	C	0	70	1	24	1989	1000	100cm/15days	100cm/60days	-	Rio Grande	Water come 100 mts. Close to the house from the north.
4.-7	26-Aug			-	Puerto Nuevo	17	11	62	47	0.5-Rio grande	T-C	C	0	40	1	60	1997	220	-	-	-	-	
4.-8	3-Sep	Okinawa	Warnes	-	El Retiro					3.5-Okinawa	R-M	C	45	130	1	250	1988-1993	35000	-	45cm/21days	45cm/21days	Rio Grande	In 1994: The water came 3 km., close to the property and take 30 days to go down. In 1998: The water came 20 mts., from the house and 21 days to go down, the speed was regular or medium, the color was dark-brown, the direction is from southeast to north.
4.-9	3-Sep	Okinawa	Warnes	-	El Retiro					6-Okinawa	R-B	B	40	0	1	50	1987-1988	500	-	-	40cm/21days	Rio Grande	1998 water level 20 cm., for 14 days, direction southeast, speed slow, color dark-brown.
4.-10	3-Sep	Okinawa	Warnes	-	El Vallecito	17	12	62	49	12-Okinawa	R-M	C	35	20	1	30	1993	-	-	60cm/8days	30cm/3days	Rio Grande	1994 40cm./6 days at the house, speed slow, direction from south to north, color dark-brown, 1998 35cm./2 days from south to north.
4.-11	3-Sep	Okinawa	Warnes	-	El Retiro					8-Okinawa	R-B	C	30	18	1	3200	1993	250	100cm	200cm/45days	40cm/25days	Rio Grande	1994 100cm./25 days direction from south to north, color brown.
4.-12	3-Sep	Okinawa	Warnes	-	Puerto Nuevo	17	10	62	49	1-highway	R-B	C	0	350	1	61	1994	4000	-	-	-	-	The River over flood from the south (don't make any damage).
4.-13	18-Sep	Okinawa	Warnes	-	9 de Abril	17	11	62	45	15-Okinawa	R-B	C	0	0	1	36	1986		0	0	0	-	The river is located at 10mts., from the house and over flood from south east at 10km., from the house, this area is high.
5.-1	26-Aug	Okinawa	Warnes	-	Retiro	17	13	62	51	1.5-Okinawa	R-B	C	20	20	1	100	1985	-	-	-	-	-	Since 5 years ago they don't have any inundation.
5.-2	26-Aug	Okinawa	Warnes	-	Retiro	17	12	62	49	2.5-Retiro	R-B	C	45	15	1	40	1997	280	60cm/7days	60cm/7days	-	Rio Grande	They don't any drainage.
5.-3	28-Aug	Okinawa	Warnes	-	Retiro	17	12	62	50	-	R-L	A	0	200	1	3000	1980	100000	-	-	-	-	
5.-4	28-Aug	Okinawa	Warnes	-	Cupesi	17	14	62	48	7-highway	R-B	B	0	0	1	88	1962	-	-	-	-	Rio Grande	The water come close 150mts., from the northwest side, and the level is 10cm.
5.-5	28-Aug	Okinawa	Warnes	-	Nueva Esperanza	17	14	62	47	7-highway	R-M	C	0	20	1	3000	1980	17000	150cm/90days	150cm/90days	150cm/90days	Rio Grande	The water come close 200mts., from the north side, and the level is 150cm.
5.-6	3-Sep	Okinawa	Warnes	-	-					-	R-L	C	0	0	1	400	1994	40000	-	-	-	-	-
5.-7	3-Sep	Okinawa	Warnes	-	-	17	12	62	49	-	R-B	B	40	0	1	50	1991	-	-	40cm/90days	40cm/4days	Rio Grande	The speed is slow, the color is grey-yellow
5.-8	18-Sep	Okinawa	Warnes	Los Chacos	El Retiro	17	12	62	50	6-Okinawa	R-B	C	30	0	1	62	1985	1000	30cm/30 days	30 cm/ 30 days	30 cm/30days	Rio Grande	Water come from east to west.
5.-9	21-Sep	Okinawa	Warnes	-	Nueva Esperanza	17	13	62	48	17-Okinawa	R-B	C	50	0	1	80	1980	200	50cm/30days	50cm/30days	50cm/30days	Rio Grande	Water come from east to west the river is located at 208mts., from the house.
5.-10	21-Sep	Okinawa	Warnes	Los Chacos	Nueva Esperanza	17	14	62	49	3-highway	R-B	C	0	30	1	20	1990	200	-	40cm/2days	40cm/2days	Rio Grande	The water come close to the house at 600mts., to the north, the years 96/97. They have a lot of rain but no inundation
5.-11	21-Sep	Okinawa	Warnes	-	-	17	14	62	46	12-highway	R-M	C	0	50	1	12	1994	15000	-	-	70cm/2days	Rio Grande	Water come from east and go back from the same side. The inundation in 1997 left 30cm., of mud this inundation afect 40Has.
5.-12	21-Sep	Okinawa	Warnes	-	Retiro	17	12	62	50	7-Okinawa	R-B	C	16-36	15	1	60	1982	450	70cm/15days	70cm/15days	70cm/15days	Rio Grande Cañada artificial	The water come around the house 800mts., they afect the all area from the road til the south part close to the curve that goes to (Nueva Esperanza).

TABLE K.2.1(5) RESULTS OF FLOOD SURVEY IN CHANE-PAILON AREA

No.	Location of the Survey										Building		House						Inundation			Cause of Inundation	Remarks
	Date	Place	Municipality	Canton	Community	Latitude		Longitude		at....km from	Class	Type	Inundation depth (cm)	Elevation (cm)	Floor	Area (m2)	Year	Cons. Cost (US$)	Depth(cm)/Duration(dias)				
						D	M	D	M										95/96	96/97	97/98		
5.-11	21-Sep	Okinawa	Warnes	-	-	17	14	62	46	12-highway	R-M	C	0	50	1	12	1994	15000	-	-	70cm/2days	Rio Grande Canada natural Lluvias	The person with more problems is the west of the property at 3km., Aprox.
6.-1	27-Aug	Okinawa	Warnes	-	-	17	17	62	54	9-highway	R-M		10	-40	1	200	1988		50cm/3days	30cm/7days	30cm/10days	Rio Pailon	They use pumping engine to take the water out of the house.
6.-2	26-Aug	Okinawa	Warnes	-	Pailon	17	18	62	54	5-highway	R-M	C	0	100	1	170	1991	20000	-	-	30cm/1.5days	Rio Pailon	The water come 100mts., around the house.
6.-3	26-Aug	Okinawa	Warnes	-	Okinawa 2	17	19	62	53	7-highway	R-M	C	0	100	1	120	1973	11000	-	-	30cm/10days	Rio Pailon	The water level is between 30-100cm.
6.-4	26-Aug	Okinawa	Warnes	-	Okinawa 2	17	21	62	53	2-Okinawa	R-M	C	0	200	1	720	1980	50000	-	100cm/1day	-	Rio Pailon	The water come close to the house 100mts. From creek Monte Cristo.
6.-5	26-Aug	Okinawa	Warnes	-	Okinawa 2	17	22	62	51	6-Okinawa 2	R-B	C	0	40	1	450	1994	2500	-	50cm/2days	30cm/2days	Rio Pailon	The water come close 500mts., from the house to the west.
6.-6	26-Aug	Okinawa	Warnes	-	Okinawa 2	17	20	62	52	6-Okinawa 2	R-B	C	0	10	1	150	-	-	-	50cm/8days	-	Rio Pailon	River Pailon is located at 30mts., from the property, the water come close to the house at 100mts.
6.-7	26-Aug	Okinawa	Warnes	-	Okinawa 2	17	20	62	49	14-Okinawa 2	R-M	B	0	0	1	700	1971	30000	-	-	-	-	River Grande is close to the property but don't affect anything.
6.-8	26-Aug	Okinawa	Warnes	-	Nueva Esperanza	17	21	62	50	10-Okinawa 2	R-M	B	0	0	1	250	1994	50000	-	-	-	-	They never has inundation problems.
6.-9	3-Sep	Okinawa	Warnes	-	Okinawa 2	17	21	62	50	10-Okinawa 2	R-M	B	0	0	1	250	1977	-	-	-	50cm/15days	Rio Pailon	Water come close 1km., from the property, direction is from west, color is dark.
6.-10	3-Sep	Okinawa	Warnes	-	Okinawa 2	17	20	62	51	12-Okinawa	R-B	B	0	0	1	80	-	-	-	-	-	-	-
6.-11	3-Sep	Okinawa	Warnes	-	Okinawa 2	17	19	62	50	5-Okinawa 2	R-B	B	0	0	1	72	1970	-	-	-	-	Cañada	In 1994: The water come close 600mts., from the property and go down in 1 days.
6.-12	3-Sep	Okinawa	Warnes	-	Okinawa 2	17	20	62	53	6-Okinawa 2	R-M	B	0	0	1	100	1973	-	-	-	-	-	-

TABLE K.2.1(6) RESULTS OF FLOOD SURVEY IN SAN JUAN-ANTOFAGA AREA

No.	Location of the Survey: Date	Place	Municipality	Canton	Community	Latitude D	Latitude M	Longitude D	Longitude M	at...km from	Building: Class	Type	Inundation depth (cm)	Elevation (cm)	House: Floor	Area (m²)	Year	Cons. Cost (US$)	Inundation Depth(cm)/Duration(dias): 95/96	96/97	97/98	Cause of Inundation	Remarks
1-1	7-Sep	Guadalquivir	San Carlos	-	Guadalquivir	17	1	63	56	-	R-B	C	0	30	1	24	1996	400	-	-	-	-	-
1-2	7-Sep	Ayacucho	San Carlos	-	El Carmen	17	2	63	54	-	R-M	B	10	0	1	90	1979	-	-	-	10cm/3dias	Canales	Water come close 7mts from house
1-3	7-Sep	Guadalquivir	San Carlos	-	San Juan	17	1	63	56	-	Escuela	C	0	20	1	74	1995	-	-	-	-	-	-
1-4	7-Sep	Guadalquivir	San Carlos	-	San Juan	17	1	63	54	-	R-M	C	0	20	1	72	1996	-	-	-	-	-	The water don't come close to the house or around the house.
1-5	7-Sep	Yapacani	-	-	Enconada	17	5	63	53	60-carretera	T-C	C	0	30	1	60	1995	10000	100cm/1dia	-		Rio Yapacani	The water come close 100 mts from the house.
1-6	7-Sep	Yapacani	-	-	Enconada	17	1	63	53	0,1-carretera	R-B	C	0	30	1	40	1980	200	20cm/7dias	20cm/7dias	20cm/7dias	Rio Yapacani	The water come close 10 mts from the house.
1-7	7-Sep	Yapacani	-	-	Santa Fe	17	4	63	56	16 Santa Fe	R-L	C	0	20	1	600	1981	50000	-	-	-	Lluvias	In 1994 they have inundation around the house, the water level was 20 cm and take 2 hrs to go down they have drainage every 2 km.
1-8	7-Sep	San Juan	Ichilo	-	San Juan	17	16	63	53	14,5-San Juan	R-M	B	0	20	1	600	1980	20000	-	-	-	Rio Yapacani	In 1994 the water came 800 mts close to the house the level was 100 cm/15hrs.
1-9	7-Sep	San Juan	Ichilo	-	Cuarta Seccion	17	18	63	52	14-Santa Fe	R-M	C	0	20	1	500	1978	-	-	-	-	Lluvias	In 1994 water level was 20cm high, take 2 to 3 hours to go down.
1-10	7-Sep	Radial 12	Ichilo	San Carlos	San Juan	17	18	63	52	-	R-M	C	0	0	1	600	1978	50000	80cm/3dias	80cm/3dias	80cm/3dias	Rio Jochi	In 1994 the water came close 600 mts from the house the level was 100cm / 3 days. Every year the water come close 400 mts from the house.
1-11	7-Sep	-	Ichilo	San Carlos	San Juan	17	15	63	51	11-carretera	R-M	C	20	30	1	150	1978-1996	15000	10cm/1dias	10cm/1dias	10cm/1dia	Rebalse del drenaje	The water come 20 mts from the house. In 1992 water level was 20 cm/2days. 94/95/96/97 color muddy speed slow.
1-12	7-Sep	-	Ichilo	San Carlos	San Juan	17	13	63	50	2-carretera	R-M	B	0	0	1	153	1975	-	-	40cm/2dias	40cm/2dias	Rebalse del drenaje	Water come close 1 km from the house.
1-13	8-Sep	Guadalquivir	Ichilo	San Carlos	Guadalquivir	17	1	63	57	7-Del 36	R-B	C	0	150	1	20	1997	200	120cm/7dias	120cm/7dias	120cm/7dias	Arroyo Yapacanicito	The water come 600 mts from the house to the north they have inundation only when a lot of rain.
1-14	9-Sep	Faja 2	Ichilo	San Carlos	-	17	3	63	57	5-Del 36	R-B	B	0	0	1	48	1993	600	50cm/1-2dias	50cm/1-2dias	50cm/1-2dias	Rio Yapacani	Only in 1994 the water came in to the house 30 cm the water come 600 mts close to the house.
1-15	9-Sep	San Juan	-	-	-	17	10	63	55	28-San Juan	R-M	B	0	50	1	224	1983	15000	50-60cm/2dias	50-60cm/2dias	50-60cm/2dias	Rio Yapacani Canada	The house is located at 60 mts from the creek (East).
1-16	9-Sep	San Juan	-	-	-	17	10	63	53	26-San Juan	L-P	B	0	30	1	430	1997	63000	60cm/3dias	-	-	Canal pequeno	In 1996 they have inundation (No exist sufficient information)
1-17	9-Sep	San Carlos	-	-	-	17	8	63	55	26-San Juan	R-M	C	0	20	2	320	1996	20000	10cm/2horas	10cm/2horas	10cm/2horas	Lluvias	-
1-18	9-Sep	2 de Agosto	-	-	-	17	4	63	56	-	R-B	B	10 - 60	0	1	40	1994	-		10cm/2horas	50cm/1dia	Drenaje Arroyo	The creek is located at 30 mts from the house to the north.
1-19	9-Sep	Guadalquivir	-	-	-	17	1	63	57	40-Santa Fe	R-B	B	0	0	1	20	1997	-	-	20cm/3dias	50cm/8dias	Arroyo Yapacanicito	At 300 mts is located Yapacanicito creek.
1-20	9-Sep	San Juan	-	-	San Juan	17	9	63	55	-	R-L	C	0	20	1	252	1998	50500	-	-	-	-	The inundation don't affect the property.
1-21	9-Sep	San Juan	-	-	San Juan	17	10	63	55	-	R-M	C	0	40	1	180	1978	8000	40cm/5dias	40cm/5dias	40cm/5dias	Arroyo Yapacanicito	Water come 1,8 km from the house (East).
1-22	9-Sep	San Juan	-	-	San Juan	17	11	63	55	-	R-L	C	0	30	1	320	1997	48000	100cm/2dias	100cm/2dias	100cm/2dias	Rio Yapacani	The water come 900 mts from the house.
1-23	9-Sep	Santa Fe	-	San Carlos	Andes	17	4	63	57	37-Santa Fe	R-B	C	0	100	1	24	1996	200	30cm/90dias	30cm/90dias	30cm/90dias	Rio Yapacani	The water come 5 mts from the house.
1-24	9-Sep	Santa Fe	-	San Carlos	-	17	4	63	57	38-Santa Fe	R-B	B	15	0	1	64	1988	400	40cm/3dias	40cm/3dias	40cm/3dias	Rio Yapacani	The water came over Road and goes from south to north.
1-25	9-Sep	9 Marzo	-	San Carlos	San Juan	17	4	63	57	3,5-carretera	R-B	C	0	250	1	32	1986	-	150cm/45dias	200cm/45dias	200cm/30dias	Arroyo	The water came 1-2 km close to the property in 1994, 200cm/45days. In 1995, 150cm/45days.
1-26	9-Sep	-	-	San Carlos	San Juan	17	4	63	56	36-Santa Fe	R-B	C	10-100	150	1	16	1990	500	10-20cm/7dias	30cm/30dias	100cm/45dias	Arroyo Curichi	1994- 10-20cm/5-7 days 1995- 10-20cm/5-7 days
1-27	10-Sep	Antofagasta	San Carlos	Antofagasta	Jochi	17	8	63	50	10-Del km 26	R-B	C	20	120	1	50	1997	400	45cm/3dias	45cm/3dias	45cm/3dias	-	The canales and drainages are the causing of the inundations. In 1994-1995 also they have inundation.
1-28	10-Sep	2 de Agosto	San Carlos	Antofagasta	-	17	6	63	51	9-Enconada	ojo	B	50-80	130	1	100	1998	-	70cm/2-3dias	-	60cm/10dias	Rio Yapacanicito	In 1994 the water came into the house 50cm and took 2 days. In 1998 the water came close 6 mts from the house 80cm/3days.
1-29	10-Sep	2 de Agosto	San Carlos	Antofagasta	-	17	5	63	50	6-Enconada	R-B	B	0	0	1	40	1994	200	50cm/4dias	50cm/4dias	50cm/4dias	Rio Yapacanicito	Years 94-95 same as 96-97-98.
1-30	10-Sep	Jochi	Ichilo	-	-	17	1	63	58	-	R-B	B	20-50	0	1	16	1996	-	-	50cm/4dias	20cm/2dias	Arroyo Yapacanicito	Creek Yapacanicito is located at 100 mts from the house(North).
1-31	10-Sep	Guadalquivir	Ichilo	San Carlos	-	17	1	63	56	9-Del km 36	R-M	C	0	60	1	72	1997	-	60cm/1dia	60cm/1dia	60cm/1dia	Arroyo Yapacanicito	The water come 100 mts close to the house. 94-95 same as 96-97-98.
1-32	10-Sep	Faja Bolivar	Ichilo	-	San Juan	17	4	63	52	3-Enconada	R-B	C	60-70	60	1	30	1995	300	50-100c/3-7dias	60-100c/3-7dias	60-100c/3-7dias	Arroyo Yapacanicito	1994 the water level was 70 cm and took 3 days to go down at the house.
1-33	10-Sep	2 de Agosto	Ichilo	San Carlos	-	17	6	63	51	7-Enconada	R-B	B	0	20	1	70	1997	200	30cm/1dia	30cm/1dia	30cm/1dia	Arroyo Yapacanicito Lluvias	The water come 20 mts from the house. 94-95 same as 96-97-98.
1-34	10-Sep	Zona 38	San Juan	-	-	17	6	63	57	38-San Juan	L-P	C	60	30	1	200	1991	30000	-	50-70cm/7dias	60-70cm/7dias	Arroyo	-
1-35	10-Sep	Zona 30	San Juan	-	-	17	7	63	54	30-San Juan	R-B	C	0	30	1	112	1990	-	30-100cm/2dias	30-100cm/2dias	30-100cm/2dias	Canales	-
1-36	10-Sep	Zona 26	San Juan	-	-	17	7	63	55	26-San Juan	R-M	B	30	0	1	80	1989	25000	-	-	30cm/1dia	Arroyo y drenaje [illegible]	In 1997 was the first time having inundation.
1-37	10-Sep	N. Esperanza	San Juan	-	-	17	7	63	57	4-carretera	R-B	B	0	0	1	24	1997	600	50cm/3dias	50cm/3dias	50cm/3dias	Arroyo	At 3 km from the house is located the creek (East).

TABLE K.2.1(7) RESULTS OF FLOOD SURVEY IN SAN JUAN-ANTOFAGA AREA

No.	Location of the Survey										Building				House				Inundation Depth(cm)/Duration(dias)			Cause of Inundation	Remarks
	Date	Place	Municipality	Canton	Community	Latitude D	Latitude M	Longitude D	Longitude M	at....km from	Class	Type	Inundation depth (cm)	Elevation (cm)	Floor	Area (m^2)	Year	Cons. Cost (US$)	95/96	96/97	97/98		
1.-38	10-Sep	-	San Juan	-	-	17	8	63	54	2,5-carretera	R-L	C	30	10	1	250	1981	25000	15-100c/2-5h	-	15-100c/2-5h	Lluvias	In 1993 water level 10-100 cm, duration 2-5 hours.
1.-39	11-Sep	Km 16	Ichilo	-	San Carlos	17	15	63	51	16-Santa Fe	R-M	C	0	30	1	160	1980	40000	30cm/2dias	30cm/2dias	30cm/2dias	Arroyo Jochi	The creek is located at 150 mts from the house to the north east, but the water come 20 mts from the house from the south.
1.-40	11-Sep	Km 23	Ichilo	-	San Carlos	17	13	63	53	23-Santa Fe	R-M	C	0	50	1	252	1998	30000	50cm/7dias	-	50cm/7dias	Arroyo Cunchi	The creek is located at 2 km from the house by the west, the water come from the south a 10 mts close to the house, and from east at 5 mts close to the house
1.-41	11-Sep	Km 22	Ichilo	-	San Juan	17	13	63	54	22-San Juan	R-M	C	40-100	150	1	1000	1963	-	50-100c/4-5dias	50-100c/4-5dias	50-100c/4-5dias	Yapacanicito	The water come 500 mts close to the house from southwest, also in 94-95 they have inundation same with 95-96-97.
1.-42	11-Sep	Km 18	-	-	-	17	13	63	52	6-San Juan	R-M	C	0	60	1	150	-	-	?/30dias	50cm/30dias	80cm/30dias	Arroyo Jochi	River Jochi is located at 20 mts from the house to the north west but the water come 100 mts from the south.
1.-43	14-Sep	-	Ichilo	-	San Juan	17	13	63	54	6-San Juan	R-M	B	0	0	1	150	-	-	50cm/6dias	50cm/6dias	100cm/12dias	Drenaje	The water come at 50 mts around the house.
1.-44	15-Sep	-	Ichilo	San Carlos	-	17	11	63	54	20-Santa Fe	R-M	C	0	30	1	265	1976	15000	200cm/180dias	200cm/180dias	200cm/180dias	Rio Yapacani	The water come 160 mts close to the house staying in the property making some small lagunes.
1.-45	15-Sep	Barrio Victor	Ichilo	-	San Juan	17	13	63	52	-	R-M	C	0	50	1	228	1972	45000	-	50-80cm/3dias	50-80cm/3dias	Yapacanicito	In 1994 they had inundation (30cm/2days).
1.-46	15-Sep	-	-	-	San Juan	17	11	63	53	16-San Juan	R-M	C	0	15	1	360	1983	-	-	-	-	-	-
1.-47	15-Sep	-	Ichilo	San Carlos	-	17	18	63	51	10-Santa Fe	R-M	C	0	20	1	120	1980	-	-	-	15cm/4horas	Lluvias	-
1.-48	17-Sep	-	Ichilo	San Carlos	-	17	18	63	52	13-Santa Fe	R-L	B	0	0	1	300	1988	70000	-	-	-	-	-
1.-49	17-Sep	-	Ichilo	San Carlos	-	17	18	63	51	12-San Carlos	R-M	C	0	20	1	120	-	-	20cm/7dias	20cm/7dias	-	Cañada	Exist one creek at 500 mts from the house(East), in 92/93 also they have inundation.
2.-1	8-Sep	Chuo	Ichilo	-	San Juan	17	20	63	50	6-carretera	R-M	B	0	20	1	280	1983	48000	-	-	50cm/2dias	Lluvias	In 1998 the water level was 50cm/2days.
2.-2	8-Sep	Yapacani	Ichilo	-	Santa Fe	17	17	63	49	12-Santa Fe	R-B	C	0	50	1	200	1998	35000	-	-	-	-	6 year ago this area has been inundated but now they don't have inundation problems because they have a drenage at 30 mts from the house that house goes to a principal creek (300 mts).
2.-3	8-Sep	Yapacani	Ichilo	-	Santa Fe	17	18	63	48	12,5-Santa Fe	R-B	C	0	15	1	70	1991	-	50cm/7dias	35cm/21dias	-	Rio Yapacani Lluvias Arroyo Jochi Arroyo Tacuaral	In 1995 the water came close to the house at 2 to 3 km, in 1997 the water came close 1.5 km from the house, also they have a small creek located at 30 mts south of the house, all the water go to a principal creek located at 2 km from the house.
2.-4	8-Sep	San Juan	Ichilo	-	Radial 10	17	18	63	49	3-Tacuaral	R-B	C	20	20	1	70	1985	2500	-	-	20cm/12horas 20cm/20dias	Lluvias	In december of 1997 the water get into the house, color clear, speed slow, in 1997 Feb-March around the house color: clear, speed slow.
2.-5	11-Sep	Km 14	Ichilo	-	-	17	16	63	50	14-carretera	R-M	C	0	50	1	50	1990	10000	50cm/2dias	50cm/2dias	30cm/3dias	Yapacanicito	Water come from south at 5 mts from the house, also come from north at 20 mts.
2.-6	11-Sep	Km 22	Ichilo	-	Km 22	17	13	63	50	22-San Juan	R-M	C	0	90	1	240	1979	30000	50cm/3dias	50cm/3dias	50cm/3dias	Arroyo Jochi	The creek Jochi is located at 500 mts to the east of the house
2.-7	11-Sep	Km 22	Ichilo	-	Km 22	17	13	63	51	22-San Juan	R-M	C	0	20	1	120	1975	-	-	-	-	-	The Yapacanicito is located 4 mts from the house this creek is 2 mts deep and proprietary said his property never been inundated.
2.-8	11-Sep	-	Ichilo	-	-	17	10	63	50	-	R-L	C	0	20	2	270	1985	70000	5cm/3horas	6cm/3horas	15cm/3horas	Lluvias	Around the house the water come close 5 mts. Years 94/95 are the same than 96.
2.-9	11-Sep	Tacuaral	-	-	Antofagasta	17	8	63	49	9.5-Antofagasta	R-B	C	50	20	1	40	1978	-	-	-			The inundation doesn't affect their plantation, direction from north east to south.
2.-10	14-Sep	Avenca	Ichilo	-	-	17	8	63	49	43-San Carlos	R-B	B	10 - 20	0	1	16	1997	-	20cm/5dias	10cm/3dias	-	Rio Jochi	The water come 100 mts close to the house by the east. Also in 1995 they have inundation: 10cm / 3 days around the house.
2.-11	15-Sep	-	Ichilo	San Carlos	-	17	14	63	50	17-Santa Fe	R-B	C	30	30	1	70	1988	400	70cm/70dias	70cm/70dias	70cm/70dias	Rio Jochi	In 94-95, also they have inundation like 96-97-98.
2.-12	17-Sep	-	Ichilo	-	San Juan	17	14	63	48	21-San Juan	R-B	C	0	160	1	20	1997	500	20cm/15dias	10cm/7dias	5cm/7dias	Agua Sarca	In 94-95 the inundation level was 20cm/15days. The level of the water at the creek goes to 5 mts in rain season.
2.-13	17-Sep	-	Ichilo	-	San Juan	17	16	63	49	19.5-San Juan	R-B	B	0	0	1	60	1992	200	50-100cm/2-8-7d	50cm/2-3dias	70-100cm/7dias	Rio Tacuaral Rio Jochi	The level of the water from river Tacuaral and Jochi go up to 7 mts in inundation season the water get close to the house from the east (Tacuaral) between 50 and 200 mts. Also from the west (Jochi) between 500 and 800 mts, 94-95 they have inundation getting the water up to100 cm during 3-8 days.
2.-14	17-Sep	Agua Blanca	Ichilo	San Carlos	-	17	14	63	50	8-San Juan	R-B	C	0	100	1	30	1988	400	100cm/10dias	100cm/10dias	100cm/10dias	Arroyo Tacuaral Cañadas Lluvias	Years 94-95 same as 96-97.
2.-15	17-Sep	-	Ichilo	-	San Juan	17	16	63	49	3-San Juan	R-M	B	0	0	1	210	1973	3000	-	-	-	-	Jochi river is located at 10 mts from the house. The elevation of the land compare with the river is 5 mts they never got inundated.
3.-1	11-Sep	Tacuaral	-	-	Antofagasta	17	8	63	48	6.2-Antofagasta	R-B	C	30	30	1	36	1996	1000	100cm/5-7dias	100cm/5-7dias	100cm/5-7dias	Rio Tacuaral Rio Grito	-

TABLE K.2.1(8) RESULTS OF FLOOD SURVEY IN SAN JUAN-ANTOFAGA AREA

No.	Location of the Survey: Date	Place	Municipality	Canton	Community	Latitude D	Latitude M	Longitude D	Longitude M	at...km from	Building: Class	Type	House: Inundation depth (cm)	Elevation (cm)	Floor	Area (m²)	Year	Cons. Cost (US$)	Inundation Depth(cm)/Duration(dias): 95/96	96/97	97/98	Cause of Inundation	Remarks
3.-2	11-Sep	Agua Blanca	Yapacani	-	-	17	11	63	48	24-San Carlos	R-B	C	85	35	1	50	1998	2000	100cm/3dias	200cm/4dias	80cm/3dias	Arroyo Tacuaral	Tacuaral creek is located a 1 km from the house to the south also to the south-east at 600 mts. 94-95 also they have inundation, but they don't have exact information in detail.
3.-3	14-Sep	Buen Retiro	Ichilo	-	-	17	3	63	48	-	R-B	B	50	0	1	15	1960	100	100-200c/10dias	100-200c/10dias	100-200c/10dias	Uvias	Water come around the house (same north 200 mts, to the east 200 mts, to the west 300 mts).
3.-4	14-Sep	-	Ichilo	-	-	17	3	63	48	-	R-B	B	180	190	1	30	1995	100	180cm/14dias	180cm/14dias	180cm/14dias	Rio Cunchi	Also 94-95 they have inundation (180 cm/14days).
4.-1	11-Sep	Mallones	San Carlos	-	Mallones	17	6	63	45	5-Antofagasta	R-B	B	0	50	1	40	1983	3000	50cm/1-2dias	50cm/1-2dias	50cm/1-2dias	Cañadas	A creek go true the property at 20 mts from the house to the west. 94 also they have inundation same with 95-96-97.
4.-2	11-Sep	Antofagasta	Yapacani	-	Antofagasta	17	10	63	48	26-San Carlos	R-B	C	0	15	1	90	1992	600	20cm/2dias	20cm/2dias	20cm/2dias	-	-
4.-3	14-Sep	El Carmen	-	-	-	17	6	63	48	-	R-B	C	50	60	1	32	1986	-	40-60cm/2-3dias	40-60cm/2-3dias	-	Arroyo Tacuaral	Water direction is from south to north and them goes to the west. Year 95 same as 96-97.
4.-4	14-Sep	Antofagasta	-	-	Antofagasta	17	8	63	46	7-San Pablo	R-B	C	0	60	1	28	1980	-	100cm/2dias	100cm/2dias	100cm/2dias	Rio San Pablo	The water come 500 mts close to the house from the east.
4.-5	14-Sep	Buen Retiro	-	-	-	17	5	63	46	-	R-B	C	0	30	1	50	1997	400	50cm/60dias	50cm/60dias	50cm/60dias	Uvias	The water come around the house (by the east 5 mts, by the west 5 mts, by the south 6 mts)
4.-6	14-Sep	Mallones	-	-	-	17	7	63	45	5-Antofagasta	R-M	C	45	10 - 50	1	120	1998	5000	100cm/2dias	50cm/1dia	50cm/1dia	Rio San Pablo	The water come close 300 mts from the house to the north. Exist one drainage, at 1 km to the west.
4.-7	14-Sep	Antofagasta	San Carlos	-	Antofagasta	17	10	63	46	-	R-M	C	10	30	1	70	1995	5000	80cm/12horas	80cm/12horas	80cm/12horas	Cañadas	-
5.-1	11-Sep	La Plata	Ichilo	-	-	17	9	63	44	3-Antofagasta	R-B	C	30-40-50	50	1	30	1988	250	100cm/5horas	100cm/5horas	100cm/5horas	Cañada Uvias	The water come from the west at 1 km close to the house.
5.-2	11-Sep	Bolivar	Ichilo	-	Bolivar	17	7	60	43	9-Antofagasta	R-B	B	0	100	1	80	1985	250	120cm/1dia	180cm/1dia	180cm/1dia	Arroyo Cañada Uvias	The water come around the house at 400 mts.
5.-3	11-Sep	24 de Junio	Ichilo	-	-	17	7	63	43	4-Antofagasta	R-M	B	0	0	1	300	1982	-	100cm/2-3dias	130cm/3-4dias	-	Cañada Uvias	3 km to the north the water come close to the house. At 4 km from the house to the west exist Tacuaral creek to the east exist another creek, a 1.5 km from the house.
5.-4	11-Sep	Bolivar	Ichilo	-	-	17	7	63	44	7.5-Antofagasta	R-B	C	0	15	1	100	1997	-	50cm/2-3dias	50cm/2-3dias	80cm/3-4dias	Cañada Uvias	The water come at 1.5 km close to the house from the west.
5.-5	14-Sep	Litoral	San Carlos	-	-	17	9	63	42	7-Antofagasta	R-B	B	0	0	1	40	1988	500	-	-	-	-	-
5.-6	14-Sep	Litoral	San Carlos	-	-	17	8	63	44	5-Antofagasta	?	B	0	0	1	50	1993	500	-	-	-	-	-
5.-7	14-Sep	-	-	-	Sta. Maria O.	17	9	63	40	15-Antofagasta	R-B	C	0	100	1	100	1997	-	-	-	100cm/30dias	Rio Piquin	The person who live here, Live here only one year.
5.-8	14-Sep	Litoral	San Carlos	-	-	17	6	63	43	2.5-24 de Junio	R-B	B	50-100	0	1	18	1987	-	60cm/2-3dias	50cm/2-3dias	100cm/3-4dias	Lagunas	Exist 3 lagune near to the property one of them to the west at 500 mts.
5.-9	14-Sep	24 de Junio	San Carlos	-	-	17	9	63	45	-	R-M	C	0	16	1	180	1970	-	-	45cm/30-60dias	60cm/60-90dias	Uvias	The water come close to the house at 10mts.
6.-1	7-Sep	Chucuy	Ichilo	-	San Carlos	17	20	63	50	7-carretera	R-M	C	0	10	1	200	1981	-	30cm/1dia	30cm/1dia	30cm/1dia	Drenaje pequeño	Water come 20mts. Close to the house in 1994 level of the water was 30cm. With duration of one day/El agua llega a 20mts. a la casa. 94-Este año el agua llego a una altura de 30cm. y su duracion fue de 1 dia.
6.-2	7-Sep	Mochoyu	Ichilo	-	San Carlos	17	21	63	50	5-carretera	R-M	C	0	30	1	180	1961	-	-	50cm/7dias	-	Rio Tesma	Water come 200mts. Close to the house/El agua llega a 200mts de la casa.
6.-3	8-Sep	Yapacani	Ichilo	-	San Juan	17	21	63	49	4-Santa Fe	R-M	C	0	15	1	150	1985	25000	-	270cm/3dias	-	Arroyo San Carlos	Water come just around the house/El agua llego solo alrededor de la casa.
6.-4	8-Sep	Yapacani	Ichilo	-	San Juan	17	21	63	50	6-San Juan	R-M	C	0	20	1	210	1978	12000	30cm/1dia	30cm/1dia	50cm/2dias	Cañada Tacuaral	At 300mts. To the northeast of the property was afect by inundation also 600mts. To the west.
6.-5	8-Sep	Yapacani	Ichilo	-	San Carlos	17	21	63	46	8-carretera	R-M	C	0	20	1	800	-	-	-	50cm/5dias	50cm/7dias	Arroyo	The water come close to the house at 400mts.
6.-6	8-Sep	Yapacani	Ichilo	-	San Carlos	17	63	63	45	2-carretera	R-B	B	0	0	1	18	-	-	-	-	-	-	-
6.-7	8-Sep	-	Ichilo	-	San Carlos	17	23	63	46	4-carretera	R-B	B	0	0	1	30	1994	-	20cm/7dias	20cm/7dias	20cm/7dias	Cañada	Exist a creek at 30mts. From the house, the water come close 12mts. From the house. 1994 same as 95/96/97/98.
6.-8	8-Sep	-	Ichilo	-	Lidia	17	22	63	46	5-carretera	R-B	C	0	40	1	80	1975	700	30cm/6dias	30cm/6dias	30cm/6dias	Drenaje pequeño	The water come 3mts. Close to the house.
6.-9	8-Sep	Santa Fe	Ichilo	-	San Carlos	17	20	63	51	7-carretera	R-M	C	0	20	1	380	1960	60000	50cm/3dias	20cm/2dias	-	Arroyo Tesma Rio Yapacani	-
6.-10	9-Sep	-	Ichilo	-	El Surel	17	23	63	47	6.7-San Carlos	-	C	0	100	1	70	1989	-	30cm/2-3dias	30cm/2-3dias	30cm/2-3dias	Arroyo Tesma	The water come 20mts. Close to the house. 94-95 same as 96/97/98.
6.-11	9-Sep	Rancho El Almacen	Ichilo	San Carlos	-	17	23	63	47	-	R-B	C	0	36	1	50	1950	-	200cm/2dias	200cm/2dias	200cm/2dias	Arroyo Tesma	94-95 also 20cm. /1-2 days, the water come 30 to 40 mts. Close to the house
6.-12	9-Sep	Propiedad "Sanounga"	Ichilo	-	-	17	24	63	48	2-Santa Fe	R-M	C	0	35	1	300	1976	-	-	100cm/2dias	-	Rio Surutu	This river is located at 150mts. From the house.
6.-13	9-Sep	Terume "Sanounga"	Ichilo	San Carlos	-	17	22	63	46	4.5-carretera	R-B	B	0	200	1	60	1994	600	100cm/1dia	100cm/1dia	100cm/1dia	Arroyo "Perez" Arroyo "Tesma"	The water come from the east at 20mts. From the house, and 50mts. From the west.
6.-14	9-Sep	Trampolin	Ichilo	San Carlos	-	17	24	63	48	3-San Carlos	R-B	B	0	0	1	120	1979	2500	100cm/4dias	150cm/10dias	-	Uvias Drenaje	95 has inundation (50cm/4 days) at 1km. From the house exist 1 creek
6.-15	15-Sep	-	Ichilo	San Carlos	-	17	23	63	60	1-Santa Fe	R-B	C	0	30	1	88	1976	1000	-	100cm/1dia	100cm/1dia	Arroyo	-
6.-16	15-Sep	-	Ichilo	San Carlos	-	17	20	63	51	7-Santa Fe	R-L	B	0	0	1	220	1982	22000	-	-	-	-	-

TABLE K.2.1(9) RESULTS OF FLOOD SURVEY IN SAN JUAN-ANTOFAGA AREA

No.	Location of the Survey										Building			House				Inundation Depth(cm)/Duration(days)			Cause of Inundation	Remarks
	Date	Place	Municipality	Canton	Community	Latitude		Longitude		#From Km from	Class	Type	Inundation depth (cm)	Elevation (cm)	Floor	Area (m^2)	Year	Const. Cost (US$)	95/96	96/97	97/98		
						D	M	D	M													
6-17	16-Sep	-	Ichio	San Carlos	-	17	24	63	50	1-Santa Fe	R-S	C	0	40	1	28	1993	2000	-	-	-	-
6-18	16-Sep	-	Ichio	San Carlos	-	17	24	63	49	3-Iglesias	R-M	C	10	20	1	220	1979	20000	50cm/5dias	50cm/5dias	50cm/5dias	Lluvias	In 1995 water from rivers inundation (50cm/5 days) the water came from south east at 100mts. From the house. To the south of the house exist 1 creek at 150mts.
6-19	16-Sep	-	Ichio	San Carlos	-	17	21	63	48	5-Santa Fe	R-M	C	0	30	1	1000	1978	-	100cm/1dia	100cm/1dia	100cm/1dia	Arroyo Tseins	The water come 30mts. Close to the house from south and 10mts. By the north.
6-20	16-Sep	-	Ichio	San Carlos	Santa Fe	17	22	63	51	3,5-Santa Fe	R-M	B	50	0	1	550	1978	67000	60cm/1-2dias	60cm/5dias	50cm/1-2dias	Lluvias	In 1997 the inundation was top, passing principal to the road, crosses at 200mts. To the north east.
6-21	16-Sep	Lota	Ichio	San Carlos	Santa Fe	17	21	63	48	6-Santa Fe	R-S	C	0	70	1	20	1972	-	-	-	-	-

TABLE K.2.1(10) RESULTS OF FLOOD DAMAGE SURVEY IN CHANE-PAILON AREA

No.	Date	LAND USE CONDITION									
		Area		Cultivation (ha)		Pasture (ha)		Fallow (ha)	Abandoned (ha)	Others (ha)	TOTAL (ha)
		House (m^2)	Field etc. (ha)	Annual	Permanent	Natural	Improved				
1.-1	31-Aug	48	-	-	-	-	-	-	-	-	-
1.-2	31-Aug	56	1	1	-	-	-	-	-	-	-
1.-3	31-Aug	68	20	7	-	-	-	-	13	-	20
1.-4	31-Aug	182	70	41	-	-	7	-	22	-	70
1.-5	31-Aug	30	0.061	-	-	-	-	-	-	-	-
1.-6	31-Aug	20	20	15	-	-	-	5	-	-	20
1.-7	31-Aug	50	20	19	1	-	-	-	-	-	20
1.-8	31-Aug	120	18	2	-	1	-	15	-	-	18
1.-9	31-Aug	50	100	25	-	-	5	70	-	-	100
1.-10	31-Aug	32	20	8	-	-	-	5	-	7	20
1.-11	31-Aug	20	20	7	-	-	-	9	-	4	20
1.-12	1-Sep	15	18	4	-	-	-	2	12	-	18
1.-13	1-Sep	80	70	68	-	-	2	-	-	-	70
1.-14	1-Sep	48	40	40	-	-	-	-	-	-	40
1.-15	1-Sep	64	35	30	-	5	-	-	-	-	35
2.-1	27-Aug	550	2000	1000	-	-	-	-	1000	-	2000
2.-2	27-Aug	450	458	400	-	-	-	-	-	58	458
2.-3	27-Aug	-	100	100	-	-	-	-	-	-	100
2.-4	25-Aug	12	175	120	-	-	55	-	-	-	175
2.-5	25-Aug	105	20	20	-	-	-	-	-	-	20
2.-6	31-Aug	60	60	27	-	-	8	-	25	-	60
2.-7	31-Aug	200	30	12	-	18	-	-	-	-	30
2.-8	1-Sep	200	400	-	-	-	400	-	-		400
2.-9	1-Sep	5000	1200	800	-	-	-	-	50	350	1200
2.-10	1-Sep	24	11	10	-	-	-	0.5	-	0.5	11
2.-11	1-Sep	110	400		-	-	300	100	-	-	400
2.-12	3-Sep	90	15	6	-	2	2	5	-	-	15
2.-13	3-Sep	50	33	8	-	25	-	-	-	-	33
2.-14	3-Sep	200	250	200	-	-	50	-	-	-	250
2.-15	3-Sep	70	43	40	-	-	-	3	-	-	43
2.-16	3-Sep	120	75	75	-	-	-	-	-	-	75
2.-17	3-Sep	90	380	380	-	-	-	-	-	-	380
2.-18	4-Sep	70	120	113	-	-	7	-	-	-	120
2.-19	4-Sep	50	6	4	-	-	-	2	-	-	6
2.-20	4-Sep	70	2	0.5	0.5	0.5	0.5	-	-	-	2
2.-21	4-Sep	60	0.2	-	-	-	-	-	-	0.2	0.2
2.-22	4-Sep	250	590	20	1	269	150	150	-	-	590
2.-23	18-Sep	24	11	11	-	-	-	-	-	-	11
2.-24	18-Sep	16	250	250	-	-	-	-	-	-	250
3.-1	27-Aug	40	12	12	-	-	-	-	-	-	12
3.-2	27-Aug	20	680	600	-	-	80	-	-	-	680
3.-3	27-Aug	200	700	450	-	-	250	-	-	-	700
3.-4	24-Aug	16	4	4	-	-	-	-	-	-	4
3.-5	27-Aug	400	50	16	-	4	-	-	-	30	50
3.-6	27-Aug	1500	50	50	-	-	-	-	-	-	50
3.-7	26-Aug	40	0.48	-	-	-	-	-	-	-	-
3.-8	24-Aug	144	50	-	47	-	-	-	-	3	50

TABLE K.2.1(11) RESULTS OF FLOOD DAMAGE SURVEY IN CHANE-PAILON AREA

No.	Date	LAND USE CONDITION									
		Area		Cultivation (ha)		Pasture (ha)		Fallow (ha)	Abandoned (ha)	Others (ha)	TOTAL (ha)
		House (m^2)	Field etc. (ha)	Annual	Permanent	Natural	Improved				
3.-9	26-Aug	144	100	35	-	-	40	-	-	25	100
3.-10	26-Aug	135	50	50	-	-	-	-	-	-	50
3.-11	27-Aug	300	200	2.5	-	-	187.5	-	-	-	200
3.-12	3-Sep	48	25	20	-	-	3	2	-	-	25
3.-13	18-Sep	80	70	65	-	4	-	-	-	1	70
3.-14	18-Sep	92	-	-	-	-	-	-	-	-	-
4.-1	26-Aug	400	20	20	-	-	-	-	-	-	-
4.-2	25-Aug	300	54	8	-	-	46	-	-	-	54
4.-3	3-Sep	300	250	160	-	-	-	-	-	90	250
4.-4	3-Sep	50	10	1.5	-	-	2	6.5	-	10	-
5.-1	28-Aug	2000	200	150	2	-	40	-	-	8	200
5.-2	3-Sep	400	1200	1100	-	-	-	100	-	-	1200
5.-3	18-Sep	62	25	2	2	21	-	-	-	-	25
5.-4	21-Sep	20	44	42	2	-	-	-	-	-	44
5.-5	21-Sep	12	100	100	-	-	-	-	-	-	100
5.-6	21-Sep	60	50	20	-	30	-	-	-	-	50
5.-7	21-Sep	50	6	5	-	-	-	-	-	1	6
6.-1	27-Aug	200	300	-	-	-	300	-	-	-	300
6.-2	28-Aug	170	300	260	-	-	-	-	40	-	300
6.-3	28-Aug	120	350	130	-	-	150	50	-	20	350
6.-4	28-Aug	720	380	250	-	-	100	30	-	-	380
6.-5	28-Aug	450	50	50	-	-	-	-	-	-	50
6.-6	28-Aug	150	50	50	-	-	-	-	-	-	50
6.-7	3-Sep	250	100	30	-	-	-	-	70	-	100
6.-8	3-Sep	72	100	100	-	-	-	-	-	-	100

TABLE K.2.1(12) RESULTS OF FLOOD DAMAGE SURVEY IN CHANE-PAILON AREA

No.	Date	AGRICULTURAL PRODUCTS														
		Soy Bean (ha)					Corn (ha)					Rice (ha)				
		Sown Land	Harvest	Damaged	Production (t)	Yield (t/ha)	Sown Land	Harvest	Damaged	Production (t)	Yield (t/ha)	Sown Land	Harvest	Damaged	Production (t)	Yield (t/ha)
1.-1	31-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.-2	31-Aug	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-
1.-3	31-Aug	-	-	-	-	-	-	-	-	-	-	7	4	3	1.1	0.27
1.-4	31-Aug	-	-	-	-	-	7	7	0	12.6	1.8	-	-	-	-	-
1.-5	31-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.-6	31-Aug	3	0	0	-	-	2	1	1	-	-	1.5	0.5	1	-	-
1.-7	31-Aug	10	10	0	23	2.3	-	-	-	-	-	-	-	-	-	-
1.-8	31-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.-9	31-Aug	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-
1.-10	31-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.-11	31-Aug	6	6	0	-	-	-	-	-	-	-	-	-	-	-	-
1.-12	1-Sep	-	-	-	-	-	-	-	-	-	-	2	2	0	-	-
1.-13	1-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.-14	1-Sep	15	10	5	10	1	-	-	-	-	-	15	8	7	5.8	0.72
1.-15	1-Sep	25	25	0	60	2.4	-	-	-	-	-	-	-	-	-	-
2.-1	27-Aug	600	200	400	400	2	300	300	0	300	1	100	70	30	9.2	2
2.-2	27-Aug	400	250	150	750	3	-	-	-	-	-	400	250	150	750	3
2.-3	27-Aug	100	100	0	300	3	50	-	-	-	-	-	-	-	-	-
2.-4	25-Aug	50	35	15	300	8.5	-	-	-	-	-	-	-	-	-	-
2.-5	25-Aug	20	5	15	10	2	-	-	-	-	-	-	-	-	-	-
2.-6	31-Aug	-	-	-	-	-	5	5	0	100	2	2	2	0	5	2.5
2.-7	31-Aug	-	-	-	-	-	5	1	4	4.1	1	-	-	-	-	-
2.-8	1-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.-9	1-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.-10	1-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.-11	1-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.-12	3-Sep	-	-	-	-	-	3	0	0	0	0	3	0.5	2.5	-	-
2.-13	3-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.-14	3-Sep	150	75	75	150	12	-	-	-	-	-	-	-	-	-	-
2.-15	3-Sep	40	40	0	-	-	-	-	-	-	-	-	-	-	-	-
2.-16	3-Sep	75	50	25	90	1.8	-	-	-	-	-	-	-	-	-	-
2.-17	3-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.-18	4-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.-19	4-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.-20	4-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.-21	4-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.-22	4-Sep	-	-	-	-	-	20	15	5	-	-	-	-	-	-	-
2.-23	18-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.-24	18-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.-1	27-Aug	-	-	-	-	-	-	-	-	-	-	12	3	9	2.7	0.92
3.-2	27-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.-3	27-Aug	350	250	100	800	3.2	-	-	-	-	-	-	-	-	-	-
3.-4	24-Aug	-	-	-	-	-	-	-	-	-	-	4	4	0	7	1.7
3.-5	27-Aug	16	16	0	-	-	-	-	-	-	-	-	-	-	-	-
3.-6	27-Aug	30	25	5	22	0.9	-	-	-	-	-	-	-	-	-	-
3.-7	26-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE K.2.1(13) RESULTS OF FLOOD DAMAGE SURVEY IN CHANE-PAILON AREA

No.	Date	AGRICULTURAL PRODUCTS														
		Soy Bean (ha)					Corn (ha)					Rice (ha)				
		Sown Land	Harvest	Damaged	Production (t)	Yield (t/ha)	Sown Land	Harvest	Damaged	Production (t)	Yield (t/ha)	Sown Land	Harvest	Damaged	Production (t)	Yield (t/ha)
3.-9	26-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.-10	26-Aug	50	38	12	76	2	-	-	-	-	-	-	-	-	-	-
3.-11	27-Aug	-	-	-	-	-	-	-	-	-	-	2.5	2.25	0.25	45	20
3.-12	3-Sep	20	18	2	27	1.5	-	-	-	-	-	20	20	0	8	0.4
3.-13	18-Sep	69	35	34	70	2	-	-	-	-	-	-	-	-	-	-
3.-14	18-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.-1	26-Aug	20	18.19	1.81	16.37	0.9	-	-	-	-	-	20	18.19	1.81	33.47	1.84
4.-2	25-Aug	-	-	-	-	-	8	0	0	0	0	-	-	-	-	-
4.-3	3-Sep	40	-	-	-	-	-	-	-	-	-	70	0	70	0	0
4.-4	3-Sep	-	-	-	-	-	0.5	0	5	0	0	0.6	0.1	0.4	-	-
5.-1	28-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.-2	3-Sep	500	440	60	660	1.5	400	400	0	120	0.3	-	-	-	-	-
5.-3	18-Sep	-	-	-	-	-	2	2	0	1.38	0.13	-	-	-	-	-
5.-4	21-Sep	42	42	0	105	2.5	-	-	-	-	-	-	-	-	-	-
5.-5	21-Sep	100	100	0	400	4	-	-	-	-	-	-	-	-	-	-
5.-6	21-Sep	-	-	-	-	-	10	6	-	-	-	5	2	-	-	-
5.-7	21-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.-1	27-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.-2	28-Aug	110	-	-	-	-	60	60	0	276	4.6	-	-	-	-	-
6.-3	28-Aug	90	85	5	212	2.5	30	18	12	90	5	-	-	-	-	-
6.-4	28-Aug	100	100	0	200	-	-	-	-	-	-	-	-	-	-	-
6.-5	28-Aug	50	50	0	60	1.2	-	-	-	-	-	-	-	-	-	-
6.-6	28-Aug	50	35	15	-	-	-	-	-	-	-	-	-	-	-	-
6.-7	3-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.-8	3-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE K.2.1(14) RESULTS OF FLOOD DAMAGE SURVEY IN CHANE-PAILON AREA

No.	Date	AGRICULTURAL PRODUCTS															Products that could be produced if no floods
		Sorghum (ha)					Wheat (ha)					Suger Cane (ha)					
		Sown Land	Harvest	Damaged	Production (t)	Yield (t/ha)	Sown Land	Harvest	Damaged	Production (t)	Yield (t/ha)	Sown Land	Harvest	Damaged	Production (t)	Yield (t/ha)	
1.-1	31-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.-2	31-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Manioc root-Rice-Corn
1.-3	31-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Sugar Cane
1.-4	31-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Soy Bean
1.-5	31-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.-6	31-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Rice-Corn-Soy Bean-Bean
1.-7	31-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.-8	31-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Rice-Manioc root
1.-9	31-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Rice-Corn
1.-10	31-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.-11	31-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Water Melon
1.-12	1-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Sugar Cane-Rice
1.-13	1-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Rice-Corn
1.-14	1-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.-15	1-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Rice-Manioc root-Corn
2.-1	27-Aug	-	-	-	-	-	300	300	0	9.2	3	-	-	-	-	-	Soy Bean-Rice
2.-2	27-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.-3	27-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.-4	25-Aug	-	-	-	-	-	50	50	0	100	2	-	-	-	-	-	Rice-Soy Bean-Wheat
2.-5	25-Aug	-	-	-	-	-	20	20	0	40	2	-	-	-	-	-	Corn
2.-6	31-Aug	-	-	-	-	-	-	-	-	-	-	20	20	0	120	6	Corn and Sugar Cane
2.-7	31-Aug	-	-	-	-	-	-	-	-	-	-	5	5	0	80	16	Soy Bean
2.-8	1-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Sorghum-Corn
2.-9	1-Sep	-	-	-	-	-	-	-	-	-	-	150	150	0	7500	50	-
2.-10	1-Sep	-	-	-	-	-	-	-	-	-	-	10	10	0	500	5	-
2.-11	1-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Corn-Rice
2.-12	3-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Corn-Rice
2.-13	3-Sep	-	-	-	-	-	-	-	-	-	-	8	8	0	640	80	Soy Bean-Rice
2.-14	3-Sep	50	50	0	-	-	80	80	0	96	1.2	-	-	-	-	-	Corn-Rice
2.-15	3-Sep	-	-	-	-	-	40	40	0	-	-	-	-	-	-	-	Soy Bean-Wheat
2.-16	3-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Soy Bean-Rice-Corn
2.-17	3-Sep	-	-	-	-	-	-	-	-	-	-	380	380	0	24700	65	Soy Bean
2.-18	4-Sep	-	-	-	-	-	-	-	-	-	-	113	70	43	2800	40	Soy Bean-Rice-Corn-Sorghum
2.-19	4-Sep	-	-	-	-	-	-	-	-	-	-	2	1.5	0.5	90	60	Potato-Rice
2.-20	4-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Potato-Rice-Corn
2.-21	4-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.-22	4-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.-23	18-Sep	-	-	-	-	-	-	-	-	-	-	11	10	1	500	50	Corn-Manioc root-Rice
2.-24	18-Sep	-	-	-	-	-	250	0	250	-	-	-	-	-	-	-	-
3.-1	27-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Rice
3.-2	27-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Soy-Sorghum-Wheat
3.-3	27-Aug	180	180	0	-	-	80	-	-	-	-	-	-	-	-	-	Soy-Sorghum-Wheat-Corn
3.-4	24-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Sugar Cane-Banana
3.-5	27-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.-6	27-Aug	20	17	3	14.5	0.85	-	-	-	-	-	-	-	-	-	-	Corn-Rice
3.-7	26-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE K.2.1(15) RESULTS OF FLOOD DAMAGE SURVEY IN CHANE-PAILON AREA

No.	Date	AGRICULTURAL PRODUCTS															Products that could be produced if no floods
		Sorghum (ha)					Wheat (ha)					Suger Cane (ha)					
		Sown Land	Harvest	Dama-ged	Produc-tion (t)	Yield (t/ha)	Sown Land	Harvest	Dama-ged	Produc-tion (t)	Yield (t/ha)	Sown Land	Harvest	Dama-ged	Produc-tion (t)	Yield (t/ha)	
3.-9	26-Aug	-	-	-	-	-	35	35	0	87.5	2.5	-	-	-	-	-	Soy-Pasture
3.-10	26-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	"
3.-11	27-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	"
3.-12	3-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3.-13	18-Sep	-	-	-	-	-	40	-	-	-	-	-	-	-	-	-	Soy-Sorghum-Wheat
3.-14	18-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	"
4.-1	26-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Sorghum-Wheat
4.-2	25-Aug	8	0	0	0	0	-	-	-	-	-	-	-	-	-	-	Pasture
4.-3	3-Sep	40	5	35	-	-	-	-	-	-	-	-	-	-	-	-	"
4.-4	3-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	"
5.-1	28-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	"
5.-2	3-Sep	200	200	0	50	0.25	200	200	0	360	1.8	-	-	-	-	-	"
5.-3	18-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Corn-Soy bean
5.-4	21-Sep	-	-	-	-	-	42	42	0	25	0.5	-	-	-	-	-	Sorghum-Sun Flower-Sugar Cane
5.-5	21-Sep	-	-	-	-	-	100	100	0	400	4	-	-	-	-	-	Soy Bean-Sorghum-Wheat
5.-6	21-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Rice-Soy Bean-Sorghum-Wheat-Potato-Greenness
5.-7	21-Sep	-	-	-	-	-	-	-	-	-	-	5	2.5	2.5	100	40	Rice-Soy Bean-Sorghum-Wheat-Mandioc root-Corn
6.-1	27-Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Corn-Soy bean
6.-2	28-Aug	150	120	30	72	0.6	-	-	-	-	-	-	-	-	-	-	"
6.-3	28-Aug	35	35	0	105	3	45	45	0	90	2	-	-	-	-	-	The same(rice-soy bean-Corn).
6.-4	28-Aug	100	100	0	200	2	50	50	0	100	2	-	-	-	-	-	"
6.-5	28-Aug	50	50	0	100	2	-	-	-	-	-	-	-	-	-	-	Corn-Soy bean
6.-6	28-Aug	-	-	-	-	-	50	35	15	-	-	-	-	-	-	-	"
6.-7	3-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	"
6.-8	3-Sep	-	-	-	-	-	100	100	0	100	1	-	-	-	-	-	"

TABLE K.2.1(16) RESULTS OF FLOOD DAMAGE SURVEY IN CHANE-PAILON AREA

No.	Date	LIVESTOCK PRODUCTS									
		Cow - Breeding		Vaca - Leche		Cerdos		Birds		Eggs per day	
		Head	Danos	Head	Danos	Cant.	Perdida	Cant.	Perdida	Cant.	Perdida
1.-1	31-Aug	-	-	-	-	2	0	30	30	-	-
1.-2	31-Aug	1	0	-	-	-	-	18	5	-	-
1.-3	31-Aug	8	0	-	-	3	0	30	15	-	-
1.-4	31-Aug	70	10	-	-	10	0	50	0	-	-
1.-5	31-Aug	-	-	-	-	-	-	10	10	-	-
1.-6	31-Aug	-	-	-	-	-	-	-	-	-	-
1.-7	31-Aug	6	0	-	-	-	-	10	0	-	-
1.-8	31-Aug	-	-	-	-	-	-	15	0	-	-
1.-9	31-Aug	80	0	-	-	2	0	32	20	-	-
1.-10	31-Aug	6	0	-	-	3	0	11	0	-	-
1.-11	31-Aug	18	0	-	-	2	0	25	0	-	-
1.-12	1-Sep	-	-	-	-	-	-	-	-	-	-
1.-13	1-Sep	-	-	-	-	-	-	10	6	-	-
1.-14	1-Sep	-	-	-	-	-	-	-	-	-	-
1.-15	1-Sep	-	-	-	-	-	-	-	-	-	-
2.-1	27-Aug	50	0	-	-	-	-	-	-	-	-
2.-2	27-Aug	-	-	-	-	-	-	-	-	-	-
2.-3	27-Aug	-	-	-	-	-	-	-	-	-	-
2.-4	25-Aug	130	0	-	-	-	-	-	-	-	-
2.-5	25-Aug	-	-	-	-	-	-	-	-	-	-
2.-6	31-Aug	-	-	-	-	-	-	-	-	-	-
2.-7	31-Aug	-	-	40	0	20	0	-	-	-	-
2.-8	1-Sep	400	20	-	-	-	-	42	4	-	-
2.-9	1-Sep	-	-	-	-	-	-	-	-	-	-
2.-10	1-Sep	-	-	-	-	5	0	-	-	-	-
2.-11	1-Sep	160	0	120	20	-	-	30	0	-	-
2.-12	3-Sep	11	0	-	-	1	0	20	0	-	-
2.-13	3-Sep	40	5	-	-	1	30	40	8	-	-
2.-14	3-Sep	-	-	-	-	-	-	-	-	-	-
2.-15	3-Sep	-	-	-	-	-	-	-	-	-	-
2.-16	3-Sep	-	-	-	-	-	-	-	-	-	-
2.-17	3-Sep	-	-	-	-	-	-	-	-	-	-
2.-18	4-Sep	200	20	-	-	-	-	50	15	-	-
2.-19	4-Sep	-	-	-	-	5	0	30	0	-	-
2.-20	4-Sep	10	0	-	-	-	-	60	11	-	-
2.-21	4-Sep	-	-	-	-	-	-	25	5	-	-
2.-22	4-Sep	680	0	-	-	-	-	100	0	-	-
2.-23	18-Sep	-	-	-	-	-	-	7	0	-	-
2.-24	18-Sep	-	-	-	-	-	-	-	-	-	-
3.-1	27-Aug	2	0	-	-	3	0	50	0	-	-
3.-2	27-Aug	300	0	-	-	-	-	-	-	-	-
3.-3	27-Aug	400	0	-	-	-	-	-	-	-	-
3.-4	24-Aug	20	5	-	-	4	0	30	0	-	-
3.-5	27-Aug	-	-	-	-	25	3	-	-	-	-
3.-6	27-Aug	-	-	-	-	200	0	4000	0	2600	0
3.-7	26-Aug	-	-	-	-	-	-	-	-	-	-

TABLE K.2.1(17) RESULTS OF FLOOD DAMAGE SURVEY IN CHANE-PAILON AREA

No.	Date	LIVESTOCK PRODUCTS									
		Cow - Breeding		Vaca - Leche		Cerdos		Birds		Eggs per day	
		Head	Danos	Head	Danos	Cant.	Perdida	Cant.	Perdida	Cant.	Perdida
3.-9	26-Aug	50	0	-	-	-	-	-	-	-	-
3.-10	26-Aug	-	-	-	-	-	-	-	-	-	-
3.-11	27-Aug	300	0	-	-	-	-	-	-	-	-
3.-12	3-Sep	-	-	-	-	-	-	-	-	-	-
3.-13	18-Sep	-	-	-	-	140	-	-	-	-	-
3.-14	18-Sep	30	0	-	-	-	-	-	-	-	-
4.-1	26-Aug	-	-	-	-	20	0	18	0	-	-
4.-2	25-Aug	200	6	-	-	20	0	50	0	-	-
4.-3	3-Sep	-	-	-	-	500	0	-	-	-	-
4.-4	3-Sep	3	0	-	-	36	0	10	0	-	-
5.-1	28-Aug	50	0	-	-	4	0	30	0	-	-
5.-2	3-Sep	-	-	-	-	-	-	-	-	-	-
5.-3	18-Sep	27	0	-	-	-	-	50	0	-	-
5.-4	21-Sep	-	-	-	-	-	-	50	-	-	-
5.-5	21-Sep	-	-	-	-	-	-	-	-	-	-
5.-6	21-Sep	38	0	-	-	9	0	20	0	-	-
5.-7	21-Sep	-	-	-	-	10	2	20	20	-	-
6.-1	27-Aug	310	0	-	-	-	-	-	-	-	-
6.-2	28-Aug	-	-	-	-	-	-	-	-	-	-
6.-3	28-Aug	-	-	-	-	-	-	-	-	-	-
6.-4	28-Aug	250	0	-	-	-	-	-	-	-	-
6.-5	28-Aug	-	-	-	-	-	-	-	-	-	-
6.-6	28-Aug	-	-	-	-	-	-	-	-	-	-
6.-7	3-Sep	80	0	25	0	-	-	20000	0	12000	0
6.-8	3-Sep	-	-	-	-	-	-	-	-	-	-

TABLE K.2.1(18) RESULTS OF FLOOD DAMAGE SURVEY IN SAN JUAN-ANTOFAGASTA AREA

No.	Date	AGRICULTURAL PRODUCTS														
		Soy Bean (ha)					Corn (ha)					Rice (ha)				
		Sown Land	Harvest	Damaged	Production (t)	Yield (t/ha)	Sown Land	Harvest	Damaged	Production (t)	Yield (t/ha)	Sown Land	Harvest	Damaged	Production (t)	Yield (t/ha)
1.-1	7-Sep	20	5	15	10	2	-	-	-	-	-	-	-	-	-	-
1.-2	7-Sep	-	-	-	-	-	-	-	-	-	-	5	5	0	0.9	0.18
1.-3	7-Sep	100	100	0	200	2	-	-	-	-	-	100	100	0	400	4
1.-4	9-Sep	10	20	2	-	-	-	-	-	-	-	-	-	-	-	-
1.-5	9-Sep	450	450	0	900	2	-	-	-	-	-	200	200	0	300	1.5
1.-6	9-Sep	25	25	0	50	2	-	-	-	-	-	20	20	0	30	1.5
1.-7	9-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.-8	9-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.-9	9-Sep	120	120	0	240	2	-	-	-	-	-	120	120	300	2.5	
1.-10	9-Sep	25	25	0	37.5	1.5	-	-	-	-	-	25	25	0	62.5	2.5
1.-11	9-Sep	-	-	-	-	-	-	-	-	-	-	20	16	4	27.2	1.7
1.-12	9-Sep	5	0	0	0	0		-	-	-	-	-	-	-	-	-
1.-13	10-Sep	20	10	10	30	3	-	-	-	-	-	20	20	0	34	1.7
1.-14	10-Sep	5	5	0	10	2	-	-	-	-	-	17	17	0	23.8	1.4
1.-15	10-Sep	15	0	0	0	0	-	-	-	-	-	15	15	0	25.5	1.7
1.-16	10-Sep	-	-	-	-	-	1	-	-	-	-	9	9	0	-	-
1.-17	10-Sep	15	8	7	14.4	1.8	-	-	-	-	-	-	-	-	-	-
1.-18	10-Sep	400	400	-	680	1.7	-	-	-	-	-	500	500	0	750	1.5
1.-19	10-Sep	250	250	0	375	1.7	-	-	-	-	-	120	120	0	3000	25
1.-20	10-Sep	100	100	0	150	1.5	-	-	-	-	-	100	100	0	180	1.8
1.-21	10-Sep	10	10	0	15	1.5	-	-	-	-	-	10	10	0	21.25	2.125
1.-22	10-Sep	40	40	0	80	2	-	-	-	-	-	40	40	0	90	2.25
1.-23	11-Sep	-	-	-	-	-	-	-	-	-	-	30	30	0	105	3.5
1.-24	11-Sep	70	55	15	-	-	-	-	-	-	-	-	-	-	-	-
1.-25	14-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.-26	15-Sep	170	170	0	340	2	-	-	-	-	-	155	140	15	462	3.3
1.-27	15-Sep	20	20	0	50	2.5	-	-	-	-	-	20	20	0	36	1.8
1.-28	17-Sep	150	140	10	420	2.5	-	-	-	-	-	-	-	-	-	-
2.-1	8-Sep	250	220	30	396	1.8	-	-	-	-	-	250	220	30	660	3
2.-2	11-Sep		-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.-3	11-Sep	50	50	0	100	1.5	-	-	-	-	-	-	-	-	-	-
2.-4	11-Sep	100	100	0	150	1.5	100	100	0	200	2	-	-	-	-	-
2.-5	11-Sep	5	3	2	6	2	-	-	-	-	-	5	5	0	-	-
2.-6	15-Sep	-	-	-	-	-	-	-	-	-	-	4	3	1	?	?
2.-7	17-Sep	-	-	-	-	-	1.5	1.5	0	1.32	1.15	1.5	1.5	0	1.32	1.15
2.-8	17-Sep	-	-	-	-	-	-	-	-	-	-	50	35	15	63.25	1.8
3.-1	11-Sep	15	15	0	30	2	-	-	-	-	-	15	15	0	28	1.8
3.-2	11-Sep	70	70	0	175	2.5	-	-	-	-	-	80	80	0	144	1.8
3.-3	14-Sep	-	-	-	-	-	-	-	-	-	-	10	9	1	36.9	4.1
3.-4	14-Sep	-	-	-	-	-	-	-	-	-	-	4	4	0	15	3.7
4.-1	11-Sep	25	25	0	50	2	-	-	-	-	-	25	23	2	69	3
4.-2	14-Sep	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.-3	14-Sep	15	15	0	18	1.2	-	-	-	-	-	25	25	0	50	2
4.-4	14-Sep	15	12	3	14.4	1.2	-	-	-	-	-	15	12	3	16.8	1.4
4.-5	14-Sep	6	6	0	18	3	-	-	-	-	-	6	6	0	6.9	1.15
5.-1	11-Sep	7	1	6	2	2	-	-	-	-	-	7	3	4	12	4
5.-2	11-Sep	15	13	2	26	2	-	-	-	-	-	15	12	3	-	-
5.-3	11-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.-4	11-Sep	-	-	-	-	-	-	-	-	-	-	15	15	0	20.7	1.38

TABLE K.2.1(19) RESULTS OF FLOOD DAMAGE SURVEY IN SAN JUAN-ANTOFAGASTA AREA

No.	Date	AGRICULTURAL PRODUCTS														
		Soy Bean (ha)					Corn (ha)					Rice (ha)				
		Sown Land	Harvest	Damaged	Production (t)	Yield (t/ha)	Sown Land	Harvest	Damaged	Production (t)	Yield (t/ha)	Sown Land	Harvest	Damaged	Production (t)	Yield (t/ha)
5.-5	14-Sep	75	70	5	140	2	-	-	-	-	-	75	70	5	120.8	1.7
5.-6	14-Sep	-	-	-	-	-	-	-	-	-	-	10	7	3	-	-
5.-7	14-Sep	40	35	5	-	-	-	-	-	-	-	-	-	-	-	-
6.-1	7-Sep	-	-	-	-	-	-	-	-	-	-	25	25	0	100	4
6.-2	8-Sep	70	70	0	175	2.5	-	-	-	-	-	-	-	-	-	-
6.-3	8-Sep	-	-	-	-	-	-	-	-	-	-	200	200	0	360	1.8
6.-4	8-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.-5	8-Sep	-	-	-	-	-	-	-	-	-	-	30	30	0	90	3
6.-6	8-Sep	10	10	0	12	1.2	-	-	-	-	-	30	25	5	62.5	2.5
6.-7	9-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.-8	9-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.-9	9-Sep	45	45	0	81	1.8	-	-	-	-	-	45	45	0	135	3
6.-10	15-Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.-11	16-Sep	-	-	-	-	-	-	-	-	-	-	30	30	0	90	3
6.-12	16-Sep	-	-	-	-	-	-	-	-	-	-	30	22	8	-	-

TABLE K.2.1(20) RESULTS OF FLOOD DAMAGE SURVEY IN SAN JUAN-ANTOFAGASTA AREA

No.	Date	AGRICULTURAL PRODUCTS					
		Sorghum (ha)					Products that could be produced if no floods
		Sown Land	Harvest	Damaged	Production (t)	Yield (t/ha)	
1.-1	7-Sep	-	-	-	-	-	Rice
1.-2	7-Sep	-	-	-	-	-	Soy Bean
1.-3	7-Sep	-	-	-	-	-	-
1.-4	9-Sep	-	-	-	-	-	Citric-Sun Flowers-Soy Bean-Corn
1.-5	9-Sep	-	-	-	-	-	-
1.-6	9-Sep	-	-	-	-	-	-
1.-7	9-Sep	-	-	-	-	-	Rice
1.-8	9-Sep	-	-	-	-	-	Rice
1.-9	9-Sep	-	-	-	-	-	Soy Bean-Rice
1.-10	9-Sep	-	-	-	-	-	Citric-Soy Bean-Rice
1.-11	9-Sep	-	-	-	-	-	Sorghum-Soy Bean
1.-12	9-Sep	-	-	-	-	-	Rice
1.-13	10-Sep	-	-	-	-	-	Soy Bean
1.-14	10-Sep	-	-	-	-	-	Potato - Corn
1.-15	10-Sep	-	-	-	-	-	Potato
1.-16	10-Sep	-	-	-	-	-	Rice-Corn
1.-17	10-Sep	-	-	-	-	-	Soy Bean
1.-18	10-Sep	-	-	-	-	-	-
1.-19	10-Sep	-	-	-	-	-	-
1.-20	10-Sep	-	-	-	-	-	-
1.-21	10-Sep	-	-	-	-	-	Soy Bean -Rice
1.-22	10-Sep	-	-	-	-	-	Citric
1.-23	11-Sep	-	-	-	-	-	-
1.-24	11-Sep	-	-	-	-	-	Soy Bean-Citric
1.-25	14-Sep	-	-	-	-	-	Rice
1.-26	15-Sep	-	-	-	-	-	Corn-Sun Flower
1.-27	15-Sep	-	-	-	-	-	Citric-Comercial Trees
1.-28	17-Sep	-	-	-	-	-	-
2.-1	8-Sep	-	-	-	-	-	-
2.-2	11-Sep	-	-	-	-	-	Rice-Soy Bean-Corn
2.-3	11-Sep	-	-	-	-	-	Citric
2.-4	11-Sep	-	-	-	-	-	-
2.-5	11-Sep	-	-	-	-	-	-
2.-6	15-Sep	-	-	-	-	-	Soy Bean
2.-7	17-Sep	-	-	-	-	-	-
2.-8	17-Sep	-	-	-	-	-	Rice
3.-1	11-Sep	-	-	-	-	-	Greennes
3.-2	11-Sep	-	-	-	-	-	Soy Bean-Sorghum-Rice
3.-3	14-Sep	-	-	-	-	-	Soy Bean-Corn
3.-4	14-Sep	-	-	-	-	-	Soy Bean-Sorghum-Rice-Corn-Manioc root-Bean
4.-1	11-Sep	-	-	-	-	-	The same(soy bean).
4.-2	14-Sep	-	-	-	-	-	Manioc root-Potato-Vegetables
4.-3	14-Sep	-	-	-	-	-	The same (soy bean and rice).
4.-4	14-Sep	-	-	-	-	-	The same (soy bean and rice).
4.-5	14-Sep	-	-	-	-	-	-
5.-1	11-Sep	-	-	-	-	-	Rice-Soy Bean-Corn
5.-2	11-Sep	-	-	-	-	-	The same (soy bean and rice).
5.-3	11-Sep	-	-	-	-	-	-
5.-4	11-Sep	-	-	-	-	-	The same (soy bean and rice).

TABLE K.2.1(21) RESULTS OF FLOOD DAMAGE SURVEY IN SAN JUAN-ANTOFAGASTA AREA

No.	Date	AGRICULTURAL PRODUCTS					
		Sorghum (ha)					Products that could be produced if no floods
		Sown Land	Harvest	Damaged	Production (t)	Yield (t/ha)	
5.-5	14-Sep	-	-	-	-	-	The same (soy bean and rice)
5.-6	14-Sep	-	-	-	-	-	Soy bean
5.-7	14-Sep	-	-	-	-	-	-
6.-1	7-Sep	-	-	-	-	-	-
6.-2	8-Sep	-	-	-	-	-	Sorghum-Rice
6.-3	8-Sep	-	-	-	-	-	Soy Bean-Sorghum-Rice-Corn
6.-4	8-Sep	-	-	-	-	-	Soy Bean and Rice.
6.-5	8-Sep	-	-	-	-	-	
6.-6	8-Sep	-	-	-	-	-	Sorghum
6.-7	9-Sep	-	-	-	-	-	
6.-8	9-Sep	-	-	-	-	-	
6.-9	9-Sep	-	-	-	-	-	Rice-Soy Bean-Corn
6.-10	15-Sep	-	-	-	-	-	-
6.-11	16-Sep	-	-	-	-	-	Soy Bean
6.-12	16-Sep	-	-	-	-	-	Sorghum

TABLE K.2.1(22) RESULTS OF FLOOD DAMAGE SURVEY IN SAN JUAN-ANTOFAGASTA AREA

No.	Date	LIVESTOCK PRODUCTS									
		Cow - Breeding		Vaca - Leche		Cerdos		Birds		Eggs per day	
		Head	Danos	Head	Danos	Cant.	Perdida	Cant.	Perdida	Cant.	Perdida
1.-1	7-Sep	-	-	-	-	-	-	-	-	-	-
1.-2	7-Sep	10	0	-	-	-	-	20	0	-	-
1.-3	7-Sep	-	-	-	-	-	-	-	-	-	-
1.-4	9-Sep	-	-	-	-	-	-	-	-	-	-
1.-5	9-Sep	400	0	-	-	-	-	-	-	-	-
1.-6	9-Sep	-	-	-	-	-	-	8000	0	6000	0
1.-7	9-Sep	-	-	-	-	3	0	15	0	-	-
1.-8	9-Sep	-	-	-	-	5	0	10	0	-	-
1.-9	9-Sep	-	-	-	-	-	-	-	-	-	-
1.-10	9-Sep	-	-	-	-	-	-	8000	0	6000	-
1.-11	9-Sep	-	-	-	-	-	-	-	-	-	-
1.-12	9-Sep	-	-	-	-	-	-	10	5	-	-
1.-13	10-Sep	-	-	-	-	-	-	-	-	-	-
1.-14	10-Sep	10	0			15	0	50	0	-	-
1.-15	10-Sep	-	-	-	-	-	-	10	0	-	-
1.-16	10-Sep	10	0	-	-	-	-	20	0	-	-
1.-17	10-Sep	-	-	-	-	2	0	20	0	-	-
1.-18	10-Sep	200	-	-	-	-	-	-	-	-	-
1.-19	10-Sep	-	-	-	-	-	-	-	-	-	-
1.-20	10-Sep	-	-	-	-	-	-	-	-	-	-
1.-21	10-Sep	-	-	-	-	-	-	-	-	-	-
1.-22	10-Sep	-	-	-	-	-	-	18000	500	15000	-
1.-23	11-Sep	-	-	-	-	-	-	-	-	-	-
1.-24	11-Sep	-	-	-	-	-	-	-	-	-	-
1.-25	14-Sep	200	0	-	-	-	-	-	-	-	-
1.-26	15-Sep	-	-	-	-	-	-	16000	0	14400	0
1.-27	15-Sep	-	-	-	-	-	-	6000	0	4500	0
1.-28	17-Sep	-	-	-	-	-	-	-	-	-	-
2.-1	8-Sep	-	-	-	-	-	-	-	-	-	-
2.-2	11-Sep	-	-	-	-	-	-	1600	0	800	0
2.-3	11-Sep	50	0	-	-	-	-	-	-	-	-
2.-4	11-Sep	-	-	-	-	-	-	-	-	-	-
2.-5	11-Sep	28	0	-	-	3	0	29	0	-	-
2.-6	15-Sep	-	-	-	-	-	-	-	-	-	-
2.-7	17-Sep	-	-	-	-	-	-	20	0	-	-
2.-8	17-Sep	-	-	-	-	-	-	30	0	-	-
3.-1	11-Sep	-	-	-	-	-	-	-	-	-	-
3.-2	11-Sep	70	15	-	-	4	1	40	20	-	-
3.-3	14-Sep	15	0	-	-	-	-	-	-	-	-
3.-4	14-Sep	-	-	-	-	-	-	-	-	-	-
4.-1	11-Sep	-	-	-	-	2	0	15	0	-	-
4.-2	14-Sep	-	-	3	0	2	0	35	15	-	-
4.-3	14-Sep	30	0	-	-	3	0	30	0	-	-
4.-4	14-Sep	-	-	-	-	2	0	25	3	-	-
4.-5	14-Sep	15	0	-	-	-	-	20	0	-	-
5.-1	11-Sep	10	0	-	-	-	-	-	-	-	-
5.-2	11-Sep	8	0	-	-	2	0	10	0	-	-
5.-3	11-Sep	250	0	-	-	-	-	-	-	-	-
5.-4	11-Sep	6	0	-	-	2	0	10	0	-	-

TABLE K.2.1(23) RESULTS OF FLOOD DAMAGE SURVEY IN SAN JUAN-ANTOFAGASTA AREA

No.	Date	LIVESTOCK PRODUCTS									
		Cow - Breeding		Vaca - Leche		Cerdos		Birds		Eggs per day	
		Head	Danos	Head	Danos	Cant.	Perdida	Cant.	Perdida	Cant.	Perdida
5.-5	14-Sep	15	0	-	-	-	-	30	0	-	-
5.-6	14-Sep	-	-	-	-	1	0	5	0	-	-
5.-7	14-Sep	-	-	-	-	-	-	-	-	-	-
6.-1	7-Sep	-	-	-	-	-	-	12000	-	11000	-
6.-2	8-Sep	40	0	-	-	-	-	-	-	-	-
6.-3	8-Sep	-	-	-	-	-	-	-	-	-	-
6.-4	8-Sep	1000	0	-	-	-	-	-	-	-	-
6.-5	8-Sep	-	-	20	0	-	-	-	-	-	-
6.-6	8-Sep	80	0	25	0	-	-	20000	0	12000	0
6.-7	9-Sep	-	-	20	0	-	-	-	-	-	-
6.-8	9-Sep	-	-	-	-	3	0	35	0	-	-
6.-9	9-Sep	2	0	-	-	7	0	20	0	-	-
6.-10	15-Sep	30	0	-	-		-	-	-	-	-
6.-11	16-Sep	120	0	-	-	-	-	4000	0	3200	0
6.-12	16-Sep	-	-	-	-	-	-	-	-	-	-

QUESTIONNAIRE FORM OF FLOOD SURVEY

ESTUDIO DE FACTIBILIDAD

SOBRE EL

CONTROL DE INUNDACIONES

EN LA

REGION RURAL NORTE DE SANTA CRUZ

EN LA

REPUBLICA DE BOLIVIA

Formato de Encuesta sobre condiciones de inundación

No. de Encuesta	_____		
Fecha	_____	Encuestador	_____
Departamento	_____	Municipio	_____
Ciudad	_____	Villa	_____
Caserío	_____	Cantón	_____

ENCUESTA SOBRE INUNDACIONES Y DANOS OCASIONADOS

Referencia	No.	Grupo	No.
Fecha	/ / 1998	Nombre encuestador	

A. Lugar de la entrevista

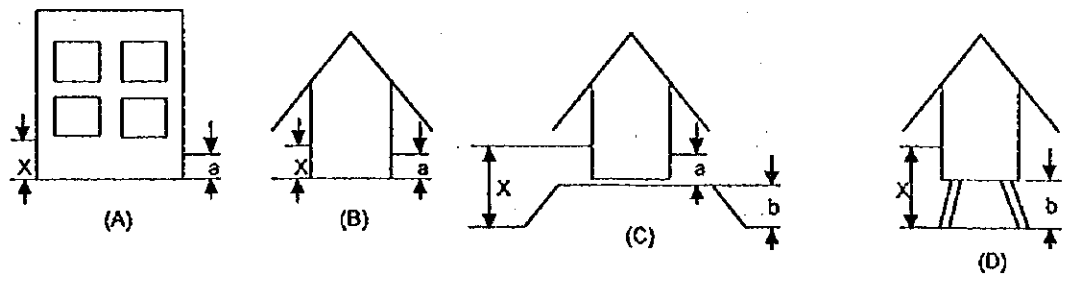
Provincia o Municipio	
Canton	
Comunidad	
Localizado a .. km de ...	

B. Clase de Edificio

Lujosa	Residencia	Oficina	
Media	Residencia	Escuela	
Baja	Residencia	Hospital	
Tienda Comercial		Clinica	
Indust. Fabrica		Iglesia	
			Otros

C. Tipo de Edificio o Vivienda

Tipo	A / B / C / D	
Area Total construida (a)		cm
Elevacion de Terreno Natural (b)		cm



Vivienda de pisos		Floors	Hight Class
Area total construida		m^2	Medium Class
Ano de construccion	19.....		Low Class
Costo de Construccion		Bs.	

D. Estadistica de inundaciones

(x)

Mes/Ano	Danos	Profindidad del Agua(cm)	Duracion (hora/ dia)	Causa de inundacion		
				Rio (a)	Drenaje (b)	Otros (c)
1995/96	Conoce No conoce					
1996/97	Conoce No conoce					
1997/98	Conoce No conoce					
Otros	Conoce No conoce					
Otros	Conoce No conoce					
Otros	Conoce No conoce					
Otros	Conoce No conoce					
Otros	Conoce No conoce					

Causas de inundacion Si (a)
Si (c)

Nombre de rio	
Causas	

QUESTIONNAIRE FORM OF FLOOD DAMAGE SURVEY

ESTUDIO DE FACTIBILIDAD

SOBRE EL

CONTROL DE INUNDACIONES

EN LA

REGION RURAL NORTE DE SANTA CRUZ

EN LA

REPUBLICA DE BOLIVIA

Formato de Encuesta sobre Daños de inundación

Bienes Muebles

No. de Encuesta .....

Fecha ..... Encuestador .....

Departamento ..... Municipio .....

Ciudad ..... Villa .....

Caserío ..... Cantón .....

1. Condiciones de la Tenencia de la tierra

Area total del predio (ha.) Area propia (ha.)

2. Uso de la Tierra

Cultivos Anuales	Cultivos Permanentes	Pasto Natural	Pasto Mejorado	Barbecho	Abandonada	Otros	Total
ha	ha	ha	ha	ha	ha	ha	ha

4. Si no sufriera problemas de inundación, indique qué productos podría producir.

1)	2)	3)
4)	5)	6)

3. Daños por Inundación en 1997

Indique cuántos días y profundidad. ..... Días ..... Cm

1) Cultivo

	1996					1997												1998								
Epoca de Inun.																							Area Sembrada	Area Cosechada	Prod	Rend.
Cultivo	A	S	O	N	D	E	F	M	A	M	J	J	A	S	O	N	D	E	F	M	A	M	(ha)	(ha)	(ton)	(ton/ha)

Nota : Indicar con aspas el periodo comprendido desde la siembra hasta la cosecha

2) Pasto

	Area Total	Dañada		Area Total	Dañada
Pasto Natural	(ha)	(ha)	Pasto Mejorado	(ha)	(ha)

3) Producción Pecuaria

	Cabezas	Pérdidas	Producción en Epoca de Inundaciones	Daños
Vacas Cría				
Leche			l/día X día	l/día X día
Cria y Leche			l/día X día	l/día X día
Cerdos				
Aves Carne				
Huevos			/día X día	/día X día
Otros				

QUESTIONNAIRE FORM OF AGRICULTURAL SITUATION

EL ESTUDIO DE FACTIBILIDAD PLAN

PARA EL

CONTROL DE INUNDACIONES

EN LA

REGION RURAL NORTE DE SANTA CRUZ

EN LA

REPUBLICA DE BOLIVIA

Formato de Encuesta Agro-Socio-Ecónomica

No. de Encuesta .....

Fecha ..... Encuestador .....

Provincia ..... Municipio .....

Canton ..... Lugar .....

Nacionalidad .....

1. Personas que componen el hogar del propietario

El dueño vive en la propiedad. Si ( )No ( )

Si usted es el dueño de la propiedad llenar el item 1, si usted no es dueño No. de personas que componen su familia. ( )

	Sexo	Parentesco	Edad	Trabajo actual	Nivel educativo	Ingreso anual
1	M F					
2	M F					
3	M F					
4	M F					
5	M F					
6	M F					
7	M F					
8	M F					
9	M F					
10	M F					

No de empleados - en el campo ( ) Salario aproximado (Bs/M)
Jornal aproximado (Bs/M)
- Otros ( ) Salario aproximado(Bs/M)
Jornal aproximado (Bs/M)

2. Caracteristica de Propiedad

Area total del predio (Ha)Area propia (Ha)
Area arrendada (Ha) Otra forma de tenencia ( )
Costos de arrendamiento por ha (Bs/Campaña)

3. Uso de la Tierra

Cultivos anuales	Cultivos permanentes	Pastos	Barbecho	Abandono	Otros	Total
(ha)	(ha)(	ha)	(ha)	(ha)	(ha)	(ha)

Tierra desmontada (ha) Tierra sin desmontar (ha)

4. Uso de Insumos

Usa semilla certificada ? Sí ( ) No ( )

Si usa semilla certificada, indique las cantidades de semilla que utiliza y sus precios

Cultivo	Cantidad de semilla utilizada	Superficie sembrada(Ha)	Precio de la semilla (Bs/Kg)	Cantidad de la semilla(Kg)	Lugar de compra

Utiliza abonos ? Sí ( ) No ( )

Si utiliza abonos, indique las cantidades aproximadas que aplica por cultivo por hectarea y costo.

Nombre del abono	Cultivo	Superficie (Ha)	Cantidad de abono aplicada (Kg/Ha)	Precio del abono (B/Kg)	Cantidad de compra (Kg)	Lugar de compra

Uso de Pesticidas

Aplica insecticidas ? Sí ( ) No ( )
Herbicidas ? Sí ( ) No ( )
Fungicidas ? Sí ( ) No ( )

Si usa pesticidas, indique el nombre de los productos, en qué cultivos los emplea y contra que plaga o enfermedad y las cantidades que aplica.

Nombre del pesticida	Cantidad de pesticida aplicada (/Ha)	Cultivo tratado	Plaga o enfermedad	Precio del pesticida	Volumen de compra	Lugar de compra

5. Comercializacion

Donde vende sus productos agrícolas ?
A quien vende sus productos ?
(1) Al mayorista (2) Al minorista (3) A una cooperativa
(4) A otros .....

Indique a que precio vendió su última cosecha indicando la fecha aproximada de venta.

Producto	Precio de venta	Cantidad	A quien vendió
			(1) (2) (3) (4)
			(1) (2) (3) (4)
			(1) (2) (3) (4)
			(1) (2) (3) (4)
			(1) (2) (3) (4)

De los productos que cosechó, que cantidad dedicó a la venta y que cantidad consumieron en su casa (Autoconsumo).

Producto	Venta (Kg)	Autoconsumo (Kg)

6. Maquinaria e Implementos de Labranza

En la preparación de su terreno emplea :
Tractor (ha) Bueyes (ha) Mulas (ha)
Otro (ha)
Arrienda tractor ? Sí ( ) No ( )
Si arrienda tractor, paga : por hora ? .....Bs por Ha ? .....Bs
Indique qué maquinaria y equipo posee

Item	Capacidad	No	Fecha de compra	Estado		
				Excelente	Regular	Deteriorado
Tractor						
Cosechadora						
Camión						
Camioneta						
Arado de hierro						
Rastra						
Sembradora						
Pulverizador						
Espolveador						
Equipo de bombeo						
Nivelador						
Otros						

7. Riego y Drenaje

Realiza riego ? Sí ( ) No ( )
Si realiza riego, detallar ;

Cultivo	Superficie (Ha)	Tipo		
		Gravedad	Aspersión	Otros
		(	( )	
		(	( )	
		(	( )	
		(	( )	
		(	( )	

En caso de que no realice riego, indique si desea realizarlo ? Sí ( ) No ( )

Indique en qué cultivos desearía realizar riego ? 1).....2) .....

3).....4) .....

Tiene usted problema con la falta de drenaje ? Sí ( ) No ( )
Si tuviera buen drenaje que tipo de cultivo desearía producir ?

1) ..... 2) ..... 3) ..... 4) .....

8. Producción Pecuaria

Especie	Cabezas	Precio promedio de venta (Bs)	Cantidad vendida /a	Dónde vende
Ganado de carne				
Ganado de leche				
Ganado de doble propósito				
Cerdos				
Aves ponederas				
Aves parrilleras				
Otro				

Leche	Cantidad vendida (Bs/M)	Precio de venta (Bs/l)	Dónde vende

Huevos	Cantidad vendida (Bs/M)	Precio de venta (Bs)	Dónde vende

9. Asistencia Técnica

Recibe asistencia técnica ? Sí ( ) No ( )

Cual es entidad que le ha brindado asistencia técnica ? .....

En que área ha recibido asistencia técnica ?
Manejo de suelos ( ) Uso agua de riego ( )
Siembra ( ) Abono ( )
Drenaje ( ) Control de plagas y enfermedades ( )
Comercialización ( ) Crédito ( )
Otros .....
Se ha beneficiado con la asistencia técnica ? Sí ( ) No ( )

.....

10. Crédito Agrícola

Recibió alguna vez crédito agrícola ?

Sí ( ) : Qué entidad .....

Para qué actividad .....

Que año .....

Valor .....

Plazo .....

Interés .....%

No ( ) : Por qué no tiene crédito agrícola ? .....

Suficiente con recursos propios Sí ( )

No ( ) : Especificar : .....

12. Organización

Pertenece usted a alguna asociación, cooperativa, junta, asociación comunal u otra organización ?

Sí ( ) Cual ? .....
No ( ) Por qué no pertenece .....

13. Inundación

Sufre o ha sufrido daños por inundaciones ? Sí ( ) No ( )

Si sufre inundaciones :

Indique la frecuencia : Anual ( ) Otros .....

Indique cuántos días y a qué profundidad ? .....Días ..... Cm

Si no sufriera problemas de inundación, indique qué productos podría producir ?

1) ..... 2) ..... 3) .....

13. Datos de la Vivienda del Propietario

Abastecimiento de agua :
Noria ( ), De río, quebrada o manantial ( )
De pozo ( )
Otros : Especificar .....

La vivienda cuenta con energía eléctrica ?
Sí ( ) : Red de electrificación ( ) Planta propia ( )
No ( )

Sistema sanitario de la vivienda ?
Conectado a alcantarillado ( ) Conectado a pozo séptico ( )
Letrina ( )No tiene ( )

14. Problemáticas

Terreno no productivo : Sí ( ) No ( )

Falta de agua : Sí ( ) No ( )

Tamaño de finca reducido : Sí ( ) No ( )

Falta de asistencia técnica : Sí ( ) No ( )

Falta de crédito agrícola : Sí ( ) No ( )

Falta de disponibilidad de semilla certificada : Sí ( ) No ( )

Inestabilidad de precios : Sí ( ) No ( )

Falta de centro de acopio y otros infraestructuras de comercialización : Sí ( ) No ( )

Otras : .....

Indique que productos desearía cultivar ?

1) ..... 2) ..... 3) .....

Indique las razones : ( ) 1) Económicas (Ganancia altas, Costos bajos)

( ) 2) Técnicas (Facilidad de cultivo)

( ) 3) Otros .....

TABLE OF RESULT OF FLOOD SURVEY

SUPPORTING REPORT L

TERMS OF REFERENCE FOR SUPPLEMENTAL SURVEY

TABLE OF CONTENTS

SUPPORTING REPORT L TERMS OF REFERENCE FOR SUPPLEMENTAL SURVEY

1. Supplemental Survey

The supplemental surveys were conducted during the field investigation period of the Study Team in the Chane – Pailon Area and the San Juan – Antofagasta Area from August to September 1998. Those surveys were:

- The topographic survey,
- The standard soil penetration test (SPT),
- The environmental survey.

2. The Topographic Survey

The longitudinal and cross-sectional data are necessary in the design of flood control facilities and cost estimate. This survey was carried out along the main rivers in the Chane – Pailon Area and the San Juan – Antofagasta Area with a distance pitch of about 1 km and a total length of about 181 km. Detail of the survey was shown in the attached specifications and the Data Book.

3. The Standard Soil Penetration Test (SPT)

The soil survey was conducted in the San Juan – Antofagasta Area. The standard soil penetration test (SPT) was used to test the soils in that area with a total length of about 9 km and a 1 km distance pitch. Detail of the survey was shown in the attached specifications and the Data Book.

4. The Environmental Survey

The environmental survey was conducted in the Chane – Pailon Area and the San Juan – Antofagasta Area for the evaluation of the impacts caused by the implementation of the flood mitigation plan. The possible impacts considered in the survey were:

- The natural environment
- The social environment
- The pollution

Detail of the survey was shown in the attached specifications and the Data Book.

SPECIFICATION FOR THE TOPOGRPHIC SURVEY

SPECIFICATIONS FOR THE TOPOGRAPHIC SURVEY FOR THE FEASIBILITY STUDY ON FLOOD CONTROL IN THE NORTHERN RURAL REGION OF SANTA CRUZ IN THE REPUBLIC OF BOLIVIA

CHAPTER 1 GENERAL

Section 1 Background

In compliance with the Scope of Work for the Feasibility Study on Flood Control in the Northern Rural Region of Santa Cruz in the Republic of Bolivia, which was agreed upon between the AGRICONSULT SANTA CRUZ LTDA. and the Japan International Cooperation Agency (JICA) on September 23, 1998, JICA has decided to carry out the Topographic Survey Work and assigned JICA Study Team for execution of the works.

The Topographic Survey shall be carried out in the Republic of Bolivia, by the AGRICONSULT SANTA CRUZ LTDA. (Agency) under supervision of the Study Team's Supervisor.

Section 2 Specifications

The survey works shall be conducted by the topographic mapping method in accordance with the Specifications written hereunder.

Section 3 Scope of Work

The work to be done is to carry out the Longitudinal Profile and the Cross Section Survey in the proposed site of the Northern Rural Region of Santa Cruz in the Republic of Bolivia.

The quantity of the work is estimated as follows:

- Longitudinal/Transversal Profile survey: approx. 181.7 km

Section 4 Unit to be Used

The measurement unit shall be the Metric System.

Section 5 Language

The language to be used shall be English.

CHAPTER 2 DETAILED SPECIFICATION

Section 1 Method of Work

All the works to be done shall be executed in accordance with this Specification or where not specified therein, in accordance with such instructions and orders that the Supervisor of the Study Team may give.

Section 2 Quantity and Location of Work

The measurement must be each 1 (one) kilometer.

	Distance	Cross Section Width
A. Rivers & Tributaries		
1.Chane river:	27.0 km	200 m
2.Paillon river:	32.0 km	200 m
3.Yapacanito river:	14.1 km	100 m
4.Jochi / Tacuaral rivers:	20.3 km	100 m
B. Roads on Banks		
1. San Juan/Antofagasta region:	9.0 km	100 m
C. Main Drains		
1. Paillon river area:	6.5 km	100 m
2. Okinawa main drain:	21.5 km	100 m
3. San Juan area:	41.3 km	100 m
4. Antofagasta area:	10.0 km	100 m
Total	181.7 km	

Section 3 Longitudinal Profile and Transversal Section Survey

(Preparation)

The timber piles shall be established on one side of river in advance, located perpendicular to the river centerline, as instructed by the Study Team and/or on the location maps.

(Leveling for the timber piles)

Elevation of the each timber pile shall be determined by direct leveling or GPS surveying from existing benchmarks established on the national highway by IGM.

Accuracy : 6cm x $\sqrt{S}$, where "S" in kilometer

(Transversal section survey)

Transversal section survey shall be carried out by direct leveling, echo sounding or trigonometric leveling. The cross sections shall be approximately 100m to 200m in width, and surveyed at approximately 1 km intervals along the river centerline. If the supervisor

judges that additional cross section survey must be added in locations as hydraulic control sections such as narrow pass or bridges, it must be performed in accordance to the supervisor order.

Accuracy : 5cm + 3cm x $\sqrt{S}$, where "S" in meter
Drawing : H= 1/100 ~ 1/4,000
(Scale) V= 1/100 ~ 1/200

(Longitudinal profile survey)
Longitudinal profile shall be drawn according to the results of elevations, measured during the cross section survey of the river center.

Drawing: H= 1/50,000 ~ 1/100,000
(Scale) V= 1/100 ~ 1/1,000

CHAPTER 3 WORK SCHEDULE

The works shall be completed within 60 days from commencement date, by the end of October, 1998.

Working Schedule

Item	1998						1999		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Topographic Survey									

CHAPTER 4 FINAL PRODUCTS TO BE DELIVERED

The Agency shall deliver 2 sets each of the following final result and products to the Study Team:

(1) Transversal sections drawing
(2) Copy of Transversal sections
(3) Longitudinal profile drawing
(4) Copy of Longitudinal profile
(5) Index map
(6) Spatial map plotting the transversal survey points

SPECIFICATION FOR THE STANDARD SOIL PENETRATION TEST (SPT)

SPECIFICATIONS FOR THE STANDARD PENETRATION TEST (SPT)
FOR
THE FEASIBILITY STUDY
ON
FLOOD CONTROL IN THE NORTHERN RURAL REGION OF SANTA CRUZ
IN
THE REPUBLIC OF BOLIVIA

CHAPTER 1 GENERAL

Section 1 Background

In compliance with the Scope of Work for the Feasibility Study on Flood Control in the Northern Rural Region of Santa Cruz in the Republic of Bolivia, which was agreed upon between the Servicios Ingenieria Desarrollo_and the Japan International Cooperation Agency (JICA) on 5th of October , 1998, JICA has decided to carry out the Standard Penetration Test (SPT) and assigned JICA Study Team for the works execution.

The Standard Penetration Test (SPT) shall be carried out in the Republic of Bolivia, by the Agency under supervision of the Study Team's Supervisor.

Section 2 Specifications

The investigation works shall be conducted by the method of the Standard Penetration Test (SPT) in accordance with the Specifications written hereunder.

Section 3 Scope of Work

The work to be done is to carry out the Standard Penetration Test (SPT) in the proposed site of the Northern Rural Region of Santa Cruz in the Republic of Bolivia.

The quantity of the work is estimated as follows:

- Along the 9 km of the projected banking line : 10 points

Section 4 Unit to be Used

The measurement units shall in the International System (SI)

Section 5 Language

Language to be used shall be English.

CHAPTER 2 DETAIL SPECIFICATION

Section 1 Method of Work

All the work to be done shall be executed in accordance with this Specification or where not specified therein, in accordance with such instruction and orders as the Supervisor of the Study Team may give.

Section 2 Quantity and Location of Work

The number of the Standard Penetration Test (SPT) points are 10 (ten), located in the projected banking line of 9 km in the San Juan / Antofagasta region as indicated by the Study Team.

Section 3 The Standard Penetration Test (SPT)

The performance of SPT should follow all standard specification in order to obtain the hardness, compactness or structure of the soil. The SPT shall compose of the process as follows:

1. **Boring**

   Holes of 4 inches in diameter will be drilled using the standard soil drilling method in the area indicated with a vertical depth up to 5.0 m.
   According to the local condition, if needed, the depth can be changed upon the request of the Study Team.

2. **SPT Test**

   A Standard Penetration Test will be conducted with a vertical depth pitch of 1.0 m. The test shall be executed with the following standard specification:

Drop height	75 cm
Weight of the hammer	65 Kg
Penetration	30 cm
Sampler	Terzaghi Spoon

3. **Sampling**

   Every meter of the boring and all the existing types of soil, samples shall be collected, carefully identified and codified and taken to the laboratory for the soil analysis.

4. **Laboratory Work**

   All the samples obtained in the field work shall be tested with specialized technical personnel in the laboratory with the following items:

- Soil Humidity
- Soil Content
- Consistency limits
- Specific Weight
- Permeability
- Others as required by the Study Team, if any.

CHAPTER 3 WORK SCHEDULE

The works shall be completed within 1 (one) month from commencement date, by the 25th of October , 1998.

Item	1998						1999		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
SPT				■					

Working Schedule

CHAPTER 4 FINAL PRODUCTS TO BE DELIVERED

All results from the field and the laboratory test shall be summarized and presented in a proper form to the Study Team with the main content as follows:

- Summary of the field works including:
  - (1) Point Number
  - (2) Ground Level
  - (3) Date of Survey
  - (4) Responsible Person
  - (5) Type of the Equipment
  - (6) Annotations of the survey, calculation and test conditions
  - (7) Graph of the Static Penetration Resistance (Wsw, Nsw)
- Summary tables of the laboratory test
- Individual soil profile, with the admissible fatigue obtained from the SPT test.
- Unified soil classification.
- Compressive Strength of the Soil

Three (3) copies of the final report shall be submitted after the revision of the results by the Study Team with all annotations and sheets as mentioned above. The final report shall cover the results as mentioned above and the conclusions and the references those define guidelines and limits according to the soil type and the types of foundations.

SPECIFICATION FOR THE ENVIRONMENTAL SURVEY

SPECIFICATIONS FOR THE ENVIRONMENTAL SURVEY FOR THE FEASIBILITY STUDY ON FLOOD CONTROL IN THE NORTHERN RURAL REGION OF SANTA CRUZ IN THE REPUBLIC OF BOLIVIA

CHAPTER 1 GENERAL

Section 1 Background

In compliance with the Scope of Work for the Feasibility Study on Flood Control in the Northern Rural Region of Santa Cruz in the Republic of Bolivia, which was agreed upon between the A.S.A. CONSULTURAand the Japan International Cooperation Agency (JICA) on 5th day of October , 1998, JICA has decided to carry out the Environmental Survey Work and assigned JICA Study Team for the works execution.

The Environmental Survey shall be carried out in the Republic of Bolivia, by the (Agency) under supervision of the Study Team's Supervisor.

Section 2 Objectives

The objectives of the environmental survey are :

- To study, forecast and evaluate impacts caused by the implementation of the proposed flood control plan.
- To propose measures to avoid or alleviate environmental impacts.
- To prepare Environmental Impact Study (EIA) in accordance with the environmental law of Bolivia.

Construction plan for the flood control will expect to following works:

Region	River Improvement (km)	Drain Improvement (km)	Banking (km)
Chane – Paillon			
Chane River	27.0	0.0	0.0
Paillon River	32.0	6.5	0.0
Okinawa Drain	0.0	21.5	0.0
Sub-total	59.0	28.0	0.0
San Juan – Antofagasta			
San Juan	14.1	41.3	0.0
Antofagasta	20.3	10.0	9.0
Sub-total	34.4	51.3	9.0

TOTAL	93.4	79.3	9.0

Section 3 Specification

The study must be realized based on the Environmental Law of the Republic of Bolivia.

Section 4 Scope of Work

The work to be done is to carry out the Environmental Survey in the proposed site of the Northern Rural Region of Santa Cruz in the Republic of Bolivia.

The study requires the following items:

- Actual Environmental regulation, policy and organization of the Republic of Bolivia;
- Environmental survey and Environmental Impact Study (EIA)

Section 5 Language

Language to be used shall be English.

CHAPTER 2 DETAIL SPECIFICATION

Section 1 Method of Work

All the work to be done shall be executed in accordance with this Specification or where not specified therein, in accordance with such instruction and orders as the Supervisor of the Study Team may give.

Section 2 Environmental Survey

The survey is divided into three fields: natural environment, social environment and pollution. The checking items and possible environmental impacts are as follows.

1) Natural Environment

- Topography and geology: Changes of valuable topography and geology due to excavation or filling work.
- Soil erosion: Topsoil erosion by rainfall after reclamation and deforestation.
- Groundwater: Reduction of the groundwater level due to overdrafting and occurrence of turbid water caused by construction work.
- Hydrological changes: Changes of river discharge, flow velocity and riverbeds condition due to filling work and diversion channel.
- Fauna and flora: Obstruction of breeding and extinction of species due to changes of

habitat conditions.

- Climate: Changes of temperature, rainfall, wind, etc. due to large-scale reclamation and building constructions
- Landscape: Change of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structures.

2) Social environment

Most of the following informations will be collected by interviewing the inhabitants and cooperatives in the Study Area.

- Resettlement: Resettlement due to land occupancy (transfer of rights of residence/land ownership)
- Economic activities: Loss of base of economic activity, such as land, and change of economic structure etc.
- Traffic and public facilities: Impacts on schools, hospitals and present traffic conditions, such as the increase of traffic congestion and accidents etc.
- Split of communities: Community split due to interruption of area traffic.
- Cultural property: Damage to or loss of value of churches, temples, shrines, archaeological remains or other cultural assets.
- Water rights and rights of common: Obstruction of fishing rights, water rights, rights of common.
- Public health condition: Worsening of public health and sanitation conditions due to the generation of garbage and the increase of vermin.
- Waste: Germination of construction waste, debris and logs.
- Hazards: Increase in danger from ground failure,

3) Pollution

- Air pollution: Pollution caused by exhaust gas or toxic gas from vehicles during construction works.
- Water pollution: Pollution caused by the decrease of discharge or the inflow of sediments.
- Soil contamination: Contamination caused by discharge or diffusion of sewage or toxic substances.
- Noise and vibrations: Noise and vibrations generated by vehicles and pumping

operations during construction works.

- Land subsidence: Deforestation of the land and land subsidence due to lowering of groundwater table.
- Offensive odor: Generation of exhaust gas and offensive odor by facility construction and operation.

The groundwater level, fauna and flora and downstream area must have special attention. These items were estimated to receive some impacts by the implementation of the project, as mentioned in the Initial Environmental Examination (IEE).

CHAPTER 3 WORK SCHEDULE

The works shall be completed within 1.0 (one) months from commencement date, by the end of October, 1998.

Working Schedule

Item	1998						1999		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Environmental Survey									

CHAPTER 4 FINAL PRODUCTS TO BE DELIVERED

The following reports must be prepared in 2 (two) sets each:

a) Report of the environmental survey
b) Environmental Impact Study (EIA)

SUPPORTING REPORT M

DATA BASE

TABLE OF CONTENTS

SUPPORTING REPORT M DATABASE

1. Introduction

Geographic Information System (GIS) has been introduced for the study to analyze the present conditions, to formulate a Master Plan for integrated environmental management.

GIS is a powerful and useful tool for the study to collect and store the data, organize and identify the related data, support to draw a conclusion, and take over the study results to the Government. It is believed that Database will be more useful if the Government would continuously add and analyze the data for the future decision making. GIS helps you discover and better understand the changes from the present condition to the future.

In the Study, the GIS data has been developed by the software of ArcView3 from ESRI Inc. ArcView is a very sophisticated software and have the data change-ability with ArcInfo and many other GIS and CAD systems.

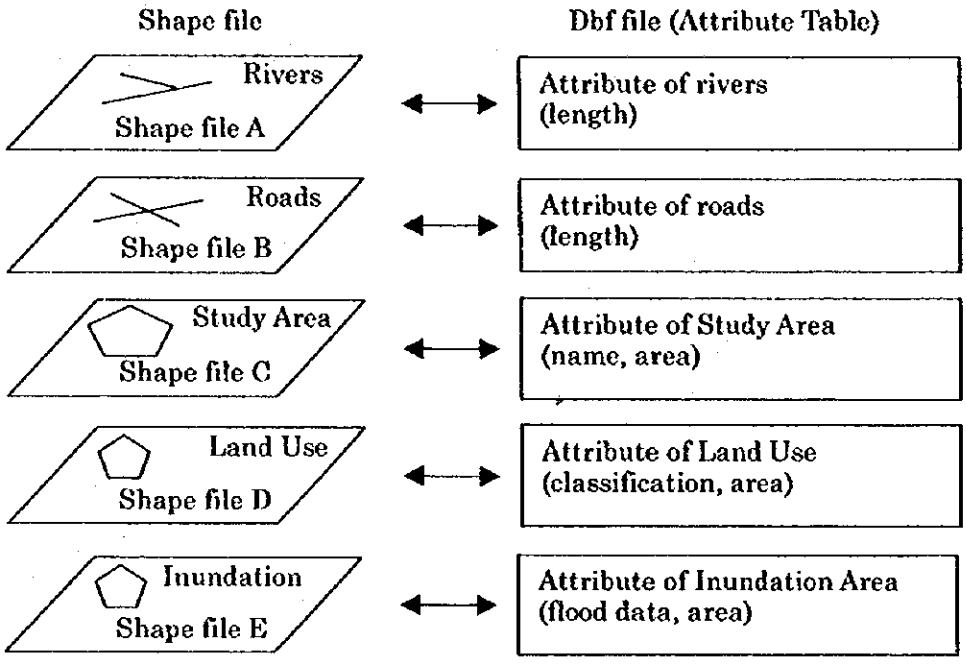
In this chapter, the structure of the GIS database made by the Study Team is mainly described.

2. Relationship between Spatial Data File their Attribute

There are two types of data in GIS. One is the spatial map data, which keep location of features such as line, polygon, and point with their XY coordinates. Spatial map data have only information on location, area or length. These spatial data are saved as **shape file format** in the world of ArcView3. Shape file should have a single type of feature. For example, the features of line and polygon must be saved in a different shape file. At the same time, one group of theme should be a single Shape file.

Another type of data is text base attribute such as name. Any kinds of text data, which explain the spatial data, can be added to the attribute table. These are saved as **dbf file format (attribute table)** in ArcView3.

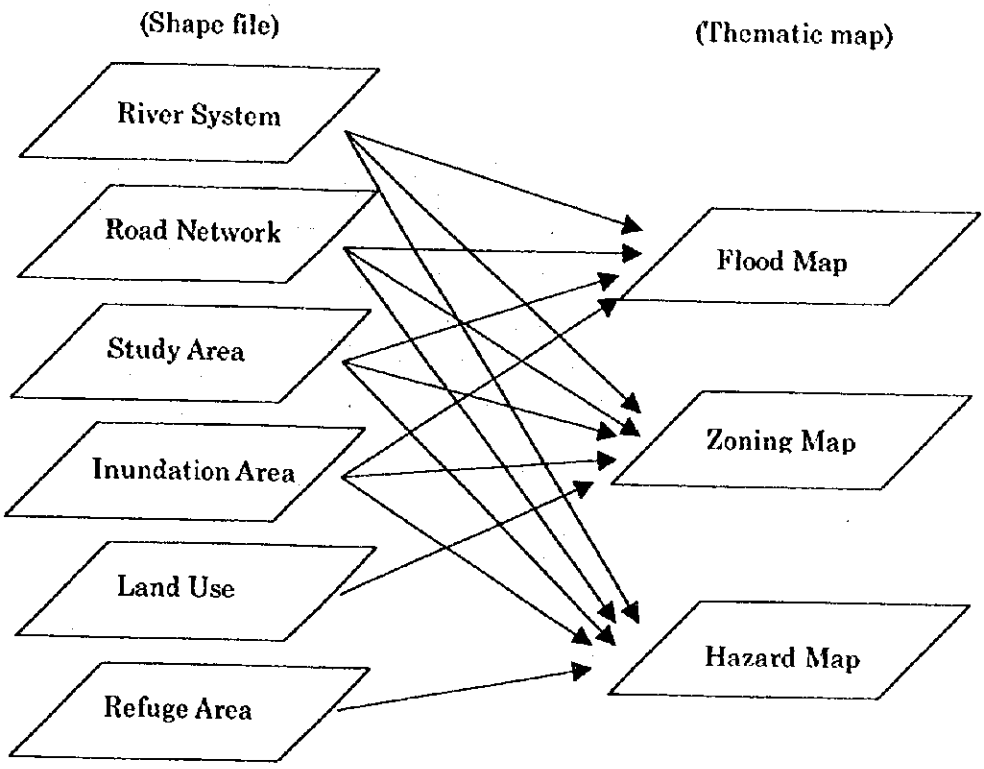
Each shape file is dynamically linked with its attribute table. For example, the color of features of shape file will be automatically changed based on the specified legend when attribute data is modified. Specific features of shape file are automatically selected when some data is queried in the attribute table. On the other hand, the attribute will be automatically queried when mouse selects the features on the map. The relationship between shape file and attribute table is shown as below. A shape file corresponds to one attribute table on by one.



Note: polygon is closed line and has area, mesh size of grid is 500m interval.

3. Relationship between Shape File and Thematic Map

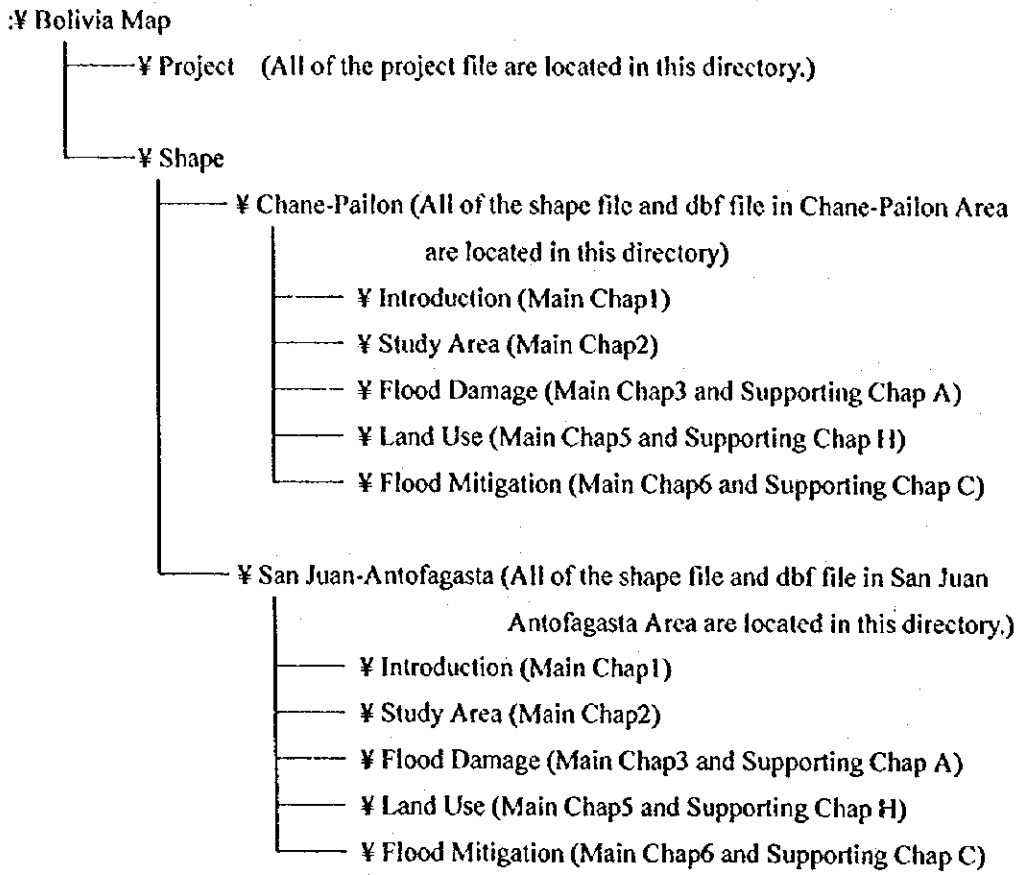
A shape file is a single theme that has only one group of features such as river system or road network etc. On the other hand, several shape files is necessary to make a thematic map. It is possible for ArcView3 to combine several shape files to make specific thematic map. Same shape file becomes a component of plural thematic maps. In this way, the modification of particular shape file can be automatically reflected to many thematic maps that include one. The relationship between shape file and thematic map is shown below. The shape files of each figure of reports are summarized in DATABASE DESCRIPTION .



4. File Structure of the Bolivia GIS Database

The file structure of the Bolivia GIS database is designed as shown below.

4.1 File Structure



4.2 Directory of Project File

All of the project files are saved in the directory of "Projects". Project file is the key file of the Bolivia GIS database. Project file does not contain the spatial data or attribute data itself. Instead, a project file stores all references to the location of these related data sources (shape file, dbf file) on disk. For example, the shape file called XXX.shp is not saved in the project, but the project does contain a reference to where that shape file is located on disk. In this way, the same data can be used in any number of projects without duplication, and if this data changes, the updates will be reflected in all the projects that reference this data.

4.3 Directory of Shape File

The shape files and dbf files each Chane-Pailon Area and San Juan-Antofagasta Area are saved in the directory of "Shape¥Chane-Pailon" and "Shape¥San Juan-Antofagasta". Shape file contains spatial data and dbf file contains attribute data. The directory of "Study Area" is prepared for shape file that is commonly used in several thematic maps. Other directories are prepared based on the chapter of reports.

5. Database Description

Database Description covers information on the structures of data file on the figures listed in reports. Information on Figure No. Tittle of Figure, Name of Project, Name of View, Name of Data File and Settings of Legend are listed. The file names of shape file and dbf file are same.

These table covers all figures listed on Main Report and Supporting Report.

Main Report
Introduction

Fig	Title of Figure	Name of Project	Name of View	Shape & Dbf File	Legend Type	Values Field
1 2 1	Proposed Flood Control and Drainage Improvement Facilities in the Master Plan	Introducton apr	Proposed Flood Control Facilities in the Rio Chane-Pailon Basin in the Master	/Chane-Pailon/Introduction/line	Single	-
				/Chane-Pailon/Introduction/Road	Unique	Type
				/Chane-Pailon/Introduction/River	Single	-
				/Chane-Pailon/Introduction/River(polygon)	Single	-
				/Chane-Pailon/Introduction/Chane-Pailon Area	Single	-
1 2 2	Proposed Flood Control and Drainage Improvement Facilities in the Master Plan (San Juan-Antofagasta)	Introducton apr	Proposed Flood Control Facilities in the Rio San Juan-Antofagasta Basin in the Master Plan	/San Juan-Antofagasta/Introduction/line	Unique	Color
				/San Juan-Antofagasta/Introduction/Road	Unique	Type
				/San Juan-Antofagasta/Introduction/River	Single	-
				/San Juan-	Single	-
				/San Juan-Antofagasta/Introduction/Secondary Drainage	Single	-

Fig	Title of Figure	Name of Project	Name of View	Shape & Dbf File	Legend Type	Values Field
3.2.1	Inundation Area in Chne-Pailon Area (by 1992 Floods in the Master Plan)	Flood_Damage(1992) apr	1992 FLOODS CHANE-PAILON	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main_road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Flood Damage/1992 floods label	Unique	Number
				/Chane-Pailon/Flood Damage/1992 flood in m-	Single	-
3.2.2	Inundation Area in San Juan-Antofagasta Area (by 1992 Floods in the Master Plan)	Flood_Damage(1992) apr	1992 FLOODS SAN JUAN-ANTOFAGASTA	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc_rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main_road	Single	-
				/San Juan-Antofagasta/Study Area/Sj_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj_rivers	Single	-
				/San Juan-Antofagasta/Flood Damage/1992	Unique	Day
				/San Juan-Antofagasta/Flood Damage/1992	Single	-
3.2.3	Inundation Area in Chane-Pailon Area (by the Floods During November to	Flood_Damage apr	Nov to Dec 97 (Chane-Pailon)	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main_road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Study Area/Okinawa-frame	Single	-
				/Chane-Pailon/Flood Damage/Frame1	Single	-
				/Chane-Pailon/Flood Damage/Inundation-point	Single	-
				/Chane-Pailon/Flood Damage/Nov_to_Dec97	Unique	Name
3.2.4	Inundation Area in Chne-Pailon Area (by the Floods During February to March 1997 from the Rio Grande)	Flood_Damage apr	Feb to Mar 97 (Chane-Pailon)	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main_road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Study Area/Okinawa-frame	Single	-
				/Chane-Pailon/Flood Damage/Frame1	Single	-
				/Chane-Pailon/Flood Damage/Inundation-point	Single	-
				/Chane-Pailon/Flood Damage/Feb_to_Mar97	Unique	Name
3.2.5	Inundation Area in San Juan-Antofagasta Area (by the Floods During December 96 to February 97)	Flood_Damage apr	Dec 96 to Feb 97 (San Juan-Antofagasta)	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc_rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main_road	Single	-
				/San Juan-Antofagasta/Study Area/Sj_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj_rivers	Single	-
				/San Juan-Antofagasta/Study Area/San_Juan-	Single	-
				/San Juan-Antofagasta/Flood	Single	-
				/San Juan-Antofagasta/Flood	Unique	Name
3.2.6	Inundation Area by Annual Floods in Chene-Pailon Area	Flood_Damage apr	Annual Floods in Chene-Pailon Area	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main_road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Flood Damage/Frame1	Single	-
				/Chane-Pailon/Flood Damage/Annual flood	Unique	Annual flo
3.2.7	Inundation Area by Annual Floods in San Juan-Antofagasta Area	Flood_Damage apr	Annual Floods in San Juan-Antofagasta Area	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc_rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main_road	Single	-
				/San Juan-Antofagasta/Study Area/Sj_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj_rivers	Single	-
				/San Juan-Antofagasta/Flood Damage/Annual	Unique	Annual flo

Fig	Title of Figure	Name of Project	Name of View	Shape & Dbf File	Legend Type	Values Field
5.2.1(1)	Land Use Map in 1998 (Chane-Pailon Area)	Land_Use apr	LAND USE (II)	/Chane-Pailon/Study Area/Studyarea(unit)	Single	-
				/Chane-Pailon/Study Area/Ok_roads	Single	-
				/Chane-Pailon/Study Area/Ok_rivers	Single	-
				/Chane-Pailon/Land Use/Landuse	Unique	Codigo
				/Chane-Pailon/Land Use/Landuse	Unique	Codigo
5.2.1(2)	Land Use Map in 1998 (San Juan-Antofagasta Area)	Land_Use apr	LAND USE (I)	/San Juan-Antofagasta/Study Area/Study area(unit)	Single	-
				/San Juan-Antofagasta/Study Area/Sj_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj_rivers	Single	-
				/San Juan-Antofagasta/Land Use/Sj_Land_use	Unique	Codigo
5.2.2(1)	Land Classification Map (Chane-Pailo Area)	Land_Class(chane) apr	Landclass (Chane-Pailon)	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main_road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Land Use/Landclass_wn	Unique	Class2
				/Chane-Pailon/Land Use/Landclass_ob	Unique	Class2
5.2.2(2)	Land Classification Map (San Juan-Antofagasta Area)	Land_Class(san_juan) apr	Landclass (San Juan-Antofagasta)	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc_rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main_road	Single	-
				/San Juan-Antofagasta/Study Area/Sj_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj_rivers	Single	-
				/San Juan-Antofagasta/Study Area/San_Juan-	Single	-
				/San Juan-Antofagasta/Land Use/Landclass_sj	Unique	Class2
5.3.1(1)	Zoning for Agricultural Lnad Use(Chane-Pailon Area)	Agricultural_Land_Use apr	ZONING FOR AGRICULTURAL LAND USE (Chane-Pailon)	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main_road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Land Use/Zoning Okinawa	Unique	Zone
5.3.1(2)	Zoning for Agricultural Lnad Use(San Juan-Antofagasta Area)	Agricultural_Land_Use apr	ZONING FOR AGRICULTURAL LAND USE (San Juan-Antofagasta)	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc_rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main_road	Single	-
				/San Juan-Antofagasta/Study Area/Sj_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj_rivers	Single	-
				/San Juan-Antofagasta/Land Use/Zoning	Unique	Zone

Support	Title of Figure	Name of Project	Name of View	Shape & Dbf File	Legend Type	Values Field
6.1.1(1)	Proposed Structural Measures (Chane-Pailon Area)	Introduction apr	Proposed Structural Measures (Chane-Pailon Area)	/Chane-Pailon/Introduction/line	Single	-
				/Chane-Pailon/Introduction/Road	Unique	Type
				/Chane-Pailon/Introduction/River	Single	-
				/Chane-Pailon/Introduction/River(polygon)	Single	-
				/Chane-Pailon/Introduction/Chane-Pailon Area	Unique	Code
6.1.1(2)	Proposed Structural Measures (San Juan-Antofagasta Area)	Introduction apr	Proposed Structural Measures (San Juan-Antofagasta Area)	/San Juan-Antofagasta/Introduction/line	Unique	Color
				/San Juan-Antofagasta/Introduction/Road	Unique	Type
				/San Juan-Antofagasta/Introduction/River	Single	-
				/San Juan-	Single	-
				/San Juan-Antofagasta/Introduction/Secondary Drainage	Single	-
6.1.5(1)	Inundation Area in Chane-Pailon Area (without Project ; 10years return period)	Flood Mitigation(1) apr	10PRESENT Chane-Pailon Area	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Flood Mitigation/10present	Unique	Flood
6.1.5(2)	Inundation Area in Chane-Pailon Area (with Project ; 10years return period)	Flood Mitigation(1) apr	10PROPOSED Chane-Pailon Area	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Flood Mitigation/10proposed	Unique	Flood
6.1.6(1)	Inundation Area in San Juan-Antofagasta Area (without Project : 10years return period)	Flood Mitigation(1) apr	10PRESENT San Juan-Antofagasta Area	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main road	Single	-
				/San Juan-Antofagasta/Study Area/Sj roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj rivers	Single	-
				/San Juan-Antofagasta/Flood	Unique	Flood
6.1.6(2)	Inundation Area in San Juan-Antofagasta Area (with Project : 10years return period)	Flood Mitigation(1) apr	10POPOSED San Juan-Antofagasta Area	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main road	Single	-
				/San Juan-Antofagasta/Study Area/Sj roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj rivers	Single	-
				/San Juan-Antofagasta/Flood Mitigation/10proposed	Unique	Flood
6.4.8(1)	Flood Hazard Map of Chane-Pailon Area (Flood Area durine November to December	Flood Mitigation(2) apr	Flood Hazard Area (Chane-Pailon)	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Study Area/Okinawa-frame	Single	-
				/Chane-Pailon/Flood Damage/Nov to Dec97	Unique	Name
6.4.8(2)	Flood Hazard Map of San Juan-Antofagasta Area (Flood Area during November to December 1997)	Flood Mitigation(1)	Flood Hazard Area (San Juan-Antofagasta)	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main road	Single	-
				/San Juan-Antofagasta/Study Area/Sj roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj rivers	Single	-
				/San Juan-Antofagasta/Flood Damage/Dec96 to Feb97	Unique	Name

Supporting Report

Support	Title of Figure	Name of Project	Name of View	Shape & Dbf File	Legend Type	Values Field
A 2 1	Inundation Area in Chne-Pailon Area (by 1992 Floods in the Master Plan)	Flood_Damage(1992) apr	1992 FLOODS CHANE-PAILON	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main_road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Flood Damage/1992 floods label	Unique	Number
				/Chane-Pailon/Flood Damage/1992 flood in m-	Single	-
A 2 2	Inundation Area in San Juan-Antofagasta Area (by 1992 Floods in the Master Plan)	Flood_Damage(1992) apr	1992 FLOODS SAN JUAN-ANTOFAGASTA	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc_rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main_road	Single	-
				/San Juan-Antofagasta/Study Area/Sj_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj_rivers	Single	-
				/San Juan-Antofagasta/Flood Damage/1992 floods label	Unique	Day
				/San Juan-Antofagasta/Flood Damage/1992 flood in m-p	Single	-
A 2 3 (a)	Location of Flood Survey in Chane-Pailon Area	Flood_Damage apr	Location of Flood Survey in CHANE-PAILON AREA	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main_road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Flood Damage/Survey location	Single	-
A 2 3 (b)	Location of Flood Survey in San Juan-Antofagasta Area	Flood_Damage apr	Location of Flood Survey in SAN JUAN-ANTOFAGASTA	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc_rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main_road	Single	-
				/San Juan-Antofagasta/Study Area/Sj_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj_rivers	Single	-
				/San Juan-Antofagasta/Flood Damage/Survey location	Single	-
A 2 4	Inundation Area in Chane-Pailon Area (by the Floods During November to	Flood_Damage apr	Nov to Dec 97 (Chane-Pailon)	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main_road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Study Area/Okinawa-frame	Single	-
				/Chane-Pailon/Flood Damage/Frame1	Single	-
				/Chane-Pailon/Flood Damage/Inundation-point	Single	-
				/Chane-Pailon/Flood Damage/Nov_to_Dec97	Unique	Name
A 2 5	Inundation Area in Chane-Pailon Area (by the Floods During December 95 to	Flood_Damage apr	Dec 95 to Feb 96 (Chane-Pailon)	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main_road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Study Area/Okinawa-frame	Single	-
				/Chane-Pailon/Flood Damage/Frame1	Single	-
				/Chane-Pailon/Flood Damage/Inundation-point	Single	-
				/Chane-Pailon/Flood Damage/Dec95_to_Feb96	Unique	Name
A 2 6	Inundation Area in Chane-Pailon Area (by the Floods During December 96 to	Flood_Damage apr	Dec 96 to Feb 97 (Chane-Pailon)	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main_road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Study Area/Okinawa-frame	Single	-
				/Chane-Pailon/Flood Damage/Frame1	Single	-
				/Chane-Pailon/Flood Damage/Inundation-point	Single	-
				/Chane-Pailon/Flood Damage/Dec96_to_Feb97	Unique	Name

Supporting Report
A

Suppor t	Title of Figure	Name of Projet	Name of View	Shape & Dbf File	Legend Type	Values Field
A 2 7	Inundation Area in Chane-Pailon Area (by the Floods During February to March 1997 from the Rio Grande)	Flood_Damage apr	Feb to Mar 97 (Chane-Pailon)	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Study Area/Okinawa-frame	Single	-
				/Chane-Pailon/Flood Damage/Frame1	Single	-
				/Chane-Pailon/Flood Damage/Inundation-point	Single	-
				/Chane-Pailon/Flood Damage/Feb to Mar97	Unique	Name
A 2 8	Inundation Area in Chane-Pailon Area (by the Floods During February to March 1998 from the Rio Grande)	Flood_Damage apr	Feb to Mar 98 (Chane-Pailon)	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Study Area/Okinawa-frame	Single	-
				/Chane-Pailon/Flood Damage/Frame1	Single	-
				/Chane-Pailon/Flood Damage/Inundation-point	Single	-
				/Chane-Pailon/Flood Damage/Feb to Mar98	Unique	Name
A 2 9	Inundation Area in San Juan-Antofagasta Area (by the Floods During December 96 to February 97)	Flood_Damage apr	Dec 96 to Feb 97 (San Juan-Antofagasta)	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main road	Single	-
				/San Juan-Antofagasta/Study Area/Sj roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj rivers	Single	-
				/San Juan-Antofagasta/Study Area/San Juan-	Single	-
				/San Juan-Antofagasta/Flood Damage/Inundation-point	Single	-
				/San Juan-Antofagasta/Flood Damage/Dec96 to Feb97	Unique	Name
A 2.10	Inundation Area in San Juan-Antofagasta Area (by the Floods During December 94 to February 95)	Flood_Damage apr	Dec 94 to Feb 95 (San Juan-Antofagasta)	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main road	Single	-
				/San Juan-Antofagasta/Study Area/Sj roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj rivers	Single	-
				/San Juan-Antofagasta/Study Area/San Juan-	Single	-
				/San Juan-Antofagasta/Flood Damage/Inundation-point	Single	-
				/San Juan-Antofagasta/Flood Damage/Dec94 to Feb95	Unique	Name
A 2.11	Inundation Area in San Juan-Antofagasta Area (by the Floods During December 95 to February 96)	Flood_Damage apr	Dec 95 to Feb 96 (San Juan-Antofagasta)	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main road	Single	-
				/San Juan-Antofagasta/Study Area/Sj roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj rivers	Single	-
				/San Juan-Antofagasta/Study Area/San Juan-	Single	-
				/San Juan-Antofagasta/Flood Damage/Inundation-point	Single	-
				/San Juan-Antofagasta/Flood Damage/Dec95 to Feb96	Unique	Name

Supporting Report
A

Suppor t	Title of Figure	Name of Projet	Name of View	Shape & Dbf File	Legend Type	Values Field
A 2 12 -	Inundation Area in San Juan-Antofagasta Area (by the Floods During December 97 to February 98)	Flood_Damage apr	Dec 97 to Feb 98 (San Juan-Antofagasta)	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc_rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main_road	Single	-
				/San Juan-Antofagasta/Study Area/Sj_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj_rivers	Single	-
				/San Juan-Antofagasta/Study Area/San_Juan-	Single	-
				/San Juan-Antofagasta/Flood Damage/Inundation-point	Single	-
				/San Juan-Antofagasta/Flood Damage/Dec97_to_Feb98	Unique	Name
A 3.1	Inundation Area by Annual Floods in Chone-Pailon Area	Flood_Damage apr	Annual Floods in Chone-Pailon Area	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main_road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Flood Damage/Frame1	Single	-
				/Chane-Pailon/Flood Damage/Annual flood	Unique	Annual f
A 3 2	Inundation Area by Annual Floods in San Juan-Antofagasta Area	Flood_Damage apr	Annual Floods in San Juan-Antofagasta Area	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc_rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main_road	Single	-
				/San Juan-Antofagasta/Study Area/Sj_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj_rivers	Single	-
				/San Juan-Antofagasta/Flood Damage/Annual	Unique	Annual f

Supporting Report
II

Suppor t	Title of Figure	Name of Project	Name of View	Shape & DSf File	Legend Type	Values Field
II 2 1 (1)	Land Use Map in 1998 (Chane-Pailon Area)	Land_Use apr	LAND USE (II)	/Chane-Pailon/Study Area/Studyarea(unit)	Single	-
				/Chane-Pailon/Study Area/Ok_roads	Single	-
				/Chane-Pailon/Study Area/Ok_rivers	Single	-
				/Chane-Pailon/Land Use/Landuse	Unique	Codigo
				/Chane-Pailon/Land Use/Landuse	Unique	Codigo
II 2 1 (2)	Land Use Map in 1998 (San Juan-Antofagasta Area)	Land_Use apr	LAND USE (I)	/San Juan-Antofagasta/Study Area/Studyarea(unit)	Single	-
				/San Juan-Antofagasta/Study Area/Sj_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj_rivers	Single	-
				/San Juan-Antofagasta/Land Use/Sj_Land_use	Unique	Codigo
II 2 2 (1)	Land Classification Map (Chane-Pailo Area)	Land_Class(chane) apr	Landclass (Chane-Pailon)	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main_road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Land Use/Landclass_wn	Unique	Class2
				/Chane-Pailon/Land Use/Landclass_ob	Unique	Class2
II 2 2 (2)	Land Classification Map (San Juan-Antofagasta Area)	Land_Class(san_juan) apr	Landclass (San Juan-Antofagasta)	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc_rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main_road	Single	-
				/San Juan-Antofagasta/Study Area/Sj_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj_rivers	Single	-
				/San Juan-Antofagasta/Study Area/San_Juan-	Single	-
				/San Juan-Antofagasta/Land Use/Landclass_sj	Unique	Class2
II 3.1 (1)	Zoning for Agricultural Lnad Use(Chane-Pailon Area)	Agricultural_Land_Use apr	ZONING FOR AGRICULTURAL LAND	/Chane-Pailon/Study Area/Studyarea	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main_road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Land Use/Zoning Okinawa	Unique	Zone
H 3.1 (2)	Zoning for Agricultural Lnad Use(San Juan-Antofagasta Area)	Agricultural_Land_Use apr	ZONING FOR AGRICULTURAL LAND USE (San Juan-Antofagasta)	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc_rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main_road	Single	-
				/San Juan-Antofagasta/Study Area/Sj_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj_rivers	Single	-
				/San Juan-Antofagasta/Land Use/Zoning	Unique	Zone

Supporting Report
C

Suppor t	Title of Figure	Name of Projet	Name of View	Shape & Dbf File	Legend Type	Values Field
C.4.1 (1)	Proposed Structural Measures (Chane-Pailon Area)	Introduction apr	Proposed Structural Measures (Chane-Pailon Area)	/Chane-Pailon/Introduction/line	Single	-
				/Chane-Pailon/Introduction/Road	Unique	Type
				/Chane-Pailon/Introduction/River	Single	-
				/Chane-Pailon/Introduction/River(polygon)	Single	-
				/Chane-Pailon/Introduction/Chane-Pailon Area	Unique	Code
C.4.1 (2)	Proposed Structural Measures (San Juan-Antofagasta Area)	Introduction apr	Proposed Structural Measures (San Juan-Antofagasta Area)	/San Juan-Antofagasta/Introduction/line	Unique	Color
				/San Juan-Antofagasta/Introduction/Road	Unique	Type
				/San Juan-Antofagasta/Introduction/River	Single	-
				/San Juan-	Single	-
				/San Juan-Antofagasta/Introduction/Secondary Drainage	Single	-
C.6.1 (1)	Inundation Area in Chane-Pailon Area (without Project ; 2years return period)	Flood Mitigation(1) apr	2PRESENT Chane-Pailon Area	/Chane-Pailon/Study Area/Study area	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Flood Mitigation/2present	Unique	Flood
C.6.1 (2)	Inundation Area in Chane-Pailon Area (with Project ; 2years return period)	Flood Mitigation(1) apr	2PROPOSED Chane-Pailon Area	/Chane-Pailon/Study Area/Study area	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Flood Mitigation/2proposed	Unique	Flood
C.6.1 (3)	Inundation Area in Chane-Pailon Area (without Project ; 5years return period)	Flood Mitigation(1) apr	5PRESENT Chane-Pailon Area	/Chane-Pailon/Study Area/Study area	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Flood Mitigation/5present	Unique	Flood
C.6.1 (4)	Inundation Area in Chane-Pailon Area (with Project ; 5years return period)	Flood Mitigation(1) apr	5PROPOSED Chane-Pailon Area	/Chane-Pailon/Study Area/Study area	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Flood Mitigation/5proposed	Unique	Flood
C.6.1 (5)	Inundation Area in Chane-Pailon Area (without Project ; 10years return period)	Flood Mitigation(1) apr	10PRESENT Chane-Pailon Area	/Chane-Pailon/Study Area/Study area	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Flood Mitigation/10present	Unique	Flood
C.6.1 (6)	Inundation Area in Chane-Pailon Area (with Project ; 10years return period)	Flood Mitigation(1) apr	10PROPOSED Chane-Pailon Area	/Chane-Pailon/Study Area/Study area	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Flood Mitigation/10proposed	Unique	Flood
C.6.1 (7)	Inundation Area in Chane-Pailon Area (without Project ; 20years return period)	Flood Mitigation(1) apr	20PRESENT Chane-Pailon Area	/Chane-Pailon/Study Area/Study area	Single	-
				/Chane-Pailon/Study Area/line	Single	-
				/Chane-Pailon/Study Area/Main road	Single	-
				/Chane-Pailon/Study Area/Roads	Single	-
				/Chane-Pailon/Study Area/Rivers	Single	-
				/Chane-Pailon/Flood Mitigation/20present	Unique	Flood

Supporting Report
C

Suppor t	Title of Figure	Name of Project	Name of View	Shape & Dbf File	Legend Type	Values Field
C 6.1 (8)	Inundation Area in Chane-Pailon Area (with Project ; 20years return period)	Flood Mitigation(1) apr	20PROPOSED Chane-Pailon Area	Chane-Pailon/Study Area/Studyarea	Single	-
				Chane-Pailon/Study Area/line	Single	-
				Chane-Pailon/Study Area/Main road	Single	-
				Chane-Pailon/Study Area/Roads	Single	-
				Chane-Pailon/Study Area/Rivers	Single	-
				Chane-Pailon/Flood Mitigation/20proposed	Unique	Flood
C 6.1 (9)	Inundation Area in Chane-Pailon Area (without Project ; 50years return period)	Flood Mitigation(1) apr	50PRESENT Chane-Pailon Area	Chane-Pailon/Study Area/Studyarea	Single	-
				Chane-Pailon/Study Area/line	Single	-
				Chane-Pailon/Study Area/Main road	Single	-
				Chane-Pailon/Study Area/Roads	Single	-
				Chane-Pailon/Study Area/Rivers	Single	-
				Chane-Pailon/Flood Mitigation/50present	Unique	Flood
C 6.1 (10)	Inundation Area in Chane-Pailon Area (with Project ; 50years return period)	Flood Mitigation(1) apr	50PROPOSED Chane-Pailon Area	Chane-Pailon/Study Area/Studyarea	Single	-
				Chane-Pailon/Study Area/line	Single	-
				Chane-Pailon/Study Area/Main road	Single	-
				Chane-Pailon/Study Area/Roads	Single	-
				Chane-Pailon/Study Area/Rivers	Single	-
				Chane-Pailon/Flood Mitigation/50proposed	Unique	Flood
C 6.2 (1)	Inundation Area in San Juan-Antofagasta Area (without Project : 2years return period)	Flood Mitigation(1) apr	2PRESENT San Juan-Antofagasta Area	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main road	Single	-
				/San Juan-Antofagasta/Study Area/Sj roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj rivers	Single	-
				/San Juan-Antofagasta/Flood	Unique	Flood
C 6.2 (2)	Inundation Area in San Juan-Antofagasta Area (with Project : 2years return period)	Flood Mitigation(1) apr	2POPOSED San Juan-Antofagasta Area	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main road	Single	-
				/San Juan-Antofagasta/Study Area/Sj roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj rivers	Single	-
				/San Juan-Antofagasta/Flood	Unique	Flood
C 6.2 (3)	Inundation Area in San Juan-Antofagasta Area (without Project : 5years return period)	Flood Mitigation(1) apr	5PRESENT San Juan-Antofagasta Area	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main road	Single	-
				/San Juan-Antofagasta/Study Area/Sj roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj rivers	Single	-
				/San Juan-Antofagasta/Flood	Unique	Flood
C 6.2 (4)	Inundation Area in San Juan-Antofagasta Area (with Project : 5years return period)	Flood Mitigation(1) apr	5POPOSED San Juan-Antofagasta Area	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main road	Single	-
				/San Juan-Antofagasta/Study Area/Sj roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj rivers	Single	-
				/San Juan-Antofagasta/Flood	Unique	Flood
C 6.2 (5)	Inundation Area in San Juan-Antofagasta Area (without Project : 10years return period)	Flood Mitigation(1) apr	10PRESENT San Juan-Antofagasta Area	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main road	Single	-
				/San Juan-Antofagasta/Study Area/Sj roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj rivers	Single	-
				/San Juan-Antofagasta/Flood	Unique	Flood
C 6.2 (6)	Inundation Area in San Juan-Antofagasta Area (with Project : 10years return period)	Flood Mitigation(1) apr	10POPOSED San Juan-Antofagasta Area	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main road	Single	-
				/San Juan-Antofagasta/Study Area/Sj roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj rivers	Single	-
				/San Juan-Antofagasta/Flood Mitigation/10proposed	Unique	Flood
C 6.2 (7)	Inundation Area in San Juan-Antofagasta Area (without Project : 20years return period)	Flood Mitigation(1) apr	20PRESENT San Juan-Antofagasta Area	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main road	Single	-
				/San Juan-Antofagasta/Study Area/Sj roads	Single	-
				/San Juan-Antofagasta/Study Area/Sj rivers	Single	-
				/San Juan-Antofagasta/Flood	Unique	Flood

Supporting Report
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Suppor t	Title of Figure	Name of Project	Name of View	Shape & Dbf File	Legend Type	Values Field
C 6 2 (8)	Inundation Area in San Juan-Antofagasta Area (with Project : 20years return period)	Flood Mitigation(1) apr	20POPOSE D Ssn Juan-Antofagasta Area	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc_rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main_road	Single	-
				/San Juan-Antofagasta/Study Area/Si_roads	Single	-
				/San Juan-Antofaeasta/Study Area/Si_rivers	Single	-
				/San Juan-Antofagasta/Flood Mitigation/20proposed	Unique	Flood
C 6 2 (9)	Inundation Area in San Juan-Antofagasta Area (without Project : 50years return period)	Flood Mitigation(1) apr	50PRESENT San Juan-Antofagasta Area	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc_rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main_road	Single	-
				/San Juan-Antofagasta/Study Area/Si_roads	Single	-
				/San Juan-Antofagasta/Study Area/Si_rivers	Single	-
				/San Juan-Antofagasta/Flood	Unique	Flood
C 6 2 (10)	Inundation Area in San Juan-Antofagasta Area (with Project : 50years return period)	Flood Mitigation(1) apr	50POPOSE D San Juan-Antofagasta Area	/San Juan-Antofagasta/Study Area/Studyarea	Single	-
				/San Juan-Antofagasta/Study Area/Sc_roads	Single	-
				/San Juan-Antofagasta/Study Area/Sc_rivers	Single	-
				/San Juan-Antofagasta/Study Area/Main_road	Single	-
				/San Juan-Antofagasta/Study Area/Si_roads	Single	-
				/San Juan-Antofagasta/Study Area/Si_rivers	Single	-
				/San Juan-Antofagasta/Flood Mitigation/50proposed	Unique	Flood