



## Climatic change in river Valley & Decay of Harappan cities

Lingaraju, Assistant Professor, Department of History, Government College  
(Autonomous) Mandya, Karnataka

**Abstract:** *Global history is replete with several disappearances of human civilization due to climatic diffusion. The occurrence of Natural calamities due to change in the pattern of climate has been an accorded fact for the disappearance of these civilizations. Harappa civilization was one such civilization which thrived on the banks of river Indus some five thousand years ago disappeared .historians researched about this & there was no consensus on the cause for its disappearance. Initially it was credited with invasion of aryas but it is said today that this civilization disappeared not because of Aryan invasion but because of the amalgamated impact of climate change. The paper attempts to probe the prospective impact of climatic change on the disappearance of the civilization & re-examines the opinions of scholars about residential and cultural discontinuance around River Indus & addresses the causes for eastward migration of Harappa people due to adverse climatic changes.*

**Key Words:** *Harappa civilization, debates about its disappearance, climatic impact, new researches*

### Introduction

The research was conducted between 2003 and 2008 in Pakistan, from the coast of the Arabian Sea into the fertile irrigated valleys of Punjab and the northern Thar Desert. The international team included scientists from the U.S., U.K., Pakistan, India, and Romania with specialties in geology, geomorphology, archaeology, and mathematics. By combining satellite photos and topographic data collected by the Shuttle Radar Topography Mission (SRTM), the researchers prepared and analyzed digital maps of landforms constructed by the Indus and neighboring rivers, which were then probed in the field by drilling, coring, and even manually-dug trenches. Collected samples were used to determine the sediments' origins, whether brought in and shaped by rivers or wind, and their age, in order to develop a chronology of landscape changes. National center for

atmospheric change reveals that across the globe there is decrease in the water flow level.

**Parameters of the study-**the reasons behind the decay of Indus valley civilization is a much debated topic among historians, coastal scientists, oceanographer, hydrologists, archaeologists, geologists, ecologists, etc. Their finding involved following parameters

1. Change in shore lines
2. Change in ground water
3. Change in coastal eco system
4. Change in the Impact on fresh water resources
5. Change in river flow pattern
6. Change in hydrological systems to climate change
7. Change in water management system



8. Change in eco system
9. Change in river discharge
10. Change in slit formations system
11. Change in water evaporation system
12. Change in water precipitation
13. Change in surface water draining
14. Change in upstream flow of water sources
15. Change in diversion of river flow for agricultural work

### The Scholarly Propositions

1. In 1953, sir Mortimer wheeler proposed that the decline of the Indus Civilization was caused by the invasion of an Indo-European tribe from Central Asia called the Aryans. As evidence, he cited a group of 37 skeletons found in various parts of Mohenjo-Daro, and passages in the Vedas referring to battles and forts
  2. Scholar Gordon childe maintained that there was a foreign invasion which led to the fall in Indus cities
  3. Scholars Marshal and Mackay who have conducted the main excavation at the two major sites had originally commented that flooding of the Indus valley had eventually lead to the destroying of the civilization.( Tapati Dasgupta & R. N. Chattopadhyaya- Ecological Contradictions Through Ages)
  4. Today, many scholars believe that the collapse of the Indus Civilization was caused by drought and a decline in trade with Egypt and Mesopotamia. It has also been suggested that immigration by new people, deforestation, floods, or changes in the course of the river may have contributed to its collapse.
- it was also believed that the decline of the Harappan civilization led to an interruption of urban life in the Indian subcontinent . ( Tapati Dasgupta & R. N. Chattopadhyaya- Ecological Contradictions Through Ages).
5. Very recently Prof. Lambrick proposed a slightly modified theory of repeated shifting of the river Indus basin as a cause for collapse of Indian cities
  6. Recent archaeological excavations indicate that the decline of Harappa drove people eastward. After 1900 BC, the number of sites in India increased from 218 to 853 which shows that people have migrated eastwards. ( Tapati Dasgupta & R. N. Chattopadhyaya- Ecological Contradictions Through Ages)
  7. Excavations in the Gangetic plain show that urban settlement began around 1200 BC, only a few centuries after the decline of Harappa and much earlier than previously expected.
  8. Archaeologists have emphasized that, just as in most areas of the world, there was a incessant sequence of cultural developments. These link "the so-called two major phases of urbanization in South Asia".
  9. Generation of Archaeological surveys have emerged out from the schooling of an Aryan invasion theory to explain the decline of the Indus civilization.( Collier, B.D. & others Dynamic Ecology, (1973).
  10. Dorian Fuller, an archaeologist with University College London. says "This brought new insights into the process of eastward population shift, the change towards many more small



farming communities, and the decline of cities during late Harappan times."The new study suggested that the decline in monsoon rains led to weakened river dynamics, and played a critical role both in the development and the collapse of the Harappan culture, which relied on river floods to fuel their agricultural surpluses.

### The Sequential Corollary

1. The Indus valley people started agriculture on a vast scale , cutting down forests for their industrial pursuits was increasing on a grave note.
2. Salinity & temperature patterns were affected because of vast burning down of forests
3. Their channeling of water resources for agricultural & industrial purposes led to alteration in precipitation patterns
4. The rate of evaporation increased because of this
5. This led to widespread drying of water bed
6. This resulted in recurring droughts
7. Nutrients & minerals were drawn towards ocean
8. Soil became eroded
9. Floods & inundation became a regular guest
10. This was a clear situation of atmospheric change
11. Large number of people were forced to rebuild their cities & residential living again & again due to inundating floods
12. The houses were built to avoid water inundation
13. The water flow dried up completely
14. People were forced to evacuate & search for a new place fit for farming
15. They started migrating east wards in search of clear source of water
16. This led to huge & unprecedented migration
17. Large populace disappeared due to an amalgamated atmospheric situation
18. The civilization thrived richly on the banks of rivers gradually disappeared.

### Findings

1. The drying up of Gagra hakkar river was the main cause of the decay of Indus civilization
2. The people who thrived along with the river basin were suddenly made to migrate to new east ward locations
3. The population suffered heavy catastrophe during this eastward migration
4. This migration was very huge & disastrous
5. Their eastward migration in search of water for sustenance was slow , gradual & fatal
6. They came in contact with the local population & this led to assimilation of cultures
7. They failed to build bigger cities as there was a shortage of people



8. The migration had impact on script, economy, culture, socio religious living, pottery, art, craft, industries, armaments, skills, trade, export import etc.
  9. It is noticed that aftermath of the Indus Civilization's collapse; several regional cultures emerged, showing the influence of the Indus valley civilization. In the formerly great city of Harappa, burials have been found that correspond to a regional culture. There were close relations in cremation culture which goes to show that the eastern migration of the Harappan people & this led to the migrated people amalgamating into the local culture.
- Ecology, Prentice Hall, Inc., London (1973).
  2. Proceedings of the academy of natural sciences USA 2013 Vol 1(42)
  3. Tapati Dasgupta and R. N. Chattopadhyaya- Ecological Contradictions Through Ages: Growth and Decay of the Indus and Nile Valley Civilizations. 2012
  4. Wheeler, M.: The Cambridge History of India, The Indus Civilization. Cambridge University Press, United Kingdom (1960)
  5. Niger arnell –the impact of climate change on river flow regimes across globe 2013

**Conclusion-**Thus the Indus valley civilization chanced its way to decaying due to several amalgamated climatic factors. This eastern shift involved a change in the more localized forms of economy & smaller communities supported by local rain fed farming. The larger cities disappeared as a result of this & small population were forced to a new beginning with very less original resources. The dispersal of the population meant that urbanized locations as found earlier was just a dream. The researches on the sequential climatic change has yet to be digged out of the remains of Indus valley sites but the fact remains a lesson that over utilization of river water not only causes devastating effects on civilization but also dramatic disappearance of human race.

### References

1. Collier, B.D., Cox, G.W., Johnson, A.W. and Miller, P.C.: -Dynamic