

CHAPTER IV

THE QUEST FOR BIO-MEDICAL WASTE UNDER THE INDIA'S ENVIRONMENTAL REGIME SINCE ANCIENT PERIOD

The term environment is closely associated with the Sanskrit word paryavaranam commonly known to the people of India since ancient period, thousands of years before the advent of modern era. It has been seen from ancient history that the India's civilisation had grown up depending on the nature and this dependency had helped the people to form a nature friendly civilisation for its own selfish interest to live in an environment without harming it. The long standing culture and heritage of the country shows its concern towards preservation and protection of the nature by adopting and following various methods to maintain ecological balance. Considering the nature as the creation of God, it is now established that environment is not a physical and lifeless being but a very living and active mechanism and human beings are just one among the various other creatures that inhabit the earth¹, and the duty to safeguard it against the unwanted invasion by the human being lies on them only who are considered as most powerful species and it is them in whose hand the earth is mostly exploited in order to fulfil their desires.

Various research on the subject revealed that for the ancient Indians, the Universe was integrated whole and all natural phenomena had a divine origin.² The modern day holistic approach towards the sustainability of the nature is replicated in many Indian literatures. For example, Hindus regard everything about them as pervaded by divine presence. The rivers, mountains, lakes, animals, flora and fauna, are all manifestations of God, and therefore there is a deep respect and gratitude felt towards nature³. In fact, Indian ancient history depicted that all Indian religions are the supporter and promoter of the environment. The whole emphasis of the ancient Indian religious practices is on that human beings are the integral part of the nature and they cannot be separated from their natural surroundings. Nature has the same blessed connection with man as mother has with her child⁴. Therefore, in order to

¹Ms. U. Rajani Rao, "Environment awareness in ancient India" Vol. 2 International Journal of Life Sciences Research pg. 2 (April-June 2014).

²*Ibid.*

³Rajeev Sharma, Naveen Aggarwal, *et.al.*, "Ecological Sustainability in India through the Ages" Vol. 3(1) International Research Journal of Environment Science pg. 71 (Jan., 2014).

⁴*Ibid.*

have an elaborate understanding regarding the love and respect towards the nature, an extensive analysis has been made in this chapter under the following heads.

4.1 Protection of Environment: The Religious Perspective

The various texts on ancient environmental history showed that almost all the religions have put emphasis on the importance of environment. Apart from the Hindu religion, the other religions such as Christianity, Buddhism, Jainism, Sikhism, Islam etc. that dominated and spread over in different periods has culminated in the interdependency of nature with the living beings specially human beings and the underlying principles of all these religions have always been the same; viz., protection of environment in some way or the other. Hindu Mythology recognises omnipresence of God and believed that everything in the world bears an element of God in it and be treated accordingly. According to the ancient Indian mythology, God prevails over the whole Universe and this ancient mythology has helped Indians to maintain ‘a constant link with nature’.⁵ The concept of divine origin is based on the principle that God has created this Universe and control it with the help of divine forces. Power of God resides in different worlds in the form of different entities and governed the Universe in accordance with the ‘principle of Lila or God’s play’.⁶ In the light of above discussions let us see the contribution made by different religions towards to protection of the nature for the sake of maintaining sustainability throughout the world.

4.1.1 Christianity

The Christian religion has always been the path maker in establishing harmonious relationship between the divine and human beings vis. a. vis. the nature. Under the natural law theory, it has been seen that the church wardens always tried to establish a theological connection between the God and the nature based on reason. It was the reason that teaches the human being about the preservation and protection of the environment for self interest considering every part of the creation has His divine hand in it and no human being has an absolute right to exploit it enormously. The

⁵Dr. Indranil Bhattacharjee, *Textbook of Environmental Laws* pg. 118 (Kamal Law House, Calcutta, 1st Edn., 2009).

⁶Dr. I. A. Khan, *Environmental Law* pg. 22 (Central Law Agency, Allahabad, 2nd Edn., 2002).

Biblical verses in old and new testaments provide that it is the duty of man to protect nature and Humanity must safeguard or care for the environment. Christianity prescribes a harmonious relationship between man and nature.⁷The Christian environmental ethic is based on three principles⁸:

1. the principle of creation which acknowledges that God is the creator of nature and He values it;
2. the principle of sustained order and purpose acknowledges that God sustains nature and has a purpose for it; and
3. the principle of universe corruption and redemption speaks of how mankind and nature were corrupted as a result of the fall and how God's ultimate plan is redemption is the redemption of both mankind and nature.

It contains numerous examples as to how to treat the environment. Regarding the plant life Deuteronomy's⁹ 20: 19-20 sets out ban on the cutting down of fruit trees in war to prosecute a siege. Deuteronomy (25:4 and 22:6) indicates the proper care for domestic animals and a respect for wildlife. In Isaiah 5:8-10 the Lord judges those who have misused the land. Job 38:25-28 and Psalm 104:27-30 speak of God's nurture and care for his creation¹⁰. Thus, sustaining the life of human being, animals and plant had given priority under the Bible to live in harmony with the nature.

4.1.2 Buddhism

Buddhism came into existence by the end of the Vedic period. This particular religion is based upon truth, non-violence, respect and love for the living beings including trees and plants. Simplicity and non-violence are the two cardinal principles

⁷ Rev. Anand Veeraraj, "Christianity and the Environment", cited in O.P.Dwivedi, *World Religions*, pg. 36 (Gitanjali Publishers, New Delhi, 1989).

⁸ *Rejoice Muwadzuri, Biblical Environmental Protection : Seven Keys for Christian Leaders*, A Thesis Project Submitted to Liberty Baptist Theological Seminary in partial fulfillment of the requirements for the degree, Lynchburg, Virginia, pg. 29 (March, 2014), Available at : <http://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=1888&context=doctoral> (Last visited on March 25, 2017).

⁹The fifth book of the Bible, containing a recapitulation of the Ten Commandments and much of the Mosaic law.

¹⁰Mrs. Nandita Verma, "Religion: A Saviour for Environment with Particular emphasis on Hinduism" pg. 5, Available at: <http://www.iitk.ac.in/infocell/announce/convention/papers/Context%20and%20Human%20Resource-04-Nandita%20Verma.pdf> (Last visited on March 27, 2017).

of Buddhism which had been founded by Goutam Buddha around 500-550 B.C. Buddhism emphasises very much over the rational use of natural resources by mankind. This religious thought used to preach people about this behavioural ideology that high degree of human satisfaction might be achieved by means of a relatively low rate of material consumption and it helps people to live without pressure and strain.¹¹

From the viewpoint of the Buddhist concept of karma, the environment is considered to be derived from the karma seed. It is described in the text of Abhidharma-nyayanusara (Junshori-ron) that mountains, rivers, the earth and so on are born from common karma (gu-go), and living beings are born from individual karma (fugu-go). Individual humans are, therefore, born from individual karma (fugu-go), and the natural environment of mountains, rivers and the earth is produced by common karma (gu-go) of the human race¹². The improvement of the karma of humans will improve its environment resulting from common karma¹³.

The teaching of Buddha speaks for tolerance and reverence behaviour not only towards human beings but also towards all living beings including the plants and trees. Under this religious teaching, every follower of Buddha should implant trees every year and look after those plants until they are safely grown up. According to the spirit of this religious belief, one should abstain from killing animal either as a pastime pleasure or even for sacrifice. Buddhism not only forbids the destruction of animal life, but also regards it as a duty of human being to take care of the well being of all animals.¹⁴ Cutting of trees, destruction of birds and pollution of water are also forbidden under Buddha's preaching that shows respects towards the norms of ecology¹⁵.

From a Buddhist perspective, solving environmental problems and contributing to their elimination is in itself part of the practice of Buddhism. In other

¹¹Dr. Indranil Bhattacharjee, *Textbook of Environmental Laws* pg. 127 (Kamal Law House, Calcutta, 1st Edn., 2009).

¹² Shuichi Yamamoto and Victor S. Kuwahara, *How does Buddhism Contribute to the Environmental Problems?*, Vol. 11, The Journal of Oriental Studies, pg. 167 (Plenum Publishers, New York, 2005).

¹³ *Ibid.*

¹⁴ Dr. Indranil Bhattacharjee, *Textbook of Environmental Laws* pg. 127 (Kamal Law House, Calcutta, 1st Edn., 2009).

¹⁵S.S. Tripathi, and Acharya Bhante, "Buddhism and the Ecological Crisis" cited in O.P.Dwivedi, *World Religions* pg. 188 (Gitanjali Publishers, New Delhi, 1989) .

words, solving environmental problems is a natural aspect of the Buddhist philosophy. The Bodhisattva ideals under the Buddhist religion consisted of six paramitas. The six paramitas are composed of Dana paramita, Sila paramita, Kshanti paramita, Virya paramita, Dhyana paramita and Prajna paramita. Dana paramita means giving a fortune, preaching a law or removing fear, i.e., doing something good without regret for a person and nature, Sila paramita means keeping precepts such as not hurting or killing living entities and not stealing, Kshanti paramita means enduring sadness and pain, Virya paramita means doing your best and always making effort to do better, Dhyana paramita means being unwavering or steadfast in all endeavors, and Prajna paramita means obtaining true cognition of wisdom from the concepts of “dependent origination” and the “middle-way.”¹⁶

4.1.3 Jainism

The Jainism which was preached and propagated by Lord Mahavira laid emphasis on maintaining harmony between man and man and between man and nature. This religious belief had laid emphasis on minimum consumption and destruction of living and non-living resources for the satisfaction of material needs and comfort of the human being. The spirit of the Jain precept is based on Ahimsa. Jainism prohibits eating of any kind of meat. Ahimsa has been given the greatest importance and has been called as the highest virtue i.e. paramodharma. So this type of religious teaching of the Jain faith and belief is clearly upheld the virtue the protection and preservations of the natural environment. It is mandatory for the Jains to renounce fifteen monastic vows known as Karamdan and some of the vows consist of environmental matters are Vankarm, Sphotrak Karm, Nirlanchan Karm and Asatipashan Karm which deserve special mention.¹⁷ The idea of ahimsa argues that all living beings deserve freedom from violence and therefore, meat eating is considered to be the biggest enemy of righteousness, purity and goodness in Jainism. It insisted upon vegetarianism to protect animals from harm and ensure their own positive karmic rebirth.

¹⁶ Shuichi Yamamoto and Victor S. Kuwahara, *How does Buddhism Contribute to the Environmental Problems?* Vol. 11, The Journal of Oriental Studies, pgs. 78-79(Plenum Publishers, New York, 2005).

¹⁷ P.L. Bhargave, “The Jain Concept of Ahimsa”, cited in R. C. Dwivedi, *Contribution of Jainism to Indian Culture* pg. 120 (Motilal Banarsidass, New Delhi, 1st Edn., 1975) .

The Jain scriptures preaches matters relating to environment, such as, not to injure, abuse or oppress, enslave, insult, torment, torture and kill any creature or any living being. The basic thrust of Jainism is on non-violence and regards for life. It also emphasises protection of living creatures. Jainism condemns the sacrifice of animals to the sacred fires. It disapproves captivity, whipping, overloading and depriving animals from adequate food and drink. Jainism is also based on the principle of simplicity which is close harmony with nature and helps in protecting and preserving the nature¹⁸.

4.1.4 Sikhism

“The Lord infused His Light into the dust, and created the world, the universe. The sky, the earth, the trees, and the water - all are the Creation of the Lord”-Guru Granth Sahib

Sikhism emerged, as another religious belief which is comparatively a recent one. In the Guru Granth Sahib it has been described that the purpose of human beings is to achieve a blissful state in harmony with the earth and all creation. It considers every creature to be the incarnation of God and therefore, the conservation and preservation of the same are the essential principles. According to Guru Nanak, the founder of Sikh religion, “Air is vital force, water the progenitors, the vast earth the mother of all, day and night are nurses fondling all creation in their lap¹⁹. This implies that a sacred relationship with the environment is crucial in maintaining a spiritually healthy and ecologically balanced planet.

According to religious belief of Sikhism, there is one way, one love, one beauty that shines through air, water and fire. Actually, it speaks of integrity and unity of the world environment. As per this belief, the world community is considered as one of a single family living in a harmonious, unified environment and the person, who can respect this sense of world unity under environment perspective, can survive with honour and dignity. This religious thought expresses its most precious virtue of protecting and preserving the natural environment through its preaching and teaching.

¹⁸ Dr. Rajender Verma, *Management of Natural Resources and Laws in India* pg. 30 (Laxmi Book Publication, Maharashtra, 2016).

¹⁹ *Ibid.*

In the Sikh scripture, Guru Granth Sahib emphasise has given that the human beings are composed of five basic elements of nature i.e., earth, air, water fire and sky. This establishes a close relationship between nature and mankind. It also emphasized on sustainable use of natural environment and its resources for the benefit of mankind in respect of food, nutrition, health and good living. In Guru Nanak Bani (Religious speech of Sikhism), the term ‘jagat’ refers to the world and convey the idea regarding creation of it from the elements like, water, fire and air, as created by the God. So according to Sikhism, the inherent spirit of God is present in nature and its every element. From this religious thought, it appears that Sikhism also bears the same traditional Hindu religious notions that nature is the creation of God and a part of it and it is the object of love and respect. So in this way, Sikh religious faith and belief also embrace the spirit of environment protection through its religious teaching and preaching.²⁰ People should identify their position in universe and should respect the creation of god. They believe that the every survival depends on environment.²¹ According to Holy Scripture of Sikhs, Guru Granth Sahib, the creation and dissolution of universe occurs from divine command; God is the source of birth, substance and destruction. Thus for sikh’s divinity lies in nature and to meet their needs without over exploiting the nature.

4.1.5 Islam

The Islam religion depicted harmonious relations between man and nature. The Holy Quran declares that Allah created the heaven and the earth, from clouds he released water. It consisted of mountains, hills and dales, valleys and slopes, rivers and springs, forests and the plains have been provided where animals, birds and different other living creatures including human beings would live in peace and harmony with nature. On earth he made rivers and raised mountains. Under the Islamic religion everything is created from water. Allah is considered to be the owner of land and mankind is the trustee or guardian, whereas, the other living creatures are considered to be the beneficiaries. Destruction of nature is the destruction of “Ayyat

²⁰ Dr. Indranil Bhattacharjee, *Textbook of Environmental Laws* pg. 126 (Kamal Law House, Calcutta, 1st Edn., 2009).

²¹ Jolly Surjif, “Sikhism and the Environment,” cited in O.P.Dwivedi, *World Religions* pg. 301(Gitanjali Publishers, New Delhi, 1989).

of Allah”²². Under the domain of Islamic religious thought and belief, the environment and ecology are considered as the subject matter of immense importance to make the society a habitable one with proper peace and tranquility.²³ To enter into peace, another meaning of Islam postulates that a Muslim should make his place a peaceful abode by maintaining peace and tranquility not only with God but also with other cohabitants, without doing any evil or causing any injury to them.²⁴

It is interesting to note that the word ‘nature’ which is an abstraction cannot be found in the Qur’an and the closest modern Arabic usage is the word bi’a which connotes a habitat or a surrounding. The Qur’an speaks of creation (khalq) and it contains two hundred and sixty one verses where this word is used in its various grammatical forms derived from the root kh-l-q. These verses contain references to the human world; to the natural world of the planet from trees to turtles, from fish to fowl; and to the sun, stars and skies. The very first revelation of the Qur’an to the Prophet used this word in its verb form to dramatic effect, “Recite in the name of your Lord who created, created man from clots of blood” (Al-‘Alaq, 96:1,2). Creation is the fabric into which the tapestry of life is worked²⁵.

The holy Quran’s message is unity, harmony, balance and order representing the sustainable development. One should not alter the environment or disrupt the balance. If any such damage is caused to environment, it is considered as fasad (mischief).²⁶ Islam is against the cutting or destruction of plants and trees unnecessarily. In Hadith, Prophet Mohammad said “He who cuts a lote-tree without justification, Allah will send him to Hellfire²⁷. Regarding the preservation of animals and species the Quranic verse says that all living things are partners to man in existence and they deserve our respect. We must be merciful toward animals and

²² Dr. Rajender Verma, *Management of Natural Resources and Laws in India* pgs. 28-29 (Laxmi Book Publication, Maharashtra, 2016).

²³ Dr. Indranil Bhattacharjee, *Textbook of Environmental Laws* pg. 126 (Kamal Law House, Calcutta, 1st Edn., 2009).

²⁴ *Ibid.*

²⁵ The Royal Aal al-Bayt Institute for Islamic Thought, *Islam and the Environment Ethics and Practice*, The 15th General Conference, pgs. 6-7 (27-29 Sept., 2010), Available at: <http://www.aalalbayt.org/EnvConference/018.pdf> (Last visited on March 15, 2017).

²⁶ M. Rafiq and Muhammad Ajmal, “Islam and the Present Ecological crisis”, cited in O.P. Dwivedi, *World Religions* pg. 119 (Gitanjali Publishers, New Delhi, 1989).

²⁷ Dr. O.M. Ashtankar, “Islamic Perspectives on Environmental Protection” Vol. 2 International Journal of Applied Research pg. 440 (2016).

strive to ensure the preservation of different species²⁸. Therefore, the social, cultural and religious dimensions and values in Islam helped in the protection of environment. The best way to protect the environment from destruction and, indeed, to improve its condition is to revive these forgotten understandings by referring back to the teachings and instructions of divine religions and reviewing and readjusting our policies regarding the application of modern technology and in using natural resources appropriately.

4.2 Ancient Civilisations in Protecting the Environment

Ancient civilisations which are considered as the oldest civilisation of the world had originated and spread in close association with nature. The people of ancient India were the custodians of nature with highly evolved civilisation. All civilisations evolved by balancing the human needs and surrounding environment. Indians enjoy the plethora of natural resources endowed to them by their ancestors. It has rich and diverse ecosystems.²⁹ The rich natural resources which people enjoy today are the result of wise resource management and allocation strategies followed by their ancestors. Their approach towards life was very comprehensive, highly integrated with the environment and therefore, was ecologically sound and sustainable³⁰. The sages and rishis identified man as an integral part of nature and stressed the importance of maintaining complete harmony with all the living and non-living components of earth. They identified human environment from the point of view of physical, chemical, biological and social process that influences directly or indirectly the health and well – being of the human kind³¹. For the sake of clarity it can be understood under the following heads:

4.2.1 Pre-Vedic Period

Pre-Vedic period is the most ancient time in the history of India. Mohenjodaro and Harappa civilisations are known as the most ancient civilisation of India

²⁸ *Ibid.*

²⁹ Chandan Kumar Gautam and Anand Prem Rajan, “Ecocentrism in India: An Incredible Model of Peaceful Relation with Nature” Vol. 4 Universal Journal of Environmental Research and Technology pg. 1 (2014).

³⁰ P.Pushpangadan, Jyoti Sharma, *et al.*, “Environmental Health and hygiene in Ancient India: An Appraisal” Vol. 7 Ancient Science of Life pg. 1, (Jul.-Sept. 1987).

³¹ *Ibid.*

during pre-Vedic period, although a doubt exists as to which period can properly be said as pre-vedic, vedic and later vedic. However, to have a detailed knowledge regarding ancient Indian environmental issue such division is discernible.

4.2.1.1 The Indus Valley Civilisation

The Indus valley is one of the world's earliest urban civilisations, Inhabitants of Harappa and Mohenjo-daro, the ancient Indus river valley civilisation, developed new techniques in metallurgy and handicraft. The civilisation is noted for its cities built of brick, roadside drainage system, and multistoried houses³².

Evidence regarding the environmental history of India can be traced back in the mature phase of a civilisation known as the Harappan civilisation, considered as the first of its cities to be unearthed was located at Harappa, excavated in the 1920s in what was at the time the Punjab province of British India (now in Pakistan). Perhaps the most unique feature of the Harappan civilisation was the development of urban centres. Let us look at one such centre, Mohenjo-daro, more closely. Although Mohenjo-daro is the most well-known site, the first site to be discovered was Harappa³³.

During pre-Vedic period in Indus valley region, where Harappa and Mohenjo-daro are located, the life of ancient Indian people had attained to such height that could easily be compared with modern age. So far as country and town planning is concerned, it was really astonishing. Sense of public health and hygiene of the people was very high. Architects and country planners were well aware about the danger of mixing of drinking water and sewage, if proper care and attention would not have been taken and that is why they always gave proper attention in both supply of drinking water and maintenance of sewerage system, so that contamination of drinking water with sewerage water could not have taken place. There was very good underground sewerage system in Harappa and Mohenjo-daro. At that time special care and attention were taken regularly for sewerage treatment in those two towns, and for that treatment purpose 'soak pits' were constructed there in different places

³² Anonymous, *Indus Valley Civilisation* pg. 2, Available at:

<http://fileservet.nettexts.com/asset.aspx?dl=no&id=4821> (Last visited on March 30, 2017).

³³ *Brick, Beads and Bones: The Harappan Civilisation* pg. 5 (2015-16) Available at : www.ncert.nic.in/ncerts/l/lehs101.pdf (Last visited on March 28, 2017).

within the sewerage system. There was not a single open drain and all were covered with very good cover made up of either stone or concrete.³⁴

There was a very good system for cleaning the sewerage and water supply pipe and those were regularly cleaned. There was also a special arrangement for dumping of all the garbage and wastes of the town outside the two towns, in deep ditch. It was an excellent example of maintenances of public health and hygiene. There were also special arrangements for discharging of solid municipal waste products and polluted water and the entire system was conducted with high degree of care and cautions to avoid any kind of risk of pollution in drinking water due to contamination by polluted sewerage water.³⁵

In the Indus valley region, the burial system was also very much scientific and aiming at prevention of the environmental pollution. Bodies were interred in deep graves lying extended north and south on stone slabs and such tombs were surrounded by stone circles. The Indian megalithic tombs, of which hundreds have been found in the peninsula, usually contain iron objects may be assigned to the early Iron Age. Many prehistoric crematories were found in Tinnevely District, in Northern ancient India covering an area of 114 acres.³⁶ Thus, there is no doubt that this type of arrangements were made only to protect the human environment and hygiene in those days.

4.2.1.2 Aryan Civilisation: The Beginning of Hinduism

The Vedic people, who called themselves Aryas or Aryans, invaded Northern India from Central Asia evolved separately from the Indus civilization. Our knowledge of the early Aryans comes mainly from the Rig Veda, the earliest of the Vedas³⁷. The continuation of environmental awareness can be seen in the Aryan civilization also where the ecological awareness find place in their notion of 'Aranyani', meaning 'queen of forests' as envisaged by the Vedic seers. This can be likened to the idea of tree goddesses of the Indus civilization. There are several

³⁴ Dr. Indranil Bhattacharjee, *Textbook of Environmental Laws* pgs. 118-119 (Kamal Law House, Calcutta, 1st Edn., 2009).

³⁵ *Ibid.*

³⁶ Vincent A. Smith, *The Oxford History of India* pg. 3 (Oxford, London, reprinted 2nd Edn., 1941).

³⁷ Dr Raj Pruthi (Eds.), *Vedic Civilisation* pg.1(Discovery Publishing House, New Delhi, 2004).

descriptions in the Vedas regarding praise to Aranyani, the spirit of the forest which guides and protects the plants and wild animals. The Aryans observed nature in all its true aspects.³⁸ Regarding planting of trees, each year of a man's life, right from the year of his birth until the age of his retirement at sixty, surrounded with the obligation to plant new trees in place of trees that fell or withered away. Responsibility for planting yearly trees initially fell on parents and the task was then passed on to the son and his wife, a year after marriage³⁹. The Aryans had respect towards cow and other animals. Cows were ushered in, to milk them on the spot, to serve, first the children, and then adults. The Aryans were concerned for waste, especially human waste. There was a man Karkarta who was given charge of improving drainage system and environmental aspects; later he was promoted as Town Planner and became President of the Architects Guild. He is credited to have said:

“An animal, an insect a fish creates no waste and no hazard, but each human being creates a waste of 1,100 times his body weight and hence twice the hazard.”⁴⁰

4.3 Vedic Approach to Environment

Veda i.e., the treasure house of knowledge⁴¹ is the oldest religious document containing various hymns relating to subjects like linguistic, mathematics, astrology, natural science like physics, chemistry, biology, botany, medical science, ecology etc. Subject like ecology for the protection and cleaning up of environment was given priority and formed part and parcel in the daily lives of the people incorporating the same in the folklore, art, culture and religion. Vedas are the absolute religious authority for Hinduism that categorically explained the rule of nature, principle of food, life, intellect and immortality. The Vedic and Puranic literatures, in the Upanishads, Arthashastra, Charak Samhita, Ramayana and Mahabharata are all based on Hindu religious philosophy⁴². Like all other religions in India, under Hindu religions also the omnipresence of God can be found in nature-in rivers, mountains,

³⁸ Ms. U. Rajani Rao, “Environment awareness in ancient India” Vol. 2 International Journal of Life Sciences Research pgs. 2-3 (April-June 2014).

³⁹ Bhagwan S. Gidwani, *Return of the Aryans* pg. 7 (Penguin Books India, 2nd Edn., 2000).

⁴⁰ *Ibid* at pg. 333.

⁴¹ Rajib Sarmah, “Environmental awareness in the vedic literature: An assessment” Vol.1 International Journal of Sanskrit Research pg. 6, (2015).

⁴² R. Renugadevi, “Environmental ethics in the Hindu Vedas and Puranas in India” Vol. 4 African Journal of History and Culture pg. 1 (Jan., 2012).

forest and all forms of life . It is considered a sacred duty to protect them. Birds and animals have been identified with Gods, for instance, elephant with Indra, rat with Ganesh, lion with Durga etc⁴³. In Hindu theology forests, trees and wildlife protection held a place of special reverence. The theology prescribed for temple forests and trees were worshipped as a ritual. Therefore, the ancient Indian scriptures thus have enough to reveal about the protection and maintenance of ecological balance. The Vedas, Upanishads, Puranas and other scriptures of Hindu religion give a detailed description of trees, plants and wildlife and their importance to the community.

Vedic man was nature centered for him the nature and its phenomena were part of eternal divine design.⁴⁴ The Vedic prayer invokes and postulates divine intervention to bliss and protect the nature environment⁴⁵.

4.3.1 Four Vedas

Veda comprised of the four Vedas i.e. Rig Veda, Sama Veda, Yajur Veda and Atharva Veda consisted of full of hymns and recognises explicitly the importance of nature and advocate the supremacy of different natural power. In fact, Rigveda hymn is dedicated to praise all of the healing properties of trees. The nature has been personified and worshiped as different Gods. For instance, the Rigv Veda has a description of thirty three Gods distributed in the three divisions of the universe, i.e., earth, air and heaven.⁴⁶ They have been glorified and worshipped as givers of health, wealth and prosperity. It also highlights the potentialities of nature in controlling the climate, increasing fertility and improvement of human life emphasising for intimate kinship with nature. Some of the Vedic deities representing the phenomenon of nature are: Indra, Maruts (the storm deities), Vayu (the god of wind), Parjanya (the god of rain and water), Jal (the god of water), Prithivi (the earth), Dyaus (the god of sky), Agni (the fire god), Varuna (the god of the sky, water and celestial ocean, as well as the god of law), Mitra (the god of friendship and alliances), Savitr (the solar deity), Pusan (the pastoral god), prajapati(the lord of creatures), Asvins (the god of wonder

⁴³ Sunit Gupta, *Environment and Social Issues* pgs. 145-146 (Sarup & Sons, 1st Edn., 2000).

⁴⁴ R.T. H.Griffith , *The Hymns of Atharva Veda* pg. 12(Evinity publishing Inc, 1st Edn., 2009).

⁴⁵ Om Krishna, "Environmental Discourses in Vedic Period" Vol. 4 International Journal of Social Science and Humanities Research pg. 485 (Jan.-Mar., 2016).

⁴⁶ S. Upinder, *A History of Ancient and Early Medieval India: From the Stone Age to the 12th Century* pg. 195 (Pearson Education, India, 2008).

works and miraculous healing power), Gandharvas (the aerial spirits), Surya (the Sun), the goddesses usas' (dawn) and Ratri (night). It also states that the sun causes evaporation and brings rainfall.⁴⁷ Surya has also been enchanted in the sacred Gayatri mantra/hymn.⁴⁸ Many rivers have been recited in the Nadistuti (prayer of river) hymns of the Rigveda.⁴⁹ The river Ganga, Yamuna and Saraswati finds a special place in Indian cultural and social traditions. They are respected as mothers. Even mountains like the Kailash, the Barabar and the Govardhan are considered sacred. They are believed to be associated with some gods or goddesses.

The Rig Veda describes the various components of eco-system which were later rediscovered by modern scientists. It states the plant as “God for Gods” thus giving it precedence above mythological God Indra (god of rain and thunderstorms) and the other Gods. Cutting or uprooting the green trees has been described sinful job; as it may break the food chain and thus may bring instability in the ambience.⁵⁰

The Sama Veda mainly contains verses. These singing hymns are mostly taken from the Rigveda. In Sama Veda, the sacrificial fire is compared to a stallion that can stave off the insects.⁵¹ In ancient India, places of worship were mostly located in jungles. People did not see much difference between nature and God. There might have been a method to make people aware that nature is also a divine establishment and should not be interfered unnecessarily. Protection of nature and preservation of natural resources were very much religious and an accepted mode of worshipping god.

The Yajur Veda mainly contains information about rituals.⁵² It emphasises to protect the animals as they are extremely important and helpful to environment⁵³. A

⁴⁷ S. Prasoan, *Panch Mahabhuta Tatwa And Sharira* pg.102 (Hindology books, Pustak Mahal, Delhi, 2008).

⁴⁸ S. Radhakrishnan, *The Principal Upanishads* pg. 299 (Harper Collins publishers India, 1953).

⁴⁹ P.N. Chopra, B.N. Puri, M.N. Das, *et. al., A Comprehensive History of Ancient India* pg. 25 (Sterling Publishers Pvt. Ltd., New Delhi, 2003).

⁵⁰ A.Goel and S.L. Goel., *Human Values and Education* pg. 123 (Deep and Deep Publications Pvt. Ltd., New Delhi, 2005).

⁵¹ Km. Saroj Gupta, “Environment Ethics, Policies and Inclusive Environment Protection Mechanism in India (With Special Reference to Environmental Inquisition)” Vol. 5 *Journal of Environment & Earth Science* pg. 113 (2015).

⁵² J. Gonda, “A History of Indian Literature: Veda and Upanishads” pg. 11 (Wiesbaden: Otto Harrassowitz, 1975).

⁵³ H. Mandalia, Y.Rupala, *et. al., “Bio-cultural Importance of Indian Traditional Plants and Animal’s For Environment Protection,” Review of Research,* pg.1 (2012).

ruler should never kill animals which are useful in agriculture like bullocks or cows which gives us milk. It is a punishable crime if a person kills or harms such animals⁵⁴. Killing is considered as the most sinful act in Hindu religion. This type of religious belief and sacredness has kept the public away from exploiting these natural resources due to the fact that the relationship with nature and the animals should not be that of dominion and subjugation but of mutual respect and kindness.

Atharva Veda considered trees as abode of various gods and goddesses. Atharva Veda emphasises that relationship with nature and animals should not be that of dominion and subjugation but of mutual respect and kindness. Atharva Veda prayers, “whatever, I dig from thee 'O' Earth, may that have quick growth again, 'o' purifier, may we not injure the vital heart.”⁵⁵ Many animals and plants were associated with gods and goddesses so that they were preserved for the future generations. It has also been associated with supernatural powers and no one dared to misuse the resources and therefore it acts as a check on the overuse of resources. The Athar Veda defines the relationship between green plants and the sun in maintaining the weather conditions necessary for the continuation of life on this planet. It states that plants and herbs destroy the poison pollutants. In fact it establishes the significance of the sun as the ultimate source of energy on earth and green plants as primary producer. It also says about the elimination of toxins from plants and herbs that aid in the biological treatment and maintenance of healthy biogeochemical cycle. The significance of purity and quality of water has also been highlighted. It talks about herbal ways of treatment of diseases.⁵⁶ The Bhumisukta of Atharva Veda considers 'Bhumi' *i.e.*, the earth, as the personified mother goddess. Killing of innocent animals was considered to be a sinful act. It is she who nourishes us all like a loving mother nurtures her sons. In fact the earth in Bhumisukta doesn't merely represent the land, but all that which is part of the environment. She symbolises the three principal components of environment, land water and air. At the liquid level 'Bhumi' is the sustainer of oceans, river sand waters.

⁵⁴ P.Pushpangadan, Jyoti Sharma, et al., “Environmental Health and hygiene in Ancient India: An Appraisal” Vol. 7 Ancient Science of Life pg. 91, (Jul.-Sept. 1987).

⁵⁵ Dr. I. A. Khan, *Environmental Law* pg. 22 (Central Law Agency, Allahabad, 2nd Edn., 2002).

⁵⁶ M.Bloomfield, “Hymns Of The Atharva-Veda” (1897), *Available at*: <http://hudsoncress.net/hudsoncress.org/html/library/india/Atharaveda.pdf> (Last visited on June 8, 2015).

Similarly, trees and plants have been regarded as indispensable in the life of human being. They considered reverence, a good scalpel and protector from the evils with a concept of dwelling of many God and Goddesses living in it. However, the sense of utility behind worshipping cannot be ignored. Following are some of the trees associated with the God and Goddess.

- a. Lotus-Laxmi (Goddess of Wealth).
- b. Vat (Banyan)-Brahma(Creator of Universe).
- c. Ashoka-Buddha, Indra.
- d. Kadamb-Krishna.
- e. Palasa-Brahma, Gandharva.
- f. Need-Sitala, Manasa.
- g. Fig-Vishnu, Rudra.
- h. Mango-Laxmi, Govardhan.
- i. The Pipal-Vishnu, Krishna.

Thus, the Hindus have received their religion through revelation, the Vedas which depicted the dependency of ancient Indians solely on the nature. Trees are worshipped as Vriksha Devta (Tree Deity) with prayers, offering of water, flower, sweets and encircled by sacred threads. Planting of trees is also regarded as sacred religious duty and work of great virtue. The nature and religion have been directly connected in all aspects of life and thereby the protection and preservation of the nature has always given priority in the self interest of human being. Matsya Puran has regarded one tree equal to ten sons. According to Vaha purana one who plants one papal, one neem, one ber, ten flowering plants or creepers, two pomogranases, two oranges and five mango trees will not go to hell. Therefore, cutting of trees and destruction of flora was considered a sinful act. Charak Samhita has considered the destruction of forests as the most dangerous act for humanity and its welfare.⁵⁷ The

⁵⁷ R.B.Singh and Suresh Mishra, *Environment Law in India: Issues and Responses* pg. 103(Concept publishing Company, 1996).

destruction of forests is most dangerous for the nation and for human beings. Vanaspati (vegetation) has direct relationship with the well being of the society. Due to the pollution of natural environment and the destruction of Vanaspati, many diseases crop up to ruin the nation. Only then Vanaspati with medicinal qualities may enhance the nature and cure diseases of human beings.⁵⁸

4.3.2 Upanishads

The Upanishads, the secret doctrine form the Vedanta (the end of the Veda) are probably the most important part of the Veda.⁵⁹ Ranging between 1500 and 600 B.C., a great deal of the Upanishads is in dialogue form. It is found in the concluding sections known as Aranyaka part of the Veda. It explained the inter-relations between the various components of nature. Water known as 'jeevan' has depicted water as the strength and source of all energy for all living organisms on the earth. The other natural resources especially forest was considered as the 'van devta' also a source of natural energy and to be worshipped. In the exposition of the evolutionary process of human life by Upanishads, the earth is the disembodied spirit of nature; water is the essence of earth; vegetation is the essence of water; human life is the essence of vegetation; meditation is the essence of human life; recitation is the essence of meditation; harmony is the essence of sanitation and the existence of human beings in totality⁶⁰.

The Upanishads sages perceived the existence of God in trees and other plants and those they were gifted to man as a companion for mutual survival. "The God who exists in the universe, lives in air, water, in fire and also in trees and herbs, men should have reverence for them". Brhadaranyaka Upanishad (3.9.28) equate trees with human beings as follows: Just like a tree, the prince of the forest, so the man is, in truth.⁶¹ In the Taittiriya Upanishad (5.101) certain norms were prescribed for human beings to keep the environment clean. "One should not cause urine and stool in water,

⁵⁸ *Ibid.*

⁵⁹ Charles S. Braden, *The Scripture of Mankind: An Introduction* (The MacMillan Company, New York, 1952).

⁶⁰ Km. Saroj Gupta, "Environment Ethics, Policies and Inclusive Environment Protection Mechanism in India (With Special Reference to Environmental Inquisition)" Vol. 5 Journal of Environment & Earth Science pg. 113 (2015).

⁶¹ R. Renugadevi, "Environmental ethics in the Hindu Vedas and Puranas in India" Vol. 4 African Journal of History and Culture pg. 3 (Jan., 2012).

should not spit in water; and should not take bath without clothes". The Iso-Upanishad has revealed the secrets of existence of life on earth and the importance of every organism for mutual survival. The universe along with its creatures belongs to the Lord. No creation is superior to any other⁶².

The verses of the Iso-Upanishads envisage that human beings should not be above nature and no species encroaches into the rights and privileges of other species indicates that the modern civilisation armed with technological weapon, should not interfere into the rights of all other life forms on earth by using, misusing, exploiting and over-exploiting the finite and scarce natural resources of earth. The concept of sustainable development which the modern environmentalists are harping upon to use the natural resources judiciously for a more stable development and without impairing with the abilities of the future generations to use those resources, and without interfering into their living rights was perhaps inspired by these verses of the Iso-Upanishad.⁶³

The Upanishads show a broad division of the flora into oshadhi, vanaspati and vrksha. The Chandogya indicates a distinction between the cultivated grains and the oshadhi-vanaspati in general. Soma is said to have been the king of vanaspatis, in fact the term vanaspati itself means the lord of the forest.⁶⁴

Unlike the flora, the fauna could also be divided into two categories-the Gramya or domesticated animals and the Aranya or wild beasts. The Chandogya Upanishad divides all living creatures into three parts according to the manner of their birth-

1. Andaja (oviparous), springing from the egg,
2. Jivaja (viviparous), springing from a living being and
3. Udbhija, springing from a germ⁶⁵.

The animals were held in very high esteem by the Upanishadic people. They meditated on the fivefold Saman with the image of the animals in their eyes: One should meditate on the fivefold Saman among the animals, the goats as the syllable

⁶²*Ibid.*

⁶³*Ibid.*

⁶⁴ Dr. Subhra Sharma, *Life in the Upanishads* pg. 52 (Abhinav Publications, New Delhi, 1995).

⁶⁵ *Ibid* at pg. 55.

him, the sheep as the prastava, the cows as the Udghitha, the horses as the pratihara and the human being as the nidhana⁶⁶.

Among all the animals, domestic or otherwise, the cow was the most important. Its milk shared by men and animals, was one of the seven foods created by Prajapati. Milk and all its products were the most favourite items in the dietary. The cow was also a measure of value. Things were bought in exchange with the cow; rewards and fees were given in the form of cows and even the philosophical meditations promised rich dividends in cows. Even weak and old cows were kept and fed and not driven away or sold. Cow was given as a symbol of speech.

4.3.3 The Puranas

In Puranas had also shown great concern towards the protection of environment and the flora and fauna. In the Padma Purana, it is mentioned that trees like, pipal, bel, ber, neem, etc., are the home of God and are not to be cut. This indicates that trees were sanctified by the people who through religion tried to conserve vegetation and forest. The Agni Purana even prescribed death penalty for pollution of ponds⁶⁷. The Varah Purans (172.39) says that “One who plants a peepal (*Ficus religiosa*), one neem (*Azadirachta indica*), one Banyan (*Ficus benghalensis*), two pomegranates (*Punica granatum*), two orange (*Citrus reticulata*), five mango trees (*Mangifera indica*) and ten flowering plants or creepers shall never go the hell”. The practice of “Vanmahotsava” (Tree Plantation Ceremony) is over 1500 years old in India and is found in the Matsya Puran. Agnipuran says that the plantation of trees and creations of gardens leads to eradication of sin. In Padma Puran (56.40-41) the cutting of a green tree is an offence punishable in hell⁶⁸.

In Narshimha puran trees have been personified as God (Brahma) Himself. It is said in Skandpuran that Peepal is supreme to all other trees as Lord Vishnu is to all other Gods. Varahpuran advocates regular plantation of a tree as a means to achieve heaven. In Matsyapuram plantation of a tree has been equated with progeny of ten sons. Matsya Puran has regarded one tree equal to ten sons. According to Vaha purana

⁶⁶ *Ibid.*

⁶⁷ Dr. Benudhar Patra, “Environment in Early India: A historical Perspective” Vol.1 Environment: Traditional & Scientific Research pg. 46 (Jan.-June, 2016) .

⁶⁸ *Ibid.*

one who plants one papal, one neem, one ber, ten flowering plants or creepers, two pomogranases, two oranges and five mango trees will not go to hell. Therefore, cutting of trees and destruction of flora was considered a sinful act.⁶⁹ Similarly, in Skandpuran a long list of trees has given the cutting of which is prohibited.

Apart from the protection of trees, Narasimha puran also envisages protection of animals and birds. Killing of birds for eating was prohibited in the following language “O, wicked men if you kill a bird then you are bathing in a river, pilgrimage, worship and yagnas are all useless”. Similarly, in the Vishnu Puran protection of the animals can be found where it is mentioned that “God Keshava is pleased with a person who does not harm or destroy other creatures or animals”⁷⁰.

Even in Ramayana and Mahabharata where in we find reference of beautiful forests of Dhandakaranya, Nandavana and Khandavana, destruction of forests was considered to be a great sin.⁷¹

4.3.4 Manusmriti

Manusmriti is the world’s first ethical compendium on human jurisprudence, presented by Maharshi Manu, originated sometimes immediate to the post Vedic age.⁷² Consisted of twelve Chapter and two thousand six hundred and eighty four verses,⁷³ Manusmriti focused under different chapters on different environmental aspects. It has direct and indirect references about conserving plants and animals with punishments specified for disobeying and harming the trees and animals. It also gives a distinctive taxonomy of plants while stating that some of the plants have consciousness, and experience pleasure and pain and have awareness.⁷⁴

According to Manusmriti, he who injures un-harmful being for pleasure will never find happiness. One who does not cause suffering to living creatures and desires the good of all beings obtains endless blessings and respect. Such people have great

⁶⁹ Kailash Thakur, *Environment Protection Law and Policy in India* pg. 102 (Deep & Deep Publication Pvt. Ltd., New Delhi, Reprinted 2007).

⁷⁰ *Ibid.*

⁷¹ Dr. I. A. Khan, *Environmental Law* pgs. 102-103 (Central Law Agency, Allahabad, 2nd Edn., 2002).

⁷² Sayan Bhattacharya, “Forest and biodiversity conservation in ancient Indian culture: A review based on old texts and archaeological evidences” Vol. 30 International Letters of Social and Humanistic Sciences pg. 37 (2014).

⁷³ Sachidananda Padhy, Santosh K. Dash *et. al.*, “Environmental Laws of Manu: A Concise Review” Vol. 19 Journal of Human Ecology pg. 2 (2006).

⁷⁴ Ms. U. Rajani Rao, “Environment awareness in ancient India” Vol. 2 International Journal of Life Sciences Research pg. 4 (April-June 2014).

will power and they can achieve anything they strongly wish. The use of meat as food has been shunned as they are obtained by killing living animals. Manusmriti also talks about the judicious use of the natural resources.⁷⁵

Filthy substances like urine, faeces, saliva, cloths defiled by impure substances, blood, poisonous things and any other substance considered to be impure, should not be thrown to water body. Garbage like hair, ashes, bones, potsherds, cotton seeds and chaff are not to be dumped in public places; one should avoid stepping on such substance. Waste products like urine, ordure, water used for washing the feet, water from the bath and remnants of food should be made transferred far away from the dwelling⁷⁶. It also envisages that dwelling in a place where diseases are endemic should be avoided. Things used for cleaning the body, water used for a bath, urine, ordure, blood, mucous or anything spat out or vomited should be carefully avoided to step on⁷⁷.

Provisions of punishment for the killing of different animals have been laid down in the Manusmriti. The punishment followed for the sinful killing of snakes, toad, small fishes, small animals with or without bones, insects and destroying of any kind of creatures that breed in food, condiment, fruits and flowers. Injuring medicinal plants and cutting down green trees for firewood, cutting of fruit trees, shrubs, creepers, lianes, flowering plants, destroy of agricultural species for no good purpose and all plants that spontaneously spring up in forests should be followed by penance.⁷⁸

4.3.5 Arthashastra

Kautilya, author of the book Arthashastra and a minister of the Maurya king Chandragupta, India's first emperor provides detailed instructions on different environmental issues especially on the protection and management of forests, orchards etc. The Mauryan period was perhaps the most glorious period of the Indian history from environment protection point of view. In his Arthashastra, written

⁷⁵Chandan Kumar Gautam and Anand Prem Rajan, "Ecocentrism in India: An Incredible Model of Peaceful Relation with Nature" Vol. 4 Universal Journal of Environmental Research and Technology pg. 92 (2014).

⁷⁶*Ibid.*

⁷⁷*Ibid.*

⁷⁸*Ibid* at pg. 11.

between 321 B.C. and 300 B. C. we find among others,⁷⁹ detailed and elaborate provisions on the environment. The necessity of forest administration was realised and the outcome was the appointment of a superintendent of forest.⁸⁰ Forests were classified on functional basis one of which was productive forest. He was to conduct productive works in forests and also to fix adequate fines and compensation for causing any damage to the productive forests except caused in natural calamities and it would be levied from the person who would be responsible for it. Timber forests and elephant-forests were permitted to be exploited by none other than the ruler. Spies in the guise of traders were entrusted with a duty to ascertain the quantity and price of the royal merchandise obtained from forests.⁸¹

According to Kautilya every creature has its own role to play in maintaining and preserving the environment. Some animals both carnivorous and herbivorous, aquatic animals as well as animals in the notified areas including the young animals are neither to be caught and killed nor molested. This reveals Kautilya's concern to ensure the preservation of all species. He firmly believed that human beings have no right to use animals for their luxury, because he states that skin, hair, bones and other things are to be collected from dead animals. According to him causing pain or killing animals is a cognizable offence.⁸² For cutting the tender sprouts of trees in city parks bearing fruits and flowers and providing shade, the fine of six panas⁸³ and for cutting small branches and stout branches, it was twelve panas and twenty panas respectively.⁸⁴

⁷⁹ Also consisted of Hindu treatise on statecraft, economic policy and military strategy etc. This book is most secular, realistic and practical in its approach as it was designed to identify the rules and regulation which could be enforced under the law made by emperor. It includes the preservation of environment and ecology.

⁸⁰ Dr. R. Shamasastri, *Kautilya's Arthashastra* pg. 107 (Mysore Printing and Publishing House, Mysore, 7th Edn., 1961).

⁸¹ Kailash Thakur, *Environmental Protection Law and Policy in India* pg. 105 (Deep & Deep Publications Pvt. Ltd., Reprinted, 2007).

⁸² C. Panduranga Bhatta, "Environment Friendly Life Styles: A Dialogue with Ancient India," *Available at:*

https://facultylive.iimcal.ac.in/sites/facultylive.iimcal.ac.in/files/project_doc/Environment%20Friendly%20Life%20Styles%20A%20Dialogue%20with%20Ancient%20India.pdf

⁸³ Silver punch marked coins. Burjor Avari, *India: The Ancient Past: A History of the Indian Subcontinent from 7000 BCE to BCE1200*, (Routledge, 2nd Edn., 2016).

⁸⁴ Shyam Divan & Armin Rosencranz, *Environmental Law and Policy in India* pg. 24 (Oxford University Press, New Delhi, 1st Edn., 2001).

Trees played a considerable part in the administration of ancient Indian kingdoms. The planting of trees has been proclaimed as conducive to great merit. Trees came to be regarded as so important that their felling or deforestation without reason and permission was looked upon as a penal offence. The superintendent of forest was authorized to cause forest produce to be brought in by 'guards in produce-forests'; to establish factories for forest produce and fix adequate fines and compensation for damage to any productive forests. Timber forests and elephant-forests were permitted to be exploited by none other than the ruler. Spies in the guise of traders were entrusted with a duty to ascertain the quantity and price of the royal merchandise obtained from forests.⁸⁵

As regards the protection of wild life, there were prohibition on killing of animal and birds. The officer in charge (Superintendent of the slaughter house), was authorised to impose a fine up to one thousand panas on those who were found guilty of killing deers, birds and fish declared to be under state protection. One-sixth of live animals and birds were required to let off in forests under states protection. Care was taken that animals from reserved parks or protected areas if found grazing in a field, were to be driven out without being hurt or killed, after intimating the forest officer. For causing injury to them, the fine was imposed. Wild life in sanctuaries enjoyed complete protection from being killed except when they turned harmful.⁸⁶

Arthashastra also prescribed punishment for causing pollution and uncivic sanitation. It provided that the officer in charge should punish those who throw dust on the roads by one-eighth pana for causing muddy water one-fourth pana, and if both acts were committed, the punishment should be double. If faecal matter is thrown or cause to be piled up near temple, well or pond, sacred place or state building then the punishment was to increase gradually by one pana in each case. For urinating in such places the punishment prescribed was only half of the above punishments.⁸⁷

The rules for the city administration pronounced by Chanakya testify that the rulers were keen on maintaining hygiene and cleanliness. The civic responsibility and municipal regulations were verses relating to hygiene and damage to property. He

⁸⁵ *Ibid.*

⁸⁶ Kailash Thakur, *Environmental Protection Law and Policy in India* pg. 105 (Deep & Deep Publications Pvt. Ltd., Reprinted, 2007).

⁸⁷ *Ibid.*

dealt in detail and meticulously explicated the various rules for the protection and upgradation of environment. Rules made by Kautilya made it mandatory for the rulers to protect forest and animals. They also prohibited killing or injuring animals and birds. Service penalty was prescribed for the offenders. The Arthashastra provided for punishments against the citizens for violating norms of hygiene as under:⁸⁸

(a) For throwing dirt on the road, the fine shall be one-eighth of a pana and for blocking the same with mud or water the fine shall be onequarter of a pana. {2.36.26}

(b) For the same cause, on the royal highway, such fine shall be double. {2.36.27}

(c) For using a holy place as an urinal, the fine shall be one-half of a pana, as a latrine, one pana; for using a water reservoir as an urinal, the fine shall be one pana, as a latrine, two panas; for using a temple as an urinal, the fine shall be one and one half of a pana, as a latrine, three pana and for using

(d) For throwing dead bodies of animals like cat, dog or serpent inside the city, the fine shall be three panas, and for other animals like donkey, camel, mule, horse or a cattle, the fine imposed shall be six panas and for human dead bodies the fine shall be 50 panas. {2.36.30}.

The end of Gupta Empire in 673 A.D. saw reversion of the environment conservation movement as established in Mauryan era to the situation prior to it. Political instability as caused by local conflicts, division of the country into many small states, foreign invasions led to a great deal of destruction to forests and wild life.

Other Hindu Kings also prohibited killing of animals and destruction of forest. King Ashoka of the Mauryan Empire did as much as he could to protect environment. He made several laws for the preservation of the ecology of India. The ancient Indian king Ashoka is one of the greatest figures in the political history of human kind and his messages recorded in his inscriptions are noteworthy from the point of view of

⁸⁸R. P. Kangle, *The Kautilya Arthashastra-I* pg. 94 (Motilal Benarasidas Publishers Pvt. Ltd., New Delhi, 2nd Edn., 2014).

present-day environmental problems. Ashoka stressed on the ethical teachings of Buddha, self-control and loving service to all living beings. These he popularised throughout his vast empire by engraving them on stone pillars and by illustrating them in his own conduct.

In his dharma policy he gave priority to ahimsa, namely non-violence, non-injury to human beings and animals and abstention from war. Ashoka forbade slaughtering of animals for sacrifices and food and prohibited his court from hunting expeditions on the necessity of treating all living beings with kindness and compassion. He gave importance to ecology and public services in order to avoid unnecessary sufferings to people and animals. Ashoka's dharma aims at universal good and is more humanitarian than a religious movement. His ethics include several elements which de facto effect a reduction of exploitation and destruction of the environment, namely, non-injury to animals, and benevolence and compassion towards all sentient beings. It is stated in the Rock Edit I that: 'No living being should be slaughtered for sacrifice. Many hundreds of thousands of living beings were formerly killed every day in the royal kitchen. But now only three living creatures i.e. two peacocks and one animal are killed for the sake of curry. Even this animal is not regularly killed. These three living beings shall not be slaughtered in the future.'⁸⁹

King Ashoka expressed his view about the welfare of creatures in his State. He gave orders for planting of trees by the roadside for the benefit of travellers. He also issued Adnavapatra to preserve forests and natural water resources. He prescribed various pecuniary punishments for killings animals that include even ants, squirrels, parrots, pigeon, lizards and rats. The Ashoka's edicts (Dhauri, Orissa) especially the 5th pillar edict clearly advocate both restraint in the killing of animals, and cutting of trees and plants. Ashoka also encouraged the planting of trees along highways as well as in parks and gardens.

This reveals Ashoka's concern to ensure the preservation of all species. Further the inscription states that cocks are not to be caponed. Husks containing living beings should not be burnt. Forests should not be burnt without purpose or just to destroy living beings. Living beings must not be fed to living beings. Fish should

⁸⁹ Hemendu Bikash Chowdhury, *Asoka 2300: Jagajjyoti, Asoka Commemoration* pg. 125 (Cosmo Publication, 1997).

neither be killed nor sold on the three days of every three-month period, the full-moon day in the month of Tishya (Jan-Feb), the fourteenth, the fifteenth of every bright fortnight and the first of the dark fortnight in each case and in every fast day. These and other species of animals should not be killed in the forests and the fishermen's localities. It is to be noted here that Tishya also called Pushya was the birth star of Ashoka. Bulls and other animals are not to be castrated on those days, also on the eighth, fourteenth, fifteenth days of the fortnight and on the days of Tishya and Punarvasu, on the three days of every three-monthly period and on every auspicious day. Horses and bullocks should not be branded on those days.⁹⁰

Therefore, it can be said that the ancient Indian environmental philosophy had mainly consisted in the old traditions and injunction contained in various scriptures and smritis. It mainly focuses on the interdependency between living beings and nature and for causing imbalance to the nature or abusing it steps had prescribed for punishments for immediate gains which was considered unjust, irreligious and against environmental ethics. The environmental ethics of nature conservation were not only applicable to common man but the rulers and kings were also bound by them. Despite the injunctions in the scriptures and the preachings of saints, resource conservation was not taken very seriously as the natural resources under a common belief were considered to be inexhaustible and too formidable for man and his tools to need any protection themselves which continued during the subsequent periods also.

4.4 The Medieval Period

The medieval period of India marked the beginning of a new phase i.e. the Sultanate period. Its rulers had almost succeeded in separating the country from the country from which they originally belonged. The Sultanate disintegrated from each other and emerged as a number of independent kingdoms in different parts of the country. Some of these like Bahmani and Vijaynagar kingdoms became very powerful. It consisted of people from Turks, Persi, Mongolia, Afghan etc. who had entered into and settled in India on different periods. In the following work focus has been made on the environmental concern among the people during the Mughal period.

⁹⁰ *Ibid.*

4.4.1 Mughal Period

During this period (1526-1858) environmental conservation had looked into from aesthetic point of view. They were great lovers of nature which can be seen from the significant contribution made by them in protecting the nature and setting up of magnificent gardens, fruit orchards and parks and foliage at different places brought them closer to the ecology. Although we know about the famous Mughal gardens, to which little attention had paid so far, but which clearly brings out their concern of the garden-laying to make greenery accessible to the ordinary man. Abdur Rahim Khan Khanan laid out public gardens at Burhanpur and Ahmadabad; the King himself another one at Ahmadabad; Princess Jahangira at Surat, and so on. The famous Taj Mahal garden too was open to the public⁹¹.

Mughal Emperors also did not pay much attention towards environment conservation although they were the fond lovers of the nature. For Mughal rulers, forests meant no more than wooded lands where they could hunt. The Governors of the forests treated properties as a source of revenue. A few species of trees were specified as royal trees and enjoyed patronage from being cut except upon a fee. There was, however, no restriction on cutting of other trees. In the absence of any protective management, forests during this period shrank steadily in size on account of felling made for cultivation both shifting and settled.⁹²

It is noteworthy that a very little concern was shown by Emperor Babar for the preservation of environment who described the fauna of India in a very systematic style. He used to maintain a diary in which he recorded his love towards natural beauty. After giving the features of India's physical geography he proceeds to describe first the mammals, then birds, and, finally, aquatic animals. He is not only interested in their physical appearance and use for human beings but also in their habitat, food and attributes. His description of birds is of particular interest for ornithologists. He carefully noted the occasion and place when he first saw a bird. He was quite aware of birds' migration. Similarly, while describing trees his remarks are equally insightful,

⁹¹ Shireen Moosvi, "Environmental Concern in Mughal Era" Vol. 1 Journal of History and Social Science pg. 1, (July-December 2010).

⁹² Dr. Indranil Bhattacharjee, *Textbook of Environmental Laws* pg. 107 (Kamal Law House, Calcutta, 1st Edn., 2009).

such as —“It (tamarind) has finely-cut leaflets. It is a very good-looking tree, giving dense shade. It grows wild in masses too”. Or, about latifolia—“most of the wood in houses of Hindustanis is from it.”⁹³ He was always keen to make gardens in all the places where he lived.

During the period of Sher Shah who was popular among other for the construction of Grand Trunk Road in India we find the existence of shady trees for the travellers in both the sides of the road. Much cannot be said regarding Jahangir's interest in animals, birds etc. he was said to grow finest gardens during his period. He cultivated high altitude trees such as cypress, juniper, pine and sandal tree in the plains of India⁹⁴. Jahangir ordered his artists to portray animals and birds as well as prepare accurate paintings of flowers providing all the botanical details necessary for identifying the family of the flower. He commissioned his celebrated artist Mansur to paint the flora of Kashmir; and how carefully this was done may be seen from the painting of a species of tulip (staggeringly minute in detail) that has been preserved at Aligarh.⁹⁵ Such paintings also include different kinds of crows, partridges and sheep.

As regards the position of forest economy, the rural communities by and large, enjoyed untrammelled use of forests and wastes in their vicinity. The waste and forest lands were treated as open access resources. The native rulers, however, did subject and produce of the forests (such as medicinal plants) to a small cess as and when these were exported. The products of the forests conserved by the local people themselves were exempted from cess. Untrammelled use of forests and other natural resources, however, did not mean that they could be used or misused by one and all without any restraints. Rather they were quite effectively managed with the help of a complex range of rules and regulations woven around the socio-cultural features as well as the economic activities of local communities.⁹⁶

⁹³ Pushpa Tiwari, “Environment Concern in Mughal Era,” Vol. 6 Journal of Environment History & Social Science, (Dec. 2015).

⁹⁴ Amirthalingam Murugesan, Journal of Indian History and Culture pg. 184 (2016) Available at: https://www.researchgate.net/publication/314832058_PERSPECTIVES_OF_ENVIRONMENTAL_STUDIES_DURING_THE_MUGHAL_PERIOD (Last visited on April 2, 2017).

⁹⁵ Pushpa Tiwari, “Environment Concern in Mughal Era,” Vol. 6 Journal of Environment History & Social Science, (Dec. 2015).

⁹⁶ Kailash Thakur, *Environmental Protection Law and Policy in India* pg. 107 (Deep & Deep Publications Pvt. Ltd., Reprinted, 2007).

4.4.2 Environment Protection during Colonial Regime

Colonialism in India initiated fundamental changes in the pattern of resource use, notably forests, and has been described by some workers as a 'watershed' in the history of the subcontinent.⁹⁷ With a view to trade in India the British arrived in the year 1600 but finding immense natural resources and to exploit the same, there was strategic change in their plan which resulted into the adoption of coercive method in order to fulfil their aim by employing the policy of imperialism. As a result there was large scale plundering of natural resources especially the forest resources from India due to the fact that there was increasing tendency of commodifying the same. Further to facilitate the maritime expansion, military and navy and the construction of the Indian railway need was felt to cut the forests. Perhaps the most notable resource intensive undertaking by the Britishers was the use of timber in the construction of the Indian railway system. In the fifty years between 1860 and 1910, railway track increased from 1349 Kms to 51,658 Kms (Government of India, 1964). For every mile of track laid, 860 sleepers were required, which had an expected lifespan of approximately 12 to 14 years. In the 1870's, it was calculated that every year one million sleepers were needed. Indian trees, particularly sal, (*Shorea robusta*), deodar, (*Cedrus deodara*) and teak, (*Tectona grandis*) were preferred as sleepers, for their perceived strength over other Indian timbers, so it was these three species that were intensively exploited.⁹⁸

Steps were, however, adopted for the conservation of forests during this period which was mainly based on their interest in hunting. The establishment of Indian forest department in the year 1860 was considered as the colonial world's first and most sophisticated forest department.⁹⁹ The immediate task of the forest department under the supervision of Inspector General was that of exploration of resources, demarcation of reserves, protection of the forest from fire and assessment of the growing stock in valuable reserve by sample enumeration and prescription of yields which could be sustained. The objective of management of forest thus changed from

⁹⁷ M. Gadgil, R. Guha, *This Fissured Land: An Ecological History of India* pg. 113 (Oxford University Press, 1992).

⁹⁸ Joy Lawbuary, "Reclaiming the Forests? People's Participation in Forest Management, East India," Available at: <https://www.ganesha.co.uk/JoPubWeb/Frontdiss.htm> (Last visited on May 15, 2017).

⁹⁹ Joachim Rajkau, *Nature and Power: A Global History of Environment* pg. 174 (Cambridge University Press, New York, 1st Edn., 2008).

obtaining of timber for various purposes to protecting and improving forests and treating them as a biological growing entity¹⁰⁰.

For the effective functioning of this department, legislations were enacted to curtail the rights of the indigenous communities. The early attempt at asserting state monopoly was brought through the Indian Forest Act of 1865,¹⁰¹ which was replaced by the Indian Forest Act, 1878 to remove the ambiguity with respect to state proprietary rights over forests.

The Indian Forest Act of 1878 established that customary use of forest by the villagers was based not on “right” but on “privilege” and this privilege was at the mercy of local rulers and now Britishers being the ruler were the repository of same privilege. The Act on one hand, allowed the usurpation of the forest by the state without any legal settlement of rights by “reserving” the certain blocks of forest for sustained timber production for “colonisers commercial interests by limiting the customary rights of users (village community) and on the other hand, through forest settlement operations specified the extent and limits of rights in particular blocks where villagers’ rights could be exercised.¹⁰²

This was done through the classification of forest in three type viz. Reserved Forests, Protected Forests and Village Forests. Reserved Forests were established with the intention to provide ecological stability and maintain the supplies of commercial timber which British strategic and developmental goals required especially in areas with large compact stands of commercially valuable species that could sustain long term exploitation. Here the exploitation of forest by local population was restrained.

The Protected Forests were demarcated and covered with working plans. In these access was reserved to commercially valuable trees and restrictions were imposed on activities like grazing.

¹⁰⁰ Kailash Thakur, *Environmental Protection Law and Policy in India* pg. 109 (Deep & Deep Publications Pvt. Ltd., Reprinted, 2007).

¹⁰¹ The law allowed officials to manage and preserve forest resources for strategic and development needs by regulating trade and exploitation of forest products.

¹⁰² Ramachandra Guha, “Scientific Forestry and Social Change in Uttarakhand” *Economic and Political Weekly* pg. 20 (Nov., 1985) .

Under the third category *i.e.* the Village Forests, the full governing power had been assigned to village authorities by the state government.¹⁰³

However, the British government also made attempts to regulate various kinds of air, water and noise pollution in India. Some of the Acts were The Shore Nuisance (Bombay & Kolaba) Act, 1853, which was one of the earliest laws concerning water pollution. The Oriental Gas Company Act, 1857 was enacted to regulate pollution produced by Oriental Gas Company by imposing fines. The next and most important enactment was The Indian Penal Code, 1860, and it was enacted to be a complete Criminal Code.

For the protection of wild life, some legislation had passed which were confined to specific areas and species. In 1873, Madras enacted the first legislation on wild life for the protection of wild elephants. Later on, the Elephants Preservation Act, 1879, Wild Birds and Animals Protection Act, 1912 had introduced the practice of closed hunting seasons, bag limits and permits. It also established wild life preserves in Kaziranga in 1926 and Hailey National Park in 1936¹⁰⁴.

The earliest enactments during British rule to control air pollution were the Bengal Smoke Nuisance Act, 1905 and Bombay Smoke Nuisance Act, 1912. In addition, The Police Act, 1861 prevents and controls the slaughtering of animals, cleaning of carcass, throwing dirt into streets and also prescribes punishments for the offenders in the nature of fines. The Indian Easement Act, 1882 protected the riparian owner against unreasonable pollution by upstream user. The Indian Fisheries Act, 1897 penalised the killing of fish by poisoning water by using explosives. However, the objective of environment policy during this period was different *i.e.* was not directed at the conservation of the nature but it was directed at exploitation of common resources with a primary objective of earning revenue.

These Acts and several other Acts that have been enacted by the British Legislature from time to time till independence marked the beginning of new era in

¹⁰³ Richard Haeuber, "Indian Forestry Policy in Two Eras: Continuity or Change"? *Environmental History Review* pg. 17(1993).

¹⁰⁴ Kailash Thakur, *Environmental Protection Law and Policy in India* pg. 111 (Deep & Deep Publications Pvt. Ltd., Reprinted, 2007).

the realm of environment protection. In the following chapter, an attempt has been made, to discuss in brief, several Acts which have direct and indirect impact on the environment. Such Acts aimed at regulatory measures with a view to preserve and protect the environment.

4.5 An Overview

To trace the bio-medical issues during the historical past is not easy. The various ancient texts, scriptures that has highlighted on the environmental aspects right from the ancient period till the advent of the British rule in India, none of such documents have specifically dealt with the subject. This is perhaps due to the reason that during the different phases of environment development in the country, the experts were concerned more on the question of how the preservation and maintenance of the nature could be made rather than finding the answer of the very question on what were the different human activities which added peril to the nature. Moreover, the past ancient history had focused more on the man and nature relationship and their interdependency. Most of the religious texts had highlighted mainly on the point that nature should not be destroyed. There is hardly any text which had prescribed that human being should be prevented from doing such act that caused danger to it. Indian past civilisations also depicted more or less the similar picture. It was during the British reign in India, concern for the specific environmental issues had been handled under different laws passed by them. None of the Acts had consisted of provisions relating to the bio-medical waste. Therefore, the quest for the law on the subject continues in the following chapters.