Article

Novel Credal Decision Tree-based ensemble approaches for predicting the landslide susceptibility

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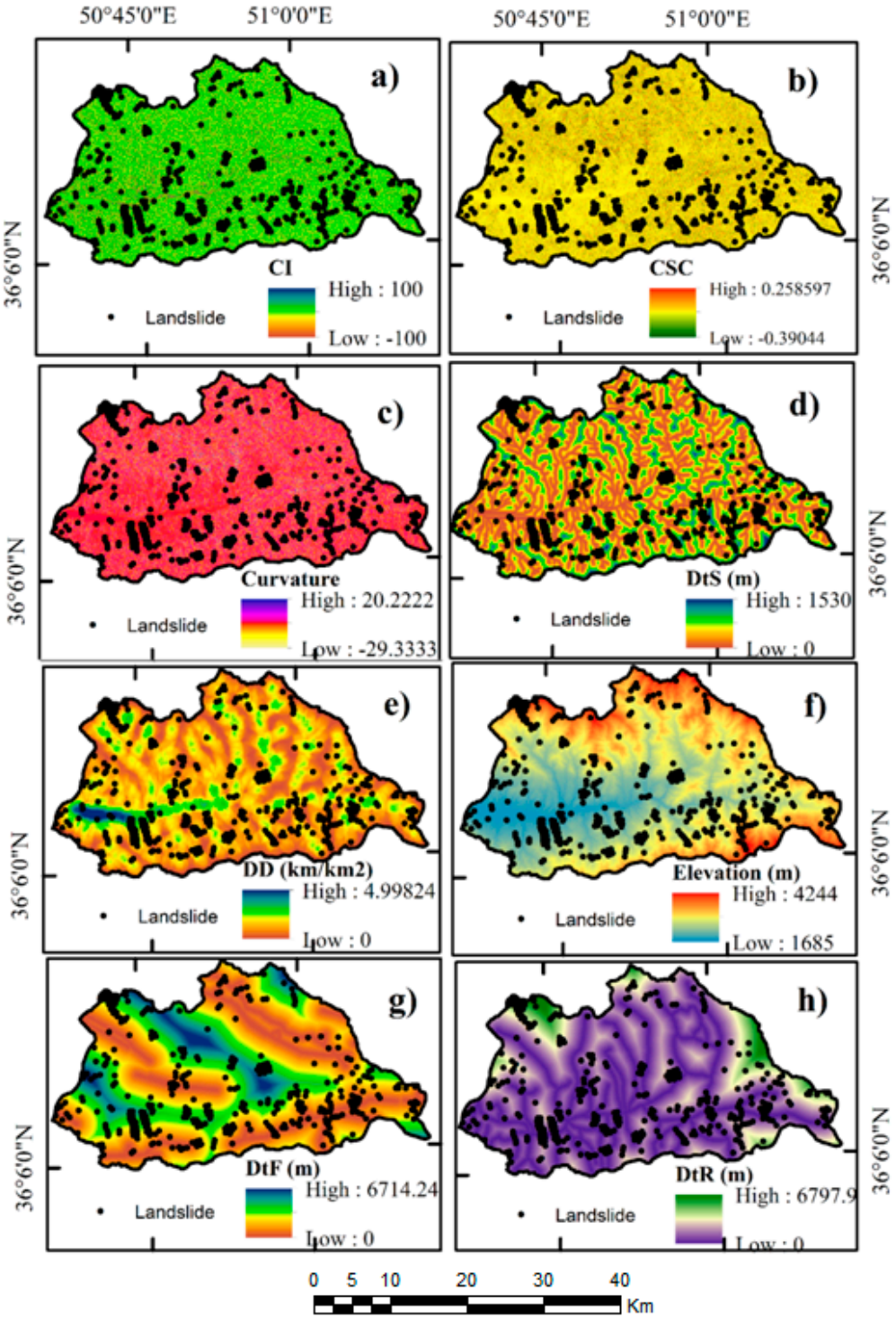
Section 1

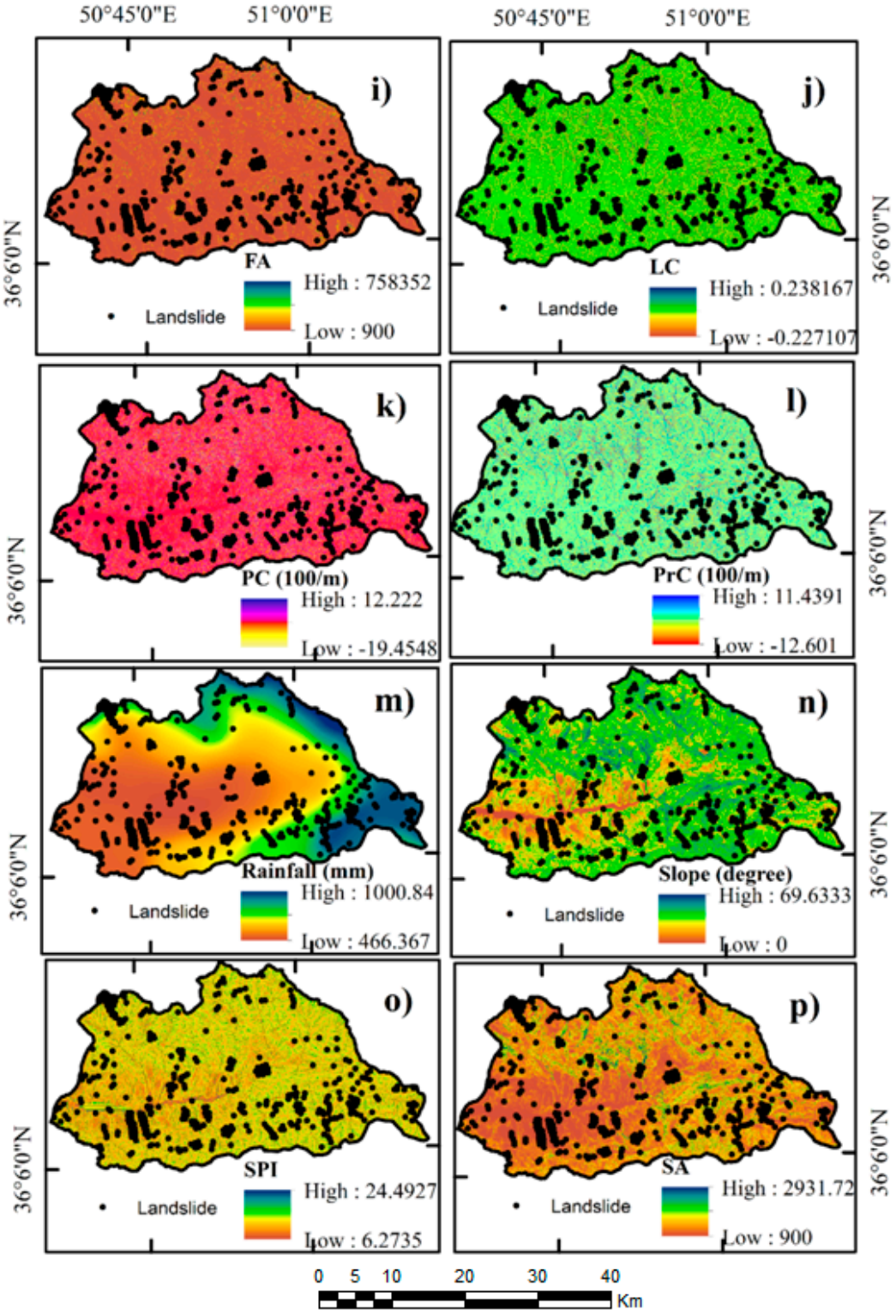
Table 1. Abbreviation and their respective description of several lithological units present in the study area.

Unit	Description
Ebv	Basaltic volcanic rocks
Ek	Well bedded green tuff and tuffaceous shale (KARAJ FM)
Cm	Dark grey to black fossiliferous limestone with subordinate black shale (MOBARAK FM)
Odi	Diorite
pC-C	Late proterozoic - early Cambrian undifferentialed rocks
Pgkc	Light-red coarse grained, polygenic conglomerate with sandstone intercalations
Ea.bv	Andesitic and basaltic volcanics
Ekgy	Gypsum
Eavt	Andesitic volcanic tuff
Mm,s,l	Marl, calcareous sandstone, sandy limestone and minor conglomerate
Qft1	High level piedmont fan and vally terrace deposits
Jl	Light grey, thin - bedded to massive limestone (LAR FM)
pCk	Dull green grey slaty shales with subordinate intercalation of quartzitic sandstone (KAHAR FM ; Morad series and Kalmard Fm)
TRJs	Dark grey shale and sandstone (SHEMSHAK FM.)
pC-Cs	Thick dolomite and limestone unit, portly cherty with thick shale intercalations (SOLTANIEH FM)
COm	Dolomite platy and flaggy limestone containing trilobite ; sandstone and shale (MILA FM)
PeEz	Reef-type limestone and gypsiferous marl (ZIARAT FM)
P	Undifferentiated Permian rocks
Pr	Dark grey medium - bedded to massive limestone (RUTEH LIMESTONE)

Source: Geological Society of Iran (GSI)

Section 2: **Several gully erosion conditioning factors**




50°45'0"E
51°0'0"E
36°6'0"N
i)
FA
High : 758352
Low : 900
Landslide
j)
LC
High : 0.238167
Low : -0.227107
k)
PC (100/m)
High : 12.222
Low : -19.4548
l)
PrC (100/m)
High : 11.4391
Low : -12.601
m)
Rainfall (mm)
High : 1000.84
Low : 466.367
n)
Slope (degree)
High : 69.6333
Low : 0
o)
SPI
High : 24.4927
Low : 6.2735
p)
SA
High : 2931.72
Low : 900
0 5 10 20 30 40
Km

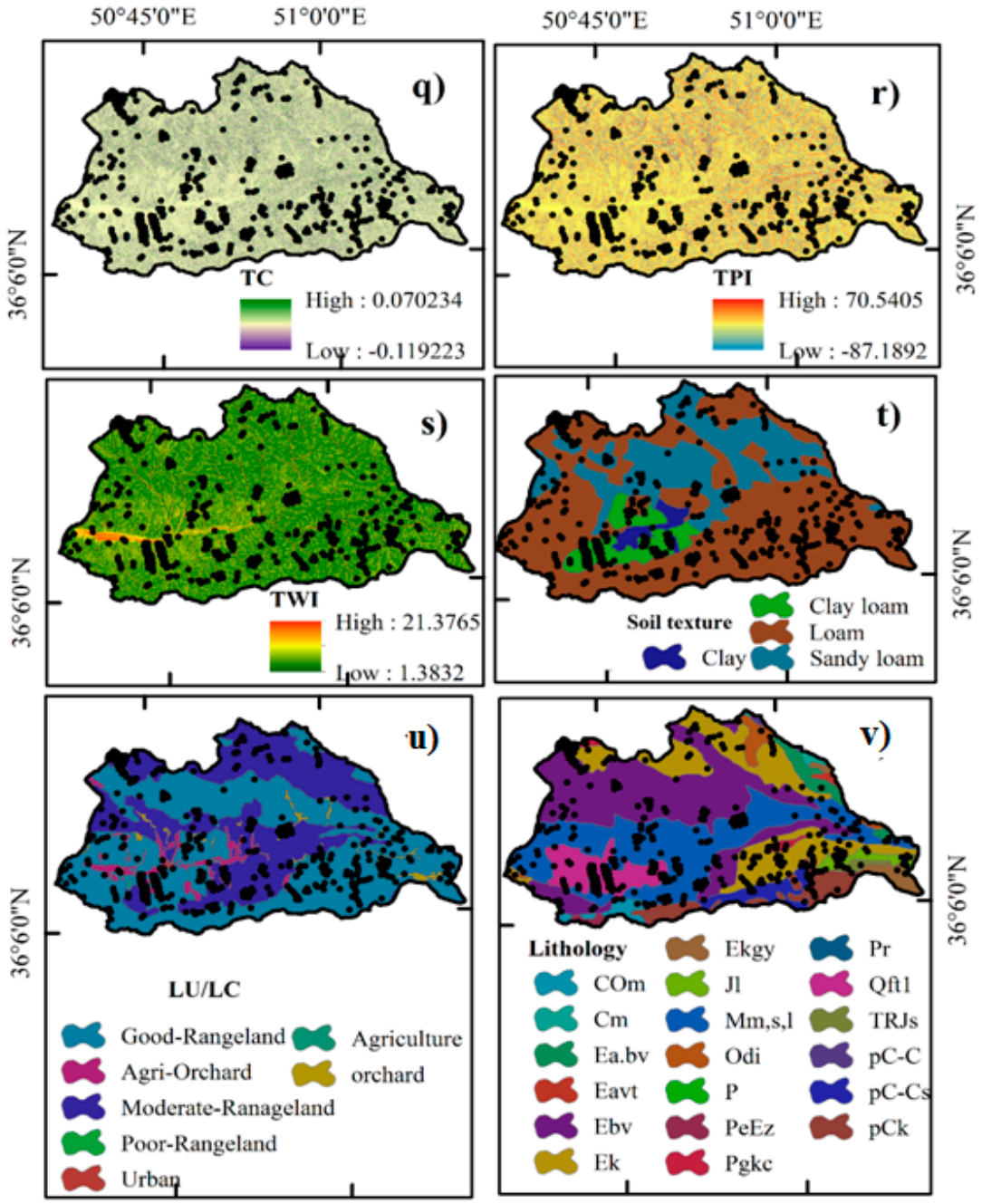


Figure S1. Landslide points and several landslide conditioning factors a) convergence index (CI), b) cross-sectional curvature (CSC), c) curvature, d) distance to stream (DtS), e) drainage density (DD), f) elevation, g) distance to fault (DtF), h), distance to road (DtR), i) flow accumulation (FA), j) longitudinal curvature (LC), K) plan curvature (PC), l) profile curvature (PrC), m) rainfall, n) slope, o) stream power index (SPI), p) surface area (SA), q) Tangential curvature (TC), r) topography position index (TPI), s) topography wetness index (TWI), t) soil texture, u) land use/land cover (LU/LC). v) Lithology.