

Dr. leo oriet essay

Technology, Development



\n[[toc title="Table of Contents"](#)]\n

\n \t

1. [Engineering and Profession 06-85-118](#) \n \t
2. [Humans](#) \n \t
3. [The Need for sustainable development](#) \n \t
4. [References](#) \n

\n[/toc]\n \n

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Sustainable Development

Introduction

The planet Earth is the third planet from the Sun in our solar system. By a fortuitous circumstance, it is located in the most optimal position to sustain life. It took 4 billion years for the Earth to change from a mass of gases and vapor to the present form, where land emerged and water condensed to form seas. From the basic biological forms at cellular level, plants and animals and finally Human life evolved. Human life can be traced back to the last 200, 000 years of the planet's history. Yet, in this relatively short time, humans now exist in all the major habitats across the planet, having established a presence on all the continents, including Antarctica, the most uninhabitable.

Our planet's support to life forms is due to its mix of atmospheric gases containing roughly 20 per cent of oxygen, and a mix of other gases, as well as the presence of water vapor. Water in all its forms covers more than 70 per cent of the Earth's surface and forms a medium along with the

atmosphere for the existence of various life forms. Water that we have on the planet is finite, and has been existence from the time the Earth began cooling down. Every particle of water on this planet has been in contact with life in various forms, and gets recycled through plant and animal life every few years, in various forms. Even the permafrost and icebergs at the poles protect and create an environment insulated from the worst of the cold weather, thereby allowing microbial life to exist in the soil and water, respectively.

The presence of so much surface water on the planet has created the water cycle, in which vapor rises from the oceans to form clouds, which are in turn moved by the planet's motions and that of air currents to form over cooler points over the land, where they fall in the form of rain, sleet, hail or snow. This flows over the land in the form of rivers, irrigating the soil and supporting plant and animal life which cannot live without water. Eventually, it flows back into the sea, to once again become part of the mass that will evaporate again to form clouds. This is an unending cycle and has been going on for billions of years.

Humans

Man is one of the hundreds of thousands of life forms that this water cycle supports. Human development began with the domestication of animals and the growth of agriculture, none of which could have been possible without the water cycle. From agriculture, man has expanded into industrial production and manufacturing, creating goods and products out of raw material generated by plants and animals as well as the Earth itself. In this quest, the cycle of nature's sustainable development has been affected.

Cities like Dubai have risen up on the basis of exploitation of the vast reserves of oil beneath the surface of the Earth that are present in the Middle East (Trumbull, 1). This oil is refined and consumed in various forms and creates pollution in the atmosphere, which is absorbed by the rain as it falls. These dissolved pollutants not only affect the atmosphere that protects our planet's ecosystem, they also dissolve and enter the soil, affecting the capability of the land to grow crops and the water itself becomes a conduit for these poisons to destroy the planet's life forms. US factories are estimated to release 3 million tons of polluting chemicals every year (Martino, 1). At the same time, water is being drawn directly from the sea through desalination plants to supply water for human needs (World Bank, 9). This too affects the ecological balance of the sea as the desalination plants draw water from a single location, affecting the delicate balance of nature in the aquatic region. Effectively, humans are destroying the environment for the propagation of its own species. This will ultimately result in the destruction of the environment and therefore of mankind itself.

In many ways, humans can be classified as parasitic, since they destroy the delicately balanced environment which they are dependent on for their own survival. For example, it has taken billions of years for the trees to form, grow, fall and die and ultimately return to the earth as minerals and coal deposits. Yet, by continuously mining coal and other natural resources at a rate far in excess of what it takes to replenish those, humans are becoming responsible for the destruction of the Earth itself (Brown, 1). Scientists estimate that nearly a thousand of every million species of plants, animals and aquatic life is becoming extinct annually (Jowit, 1) or is endangered

because of reckless human expansion across the planet.

While this consumption of resources is affecting the Earth, it has not yet resulted in a stable life for the majority of human beings on the planet. In many impoverished countries, the growth of human population is unchecked, placing a significant strain on the resources that can support it. In regions like sub-Saharan Africa, the addition of a member to the family is only of value if the child can bring additional food to the table, enabling the family to eke out a living. This results in human habitation expanding and destroying natural habitats and upsetting the balance of nature, all in the name of human progress. At the same time, developed countries with a fraction of the population consume resources at a rate several times that of the developing countries and are correspondingly responsible for a proportionately larger portion of the destruction and pollution taking place. Ventures like the creation of mile-high towering buildings and artificial islands where there is no need of such edifices, at the cost of several times what it would take to provide the entire world a sustainable ecosystem are playing havoc with the world and the delicate ecosystem in which we exist.

The Need for sustainable development

In order to control this foolish behavior and bring stability to this planet degenerating towards a breakdown, the adoption of sustainable development practices is a compulsion for all mankind. By creating and maintaining systems that at the very least retain the present equilibrium of the environment if not restore it to the past, humans can hope to bring stability to the environment and the ecosystem that supports our existence. For every acre of trees that are cut down for development, three more need

to be planted so that these can over the next few decades make up for the destruction wrought in the decades gone past. Adopting a sustainable method of agriculture that ensures soil consistency and nutrient level are maintained without converting the ground into wasteland poisoned by the use of artificial fertilizers and pesticides is critical if we are to preserve the planet for our future generations.

While industrialization and its effects cannot be reversed, the focus should be on developing clean technologies that are environment neutral - that is, they do not add to the existing levels of pollution in the planet's air, water and soil. As Earth's dominant species, it is our responsibility to leave the world in a better condition than the way we found it. As more clean technology gets developed, we have to learn to stop using Earth's rivers and oceans as a giant septic tank where we flush all our waste products, poisoning the water for eternity as it is this same water that our future generations will consume. As we develop new ways and means to live, it is imperative that all our future materials be such that they can be recycled into the environment without damage to the ecosystem.

Conclusion

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