

# Human activity: land use changes essay example

[Technology](#), [Development](#)



## **Inappropriate Usage of Natural Resources**

### Introduction

Natural resources include oil, gas minerals and forests. Exploitation of these natural resources influences the economic development through earning of foreign exchange in exportation of these resources (Lodhi and Makki, 2010). According to Busse and Groning (2011), natural resource abundance influences the economic and social development of a country. Hence in certain countries policies developed may overlook the exploitation of the natural resources. However, natural resources are by nature scarce and their overexploitation by humans is increasing (Lodhi and Makki, 2010). Human activities are significant in influencing environmental changes that have resulted to development of global warming. Human activities such as industrialization result to an increase in greenhouse gases that are responsible for altering the temperature of the earth's surface. Global warming is linked to a number of human related activities such as farming, deforestation and burning of fossil fuels. All these encompass land use activities and changes that have a direct influence on nature. Human activities have the potential to cause an imbalance in an ecosystem (Ake, 2008). These human activities also include political favoritism and over development.

Water flows from catchment areas has been reduced due to human activities such as water diversion. Natural purification systems such as wetlands have been adversely affected by pollution and this has releasing effluent into lakes, which fosters the growth of algal blooms. The effect of algal blooms on

aquatic life resulting from high nutrient content negatively affects the quality of aquatic life especially the fish.

Land use changes encompass several human activities that may affect nature. According to Comarazamy, González, Luvall, Rickman and Bornstein (2013), land use changes in conjunction with land cover changes have an immense influence on climate and environment. Land use changes developed from the need of human to provide for their expanding populations. Increase in populations has been a major influence in the different land use changes that have affected natural resources. Land use patterns differ in different places in the world. According to Entwisle (2005), land use effects on the environment have been significant both on a local and global scale. According to Breggin, Goerge and Pencak (2003), land development plays a very large part in loss of biodiversity in terms of habitat destruction, fragmentation, degradation and introduction of invasive species. Many changes on the natural resources have been influenced by the various land use changes such as farming, development of settlements and industries.

According to Foster (2003), a major resource that has been affected by the different land use changes is water. Water is an important element in the lives of humans. However, it has been over exploited and polluted at a high rate. With the increase in its scarcity, there have been calls for application of water conservations techniques. In the development of farming lands, settlements and industries, deforestation has been a major land use activity. Water catchment areas have been greatly affected by deforestation as these lands have suitable soils for farming. Demographic factors such as

population density, growth, mortality and composition of the population in terms of age and sex influence land use changes (Entwisle, 2005). Human migration from rural to urban areas also influences the land use.

## **Industrialization**

Industrialization presents both a positive and negative influence on land use changes. On one hand, it can be applied as a solution as it will be discussed later among the solutions. Industries normally require land. In the process of acquiring this land, there is the clearing of natural vegetation. Consequently, there is loss of biodiversity of indigenous plants and animals. This trend is more common in developed countries that have human capital and skills. The increase in industries also introduces issues dealing with waste management and pollution on the environment.

## **Deforestation**

Deforestation involves the cutting down of trees for purposes of timber production or expansion of farmlands. Deforestation is common in areas with fertile soils. Highly forested areas provide suitable habitats for indigenous plants and animals. Furthermore, freshwater catchment areas are mainly found in highly forested areas. Deforestation produces significant impacts on the environment and access to natural resources.

## **Farming**

Farming is another land use change that can have substantial influence on nature. Most rural areas depend on agriculture. Thus, in the quest for fertile land, humans may occupy forested areas to establish farmland. Different

farming practices have different levels of impact on the environment. Some may encourage soil erosion that reduces the quality of the land.

## **Impacts**

### Farming

Modern day farming has resulted to the intense use of fertilizers. Nitrogen fertilizers are prone to effects of leaching. This then results to nitrate levels in ground water increasing. Additionally, some of the fertilizers may be washed off by surface runoff and reach water bodies such as rivers and lakes. Increase in levels of nitrate levels in rivers may affect the aquatic life. Algae present in water bodies grow more with the increasing presence of nitrate levels. The effect results in fluctuations of dissolved oxygen levels, which make it difficult for the aquatic life to survive. Additionally, the use of chemicals in land clearance to pave way for farming may also find its way to the water bodies. Elevated levels of pesticides can be toxic to the aquatic life. Land clearance activities result in loss of biodiversity. Indigenous plants and animal may be displaced and this may have negative effect on the ecosystems.

## **Deforestation**

Deforestation increases cases of soil erosion. Normally deforestation may be carried out for purposes of increasing lands for agriculture or for logging purposes. Forest areas form good fresh water catchment areas. The continued deforestation affects the water cycle. Functioning of an ecosystem depends on the presence of sufficient water. With deforestation, the flow of water is interrupted resulting to having an unbalanced ecosystem. Continued

deforestation may destroy an ecosystem to the extent that drought develops.

According to Spilsbury (2009), deforestation may create forest fragmentation especially in cases where there is road construction. This may affect birds like parrots, which cannot fly long distance and in the process their chances of breeding reduces. Consequently, the tree species that depend on the seed dispersal by the parrots may fail to grow in other places. Additionally, animals such as elephants may be affected in terms of access to food. Deforestation reduces the area of access for the elephants to survive hence in certain extreme cases certain species may become extinct.

Spilsbury (2009) also notes that deforestation that results to development of new plantations may offer a wrong habitat for existence of certain plants. This is normally attributed to the use of chemicals in the new plantations. Similarly, deforestation may result in development of invasive species, which affect the existence of local plants. People-animal conflict that develops from deforestation results in animals such as elephants encroaching into farmlands and as result, people kill the elephants. In a way, deforestation may seem to encourage poaching of elephants.

### Industrialization

Increase in industrialization has resulted to an increase in burning of fossil fuels. Coal production is common in countries that use it for power generation. The extraction of natural gas results to an increase in production of greenhouse gases. According to Bishop (2008), the energy consuming process of extraction and refining of fossil fuels can disrupt natural habitats and destroy animal and plant life. The increase in greenhouse gases in the

atmosphere may result to conditions such as acid rain, which affects plants. Industrialization has also been accompanied by an increase in industrial waste. Disposal of industrial waste has been a major challenge and has resulted to an increase in pollution of water sources. With industrialization, there has been an increase in construction of roads and building. Road construction has been responsible for increasing loss of biodiversity. Oil spills in the oceans are increasingly affecting the quality of aquatic life.

## **Possible Solutions**

Technological advancement can be used to reduce encroachment of important ecosystem areas. Farmers can rely on the use of intensive farming systems that maximize on the on small units of land to maximize production.

Forest conservation can be applied to reduce the impact of deforestation. The government can impose laws that prohibit deforestation or logging without a permit. Important water catchment areas can be barricaded with fences to prevent unlawful entry into these areas. Promotion of afforestation and reforestation are also significant in reducing the adverse effects of deforestation. Policies need to be developed that will enhance planting of more trees. The policies need to have incentives that will promote conservation practices and sustainable use of forests. Monitoring and enforcement is necessary to ensure that deforestation practices are reduced. Promoting irrigation locally can reduce human encroachment into forestlands

Additional measures that may help preserve nature may include managing mining and development activities. Furthermore, it can be helpful to ensure

that human population is not close to wildlife habitat. This can be enhanced by the relevant agencies obtaining easements and title deeds for areas next to the natural habitats of wildlife to reduce destruction of habitats. In addition, by establishing detailed plans that will handle transportation matters reduction in fragmentation resulting from road construction can be reduced.

According to Jensen and Lonergran (2013), offering cost effective solutions to preserving natural resources enhances the implementation and sustainability of the natural resources. One of this cost effective solutions involves encouraging farmers to grow high value products from sustainable forestry and agroforestry. Additionally, promotion of soil conservation practices that enhance nutrient retention in soils may be significant in reducing encroachment in forestlands (Jensen and Lonergran, 2013).

Focus should be placed on the use of efficient energy or renewable energy such as wind power or solar as opposed to using fossil fuel. Reducing the dependence on fossil fuels may reduce the amount of carbon dioxide emitted into the atmosphere. This ensures that animals and plants have a cleaner environment to thrive and reproduce (Bishop, 2008). Planning and policy approaches need to focus on the reduction on reliance on fossil fuels by ensuring an increase in support of the use of renewable energies (Pinderhughes, 2004).

Increasing industrialization means that there is an increase in energy consumption. Thus, it becomes important to ensure that energy conservation efforts such as reliance on renewable energies are increased (Pinderhughes, 2004). Pinderhughes (2004) proposes the use of green building design



technologies, which can help reduce the dependence on natural resources and at the same time reduce environmental pollution.

## **Conclusion**

Most of the land use changes are interrelated and all result in contributing to global warming. Human activities continue to increase every year.

Populations are expected to increase tremendously. The increase in development and industrialization has increased the emission of greenhouse gases. Compared to previous years or centuries the levels are quite high and should be a sign to increase conservation efforts. The human activities that generate or result to development of greenhouses gases cause depletion of the ozone layer. The adverse effects of global warming result to changes in climatic patterns that have influenced the migration patterns of different wildlife. Increase in earth's temperatures has increased melting at the poles. Global warming persists to be an issue as the level of industrialization continues to enlarge. Global crusades are necessary to ensure sustainable environmental practices are being applied to ensure that scarce natural resources are conserved. Efficient ways need to be continually developed to enhance natural resource conservation and promote human activities that are friendly to the environment and do not lead to over exploitation of natural resources

## **References**

Ake, A. (2008). Everglades: An ecosystem Facing Choices and Challenges. Florida: Pineapple Press Inc.

Bishop, A. (2008). How to reduce your carbon footprint. St. Catharines, ON: Crabtree Pub.

Breggin, L., George, S. M., Pencak, E. H., Environmental Law Institute., & Defenders of Wildlife. (2003). Planning for biodiversity: Authorities in state land use laws. Washington, D. C: Environmental Law Institute.

Busse, M., & Gröning, S. (2013). The resource curse revisited: governance and natural resources. *Public Choice*, 154(1/2), 1-20.

Comarazamy, D. E., González, J. E., Luvall, J. C., Rickman, D. L., & Bornstein, R. D. (2013). Climate Impacts of Land-Cover and Land-Use Changes in Tropical Islands under Conditions of Global Climate Change. *Journal Of Climate*, 26(5), 1535-1550.

Entwisle, B., Stern, P. C., National Research Council (U. S.), & National Research Council (U. S.). (2005). Population, land use, and environment: Research directions. Washington, DC: National Academies Press.

Foster, D., Swanson, F., Aber, J., Burke, I., Brokaw, N., Tilman, D., & Knapp, A. (2003). The Importance of Land-Use Legacies to Ecology and Conservation. *Bioscience*, 53(1), 77.

Jensen, D., & Lonergan, S. (2013). Assessing and Restoring Natural Resources In Post-Conflict Peacebuilding. New York: Routledge.

Lodhi, S., & Makki, M. (2010). A Natural Resource Management Framework for Sustainable Development. *Pakistan Journal Of Commerce & Social Sciences*, 4(1), 56-68.

Pinderhughes, R. (2003). Alternative urban futures: Planning for sustainable development in cities throughout the world. Lanham: Rowman & Littlefield.

Spilsbury, R. (2010). Deforestation crisis. New York: Rosen Central.