

RESEARCH ARTICLE

ENVIRONMENTAL DEGRADATION AND HEALTH ISSUES

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ABSTRACT

Nature provides all kinds of facilities and resources to live in the planet. Nations are exploiting the environment (resources) as much as for comfort and luxury life in terms of development. The so called developments create negative impact in the planet and make the people keep away from nature. The environmental degradation is caused by combustion of fossil fuel, agricultural activities, industries, households, nuclear plants and other sources. These are polluting air, water and soil. As a result climate is changed and it leads global warming, flood, Hurricane, and other natural calamities. These incidences are led to threat to human health. The climate change leads to health problems such as malaria, dengue, yellow fever, diarrhoea, measles and other vector borne diseases, cancer, cardio vascular and respiratory diseases. The environmental degradation affects the food chain and it affects the health of the human beings. The climate change affects four grain production and it creates food insecurity. The poor people are forced to fall under malnutrition and it affects the health of the people. There is an urgent need to protect the environment and save the planet and protect the human beings from ill health.

Keywords: Health, pollution, need, climate change and urgent.

1. INTRODUCTION

Nature provides all kinds of facilities to live in the planet. For leading of life, all resources are supplied by environment. The environment is exploited as much as for our of comfort and luxury life. People enjoy the comfort and luxury life we termed as development. This development is without sustainability. The policy makers are thinking only the so called development rather than real development. This development can be achieved through industrialization. This industrialisation leads to environmental degradation. The industrialisation wastes are disposed freely into the environment. As a result environment is highly polluted by the industries. The high level of pollution is caused by too much exploitation of environment to meet the increasing demand for the people. The pollution is caused to climate change, ultimately there is a threat to the universe and health of the human beings throughout the world, climate change affects the human health at present and near future. There are reasons for climate change.

2. CARBON DIOXIDE CONCENTRATION

The climate change is caused by too much concentration of green house gases. These gases have been emitted from combustion of fossil fuel, forest fire, households, industries and agricultural activities. Among the green house gases, carbon dioxide plays a vital role to change climate. The major portion comes from combustion of fossil fuel.

The high income countries energy related per capital emission CO₂ increased from 10.7 mt in 1990 to 11.1 mt in 2005. World per capital Co₂ emission increased from 4 mt in 1990 to 4.2 mt in 2005. The high income countries are damaging air more than low income countries in the name of development.

The high level of emission began from industrial revolution. The industrialisation has made unsustainable level of exploitation of natural resources. As a result the atmospheric CO₂ concentration increased from 280 ppm in 1760 to 379 ppm in 2000. If the trend continues, CO₂ concentration will increase to 560 ppm in the end of the century. The CH₄ and N₂O increased from 770 ppb to 1774 ppb and 270 ppb to 319 ppb respectively during the same period. The CO₂ concentration in the atmosphere doubles the pre-industrial levels by the end of the country. The other green house gases such as methane, black carbon and nitrous oxide contribute about 25 percent of the global warming.

3. IMPACT OF CO₂ CONCENTRATION

The impact of CO₂ concentration in the atmosphere leads to high temperature in the earth. This is termed as global warming. The global warming has been realised by all over the world. The global warming is resulted in negative impact on physical structure of the planet.

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4. RISING SEA LEVEL

Sea level has been changed due to ice melting of Arctic and Antarctic region. The past one century the sea level rose to 10 – 20 cm (4.8 inches). The Inter- Governmental Panel on climate change 2001 assessment projected that the sea level could rise as much as one meter in the end of the century. If the present global warming continues, one millimetre rise in sea level retreats and average of 1.5 meter seashore, one meter rise in sea level will retreat 1500 meter seashore in nearly a mile. This will create threat to coastal areas and islands our entire world.

5. HEAT WAVES

The global warming is resulted in heat waves. The global average surface temperature has increased and 100 years (1906 – 2005) indicated and increase of 0.74°C + -0.1.8°C. If the concentration of Co2 reaches 560 ppm, the temperature is projected to increase 1.4°C to 5.8°C.

Table 1. Temperature and Heat Waves.

Nations	Change in Temperature in °C 2000 - 2050	Change in heat wave duration in days) 2000 - 2050
Algeria	1.9	22.2
Belarus	1.7	28.8
Finland	2.1	29.6
France	1.5	12.3
Czech Republic	1.7	20.3
Hungary	1.9	25.0
Kazakhstan	1.8	28.5
Poland	1.7	28.9
Romania	1.7	28.9
Russian Federation	2.2	29.5
Ukraine	1.7	28.5
USA	1.8	24.4
China	1.7	16.1
India	1.6	10.8
Canada	2.1	28.2
Ghana	1.3	1.3
Philippines	1.2	1.3
Togo	1.3	1.5

Source: World Development Report, 2010 (5)

Table 1 indicates that Finland will have 29.6 days in 2050 which is higher than all other countries. Majority of the countries will have more 10 days of heat wave in near future. This heat wave will increase mortality rate among children and old age people in the world.

6. NATURAL CALAMITIES

The natural calamities are caused by environmental degradation. They are flood, heavy rainfall, earthquake, cyclone, hurricane, volcano, tsunami, and unseasonal rainfall canoed by climate change. These affected the life, health and huge economic loss to the people. There were ten nations chosen to estimate the affected people.

Table 2. Natural Disasters and People Affected 1971 – 2008.

Nations	Drought No	Flood & Strom of People	Share of Population
Bangladesh	658	8751	9.1
China	9642	53460	5.2
Ethiopia	1361	59	6.6
India	25294	22314	7.2
Pakistan	58	1163	1.3
Kaya	960	56	9.7
Philippines	172	2743	4.5
Sudan	611	155	6.0
Swaziland	43	23	18.3
Malawi	518	50	12.3

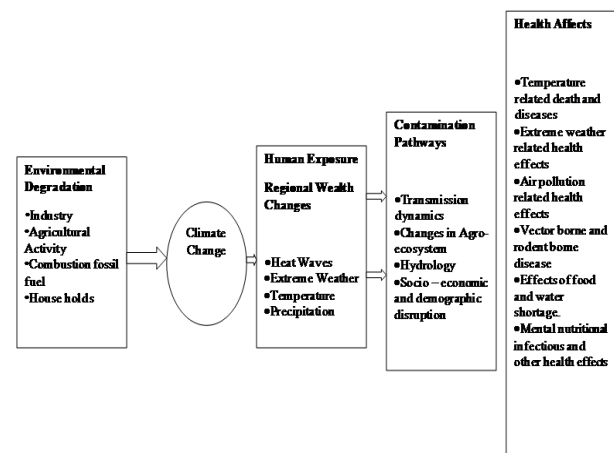
Source: World Development Report, 2010 (5)

Table 2 depicts that Bangladesh 9.1 percent, India 7.2 percent, Swaziland 18.3 percent and Malawi 12.3 percent of the total population were affected by drought and flood and storms.

7. CLIMATE CHANGE AND HEALTH ISSUES

Climate change is caused by environmental degradation. The impacts of climate change and variability on human health has increased considerably in recent years.

Environmental Degradation, Climate Change and Human Health



8. TEMPERATURE AND HEALTH

The hot temperature leads to heat wave. The heat wave creates spatial death and affects the health of human beings. This affects more children and old age people of the world. The recent heat wave was killed 70000 people in Europe. In India 18 heat waves have been reported in between 1980 – 1998. There were 1300 death in 1998 and 3000 death in 2003. The years 1998 and 2005 – 2007 were warmest on record. In many high temperature countries death rate during winter season is 10 – 25 percent higher than summer season. The high temperature leads to skin cancer. The excess deaths during times of thermal extreme are in person with pre-existing diseases especially cardio-vascular and respiratory diseases. The very old the very young and the frail are more susceptible.

9. EXTREME CLIMATE / WEATHER EVENTS AND DEATH

Extreme climate or weather kill people and affect the health of the people. On temperature countries undergoing climate change, a reduction in winter death may outnumber the increase in summer deaths.

Table 3. Extreme climate / weather events and death.

Nations	Events	1990s	
		Killed (Thousand)	Affected (Million)
Africa	24	10	104.3
Eastern Europe	150	5	12.4
Eastern Mediterranean	139	14	36.7
Latin America and Caribbean	298	59	36.7
South East Africa	286	458	427.4
Western Pacific	381	48	1199.8
Developed	577	6	40.8
Total	2078	601	1851

Source: WHO, Report 2010 (6)

Table 3 – indicates that the number of events increased from 1848 during 1980's to 2078 during 1990's similarly affected people increased from 1336 million to 1851 million during the same periods. This infers that number events have been increased and affected people increased due climate change.

10. CHILDREN'S HEALTH AND CLIMATE CHANGE

Children are highly affected both directly and indirectly. The World Health Organisation estimated that 34 percent of all childhood illness and 36 percent of children death under the age of 14 years are due to modifiable environmental factors in the world. Environmental changes can lead to respiratory diseases, sun burn, melanoma and immune – suppression. Climate change leads to heat strokes, gastro-intestinal diseases and psycho-social mal development. More number of children is affected by measles.

11. CLIMATE CHANGE AND MALARIA

Climate factors are an important determinant of various vector borne diseases. The increased temperature increases vectors life cycle and shortens the incubation time of parasites living the in the vector, climate change affects the reproduction and survival rates of both the infectious agents and vectors and therefore increase their ability to infect human. According to World Health Report 2002, approximately 6 percent of people affect by malaria in some middle income countries due to climate change. In tropical areas almost – 1 million people were dies a year (mostly children) and climate is projected to expose 90 million more people to the disease by 2030 in Africa alone.

Malaria causes 350 – 500 million illness per year and more than one million death mostly young children. Home grown malaria is caused by global warming (8).

Table 4. Climate Change and Malaria and Measles infected people.

WHO Region	2008	
	Malaria (in No)	Measles (in No)
African Region	607315	37010
Region of Americas	719783	203
South East Asian Region	100491743	75770
European Region	-	8883
Eastern Mediterranean Region	8291229	12120
Western Pacific Region	2604165	147986
Low Income	54504086	38174
Lower Middle Income	117031249	222431
Upper Middle Income	1395416	744
High Income Group	-	20623
Global	172997420	281972

Source: World Health Statistics, WHO, 2010 (1)

Table 4 shows that high level of incidence of malaria and measles were found in African and South East Asian region. The high level of infected persons was reported from lower middle income countries. If the temperature increases more the rate of malaria and measles infected patients will increase in near future. This will affect people and it leads to economic loss.

12. CLIMATE CHANGE AND DIARRHOEAL DISEASES

The diarrhoeal diseases are resulted in high temperature, water scarcity and water abundance from flooding or heavy precipitation. After a flood event rate of diarrhoeal diseases may increase. Even heavy rainfall increases the rate of diarrhoeal. Water scarcity may lead to diarrhoeal diseases. A shortage of availability of water for personal hygiene and washing food may lead to an increase in diarrhoeal diseases. High temperature is an independent risk factor of increased rate of diarrhoeal diseases. Diarrhoeal pathogens are highly sensitive to variation of climate and weather. Temperature and humidity have a direct influence on the rate of survival and replication of bacterial and protozoa. Paediatric hospitalisation for diarrhoea cases increased by 8 percent for 1oC increase in temperature in developing countries, diarrhoea incidence will increase by 5 percent per degree Celsius increase in temperature. The burden of diarrhoeal diseases from climate change is projected to increase up to 5 percent by 2020 in countries with per capital income below \$6000.

13. CLIMATE CHANGE AND DENGUE

Dengue is a climate and weather sensitive disease. This is an important arboreal disease of human beings, occurring in tropical and sub-tropical regions. El Nino Southern Oscillation affects dengue occurrence by causing changes in household water pooling. The number dengue infected has increased dramatically in the past 30 years. There were 1.2 million cases reported from 56 countries in 2000. Dengue has been expanding its geographic range and climate change is expected to double the rate of people at risk from 30 percent to up to 60 percent of the world population (or 5 billion to 6 billion by 2070). It is estimated that each year 50 million infectious occur with 500000 cases of dengue fever and at least death mainly among children.

14. AIR QUALITY AND HEALTH

Air quality is damaged by industrial wastes, emission from automobiles, agricultural activities

and indoor pollution. Air pollution is determined in part by climate factors such as temperature and humidity. The transport and dispersion of air pollutants away from source regions are highly affected by weather factors. Climate change is weather factors. Climate change is influenced by air quality which is turned to affect the health of people. Air pollution related diseases are cardio vascular and respiratory diseases. Exposure to high levels of ground level ozone is formed from the exhaust of transport vehicles. This increases the risk of exacerbations of respiratory diseases such as chronic obstructive airways disease and asthma leading to hospital admission or increased mortality. Cardio – vascular diseases is a leading death in the United States. In 2007 of all Americans who died of Cardio-vascular diseases 1, 50,000 were younger than age 65.

15. CLIMATE CHANGE AND MALNUTRITION

The climate change affects agriculture directly. The unseasonal rainfall and hot temperature create shortage of water. Stalinisation of agricultural land due to rise sea level and it decreases yield. Flood events, heavy rainfall, drought and shortage of water affect the harvest of food grains. There create food grain shortage for consumption. This situation will create food insecurity. The food insecurity leads to malnutrition. The immune is weaker while a person suffering from malnutrition. The vector born diseases are affecting more among them. The incidence of ill health; will increase in near future.

FAO estimated that 850 million people were undernourished in 2007. Climate change is expected to increase the number of undernourished people between 35 and 170 million in 2080.

Table 5. Undernourished population in Africa and developing world.

Region	Total Undernourished
North Africa	61,000,000
West Africa	34,400,000
South Africa	35,700,000
East Africa	92,400,000
Central Africa	45,200,000
Developing World	797,900,000

Source: UNDP Report, 2007 – 09 (7)

Table 5 depicts that more number of people in Africa and developing world living with undernourished. This population faces the problem of ill-health's more than the counterpart. The probable chance of incidence of disease is higher for them.

16. CONCLUSION

The environmental degradation leads to climate change all over the world. Climate change creates negative impact on physically and psycho social economic conditions of people in the world. Hot temperature increased the life cycle of vectors. This leads to increase the rate of malaria, dengue, yellow fever, diarrhoea and other related diseases. Similarly increases the mortality among pre-affected diseases of cardio vascular and respiratory. These kinds of health issues are due to so called development. We need development but without harmless to environment and human beings. The need for an hour is to mitigate the pollution, save environment and create awareness among people to adopt with changes. The healthy people can build strong nation. Health is wealth that must be protected.

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