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Essay Writing 1

GMO Social Impact Analysis Paper

Food hunger is one of the primary results of poverty. In fact, millions of people around the world are undernourished — this is evident including in first world countries such as the United States, Australia, and Canada. To combat food hunger, experts believe that we must establish food security, providing people the accessibility to nutritionally adequate and safe food. The experts also believe we must increase crop yields and the production of domestic animals for food consumption. This can be achieved by revolutionizing and modernizing agriculture in the cheapest way possible. Indeed there have been great innovations in the agricultural field that improved and resulted in successful harvests. One of these innovations is the commercialization of genetically modified organisms (GMOs). In theory, to increase food supplies is to eradicate food hunger; however, this is not the case according to Vandana Shiva and Jafri Afsar, the authors of the science magazine article *Failure of GMOs in India*, and Gerardo Otero and Gabriela Pechlaner, the authors of the science magazine article *Is Biotechnology the Answer? The Evidence From NAFTA*. I believe that the adoption of GMOs is a great way to improve crop yields and ultimately, to battle food hunger; however, it is unethical that the government and corporations that promote GMOs ignore the social and economic impacts on people. This paper discusses the social and economic impacts of the implementation of GMOs and identifies the similarities and differences of these impacts in Mexico and India.

The intention of Mexico implementing GMOs into its agriculture is to increase the production of crops mainly for trade and export, not for human consumption. Crop trading and exporting have tremendously jeopardized food security in Mexico. In 1998, according to Otero and Pechlaner, the country has increased its fruits and vegetables production more than the United States; however, ironically, the U.S consumed more fruits and vegetables than Mexico. This drove the prices for these goods go up, which resulted in a loss of purchasing power by Mexican citizens. Mexican consumers could no longer afford to buy their own fruits and vegetables that they grew as the demand for these exports increased. In addition, big corporations have required Mexican farmers to have higher outputs every harvest, which resulted in the use of more land for farming for export and trade and less land grow food for direct human consumption.

There are social and economic negative impacts brought by the implementation of GMOs in Mexico. Otelo and Pechlaner affirmed that the implementation of GMOs in Mexico, which was introduced by North American Free Trade Agreement (NAFTA), resulted in the country's loss of more than two million agricultural jobs. This job displacement in agriculture resulted in mass migrations and forced Mexican families to become migrant workers. Furthermore, Mexico's annual economic growth decreased from 6.1% to 1.7% a few years after the implementation of GMOs in the country. This resulted in Mexico having a massive food insecurity in the year 2008.

The implementation of GMO Bacillus Thuringiensis (BT) cotton in India has created social and economic repercussions to Indian farmers. According to the article *Failure of GMOs in India*, Monsanto, a multinational agrochemical and agricultural corporation, advertised and

promised that BT cotton crops would have much higher yields. However, this did not happen—BT cotton has failed in India on so many levels. Farmers found out that there was a substantial decrease of cotton harvests due to an American bollworm infestation. BT cotton is supposedly engineered to be protected by this pest. The Research Foundation for Science, Technology and Ecology (RFSTE) discovered that there was an increase in attacks (250% to 300%) on their crops by other pests, such as aphids, whitefly, and thrips. RFSTE also found out that the local cotton varieties yield more than BT cotton. The local variety yields at least 500 kilogram per hectare, whereas BT cotton only yields 250 kilogram per hectare. Besides pests infestation, Indian farmers stated that BT cotton produced a shorter staple size. Monsanto advertised that BT cotton will be 26 to 29 millimeters long; however, the actual staple size that the farmers recorded was only from 15 to 20 millimeters long, which is almost half the size that Monsanto claimed.

The are some similarities and differences in impacts in the introduction of GMOs in Mexico and India. One of the main similarities is the negative social and economic impacts to both countries. In terms of economic, the industrialization of agriculture in Mexico has cost the country more than two million agricultural jobs. Similarly, due to the successive failures of BT cotton in India, the farmers' source of income was in ruin and drove them into a lurch. In terms of social impacts, the industrialization of Mexican agriculture that resulted in job loss has forced locals to work as migrant workers going from one place to another. One of the main differences is that the implementation of GMOs in Mexico has actually helped the locals to increase crop yields, while in India, it did not. India's BT cotton crops failed due to pests infestation and shorter length of staples, and resulted in fewer crop yields than the local cotton varieties yielded.

I strongly believe that agricultural technology must be adopted and carefully implemented in today's farming methods. Agricultural technology such as the industrialization of farming equipment as well as the introduction of GMOs have been a great help to improve crop yields and better animal husbandry. Agricultural technology has been adopted, implemented, and proven to be successful in Mexico, the United States, Canada, and many other countries. I'm in favor of one commentator's claim in the article *Is Biotechnology the Answer? The Evidence From NAFTA* that said, "it would be criminal to disregard the hope that biotechnology offers to the world." I believe that the government and engineers have duties to the public to share great innovations. With regards to India's situation, Monsanto Corporation had given them false advertisements about BT cotton. Since the introduction of GMOs in India was backed up by the government, media, and big corporations, it is unethical for them to advertise false information about BT cotton. After reading these two articles, I still believe that eliminating food hunger by increasing food production is achievable, but it is absolutely unethical that the government, corporations, and other entities that promote technology and innovation ignore and disregard the social, economic, and environmental impacts.

References

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