

Corn overproduction research paper sample

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Corn Overproduction

Introduction

Corn is a plant that can thrive in numerous climatic zones making it a crop that is grown in many countries globally. Scientifically it is called Zea Mays and is commonly called Maize in Central and South America where it is native to. Because of its energy-giving capacity and quick maturity, the crop is a staple food in many countries. In addition to corn being a food crop, it is also a source of income, food for animals, and fuel. This makes corn production a demanding venture in many countries. Since 1990, many countries have invested heavily in latest agricultural practices and technology with the aim of increasing corn production. The results are that corn is currently overproduced. The United States has been a leader in this field, growing 41% of corn in the world (Paarlberg, 2010). However, corn overproduction in USA has resulted in health, environmental, and economic detriments, which calls for a revision on global corn production policies. This research paper will analyze the factors leading to overproduction, the negative impacts of corn overproduction, and recommendations to curtail situation. The research would be based on USA which is a leading corn producer.

Origin of Federal Corn Subsidies

In the 1930's when Frank Roosevelt was the president a new deal for farmers was inaugurated through the Agricultural Administration Act of 1933. During the era of the New Deal, corn farmers were guaranteed a minimum price for their corn where if the market price fell, the short fall in income was covered

by the Federal Government (Paarlberg, 2010). In the 1970's the system was modified under the Nixon administration, but the effects are broadly the same where farmers are supported in their quest to produce more and more corn by the U. S. Government. In 2005, the Energy Policy Act enabled corn to be the leading subsidized crop in USA. The bill required numerous litres of ethanol be mixed with fuel each year to reduce reliance on fossil fuel. This has resulted to overproduction of corn in the US market to satisfy market demands.

Reasons why farmers depended on subsidies

First, the New Deal of the 1930's obliged many agricultural organizations to pay farmers well. The administration during the new deal aimed at streamlining supply of corn to be in line with demand. The strategy was called 'supply management' and was attained through paying minimum wages, using conservative set-asides, and using grain stashes to control overproduction (Paarlberg, 2010). Therefore, farmers did not require payments from the government as they obtained it from the market. Before the New Deal, farmers freely sold their produce and this resulted to economic booms where farmers felt the effect of depressed prices of their produce. This was the reason why the Agrarian movements and the Populist Party become common, and finally resulted to the formation of the New Deal. Second, agricultural businesses had petitioned for the free market to regulate prices. Therefore, in 1973 there were legislative changes by the Nixon administration to liberalize the corn market. The government then, revised supply management laws, disposing off storage bins used for food security, and implemented close spacing planting (Paarlberg, 2010). The

administration was convinced that corn overproduction would be dealt by free trading and exports. Lastly, farmers had to rely on subsidies because of instable product prices in the market. Prices fell after the 1996 Freedom to Farm Act, which facilitated costly taxpayer bailouts. In 2000 the subsidies accounted for half of farmers' net income, a 37% increase from 1996 (Paarlberg, 2010).

Factors Leading to Corn Overproduction

In USA, there have been critical factors that have resulted in corn being overproduced. They are: need for fuel, governmental subsidies and policies, need for food, under-consumption of corn, Genetically Modified foods, and advances in agricultural science (Crowther, 2003). Governments in developed nations have for a long time motivated farmers to grow corn in large scale because of economic reasons. Motivation of farmers is through subsidies, educational programs, and offering grants and loans. An example is in the seventies where USA government offered subsidies to corn farmers when they sold their produce (Crowther, 2003). The government bought farmers corn at a competitive price even if the global price went down, a situation that led to increased corn produce over time.

The need for fuel also has led to increased corn production. Through research, vehicles can run on biodiesel which is produced from starch; hence the need for corn. Brazil is a leader in biodiesel production and so they require large amounts of corn. Furthermore, the need for food has also led to corn overproduction. Food is also required to feed farm livestock hence the best food that can be eaten by both humans and animals is corn.

The biotechnological advancement of genetically modified organism (GMO)

has also helped in corn overproduction. Corn is genetically produced in many developed countries, which has added to the amount that is already grown globally. In addition, consumers' fears for GMOS has led many people to choose not to consume them, resulting to a continued surplus in corn amounts (Cummings, 2009). Consumers are also selective in their feeding styles where they prefer unhealthy foods to healthy ones. The preferred processed foods, which are unhealthy causes much of corn not to be consumed resulting into a surplus.

Another reason lies in the history of agricultural science. Research in latest agricultural procedures and machinery promoted corn overproduction. For instance, a key development was the discovery of fixing nitrogen artificially by a German scientist, which led to advanced fertilizers that increased yields. In addition, throughout the twentieth century (well before the recent developments in genetically modified crops), corn seeds were being selected so that varieties which could be grown very close together were being developed by seed manufacturers to increase yield. The corn grown 100 years ago could not be grown closely together and so yields were relatively poor.

Impacts of Corn Overproduction

Michael Pollan's book titled *The Omnivore's Dilemma: The Search for a Perfect Meal in a Fast-Food World* clearly highlighted the demerits of having too much varieties of food. He used scientific data, historical evidences, and governmental statistics to prove that corn overproduction was more of a hazard than an advantage. According to Pollan (2007) the three major categories of negative impacts of corn overproduction are in the

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environment, in health, and economically. Corn overproduction impacts the environment through usage of agrochemicals, unsuitable levels of irrigation, and usage of GMO's. In USA corn production, there is a heavy reliance on pesticides, fertilizers, and herbicides. The chemicals have rapidly improved yields but are associated with disturbance of the ecosystem, and pollution of water through run-off. Specifically, Nitrogenous and Phosphate fertilizers are proven to pollute ground and surface water resulting in speedy algae growth (Pollan, 2007). Algae growth is associated with reduced dissolved oxygen in water bodies, hence absence of aqua life. In USA, the vast nitrogen amounts in Mississippi River have caused a ' dead-zone' at the Mexican gulf where there is no aquatic life (Rosenthal, 2007). Therefore, Corn production as Pollan (2007) puts it is a sponsor of the effect through run-off in fertilizer application and feeding animals with corn whose manure is a pollutant. Irrigation in dry areas has also negatively impacted the environment. Irrigation has been known to result to unrestrained withdrawals from the High Plains Aquifer and clashes over the seasonal and overused rivers in the West of USA (Rosenthal, 2007). This is a problem as 75% of corn in USA is produced in Colorado, Nebraska, Texas, and Kansas, which are dry regions and so rely on Irrigation.

Furthermore, the introduction of Genetically Modified corn has resulted in more yields. The more yields are as a result of the possibility of growing many corn seeds closer together, which was not possible before. However, the GM corn variety has Bt (*Bacillus Thuringienis*) genes that are beneficial in pest and weed control, but negatively affect other non-target organisms (Cummings, 2009). The gene is thought to reduce biodiversity through

adversely affecting organisms like butterflies or other insect populations in soil; hence reduction of pesticide resistance.

Paarlberg (2010) went into great depth in his criticism of health impacts of corn overproduction in USA. The major impact was in arguing that there was a direct relation between obesity and corn overproduction. Overproduction of corn has resulted in many food industries utilizing every part of the corn plant to make processed foods that are associated with obesity and other diseases such as cancer. Processed foods are cheaper and so many people prefer them as opposed to insisting on healthier foods. Furthermore, because of processed foods, obesity has become a problem in the world compared to starvation (Paarlberg, 2010).

Another possible health impact is in Genetically Modified breeds of corn. Even though, studies are not conclusive of direct negative health impact of GMO's, there is a high possibility that it affects the health of people indirectly. The indirect causes according to Cummings (2007) are allergic reactions and toxicity of crop because of reactions between the genetic strain in the crop and bacteria in the soil. In addition, health impact caused by run-off is also a possibility where pesticides and fertilizers used may contain heavy metal toxins that may end up in the human body in a cycle. The cycle begins from a run-off which is deposited in water bodies. In the water the chemicals can be deposited on algae and planktons that are ingested by fish. The fish are then eaten by humans who ingest the toxin indirectly. Also, the toxins may find themselves in water bodies that are sources of drinking water for humans.

Economically, even though corn overproduction has been beneficial in terms

of food and fuel provision, it has caused farmers from developing countries to be impoverished and lacking food (Paarlberg, 2010). The reason for the status is that a surplus of corn reduces global prices, which makes developing prices not able to compete in selling the crop. Therefore, they may opt not to plant it, which might lead to starvation. A classic example is between USA and Mexico, where as USA is overproducing corn its neighbor Mexico is starving because it cannot competitively grow corn and sell in the market.

Recommendations

Corn overproduction resulted largely because of federal government policies in the 20th century that encouraged production of corn. Even though it is not a bad strategy for food security and provision of income, lack of regulation has led to corn overproduction. Therefore, to combat the negative impacts that corn overproduction has brought about, it is recommended that:

Food industries should clearly specify the contents of their food so that consumers could make proper judgments on healthier eating.

Awareness campaigns and promotions in local communities on the need to eat healthy. This would help in choices on proper and healthier feeding.

Regulations should be set on the production quota of corn in certain periods, preferably on a yearly basis. This would enable the surplus corn in the market be consumed before new ones are introduced.

Proper irrigation methods be implemented, which reduce run-offs that introduce nitrogen and phosphates in water bodies. An example of a safe method is drip irrigation.

Genetic Modification should be monitored to ensure that no negative ill effects come about. Furthermore, the public should be educated on the safety of genetically modified foods.

Conclusion

Corn overproduction has resulted in important benefits like food and fuel availability; however, the situation has negative impacts on the environment, health, and economy of societies. The negative impacts result in a need for revision of policies and legislations that cause corn overproduction.

Environmental and health impacts are caused by irrigation, agrochemicals in corn growing, and GMO's. Economic impacts are felt in developing nations where they are impoverished and starved because of their developed counterparts overproducing corn. An example is USA causing Mexico to starve.

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