

Full Essay Test

Topic: Environment has gone beyond the tipping point now

Name: Manahil Raziq

Batch: 027

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Outline

1. Introduction

Environment is facing challenging conditions due to reaching the tipping points. Such situation is created due to indifferent human activities. Combined effects and ^{implementation of} preventive measures can overcome these destructive circumstances.

2. Crunch Paragraph

Environment has gone beyond the threshold level

3. Factors that have dragged the environment beyond the tipping point.

- a) Rise in population
- b) Accelerated industrial expansion
- c) Water and land pollution.
- d) Use of hazardous energy resources.

- e) Green house effect
- f) Ozone hole and nuclear power plant.
- g) Global warming.

4. Effects of tipping points of Environment

- a) Unusual change in climate
- b) Devastating natural disasters.
- c) Destruction of ecosystem.
- d) Threat to human security.
- e) Deterioration of health.
- f) Negative impact on economy.
- g) Psychological disturbance.

5. Remedies to solve overcome these devastating situations.

- a) Promotion of reforestation.
- b) Use of re-newable energy resources.
- c) Restriction of transport.

6. Conclusion

"We never know the worth of water till the well is dry" (Thomas Fuller). It is a powerful reminder that things are taken for granted until the consequences of their absence is faced. Similarly when environment was cleaner and healthier. Air was fresher, the water was pure, and the natural habitat was thriving with diverse ecosystems. Humans initiated its destruction. As the population increased demands for basic needs also increased and thus the era of industrialization got started. Operation of industries need energy which is provided in the form of fuels. These emissions from fuel burning and nuclear power plants contributed to green house effect. and results in global warming. Global warming has now converted to global boiling which has lead to the intense climate change and this change is causing devastating natural disasters which in turn ^{negatively} ~~effect~~ impacts the ecosystems, human security, human health, psychology of global economy. This havoc can be

handled by promoting reforestation, restricting transport & use of renewable energy resources. Environment is facing challenging conditions due to reaching the tipping points, such situation is created due to indifferent human activities. Combine effects and implementation of preventive measures can overcome these destructive circumstances.

The environment of planet Earth has entered a state of irreversible change. Climate change has triggered an alarming situation of unprecedented natural disasters. Frequent forest fires, hurricanes, cyclones, floods, droughts and heat waves are getting intensified. According to estimate of world bank blogs 1.81 billion people face significant flood risk world wide. Fire related tree cover loss in the tropics increased at rate of about 36,000 hectares per year (WRI). The rate of earth's temperature has risen by an average of 0.14°F (0.08°C)

2022 was the sixth warmest year on record based on NOAA's temperature data. At 1.5°C an additional five tipping points became possible, including changes to vast northern forests and the loss of almost all mountain glaciers. These tipping points are leading to high risk of loss and damages.

Rise in population is the core reason of environmental tipping points with the hike in population demand for basic life needs like land, food, transport, quality life, minerals and other resources also increased. For this purpose deforestation is practiced, urbanization is expanded, and more fuel is burned. Deforestation has robbed the world of approximately 420 million hectares and still approximately 10 million hectares of forests are cutted at the rate equivalent to 27 soccer fields per minute (Mastina agis, 21, 2023). In this way population explosion is degrading environments

Hike in population leads to rapid industrialization to meet the needs of growing population. All the basic elements: food, agriculture, clothes, pharmaceutical products, construction material, vehicles, mining and electricity are manufactured in industries.

Different chemicals and gases are emitted during manufacturing process by the combustion of fossil fuels but air pollution is the major one. WHO showed a list of six classic air pollutants in industrialized countries, such as nitrogen oxide, sulphur dioxide, carbon dioxide, carbon monoxide, nitrogen dioxide (Kabir Mansif, 7, 2020) Hence Industries contribute to a significant emissions of air pollution.

Beside Air pollution rapid industrialization is also a source of water and land pollution. In the manufacture process hazardous wastes are disposed of in water bodies and soil by industries; containing mercury, lead, copper, zinc,

cadmium, cyanide, thiocyanates, chromates, acids, alkalis and other organic substances. When the water from the contaminated water bodies is evaporated the chemicals also get evaporated. Similarly the volatile contaminants in the soil can be carried away into the atmosphere by winds.

According to the European Environment Agency Textile production is estimated to be responsible for about 20% of global water pollution from dyeing and finishing products. Industries are responsible for a large percentage of environmental pollution.

Beside the water & soil pollution caused by industries hazardous energy resources also contribute to environmental pollution. Hazardous energy resources are non-renewable energy sources; fossil fuels: coal, petroleum and natural gas. Fossil fuels is the source approximately two-thirds of world wide CO_2 emission.

and this high CO_2 concentration leads to a significant increase in the Earth's atm temperature.

Fossil fuels when burnt releases hazardous gases like CO_2 , NO_2 , CO , SO_2 and methane which according to "san tander universidades" is released around 110 million tonnes per year. For this reason ^{non-}renewable energy resources are not environment friendly.

Evaporation of hazardous energy resources give birth to green house effect. This effect is caused by the accumulation of green house gases like carbon dioxide, methane, Nitrous oxide released by electricity & heat (31%), agriculture (11%), transportation (15%), forestry (6%) and manufacturing (12%). Green house effect occurs when the green house gases make a blanket over the earth atmosphere by absorbing sunlight thus it makes the earth much warmer. By the end of 2021 ACGI

was 1.49, meaning the direct warming influence of green house gases had risen 49 percent above the 1990 base line, in which total heating imbalance (66%) was due to carbon dioxide (Rebecca Lindsey, 17, 2022). However green house effect is one of the major challenge to environment.

Beside green house effect ozone hole and nuclear power plant ^{are} also cause of environmental tipping points. Ozone layer is a thin layer of ozone gas which absorb UV light coming from sun while nuclear power plants operates on heat released during nuclear fission. A major environmental concern related to nuclear power plant is the release of radioactive wastes such as uranium mill tailing, spent reactor fuel or other radioactive wastes while ozone layer has a hole (28.4 km² million km²) which allows approach of UV rays to earth. ~~At the~~ ~~process~~,

Both of them contribute to a very little amount of pollution to the environment. However, still it is very harmful.

All the factors along with ozone hole and nuclear power plant has exacerbated global warming. The era of global warming has ended and now the era of global boiling has started. The first three weeks of July have been the warmest three weeks period ever observed in record and the ocean temperatures are at their highest ever recorded levels, which has been apparent since the end of the Apollo. Earth temperature has risen by an average of 0.14° Fahrenheit (0.08° C) per decade. Since 1880 and in 2022 the surface temperature was 1.55° F (0.86° C) warmer than the average of 57.00° F (13.9° C) and 1.90° F (1.06° C) warmer than the pre industrial period (Jessica Lunden, 18/10/23).

Global biodiversity has created alarming situation of planet earth

Global warming has caused ^{Intensified} frequent climate change. Climate change is referred to the long-term shifts in temperature and weather patterns that are observed to be increasing in their frequency, duration & intensity. The consequences of climate change now include, intense droughts, water scarcity, rising sea levels, melting of polar ice. The new global study revealed that 80% of the world land masses has been impacted by climate change, influencing most of the world's people — 7.7 billion (Mark barna, 12, 2021). Climate change has exacerbated from bad to worse and have destructive impact on earth.

Climate change has become a catalyst for an increase in the frequency and intensity of natural disasters. Weather patterns have altered, ~~contra~~ winters have contracted while summers have extended and also the ocean temperatures has exacerbated. Changed weather patterns causes disasters including earthquake, volcanic activity, land sliding, droughts, cyclones, wild fires, storms and flooding. In 2020 floods caused the death of more than 6000 people and approximately 650,000 deaths from (1970-2019) occurred due to droughts world wide (Frick Bergueno salas 17, 2020) Hence natural disasters have created havoc worldwide.

Natural disasters cause significant destruction of ecosystem. Earth is an ecosystem on a much gigantic scale; external factors such as pollution through carbon dioxide and methane, the balance of ecosystem

is disturbed to such extent that it affects everyone living in it. It disrupts food chain, cause the loss of biodiversity and habitat, as black summer fires in Australia killed one billion animals from (2019-2020). 150,300 species on the red list, with more than 42,100 species threatened with extinction including, 41% of amphibians, 37% of sharks & rays, 36% of building coral reefs, 34% of conifers, 27% of mammals and 13% of birds (Tanotte, 3, 2021). Disturbance in ecosystem has triggered an alarming situation.

Beside destruction of ecosystem health detoxification is also factor of concern. climate change is impacting health in different ways; extreme weather events, heat stress, Air quality, food security & safety & vector distribution. Health risks like heart disease, cancers chronic respiratory disease and heat stroke

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targets a number of people each year. World wide ambient pollutants are estimated to cause about 6 million premature births, almost 3 million under weigh babies in 2019 and 16% of lung cancer deaths, 25% of chronic obstructive pulmonary disease deaths, 17% of ischaemic heart disease and strokes, and about 26% of respiratory infections deaths (PLOS medicine, 28, 2021) and (WHO, 2016). Global health risk due to environmental tipping is at its peak.

Beside health deterioration human security is also facing threatening situations. Due to coming tippy point climate change accelerates, droughts, floods, hurricanes, sea level rise, forces people to leave their homes permanently, lose their access to water and food or even their lives. Other components of human security; are freedom from fears: violent conflict for food security,

freedom of want: Right to live a standard life and freedom to live in dignity - climate change not only threatens people's lives and livelihoods, but also their homes culture and dignity. More than 1.5 million boys and girls are severely malnourished, 10 million people lack access to safe drinking water and more than 33 million people were displaced, causing humanitarian needs to surge (3, 2023, UN news). Human security is at a high risk due to environmental tipping

Beside human security environmental tipping point has severe impact on economy also. Frequent rains, devastating floods, scorching heat, terrible storms poses high risks to agricultural farms tourist sectors, transport and communications directly affects the country's GDP. Apart from it loss of homes, household

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incomes, assets, rising food prices, diseases outbreaks have devastating impact on economy. In 2022 unprecedented flooding in Pakistan caused \$14.9 billion in damages, \$15.2 billion in economic losses, \$16.3 billion for rehabilitation and reconstruction, so GDP loss was projected to around 2.2 percent of FY22 GDP (WB, 3, 2022). Environmental tipping point caused significant economic loss.

All these losses are having direct impact on the psychology of people. As most of the poor people are flood victims, they do not have water or food sources even they do not have clothes to wear. Apart from it scorching heat of summers have direct relations with frustrated mood and also increased blood pressure. These psychological situations can become a cause of violent conflicts so environmental tipping points can

become a threat to society due to having negative impact on psychology

Reforestation can help to cope the events occur due the environmental tipping point. Forests have many benefits not only filter air pollution, It also filters ground water, soil and help in neutralize flooding. Reforestation balances the disrupted food chains, Preserve biodiversity, Potentially reduce the temperature of the area by 2.2°C and plants found in forests release phytonocides, antimicrobial compounds which have advantageous health benefits. A single mature tree has capacity to absorb around 21 kg of CO_2 per year and 2.3 million living species can depend on a single tree. Expansion of green cover on earth can extensively reduce the harmful environmental impacts.

Efficiency of reforestation can be promoted

by the use of renewable energy resources.

- Renewable energy is derived from natural resources such as sunlight, water and wind which is a key to safer, cleaner, sustainable world. To avoid the worst impacts of environmental tipping point & reliance on fossil fuels should end and invest in alternative sources of energy that are clean, reliable, affordable and sustainable.

The (IRENA) estimates that 90% of world's electricity can ~~can~~ come from renewable energy by 2050.

Use of renewable energy resources to reduce 200 pollutants and contribute to healthy environments.

Beside the use of renewable energy resources reduction of transport is also a matter of concern. Major environmental impacts arise from an use of energy and transport is responsible for about a quarter of world's current energy use - oils and

fossil fuels. Fossil fuels combustion emits harmful gas mainly CO_2 which form blanket over the Earth's atmosphere in the form of green house effects. The use of electric and fuel efficient cars, change of fuel vehicles to fuel cell technology, and promotion of public transport can reduce the use of harmful energy resources. Hence it is an efficient way to reduce harmful emissions.

In conclusion variety of factors are involved in driving the environment beyond the tipping points like industrialization, excessive use of non-renewable energy resources, green house effect, ~~the~~ ozone hole and Global warming. Although not all the tipping points are cooled still it has several devastating effects like climate change that leads to the disastrous situations which is threatening the human security.

health and global economy. However these are few remedies like reforestation use of renewable energy resources and transport limitations can overcome the risks created by environmental tipping points. It is well said "when defeat comes, accept it as a signal that your plants are not sound, rebuild those plants and set sail, once move toward your coveted goal".
