



Research Paper

Investigating Sustainable Man and Environment Relation in Ancient India

Vijaya Laxmi Singh

Professor, Department of History, University of Delhi,

Received 10 Dec., 2023; Revised 23 Dec., 2023; Accepted 25 Dec., 2023 © The author(s) 2023.
Published with open access at www.questjournals.org

Man and environment interaction in Indian civilization is not a recent phenomenon but was in vogue in Indian civilization from the pre historic time. In the Land and Man relations, regions are said to be either areas of attraction where human activity is evident in attempts to shape the landscape, or areas of isolation where human settlement tend to be remote and the landscape unchanging. There is also areas of relative isolation such as forests and deserts, which were incorporated into territory and kingdoms.ⁱ Forests provided many resources such as timber, elephants, semi- precious stones, clean air, and many other materials for survival of mankind. The northern Himalayan mountains were source of vegetation as well as two great historical river systems: the Ganges and the Indus. The Ganges, Yamuna, Brahmaputra, Narmada and many other rivers in Indian civilization have been accorded divine status. They help in protection of environment by making the soil fertile, irrigating the agricultural land and plants and trees and maintain the eco system of the forests. In the context of historical past, human relation and ecological distribution were established with the advent of pre historic man on earth and also colonisation for subsistence in the span of almost half a million years. Initially man looking for wild herbs and plants and animals for food found habitation in isolated rocky, hilly or forested areas, later shifted to fertile alluvial plains where there was also availability of water resources.ⁱⁱ The paintings of Bhimbetka are example of man animal relation depicted on rock in the form of rock arts, where the theme of the art focussed on the life of hunters and gatherers both being represented in abstract style.ⁱⁱⁱ Filipe Fernandez Armesto in his work 'Civilizations: Culture, ambition and the transformation of nature,' describes that "civilizations look through the lens of 'man-environment relations,'^{iv} where he talks about over exploitation of nature by humans causing depletion. Hindu philosophy talks about Panchmahabhutas (five great elements): air, sky, water, fire and earth which constitutes prakriti i.e. environment. Since ancient times, the mountains and the rivers are considered sacred as they protect the people.

Man's consciousness about nature is continued to be demonstrated in proto historic period.

In Indus Valley civilization in the north western part of Indian subcontinent flora and fauna became very significant as is shown on the seals of Indus sites viz. worship of pipal tree, and worship of animals, humped bull, rhinoceros, elephants, tiger. Veneration of pipal tree (depicted on seals) and pipal leaf (depicted commonly on pottery), show peoples concern towards nature.^v This practice was followed all through in ancient India. The recent archaeological data provide information on environmental factors playing major role in the making of history there was long debate on the environmental degradation/factors leading to the decline of Indus cities, for example drying of Ghaggar-Hakra river in north India leading to hydraulic changes and its historical implications. Increasing aridity due to palaeo-climatic changes, also man made issues like regular use of burnt brick for urban construction which required fuel which caused depletion of forest.^{vi} Later pointers were advent of role of iron technology in clearing forest leading to agricultural production in Gangetic valley.^{vii} The relationship between agriculture and technology and climate is important. Clean sanitation as demonstrated in form of Drainage system running below the streets of Indus cities connecting to house drains and finally discharged in rivers helped Indus people maintain health and hygiene.

In Early historical India the ancient scriptures like Vedas, Upanishads, Puranas, Smritis, Mahabharata, Ramayana carried the philosophy of environment management. The Bhishma Parva of Mahabharata quotes earth as father, mother, children of all creatures on earth and heaven. Mahabharata symbolises Ashvattha(Pipal) tree as universe manifesting trunk and its various branches.^{viii} The travellers of ancient times in various periods

viz. Megasthenes, Pliny, the unknown author Periplus of the Erythrian Sea, Ptolemy, Fahien, Huan-Tsang and Itsing have left valuable records of trees and plants, flora and fauna, weather and climate and various other ecological aspects. The hymn in Rig Veda advocates 'Heaven as father, earth as mother, a close kin'. Atharva Veda contains Bhumi Shukta – in praise of earth which is peaceful and kind and is supported by law and it is universal mother of flora^{ix}. The Vedic prayers discuss about the protection of environment through divine intervention. Cutting of trees, shrubs or creepers^x polluting water with excrements,^{xi} is forbidden in Vedic text. Charak Samhita, a medicinal text had alerted people against vikriti (pollution).^{xii} Atharvaveda makes reference to Kirata Girl who travels in the mountain ridge to collect herbs for medicinal purposes. Atharvaveda mentions number of trees and plants which had medicinal value. 'It is considered to be first medicinal utterances of man'.^{xiii} All the Vedic educational institutions 'Gurukulas' were in forest with flora and fauna in surrounding. Rg Veda testify the use of cattle, elephants and horses. The terms vigorous is used for horse^{xiv} and 'mighty' for the elephant.^{xv} Names and importance of series of rivers such as Sindhu, Ganga, Yamuna, Saraswati, Sutudri, Parushni, Askini and Vitasta, Tristama and Sasartu, the Rasa and Sveti, Gomti and Krumu and many more are preserved in Vedic hymns.^{xvi} There are consistent references to Saraswati and Drishadwati in the Mahabharata, while placing Kurushetra as south of Saraswati and north of Drishadwati elevating the position of Kurushetra as paradise.^{xvii} This region between the two rivers is mentioned as Brahmavrata in Manu's Dharmasastra. Erratic changes in the course of rivers due to change in eco system and geographical formation of the country would necessarily have lent itself to constant breaks in the continuity of alluvial streams.^{xviii} Rivers in India have been accorded divinity in the scriptures because they are life line and provide ecological balance by conserving agriculture, forest and human settlements.

The two great religions Buddhism and Jainism based their teachings on the principles of Ahimsa. Buddha and Mahavir Jain are closely related to environment and ecology. The attained enlightenment under Bodhi(Pipal) and Sal trees on the banks of rivers Niranjana and Rajupalika respectively, symbolising the importance of clean and fresh, pollution free environment for achieving milestones. Importance of the monsoon for farmers and also plant and animal life was emphasized by Buddha as he said, "rain sustains the life of all creatures on earth" and abundant rain brings to perfection all crops for the good, welfare and happiness to many.^{xix} Buddhist texts Milindapanha certain questions related to environment and seasons are mentioned viz. in winter sun appears to shine with more brightness in cool winter than the hot summer and also it revolves with answer that in atmosphere dust blows with wind in summer and the air borne particles in the dusty wind deflect the sun's rays.^{xx} Here the text gives natural explanation to atmospheric phenomena. Tripitaka mentions various types of soil: mattika (clay), sanhamattika (kaolinite), pandumattika (yellowish clay), valika(sandy), kalijallika (black alluvium),pasanasakkhara (pebbly and gravelly),and bhumighana(compact soil). The Buddhist texts also mention that the soil in newly deforested area might be infertile.^{xxi}The ancient Buddhist monasteries at secluded places in the forests is manifestation of harmonious living in forests and mountains with sustainable environment, which helped monks to control their inner mind and body and practice Dhyana. They also grew and worked for the protection of flora and fauna of the region. King Askoka's conversion to Buddhism influence his life and his ethics of non-violence, sanctity of animal life and cult of tree worship/nature worship, like asoka, sal, pipal or Bodhi tree and mango, banyan etc. may be seen in the context of or sustainability with the environment.

Environment played a conspicuous role in the historical development. Ecological and environmental variations influence the settlement patterns and domestic architectural forms. Elaborate technique of water harvesting and storing employed in Dholavira shows consciousness about nature in early times. These variations are seen in floral diversity also. The dry deciduous forests of Indus plain were different from the dense forests of Gangetic plains. Saurashtra lake discussed elaborately in inscriptions of Rudradaman^{xxii} indicates the importance of dam construction not only for irrigation purposes but also for the ecological balance of the surroundings. We have evidence of Chola king Karikala in around 180 C.E. erected initial structure of grand anicut on Kaveri river and diverted the Kaveri waters without impounding them and is believed to have irrigated 30000 hectares during that period.^{xxiii}

Kautilya's Arthasastra mentions three types of forests in the Mauryan state.^{xxiv} One, the forest which was donated to Brahmanas for cultivation and maintaining their religious education. The text mentions that the Brahmins shall be provided with only one entrance rendered inaccessible by the construction of ditches all round with plantations of delicious fruits trees, bushes bowers and thornless trees with expansive lake of water full of harmless animals with tigers(vyala), beasts of prey(margayuka), male and female elephants, young elephants, bisons all deprived of their claws and teeth shall be formed for the kings sports'.^{xxv} This was a forest reserved for the kings pleasure and hunting ground. Three, public forests also known as game forests with game beasts were open to all.^{xxvi} In addition to these three forests Elephant forest separated from the wild tract is also described in the Arthasastra. These elephants found mostly in Kalinga, Anga, Karusa in the east were trained to be war elephants. Dandakaranya(Superintendent of forest was appointed by the king. Arthasastra advises the

king for creation of Abhayaranya or Abhayavana where animals and birds and also the trees and plants were preserved, free from cutting and killing. It was duty of the ruler to protect the forest and also create new forests to maintain environmental equilibrium.^{xxvii} Arthashastra mentions that fines were imposed on cutting different parts of trees.^{xxviii} The plantation of trees and preservation of forest by the various rulers in ancient India gave shelter to large number of species on earth which helped in maintaining ecological balance. Asoka in his fifth edict talk about not to destroy the forests by burning which may kill living creatures inhabiting there.^{xxix}

Tree plantation is encouraged in the Puranic text Skanda Purana and the trees mentioned are vilva, banyan, Ashoka and amla, mango, imli etc. and plotting of spaces for these trees are also discussed.^{xxx} The Ashokan inscriptions refer to various tribes living in the forest regions. Yonas and Kamboja Nabhakas and Nabhanpantis, Bhojas, Parindas etc as discussed in inscription V and XII.^{xxxi} Donation of two caves by Ashoka as described in the inscription, in Barabor hills to Ajivika ascetics suggests the importance of hills for shelter and sustainability.

Gardens in urban spaces creating natural environment for cities have been discussed in literature emphasising on nature culture interface. The city garden or uddhyana were mentioned in the Arthashastra.^{xxxii} Planting of trees and creepers by women were considered to be virtuous in Kamasutra.^{xxxiii} Various Sanskrit texts viz. Mricchakatika mentions Puspakarandaka of Ujjayini, where animals and like jackals dogs bears monkeys peacocks, cuckoos resided and fruits and flowers were guarded by the security guards.^{xxxiv} Harsha's Priyadarshika talks about royal Garden named Daraghaujjanam.^{xxxv} Temple architecture were attached to garden groves, bowers ponds etc. Groves of 'red ashoka tree' is mentioned in the text.^{xxxvi} The offerings in sacred Grove is traditionally practiced even today in folk and tribal communities and also among general populace. 7th Pillar edict of Ashoka talks about planting of mango grooves along with Banyan trees along the roadside to give shadow to the travellers and also animals.^{xxxvii} The sacred groves considered to be the abode of Gods and Goddesses or spirits were not touched when forest cutting was in vogue by the settlers to clear land for settlement. Interrelation between rainfall and crop is also mentioned in Arthashastra. Arthashastra prescribes the importance of lakes, gardens, groves and forest for sustainable environment of the city, and prescribes the broadness of the road for four dandas,^{xxxviii} to accommodate the above. It is scientific way of living, 'arboriculture' which deals with planning and maintenance of city and garden for better living.

One of the greatest Sanskrit poet and dramatist of ancient India, Kalidas wrote his poems and dramas around the environmental backdrop. The two poems Ritusamhara and Meghadutam reveal an innate knowledge of region of Vindhya mountains. It also describes the topography of Vindhya and Malwa region.^{xxxix} His poem Ritusamhara talks about harmonious relation between man and forces of nature and also about the importance of six seasons(ritu) and changing weathers. His another poem Meghadutam describes clouds and rainy season, Narmada river and forests on its banks.

Ancient Indian texts and inscriptions are replete with the references of ecology and environmental balances descriptions of nature, rivers, seasons, forests city gardens, various species flora and fauna, land etc. Despite that many of the texts are religious and spiritual in nature, the bestow civic awareness about maintaining ecological balance in society.

ⁱ Romila Thaper Penguin History of India, from the Origins to A.D.1300. p. 39

ⁱⁱ V.N.Misra, Pre Historic human colonization of India, Journal of Bio Science, Indian Academy of Sciences, vol.26, No.4, Supplimentary, November 2001, p. 491

ⁱⁱⁱ Yashodhar Mathpal, Pre historic painting of Bhimbetka, Delhi, 1984.

^{iv} Filipe Fernandez-Armesto, 'Civilizations: culture ambition and transformation of nature', New York, 2001

^v For details see D.P. Agrawal, The Archaeology of India, London, 1982,; A.L. Basham, Wonder that was India, Delhi 1992(reprint), Allchin, B, The Rise of Civilisations in India and Pakistan, Delhi, 1989

^{vi} For details refer to Nayanjyot Lahiri ed. The Decline and Fall of Indus Civilization, Delhi 2000

^{vii} R. S. Sharma, Material Culture and Social Formation in Ancient India, Delhi, 1983

^{viii} K.M.Ganguly, (English Trans. of K.D. Vyas's Mahabharata),Mahabharata, Bhishma Parva Book 6, section 1., Delhi, 2012

^{ix} AtharvaVeda, XII. 1.58

^x P.V. Kane, Katyayana Smriti,793, Bombay, 1933

^{xi} H.N. Apte, ed. Taittiriya Aranyaka, 5.101, Poona, 1898

^{xii} J. Vidyasagar, 1896, ed. Charaka Samhita, 1.4, 3.20,8.94, Calcutta, 1896.

^{xiii} G.P. Majumdar, Vanaspati: Plants and Plant life as an Indian Treatises and Traditions, Calcutta University, 1927, p. 151

^{xiv} Rg Veda,i.28.7, p.17

^{xv} Rg Veda, I.64.7, p. 43

^{xvi} Edward Thomas, The Rivers of the Vedas, and How the Aryans entered India, , The Journal of Royal Asiatic Society of Great Britain and Ireland, Oct. 1883, New Series, Vol.15, No. 4, pp. 357-386.

<https://www.jstor.org/stable/25196966>; Rg Veda X.75

^{xvii} Ibid, 365

^{xviii} Ibid, p. 369

^{xix} S.I, 37, and A.IV,224, ref. in S. Dhammika, Nature and Environment to early Buddhism, Buddha Dhamma Mandal Society, Singapur, 2015, p. 2

^{xx} Milindpanha, 274

^{xxi} A. IV, 237, Ja,III,580,M.III,94, Vin,197, ref. in S. Dhammika, Nature and Environment to early Buddhism, Buddha Dhamma Mandal Society, Singapur, 2015, p. 2

^{xxii} F Kielhorn, Epigraphia Indica Vol. VIII.

^{xxiii} Anirban Ganguly, Man and Environment in India, Past Traditions and Present challenges, p.1, Vivekanand International Foundation, 2012, <https://www.vifiindia.org>.

^{xxiv} R. Shamasastri,(trans), Kautilya's Arthasastra ,Mysore, 1961, p. 49

^{xxv} Ibid, p. 64

^{xxvi} Ibid p. 65

^{xxvii} Ibid, p. 64-66

^{xxviii} Ibid, p. 222, 262.

^{xxix} Y. Misra, Ashoka, Patna, 1993, p. 104 also Arun Kumar Jha, Bio Diversity of Flora and Fauna, in the time of Ashoka (C. 269-BC C 332 AD), Proceedings of Indian History Congress, 2004, Vo. 65(2004). P. 211

^{xxx} Skandapurana, 1.2.27,21-22; Dutt, 1903

^{xxxi} N.P. Chakravarti, The Minor Rock Edicts of Ashoka and some Connected Problems, p. 19. <https://asi.nic.in> Ancient India, no.2

^{xxxii} R. Shamasastri,(trans), Kautilya's Arthasastra ,Mysore, 1961, p. 238

^{xxxiii} Kamasutra of Vatsyayana(trans. By Hindu Kamasutra Society, Beharas, 1883, 1925.

^{xxxiv} M.R. Kale, Mricchakatika of Sudraka, Delhi,2015, p. 170, 355

^{xxxv} G.K. Nariman, A.V. Williams Jackson, Charles J. Ogden and G.C.O.Hass; Harsha Priyadarshika, Sanskrit Dara Series, Cambridge, 2000, p.10.

^{xxxvi} M.R. Kale Bhavabhuti's Maltimadhava, Mumbai, 1928, p. 26-31.

^{xxxvii} A.C. Sen, Ashok'a's Edicts, Calcutta, 1956, pp 142-43.

^{xxxviii} R. Shamasastri, (trans), Kautilya's Arthasastra, Mysore, 1961, p. 49

^{xxxix} Vijaya Laxmi Singh,Portraying Cultures in Indian Subcontinent Ancient to modern, Macmillalan Publishers, Delhi, 2011, pp. 36-39.