



Ecological Patterns in the descriptions of the Ādikāvya Rāmāyaṇa

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Abstract:

Ecological patterns assemble the idea of the material and non-material inclusions of the organic system and their exchanges restricted to the boundary of the environment. The elements regarding the patterns of ecology, enhanced by the climate, geography and living organism administer the complete system of biodiversity. The Ramayana is a profound state of description of ecological conglomeration where the diverse state of patterns of ecological elements and the consequences of human and nature's conflictions that emerged as human marvels in this regard. Hence the objective of this paper is adopted to review the elements regarding the study of ecological patterns in an analytical way of research. The excellence of the human and natural resources, human and elite organisms of the wild like animals; these forms of compliance of the natural organism with the assistance and application of material elements enlighten the complete system of the nature in a tremendous way for which the epic stands tall till the modern age of the human era, conveying its successful scientific and factual succession.

Keywords: nature, ecology, organism, forest, human.

Introduction:

Ecology acclaims the study of living organisms about their instructions towards their behaviour with each other and with their consuming physical environment significantly. The word 'Ecology' consists of the Greek words 'oikos' and 'logos', those interacts with the meaning of 'study of house'. The entire study of ecology deals with the concept of biotic and abiotic factors, energy flow and nutrient cycling. In this way ecological patterns suggest the descriptions of systematic structural organization of nature and the dynamic functions that it follows. Recurring management of living organisms and the special characters reflected in the nature enhanced by the qualities of stratification, zonation, and succession. These three elements are the inclusive part of the ecological patterns, reflect the interactions of biological communities with the environmental variations and resources accessibility.

Key elements of the ecological patterns zonation, stratification, patchiness and biogeographic gradients are defined as –

- Zonation refers to the changes in specific communities; something like in plant types from a shoreline up a mountain slope; especially the spatial changes.
- Stratification is meant to describe the vertical layering of vegetation and habitats, from the forest floor up to the canopy.



- Patchiness is the formation or layering of species and resources across a landscape.
- Biogeographic gradients are the large-scale patterns of biodiversity tried to latitude, elevation or climate.

Ādikāvya Rāmāyaṇa by Maḥarṣi Vālmīki is an epitome of classic that conglomerates the concept of urban ecosystem with the natural ecosystem in a vibrant way through the life journey of Lord Rāma, Sītā, and Lakṣmaṇa. The disguise of Lord Rāma with his wife and brother in his exile to the forest brings out the aesthetic representation of ecological patterns such as the weather, rivers, and the variations of the wildlife elements as an active element that counts the human emotions, divine order, and moral equilibrium. Sequential study of this epic regarding the element of ecology or natural phenomenon with the biodiversity can be seen in a cumulative way that encompasses with the real factors up to this time. However, some facts inherit with symbolic emotional manners that fits with human behaviour can be seen in a contrast of ancient cult of understanding through verbal symbolic communications with human and other organisms, hints to a specific diagram of their web of understandings.

Observation through the grounds of various ecological substances suggests categorical study in an analytical manner that measures the vibrant imageries of biotic and abiotic elements under the flagship of environment. The balance of ecology already consists in nature which is to be maintained and respected as found in the Ramayana. These five elements (earth, water, air, ether, and fire) represent the cosmic order where the existence of response to the human and divine righteousness protected by the nature.

Metrological codes in the Rāmāyaṇa through the distinction of landscapes of clouds fit in to the human behaviours in the use of the narrations timed with the moods of human being. In such descriptions, the fearful storms and dark clouds entertained with the human emotions of sorrow, and blue skies reflect the harmony of clean and calm form of human emotion.

An early framework to confine the stages and layers of the atmosphere the Rāmāyaṇa provides an utmost picture of real facts as compared to the modern meteorology. The sequence of the flight of *Jatāyu* and the legend of *Sampāti* uncovers the distinct layers of atmospheric tiers exist upon physical traits like temperature drops, visibility and wind behaviour. In the *Kiṣkindhya Kāṇḍa*, *Sampāti* describes their skills of flight and mighty acts where he explored about the certain altitude. In his description earth looks like a small wheel of a chariot and the objects of the earth like the mountains, rivers, and rocks were seemed like the elephants in the waters as a curvature effect of high altitude flight. Thermal effect or the boundary that happens to occur fire in the wings of the giant birds causing as the effect of breaching the layers of specific thermal boundary, figuring the unfiltered solar radiation exist in the upper regions of the stratosphere.

In the 28th *Sarga* of *Kiṣkindhyā Kāṇḍa*, Lord Rāma enumerates the behaviours of *Varṣā* season. In this regard, he describes the solar evaporation of water as it notes that the sky drank the waters of the ocean through the heat of sun over nine-month duration. It states about the condensation of water which suggests the starting of moisture creates the rain signifying the understandings of accumulations, cooling, and the eventual, condensation. Heavy monsoon clouds were look like a huge mountain floating for the reason of atmospheric drops and air pressure balance.



Climatic phases of seasons explicitly find its place in the descriptions of the Ramayana. In the Āraṇya Kāṇḍa and Kiṣkindhya Kāṇḍa, deliberate spells of seasonal climate mapping can be seen in a descriptive factual manner. Description of the *Ṛtus*, namely *grīṣma*, *varṣā*, *śarad*, *hemanta*, *śīta*, and *vasanta* are found in a vibrant way. Observing the atmospheric mapping in the text, seasonal characteristics could be seen through the data chart as on the text-

- *Varṣā*- heavy, dark, moisture loaded stratocumulus clouds, strong westerly winds; high relative humidity.
- *Śarad*- clear sky, dissipating clouds, drop in humidity and the appearance of a bright high-visibility moon.
- *Hemanta*- heavy morning fog, dense dew collection, cool northern winds and low solar angle.
- *Śīśira*- biting frost severe drops in ambient temperature and completely cold river water.
- *Vasanta*- warmer ambient air gentle southerly breezes and mass botanical blossoming.
- *Grīṣma*- intense solar radiation, drying of natural aquifers, hot thermal winds and high evaporation rates.

Description of extreme weather conditions such as cyclonic dust storms finds their places in the Uttarākāṇḍa Rāmāyaṇa in the history of *Danḍaka* forest. The dust clouds covered the complete daylight and severe convective storms which had been found lasted for seven days. According to the legend, sage *Śukra* cursed King *Danḍa* for his misdeed which was unforgivable as a result for which the daughter of the sage had to suffer for. After this heavy cyclonic event the complete kingdom buried under the dust and earth which deeply affected the civilization resulted into their destruction. Battlefield dust storms have been seen as an indicative format of terrifying psychological and physical weapons employed by the nature. This version of description acts as a celestial warning, a sign of an army's upcoming dooms. The description of Makarākṣa's march to the battlefield, The defeat of Khara's army, the huge march of monkey army from southward to Lanka over the Salya mountain range, the red dust cloud of heavily rich is mineral temporarily obscures the entire sky and the army also.

Ancient engineering marvel which is witnessed as the Rāma Setu near Dhanushkodi, Rameshwaram considered as the mediator of the natural phenomenon and human behaviour that acts as the equator, denying the discomfort to the natural process. According to the description, Rāma prayed Samudra Deva to dry up for the noble cause of saving Devi Sītā. But opposite to his continuous appraisal Samudra Deva did not show any type of response. At that moment Rāma, lost his cool, going to apply his marvellous weapons which can dry the sea. Adhered to this knowledge, Samudra Deva advised Rāma with such a beautiful spell that counts deep impact upon the generations concerned to maintain the ecology. According to the spell, Samudra Deva reminded Rāma that the five primordial elements are restricted to abandon their usual properties and behaviour. Water has to be in limit to its liquidness and deep form concerning to the currents. It cannot perform against the law of nature by gaining solid form as part entirely as a whim. Instead of it, the Samudra Deva advised an alternate way by giving the idea to make a bridge by Nala. This form of idea deliberates a vision of that time that offers advanced ecological and environmental preservation values availed in the Ramayana.

Descriptions of the Rāmāyaṇa have also been seen enhanced with the narration of an explicit geographical descent from the temperate north to the tropical South India. Through the journey of Rāma, Sītā and Lakṣmaṇa the layers of botanical descriptions changes its elements accurately matching to their livelihood of soil and climatic zones. It can be seen as-



- North India - Kośala/Sarayu – Riparian meadows and Śāla forest.
- Central India – Chitrakoota/ Daṇḍakāranya – Dry deciduous and dense jungle.
- South India – Kīśkindhyā / Western Ghats – Semi evergreen and montane forest.
- Equatorial Island – Coastal Palms and Aśoka groves.

In the fertile northern plains the existence of heavily surrounded Śāla tree (*Shorea robusta*) occupies the forest lands. As the journey began into the central and South India, the tree branches makes its transition to dry deciduous and semi-evergreen species like Asana, Arjuna and Aśoka groves of Lanka. Detailed version of descriptions of Citrakuta, the Ayodhyā Kāṇḍa, states through the speeches of Rāma as an ecological park full of fruit-bearing trees, floral blooms and clean river ecosystem offers its hand to support highly dense population of birds and apex predators. The Āsrama of sage Bharadvāja is found to be the abode of well-preserved ecotone that features a dedicated buffer zone for medicinal herbs and fruit orchards at the confluence of the river Gangā and Yamunā. Āraṇya Kāṇḍa uniformly states about the lions, tigers and leopards as making their grazing grounds. The frequent presence of these predators symbolizes a thriving and balanced ecosystem with a robust existence of deer. Seasonal movement of elephants are also seen in the descriptions. Rivers and lakes (Pampa Sarovar) have been found as the bed of specific bird populations.

The sacred Āsramas of sages like Agastya, Atri and Vālmīki are featured as ancient conservation reserves. Hunting, cutting living trees for timber and disturbing the birds were found to be restricted within the limits of these Āsramas. In the Ādikāṇḍa of the epic, the kingdom of *Anga* suffers a lot for the drought. The description of the epic relates this climatic challenge with the failure of moral administrative duties and it stresses on the good governance that participate as the shield to the local environment from degradation.

Conclusion:

In such a form of descriptions availed in the classic, it can be observed that the patterns and process of the ecosystem of that era is transparently resemble the facts or study of modern ecology. The layers of the botanical organisms, biotic life cycles are organized in factual state of order that comprises the preservation and conservation in a favourable way. Zonal ecosystem of riverbed and forest with the wildlife also suggests healthy surroundings at the period of the Rāmāyaṇa. Hence, it can be said that the epic is not only a mere description of the life journey of Lord Rama but a complete guide of environment, with its complete agents of geography, ecosystem, forest and liveable and unliveable elements.

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