

IMPACT OF SCIENCE AND TECHNOLOGY ON NATURAL RESOURCES AND COMMUNITY

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Abstract- Rundown on how technology dates back from Stone Age, how to make fire, This very first technology and its impact on natural environment brought greenhouse gas emissions. Technology comprises the crafting of materials and transforming them into implements that allow man to manipulate natural resources in order to meet his needs. Present day Green technology is decisively geared at lessening if not reversing all the negative impacts of technology since millions of people especially children have come to develop respiratory diseases as chronic illness. The thin layer of soil that covers the surface of the earth is the key to the well-being and survival of individuals, about 40% of the surface of the earth and more than one billion people are affected by land degradation. The increased pressure on the land, through deforestation, overgrazing and over cultivation causes a decline in soil fertility and production, and thus aggravates poverty.

Rundown on how technology dates back from Stone Age, how to make fire, This very first technology and its impact on natural environment brought greenhouse gas emissions.[1] Technology comprises the crafting of materials and transforming them into implements that allow man to manipulate natural resources in order to meet his needs. Technology dates as far back as the Stone Age, when man discovered how to make fire, 1.4 million years ago. In fact, no one could have thought back then that fire, including its wood burning technology could create an impact on today's natural environment through its greenhouse gas emissions. The cavemen learned how to make fire that provided them heat, light and protection against the wild animals that attacked them. The cavemen's first technological tools were stone axes and spears which were used as protection and hunting implements.

Now a days Neighboring countries and regions came to wage war against each other and often the victor was the one with better technology as far as weapons were concerned. Major countries spend billions of dollars for warfare technology to ensure that no foreign leader or ruler can invade and claim a country or territory as his own. Thus, the negative impact of technology on the environment began to surface as more of the Earth's natural resources and ecological habitats were being depleted or disrupted.

Technology was used to speed up production and manufacture of goods, to provide better transport and delivery as well as make the methods of communication not only faster but also, far reaching. Trade and commerce flourished at faster rates due to technological advancements and brought about globalization. As trade and commerce grew, the more it heightened the impact of technology on natural environment wherein air, land and water reached certain degrees of pollution, degradation and contamination. Environment and **natural resources** preservation is vital to the **economic growth** of any country. Natural resources and environmental issues matters and apprehensions are cross-sectorial but also renders input in every sector in terms of reducing poverty and destitute conditions of people and therefore need to be accorded highest precedence within the overall framework of the Poverty Eradication Action Plan (**PEAP**) which intends at reducing the fraction of people living in unconditional poverty to a level below 10% by 2017. [2] There have been identification of different issues that cause harm to the earth and regular assets; they have been named rustic

neediness, populace blast, deforestation, industrialization, uncalled for waste administration, **catastrophes** and characteristic dangers.

The thin layer of soil that covers the surface of the earth is the key to the well-being and survival of individuals, about 40% of the surface of the earth and more than one billion people are affected by land degradation. The increased pressure on the land, through deforestation, overgrazing and over cultivation causes a decline in soil fertility and production, and thus aggravates poverty.

The effects of disasters and natural hazards are destructive which lead to dire consequences. Four main kinds of effects have been identified [3].

Environmental effects – The environmental effects can be destruction of lands, homes, buildings, and surroundings; there are huge losses caused in water supplies, food availability, as there is destruction of crops, immense loss of life is caused by natural calamities and there is presence of human bodies and animal carcasses which remain unburied. The environmental effects vary from disaster to disaster such as earthquakes may destroy buildings but not crops, on the other hand, a cyclone may cause destruction in both.

Effects on health – Sudden natural disasters may cause not only widespread death but also massive social disruption such as famines, epidemic diseases; injuries are also caused by the natural disasters; when people get affected by disasters they tend to move to another place and this movement may lead to transmission of diseases, and there is prevalence of malnutrition, as the food and water supplies get destructed, there is scarcity of food and water quality and quantity.

Economic, social and political effects – Disasters lead to destruction of economies, individuals have to leave their jobs and get involved in disaster related activities or they become jobless if their place of work gets affected by the disasters. There is loss of machinery and equipment as well; farmers, shopkeepers and fishermen are the individuals who are affected by the disasters in most cases. Huge monetary and financial losses are caused by disasters and economic, political and social conditions of the region get severely affected.

Green Technology and The Aim to Reverse the Negative Impacts

On a brighter side, new technology brought about what will be known in man's history as the Computer Age. This era will become significant not only in greatly improving trade and commerce but also in bringing forth instruments that will lessen the accumulated negative effects of technology on the Earth's natural resources. Green technology has come up with better solutions of generating heat and energy. The sun's powerful UV rays are being harnessed through solar panels instead of the wood burning process. The kinetic powers of wind and water currents are being utilized to produce electricity that can lessen the demands for coal and fossil fuels.

Present day Green technology is decisively geared at lessening if not reversing all the negative impacts of technology since millions of people especially children have come to develop respiratory diseases as chronic illness. In fact in China, wood burning is still prevalent among millions of the country's households. The Asia Asthma Development Board ranks China as having the highest record of fatalities of its nation's asthma sufferers. These accumulated impacts started as far back as 1.4 millions years ago when cavemen discovered how to make fire and made use of wood as fuel. Today, as China's factories and communities continue to rely on coal as its main source of energy, it is expected that out of 100,000 Chinese citizens suffering from asthma, 36.7 are not expected to survive.

Greenhouse gas emissions have brought us global warming, melting glaciers, rising sea levels, air pollution, ocean acidification, disrupted marine and wildlife biodiversity, groundwater contamination, soil depletion and a host of other adverse effects that stem from other technological innovations that were conceptualized without considering the consequences. All these effects are intertwined as a result of gas emissions that accumulated in the atmosphere. It eventually penetrated the ozone layer found in the Earth's stratosphere.

- Communities take extra effort to green their lifestyle and lessen the negative impacts of technology on natural environment. However, nations continue to increase the use of technology in warfare and they produce weapons that make use of metals, chemicals and microorganisms that have far greater negative effects.

Technology in Warfare – The Use of Chemicals and Microorganisms

Technology that was used for warfare brought other detriments that emanated from the manufacture of chemical weapons for mass destruction.

Large amounts of Mercury waste material was said to have been released in the environment at the time when nuclear weapons were being manufactured. TNT or Trinitrotoluol, is a known environmental hazard because of its ability and persistence to seep into the ground. The most frightening of all are the weapons of Biological Warfare which can be used even if there are no wars being waged but simply to sow terror. Infectious microorganisms in some form or substance will be released to cause death by way of diseases that will affect all living things, man, animals and plants.

It can be surmised that the accumulation of negative technological impact can be remedied by green technological concepts and change of lifestyle. In fact, everyone is encouraged to be patient and that the completion of environmental rehabilitation may take place not in our lifetime but of the future generations. Yet, whatever is being done to improve environmental conditions today can be easily wiped out with just one launch of warfare technology tomorrow, as man continues to engage in acts of war and terror. The more sophisticated the weapons, the more distressful the impact of technology on natural environment will take place.

It may interest the readers to have more insights about the effects of warfare technology in the environment, as featured in a separate but related article entitled: "How War Impacts the Environment and People". Administrative and managerial effects – Administrative problems become more complicated and tedious due to emergence of disasters. Loss of community leadership, when there is loss of leaders due to death or when they get injured then the leadership functions get affected; formal organizations are the ones that get most disordered by the occurrence of **disasters**, even though small community organizations can function without leaders but formal organizations cannot exist if there is no skilled personnel available, there is severe damage to critical facilities and lifelines such as electrical generating and transmission facilities, water storage, purification and pumping facilities, sewage treatment facilities, transportation facilities, police stations, hospitals and other private buildings.

Assessment of risks, impacts and opportunities from natural resources and the environment

In order to find solutions to the problems and issues concerning the environment and the **natural resources**, there have been the following questions that need to be answered [4]:

1. How did natural resources and the environment throw in to the conflicting situations and how could they participate in conflict degeneration?
2. How were natural resources and the environment impacted by the incongruity and what are the suggestions for the welfare of human health, **livelihoods**, employment, education and security?
3. What opportunities are present for natural resources and the environment to concretely contribute to peace building?

Precise insinuations for environment, sustainability and green development

When all the issues have been analyzed that affect the natural resources and the environment, then there have been precise insinuations for environment, sustainability and greenery development. Then the following domains of challenges need to be taken into account [5].

Climate and energy considerations – The climatic factors and the energy sources need to be taken under consideration, for example, the climatic factors are variable and the sources of energy, water, electricity have to be adequately preserved in order to lead to efficient environmental conditions, poverty alleviation and sustainability.

Natural cycles and their connected social processes – Natural cycles including water, is meant for a number of purposes, there have been many social processes connected with water, as water is considered to be the main aspect for survival, it is used in agriculture for irrigation purposes, generating power, survival, in industries and factories and other purposes. These have to be taken care of in order to restrain the natural resources and the environmental issues.

Technological Advancement and the Effect on the Ecosystem.[8]

While technology can be a powerful force to improve our standard of living, it comes at a cost. New technological goods are often burdensome to the environment. This damage may come from acquiring the resources to produce new technology, or from toxic byproducts of technological production. It can consist of environmentally harmful waste produced by the technology itself, or the castoff remains of obsolete technology.

The Future of the World: Positive or Negative?**Positive**

- Plentiful, less-polluting sources of energy such as thorium, nuclear fusion, natural gas, solar and wind could help reduce environmental damage and reallocate parts of budgets currently devoted to energy.
- Technology can help distribute, decentralize and democratize knowledge, empower the majority, and improve education, political and corporate transparency, and democracy.
- As education and communication continue to improve, so will environmental awareness.
- Increased global access to information, communication and education is accelerating social change.
- There are now more brilliant minds, ideas and inventions, which can have tremendous positive influence on society.
- Although individuals are relatively ignorant, selfish, narrow-minded, short-sighted and fallible, collectively society is now more diverse, intelligent, and self-correcting.
- Nuclear test ban and non-proliferation treaties, such as the Megatons to Megawatts Program which dismantled nuclear weapons to generate electricity, help to decrease the chances of nuclear war.

Negative

- People generally are overconfident and misguided that using technology will solve our problems.
- Science and technology provide knowledge and tools to solve problems, but themselves do not solve problems, since they can be used for good or ill.
- All powerful scientific and technological changes have powerful negative side effects.
- Diseases, technologies and wars have increasingly global and deadly potential.
- Technology can help centralize power into the largest and most powerful central governments and corporations.

- Tremendous, probably irreversible environmental damage has already been done to water, air and earth, and is leading to observable natural resource depletion, global warming, climate change, ice and permafrost melting, deforestation, habitat destruction, and species extinction.
- Nuclear weapons, conventional weapons, and technologies that inhibit human rights are likely to proliferate from technologically advanced but non-democratic, corrupt countries to similar, less technologically advanced countries.
- Democracy generally works for solving short-term crises but prevents urgent action over a long term.
- Corporations increasingly control government, science, education, information and the media.

Conclusions

Although many of my observations are negative, it is largely because I want to motivate people to think, and focus on shortcomings that need to be improved upon. If we are too comforting and tell ourselves everything will be fine, things will be much worse than if we all take as much positive action as we can. We shouldn't become discouraged and give up, and we should find positive examples that we can follow and build on, as Jared Diamond does.

I believe that the future of the world can go in a positive direction if enough people seriously and continually consider the question of how their lives and decisions, large and small, can shape that future. I would enjoy reading more about this topic and learning of more ways that I can take productive action.

Related Books I have read

- Smaller Faster Lighter Denser Cheaper: How Innovation Keeps Proving the Catastrophists Wrong
- The Future: Six Drivers of Global Change by Al Gore
- How to Change Minds About Our Changing Climate: Let Science Do the Talking by Seth B. Darling, Douglas L. Sisterson
- The World in 2050: Four Forces Shaping Civilization's Northern Future by Laurence C. Smith
- Collapse: How Societies Choose to Fail or Succeed: Revised Edition by Jared Diamond
- The Collapse of Western Civilization: A View from the Future by Naomi Oreskes, Erik M. Conway

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- [9] Environmental Impact of the use of Natural Resources and Products: Ester van der Voet, Laurant van Oers (CML), Sander de Bruyn, Femke de Jong (CE Delft), Arnold Tukker (TNO)