



Interpreting Environmental Phenomena through Ancient Indian Literature: A Study of the Vedas, Epics, and Puranas

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Abstract

This paper explores environmental phenomena as interpreted through ancient Indian literature, specifically the Vedas, Epics, and Puranas. It provides an interdisciplinary approach, combining literature, history, and science, to understand how ancient societies perceived and recorded their environment. The study also highlights the potential of these texts as resources for environmental history. This study is also significant as it provides a unique interdisciplinary approach to understanding environmental phenomena, combining literature, history, and science. It also highlights the potential of ancient texts as resources for environmental history, contributing to a broader understanding of how ancient societies perceived and recorded their environment.

Keywords: Ancient Indian Literature, Environmental Phenomena, Vedas, Epics, Puranas, Interdisciplinary Study, Environmental History

Introduction

Scholars have generally preferred to discuss the nature and environment of the past with the help of scientific studies. However, hidden in the obscure spirals of the myths and legends of early Indian literature, are the memories of ancient environmental and natural forces as experienced by man. These may not be the most potent remembrances but they do embody man's early explanations of the world he lived in, his environment and the forces governing his life. From several striking observations of the poet thinkers of the Vedas, Epics and Puranas, we are amply informed about the various natural and environmental phenomena. However, the scope of this study is restricted to Rgveda, Mahabharata, Ramayana and few Puranas only. Also, the focus here is the documentation of reference. Necessary archaeological and scientific correlations form the second stage of workmanship which is not attempted here. Following categorization of natural events is made to facilitate an easy understanding of the algorithm for the work and related reference are made below.

- Floods.
- Earthquakes/ tectonic movements.
- Evolution of a landform.
- Rain.
- Drying of rivers.

Floods: For the micro level study, reference pertaining to flood are divided into three types-

- **Floods not brought by environment:** By this, is meant that though the flood came but it was not the result of excessive rain brought upon by nature. Instead some human action led to the flooding of the river/rivers. The hypothesis for the occurrence of these floods is discussed after the reference.

Rgveda refers to flood in following contexts besides others (Henceforth Rgveda will be referred to as RV):

RV.I.32.8: there he lies like a *bank bursting river*, the waters taking courage flow above them.

RV.I.52.8: when Indra thou whose power is linked with thy Bay steeds hadst smitten Vrtra causing *floods to flow* for man.

RV.II.15.5: The *mighty roaring flood*, he stayed away from flowing and carried those who swam not safely.

RV.II.19.3: Indra the dragon slayer *set in motion the flood of waters* of seas generated the sun.

RV.I.56.5: In the light winning war Indra in rapturous joy thou smotest Vrtra dead and *broughtest floods of rain*.

Malati Shendge believes that Rgveda refers both directly and metaphorically to the existence of a dam *krtrimani rodhamsi* (RV.II.15.8) which was probably guarded by Vrtra (Shendge 1977: 242). Due to this dam, the flow of rivers was affected- water is often described in Rgveda as banned (RV.II.11.5), imprisoned (RV.III.32.6, RV.I.51.4) and obstructed (RV.IV.72.3). Indra, after killing Vrtra, opened the sluice valve and allowed the waters of the seven rivers to flow down in a flood, arnas. It appears that due to opening of dam, the rivers got flooded. Thus as per Shendge's conjecture, this flood was not brought about by natural forces but by the breaking of dam by man. However, Sahni differs from Shendge and believes in presence of natural dams in Indus headwaters which bursted due to tectonic upheavels and brought flood (Shendge 1977: 249).

Of the two possibilities-the flood being natural or brought by man, the later appears more logical. The Rgvedic reference indicate that this flood was desirable by man to the extent that Indra is glorified for releasing these floods. People wanted the rivers to be flooded- to release the imprisoned, banned and obstructed waters. The killing of Vrtra /breaking of dam was looked upon as victory. If the flood was due to tectonically breaking of a natural dam then it would have been sudden. The reference to flood lack thus sudden element in the coming of floods. Instead, the Rgvedic people had an idea that Indra was going to fight Vrtra to release the floods. Thus it appears that environment had nothing to do with this Rgvedic flood.

- **Flood brought by environmental factors:**

Next reference to flood is seen in the Satapatha Brahanman.I.8.6 which talks about Matsyavatar of Vishnu. Puranas also refer to this great dissolution (Matsya Purana.1.27.33,) but besides Matsyavatar, they

also talk about Varahavatar of Vishnu wherein he rescued the earth from water (Vayu Purana. Srishtiprakarana.6.20-24, Mahabharata.142.29). Harivamsa 3.8.23 names this flood as *Mahaarnava*, *Ekaarnava*, *AgaadhaStabdha Salila*. Markendeyasamasya parva 203.10 of Mahabharata tells us that whole earth was destroyed in the waters of Ekarnava. These reference indicate that due to some environmental factor, a huge flood came and devastated the human settlements. Date of this flood needs to be calculated and it could be verified by studying the river sections. If any correlation is made then we can prove that these so called myths actually record a remote event of a catastrophic flood which is also seen in Noah legends across the world (Genesis 5:28 -9:17, Matthew 24:38 and Luke 17:27, Sura 11:25-48). In this case we also need to check if this was the localized impact of environment or was a global phenomena brought about by common environmental cause.

- **Floods as a result of sequence of events:** This forms the third type of flood wherein floods occur in continuity with row of other natural events.

Srimad Bhagvata Purana.4.38 talks about four different types of pralaya-Nitya, Naimittika, Prakritika and Aatyantika. Of these, it's the prakritika parlaya which is important for us. In Prakritika pralaya clouds don't rain for 100 years. Samvartaka sun sucks the essence of oceans. Samvartaka fire and wind are then released and finally the whole world becomes an ocean (Srimada Bhagvata Purana.4.7-13).

Vayu Purana. Srishtiprakarana.6.1-3 refers to immersion of earth in water after the destruction by Agni. Mahabharata.127.67 tells us that when pralaya comes, then seven suns with excessive heat sucks the waters of rivers and oceans. Samvartaka fire and wind spread all over the earth. Samvartaka fire drills the earth to reach the end and destroys everything that is under earth. Then, clouds come and cover the whole sky. They rain and fill the earth with water and thus stop the fire. They rain episodically for 12 years due to which oceans cross their boundaries, mountains bursts and earth once again sinks in water.

Thus we see that these reference indicate a situation where flood was the final outcome of a series of events arising due to environmental factors. These are very significant details on account of their trajectory of events occurring one after another. We need to see if this actually happened sometimes back in past when the environment was settling up.

Quakes and Tectonics: For the purpose of study, reference to quakes and tectonic movements are subdivided into four types-

- **Tremors and shaking:**

RV.I.39.10: O bounteous one (Maruts), perfect, *earth shakers* is your might.

RV.I.80.14: when at they shout O thunder armed, *each thing both fixed and moving shook*.

RV.II.12.13: Even the Heaven and Earth bow down before him before his very breath the *mountains tremble*.

RV.VI.31.2: through fear of thee O Indra, all the regions of earth, *though naught may move them, shake and tremble.*

RV.VII.27.3: Heaven and earth *quake* at the crash of his thunder.

RV.X.44.8: when the mountains quake, skies screamed for and the atmosphere was agitated he *firmly fixed the plain and mountains as they shook.*

Mahabharata. Markandeyasamasya Parva.202.24-25: When that demons takes breath, earth quakes for seven days; flames of fire and smoke are produced.

Ramayana. Balkanda. 14.15: Whenever Gajraj, who bore earth, moved his head for rest *quakes occurred.*

Ramayana.Vanparva.99.62: When Rama shot an arrow dust storm, rain and *earthquake* came.

- **Tectonic movements: Rising and sinking of earth**

Sri Varaha Purana.113.8: *Some mountains not specifically fixed on earth fell.*

Mahabharata.103.16: When Vindhya mountain was *growing* then Agastya stopped him.

Mahabharata.104.6: Vindhya mountain started *growing* to stop the way of sun and moon.

Mahabharata. 142.32: Under whose influence this *earth sank down* by thousand yojans.

Mahabharata.142.39: Due to excessive weight of living beings, *this earth sank down* to thousands yojans.

- **Change in the direction of river flow:**

RV.II.15.6: with mighty power, he *made the stream flow upwards.*

Mahabharata. Markandeyasamasya parva.224.18: This Sindhu river is flowing in opposite direction.

It is significant to note here that a river in its normal course, may change its direction of flow owing to river morphology but it will flow in opposite direction only due to tectonic interference.

- **Evolution of landform:**

RV.II.XII.2: He who *fixed fast and firm the earth that staggered and set at rest the agitated mountains.*

RV.II.17.5: With his might *made firm the forward bending hills, the downward running of waters* he ordained.

RV.VI.99.2: *Rendered the earth firm* by pegs from all sides.

RV.X.44.8: When the mountains quake, skies screamed for and the atmosphere was agitated he *firmly fixed the plain and mountains as they shook.*

Vayu Purana.6.30-32: He then distributed the water between rivers and oceans. He *made the land flat and established the mountains.* Thus he created the world.

Rain: Two types of reference are seen in this category-.

- **Excessive rain:**

RV.I.59.11: The rains played through his impetuous splendor smite with his bolt he compassed them on all sides.

Mahabharata. Markandeyasamasya Parva.128.82: Clouds of pralaya *episodically rain for 12 years* to fulfill earth.

Srisri Vishnu Purana.5.11: Anger of Indra, *rain and raising of Govardhan Mountain* by Krishna in response.

Srimada Bhagvata Purana.5.9: Indra released *the clouds of destruction* and they tortured Brija by heavy rains, lightening, dust storms and hailstorms.

- **No rain:**

RV.I.52.5: To him as in wild joy, he fought with him who *stayed the rain*.

RV.I.52.6: Forth shone the warrior might, *the rain obstructor* (Vrtra) lay in mid lowest deep.

Matsya Purana. 2.14.15: First there was *no rain*, then excessive heat, fire and finally it rained. Kashi Khanda.

Jnanavapi mahatmya. 33.2-4: During Satyuga, *clouds didn't rain*, rivers didn't flow...there was water only in the oceans and man was sporadically present on earth.

Kashi Khanda. 39.29-28 tells that there was *no rain for 60 years in Avimukta* kshetra and the people started to move towards oceans and mountains.

Srimad Bhagvata Purana.4.7-13: In Prakritik pralaya *clouds don't rain for 100 years*.

Mahabahrata Tirthyatra Parva.110.42-43: Indra *stopped the rain* in Anga country.

Kashikhanda.39.29-28: During Swayambhuva manvantar of Padama kalpa, there was drought (*anavrishhti*) for *60 years* on earth and in Kashi.

It is important to note here that reference to no rain phenomena comes from two regions- Anga and Kashi. It would be interesting to see if both Kashi and Anga drought occur in same timeframe and if so then do they represent a connected event of lesser rainfall in eastern U.P. and Bihar?

Drying of rivers/Oceans: Drying of rivers had oceans has always something to do with the interruption in the annual rain cycle which may be accounted to various reasons. However in literature this is referred to be the work of certain personalities as will be seen below-

RV.I.32.11: he when he had smitten Vrtra opened the cave wherein the *floods had been imprisoned*.

RV.I.51.4: thou hast unclosed the *prison of the waters*.

RV.I.57.6: thou hast sent down the *obstructed floods* that they may flow.

RV.I.59.10: Indra with the bolt of thunder cut piece Vrtra *drier up of water*.

Srimad Bhagvat Purana.4.7: Samvartaka sun *sucks up the essence of oceans* by its excessive heat.

Mahabharata.104.7: Agastya *drank the whole ocean* and made it devoid of water.

Mahabharata. MarkendyasamasyapaRgvedaa.128.67: then seven suns with excessive *heat suck up all the water of rivers and oceans*.

Mahabharata.127.67: Seven suns with excessive heat *suck the waters of rivers and oceans*.

Srisri Vishnu Purana.7.4: Janhu *drank up river Ganga* when it reached out to his ashrama.

Observations

This brief survey has given us numerous reference pertaining to environment that are littered across the plethora of Indian Literature. It is important for us to see that these reference are not always directly referring to environmental situations in the past but record a memory of the same in form of glorification of heroes and Gods who helped mankind during these circumstances (like Indra, Matsyavatara and Varahavatara of Vishnu, Krishna). This personification of natural forces with Gods and demons, heroes and monsters alike also represents the first step towards the formalization of belief in ritual and religion. Moreover, during the last few decades hydrographers, geographers and geologists have applied their specialized knowledge to the geophysical systems in India. Archaeological data relevant to it has also been discovered. Time, therefore, seems ripe for an archaeologist to reopen a discussion which will elucidate the relationship of the accounts in our literature with reality of situation in the same

past on the basis of archaeological, literary and scientific data. This inter disciplinary study is bound to vasten our vistas of knowledge about past environment and present work represents one such a beginning.

Conclusion

In sum up, this study demonstrates the potential of ancient Indian literature as a resource for understanding environmental phenomena. The interdisciplinary approach adopted in this study, combining literature, history, and science, provides unique insights into how ancient societies perceived and recorded their environment. Future research could further explore these texts and their implications for environmental history.

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