IMPORTANCE OF ENVIRONMENTAL STUDIES AND CHALLENGES OF ENVIRONMENTAL CHANGING IN SOUTH ASIA

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ABSTRACT
Environmental damages are the main causes responsible for climate changes all over the world. It is considered as the mother of hazardous weather events in recent years. Obviously, it did not happen all of sudden but is a long-time negligence towards nature in the name of development, ironically by the scientifically advanced nations; not perceiving that this will become a global phenomenon. Like everywhere, the core cause in South Asia is also greenhouse gases and carbon dioxide which are increasing remitted in the air through rapid industrialization, including industrial waste. Both India, and Pakistan are the major contributors of these gases, causing rise in temperature, melting of glaciers, changing rain patterns, seal level rise and increase in cyclones and floods. Only the experts of Environmental Science can understand the problems and can find solutions to these atrocities. These issues must be assessed and investigated on regional basis and find solutions considering local socio-economic conditions and situations on the ground. The study is a qualitative document analysis of the past published literature related to the theme. In which the main objective is to highlight the importance of environment and understand the challenges accruing in South Asian Region.

KEYWORDS
Environment, Environmental challenges, South Asia, Climate Change, Pollution

INTRODUCTION

The term 'environment' originates after the French word 'environner,' which meaning to encircle, surround, or encircle. In Ecology, the scientist Jacob Van Uerkal (1864-1944) coined the term "environment." The study of Ecology is the relation amid living organisms and their surroundings. The Environment Protection Act of 1986 defines environment as the aggregate of water, land and air, along with their interrelationships with humans and other living species (Stokols, 1992). It investigates the origins, responses, transit, influence, and destiny of organic particles in water, air and soil, as

well as the impact of human activities. Environmental Science is concerned with the investigation of procedures in water, soil, air, and creatures that result in pollution or environmental harm, as well as the scientific foundation for establishing a standard that is acceptable to humans and natural ecosystems as clean, safe, and healthy (Erac Bharucha, 2005).

The Global Environmental disasters accruing in recent years, urge the need for awareness for protecting and conserving our mother planet, as well as the devastation caused by pollution releases into the ecosystem. The rise of human and animal populations, as well as industry and other factors, make survival difficult (Katar & Anil, 2007). A large variety of environmental concerns have risen in scale and complexity, posing a threat to humanity's existence on the planet. That is why environmental awareness is importance not only locally but also on international level. In this regard International Conferences on Global Environmental Changes are convened to discuss strategies to control pollution, global warming and climate changing, which is causing devastating damage in the form of heavy and unpredicted rain fall termed as "cloud burst". Also acid rain, global warming, melting of glaciers, ozone depletion, sea pollution, and biodiversity, are global issues that require worldwide efforts and collaboration to address (Singh, 2007).

Majority of South Asian people are living in poverty and in some countries near the coastal zone. Rise in sea level patterns and changes in the coastal region will put more burden on these poor and vulnerable people. Rise in sea level will cause flood and storm damage to the coastal region. This damage will cause critical hardships to those people living near the coastal region. Melted snow water from the glaciers in Himalaya is the source of water in Northern India during the month of summers. Likewise, Pakistan is also dependent on the water from these sources and will also suffer in the future. According to the research, rapid snow and glacier melt will cause hazards and land sliding and flood which fills waterways with mud and sand causing overflow of rivers again damaging coastal regions (Byraran, S., 2009). This is what is happening now in the region which is the world's most densely populated (one fifth) and one of the poorest as well. The climate change is affecting the economic growth here and agriculture (60% of the population of the region is depends on it), fishery sectors and tourism which are providing employment and gross domestic product in the region main cause of these changes is industrial development and industrial waste and pollution, all over the world. The Industrially developed countries, who are the major contributors to this damage, do not accept their responsibility and are not willing to take any necessary measures for prevention. Bangladesh, Nepal, Afghanistan, and Bhutan are the least developed countries of South Asia and are trying to cope with various socio-economic issues such as health, education, and poverty. South Asian Association for Regional Cooperation (SAARC) is an organization established by

South Asian countries to ensure a long-term measure to reduce the severity of climate related disasters (Mall, R.K., 2019), but unfortunately is inactive due to political frictions between two big members namely India and Pakistan.

LITERATURE REVIEW

Environmental impacts and development

(Singh, 2007) Highlighted the relation between environmental impacts and development and discussed that, the development, industrial growth, telecommunication and transport systems, high-tech agriculture, and housing are all examples of how development affects the environment. In the industrialized world, however it is being handled but as climate is not restricted to a specific region, but the impact spreads beyond borders and continents. They have relocated factories from the North purposefully to the South in order to keep their own environment clean. The development of the world's wealthy countries did not take in account the consequences for the rest of the world. According to the United Nations, India is home to one out of every seven people on the earth. With 16% of population of the globe and merely it's worth 2.4% of the total. Geographic area, natural resources, particularly land, is clearly under strain. Soil health issues such as a lack of micronutrients and biological material, earth salinity, and soil structure deterioration have been identified by agricultural specialists.

Rajagopalan (2015) explained some environmental concerns that it is also vital to confront numerous environmental concerns and operate in a manner that is environmentally beneficial. The following are the key obstacles that lie ahead; 1) The population of the United States is expanding at a rate of 2.11 percent each year. Every year, almost 17 million individuals are added to the population. 2) India has a population of only 2.4% of the total land area of the world is engaged by 16 percent of the world's inhabitants. Putting a strain on natural resources and limiting development progress.3) accordingly the most pressing issue we face is curbing population growth.4) In spite of the fact that inhabitants control aids development, population growth slows because of development. 5) Women's awareness is required for this growth to take place .6) In order to achieve sustainable development, future population increase must be conditional to the resources available.

Temperatures rising on average, but not always as a result of heat waves, are a major consequence on human health. Between 1983 and 2016, excessive heat exposure with a temperature of a wet bulb globe exceeding 30 °C increased, according to a survey of 13,115 cities. When the cities' population increases it is not taken into account. The temperature can at times climbed to 50% which can affect rural and urban cities areas equally (Romanello, 2021). Higher temperature has a significant impact on psychiatry and mental health in humans. These impacts might also be indirect: among persons in

low HDI countries, the amount of time that has passed in which weather conditions were too hot for secure outdoor environment enlarged by 3.7 hours on average during the last four decades. Extreme heat is a serious health threat, especially for adults over 65, those who live in cities, and those who have health problems.

Wibowo (1999) discussed many causes of environmental damages including urbanization, industrialization, and the combustion of fossil fuels, are responsible for increasing CO2 levels in the environment and creating additional greenhouse gases in a variety of ways. The amount of CO2 and other greenhouse gases in the atmosphere is increasing and are the primary cause of global climate change and its consequences. Mitigation and adaptation measures, that are appropriate to site, can be performed to address climate change. Moreover, some renewable energy sources such as solar energy may be utilized in businesses, cars, cooking and brick kilns for the purpose of reducing greenhouse gas emissions and reaching an acceptable level. Forests that have not been damaged and soil and water that have not been contaminated may absorb a significant quantity of CO2 emissions from the atmosphere. Human pressure is at the basis of fast urbanization and industrialization, rising vehicle numbers and fossil fuel combustion, dramatic changes in land usage, and immediate climate change, all of which have negative consequences. Developing the present population into human capital, as well as taking steps to limit future population increase to a desirable level by slowing the pace of development, might be effective strategies for addressing all negative environmental challenges.

All these issues should be a part of curriculum to provide awareness about Environment, climate, nature, and wildlife preservation, to helps us to understand the root cause of these issues and helps us to analyze the solutions of these problems (Hajare, 2020). Educating the masses about Environmental issues allow us to find a variety of different and alternate methods to make efficient use of resources, to minimize the impact (Poonguzhali, 2021).

Environmental Challenges in South Asian Region

Climate change is already having a substantial influence in South Asia, which is predicted to worsen as global temperatures increases. India, Pakistan, Nepal, Afghanistan, Maldives, Bangladesh, Sri Lanka, and Bhutan are the eight South Asia countries (Kreft & Sonke, 2017). According to the 2017 edition of German watch's Bangladesh and Pakistan are included in the Climate Risk Index. Bangladesh has suffered the most damage due to of climate change due to a mix of topographical reasons and its delta-exposed, flat, low-lying terrain, and not to forget, the socio-economic factors, like its agricultural dependence, poverty levels, and high and dense population (Thomas & Mainuddin, 2013). The sea level rise, caused by increasing temperature and vaporization are all factors of concern. Rivers which flow cross-

borders also are flooding the neighboring countries as well. Freshwater supply is polluted and disrupted. Another cause of pollution is increasing industrial activities and industrial waste dumped in rivers and sea, damaging marine life. In Bhutan, main air pollution cause is forest fire while in India is the top air polluting country in South Asia region due to industrial and traffic pollution, termed as smog. In Sri Lanka, motor vehicles, and burning of industrial wastages etc. are the main source of air pollution. (Hasnat, 2018)

Pakistan is also experiencing climatic impacts in the form of melting glaciers in the northern areas and heavy rain and snowfall. Extreme heat waves or rain fall in the form of cloud burst. This will have far-reaching consequences on people and ecology because of heavy deforesting. Pakistan has started plantation on emergency basis (one million trees program a year),and also take measures to protect existing forests as well as mangroves trees at our coastal regions, which protect land sliding and marine live. Pakistan and the rest of the South Asian countries have limited resources to take sufficient measures without the support of developed countries who are the main culprits in this regard, having biggest industries and industrial waste but not accepting the responsibility although they can afford to take safety measures having financial and technical resources, which poor countries don't have (US President Trumph even refused to participate in International Climate Change Conference to diminish it's importance and show America's disinterest in this regard).Pakistan's most important rivers are also threatened as the Himalayan glaciers are melting. Between the years 1999 and 2018, Pakistan was ranked fifth among the worst impacted countries in terms of severe climate induced by climate change (Eckstein & David, 2020).

Between 1994 and 2004, the average annual rise in sea level was 3.1 millimeters. A new study in a variety of models that are semi-empirical predicts about 1 meter increase in sea level by the year 2100. The Sundarbans have a number of low-lying islands. Have already been inundated due to rising sea levels, displacing thousands of inhabitants. Himalayan glaciers are retreating due to rising temperatures on the Tibetan Plateau. The ancient cities of Badin and Thatta in Sindh, Pakistan, are expected to be suffocated by the sea by 2026, since the sea water is rapidly intruding on the land about 80 acres each day. Similarly, due to increased tidal flooding, certain Indian territories have already been evacuated (Khan, 2012) and by 2030, a large portion of Indian cities, including Mumbai, Kolkata, Cuttack, Kochi, and others, would be below sea level. Almost the whole city of Navi Mumbai would be submerged. A research published in the Nature Communications is a peer-reviewed journal that published in October of this year 2019, has written that the total number of individuals impacted by sea level rise in the twenty-first century is three times larger than previously estimated. In year 2050, hundred and fifty million people, during high tide will be submerged and there will be 300 million people living there in flood-prone areas every year. These figures

fluctuate dramatically by 2100, depending on the situation for emissions. In the case of a scenario with low emissions, one hundred and forty million people will take place and flooded 280 million people will be affected during high tide flooded annually. The figures rise to 540 million and 640 million in the high-emission scenario, respectively. 70% of these people will reside in Bangladesh, Indonesia, China, India, Japan, Thailand, Philippines, and Vietnam which are all in Asia. Mumbai, Ho Chi Minh City, Basra, Bangkok, and Shanghai might all be flooded to some extent (Khan, 2012).

Global warming and climate change are caused by deforestation, which leads to a slew of other environmental problems. Even though Bangladesh's forest area accounts for 17.63 percent of the country's total land area, only 6% of it is covered by trees. Deforestation has destroyed around half of the country's forests in the previous 20 years. In the major portions of Rajshahi, Dhaka and Mymensingh, especially for shifting agriculture in the Chittagong Hill Tracts, indiscriminate tree chopping for industrial or domestic use has resulted in an alarming loss of natural forests. Bangladesh's population increase is one of the biggest reasons for deforestation. (Aryal, 2020) Because of the growing need for land for agriculture, houses, and industry, the country's forests have been degraded from the beginning of the twentieth century which was 8000 hectares per year in the 1980s, but currently every year, 37,700 hectares are harvested. Lower rainfall, ecosystem and biodiversity loss, soil erosion, climate change and species extinction are some of its consequences (WHO, 2015).

South Asia is a populous region and 70% of its people are living in villages. Due to already poor agricultural production, climate change has created even more problems for people living in rural as well as urban areas. Agriculture in South Asia is heavily dependent on monsoon. The change in rain patterns has affected the livelihoods of the people in rural areas. According to the research cyclones and floods have a serious impact on this region. Rise in sea level will impact Pakistan, Bangladesh, India and Sri Lanka. Around 125 million people will be homeless by the end of the century while Maldives could submerge by the end of the century. (Sterrett, 2011)

South Asian region consisting of India, Nepal, Pakistan, Bangladesh, Afghanistan, Sri Lanka, and Bhutan makes it the world's most populated region. Due to the rapid increase of COVID-19, governments in the region have persuaded people to stay at home. Measures to prevent COVID-19 include shutting down transportation, closure of industrial centers and manufacturing as well as construction activities were stopped. This results in reduction of hazardous gases and particles causing air pollution and affecting the environment. According to the research, Bangladesh has improved in controlling the air pollution by imposing ban on travelling through railways, air, and water routes. (Mishra, M., & Kulshrestha, 2021)

Climate Change and Health Issues

Climate change is directly and indirectly impacting human health. Severe weather conditions cause health issues ie viral diseases which mutate rapidly. It interrupts both economy and social activities and limits the capacity of people to make their living. Other health repercussions include environmental deterioration, vector-borne illnesses; infections transmitted by food and water, variations in mental health and food security effects for example an increased threat of recklessness (Mboera, 2011).

Climate change can increase the number of people infected with illnesses like dengue fever and malaria which are both contagious diseases, as well as having a negative influence on mental well-being. It can diminish the accessibility of clean water and have an impact on food production, whether by producing crops or rearing cattle; although yields has increased in some regions, and certain foods grown has been shown to be less nutritious. Climate change's health implications are becoming a growing source of worry for worldwide public health policy makers. It effects affects humans in a variety of ways, including health, displacement and migration, security, and socio -economic consequences (John Hopkins, 2020).

The South Asian region is facing many problems related to environment such as economic disasters and diseases, unsafe water, urban air pollution, indoor and outdoor smoke, poor hygiene conditions and air pollution is also causing lung cancer, respiratory infections in children and cardiovascular disease (Abbaspour, 2011). According to the research, the earth's resources are reducing and issues like energy needs, global warming and toxic emissions are rising. Besides adopting preventive measures by the states, on emergency basis, it is also very important to create awareness through education especially designed for common people. These measures must be in coordination with international coordination and assistance of UNO bodies.

DISCUSSION

Environmental studies highlights the importance and need in the rapidly changing scenario as it helps to create awareness to the young generation and, understand the environmental problems, which are a global concern and are not limited to any particular city or country. These issues are affecting human development directly or indirect especially their quality of life in many ways. India, Pakistan, and Afghanistan are facing shortage of water due to water logging, soil erosion etc. Maldives is facing shortage of fresh water due to salinity and some parts of South Asia are facing issues due to pollution and the agriculture is highly affecting the lives of billions of farmers in this region. Furthermore, it is indicated that the food production and shortage will worsen in South Asia in the coming years and reduce the major food crops like maize, wheat and rice as well as fishery. People living in Pakistan, India and Nepal are

endangered to climatic changes because of their dependence on agriculture for their survival.

RECOMMENDATIONS

1. The South Asian states must coordinate to find ways to minimize the impact of environmental imbalance.
2. The solution is to adopt more technology in coping with these problems along with awareness through educational institutions.
3. The economy should be based on modern technology to reduce the dependency on agriculture.
4. Environmental research should be considered as a priority by the governments and policymakers of these region.
5. The researchers should explore the different environmental phenomena to create awareness for future damages.
6. Research priorities and resource allocation should be based in South Asian countries to function independently without foreign involvement.
7. Effective strategies should be adopted by developing countries especially in South Asia region.
8. Coherence between environmental studies and environmental changes should be established at all levels to protect the environment.

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