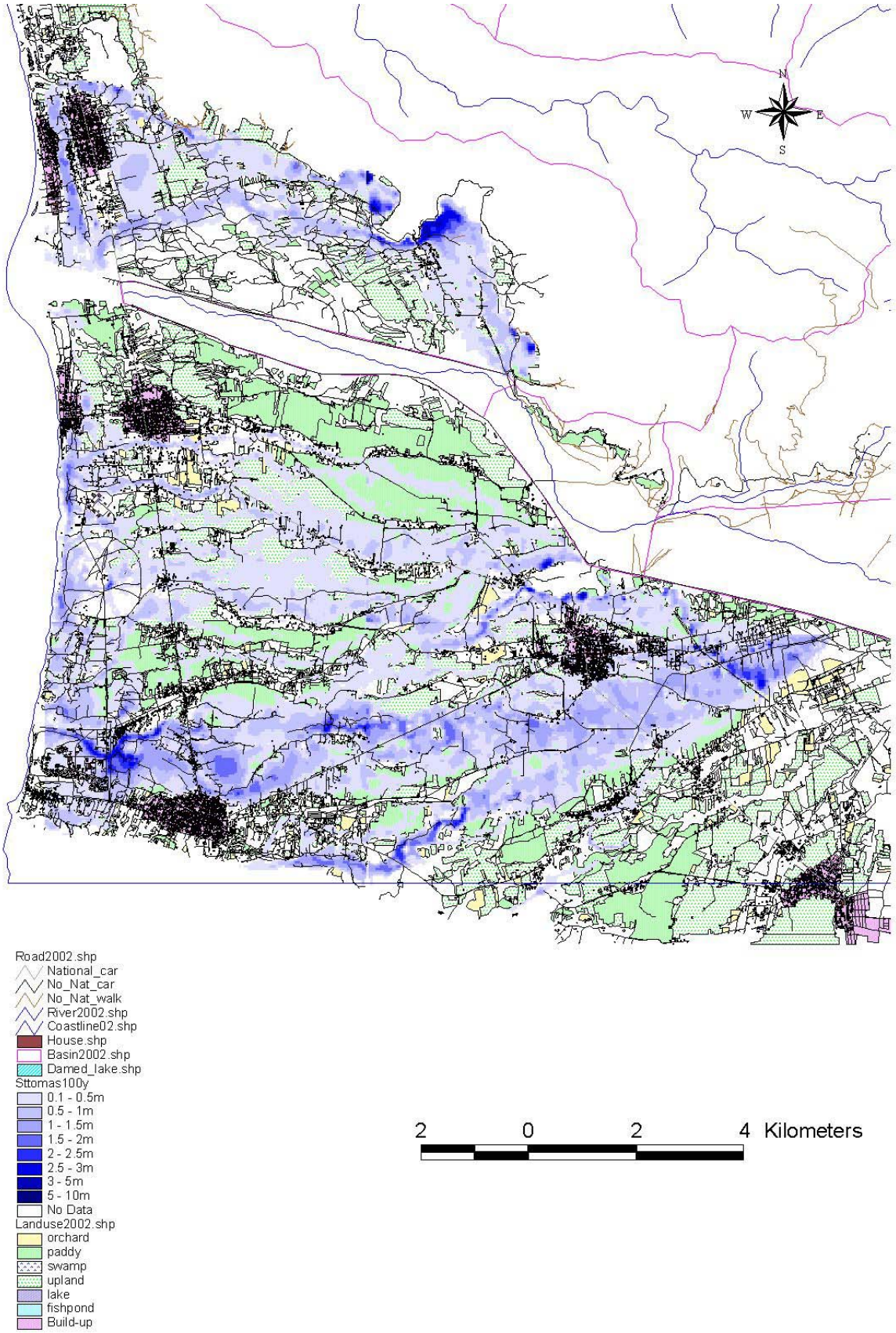

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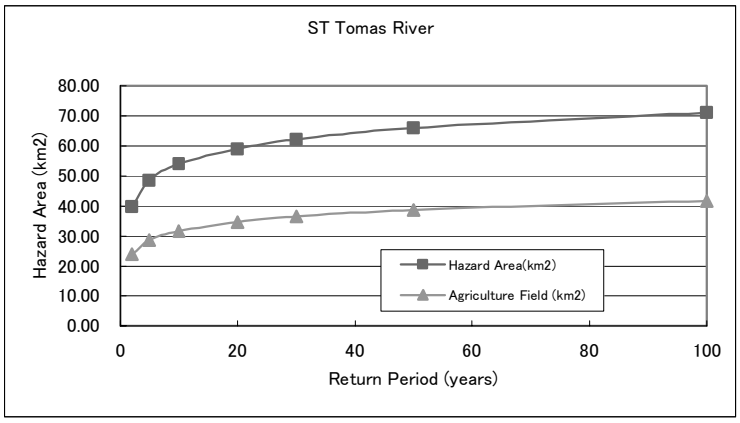
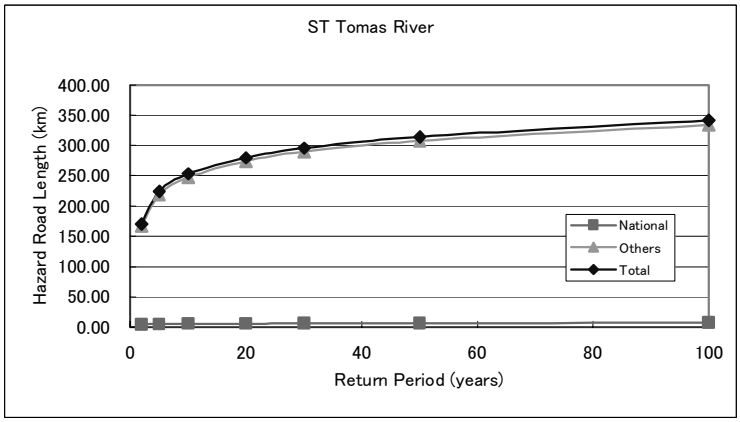
Figure 2.1.5

Sto. Tomas River Inundation Hazard Map (Probability 100 Years)

ST Tomas River Inundation Analysis Result

Return Period(years)	Hazard Area(km2)	Probable Damage				
		House (Number)	Road(km)			Agriculture Field
			National	Others	Total	
2	39.85	3782	4.13	166.19	170.32	23.87
5	48.49	5045	4.91	218.63	223.55	28.62
10	53.95	5762	5.54	247.89	253.43	31.75
20	58.94	6444	6.02	273.75	279.77	34.65
30	62.20	6832	6.26	289.54	295.79	36.56
50	65.89	7296	6.91	307.53	314.44	38.68
100	71.04	8079	7.62	333.84	341.46	41.68





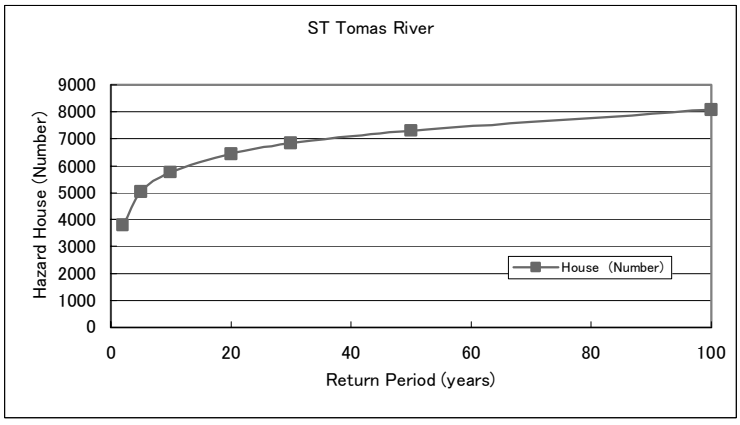


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Figure 2.1.6

Result of Inundation Analysis (Sto. Tomas River)

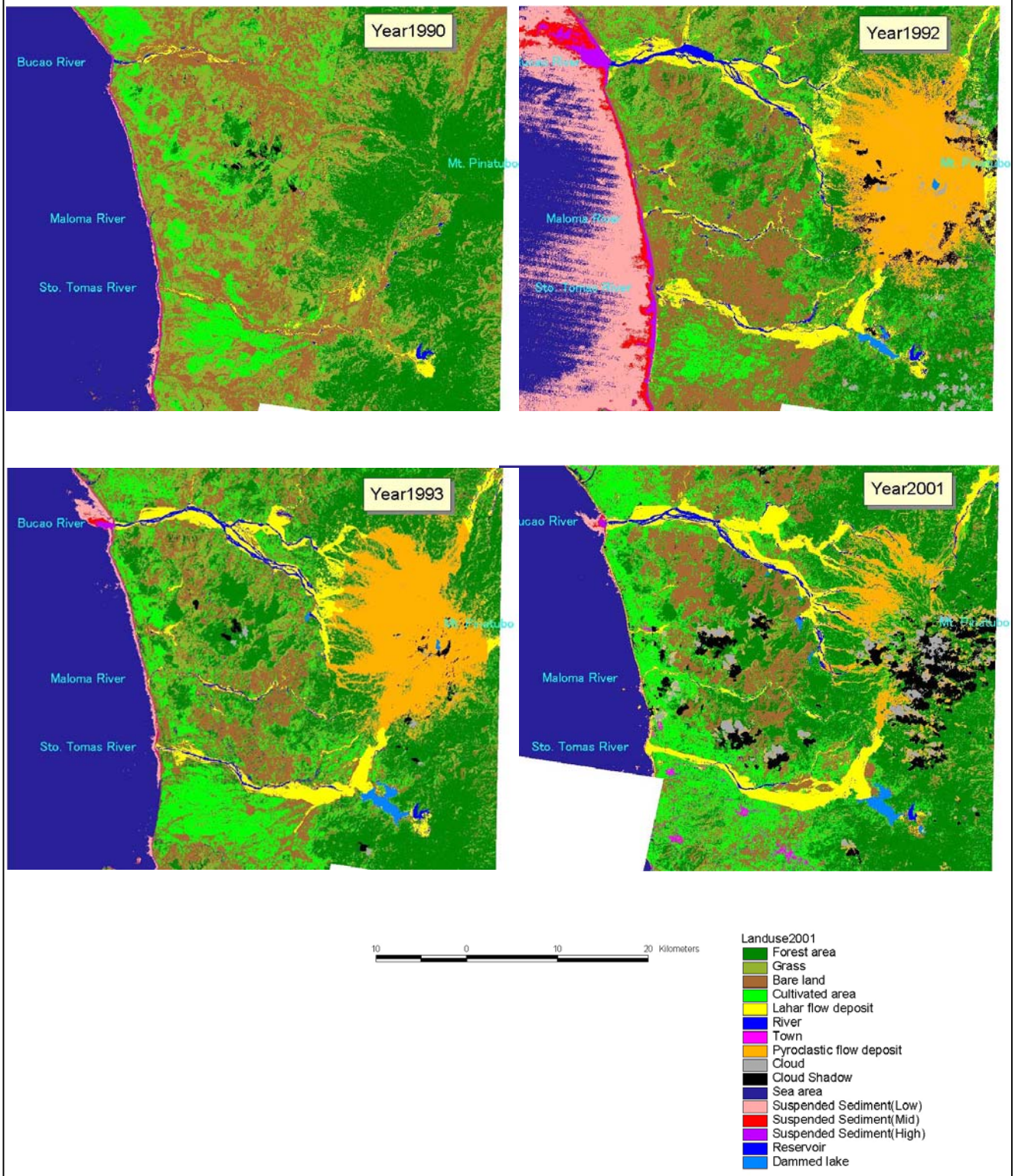

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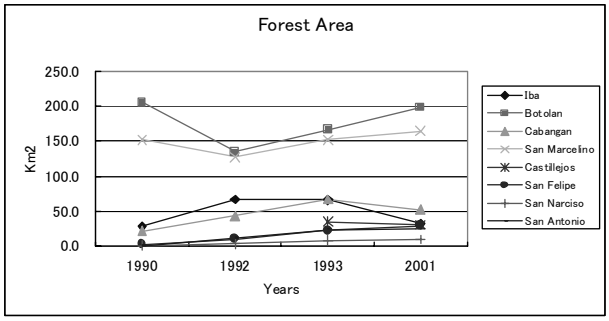
Figure 2.1.7

Land Use Condition from 1990 to 2001

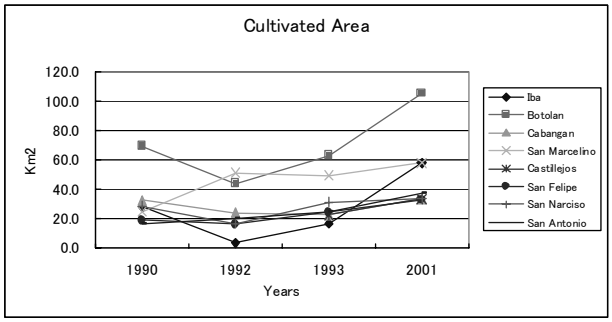
Forest Area Unit:km2

	1990	1992	1993	2001
Iba	28.2	67.1	66.5	32.4
Botolan	205.6	135.1	166.5	197.9
Cabangan	21.5	44.0	66.7	52.1
San Marcelino	152.2	127.6	151.9	164.6
Castillejos			35.2	30.6
San Felipe	2.9	10.5	22.2	29.3
San Narciso	0.9	4.2	8.6	9.8
San Antonio	0.4	11.8	23.7	24.6
Total	411.7	400.3	541.2	541.2



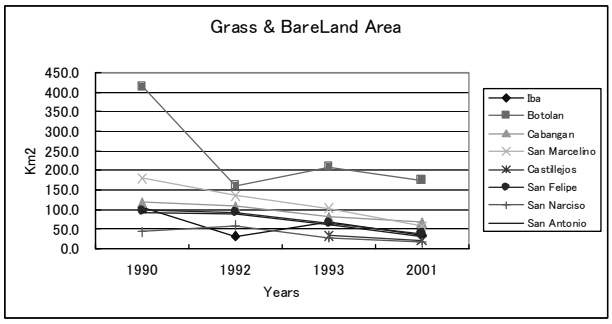
Cultivated area Unit:km2

	1990	1992	1993	2001
Iba	28.1	3.4	16.8	58.0
Botolan	69.4	44.0	63.3	105.3
Cabangan	32.5	24.2	22.6	33.3
San Marcelino	25.1	51.1	49.4	58.2
Castillejos			22.5	33.5
San Felipe	19.0	16.2	24.4	32.8
San Narciso	28.8	16.5	31.2	34.2
San Antonio	16.5	20.1	24.5	37.4
Total	219.5	175.6	254.7	392.6



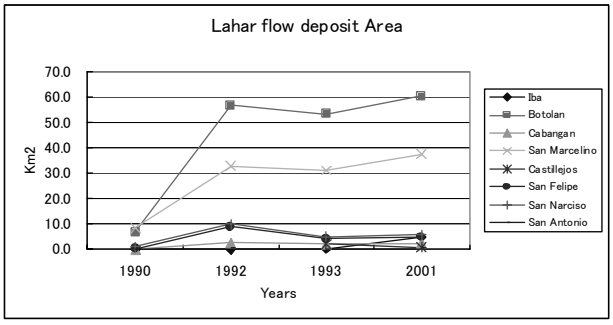
Grass+Bare land Unit:km2

	1990	1992	1993	2001
Iba	106.8	31.6	69.6	35.6
Botolan	413.8	161.6	208.9	175.3
Cabangan	118.9	109.1	81.6	67.4
San Marcelino	179.8	135.6	102.7	58.2
Castillejos			33.9	22.6
San Felipe	97.9	93.6	67.3	38.3
San Narciso	44.3	59.2	28.4	15.9
San Antonio	92.5	89.9	62.6	30.5
Total	1054.1	680.7	655.2	443.8



Lahar flow deposit Unit:km2

	1990	1992	1993	2001
Iba	0.0	0.0	0.4	4.9
Botolan	6.9	56.5	53.2	60.2
Cabangan	0.0	2.7	2.1	2.3
San Marcelino	8.4	32.8	31.0	37.5
Castillejos			2.1	1.0
San Felipe	0.4	8.9	4.1	4.8
San Narciso	1.1	9.9	5.0	5.8
San Antonio	0.0	0.3	0.0	0.3
Total	16.9	111.0	98.0	116.7



Pyroclastic flow deposit Unit:km2

	1990	1992	1993	2001
Iba	0.0	0.0	0.0	0.4
Botolan	0.0	202.2	189.0	82.6
Cabangan	0.0	0.0	0.0	2.2
San Marcelino	0.0	34.6	18.8	12.8
Castillejos			0.0	0.5
San Felipe	0.0	0.0	0.0	0.9
San Narciso	0.0	0.0	0.0	0.0
San Antonio	0.0	0.0	0.0	1.8
Total	0.0	236.8	207.9	101.3

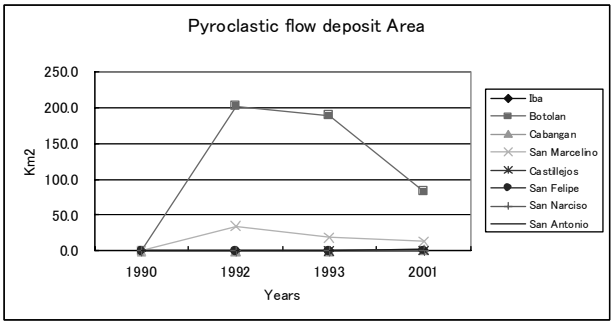


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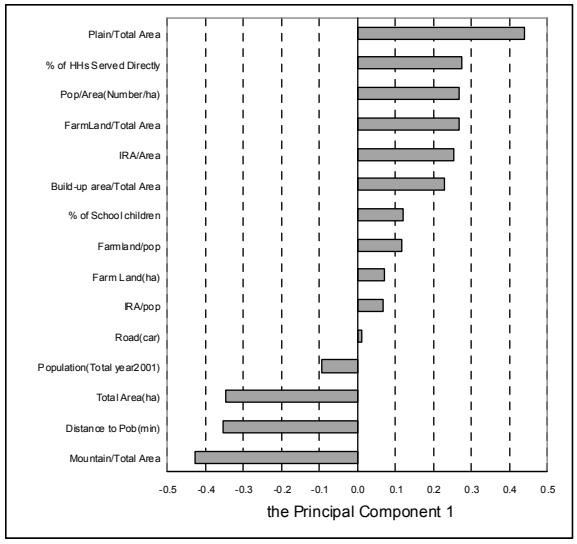
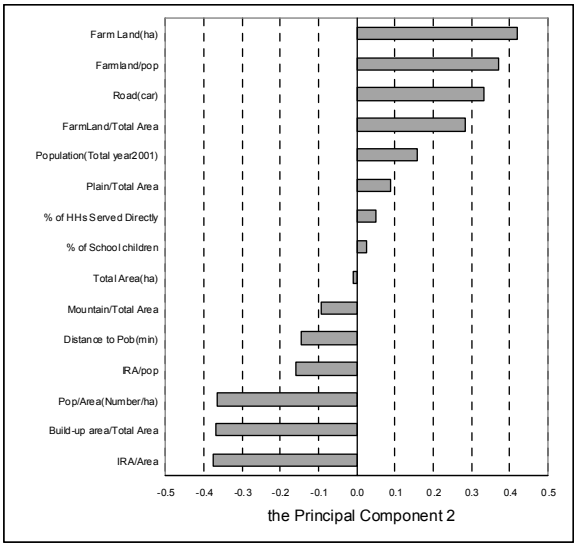
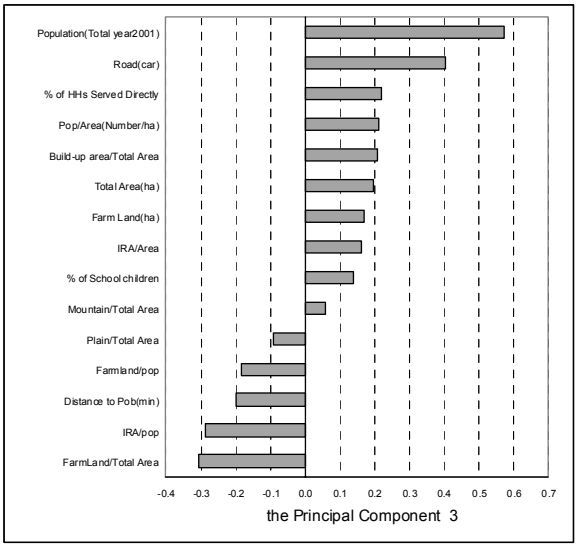
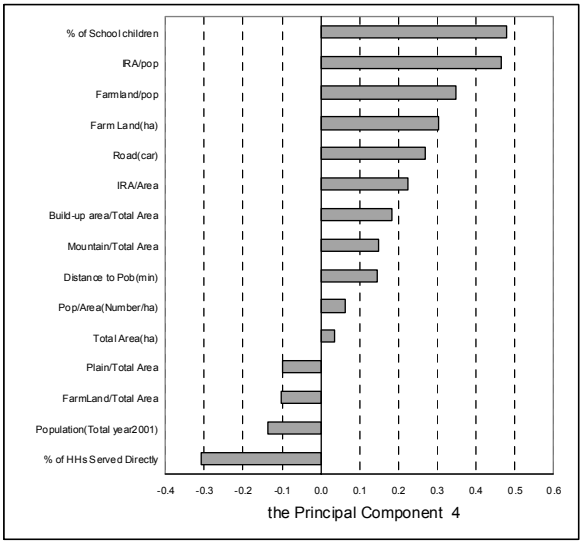
Figure 2.1.8

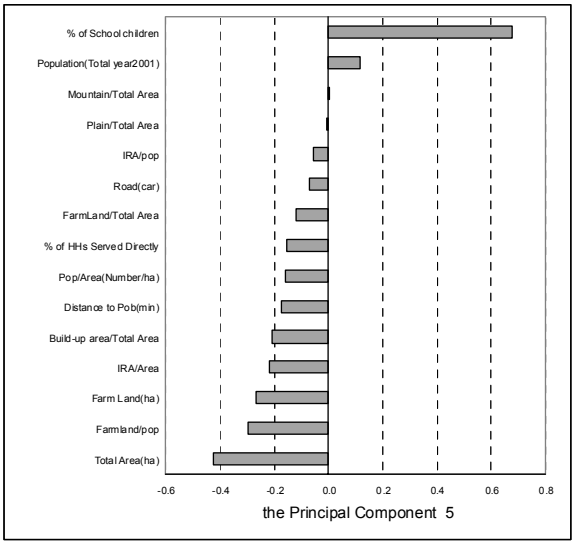
Trend of Land Use Condition from 1991 to 2002











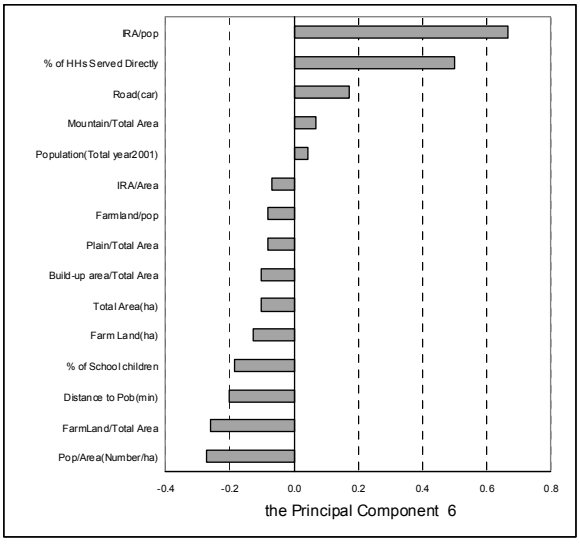


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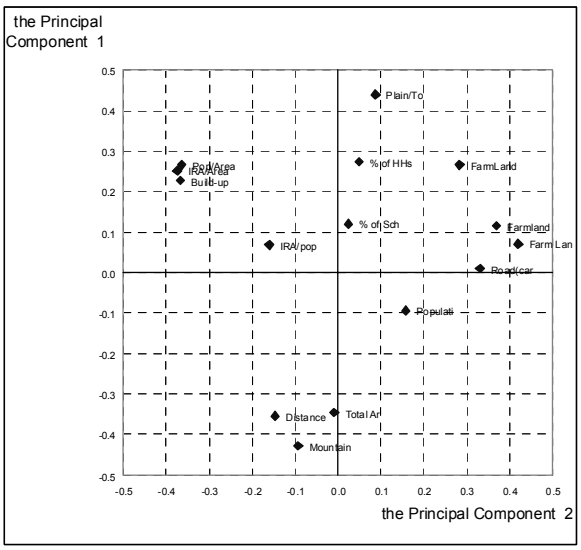
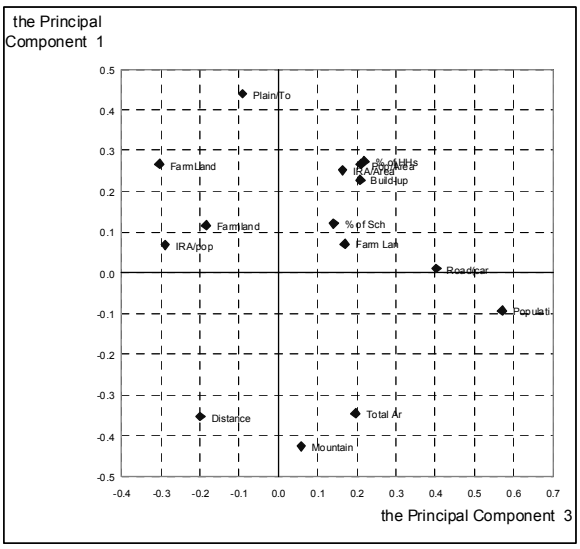
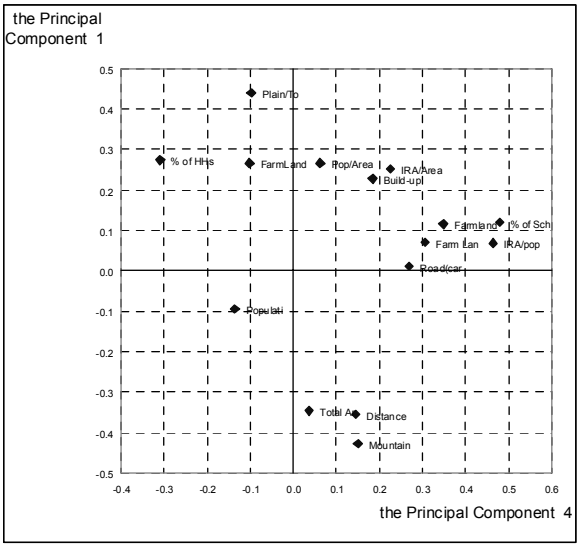
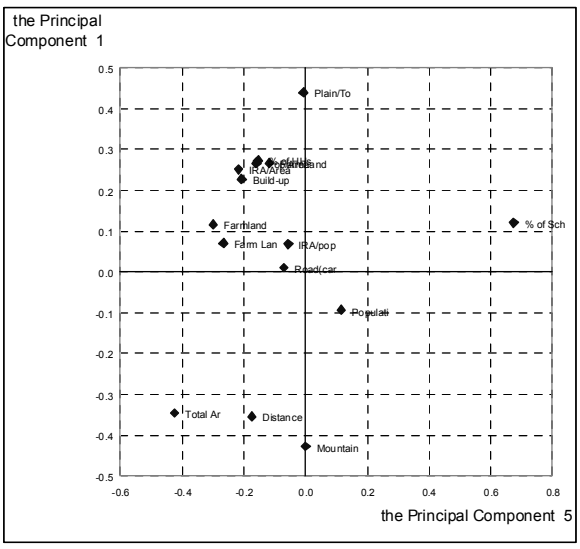
Figure 2.2.1

Vector of Each Principal Component (1/2)









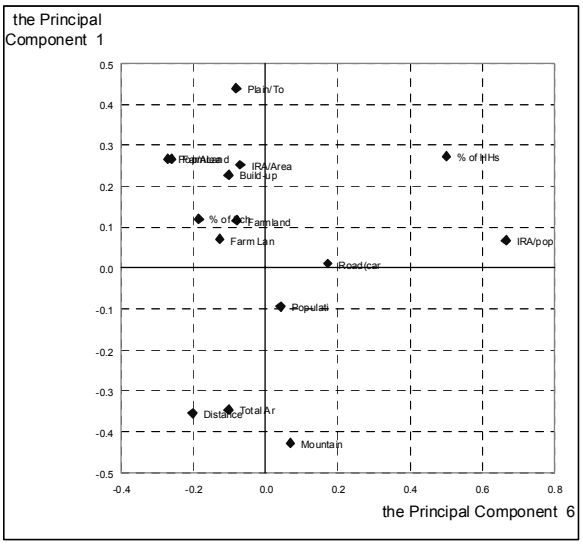


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Figure 2.2.1

Vector of Each Principal Component (2/2)