

History and Philosophy of Environmental Science and Education and their interrelationship

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Abstract: Ask a scholar "what is environmental education?" and you will find various and converging responses. However the context of their responses somehow revolves around one of the most concise definition "the study of man and the rest of nature". The discipline of Environmental education has been resembled oftentimes with a tree of many branches, representing the diversity and variety of the field. The purpose of this writing is not to discuss the agreement or disagreement of the scholars on the precise definition but to study the relationship between man and environmental development in a historical dynamics. The prime focus of this work is environmental science, environmental education and their interrelationship. The work correlates environmental problems with the development of laws of environmental education and debates about how both fields are interdependent yet separable from one another. The historical role played by environmental issues studied in environmental science in developing nowadays environmental education. It also discusses the need of spreading the awareness among public through environmental education to avoid the environmental issues that pose serious threat to the future environment like air pollution and global warming.

Index Terms— Environmental education, environmental science, brief history, development period, global warming, environmental issues, pollution perception, spreading awareness.

1 A BREIF HISTORY

Ask a scholar "what is the history of the environment?" and you will find various and converging responses.

However the context of their responses somehow revolves around one of the most concise definition "the study of man and the rest of nature". The discipline of Environmental education has been resembled sometimes with a tree of many branches, representing the diversity and variety in the field. The purpose of this writing is not to discuss the agreement or disagreement of the scholars on the precise definition but to study the relationship between man and environmental development in a historical dynamics. The prime focus of this work is environmental science and environmental education and their interrelationship. The work compiled generally is in chronological order.

The definition presents various original heuristic implications, but ultimately it is probably more suitable and tends to suggest a holistic approach to the history of man and nature. An approach which, moreover, is widespread among environmental historians, largely derived from studies in natural history, historical ecology, forest history, historical geography and concerned primarily with delineating the numerous changes in the natural environment—from the history of climate change, to changes in landscape or forest cover, from the history of natural disasters to that of epidemics or the variation in animal species, which have been induced by or, on the contrary, condition man's social life. The relationship between man and nature started from a philosopher Jean-Jacques Rousseau (1712-1778) who felt the need that education should focus on the environment, or the early nineteenth century educator Louis Agassiz (1807-1873) who encouraged students to "study nature, not books"

To understand the natural world and human societies with ease one needs to consider them as systemic and complex realities as both are fully interactive with each other. The dynamics of the natural world, or, better, of the ecosystems and the dynamics of anthropic societies are the most strongly interac-

tive with each other because they rest on the same material, physical, chemical and biological base. But for this very reason, an irreducible state of tension is created which sometimes opens the way to widespread conflict. The dialog continued in the writing and public speaking of renowned naturalists and writers of the late nineteenth and early twentieth centuries such as John Muir (1838-1914), Enos Mills (1870-1922), Robert Marshall (1901-1939), and Aldo Leopold (1887-1948). But much of what was being written, discussed, and actually accomplished primarily took the forms of resource conservation and habitat preservation rather than the environmental quality, environmental awareness, and environmental literacy that are the central concerns of today [1], [2].

A new focus on the state of the environment can be traced to the years immediately after the end of the World War 2 although until 1960s this attention did not become the part of the modern environmental moment [3]. The environmental education has its roots in the nature study moment of the early 1900s or the conservation education programs of the 1930s "Dust Bowl" era. The "Dust Bowl" gave rise to the conservation education movement in America and was supported by state and federal natural resource agencies as well as many nongovernment organizations.

In 1935 Wisconsin became the first state to introduce a law requiring teachers to have adequate knowledge in conservation of natural resources, which later offered in University of Wisconsin Steven's Point as a degree in conservation education. The first professional use of the term "environmental education" publically happened in 1948 when Thomas Pritchard used the term in Paris during a meeting of International Union for the Conservation of Nature. Later this year, establishing the International Union for the Protection of Nature (IUCN) a conference took place at the Fontainebleau, Paris, France in October 1948, the protection of nature and habitats were set to be the top priority of the conference. In order to insure the continuous progress similar kind of conferences

were scheduled [4].

The concept of Environmental Education practiced today can be traced back to IUCN conference in 1948 at least [5]. Fast forwarded, the public started awakening to pollution and general environmental problems in 1970s that later set the foundation for modern environmental education. In 1971 The National Association for Environmental Education (now the North American Association for Environmental Education (NAAEE) was founded and 1972 was a milestone in giving Environmental Education an international recognition. The participants in the first United Nations Conference on the Human Environment in Stockholm, Sweden produced a declaration containing 26 principles. Principle 19 of the Stockholm Declaration specifically calls for "education in environmental matters, for the younger generation as well as adults" [6].

Anthropogenic societies have played a serious role in accelerating the impact on the natural world over the period of last two centuries, which turned out to be an undoubted pace in the history of environmental changes. These changes occurred were generally the consequences of catastrophic events locally or sometimes continentally. In other words environmental history is the history of relationships between anthropic system and ecosystems i.e. the man's knowledge of nature. For example history of soil tells us about the agricultural practices and the techniques used (cultivation, irrigation, live breeding etc.) never disturbed the equilibrium of the nature, but later when these techniques transformed themselves into more complex system, it started influencing the equilibrium of ecosystem.

2 AUTHORS AND POLLUTION PERCEPTION

A pioneer of modern conservation, the father of ecology and a conservationist Aldo Leopold's work on the relationship between anthropic and environment with the title "A Sand County Almanac" that proved to be the bedrock for the American environmental moment was published in 1949 after his death. His work set a foundation for the later works that directed the moment and drew the attention of the world towards the environmental awareness in 60s and 70s of the 20th century. He challenged the pursuit of affluence for its own sake. In 1950s the pursuit of affluence got questioned at the cost of the environment. John Kenneth Galbraith an American economist in his book "The Affluent Society" published in 1958, argues about the uneven distribution of wealth amongst private and public sector, later offers an economic model investing in public that challenges the convenient wisdom. He also points out to the smog in the cities of California, polluting the atmosphere persistently. Vance Packard raised his voice against the pollution and impassiveness of people in his 1960 book "The Waste Makers". He examined the expanding growth on natural resources and proposed an action of reconditioning of pride in quality and prudence in maintaining environmental balance.

The work on air pollution started in 1950-60s was generally focused in American and United Kingdom. The environmental problems were highlighted and got the attention of the Americans after two books written during early 1960s the first titled as "Silent Spring" by Rachel Carson published in 1962.

Carson awakened the public by surfacing the situation that threatened the atmospheric fabric. He brought up the issue of huge amount of chemicals used in the name of pesticides to get rid of insects and other unnecessary shrubs and weeds that affect the production of the crops, is happening to be a lot more injurious for the atmosphere and soil than just controlling the pests. His work was praised by the conservation movement and environmental groups although both the book and its writer were criticized by the chemical industry [7]. However, the trumpet was blown already and the fact was well understood by the general public on how these changes are disturbing the chemical composition of environment balance and what the hidden causes of this imbalanced are.

While the people were still furious after the Silent Spring another book written after the Carson's on the environmental controversies happened to be fuel on the fire. US president John Kennedy's Secretary of interior, Steward Udall published The Quiet Crises in 1963 which provided the public of America a view on the environmental legacy i.e. what had lost and what is left to be lost, because of the examined range of environmental threats. Silent Spring and The Quiet Crisis led in a decade of unprecedented environmental legislation and action from grassroots organizations to the Congress and the White House.

3 AWARENESS

The majority of the opinion surveys carried out during 1960s found that the awareness of pollution among general public was low and few people considered air pollution as a problem [8]. Several surveys showed the high level identification of health impact only when respondents were asked directly [23], [24], [25] however the level of awareness of US public was comparatively better in realizing the problem of air pollution than the rest of the world

Despite the fact that issue of pollution was overshadowed by the Vietnam War protests during 1960s [10]., yet the decade was an important era for showing concerns about air quality [11] that turn out to be fruitful as environmentally focused legislation were being passed and signed into law. . The Wilderness Act of 1964, the Species Conservation Act of 1966, and the Wild and Scenic River Act of 1968 altogether manifested our concern towards nature, the relationship between human and environment and how human are affecting it. Whereas the Solid Waste Disposal Act (1965) and the Clean Air Act of 1965 reflected national concerns over how human induced activities are damaging environment by injecting solid waste and carbon and GHG laden emissions. The National Environmental Policy Act (NEPA) of 1969, remains the environmental law of USA until today, was declared "to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation". The national policy encouraged the harmony between man and the nature, it raised the awareness among the public to prevent damage to the environment and it popularized the understanding of the ecologi-

cal systems and natural resources and established an environmental Quality council. The year 1970 is considered a benchmark also because Professor Clay Schoenfeld began the journal, *Environmental Education*, later renamed "The Journal of Environmental Education". Dr. William Stapp with his students formally developed and published a definition of "environmental education" at the University of Michigan. The literature and legislation of the 1960s were the driving forces culminated a decadal landmark in environmental history.

The civil right moments, protest against the Vietnam War and the air quality gave birth to the stream of actions during 1960-70s, many of which took the form of a sit-in, where large number of protesters would gather in a particular area to restrain the normal operations simply by getting into the way. This sort of protests became so popular amongst the activists that they started gathering in for specific purposes e.g. protest. Later these sit-ins changed into kneel-ins at churches, stand-ins at ticket counters and even started being followed on college campuses. Another variation of the sit-in with an educational focus to protest against war was the teach-in [10].

Gaylord Nelson, at the time a US Senator from Wisconsin, had adopted an environmental teach-in that helped raising public awareness on critical environmental issues [12]. Denis Hays, a Harvard law student joined Nelson in providing the campus activists from across the country for an environmental teach-in that resulted in what we call Earth Day and on April 22, 1970, with around 20 million participants across the United States of America [10].

The landmark developments of the decade (1961-1970) not only enumerate NEPA and Earth Day but NSTA and NEEA also made to this list. National Science Teachers Association (NSTA) in 1970 painted a picture portraying the need of environmental studies in curriculum development. Later this year August 1970 in an address to congress President Nixon stated: It is also vital that our entire society develop a new understanding and a new awareness of man's relation to his environment – what might be called "environmental literacy." This will require the development and teaching of environmental concepts at every point in the education process. As a result of Nixon's a statement and the study conducted by the NSTA indicated a serious need of a program to be introduced. October 1970, Congress passed the National Environmental Education Act (NEEA) of 1970. This law authorizes the establishment of an Office of Environmental Education in the U.S, a Department of Health Education and Welfare, establishment of a National Advisory Council for environmental education and establishment of a domestic grants program. Limited funding and short life span of 5 year, were the major setbacks of the Act (1970), however environmental education finally became the part of the federal government.

4 ACHIEVEMENTS

The era of 1970s is often linked to great accomplishments and growth of environmental education. The momentum of the legislation and activism of the 1960s continued to build on both the national and international levels. In 1971 National Association for Environmental Education (NAEE) was founded for the further development of this field, later associ-

ation's name was changed to what today we call North American Association for Environmental Education (NAEE) [28]. By the end of this decade environmental education was fully introduced in school system of all the 50 states of United States and publishing houses around the country were rapidly producing environmental education materials [17]. The environmental education programs initiated got funding for a limited period of time, however nongovernmental organizations kept the pace of its development high. A serious approach establishing a partnership between education and natural resource professionals was happened in 1970, hence "The Western Regional Environmental Education Council (WREEC) later called "The Council for Environmental Education (CEE)" came into existence. CEE played vital role in developing environmental education curriculum and spreading environmental awareness around the world. Number of events and conferences were conducted throughout the decade, addressing different aspects of environmental education and atmospheric pollution. The range of these conferences was wide enough to cover secondary education to higher education by addressing emerging problems of the field.

The issue caught of the attention of the rest of the globe, therefore an international conference on human environment was called upon by the United Nations in Stockholm, Sweden in June 1972, also known as the Stockholm Conference. The conference marked a turning point in the development of the international environmental education by putting these environmental issues into a global environmental context. The meeting was influenced by a report for the Club of Rome on environmental degradation that would lead to a collapse of civilization by 2020. After one and half year in 1974, Sherwood Rowland and Mario Molina discovered that the ozone is under serious threat of depletion due to the influence of the ultraviolet radiations. By 1977 it was already developed that ozone layer that protects us from harmful Ultraviolet radiation has been damaged by the excessive use of the sprays and refrigerators.

Though 1972 Stockholm conference set a stage for the awareness of environmental education, however, October 1975 the International Workshop on Environmental Education, Belgrade, Yugoslavia took it to the next level, by describing the goals, objectives and principles that guide environmental education. During this workshop the definition of environmental education proposed and accepted was a big achievement, it says "Environmental education is a process aimed at developing a world population that is aware of and concerned about the total environment and its associated problems, and which has the knowledge, attitudes, motivations, commitments, and skills to work individually and collectively toward solutions of current problems and the prevention of new ones." [13]. The environmental education definition was given definite structure in October of 1977 at first Intergovernmental Conference on Environmental Education held in Tbilisi, Georgia, USSR. The document formulated is known as Tbilisi Declaration. The much needed goals set in this conference provide the foundation of environmental education and are as follow (a) to foster clear awareness of, and concern about, economic, social, political and ecological interdependence in urban and rural areas; (b) to provide every person with opportunities to acquire the

knowledge, values, attitudes, commitment and skills needed to protect and improve the environment; (c) to create new patterns of behaviour of individuals, groups and society as a whole towards the environment [14].

In United States, the next decade of 1980s was not as successful in terms of environmental education as the previous decade of 1970s had been. In his first budget, after passing Omnibus Budget Reconciliation Act (OBRA) of 1981, the President Ronald Reagan debarred almost everything, established by Nixon in previous decade in the name of Environmental Education Act. Apart from Reagan's disinterestedness in air quality and environmental education the era is rather criticized over the development of anti-environmental moment 'sagebrush rebellion' [3]. By the mid of the 80s, a severe ozone thinning was observed in Antarctica and a hole in the ozone layer was reported in 1987 [26]. The nuclear disaster happened in Chernobyl in 1986 stunned the world and its effects can be traced to the present day. The same year The World Commission published a report also known as "our common future" in which the first ever time the idea of sustainable development was introduced, describing how the concepts of economic growth and environmental protection should go side by side. The whole idea was to control the consistently increasing amount of air pollutants into the atmosphere by industry while keeping an eye on the economic growth.

Due to the Reagan and his active administration's policies, the industry and business flourished in his era, regardless of the air pollutants these industries were adding into the atmosphere. In general Reagan's era is associated with environmental recession, but George H.W. Bush who came into presidency in 1988 paid a serious attention to emerging issues of air quality and emphasized on environmental education, which resulted in forming the National Environmental Education Act of 1990, the law authorized establishing an environmental protection agency, environmental education training programs were being offered along with President's youth awards, environmental educational grants and number of student fellowship to promote the environmental literacy and awareness among the locals.

5 STEPPING INTO 21ST CENTURY – THE ERA OF ENVIRONMENTAL ISSUES

The climate change is apparently the biggest issue of the environment of this century but the problem of global warm-

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(This information is optional; change it according to your need.)

ing actually started in the 19th century. Industries emitting greenhouse gases such as carbon dioxide and methane were

the main sources of this rising temperature globally. A plethora of carbon has been piled up into atmosphere due to the burning fossil fuels such as coal, oil and gas. All energy resources especially coal has contributed in bringing industrial revolution. The use of the fossil fuels increased in 19th century due to high demand of energy by rapidly growing population around the globe, hence the emission of carbon and other harmful gases increased. The issue global warming though started getting pace in 1950s didn't catch the attention, but during 1970s scientists turned conscious towards the amount of carbon and other greenhouse gases released into air, even to that decade the issue was not yet considered as a public or political.

1988 can be considered as a landmark year because climate change was regarded as a public, political and major environmental issue, when NASA climatologists Dr. James Hansen during a senate committee said claimed that "the greenhouse effect has been detected and it is changing our climate now", 1988 was the hottest ever recorded year in United States up till that year.

Taking into account Hansen's claim, a joint venture in 1988 by the World Meteorological Organization and the United Nations formed an organization named "Intergovernmental Panel on Climate Change (IPCC), which was given charge of estimating the socio-economic challenges faced by the societies concerning the climate change. In their four assessment reports published so far, all-inclusive knowledge of climate change bringing together the evidence of changes in the chemical composition of atmosphere, evidence of warming of system and understanding the human contribution in warming the globe and changes to the global climate expected in coming years.

During this period there was a lot of criticism environmental education had to face, at one point environmental education was called incomplete and another time it was regarded as biased, the environmental education was under serious political attacks from the conservative thinkers against those who were advocating in its favor [15] at the same time it was getting popular among scientists and scholars by giving this field international recognition for instruction in schools and universities. Meanwhile the standard moment in association with NAAEE was focused on developing the standards of the environmental education, later in 1993 regarded as the National Project for Excellence in environmental education. It provides any kind of guidelines needed for the development of environmental education materials.

Twenty first century started with one of the most serious environmental disasters occurred in Mississippi river, an eastern Appalachian region of Kentucky in October 2000, when a Massey Energy Co. dam collapsed with hundreds of thousands of gallons of thick black coal sludge from the mountain-side burst out to the big Sandy River and its tributaries which not only destroyed many streams came across its way but also killed millions of fish. This spill became famous also because it exposed the corruption in the US environmental system. An investigation headed by engineer Jack Sparado, was called by the National Mine Health and Safety Academy. He found that spill in the same dam happened in 1994 was misrepresented

by the Massey Energy officials, when this investigation went public, Bush administration fired him.

World Summit on sustainable development gathered in Johannesburg, South Africa in August 2002. Many were unhappy with the outcomes. Environmentalists like Ricardo Navarro, chairman of Friends of the Earth International said that "we should never have such shameful summits again. We feel anger and despair because world leaders have sold out to the World Trade Organizations and big businesses. They have done nothing for the poor." while many others found out this kind of summits are better than doing nothing at all. The summit set a goal of reducing the 2.4 billion people living without sanitation in the Third World to half by 2015.

February 2003, even after receiving a serious criticism on coal mining operations, Bush Administration proposed a legislation "Clear Skies" to the Congress to amend the Clean Air Act. This new plan would not just allow three times more mercury emissions, 50% more sulfur emissions and tons of nitrogen oxides into the air, but, would allow companies/residents to delay the process of cleaning up this pollution for a decade even.

2004 was full different activities affected the environment in 2004 starting from 200 buffalos killed in Yellowstone park Rangers to the scientists publishing studies showing that the air pollution is affecting the lungs of the Southern California in New England. The studies were published in the Journal of Medicine showed that the children with higher level of air pollution their lungs underperform as compare to the ones who live in a less polluted environment. The year ended with the work of 300 scientists conclusion who worked on International Arctic Council for four years, that climate is changing very rapidly especially in Arctic region. They reported that the ice in the Arctic cover 10% less area than it had covered 30 years ago. This rapid melting of Arctic region was a serious threat not only for the Arctic human population but there were many other endangered species were reported, however this rapid sea ice melting might give a go to the way through Arctic sea and oil and gas reserves underlying. Scientists often relate these massive climatic changes with the deep quake of magnitude 8.9 on Richter scale, triggered Tsunami under the Indian Ocean that killed 230,000 people just a week before the start of the 2005.

To deal with the issue of global warming an initiative was taken in the form of a conference conducted "Sustainable Future Conference" in Ahmedabad, India when The National Environmental Education and Training Foundation held the first ever international week in April 2005, in which more than 800 thinkers, learner and leading environmentalists participated from over 40 countries. The same year National Environmental Education Advisory Council celebrated on the success of report about setting the standards and measuring results submitted to congress on the status of environmental education in United States.

On the other hand the first decade of twenty first century did not proved better than the previous decade for environmental education in terms of support from the government. The capacity building, curriculum development, and dialog that started since the environmental flurry of the 1960s resulted in a rich knowledge base for Environmental education

grounded in both research and practice. Education in and about the environment remained a topic in educational circles regardless of governmental lethargy. Educators, authors, and researchers continued to promote, demonstrate, and document the benefits of involving children in the environment as a learning context. Most telling was the resurgence of interest in, and mounting evidence for, the benefits of interaction with the natural environment and developing problems due to the reduction or complete loss of that contact and the environmental price to be paid.

Rivkin [6] commented on the essential need for especially young children to interact with and experience the environment through outdoor play spaces, and [16] examined the relationship of environmental awareness to children's manipulation of the natural environment. Two researchers at the University of Illinois documented the positive effects of green play spaces on the symptoms of attention-deficit disorder (ADD) and attention-deficit/hyperactivity disorder (ADHD) in children noting that there was a "green advantage" in natural versus built play environments [9].

The capstone of this era of research and publishing on the environment and environmental concerns came in 2005 with the publication of Richard Louv's Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder. Louv's manifesto on the causes and consequences of a number of modern society's ills reawakened an interest in the outdoors, the environment, and EE, returning them to center stage. A national No Child Left Inside movement sprang up, spearheaded by the Chesapeake Bay Foundation, a not-for-profit organization dedicated to the cleanup and protection of the Chesapeake Bay. The upwelling of new support for education in and about the environment even reached the chambers of Congress and as of this writing, the US House of Representatives had passed, and sent on to the US Senate, the reauthorization of the National Environmental Education Act, alternatively named in this version as The No Child Left Inside Act.

September 2006 the global warming reached its highest level according to a research by James Hansen of NASA. According him the warming rate of earth had been 0.36°F per decade for last 30 years which is very alarming. He warned that global warming of another couple of degree Celsius would result in a dramatic sea level rise. After Stern Review a report written by Nicholas Stern on the economics of climate change to the Government of United Kingdom in Oct 2006, the British Prime Minister Tony Blair admitted that the scientific evidence of global warming is overwhelming and its results are disastrous. There was a steady increase of 2 percent on the oxides of carbon and nitrogen recorded by the United Nations World Meteorological Organization (WMO).

The year 2007 began with Democratic Congress's new promise in January to take an initiative in the favour of renewable energy which resulted in European Union agreement over cutting down carbon emissions by 20% by the end of 2020, the plan also included the introduction of biofuel to fuel at least 10% of vehicles during this period. April 2007 UN Intergovernmental Panel on Climate Change (IPCC) released a portion of their report under title "Climate Change 2007" stated that, the climate change will most drastically effect the poorer nations, and, in the final portion of the report estimated

the cost to reverse the emission of greenhouse gases, by 2030 one ton of carbon will cost about 0.12% of the world's GDP, it will also result in 3% decrease in the projected growth of the world's economy. Report was compiled by the hundreds of scientists on climate change impacts, adoption and vulnerabilities and was endorsed by the 120 countries, for which Al Gore and IPCC were honored with Noble Peace Prize, later the same year, for their effort spreading awareness and knowledge about the man-made climate change. The year ended with Bali's international conference began as part of United Nations ongoing effort in minimizing the emissions of carbon and other greenhouse gases by the industrialized countries concerning climate change. Europe showed that they are dedicated in decreasing greenhouse gases and supporting renewable energy technologies, environmental issues got favoured also by the religious organizations like Pope Benedict sixteen appealed for peace and environmental protection in his annual Christmas message, in growing the awareness about the acceleration at which Arctic and Greenland ice melting because the year was the warmest on record up till that time.

2008 came with history's most emotional presidential campaigns, Barak Obama won the presidential elections and promised to bring environmental law reforms. Princeton University scientists and Nature Conservancy published some of their findings in Science magazine which says that the conversion of forests and natural ecosystems into farmlands to produce biofuels, actually create more greenhouse gases. The year is well known in the history of environmental studies because of the serious environmental issues it had brought to the world in the form of reports such as British Antarctic Survey and U.S National Snow and Ice data Center (NSIDC) reported the collapse of a 405 square kilometer of ice in the western Antarctica during the end of an Antarctic summer and The World Glaciers Monitoring Service published the melting of 30 glaciers from nine mountain regions and its impact on the drinking water in poor areas of South Asia and South America, followed by another report from U.S National Research Council about the rising sea level and the endangered U.S infrastructure in March 2008. Before this year the issue was not taken that seriously and there were no serious steps taken in combating the global warming.

It was June 2008 when first ever time UN commissioner Antonio Guterres linked the increasing number of refugees with the disastrous effects of global warming. He echoed in interview with Britain's Guardian newspaper that the climate change directly or indirectly is driving people leave their homes where they were traditionally living and move to a new place where there is poverty and conflicts.

Climate change deserves a credit for its versatility. There were days when global warming was considered nothing but an association of fraction rise in the temperature every passing year, later did we know its other serious prodromal features in the form of droughts, sea level rise, floods, crop death and now yet another problem has recently been added in the hit list of climate change "Seismic activity" i.e. volcanoes and earthquakes.

6 OTHER APPROACHES, CONTRIBUTING DISCIPLINES

Different schools of philosophical thought have come from diverse approaches. The traditional American philosophy stresses upon the abstract clarity, logical rigor, practical soundness and scientific validity of arguments. The continental philosophy especially European, mostly from France and Germany, is far more critical in terms of scientific claims and open to explore the historical and cultural context of ideas that tend to a larger philosophical subject such as the nature of being, existence and consciousness. There were many other motivated by the Jacques Derrida a French philosopher who believed in "there's no outside-text", there were primarily focused on the text. Thinkers follow more than one these different ways of writing philosophy and these labels most of time are not mutually exclusive.

It was in the 1970s when philosophers started rediscovering, the ideas about nature found in Rousseau, Kant, Hegel, Hölderlin, Nietzsche, Benjamin, and Heidegger; thinkers who regard themselves as belonging to the continental tradition have been at the forefront of this development [18], [19]. Some of their fellows have questioned the relevance of phenomenology to environmental consciousness and understanding of human condition [20]. These kind of phenomenological approaches sum up many times the themes discussed in analytical literature. Take moment the twentieth-century German philosopher Martin Heidegger (1889-1976) notion of Dasein is like a basis to the idea of what is inherently valuable? For him human being were not just existed but, rather found themselves somewhere, so called dasein (being there). It seems as the work might have brought a new insight to the work of environmental philosophy but criticized because of approach's emotional and spiritual linkage between human and nature.

While the field of Environmental Education has been sourced from a range of disciplines like science, mathematics, language arts, social science, politics and philosophy. Its historical roots starts from nature studies, conservation education and outdoor education, but the major and basic knowledge contributions comes from environmental sciences. Educators in recent years have often had difficulty separating environmental science from environmental education. The variability found in definitions of both these terms is another part of the problem. According to the most recent work of Rave, Berg and Hassenzahl [26] " it integrates importance information from many different fields such as biology, geography, chemistry, geology, physics, economics, sociology, natural resources management, law and politics, because environmental science is an interdisciplinary field, this book is appropriate for environmental science courses offered in variety of departments, including (which does not make it limited to) biology, geology, geography and agriculture". Environmental Science is the data collection knowledge whereas environmental education is the application of that knowledge with environmental literacy. However, the essential features of environmental science and education are fairly candid and discrete.

7 FUTURE DIRECTIONS

Current environmental problems are not simple, they involve the issues of public health, social justice, behavior towards nature and our ignorance about the matters of science, policy, rights and our ethical obligations. These complex situations are generally the reason for today's environmental problems such as droughts, changing weather patterns, the loss of habitat and species, the increased number of environmental refugees, various health problems associated with different forms of pollution, the threat of rising sea level and the enhanced seismicity in the form of increased frequency of volcanoes and earthquakes. The problems associated with the issue of global warming and air pollution can be classified into groups of interconnected dilemmas that are incapable of suggesting a solution in a single agenda can be called as wicked problems [21]. The solution of such conflicts demands the cooperation and interdisciplinary action between philosophers, political theorists, legal experts, environmentalists and scientists. To make philosophy a more empirical there is a need of such cross departmental approaches along with Bookchin's suggestion that ecology is both an integrative and a reconstructive discipline. Our concerns about the climate change, global warming, species loss, deglaciation, environmental degradation, sea level rise and increased seismicity are likely to lead to a further investigation for the thinkers in the field of science and philosophy. As long as scientific facts about the environment pose ethical and philosophical problems for philosophers, citizens, and government officials, it is likely that new interdisciplinary research agendas will emerge. However the goal of environmental education is to make society environmentally literate for their active participation in dealing with all these environmental issues. The challenge is to develop an education program that promotes environmental education, which depends on knowledge derived from the science and social science. The same vision of environmental education also reflects in the recently adopted standards of National Council for the Accreditation of Teacher Education for the preparation of environmental educators, which says that environmental teachers should be environmentally educated as well [22].

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