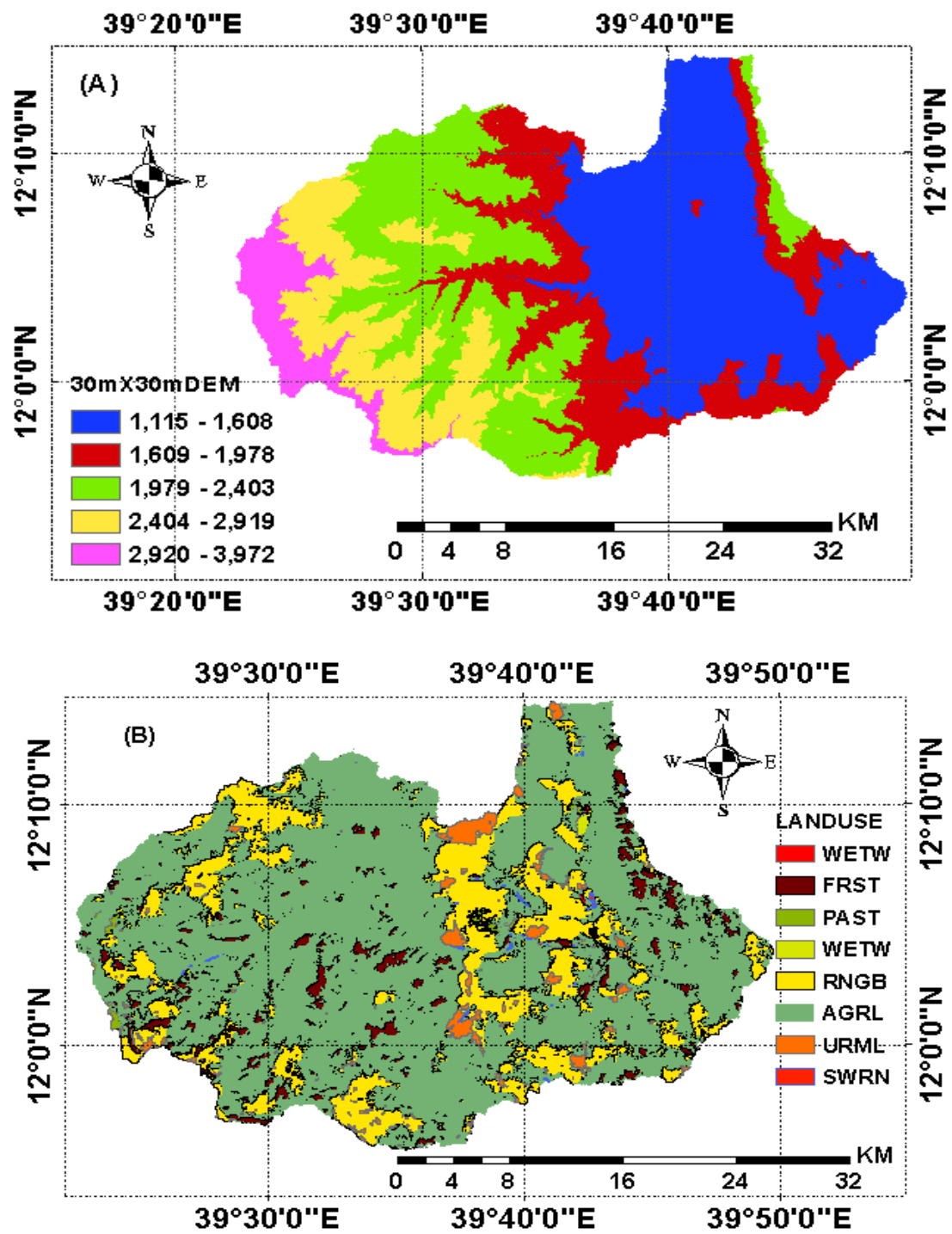
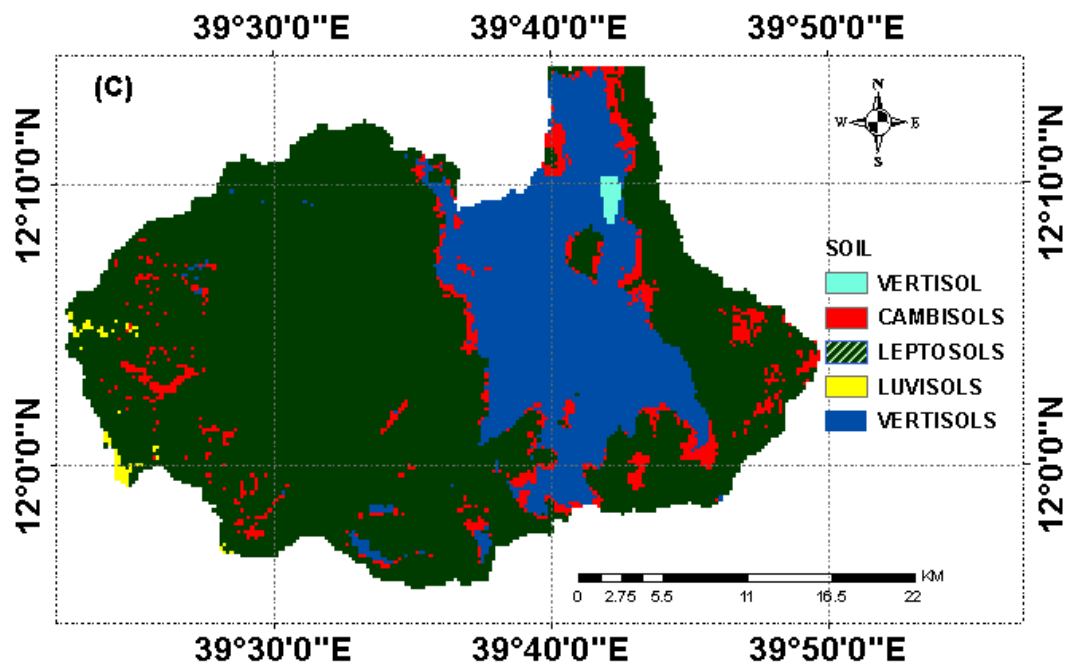


## Supplementary material





**Figure S1.** Physical land resources of the study area A) DEM, B) Land use, C) Soil; Note: URML (Urban Medium Density), AGRL (Agricultural land generic), FRST (Forest), RNGB (Range Shrubland), South Western Range +Bed rock (SWRN), PAST (Pasture land), WETW (Water).

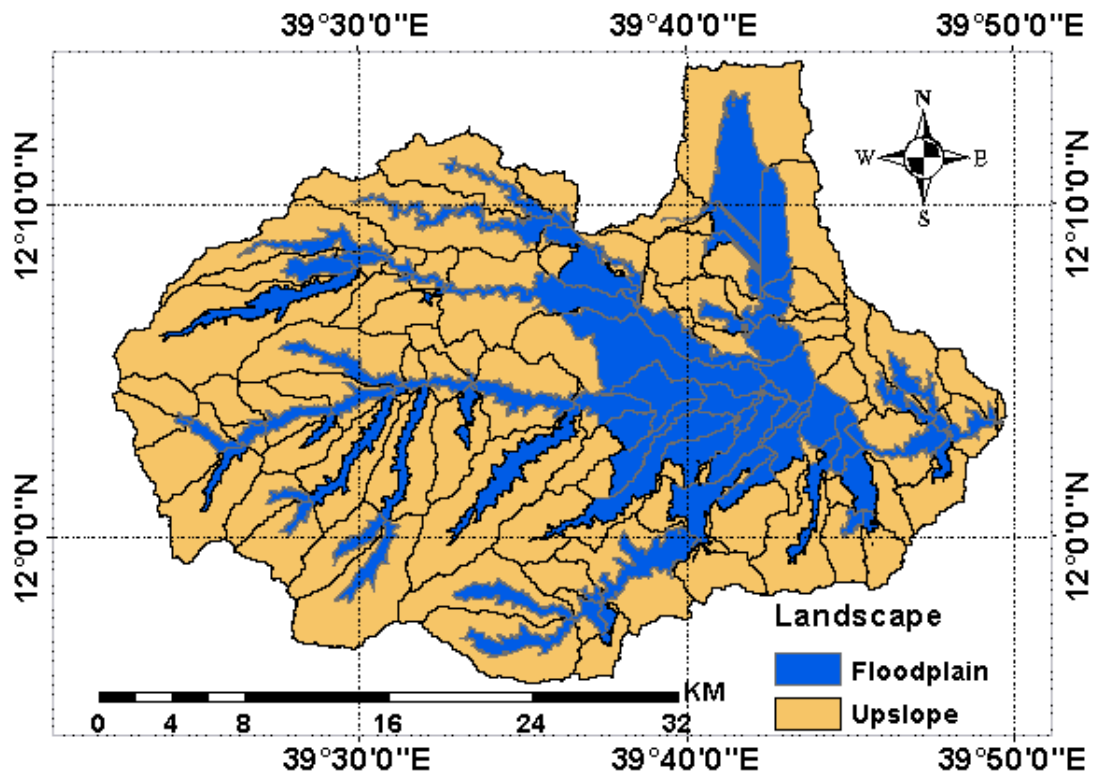


Figure S2. Landscape of the study area.

Table S1: Parameter range and change type to simulated SWAT using MODIS AET and GloFAS river flow

SWAT parameter	Parameter Description	Change type	min	max	units
CN2.hru	SCS runoff curve number for moisture condition II	Percent	-20	20	
Esco. hru	Soil evaporation compensation factor	replace	0	1	
Epc. hru	Plant uptake compensation factor	Replace	0	1	
Canmx. hru	Maximum canopy storage	Relative	-1.5	-1	mm/H <sub>2</sub> O
Perco. hru	Percolation coefficient	Replace	0.3	0.6	fraction
k.sol	Saturated hydraulic conductivity	Relative	5	55	mm/hr
Alpha. aqu	Base flow alpha factor	Replace	0	0.98	days
revap_min. aqu	Threshold depth of water in the shallow aquifer for “revap” to occur	Replace	100	500	mm
cn3_swf.hru	Pothole evaporation coefficient	Percent	-60	30	
awc.sol	Available water capacity of the soil layer	Relative	-0.5	0.5	Mm/ H <sub>2</sub> O/mm

flo_min.aqu	Minimum aquifer storage to allow return flow	Replace	0	8	mm
Bd.sol	Moist Bulk density	Replace	0	1	Mg/m**3
Bd.sol	Moist Bulk density	Replace	0	1	g/cm**3

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