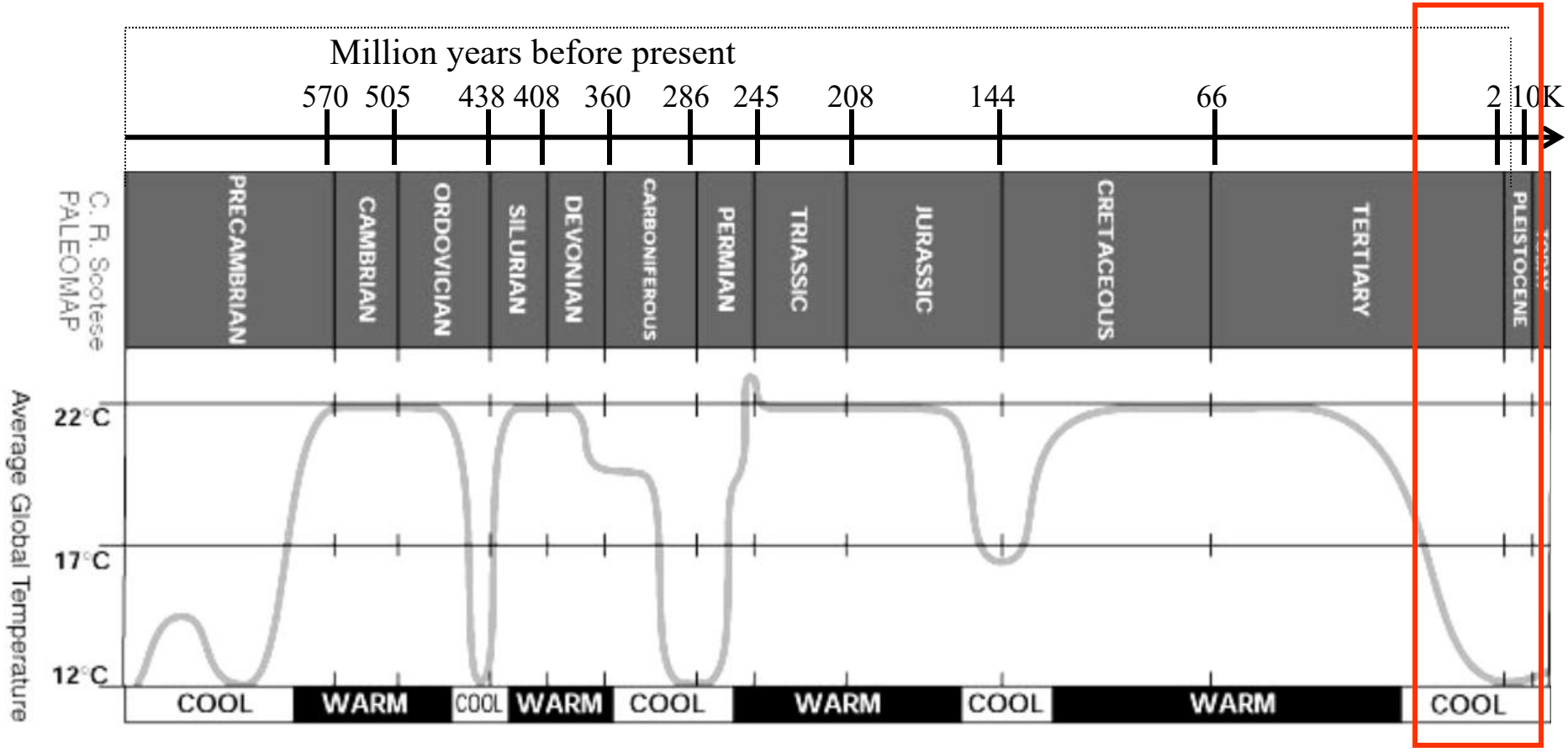


Desertification based on Geohistorical Records with Reference to Cholistan Desert

**Prof. Dr. Abdul Ghaffar
Department of Zoology
Faculty of Biosciences
CUVAS, Bahawalpur**



Proxy Indicators

Personnel communications

Dendrochronology: study of tree rings

Historical documents: paintings, evidence of civilizations

Fossils: Studies of geological settings/stratigraphy

Isotopic Geochemical Studies: The study of rock isotopic ratios, ice core bubbles, deep sea sediments, etc.

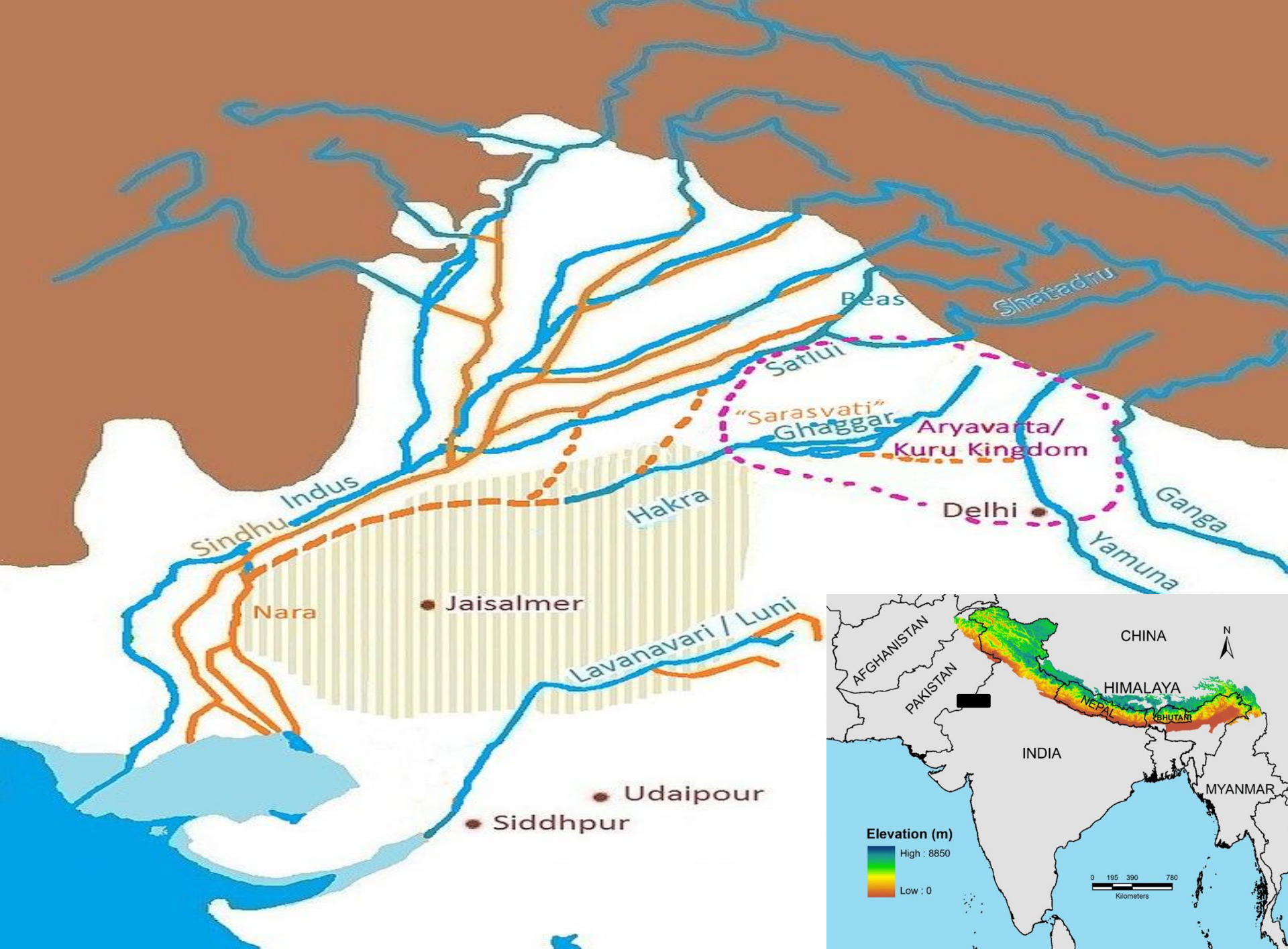
Pollen Distribution: the study of plant types and prevalence from pollen found in sediments, ice, rocks, caves, etc.

Lake Varves: (a varve is an annual layer of mud in the sediment)

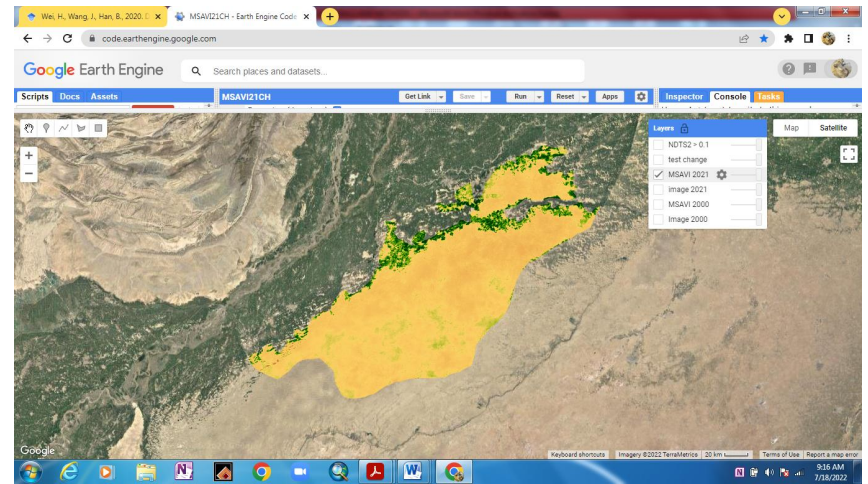
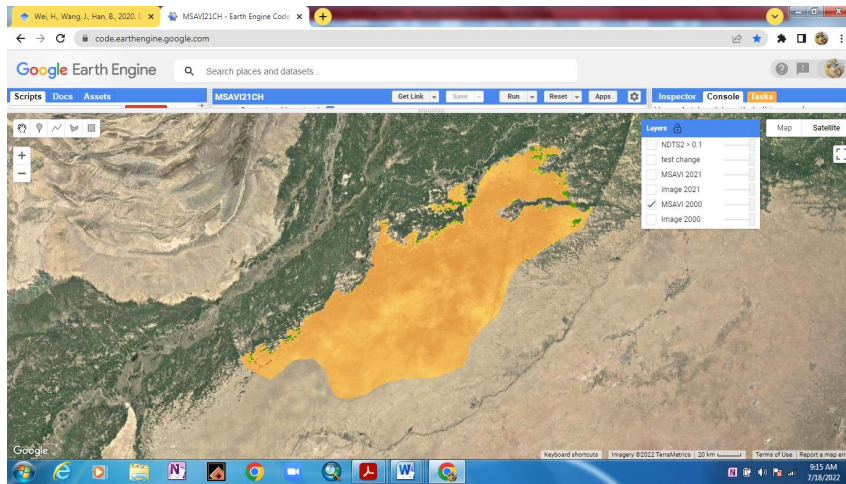


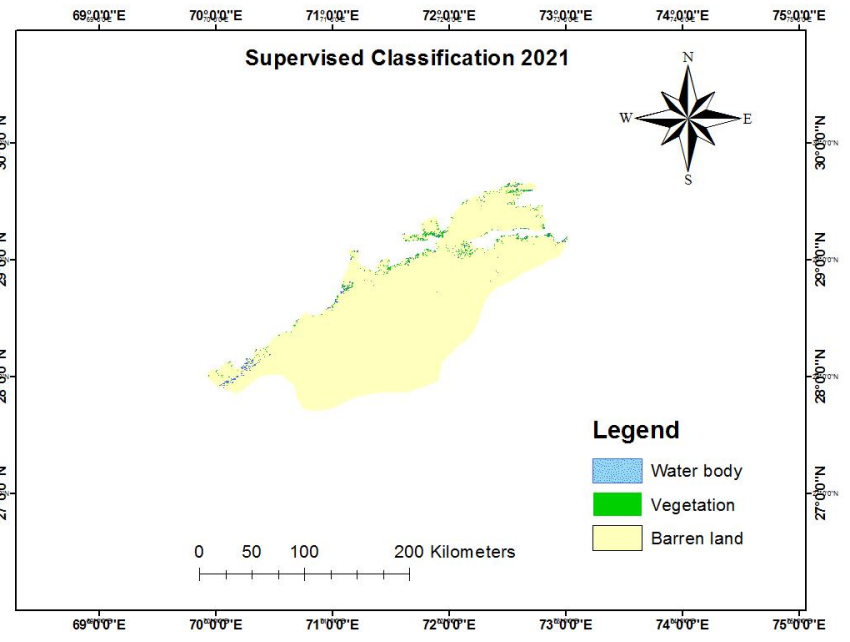
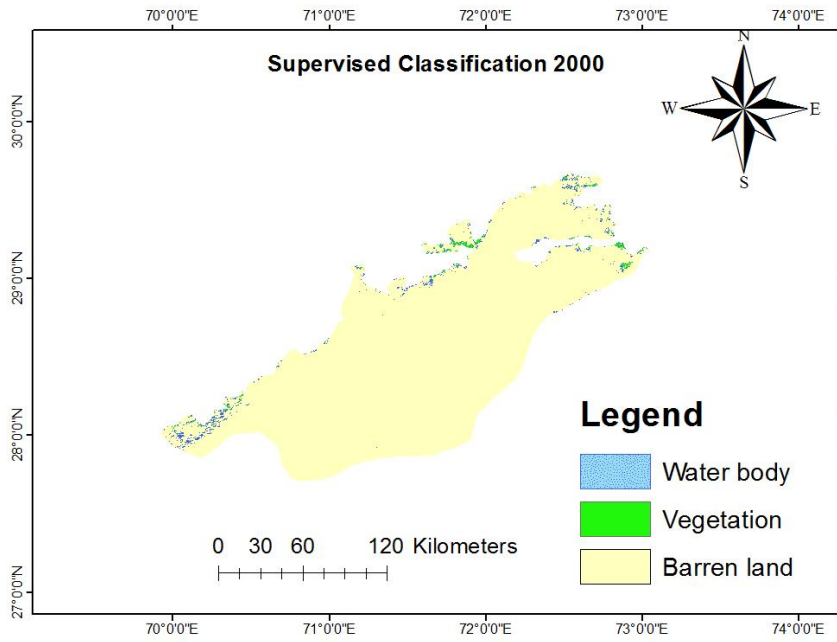
Cholistan Desert

- Depositional Environments
- Geographical Position
- Geopolitical Position
- Contribution of eastern vs western Rivers
- Hydrological threats



LULC 2000 vs 2021





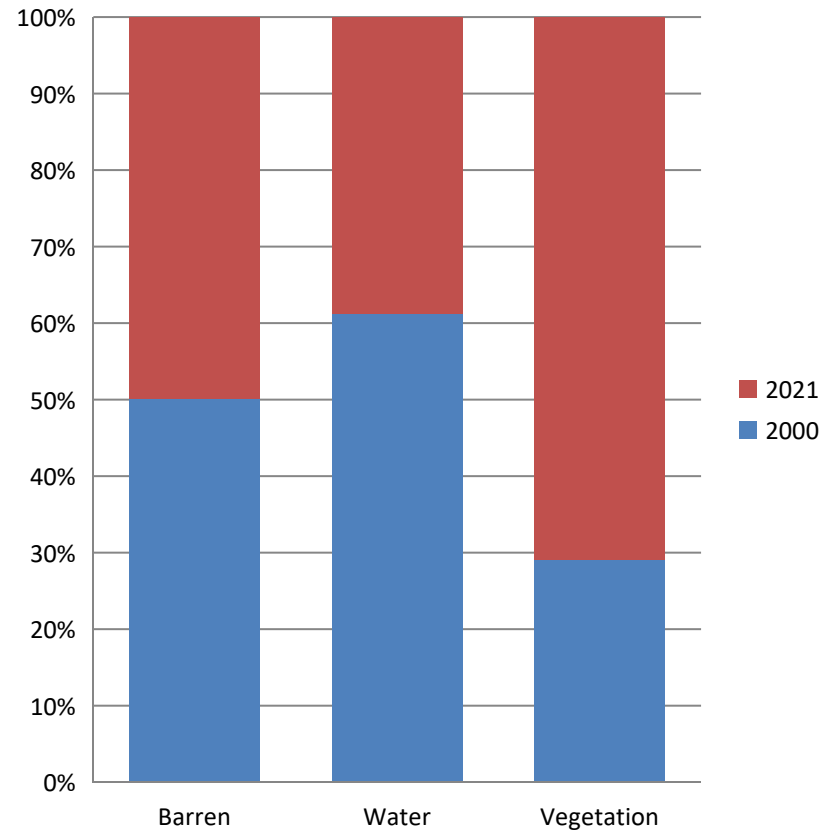
Cholistan region livestock data

	Cow	Buffalo	Sheep	Mule	camel	Donkey	Horse	Goat	Total
2018	413193	10588	530963	37	16037	3621	13	219296	1196448
2006	567510	9923	356024	106	11328	6429	922	257285	1209527

LULC of Cholistan

LULC	2000		2021	
Classes	Area (ha)	%	Area (ha)	%
Water body	35251.5216	1.333955	22252.3110	0.84209
Vegetation	15010.7322	0.568022	36651.8112	1.387008
Barren Land	2592369.9335	98.098023	2583605.696	97.770902
Total	2642632.19		2642509.83	

stack graph for LULC 2000-2021



Change Detection 2000-2021

	2021				
2000	L U L C classes	Water body Ha	Vegetation ha	Barren land Ha	Total Ha
	Water body	10242.291878	10083.232726	14466.650487	34792.17509
	Vegetation	3730.789112	6687.573471	4391.811955	14810.17
	Barren land	7716.057762	18770.152265	2566421.0910 37	2592907
	Total	21689.14	35540.96	2585280	2642509.83

