APPENDICES

APPENDIX A
SUGARCANE CULTIVATION OF EACH AGE

Figure 1.1 1 month of sugarcane

Figure 1.2 2 months of sugarcane

Figure 1.3 3 months of sugarcane

Figure 1.4 4 months of sugarcane

Figure 1.5 5 months of sugarcane

Figure 1.6 6 months of sugarcane

Figure 1.7 7 months of sugarcane

Figure 1.8 8 months of sugarcane

APPENDIX B
WEIGHT AND RATE FACTOR ANALYSIS

Weight and rate factor analysis

Weighting factors and rating factors by potential surface analysis was determining suitable areas for sugarcane cultivation, which have details as follows:

Table B.1 Detail of factor to evaluate suitable for sugarcane cultivation area in Kanchanaburi Province

Factor	Detail of factor
Weather factor	
1.Annual Rainfall	Rain is affect to time of planting sugarcane. Sugarcane requires an average annual rainfall of less than 1,000 mm per year.
2. Temperature	Temperature is influence of period crop and harvest sugarcane. It' s about 30-35 Celsius
Topology factor	
3. Slope	Sugarcane is grow well in slope 3% - 12%
4. Land Use	In Kanchanaburi Province has various landuse. For example; urban, forest, water source and agriculture that difference to plant sugarcane.
Soil factor	
5.Soil Texture	Sugarcane can grow in loam, clay loam.
6. Soil drainage	Soil drainage is ability to absorb water and air. Sugarcane grows well in good drainage or quite good.
7. pH	pH is affect to fusion nutrient of sugarcane. It need pH pH 5.0-8.5
8. Soil depth	Soil depth is ability of plant roots to find nutrient in soil. Sugarcane is need more than 150 centimeter of soil.
Water factor	
9.Irrigation zone	Irrigation zone is suitable for cultivation plant more than other zone.
10. Water source	Far from water source is suitable for cultivation plant less than near water source.

Source: Analysis

Weighting factors and rating factors are used in spatial analysis that determines suitable areas for sugarcane cultivation referring to weighting factor criteria and factor capacity from Department of Agriculture, Land Development Department, related agencies, and an interview with soil management specialist, Associate Professor Chalee Navanukroh. Weighting factors are then input into an analytic hierarchy process (AHP) by direct comparison between factors which shows weighted factor in following table:

Score of factor is 0-10

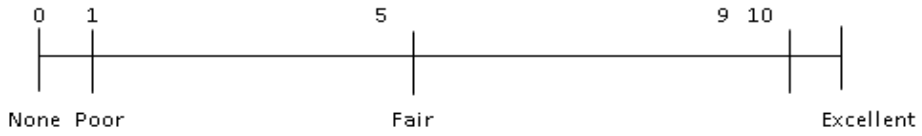

Table B.2 Weighting factors to evaluate suitable for sugarcane cultivation area in Kanchanaburi Province

Factor	Weighting score
1. Rainfall	10
2. Temperature	6
3. Slope	5
4. Land Use	1
5. Soil Texture	7
6. Soil drainage	9
7. pH	4
8. Soil depth	8
9. Irrigation zone	3
10. Stream	2

Source: Analysis

Table B.3 Rating factor in each factor to evaluate suitable area for sugarcane cultivation area in Kanchanaburi Province

Factor	Detail	Rating score
1. Annual rainfall	1.1 1,200-1,500 mm.	4
	1.2 1,500-2,500 mm.	3
	1.3 2,500-4,000 mm.	2
	1.4 <500, >4,000 mm.	1
2. Temperature	2.1 25-29 ℃	4
	2.2 30–32 ℃	3
	2.3 33–35, 10-13 ℃	2
	2.4 >35, <10 ℃	1
3. Slope	3.1 0-2%	4
	3.2 3-5%	3
	3.3 6-12%	2
	3.4 >12%	1
4. Landuse	4.1 Agricultural area	4
	4.2 Communities & Buildings	3
	4.3 Forest & Water Resources	2
	4.4 Others	1
5. Soil Texture	5.1 C<65%,L,SCL,SiL,Si,CL,L	4
	5.2 SiCL, SL	3
	5.3 SiC, LS	2
	5.4 C(>65%),G,SC,AC,S	1
6. Soil drainage	6.1 Very Good, Good	4
	6.2 Moderate	3
	6.3 Rather Good	2
	6.4 Bad, Worst	1
7. pH	7.1 6.1-7.3	4
	7.2 7.4-7.8, 5.1-6.0	3
	7.3 7.9-8.4, 4.0-5.0	2
	7.4 >8.4, <4	1
8. Soil Depth	8.1 > 150 cm.	4
	8.2 100 - 150 cm.	3
	8.3 50 - 100 cm.	2
	8.4 < 50 cm.	1
9. Irrigation zone	9.1 Out	2
	9.2 In	4
10. Distance to water resource	10.1 <500 m.	4
	10.2 500–1000 m.	3
	10.3 1000–1500 m.	2
	10.4 >1500 m.	1

Notes: Soil texture; L = Loam, SiCL = Silty clay loam, SCL = Sandy clay loam, CL = Clay loam, SL = Sandy loam, C = Clay, LS = Loammy sand, SC = Sandy clay, SiC = Silty clay, S = Sand, G = Gravel soil, SC = Slope complex, AC = Alluvial complex

Notes: Weighting factors and factor capacity is on study process

Weighting Factors rating for suitable factors for sugarcane cultivation

High suitable	4
Moderate Suitable	3
Low Suitable	2
Non-suitable	1

Source: Analysis

APPENDIX C

FACTOR OF SUITABLE SUGARCANE CULTIVATION USING POTENTIAL SURFACE ANALYSIS

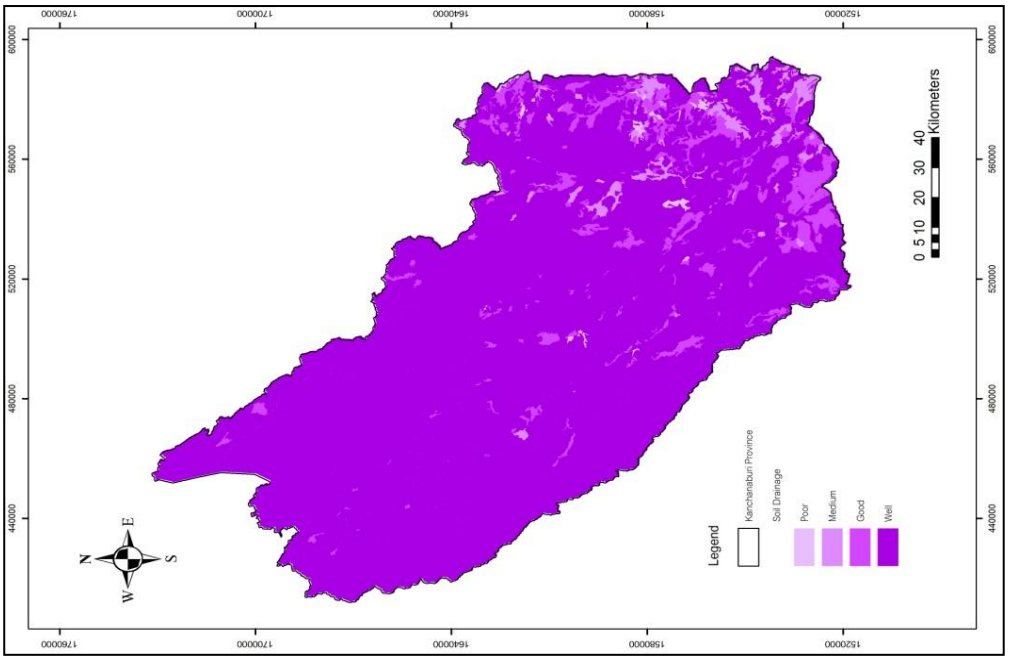

Figure C.2 Soil Drainage

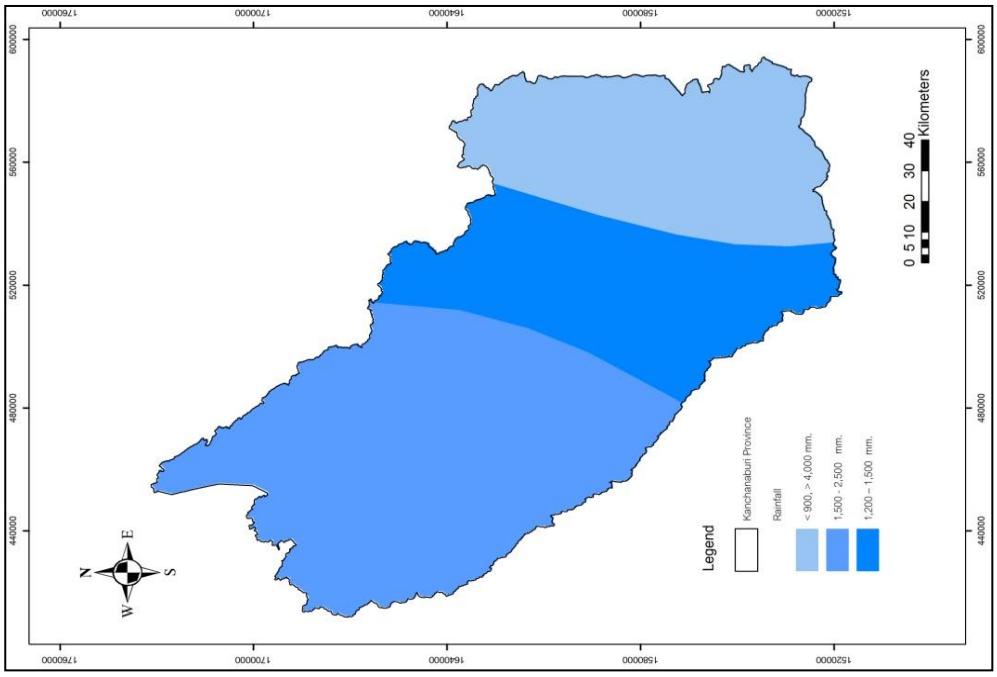

Figure C.1 Annual Rainfall

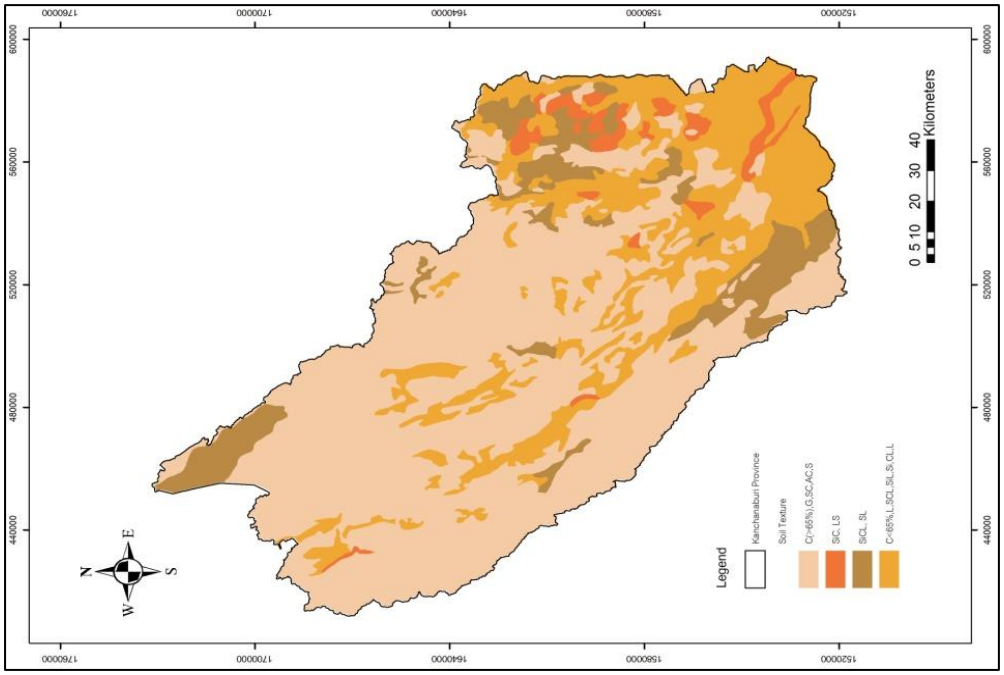

Figure C.4 Soil Texture

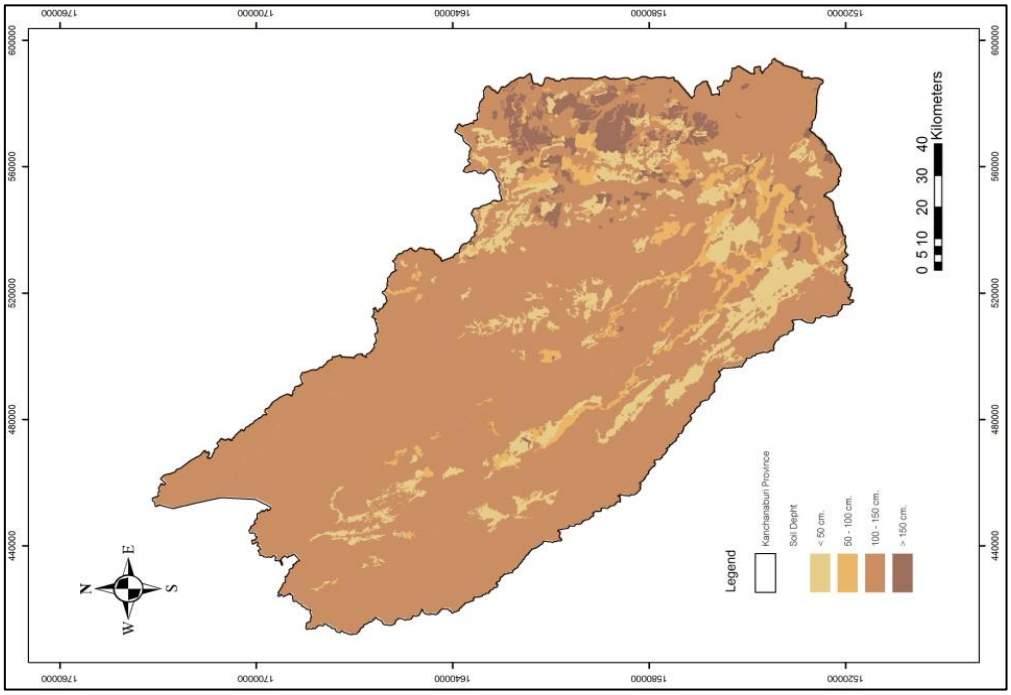

Figure C.3 Soil Depth

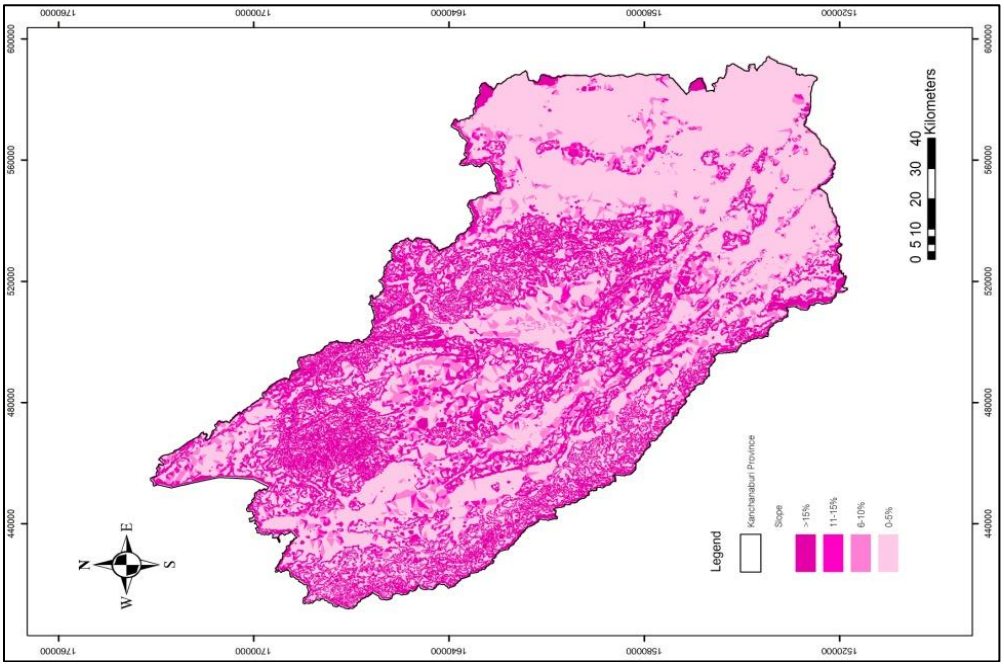

Figure C.6 Slope

Figure C.5 Temperature

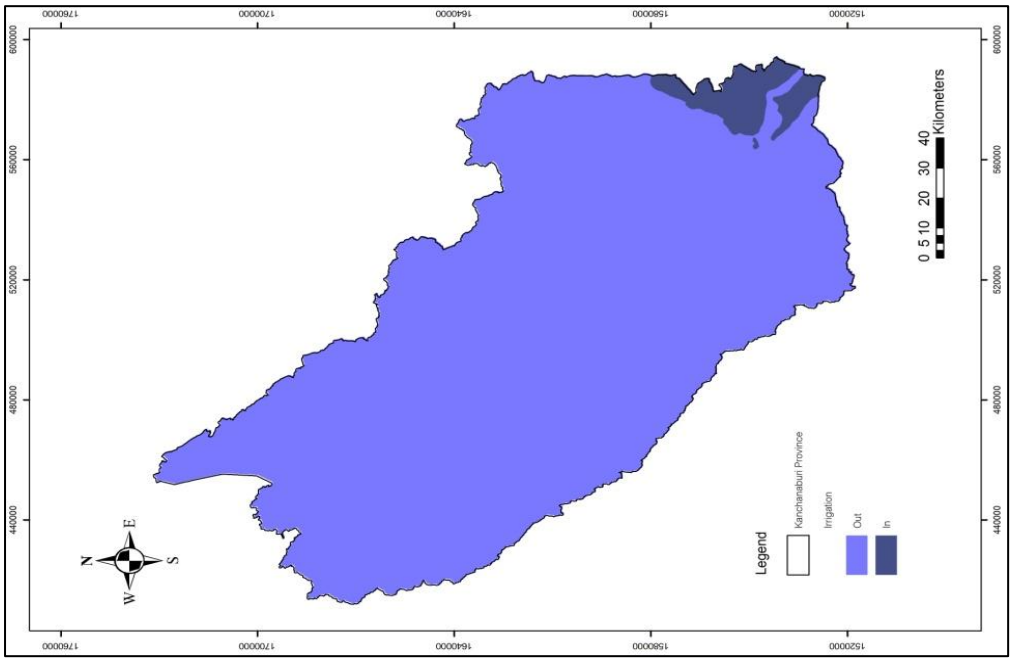

Figure C.8 Irrigation Zone

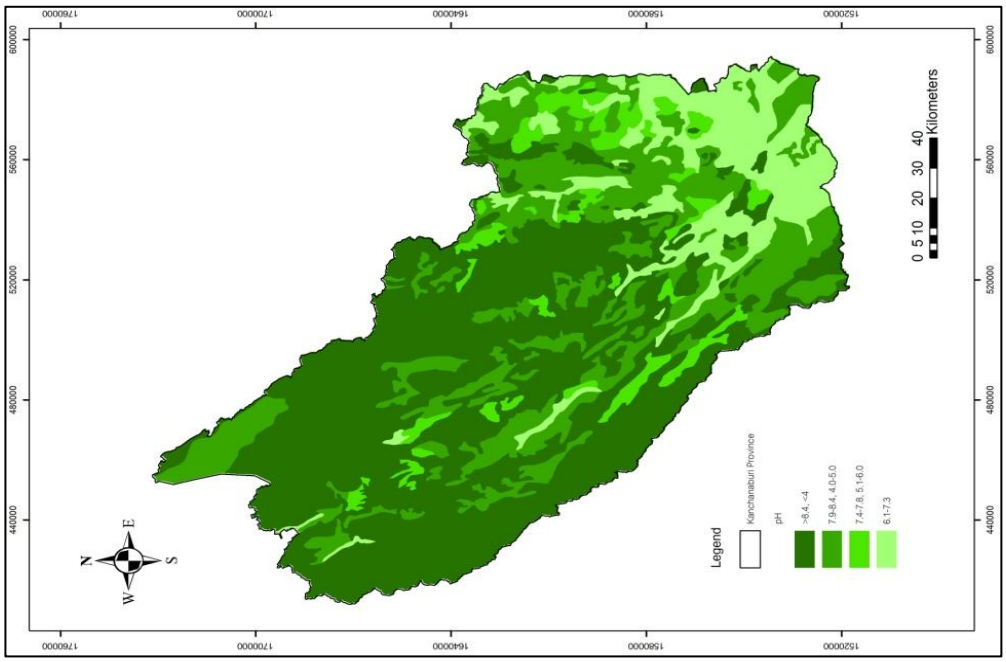

Figure C.7 pH

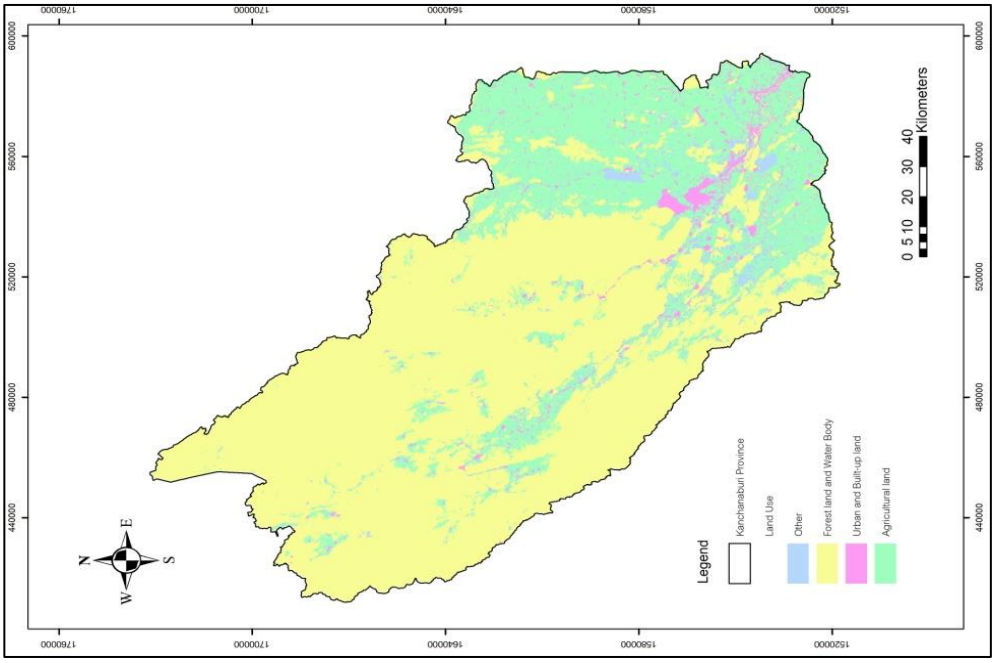

Figure C.10 Land Use

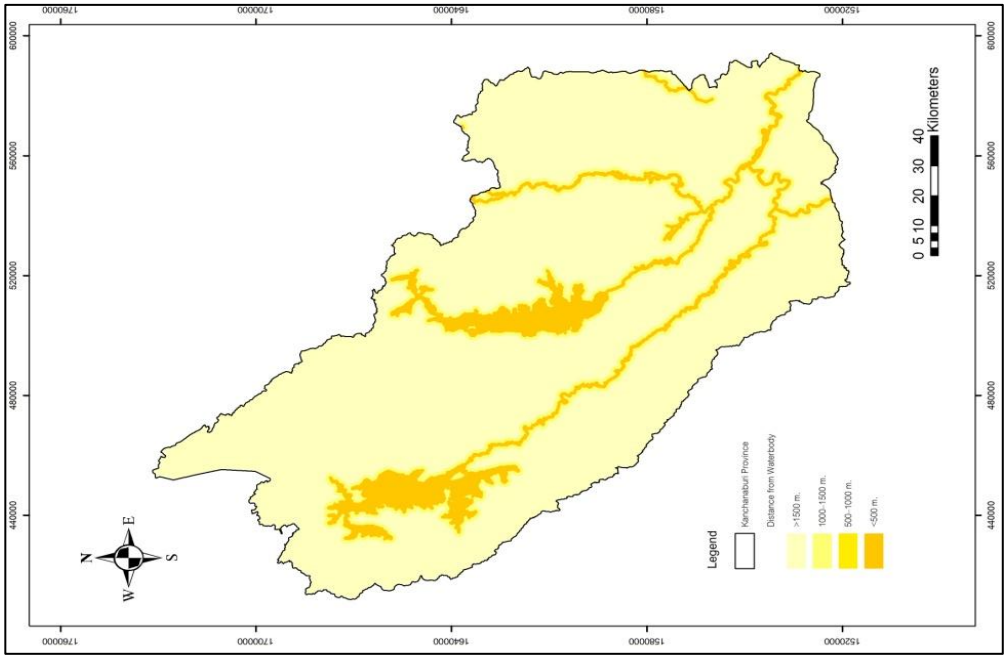

Figure C.9 Water Sourcel