



Introduction

India is a land with varied diversity in all habitants for a long period of time. It has its own way of mechanism of sustenance and development. The concept of ecology and its role play an integral part in development of culture and civilization of human being. The Vedas and others Brahminical literatures universally acknowledged everything of nature which is embodied in under the sun. The Vedas and other literatures deal with knowledge and the knowledge cover both ecological and philosophical of nature. The oldest and simplest form of nature-worship finds expression in Vedic texts. Many scholars have come to the conclusion that the Vedas are primarily concerned with cosmology, however, they are not in a position to show that Vedic cosmology has the solutions to the most difficult problems of modern cosmology¹. As Sanskrit literature is so wide we refer here mainly to Vedic texts, particularly the Vedas, Upanishads, Ramayana, Mahabharata and Bhagavad Gita for our study of ecological awareness.

The Environment (Protection) Act, 1986, defines the environment as follows, 'Environment includes water, air and land and the inter-relationship which exists among and between water, air and land and human beings, other living creatures, plants, microorganisms and property'. From the above definition, it can be briefly said that environment consists of two components namely biotic (living organisms) and abiotic (non-living materials) factors.

Ecology (from Greek: οἶκος, "house" or "living relations"; -λογία, "study of") is the scientific study of the distributions, abundance and relations of organisms and their interactions with the environment². Ecology includes the study of plant and animal populations, plant and animal communities and ecosystems. The Cary Institute of Ecosystem Studies gives the definition of Ecology - *The scientific study of the processes influencing the distribution and abundance of organisms, the interactions among organisms, and the interactions between organisms and the transformation and flux of energy and matter*³. So the term 'ecology' commonly indicates the study of interactions of the living organism with the non-living materials.

The living organisms can be grouped into three types – those living mainly on land, in water and in air. The non-living materials of the environment are land, air, water, property etc. In modern Sanskrit, the word *Paryavarana* is used for environment,

¹ Raja Ram Mohan Roy, Vedic Physics, Scientific Origin of Hinduism, Golden Egg Publishing, Toronto, 1999, p.6.

² <https://en.wikipedia.org/wiki/Ecology>(accessed on 27-08-2015)

³ <http://www.caryinstitute.org/discover-ecology/definition-ecology>(accessed on 27-08-2015)

meaning which encircles us, which are all around in our surroundings but in the Atharvaveda words equivalent to this sense are used such as *Vritavrita*, *Abhivarah*, *Avritah*, *Parivrita* etc. The Vedic view on environment is well-defined in one verse of the Atharvaveda where three coverings of our surroundings are referred as *Chandamsi*. These are water, air and plants or herbs. They exist in the world from the very beginning. They are called as *Chandamsi* meaning ‘coverings available everywhere.’ It proves the knowledge of Vedic seers about the basic elements of environment. According to one indigenous theory established in the *Upanishads*, the universe consists of five basic elements viz., (i) Earth or land, (ii) water, (iii) light or lustre, (iv) air, and (v) ether. The nature has maintained a status of balance between and among these constituents or elements and living creatures. A disturbance in percentage of any constituent of the environment beyond certain limits disturbs the natural balance and any change in the natural balance causes lots of problems to the living creatures in the universe. Different constituents of the environment exist with set relationships with one another. The relation of human being with environment is very natural as he cannot live without it. From the very beginning of creation he wants to know about it for self-protection and benefit. It is clear from the study of ancient literature that the attitude of people to live in harmony with environment was not merely physical but was far wider and much comprehensive. Essence of the environmental studies in the ancient literatures can be put here by quoting a partial *Mantra* of the *Ishavasyopaniṣad* ‘One should enjoy with renouncing or giving up others part.’ It is clear that environment belongs to all living beings, so it needs protection by all, for the welfare of all. Thus the study of ecology indicates the relationship of different living organisms with the surrounding environment which is present in the Vedas, Upanishads, Epics and others ancient literatures.

The meaning of the term ‘Awareness’ according to Oxford Dictionaries is - *Concern about and well-informed interest in a particular situation or development*⁴. Again another word ‘Consciousness’ is also synonymous to the word ‘Awareness’. According the Oxford Dictionaries the word ‘Consciousness’ is - *A person’s awareness or perception of something* .⁵ From the above meaning it is clear that here the word ‘Awareness’ is more appropriate for our purpose of ecological study in the ancient Brahmanical literature.

⁴ <http://www.oxforddictionaries.com/definition/english/awareness> (accessed on 27-07-2015)

⁵ <http://www.oxforddictionaries.com/definition/english/consciousness> (accessed on 27-07-2015)

Statement of the Problem:

With time the issue of ecological problem is becoming complex day by day. Over population, urbanization, global warming and the similar topics are addressed and discussed by many people all over the globe. But very little work has been done to study the model eco-friendly system prevalent in age-old Indian tradition and culture. Indian culture has developed integrating environment and all ecological aspect from very beginning of its inception, so all literatures and inscribing articles found from archeological survey in different parts of the land are full of such evidences but due to the time-bound survey we restrict it into Vedic period up to Six century BCE. This study will help to understand the eco-friendly model system prevalent in those days and can give a positive direction towards conservation and protection of environment in present days.

Review of Literature:

There are several works regarding the ecological aspects of the different present research problems available. Moreover ecological studies on different Vedas separately and collectively, Upanishads, Bhagavad Gita and the discussion on five gross elements are done by different learned scholars. But the thorough study of all literatures in Brahmanical literatures specially Vedas, Upanishads, Ramayana, Mahabharata and Bhagavad Gita in the lens of ecological awareness which widens many aspects present in the said literatures has received less importance or consideration. Following works which are partly addressed the ecological issues are given below :

Essentials of Ecology and Environmental Science - by S.V.S. Rana in his book gives the idea of definition, scope and history of Ecology. First chapter deals with different definitions, and history of ecology. Second chapter deals with evolutionary aspects of ecology. Third chapter deals with the different types of adaptations present in the ecosystem. Fourth to seventh chapter deals with the different types of spheres present in the whole ecosystem and their details role. Chapter eight deals with different nutrient cycles present in atmosphere. Chapters nine deals with environmental factors with interactions in different species. Chapters ten to sixteen deal with biodiversity, genetic resources and different ecosystems. Rest chapters deal

with pollution hazards and other environmental problems. This book gives the idea of the evolution of ecology as a subject.

Agricultural History of Ancient India - by Sandeep Bajpai in his book deals the agricultural and rural development in India. Agricultural extension programs and its improvement is discussed which gives the idea of development in ecology and ecological concept.

Ancient Art, Architecture and Environment - by K. K. Pathak clearly deals the effect of environmental concept in art and Architecture. It deals different periods with systematic approach and analysis.

Historiography of Ancient India - by Vandana Verma gives the idea of different hypothesis and critiques in ancient India. Different dimension of history and its study is the important theme of this book.

Purifying the Earthly Body of God - edited by Lance E. Nelson describes different topics related to environment with theological and textual perspective of Ancient India. Ecological idea is scattered in different texts in different forms. All articles deals this aspect clearly and scholarly.

Prakriti: The Integrated Vision - edited by Kapila Vatsyayan deals the integrated vision of environment in different ages of Ancient India. Ancient people do not consider environment as a separate topic rather and integrated holistic field in human development.

Forest and Environment in Ancient India : By Vijay Kumar Gupta mentions different aspects of environmental consciousness right from the Vedic period upto the period of Mahabharata. Moreover he emphasizes the deforestation aspect of the human being in different literatures specially in the age of Mahabharata.

Hinduism and Ecology : Edited by Christopher Key Chapple and Mary Evelyn Tucker deals different issue like - traditional Hindu Concept of Nature, forest in classic texts and traditions, risk and danger of the flowing rivers and role of the Hindu texts and ritual for development of the Environmental Consciousness.

Environmental History of Early India : A Reader : Edited by Nandini Sinha Kapur discusses the following issues –

- Forest, forest dwellers, and deforestation
- Water resources, irrigation and landscapes
- Agricultural expansion, Pastoralism and economy

- Botany in early India

Ecological Awareness reflected in the Atharvaveda : By Niranjana Jena discusses the concept of Ecology and different ecological parameters like five gross elements – earth, water, fire, air and sky. The role of man and the interaction with flora and fauna of the nature mentioned in Atharvaveda are enumerated clearly.

Vedic view of the Earth : A Geological Insight into Vedas : By S.R.N. Murthy discusses different geological parameters, different theories and different forces discovered in modern science which is found in Vedic literatures.

Ecological Readings in the Veda : By M. Vannucci tries to find out different problems and hypothesis from the study of Vedas. By using the different hypothesis the author tries to correlate the different ecological aspects mentioned in Vedas.

Hinduism and Ecology : Seeds of Truth : By Ranchor Prime describes the different ecological parameters mentioned in different literatures based upon facts and anecdotes mentioned in the literatures to give a comprehensive idea to the readers.

Indian Society in Mahabharata : Based on Smriti materials in the Mahabharata : By S. C. Banerji points out the different stages of society and its role mentioned in Mahabharata.

The Great Epic of India – its Character and Origin : By E. Washburn Hopkins discuss the gradual development of the ancient Indian literature upto the period of epic. He tries to mention the different aspects of the earlier literatures like Vedas and Upanishads which are found in the epic like Ramayana and Mahabharata. So this gives idea about the change in concept of the nature and environment from the Vedic period to the epic period.

Ramayana and Lanka (Part I & II) : By T. Paramasiva Iyer put his effort in this book to trace the historical places of the Ramayana which is mentioned in the text considering the different environmental and ecological parameters mentioned in the text.

A note on the Ramayana : By S.S.N. Murthy through his article explains the different characters and episodes in the Ramayana in the light of environmental phenomenon. He puts logic and arguments for establishing the fact that Ramayana is nothing but the natural environmental process like rain, cloud formation, etc.

Dharma in the Mahabharata as a response to Ecological Crises : A Speculation : By Kamesh Aiyer mentions different ecological crisis in the epic Mahabharata and the people in that time develops different methods to overcome all crisis. In this way Mahabharata indicates a culture matching with the then environment.

Relevance of Mahabharata with regard to Environmental Consciousness : By Dr. Amarendra Biswal in this article discusses the several ecological parameters like Earth, Air, Fire, Water, ether, etc. as indicated in the epic Mahabharata.

Horticulture Science in Ancient India : By S.K. Mukherjee and N. Nath discuss in this article the horticulture science which is verily prevalent in ancient India. The science is gradually developed from the Upanishadic age.

Geographical Knowledge in Upanisads : By B.G. Tamaskar discusses the various geographical factors like Cosmography and Cosmology, Directions, Seasons, weather, properties of Lithosphere and availability of different minerals, stone and gems mentioned in different Upanishads. It also gives the idea of different ecological parameter like different forests, Flora, Fauna, etc. are present in various Upanishads.

Dating the Era of Lord Ram : By Pushkar Bhatnagar gives the idea of astronomical dating based on the astronomical description mention in the Valmiki Ramayana through the modern software Planetarium Gold. This helps to understand the nature and the growth of the civilization along with other parameter in antiquity.

Objectives of the Study:

- (i) To study the five gross elements (*Panchamahabhutas*) in Brahmanical literature up to Six century BCE
- (ii) To study the ecological awareness present in the Vedas
- (iii) To study the ecological awareness present in the Upanishads
- (iv) To study the ecological awareness present in the Ramayana
- (v) To study the ecological awareness present in the Mahabharata
- (vi) To study the ecological awareness present in the Bhagavad Gita

Methodology:

The study is based on records of primary and secondary sources. The study is also based on sources like various manuscripts, relevant books and journals which have been found in different libraries. Proper scientific research methodology mainly the

empirical and analytical methods is employed for collecting data and for a proper analysis of them. This study compares and contrasts elements that are found in all data. This study follows the convention of acknowledging sources and of appending those in a bibliography.

Research Questions:

1. What are the five gross elements (*Panchamahabhutas*) in Brahmanical literature up to Six century BCE?
2. What are the ecological awareness present in the Vedas?
3. What are the ecological awareness present in the Upanishads?
4. What are the ecological awareness present in the Ramayana?
5. What are the ecological awareness present in the Mahabharata?
6. What are the ecological awareness present in the Bhagavad Gita?

Organization of chapters:

The first chapter deals with the different ecological concepts present in different texts and traditions prevalent not only in India but in outside the land. This study indicates that the concept of ecology and ecological parameter are very much present in ancient civilization all over the world. This chapter tries to enumerate the ecological awareness present in some important texts and traditions. Moreover the same concern for the nature or environment is prevalent in all civilizations in past as well as the modern time and ecology which is nothing but the study of the interaction between living being and the environment is prevalent in all ages irrespective of geographical location.

The Second chapter deals with the five gross elements (*Panchamahabhutas*) present in literature available as primary source and secondary source. The five gross elements are Earth, Air, Water, Fire and Ether. The literature in Brahminical period is vast and profound, so the study is restricted up to six century BCE. This literature survey would give the idea and outline of five gross elements (*Panchamahabhutas*) in ancient time.

In recent days, ecology is a discipline of modern science under which study of ecology and its constituents is done with minute details. As science, they are

established in 20th century, but their origin can be seen long back in the Vedic and ancient Sanskrit literature. The concepts of ecology differ from age to age, since it depends upon the condition, prevalent at that particular time. In this third chapter, an effort is made to find out the awareness of ancient Indian people in Vedic period about the environment. As Sanskrit literature is so wide we refer here mainly to Vedic texts, particularly the Vedic Samhitas.

Fourth chapter deals the ecological ideas in Upanishads. Upanishadic 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). 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, should not spit in water; and should not take bath without clothes”. The Isoupanishad 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 other. This chapter will focus the important view point of the ancient people in respect of the environment which are found in Upanishads.

The fifth chapter deals the different ecological aspects mentioned in the text of Ramayana. The Ramayana refer to forest and plant life at various places. The language of these texts is the Epic Sanskrit. The importance of forests in Indian epics can be understood from the fact that each epic devotes one book to the forests. The divisions of Ramayana into Kandas (Books) also includes one Kanda known as Aranya Kanda – Book of the Forest. In Ramayana Kishkindha Kanda – Book of Kishkindha also discusses the geography and forestry of the region. This chapter will discuss different environmental issues which are addressed in this Epic.

The sixth chapter deals the ecological concepts are prevalent in Mahabharata. The Mahabharata is termed as Mahākāvya (Great Compositions). In Mahabharata it is the Aranyaka Parva also Vana Parva, Aranya Parva, the Book of the Forest, which mentions about the period of twelve years spent by *Pandavas* in exile in the forest (Aranya). The geographical and ecological aspects of different islands, mountains, rivers, and forests are indicated vividly in the epic which are full of metaphors and anecdotes. This chapter deals all ecological aspects mentioned in Mahabharata.

The seventh chapter is devoted to discuss the different aspects like biodiversity, ecosystem and ecology in the light of the texts mentioned in the Bhagavad Gita. Though Bhagavad Gita is popular as the philosophical book but this book gives different insights about the ecological awareness, biodiversity, conservation, ecosystem, relation between the abiotic and biotic factors. This chapter is clearly mentioned all ecological aspects which are present in the Bhagavad Gita.

The concluding chapter enumerates the different findings in previous chapters in the light of ecological awareness to get a comprehensive and meaningful knowledge about the subject. It also tries to correlate the study made in different chapters with the motive of interconnected consequences. All efforts give rise a model form to understand the ecology as a whole.