

Water Storage & Water Availability and Release

Information and basin analysis

Meteorological – rain gauge – rainfall (decadal, yearly, monthly, weekly), Temperature, Relative humidity, wind speed

Terrain – Digital elevation, slope, drainage, land cover and land use, soil, geology,

Water infrastructure - Reservoirs, pond/lakes, canals, aquifers

Agriculture – Crop type & area

Socio-economic- demography (human & Livestock), other users

Water availability – Surface water – run off estimation (SWAT)

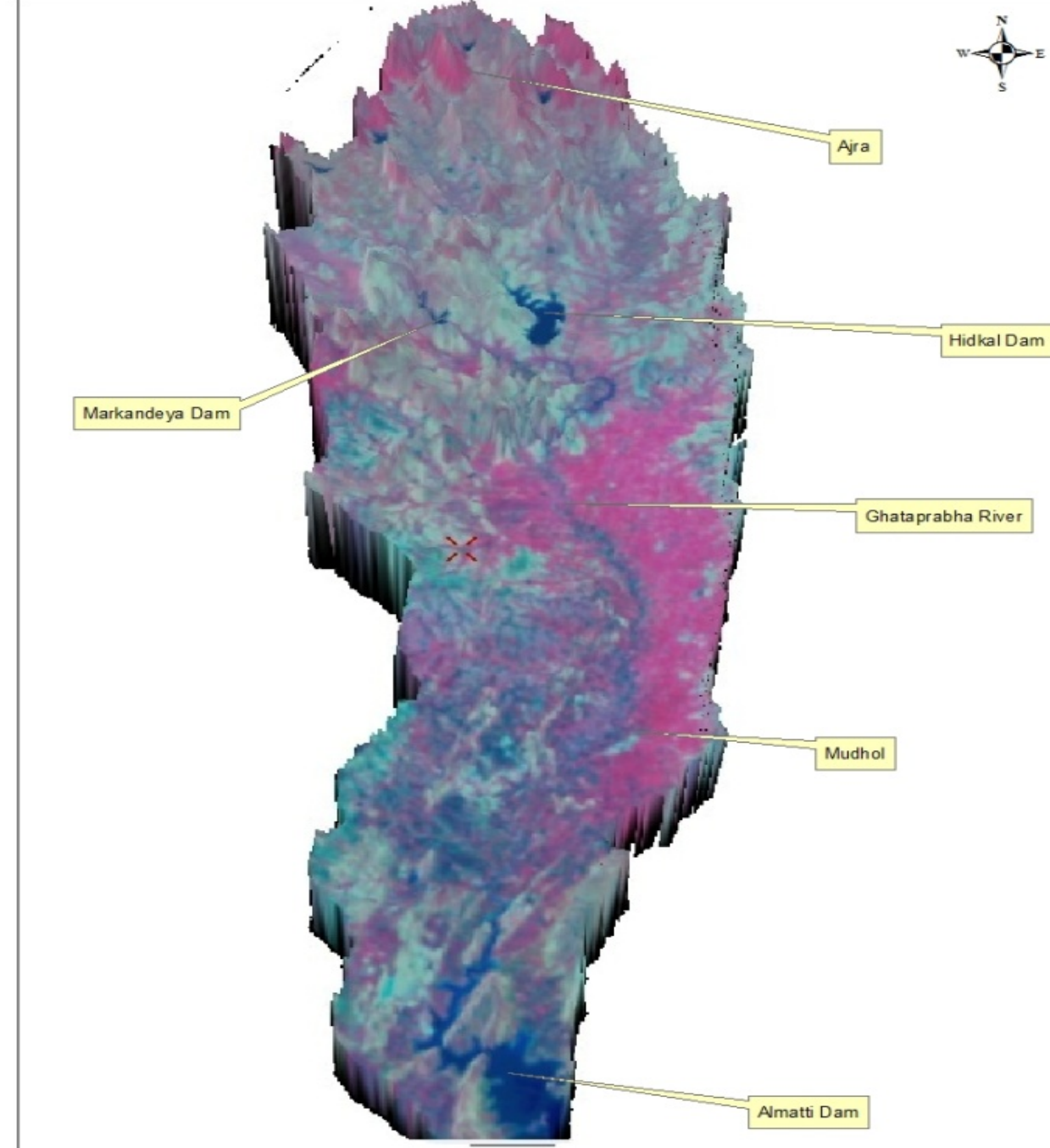
Ground water – water level fluctuation

Water requirement – drinking, crop water & other needs

Supply Deficit – Water availability – requirement

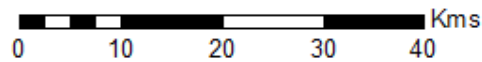
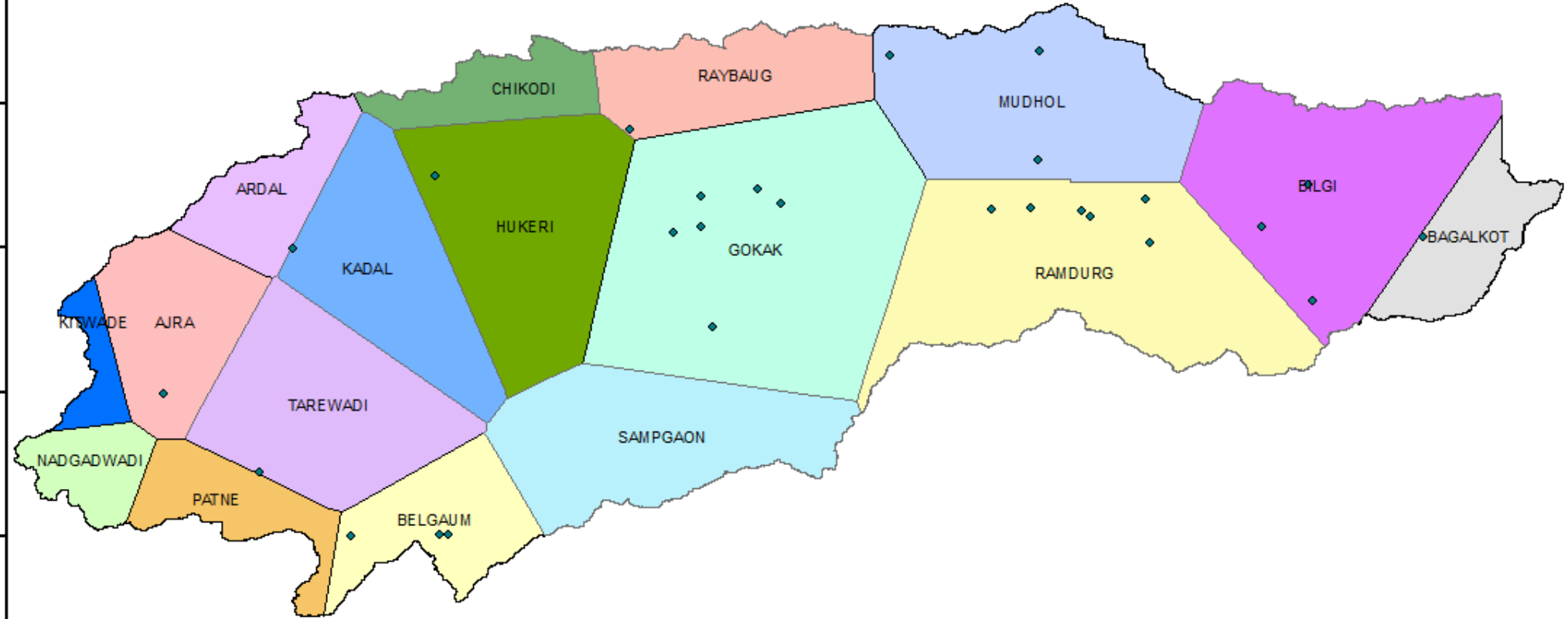
Climate change – rainfall and temperature

Vulnerability – basin and sub-basin wise



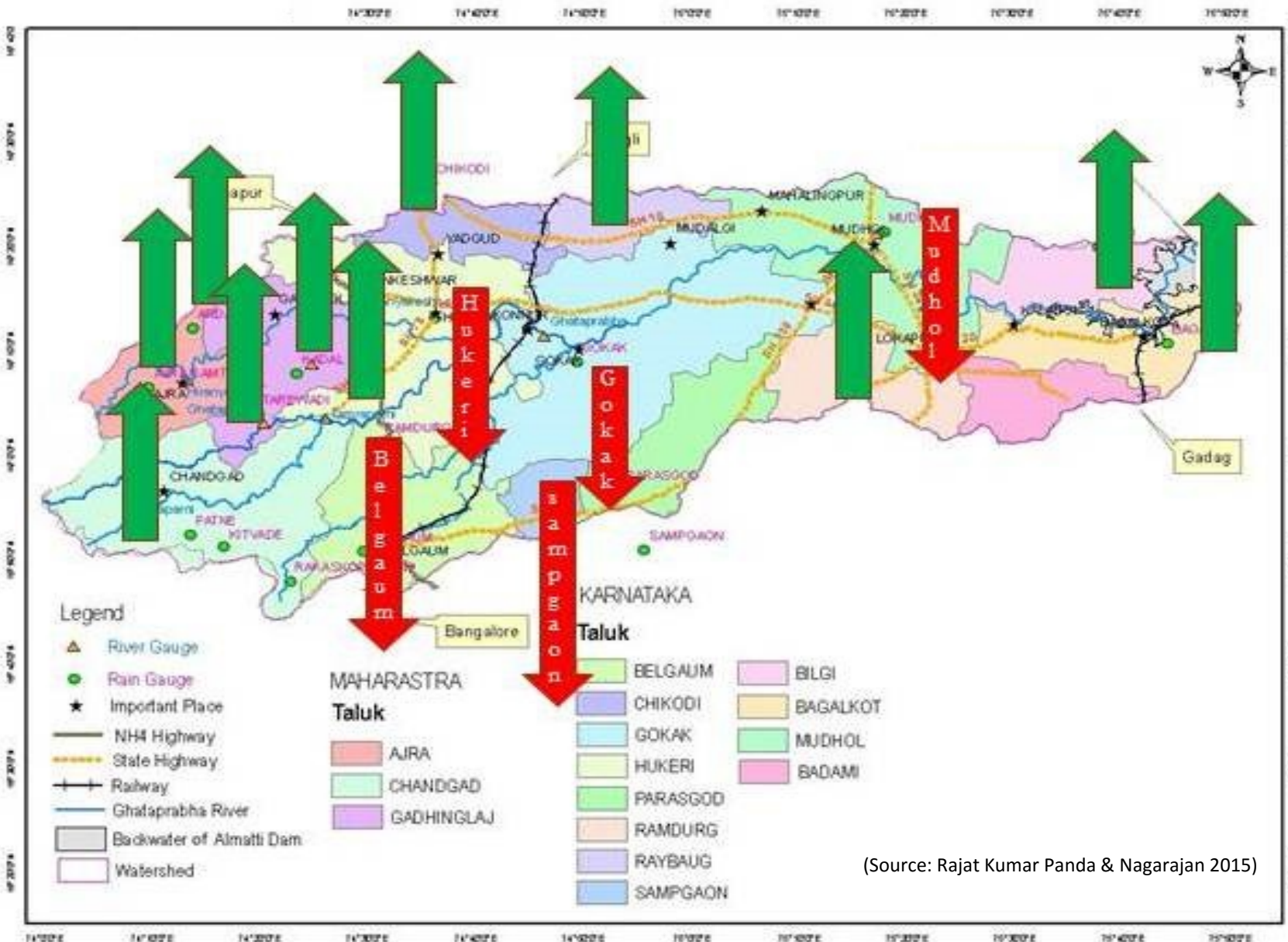
Source: Rajat Kumar Panda & Nagarajan 2015)

Thiessen polygon coverage (rainfall uniformity)



(Source: Rajat Kumar Panda & Nagarajan 2015)

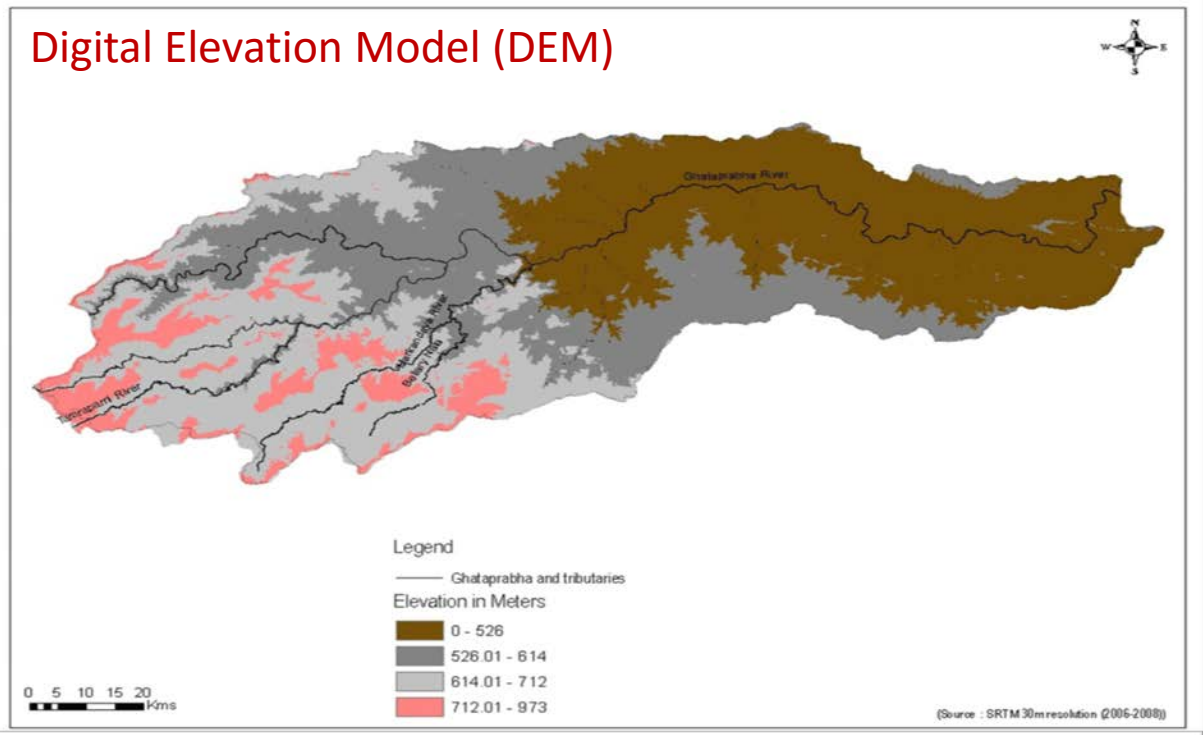
Rainfall Trend



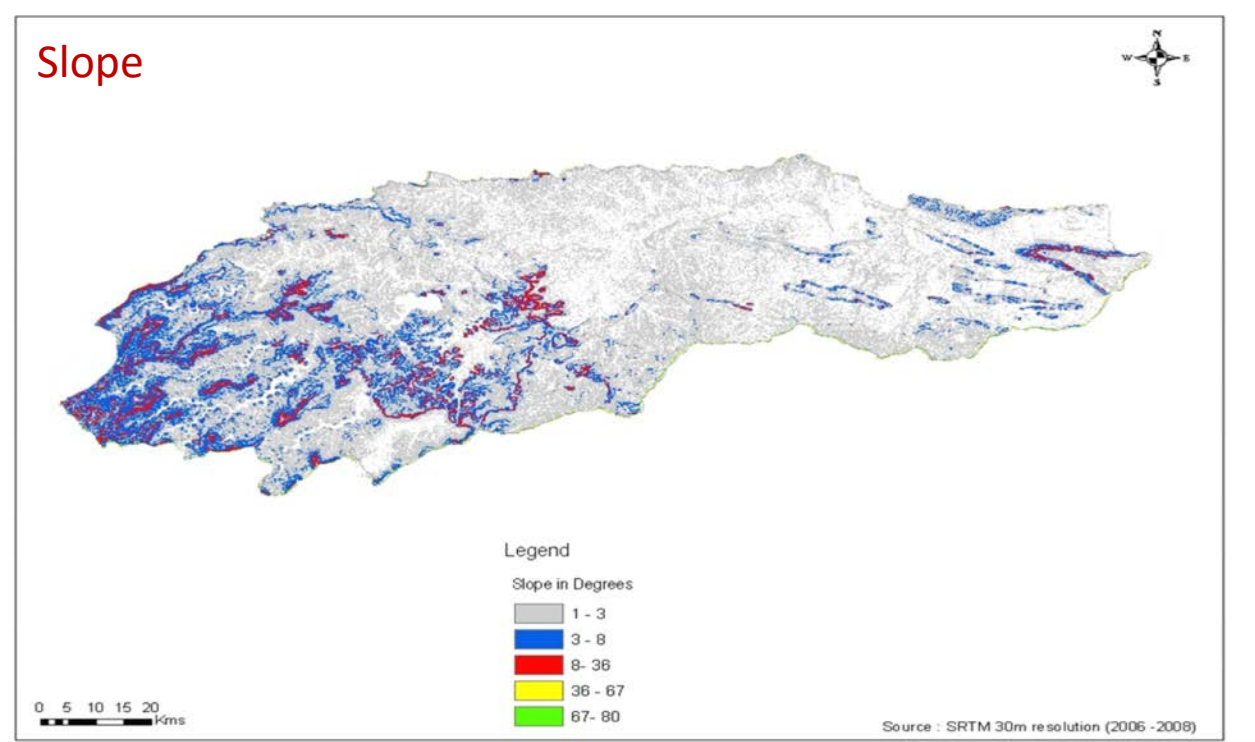
(Source: Rajat Kumar Panda & Nagarajan 2015)

Station	Menkendall's Z test	Sen's slope estimator (B)
Ajra Ramtirth	0.94	84
Ardal	0.01	44.4
Kadal	0.5	107
Kitwade	1.41	548.21
Nadgadwadi	0.52	147.9
Patne	1.23	308.21
Tarewadi	1.31	103.9
Belgaum	-0.34	-31.7
Chikodi	1.07	42.3
Gokak	-0.49	-15.2
Hukkeri	-1.67	-68.8
Raibaug	0.51	21.8
Ramdurg	0.62	26.3
Sampgaon	-0.49	-26.9
Mudhol	-1.13	-43.5
Bagalkot	0.71	27.4
Bilgi	-0.02	-0.7

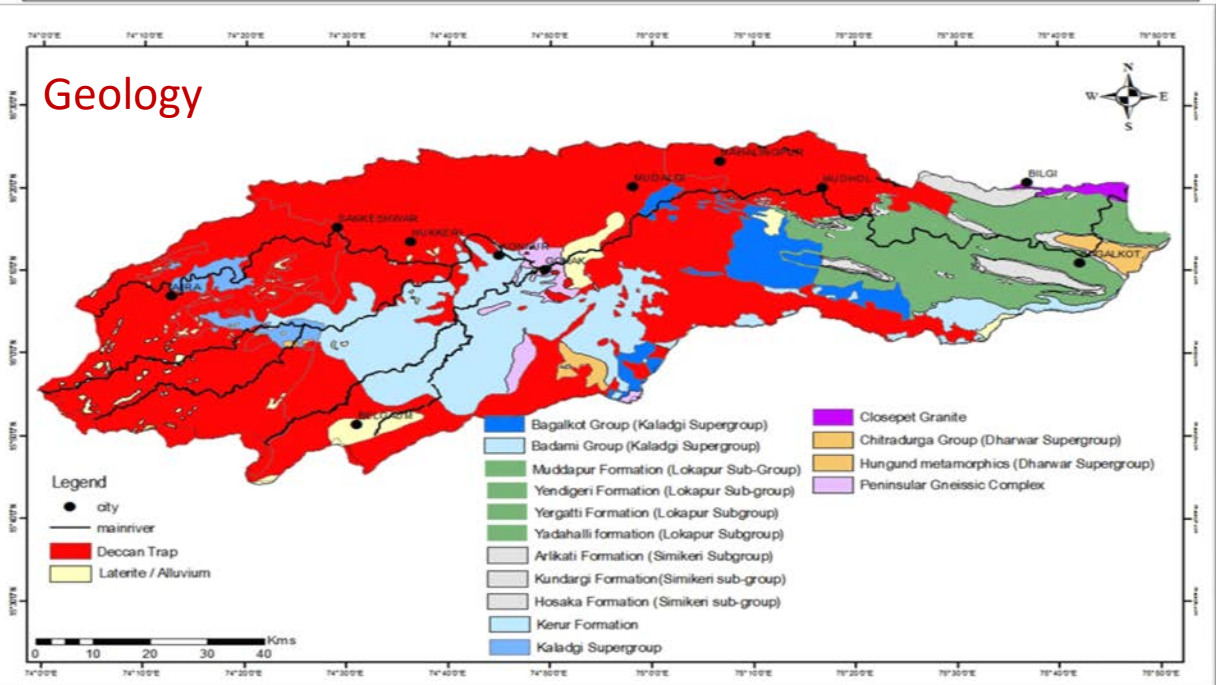
Digital Elevation Model (DEM)



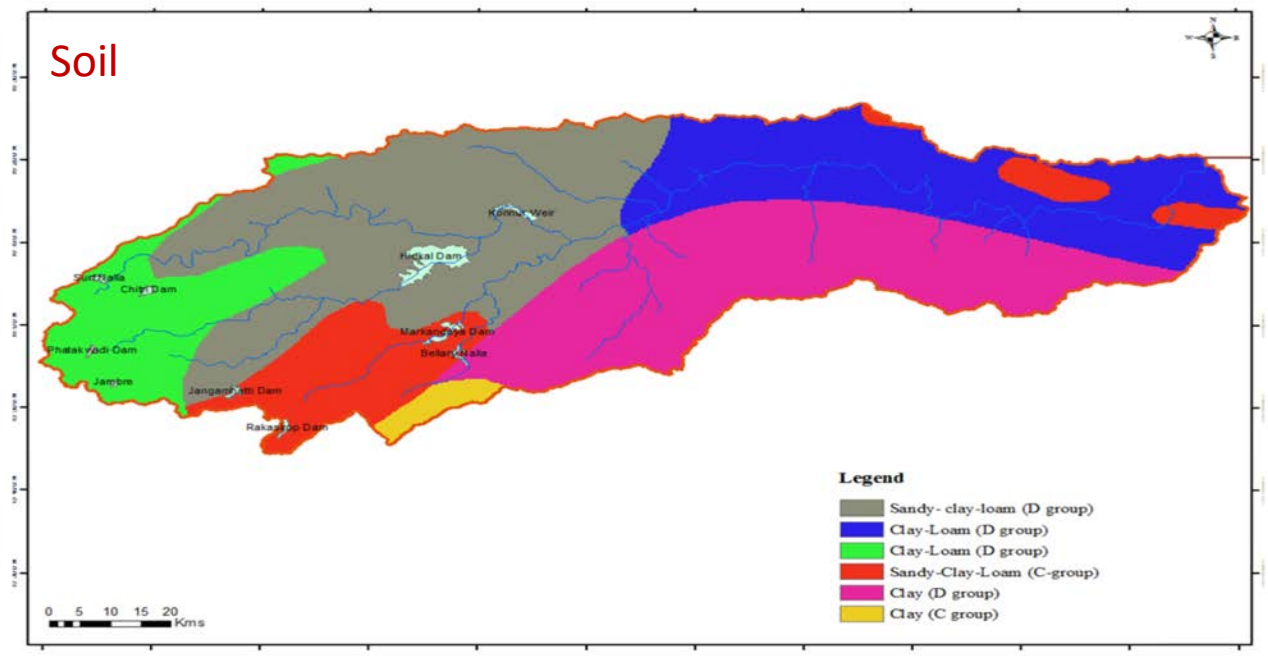
Slope



Geology



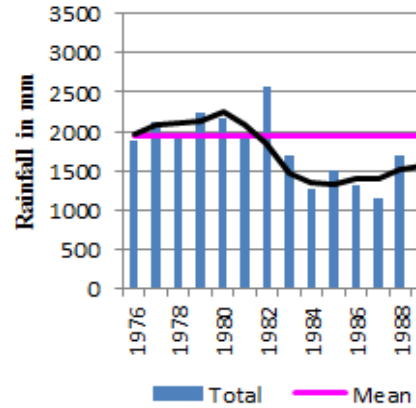
Soil



Annual Rainfall

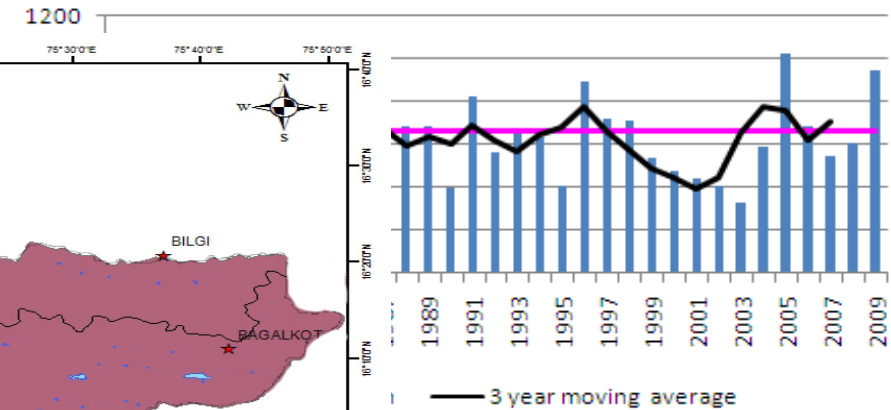
Catchment – Humid condition

Three Year Moving Average Yearly Rainfall Ajra station (Ghataprabha Basin)

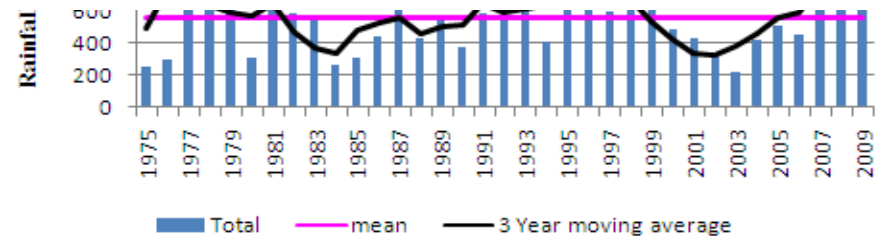
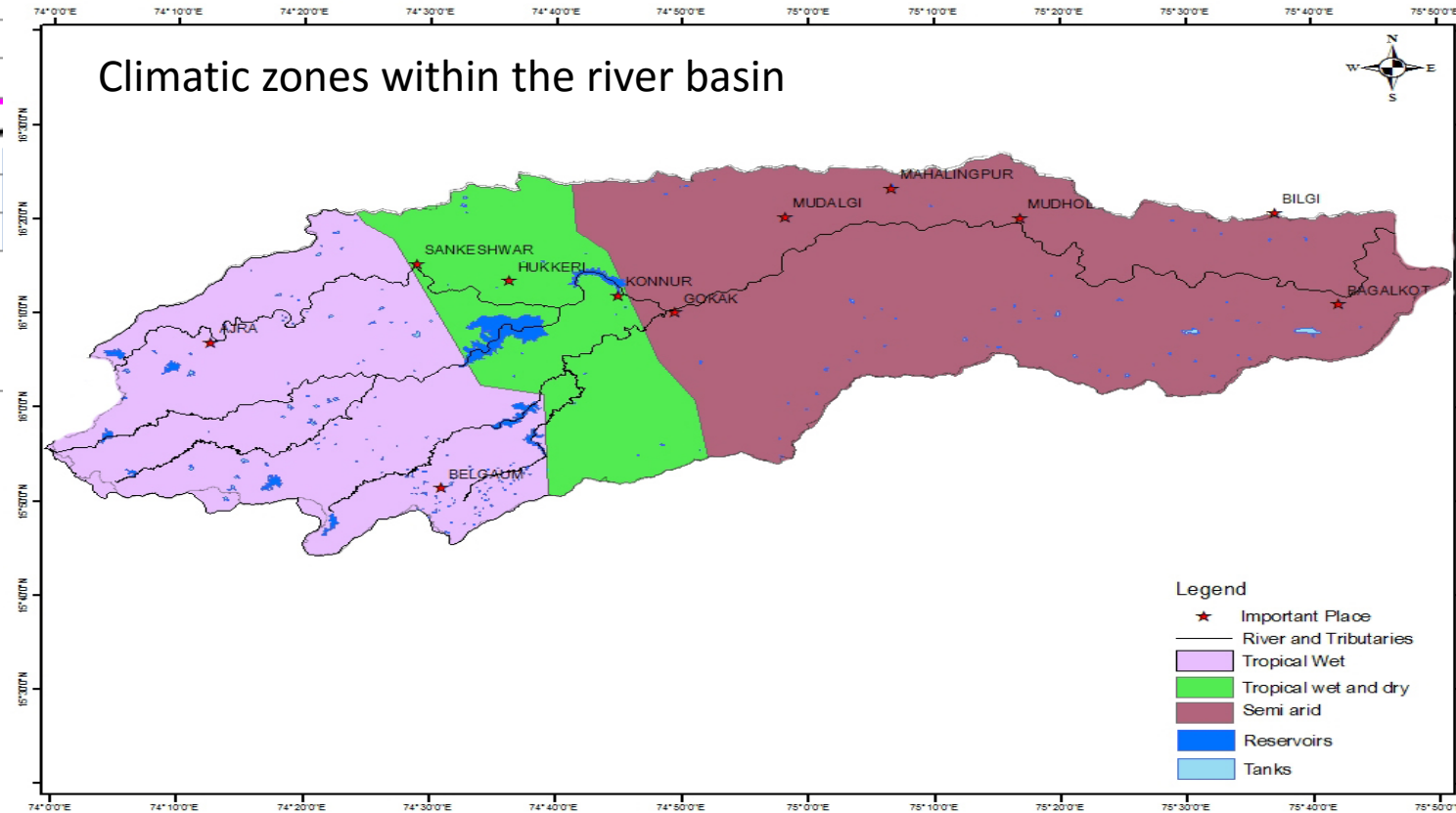


Command – Humid and Dry condition

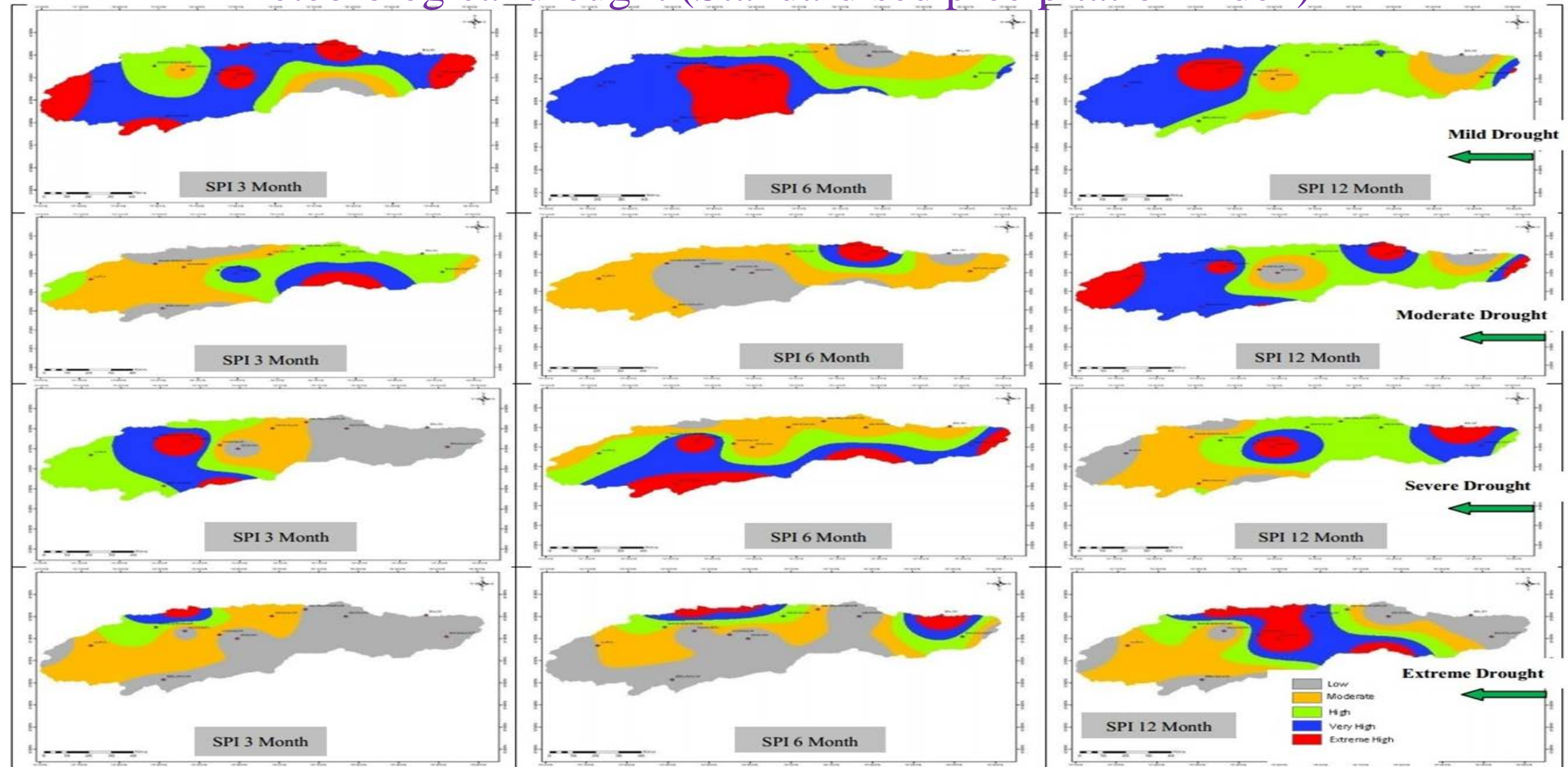
Three Year Moving Average Yearly Rainfall at Hukeri station (Ghataprabha Basin)



Climatic zones within the river basin



Meteorological drought (Standardised precipitation Index)



Thank you