

# Environment and Development: Issues and Resolution in India

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**Abstract-** Environmental problems in developing countries are different than that of developed countries. Similarly scientific and technical tools developed and widely utilized in developed countries may not be effective in developing countries. It is very essential to understand social and historical context in which environmental movement is working in these places. Present paper highlights current environmental and human relation problems in India. How these problems differ from developed countries and the practical solution to solve these problems are discussed. An essential framework with some most relevant indicators which can be pursued in the environmental research are presented. Some important tools like environmental education, environmental management and spiritual education suggested for the betterment of human and environmental wellbeing of the developing nations like India.

**Keywords-** Developing Countries; Environmental Crisis; Interpersonal relations; Resolution

## I. INTRODUCTION

We are facing two problems in the 21<sup>st</sup> century; the global ecosystem collapse and ultimate interpersonal violence [1]. The environmental problems are becoming so important that some authors [2] noted that we have entered the century of the environment. But these environmental problems differ for low-income, high density regions such as India and Mexico, low income, low density regions such as Amazonia and Malaya, than the high income, low density regions such as United States, and oil rich kingdoms. In low income countries the first priority is reducing poverty, by promoting sustainable economic growth [3]. Whereas reducing consumption is priority in developed countries.

The third world today faces both an environment and a development crisis. On one end, there does not seem to be any end to the problems of inequality, poverty and unemployment, the problems that development process is meant to solve. On the other environmental destruction has grown further apace [4]. The northern concerns which have directed the global environmental debate reflecting a definition of sustainability in which the physical environment is the primary focus is least use here. Global warming and the loss of the biological diversity have little meaning for people suffering daily from starvation, malnutrition, or lack of basic health care. Southern priorities such as resource degradation, pollution and natural disasters are immediate issues of life and death. Poverty, inequality, dependency are the economic and social malaise of the Third world. Intra-generational equity-in wealth and opportunities are the keys to resolving the environmental and development crisis [5]. Simply following development models of developed countries, funds are

allocated for expensive equipment and devices, while much needed public health services go without funds. In India for example, nearly 33% of villages have been identified as problem areas, without any satisfactory protected drinking water supply, only 7% of population is served by drainage system. There are many other areas where position calls for urgent attention [6]. Possibility of serious water shortages where-half of the world's population may suffer from water shortages in coming decades cannot be overlooked [7].

As we debate the fate of the rainforests and other wilderness, initiatives to improve the urban environment are also critical to sustainable development [8]. In developing world the constraints of agriculture and the relative prosperity of cities is driving people into large urban centers. In this context the proper planning of cities and the creation of urban ecosystems in consonance with nature becomes more important.

With increasing migration to cities six major problems are identified [9]. Land depletion, resource depletion, urban waste, wastage of energy, aesthetics and crisis in social organization. There is tremendous drawl on water and an equally great pressure on natural drainage system. Surface and ground water sources in most cities are already over exploited. The major crisis arises out of the by-products of human action and endeavor. One such by-product is effluent, both liquid and gaseous, solid waste, noise, dirt, and overcrowding. Human waste, largely untreated, pours in hundreds of millions of liters each day from our cities into our river systems. Not a single city in India is fully treating sewage, which means that either sewage seeps into the soil and pollutes ground water or it flows into the streams and rivers. Open field defecation is the only option for more than 22% of cities population. The figure shows that over 24 and 20% population does not have access to piped water and sanitation [10].

The situation in suburban areas and pilgrim places is equally dangerous. Because of continuous influx of pilgrims and increasing residential population the natural ecosystems, especially rivers at pilgrim places are under continues stress. Pilgrims take holy dip in the river, where as sewage of the towns is directly released in the river. About 26 to 28% residential does not have an access to toilets, whereas 99% pilgrims go for open defecation during pilgrimage fairs due to non availability of toilet facilities. In some places 33 to 66% rise in waterborne diseases were recorded during the fairs [11] [12]. No traveler, no wider roads not asphalted properly and no busses in time, the fraying of nerves and rising of tempers, man which is a living organism and the cities physical

structure adversely affects his psyche [9]. There is no holistic approach for environment and development issues. It is forgotten that environment and public health are closely related and inherently concerned with social justice, with fair and equitable distribution of resources to protect, preserve and restore health. Improved environmental and housing conditions, improved nutrition and smaller family size reduced the infectious diseases rather than medicines. Similarly unemployed have significantly elevated rates of both minor and major illness compared to the rest of the population; they also have higher suicide rates [1].

## II. ECOLOGICAL CRISIS

The main source of environmental destruction is due to demand for natural resources generated by the consumption of the rich whether they are rich nations or rich individuals and groups within nations and because of their gargantuan appetite; it is their wastes mainly that contribute to the global pollution. The poor that are affected most by the environmental destruction. The environmental destruction will only intensify poverty [4]. It was recognized that increase in human populations and the rate of consumption of resources are major environmental problems [13]. With rising population large number of poor people can destroy and pollute environment. But in several cases the alienation of land and resources to the commercial interests is behind the degradation of local environment by which their members are rendered poor. Corrupt politicians, forest officers, contractors grow fat by destroying ecosystems and not protecting them; in contrast poor people living only of subsistence hand to mouth on a daily basis, maintain and enhance their resources. The poor people are the solution, but they are only the solution if their livelihoods are adequate sustainable and above all secure [14].

The high population is often mistakenly condemned as a liability, fatalistic and backward but it is a population with innate intelligence, resilience, capability for long survival. The only sensible approach to the population is, to transform it into high quality resources through inputs such as health, education and ethical component of values[15]. Even though increasing number in population have a bearing on environmental conditions more relevant factors are the volumes and patterns of consumption of different groups of people. The major thrust must be to modify global patterns of production, distribution and consumption [5]. Other than technical change and population growth the forces behind the culture of consumerism are the influence of competitive social pressures and industrial societies, in which money becomes a dominant indicator of success, status and self-worth [16].

The major environmental problems in the west are those arising out of the waste disposal- problem of air and water pollution and of disposal of highly toxic industrial and nuclear waste. In the third world they are still not the major environmental problems. In the third world, the environmental problems are clearly those which arise out of the misuse of the natural resources base [4]. Clean water has become a precious commodity and its quality is threatened by numerous sources of pollution. Municipal waste is the principal contributor of water pollution. Water has been a potential carrier of

deleterious inorganic and organic materials, non biodegradable matters and pathogenic microbes which can endanger public health and life. The potable water contaminated with municipal sewage has become the root cause of dangerous diseases in public life [17]. Potable drinking water at present is available to less than 10 percent of the population in India. A large number of people do not have access to water within close reach. Nearly 54,000 have adequate water supply of acceptable quality, 214,000 have adequate water supply but with pollution risk, 185,000 adequate unprotected water supply and 153,000 have inadequate water supply or water supply is hazardous [18].

Promoting income generation activities in rural areas and counteracting the forces that lead to urban migration are especially important as means towards poverty alleviation. Education leads to development of the society, female literacy has been found to be associated with better nutritional status of children. Safe drinking water and safe excreta disposal facilities are essential for human resources development and to prevent infection [19].

## III. INTERPERSONAL VIOLENCE

Parallel to the ecological collapse other most severe perhaps ignored problem is the worsening interpersonal relations which is a major social malaise and challenge for the humanity. As enough humans won't understand their true purpose and therefore become malleable and torture others [20]. In the highly technological world the interpersonal relations are severely affected. Education is not moving rapidly enough in the right direction to produce the knowledge about the outside world and attitude toward other people that may be essential for human survival [21].

As indicated by an Indian philosopher Dr. Radhakrishnan, achievements of science and technology in these years are among the greatest works of reason. Many people who live in this science – dominated society claim that scientific knowledge would bring with it perpetual progress, a steady improvement in human relations. The expected transformation of men and their social relationship has not been achieved. This period of great scientific achievement has also been increased in human misery. Science has liberated man from much of the tyranny of the environment but has not freed him from the tyranny of his own nature.

The sources of human happiness and social co-operation are not exactly the same as those of scientific inquiry, for the proper adjustment of man to the new world, an education of the human spirit is essential. To remake society, we have to remake ourselves. Humanities which cover art and literature, philosophy and religion are as important for human welfare as science and technology. The consensus has been evolved, indicating the common origin of social and environmental oppression. The root sources of oppression of women, environment and humankind is variously identified as human aggression, pride, ignorance, greed, class conflict, the idea of hierarchy, and the denial of otherness- the refusal to let the other human or non human being [22]. Ancient teachers in India gave found that there are six enemies of every human being. They are not outside but within us. They are unrestrained lust, anger, greed, delusion, pride, and violence.

These are the enemies that create all the trouble. Today whatever trouble you find in the world spoiling inter-human relations is the product of these enemies-one or two or three in most cases kama, krodha and lobha (lust, anger and greed) [23].

It is the man who harbors disease germs and creates situations for its spread. Man himself is polluting air, water and even the mental horizon to his own disadvantage. Man should therefore, be the basic target of attack and need be adequately educated and motivated to help themselves by restraint of his behavior that spoil the sanctity of the environment around [24].

#### IV. CONSEQUENCES

At an operational level, four interlinked dimensions of sustainable development are recognized- economic, environmental, social and cultural. For development to be sustainable in the long- term there needs to be a balance between those four dimensions. As in some countries where the state of the environment and the level of environmental awareness is fairly acceptable, but the signals of social disruptions are emerging with all their train of marginalization, whereas in some cases environmental awareness is coexisting with economic stagnation and unemployment with extreme poverty. The conditions required for development to be sustainable are not, therefore, gathered together [25].

The western science saw the rational human observer as separate from nature. This approach has generated a vast amount of scientific knowledge, but it also marginalized a spiritual, emotional perception of the relationship of humankind to nature [16]. Today more and more people aspire to a standard of living such as western countries now enjoy. No longer satisfied with traditional values people all over the world are fleeing to the cities to find a better life [26]. In countries like India, rural poverty and caste are forcing many people, especially the unskilled and the landless, to seek employment in the larger cities [27].

The new culture created by penetration of cash economy also slowly but steadily, psychologically alienated the men from their ecosystem. Employment for them means work which can bring cash in their hands. This employment can be found mainly in the city [4]. As subsistence farming gives way to mechanical agriculture for production of crops for export, women are less able to contribute to their family's survival, together with devaluation of the worth of domestic work. Since most women do not have the time to develop special job skills, only low-paying jobs are open to them [26]. Working for any large corporation tends to generate hostility, instability and fear of being obsolete and unprotected. For most people their jobs are what they had to do rather than what they wanted to do. Taking a job, therefore, meant giving up part of their lives [28].

Like environmental hazards psychological factors also contribute health hazards. Only a minority of people in an industrial society enjoy their work, for many work is just a necessity, providing an income to pay for food, shelter and clothing. Lack of pleasure in achieving or having something to show for one's efforts can be depressing, demoralizing and

if sustained, can cause emotional even perhaps physical illness [1]. It is noted by Indian philosopher Swami Vivekananda that centuries and centuries, a thousand years of crushing tyranny by foreigners and our own people our backbone is broken. What we require is strength. Strength is medicine for world's diseases. The obvious consequences are cultural heresy, physical weakness, and lack of faith in ourselves, selfishness and jealousy, lack of organizing capacity, lack of business integrity and above all lack of love. The root causes for most of the problems our society, are facing today is sex and fear complex. What we want are western science coupled with Vedanta, Brahmacharya (continence) as the guiding motto and also shraddha (faith) in one's own self.

#### V. RESOLUTION

Partnership of all actors, involved, from the individual up to the transnational level of decision making, is the ultimate solution for sustainability as well as the stimulus for a cognitive democracy. Both targets- sustainability and democracy- are intimately linked [25]. Beside strong democracy maintaining and improving environmental quality requires an ethical underpinning [13]. It is realized that scientific progress, without a spiritual base would lead to the destruction of humanity. In the current state all the ailments in society spring from the lack of the five basic human values namely truth, religion, peace, love and nonviolence. Thus it can easily be seen, that if a group of individuals join together in spiritual integration, we can have harmony in the family and the communities will make the nation strong [29]. The environment should be congenial. The spiritual forces of the individual as reflected in prayer should be encouraged. The family of the worker should be an extended family of the organization [30].

The fusion of spirituality and management will revitalize the industry, science and management will enrich man's life with material happiness and spirituality will elevate his soul and fill him with inner peace, self satisfaction, love and harmony [31]. In developing countries, one never finds advocating maximizing of consumption. More and more investment does not mean more and more happiness. Happiness arises out of the practice of dharma (religion) viz; practicing values in life, following principles of good conduct, being unselfish, etc. Dharma is linked to rightly earned wealth, wealth to sound political system, to the state having leader who are not prone to selfishness. Self control gives rise to humility, which leads to orderliness in society. There is thus an interlinking dependence of our happiness on our conduct and our values [32].

Each nation has its own peculiarity and individuality, with which it is born. In one nation political power is its vitality, as in England, artistic life in another, and so on. Religion is the life of India, if that works well everything is right; political, social, and other material defects, even the poverty of the land, will all be cured. The basis of all systems, social or political, rests upon the goodness of men. When hundreds of men and women, giving up all desires of enjoying life for the wellbeing of the millions of their countrymen who are gradually sinking lower and lower, then only is meaning to education [33].

In building up character, in making for everything that is good and great, in bringing peace to other and peace to one's own self, religion is the highest motive power and therefore ought to be studied from that standpoint. The religious ideals of the future must embrace all that exists in the world and is good and great and at the same time have infinite scope for future development [33].

At the root of all the concepts and theories of management lie the all pervasive mind [34]. Every nation has its own culture. Management constitutes a sub-culture and environmental protection is part of management influenced by the cultural ethos of the particular society. Management cannot be divorced from life, because management and worker do not undergo any metamorphoses when they come to work. A manager or worker is also a parent, son, friend and above all a citizen. Therefore without being a decent man one cannot become a good worker or manager. We are conditioned and influenced by our view of life. Our attitudes to work are determined by our values of life. The work culture is part of a national culture [35].

As noted by Swami Vivekananda, no amount of force, or government, or legislative cruelty will change the conditions of a race, but it is spiritual culture and ethical culture alone that can change wrong racial tendencies for the better [32]. As noted by Chinmayananda In the book Science of Religion, the attempt of religion is to bring about inner integration of the spirituo-physical structure in man. Without an integrated personality in ourselves whatever be the scheme of things we may bring about in the outer world, we shall not be ushering in a relatively greater amount of individual and social happiness.

## VI. ESSENTIALS OF REGENERATION

### A. Environmental Management

Earlier environmental management or conservation was linked in the public mind with wildlife, but humans have occupied increasing parts of this planet for thousands of years and the process of development alters the environment to cater the human needs. World's population will be increasingly concentrated in urban systems. If present trend continue in 21st century more than half of the world population will be urban. In addressing the question of environmental management it is suggested that it has two fundamental objectives: first to make cities and other human settlements better places to live in; second, to ensure that what goes on in and around cities does not damage natural environment [36]. It is possible by promoting system of education, research, training, management and policy making that is well integrated and responsive to public needs. Ecological information plays crucial role in overall process. Requirements for ecological information depend on the people who take decision, the kinds of question to be answered and the social, economic and administrative context of the decision making process and time scale. Ecological research can contribute detailed information to management decisions, and process of analysis and decision making [37].

Ecology had its roots mainly in the biological sciences, however during the past few decades ecology has proliferated

into emerging fields of study such as medical and ecological sciences with great challenges and opportunities. Ecology- the study of the home or total environment-appears best equipped to guide higher learning viz., teaching, research and services into a world requiring a holistic approach to problem solving, global planning, resource management, sustainability and synthesis [38].

Another factor along with ecological research is that of communication. Communication to the wider public needs to proceed in two ways, one is through the growing area of environmental education, presenting clear, balanced evaluations of complex issues before the public. In this way ecologists can influence the decision makers [36].

Thus scientists have the major responsibility in providing not only an accurate assessment of environmental relationships, but in seeing that such knowledge is fully communicated to both governments and people. Environment education should be the most significant priority in future conservation strategies and action plans. Similarly closer links should be developed in any educational materials, between ecological issues, and the major contemporary global problems such as armaments, poverty and injustice [39]. Thus a framework which could address the questions such as ecological research, decision making and effective communication can be considered analogous and intermeshed with each other (Fig. 1).

There are two basic elements for environmental management.

#### 1) Indicators to See Changes in Environment

It deals with the construction of a solid basis for understanding environmental problems, in particular with indicators that allow the assessment of changes taking place in environment.

The second is of a much broader nature can be exemplified by the integrated management of ecosystems [40].

Specific, measurable, achievable, realistic, and time bound indicators will help streamline environmental assessments and guide policy setting and management choices. Some of the indicators most relevant for the developing countries include: inequality, poverty, affluence and overdevelopment, basic needs, population and resource use, participation and accountability, gender, legal and regulatory systems, conflict over natural resources, cultural diversity, values and ethical systems and education and media. The general tendency in the region is to adopt an intellectual instead of In this approach the main actors who can contribute to the solutions are usually left out [41]. The sensible approach suggest putting poor people at the center of environment management, strong institutional mechanisms and good governance principles need to guide the behavior of leaders.

#### 2) Ecosystem Based Management

The complexity of the economic, social and environmental realities requires ecosystem-based, multi-sectoral approaches in policy and management. An Outcome framework disaggregates the goal of sustainable development into a sequence of tangible levels of achievement [42]. The focus is

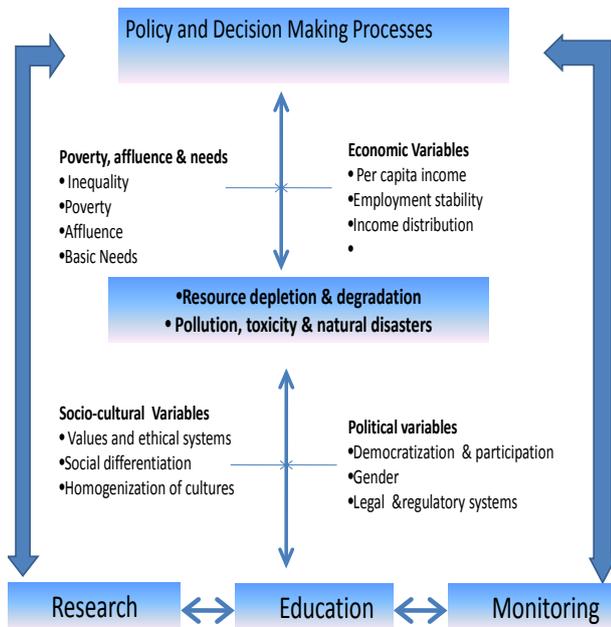


Fig. 1: Conceptual framework for effective environmental management

on outcomes rather than management process. Sets of markers or indicators are offered that can be used to assess progress in each step of integrated management of ecosystems. It is applied to assess the progress on issues that integrate across management of various ecosystems. It offers guidance on ecosystem-based management initiatives that address both the impacts of human activities and the need to sustain healthy ecosystems [42].

#### B. Environment Education

There is a need of a holistic understanding across the disciplines, which is needed in order to accommodate the still evolving concept of sustainability. A key ally in this endeavor is environmental education. Professionals engaged in environment education now need to work together with those from population education, economics, religion and other humanities and social sciences, including human rights and values education [43].

Environmental problems and opportunities of the global information society are not of the same nature as those of the industrial society. Opportunities tend to be potentially brighter and more complex in developing countries. However environment education in these countries often focuses on sterile and obsolete attack on the vanishing industrial societies. Too much emphasis is placed on environment problem and not enough on environmental opportunities and services [44].

Much progress has been made in the field of environmental studies since the publications of the Brundtland report and the Rio conference. These studies mostly concerned the scientific study of biodiversity and biophysical exchanges. By comparison public awareness of the interrelationship between culture and environment is in its infancy. What is required is a study on sustainable human development, proposing increasing quality in every human activity [45]. Education is most effective tool by which character is formed, strength of mind is increased, the intellect

is expanded, and by which one can stand on one's own feet. But now the chief cause of India's ruin has been the monopolizing of the whole education and intelligence of the land among a handful of men and the neglect of the masses [46]. Most crucial responsibility of the environmental research and education is to heighten the understanding of the philosophical and practical implications of environmental issues among all sectors. This research and education should not only contribute to people's understanding but also enable their involvement and empowerment [5]. Only people with the right outlook and human relations abilities, with the support of the network can, move beyond their normal professional boundaries and become important agents of change in the improvement of the quality of environment management [16].

#### VII. CONCLUSION

Environmental, socio-economic and cultural conditions of the developing countries like India differ from that of the developed countries. With the changing conditions priorities also differ. With the globalization there is sharp change in the human relations. Even though there are few studies about deteriorating human relations, there is a clear indication of severe environmental problems are becoming severe in certain pockets. There is a limited influence on the environment in rural areas, but these areas lack the minimum amenities of life.

Migration, environmental degradation, natural disasters, poor infrastructure, pollution, and deteriorating human relations all have equal importance and to be tackled at the same time. It is suggested to give stress on environmental and spiritual education and environmental management based on international principles and suitable methodologies.

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#### REFERENCES

- [1] Last J.M. Public Health and Human Ecology, Prentice Hall, International, Inc 2<sup>nd</sup> Ed. 1988.
- [2] Wilson E.O, The future of life, Vintage Books, New York 2002.
- [3] Clark W.C, Managing Planet Earth, Scientific American 261:47-54 1989.
- [4] Agarwal A, Beyond pretty trees and tigers in India, Ed. Pitt D.C. Future of the Environment IUCN, Routledge, New York 93-125, 1988.
- [5] IDRC; For Earth's Sake; A Report from the Commission on Developing Countries and Global Change, International Development Research Center Canada, New Delhi, 1992.
- [6] Venkatesh S., Population, employment and environment: In Desh Bandhu Eds. Environmental Management; Indian Environmental Society 1980.
- [7] Theys J., 21<sup>st</sup> Century: Environment and Resources; European Environmental Review, 1 1987.

- [8] Elkin T., McLaren D. and Hillman M., Reviewing the city: towards sustainable urban development 1991, Friends of the Earth, London 1991.
- [9] Buch M.N., The environmental impact of cities, In Eds. Bahuguna S. and Vandana S., Environmental crises and sustainable development Indian Environmental Society 620, 1981.
- [10] CSE; CSE Draft Dossier: Health and Environment Retrieved on 12.11.2007 www.cseindia.org 2006.
- [11] Marale S, Mahajan D., Gavali R. and Rao K. Multi-criteria assessment of different temporal water quality changes causing impact on public health, *Int. J. of Integrative Biology*, 9 (3): 123-127, 2010.
- [12] Marale S.M., Assessment of Pilgrimage Impact on River Water Quality and Health, along River Indrayani District Pune, India, Ph.D thesis submitted to University of Pune, Unpublished 2011.
- [13] Odum E.P. and Barrett G.W., *Fundamentals of Ecology*, Brooks/Cole 2005.
- [14] Chambers R. Putting people first, In Ed. Pitt D.C. The future of the environment: the social dimensions of conservation and ecological alternatives, Routledge; London and New York 5-22, 1988.
- [15] Athreya M.B. Ancient Wisdom for Human Resource Management, *Tattvaloka: the splendor of truth* (14) 5; 8-13, 1992.
- [16] Carley M., and Christie I. Managing sustainable development, Earth Scan, London 1992.
- [17] Pandey K., Shukla J., and Trivedi S., *Fundamentals of Toxicology*, New Central Book Agency 2005.
- [18] K. Indirabai, Monitoring and control of water pollution: In Sapru R.K. Eds. Environmental Planning and Management in India New World Environmental Series 1990.
- [19] Gupta M.C, Human Resource Management and Nutrition, *Tattvaloka: the splendor of truth* (14) 5; 74-82 1992.
- [20] Eliot T.S, *The hollow men*, Faber and Faber, London 1925.
- [21] Allen S, Media anthropology: Building a public perspective, *Anthropology Newsletter* 25 1984.
- [22] Engel R. Ethics In Pitt D.C., Ed The future of the environment: the social dimensions of conservation and ecological alternatives, Ch. 2; 23-45 Routledge; London and New York 1998.
- [23] Ranganathananda S, How to be an ideal householder, A talk by Sri Swami Ranganathandaji Maharaj delivered on 17<sup>th</sup> May, 1998, at the Ramkrishna Mission, New Delhi, 1999.
- [24] Melkania N.P. and Melkania U. Environmental and Human Health: In the Fragile Environment, Ashish Publications 1991.
- [25] Castri F, The chair of sustainable development, *Nature and Resources* (32), 3, UNESCO, Parthenon, Carnforth, 1995.
- [26] William A.H. Cultural anthropology: case studies in cultural anthropology, Harcourt Brace College, 1996.
- [27] Margolis S., Bombay ducks: growing crisis of urban poverty, *Planning* No.850, 1990.
- [28] Henry Jules, Culture against man, *American journal of orthopsychiatry* (35) 1; 170-179, 1965.
- [29] Muralidhara B.S. Indian philosophy Vs management practice *Tattvaloka; the splendor of truth* (14) 5; 31-35, 1992.
- [30] Panchmukhi V.R. Eternal values and management perspective, *Tattvaloka: The splendor of truth* (14) 5; 72-73, 1992.
- [31] Ramchandra T.R. Preface to Sastras and Management, *Tattvaloka: The splendor of truth* (14) 5; 4-5, 1992.
- [32] Srikanthanda, Youth arise, awake and know your strength: compilation of Swami Vivekananda thoughts Vivekananda Institute of Human Excellence, Ramkrishna Math, Domalguda, Hyderabad 2010.
- [33] Vivekananda Swami, The complete works of the Swami Vivekananda; Himalaya Series No. XIII, Guranga Press Calcutta 1921.
- [34] Sarma V.K, (1992) Sastric view for management, *Tattvaloka: the splendor of truth* (14) 5; 14-19, 1992.
- [35] Shrivastava P.K. Organizational tensions: cause and cure: *Tattvalokn: the splendor of truth* (14) 5; 51-52, 1992.
- [36] Holdgate M.W. (1988) Information needs for the decision-making process, Chapter 22, In *Ecology in Practice* (Eds. DI Castri, Baker F.W.G., Hadley M) PP 249-263 Tycooly International, Dublin, 1988.
- [37] Boyden S, *Integrated Studies of Cities Considered as Ecological Systems, Ecology in Practice; Part II* (Eds. F.Di Castri, F.W.G. Baker and M.Hadley, Tycooly International Publishing Ltd, Dublin, 1988.
- [38] Barrett, G.W, Closing the ecological cycle: the emergence of integrative science, *Ecosystem health* 7; 79-84, Blackwell publishing, 2001.
- [39] Pitt D.C. Education In Pitt D.C., Ed. The future of the environment: the social dimensions of conservation and ecological alternatives Ch. 3;46-59, Routledge; London and New York, 1988.
- [40] UNEP-GPAa, The State of the Marine Environment; Trends and processes, UNEP/GPA, The Hague, 2006.
- [41] UNEP-GPAb, The State of the Marine Environment; Regional Assessment, UNEP/GPA, The Hague, 2006.
- [42] UNEPc, Ecosystem-based management; markers for assessing progress, United Nations Environment Programme, The Hague, Netherlands, 2006.
- [43] Arizpe L. Culture and Environments, *Nature and Resources* (32) 1, UNESCO, Parthenon, Carnforth, 1996.
- [44] Castri Francesco di Environment in global information society, *Nature and Resources* (34) 2; 4-7, 1998.
- [45] Komatsu, Creating opportunities for sustainable development 1996, *Nature and Resources*, (32) 3. UNESCO, Parthenon, Carnforth, 1996.
- [46] Walia K. My Idea of Education: Compilation of Swami Vivekananda thoughts on education, Advaita Ashram Publication Kolkata 2008.



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