

Food production and the loss of biodiversity assignment



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The variety and variability amongst environmental systems is the characteristic that enables sustained in every day life. Commonly known as biological diversity, this distinctive feature encompasses the multitude of both plant and animal species that can be found in distinctive ecosystems across the globe. At the very least, diversity is accountable for the thorough development of all natural systems and warrants their existence.

The inclination of biodiversity in our daily lives is what enables us to continue to prosper and feasibly grow and develop in our environment, with each life arm and ecosystem having its own intrinsic value (Burns, 2001 , peg. 3). Increasingly however, biodiversity has observed a steady decline, being detrimentally impacted by Industrial Expansion, and particularly, the various agricultural practices it entails. With an annual growth rate of 1. 8%, three people are added to the Earth every second (Agriculture and Agro-Food Canada).

This depicts the constant substantial population growth, which creates a deficit in the supply of nourishment annually. Accordingly, agricultural methods such as slash-and-burn, the aid of chemicals, and monoculture have followed as to increase the supply of food to meet the increasing demand. This has created the basis for three harmful characteristics of agricultural expansion: habitat alteration, pollution, and simplification, which all significantly work to deteriorate the biodiversity found across the world.

Agricultural techniques of expansion have implicitly created an undesirable loss for society, slowly yet surely eliminating the one advantage the Earth has maintained for centuries- its diversity. The alteration or complete

destruction of natural habitats has become an increasingly necessary way of creating accessible areas for agricultural processes. In order to produce ample space for cultivation methods, localized ecosystems are destroyed, alongside all the functions of their diverse inhabitants. This is done through a common agricultural technique known as ' slash-and-burn. This method involves the clearing of forested areas through the cutting and burning of trees and all surrounding plant life. Habitat alteration such as this is the most prominent factor in species risk of extinction, whereas clearance for cropland or pastures has reduced the extent of natural habitats by approximately 50% (Green et al. , 2005). The fragmentation of a natural system in this way is not only detrimental to the particular area encompassing the ecosystem, but to the landscape as whole.

Each particular habitat includes the required conditions and means for survival of certain species, and by taking away their openwork's we are theoretically extracting their survival methods. Slash-and-burn is an ineffective and unsustainable method due to the fact it readily influences deforestation as well. About 80% of the world's documented species can be found in tropical rainforest's (WFM, 2013). This being said, the decline of this habitat is potentially harmful to all 80% of the world's species.

A prominent example of this is the Java Tiger, which became extinct in 1979 (The Daily Green, 2012). Native to the Indonesian island of Java, the tigers were considered to be in abundance in the 1930's, but became quickly eradicated as the island's development progressed, and by the 1980's there were only twenty tigers of this kind. In attempting to expand the island's environment for agricultural purposes, techniques such as slash-and-burn

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were used wrought the vast rainforest's, eliminating the habitat of this species.

Overall, the alteration and obliteration of natural habitats may come as an indirect intention of agricultural means, but it is an unresolved external cost, which not only decreases the biodiversity around us, but also permanently prohibits growth in the inflicted geographic areas. In attempting to expand our means of agricultural abundance, externalities such as the high extent of pollution have also becoming an increasingly vivid notion in the environment. This is prominently depicted through the implications of synthetic fertilizers and pesticides, which continue to increase agricultural yields globally.

A disadvantage of chemically treating fields is the runoff it causes, and the repercussions this runoff has on the surrounding environment. Fueling an increase in crop production, the use of pesticides and fertilizers on farms has increased by 26-fold over the past 50 years alone (WFM, 2013). It is valid to argue that chemicals have enabled us to do much more in the modern world, but we must examine as to what cost. Chemically treating various agricultural crops increases their tolerance and short-term sustainability, however decreases the overall standard of the environment, inducing constant levels of minute pollution.

Many chemicals used in irrigation have the tendency to contaminate food and water sources, and are able to amply become airborne as well (Wellington, 1968, peg. 22). Prominently however, through sustained periods Of use and lapses of precipitation, these chemicals are deposited into bodies

of water through the run-off from vast fields. This may pose potential problems for the organisms that live in the bodies of water, endangering their sustained if they are not able to des tautly regulate with the altered conditions of their habitat.

For example, fertilizers alter the nutrient levels within marine areas. This instigates the growth of algae, due to the amount of excess nutrients. An excess of algae depletes the water of dissolved oxygen, which is essential to aquatic life, further endangering the sustained of these organisms in their own habitats. A devastating example of this is the Chinese Abaci dolphin, which was declared extinct in 2002 after no potential breeding pairs remained (Mother Nature Network, 2013).

In spite of attempting to sustain ourselves wrought the implementation of chemical advancements, it is evident that the alteration Of biodiversity through pollutants, particularly in their excess amounts in bodies of water, IS an indirect effect of attempted increased productivity. Having to provide for such a large amount of people, agricultural expansion has opted to maximize its production efforts, causing the simplification of all irrigation. During the last century, 75% of crop diversity has been lost, which has been referred to as genetic erosion (GRACE Communications Foundation).

The simplification of industrial practices, particularly the types f crops being cultivated, is a common method in today's society to ensure the harvested land is being maximized for its profitability, at the cost of losing all agricultural diverse?? y'. This method of practice is referred to as the use of monoculture's, which is the harvesting of one crop opposed to having a

multitude on one individual field. Prior to today's techniques, farming and agriculture as a whole, was a bio diverse way of life, incorporating fields for crops, grazing for animals, and even wetlands.

The elimination of these methods has severely impacted the diversity on farmlands in today's society, which tend to appear as production mills- harvesting mass fields of monoculture's as to maximize efficiency and quantity of goods produced. This loss of genetic diversity in plant crops is dangerous because it makes our food supply more vulnerable to outbreaks Of pests and disease (GRACE Communications Foundation). It creates a general disadvantage to our standard of living, decreasing the abundance of diversity in our possible consumption choices, and posing as an overall dependency threat on the small variety of crops we do produce.

Agricultural expansion has succeeded in producing an abundance Of cultivation for the society we live in, but has severely deteriorated many environment aspects in the process of doing so. The increasing demand for agriculture around the world has endangered species, influenced their extinction, and has even begun to negatively impact human sustained by increasing the pollution levels in the ecological situations around us.

This goes to say that the process in which we are expanding for agricultural purposes, such as slash-and-burn, and increasing the use of monoculture's, is not only unhealthy, but also unsustainable. As a society, we must examine the means behind our methods, and implement CEO-friendly practices, articulacy such that will evade all destruction, and rather enable us to use the diversity of the world to our advantage. It has been said that, ' the

Earth's natural environment provides the platform upon which all life is based" (Grid Arden).

This platform is crucial to economic sustained, and relies solely on the biodiversity ridden within the natural world. Similarly, adequate development of the world around us relies on this diversity, the very characteristic that is hampered by agricultural enhancements. In attempting to prosper fiscally and socially, the current agricultural methods hinder the directives biodiversity around us, a potentially detrimental alteration for not only the current society, but future generations and their environmental sustained as well.

The variability of the world in which we live in is crucial to our progression, and we must ensure its sustainability despite all costs. Bio diversity is perhaps the greatest characteristic of life, and particularly, one that enables Earth to be inhabitable- an ample reason to maintain the configuration of the biosphere, and work around its natural ecosystems, rather than through them.