Environmental Exploitation by Man and Its Implications

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ABSTRACT

Due to rapid growth in human population over the years, maintaining an efficient and productive capability to sustain development, ensuring economic benefit, food security and quality of life has posed a major threat to biodiversity globally. Through indifferences man do massive and irreversible harm to the environment on which our life and well-being depend. Men are parts of nature's finest balance eco-system a struggle against nature is a struggle we cannot win. Even if man seems to be defeating nature, in the long run, he will lose out because man has upset nature's balanced system of which man are part. This paper identifies in all ramification technical advances made by man in exploiting nature in order to satisfy human needs through agriculture, urbanization, industrialization, engineering and medicine. Some of the major environmental challenges posed by man's development include deforestation, desertification, global warming, environmental contamination by pesticides, household waste industrial pollution, depletion of natural resources etc. The paper proffers some possible solutions to alleviate the implications arising from man's exploitation of nature. Through great scientific knowledge and wise action, man can achieve for himself and posterity which we ought by right to hand down to them limits population density or face the consequences of the laws of nature. Hence, the paper concludes that man must not fail to appreciate the limitation of its technical advancement. He must accept the fact that it is just another animal species functioning in an eco-system which is ruled by the law of nature. There is naturally a limit to a number of individual, which can inhibit a given area at a given time. The paper recommends that in the interest of man's future on earth man should learn to work with nature rather than fight nature. Man should view nature as an ally not as an adversary.

Keywords: Biodiversity, Ecosystem, Environment, Man, Nature, Struggle

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1. INTRODUCTION

Environment is described as external medium where human, animals and plants triple live together. Environment consists from two pieces that human hand made and natural environment. Environment pollution occurred by irregular urbanization and unconscious industry and applications. Also the balance between human and the natural environment where human live breaks. Main reasons of environment pollution are irregular and rapid industry, urbanization, organic and inorganic wastes that left in environment, unintended usage of agricultural lands and wrong agricultural applications. Erroneous using of pesticides and chemical fertilizers, irrigation, tillage, plant hormone applications are some of the wrong applications. Also stubble burning, planting without rotation and inappropriate animal wastes are assumed as mistakes.

Evaluating the effects of best management practices (BMPs) in agricultural watersheds is often complicated by significant temporal variability in weather and hydrologic conditions (Zollweg & Makarewicz, 2009). BMPs are increasingly being used by decision makers to reduce agricultural non-point source pollution while improving productivity for the farmers (Esen & Uslu, 2008). Since ages, industrial growth has started to affect environment with severe downside problems. It causes tremendous stress on the entire bionetwork and natural system components like water, air, soil, bio-diversity including surrounding eco-system. Realizing the severity of the problem, impacts of industrialization on the environment need to be analyzed with more intensity and feeling (Webnote, 2017). Industrial effluents contain numerous essential nutrients or possess properties which can easily be utilized for many value-added purposes with commendable benefits to society and environment.

Urbanization is a process that leads to the growth of cities due to industrialization and economic development, and that leads to urban- specific changes in specialization, labor division and human behaviors. The population is growing at the rate of about 17 million annually which means a staggering 45,000 births per day and 31 births per minutes. If the current trend continues, by the year 2050, Nigeria would doubles 400 million by populations. Due to uncontrolled urbanization in Nigeria, environmental degradation has been occurring very rapidly and causing many problems like shortages of housing, worsening water quality, excessive air pollution, noise, dust and heat, and the problems of disposal of solid wastes and hazardous wastes.

2. EFFECTS OF AGRICULTURAL PRACTICES ON ENVIRONMENT

Various agricultural practices and their effects is one of the main global environmental disturbances which include pesticide and chemical usage, irrigation, soil tillage, rotation system and animal waste.

Pesticide usage

Pesticides that are used to elimination of harmful insects, microorganisms and other pests which are mixed with soil, water, air and food, they cause to problems on the agricultural foods and affect both human health and natural balance so finally they become an environment problem. Pesticide runoff is an important contributor to surface-water contamination (Wohlfahrt et al., 2010). A pesticide that specialized on a harmful doesn't kill only target, it also kills many harmless organisms. Modeling stream water pollution by herbicides in agricultural areas is a critical issue since numerous and incompletely known processes are involved (Odoux et al., 2009).

Chemical fertilizer usage

The fertilizer which are used to improve plant growth, more and qualified product and some features of soil like physical, chemical and biological structure cause to environmental pollution in case of excessive or wrong usage. Using high amounts of nitrogen fertilizer results to soil washing, contaminates to ground water, drinking water, stream and sea nonetheless it increases nitrogen amount. This also affects the water organisms and when that kind of water is used some where they break the natural balance of environment. Additionally the lettuce and spinach that are grown in the high amount nitrogen applied soils accumulateNO_2 and NO_3 and some carcinogenic substances like nitrosamine. Drinking waters shouldn't contain more than 20 ppm nitrate. Unconscious using of phosphorus fertilizers also breaks natural balance due to increasing phosphate value in water. Excess micronutrient elements in soil are much more important than nitrogen, phosphorus and it is harmful to the domestic plants.

Irrigation

Irrigation has big importance to high agricultural yield and quality in arid and semi-arid regions. Wrong irrigations cause to environment problems. Rising of ground water, salinity, fertilizers and chemical additives residues go to deep with irrigation water, trace elements collect in water sources and cause to soil erosion and these kinds of waters make disease and harmful on the whole living organisms so this type of waters are a very important environment problem.

Also excessive irrigation as a purpose of agricultural production leads to soil salinity and desertification (Haktanır, 1989). It can be said, as agricultural policies affect land use, they have effects on the amount of soil erosion in agricultural regions through changes of the economic conditions of agricultural production (Schuler &Sattler, 2010).

Soil tillage

Wrong soil tillage with regards of without any concern field location, soil structure and climate conditions cause to soil moving with rain in other words cause erosion. This situation not only causes inefficient soils, it also pollutes streams and fills up dams with soil etc. serious environment problems. Cultivation of natural ecosystems has led to marked decline in soil storage, such that conservation agricultural practices are widely recommended as options to increase soil C storage, thereby mitigating climate change (Luo et al., 2010).

Rotation

Bioenergy crops play an ecologically and economically fundamental role as an alternative to agri-food productions and as renewable energy sources. Little attention has been focused on soil quality following conversion of agricultural lands to biomass crops (Pellegrino et al., 2011). Agricultural applications which are without rotation due to lack of knowledge or economical reasons entail to one-way consumption of soil plant nutrition elements, decrease to soil fertility, degradation, increasing of disease and harms in the soil and it also cause erosion.

Animal wastes

Animal production has caused many changes in kinds of industry sectors. These changes put forth a large scale of concerns about the impacts of animal wastes on environment. In great business' animal husbandry especially poultries cause to negative effects on environment because of manure, urine, animal and animal products processing wastes. These organic wastes contaminate to soil and stream beside dust, gas and smell effects on environment (Sayılı & Akmaz, 1994). Animal wastes play an important role in environmental pollution (Dominguez et al., 2001).

3. POSITIVE EFFECTS OF AGRICULTURAL APPLICATIONS

As agriculture has negative effects on environment it also has positive effects. For instance some regions that have commonly agricultural applications have various favorable environmental effects kind of natural life, oxygen production and climate depending on regions and ecology. As example although fertilizing has negative effects on air, it has indirect positive effects. In the fertilized fields, O2 is consisted by photosynthesis so it increases amount of O2 in atmosphere. So cereal production areas constitute 12 tonoxygen in per 1 ha area. Oxygen production in agricultural area is more than forests and empty areas. In these areas, the poison of the air decreases depending on CO2 reception. Humanity should develop a new perspective to decrease the negative effects of agriculture (Mustafa et al, 2011). Sustainable agriculture which is a new agricultural technique seems environmentally friendly and it is supported by developed countries.

Environmentally friendly agriculture has three common applications. These are good agricultural practices, organic agriculture and precision agriculture. Also rotation, sowing of legumes that able to nitrogen fixation and fallowing reduce the negative effect of agriculture on climate change. We suppose to make many researches about the agricultural practices which are featured by sustainability and ecologically friendly methods. As we know, water and air are the abandonment sources of agriculture and all vital activities. Environment that comprised by unpolluted air, water, soil, far from noise and other dirtiness, clean, beautiful, green and healthy is the biggest demand of present day human and guarantee of future (Webnote, 2017)

Impacts of industrialization on environment

Impacts on water- A detailed analysis of the environmental impacts of industrialization revealed that industries set up before the 1990s included mostly textiles, sugars and distilleries that were water intensive and had a higher pollution potential, exerting enormous pressure on the environment. The indiscriminate discharge of industrial effluent along with municipal solid waste disposal is the principal source for surface water contamination (Murugesan et al., 1999; Abbasi et al., 2002). The heavy metals, salts and fluoride effluents from the industries of chemicals production, metal processing and paper manufacturing were found to have contaminated the surrounding groundwater (Raj, 2016).

Impacts on air - The air quality are equally affected by industrialization. By the end of the eighteenth century, Puducherry received 499 tons of suspended particulate matter (SPM), 2.88 tons of sulphur dioxide (SO2) and 1.99 tons of nitrogen dioxides (NOx) per year. The total emissions from these industries are still vast, even after applying the advanced air pollution control devices such as bag filter, double way scrubber and multiple cyclone. By 2012, pollutants such as SPM, CO, SO2 and NO2 were found to have either exceed edor nearly reached the limits (Balashanmugam et al., 2012), necessitating the immediate installation of a continuous monitoring and control mechanism.

Impacts on ecosystem- This uncontrolled industrialization brought changes in community and habitat structure (EIA report, 2010). Forest cover of Puducherry has become very less, posing a threat to current ecosystem (Pondy CAN final report, 2012). With this sudden boom in industries, the pattern of resource utilization in the form of energy, water usage etc increased drastically leading to the inevitable resource disturbance and imbalance. Today, the land bears no resemblance to its past, except in a few pockets of the region. It already affected the sedimentation patterns, the distribution of major and trace elements and rate of soil formation, which in turn brought significant changes in ecosystem stability (Ramesh, 2005). Regular inflow of industrial effluents into the ponds disturbed their ecological equilibrium. Consequently, the water which previously could be used for domestic and agricultural purposes became exceedingly unusable. This in turn affected the cropping pattern. Though not conspicuously alarming, the slow and steady pollution by heavy metals in the environment is quite hazardous. They reach the aquatic environment and being non-degradable, remains suspended or partially dissolved in water and subsequently accumulated in organisms (Ramesh, 2005).

Impacts on flora and fauna - Due to the changing climate of industrialization and in the absence of forest cover in most of the areas, several endangered and threatened plant species such as Derris ovalifolia, Mallotus philippensis, Atlantia monophylla, Pamburus missicnsis Glycc smispen taphylla, Lepisanthus tetraphylla, Diosypyro sebnum, Gloriosa superb Gymnema sylvestre,Combretumo valifolium, Derris scanden and varieties of mangroves are under great threat (EIA report, 2010). The peri-urban estuaries where mangroves are located, receive a large quantity of untreated sewage and solid wastes that degrade the habitat and threaten the flora and fauna [Satheeshkumar and Senthilkumar, 2012; Palanisamy, 2012).It also poses great risk to the very survival of rare and endangered species of wild animal population. Among the five species of sea turtles reported in Indian coast, leatherback (Dermochely scoriacea),loggerhead (Caretta caretta), olive ridley (Lepidochely solivacea), hawksbill (Eretmochely simbricata),and green olive ridley turtles (Chelonia mydas) are the common species nestling along Puducherry coastal belt.

4. IMMEDIATE CAUSES

The current study identified inadequate/uncontrolled disposal of industrial wastes, discharge of untreated industrial effluent, lack of/complete absence of proper facilities for the waste treatment system, absence of secured hazardous waste landfill site, increased use of heavy metals and hazardous toxic substances, leaching of hazardous and toxic wastes as immediate causes of industrial pollution in. With rapid industrialization, there has been a substantial increase in generation of various hazardous wastes, discharge of industrial effluents and emission contaminating groundwater resources (PIPDIC, 2009).

The crisis of aquatic pollution and its impact on the health of organisms were an important current problem mainly because of the indiscriminate discharge of industrial effluents containing heavy metals like Iron, Chromium, Zinc and Lead etc. (Murugesan et al., 1999). As the region's industrial structure shifts into highly polluting sectors, industrial effluents contain more and more heavy metals and non-biodegradable toxic and hazardous waste, leaching of which increasingly contaminate ground water resources both chemically and microbially (Abbasiet al., 2002).

5. IMPACTS OF URBANIZATION ON VARIOUS COMPONENTS OF ENVIRONMENT

The most emerging issues are climate changes, freshwater scarcity, deforestation, and fresh water pollution and population growth. These problems are very complex and their interactions are hard to define. It is very important to examine problems trough the social-economic-cultural system. Even the interconnections between environmental problems are now better known, we still lack exact information on how the issues are linked, on what degree they interact and what are the most effective measures. One problem is to integrate land- and water use planning to provide food and water security.

6. CONCLUSION

Rampant industrialization and urbanization have been very important causes for putting pressure on natural resources and also causing various degrees of environmental degradation. Some industrial parts of Nigeria have been experiencing similar kind of situation since many decades. There is urgent need of initiatives that ensure that industrialization is sustainable both in terms of taking measures to prevent damage to the environment and also promoting more environmentally friendly industries**.** A transition of the industries into eco-industrial network has emerged as a dynamic approach to preserve the natural resources of the region.

7. RECOMMENDATIONS

From the foregoing we can conclude that some causes of damage to the environment due to urbanization lies in the legislation and the regulating agencies if the country.

- Failure of governance in today's cities has resulted in the growth of informal settlements and slums that constitute unhealthy living and working environment.
- Serious attention should be given to the need for improving urban strategies, which promote efficiency in resource use.
- Vehicular pollution control in metropolitan cities and other cities deserves top priority.
- Urgent attention should be given to reduce the generation of solid waste at the sources through mandatory standards and regulation fee and tax incentives, and education and voluntary compliance.
- In case adequate steps are not taken to prevent pollution and to improve the quality of life by providing more social amenities, the life of the urban dwellers of India may become more miserable this may be the cause of health hazards and worst devastation.

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